



COMMERCIAL LOW-SLOPE ROOFING MATERIALS GUIDE

The information source on low-slope membrane, insulation board, and roof fastener products and membrane warranties for the commercial roof designer, specifier, installer, manufacturer and user



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Commercial Low-Slope Roofing Materials Guide

Introduction

The *Commercial Low-Slope Roofing Materials Guide*, published annually by the National Roofing Contractors Association, is a comprehensive report on commercial, industrial, and institutional low-slope roof membrane, insulation board, and fastener products currently on the market, as well as the warranties offered for most membrane systems. It also provides pertinent information on the manufacturers and suppliers of these products.

The *Guide* is published as a service to the roofing industry. Its objective is to provide information on listed products that will be helpful to users in determining which generic and specific products will serve their particular needs. It is of special value to those associated with the design, specification, application, and use of commercial, industrial, and institutional roof systems.

The NRCA *Commercial Low-Slope Roofing Materials Guide* maintains a policy of total objectivity in its reporting of data. Nothing is required from listing manufacturers or suppliers other than adherence to a prescribed reporting format. Any manufacturer or supplier of products included in the *Guide* can participate by submitting information on their company and products in accordance with procedures developed for this purpose. Companies involved only in the distribution of other companies' brand-name roofing products are not included in this publication. For further information, write: National Roofing Contractors Association, 10255 W. Higgins Road, Suite 600, Rosemont, Ill. 60018-5607.

NRCA exercises due care in accurately reporting the data as supplied by manufacturers and suppliers but does not audit test procedures used to arrive at the reported data, nor does NRCA assume responsibility for the accuracy or completeness of the data submitted. The presence or absence of a listing of a product, manufacturer, or supplier in the *Guide* does not imply NRCA approval or disapproval of the product or company, nor does NRCA recommend that any specific materials be used or not.

NRCA does not develop standards but instead works toward and supports the improvement of existing standards and the development of new ones by those organizations responsible for standards development. The fact that materials listed in the *Guide* do or do not meet all of the values of the reference standards, documents, recommendations, or criteria does not necessarily imply that they will or will not produce acceptable roof systems. For listing purposes, it is not mandatory that test results be provided for each of the test methods specified in the reference standard; however, manufacturers and suppliers

are encouraged to furnish complete test results so that the *Guide* users have access to this information.

The 1993 edition of this publication was the first one to bear the title *Commercial Low-Slope Roofing Materials Guide*. From its inception in 1983 through 1992 it was named simply the *Roofing Materials Guide*. The words *commercial low-slope* were added to distinguish it from a companion publication—the *Residential Steep-Slope Roofing Materials Guide*—the first edition of which was published by NRCA in November 1992. The *Residential Guide* provides product information on asphalt shingles, shingle warranties, fiber-cement roof components, clay and cement tile, metal roof components, slate, and synthetic roof components.

When applied to the roofing market, the terms *commercial low-slope* and *residential steep-slope* are by no means definitive. Even granting a generally accepted definition of *low-slope* for a roof with a pitch of less than 3 (or 4) in 12, such roofs are employed regularly in residential structures (e.g., porches, car ports, garages, town houses), and steep-slope roofs are commonly used in commercial applications (e.g., offices, restaurants). Tradition, however, tends to associate specific kinds of products with either residential or commercial applications regardless of the true (or changing) use of the material. It is primarily for this reason that the division of product categories, as well as the titles, have been adopted for NRCA's two product directories.

How the Commercial Low-Slope Roofing Materials Guide is Organized

The *Commercial Guide* is divided into five major sections: (1) roof membranes, (2) roofing cements and coatings, (3) roof membrane warranties, (4) roof board insulation, and (5) roof fasteners. There is an index for each section, except that the one for the membrane section also serves as an index to roofing cements and coatings and membrane warranties. There is also an introduction to product information for each section. The membrane section introduction encompasses built-up roofing, modified bitumen and single-ply products, spray-applied polyurethane foam roof systems, and metal roof panels. The roofing cements and coatings and warranties sections have their own introductions, as do the insulation and fastener sections. Finally, there is a separate appendix for the membrane, roofing cements and coatings, insulation, and fasteners sections.

The purpose of the appendixes is to provide for manufacturer-supplied information that expands on or is in addition to data listed in the category section itself.

Appendix information can be found for a product when an X appears in the space at the end of the listing entitled "See Appendix if Checked." In reviewing the data in the *Commercial Guide*, the user should keep in mind that the format is designed to facilitate the side-by-side comparison of products. For this reason, listers can only respond to existing items of requested information; they cannot add their own. Nor is footnoting permitted in *Guide* listings; companies instead may expand on or clarify an item of information by providing copy for the appendix.

Roof membrane product information is presented in up to three parts, depending on its category. Part 2 is generally reserved for technical information, although, for spray-applied polyurethane foam roof systems, Part 2 contains data on a second component of the system—the insulation. There are three parts for modified bitumens, the third containing information on specifications.

Technical Information on Products in the *Commercial Guide*

In the main, there are two categories of technical information for which data is requested in the *Commercial Low-Slope Roofing Materials Guide*: (1) fire and wind ratings, according to Underwriters Laboratories (UL) and/or Factory Mutual (FM) test methods; and (2) ASTM performance-related standard specifications and/or standard test methods. (In the insulation and fastener sections, there are provisions for information on UL design numbers and code approvals; see the introductions to these sections for details.)

Although information is requested concerning wind uplift or fire ratings in the sections on metal roof panels and spray-applied polyurethane foam roof systems, space limitations do not permit the listing of specific roof assembly components and attachment methods that have been used to secure UL and FM fire and/or wind uplift ratings. Therefore, such data is not included for any roof membrane. Readers should refer to UL Fire Resistance and Building Materials directories and the *FM Approval Guide* to determine ratings that have been awarded for these roofing materials.

In the majority of cases, the technical data requested is for specific ratings or standards that are generally regarded in the industry as appropriate to the particular product category to which they apply. In a few cases—for example in the other prefabricated sheet-applied membranes section—manufacturers may provide test results according to whatever methods are deemed appropriate for the product being listed. This is because the category encompasses a variety of disparate products that are not generally measured according to the same criteria.

It should be pointed out that the development of

standard specifications and test methods is a continuous process; many are under consideration by standard-setting bodies, such as ASTM, at any given point in time. The fact that a draft standard is being evaluated or exists in proposed form does not make it useable by the *Guide*. Proposed standards or proposed revisions of existing standards are just that—proposed—and their use as reference is often contrary to the policy of standard-setting bodies. For this reason, only standards that have undergone all formal approval procedures by the organization identified with them are used in this publication.

The reader should note that the abbreviation *NA* is used throughout the *Commercial Guide* to indicate "not applicable." The use of *NA* is limited to those cases in which a standard does not, by its nature, apply to the particular product; for example, it would be appropriate for a manufacturer of a reinforced PVC membrane sheet to enter *NA* next to ASTM D 4434-95 "Elongation at Break, Type I, Type II, Grade 1," because the value in this test only applies to unreinforced PVC membrane sheets (Type III). It is inappropriate for a lister to indicate *NA* for another reason, e.g., the manufacturer doesn't believe that a test method is valid and therefore shouldn't apply to the product. In such cases, the editors of the *Commercial Guide* will delete the *NA*, and no response will appear. Although the reader cannot know whether the space was left blank by the lister or was rendered blank editorially, the net effect is the same.

Fire and Wind Ratings

The reference standards or tests for fire and wind ratings in the *Commercial Guide* are:

ANSI/UL Standard 790 *Tests for Fire Resistance of Roof Covering Materials*

UL Standard 580 *Tests for Wind-Uplift Resistance of Roof Assemblies*

Factory Mutual System Approval Standard *Class I Roof Covers, Class Number 4470*

UL Standard 790 is referenced in the Spray-applied polyurethane foam roof system section relative to flammability Class A ratings. UL Standard 580 and FM 447 are referenced implicitly in the metal roof panel section in the question that pertains to wind uplift ratings for a specification.

UL Standards

The performance criteria for roof covering material and ratings of individual products are published in *UL Roofing Materials and Systems Directory*, available from UL; the ratings derive from tests performed by UL on products provided for this purpose. The fire-resistance

ratings are Class A, B, or C based on tests conducted under UL 790 and, additionally, Class 15, 30, 60, or 90 under the wind-resistance tests found in UL 580. (A full description of these tests is also available from UL.) Class-A products are defined as those "roof coverings...effective against severe fire exposures...[that] under such exposures are not readily flammable...; offer a fairly high degree of fire protection to the roof deck; do not slip from position; possess no flying brand hazard; and do not require frequent repairs to maintain...fire-resistance properties." Under UL 580 the classification—15, 30, 60, or 90—depends on an evaluation of the comparative resistance to negative and positive pressures simulating the effects of wind velocities of 73 to 174 miles per hour.

FM Standards

FM standards recommend design criteria for consideration by the building owner's architect or engineer. To confirm that a product or building assembly will perform satisfactorily under actual fire, wind, or other conditions, Factory Mutual develops performance standards that test the product under simulated field conditions. FM standards for building products are written for a specific end-use in mind. They involve the owner and the installer, both of whom rely on a product's behavior under a variety of use conditions. The FM performance ratings are published in the *FM Approval Guide* and its three supplements, which are prepared at four-month intervals before the subsequent annual edition of the *Approval Guide* is printed.

Product Category

1. Built-up roofing specifications
2. Unreinforced and fabric-reinforced EPDM sheets
3. Unreinforced and fabric-reinforced Neoprene (Polychloroprene) sheets
4. Modified bitumen prefabricated sheets
5. PVC (polyvinyl chloride) prefabricated sheets
6. Fiber- or fabric-reinforced CSPE (Hypalon) prefabricated sheets

Roof Cover Standard 4470 contains requirements that test products, as follows:

Fire spread below the roof deck A Class-I fire rating means that the building owner is not required to install automatic sprinklers below the deck for its protection because the heat-release rate of the roof system is within allowable FM limits. The Class-I fire rating involves the most severe testing for any building assembly. Fire spread across the roof cover The FM rating for fire spread across the cover and insulation can be IA, IB, or IC depending on the length of spread under ASTM E 108 fire testing. The insulation beneath the cover is a part of the rating, both as pertains to fire resistance and wind blow-off.

Windstorm rating (I60, I90) The "I" in the windstorm rating refers to the Class I fire rating possessed by the roof assembly; the number 60 or 90 refers to the wind pressure in pounds per square foot that the roof assembly was subjected to.

Hail, leakage, weathering, and corrosion FM 4470 incorporates performance tests for each of the potential problems listed above, but the tests are made on the entire system, not individual components.

ASTM Standards

The following standards are referenced in the *Commercial Low-Slope Roofing Materials Guide* as a basis for reporting technical data.

Reference Document

National Bureau of Standards, Building Science Series #55 *Preliminary Criteria for Bituminous Membrane Roofing*, 1974

ASTM D 4637-96 *Standard Specification for Vulcanized Rubber Sheet Used in Single-Ply Roof Membrane*

ASTM D 4637-96 *Standard Specification for Vulcanized Rubber Sheet Used in Single-Ply Roof Membrane*

ASTM D 5147-95 *Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material*

ASTM D 4434-95 *Standard Specification for Polyvinyl Chloride Sheet Roofing*

ASTM D 5019-96 *Standard Specification for Reinforced Non-Vulcanized Polymeric Sheet Used in Roofing Membrane*

Product Category	Reference Document
7. Fiber- or fabric-reinforced PIB prefabricated sheets	ASTM D 5019-96 <i>Standard Specification for Reinforced Non-Vulcanized Polymeric Sheet Used in Roofing Membrane</i>
8. Fiber- or fabric-reinforced CPE prefabricated sheets	ASTM D 5019-96 <i>Standard Specification for Reinforced Non-Vulcanized Polymeric Sheet Used in Roofing Membrane</i>
9. Other single-ply prefabricated sheets	A list of eighteen optional tests are offered for the products, for which standards are not available
10. Spray-applied polyurethane foam roof systems	ASTM D 412-92 <i>Standard Test Methods for Vulcanized and Thermoplastic Rubbers and Thermoplastic Elastomers—Tension</i> ASTM D 570-95 <i>Standard Test Method for Water Absorption of Plastics</i> ASTM D 573-88 <i>Standard Test Method for Rubber—Deterioration in an Air Oven</i> ASTM D 822-89 <i>Standard Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus</i> ASTM D 1621-94 <i>Standard Test Method for Compressive Properties of Rigid Cellular Plastics</i> ASTM D 1622-93 <i>Standard Test Method for Apparent Density of Rigid Cellular Plastics</i> ASTM D 2794-93 <i>Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)</i> ASTM D 2856-94 <i>Standard Test Method for Open Cell Content of Rigid Cellular Plastics by the Air Pycnometer</i>
11. Metal roof panels	ASTM E 283-91 <i>Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen</i> ASTM E 331-93 <i>Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference</i>
12. Roofing cements and coatings	ASTM D 41-94 <i>Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i>

Product Category

Reference Document

12. Roofing cements and coatings (cont'd)

ASTM D 43-94 *Standard Specification for Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing*

ASTM D 1227-95 *Standard Specification for Emulsified Asphalt Used as a Protective Coating For Roofing*

ASTM D 2823-90 *Standard Specification for Asphalt Roof Coatings*

ASTM D 4479-93 *Standard Specification for Asphalt Roof Coatings—Asbestos-Free*

ASTM D 2824-94 *Standard Specification for Aluminum-Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, and Fibered without Asbestos*

ASTM D 2822-91 *Standard Specification for Asphalt Roof Cement*

ASTM D 4586-93 *Standard Specification for Asphalt Roof Cement, Asbestos Free*

ASTM D 3019-94 *Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, Asbestos Fibered, and Non-Asbestos Fibered*

ASTM D 3409-93 *Standard Test Method for Adhesion of Asphalt Roof Cement to Damp, Wet, or Underwater Surfaces*

ASTM 4022-94 *Standard Specification for Coal Tar Roof Cement, Asbestos Containing*

ASTM D 3747-79 (1995) *Standard Specification for Emulsified Asphalt Adhesive for Adhering Roof Insulation*

ASTM D 1187-95 *Standard Specification for Asphalt-Base Emulsions Used as Protective Coatings for Metal*

ASTM D 3468-90 *Standard Specification for Liquid-Applied Neoprene and Chlorosulfonated Polyethylene Used in Roofing and Waterproofing*

13. Insulation: extruded polystyrene, glass/mineral fiber, cellular glass, phenolic, fiberboard, perlite

ASTM C 203-92 *Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal*

Product Category

Reference Document

13. Insulation (cont'd)

Insulation: fiberboard

ASTM C 209-92 Standard Test Methods for Cellulosic Fiber Insulating Board

Insulation: extruded polystyrene, glass/ mineral fiber, cellular glass, phenolic, perlite

ASTM C 272-91 Test Method for Water Absorption Core Materials for Structural Sandwich Construction

Insulation: polyisocyanurate

ASTM C 1289-95 Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board

Insulation: expanded polystyrene, extruded polystyrene

ASTM C 303-90 Test Method for Density of Preformed Block-Type Thermal Insulation

Insulation: extruded polystyrene, glass/ mineral fiber, cellular glass, phenolic, perlite

ASTM D1621-94 Test Method for Compressive Properties of Rigid Cellular Plastics

Commercial Low-Slope Roofing Materials Guide Order Form

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Section 1

Roof Membranes

Information on Commercial Low-Slope Roof Membranes

Built-up Roofing Membranes

General Information

The traditional hot built-up roofing membrane consists of alternating layers of felts, fabrics, or mats saturated with bitumen during manufacture, assembled in place, and adhered with applied layers of hot bitumen. The felts are commonly either organic, or "rag" felts, or glass fiber mats. Layers of felts sealed with bitumen are called plies; they are solid-mopped together and applied shingle-fashion. The number of plies in a cross-section is the number of plies on the roof: four plies equals a four-ply roof. Sometimes a base sheet, used as a first ply, is mechanically fastened.

Surfacing for the hot built-up roof can be aggregate embedded in hot asphalt; mineral-surface cap sheets; or smooth-surface application, which consists of hot asphalt mopped over the entire surface or cold-applied asphalt emulsions, cut-backs, and other coatings sprayed, rolled, or brushed on.

The bitumen used for interply moppings is either asphalt or cold tar. Asphalt is a petroleum product refined from crude oil; coal tar is derived from the destructive distillation of coal. A variant of the asphalt normally used in hot built-up roofing is modified asphalt, a material that is usually associated with modified bitumen membrane products. It is so named because it is created by modifying asphalt through heating and the addition of rubbers or plastics, which makes it more elastic and gives it a higher softening point than normal built-up roofing bitumen.

The cold-applied built-up roof, applied at ambient temperature, involves the use of asphalt cutbacks or elastomeric adhesives and, usually, either asphalt-coated felts or synthetics, such as those made of polyester. The most popular surfacing is mineral granules, although some cold-applied roofs are smooth surfaced with cut-backs or emulsions.

Notes on the Built-up Roofing Section

Item 7 Felts Data The response to this item is a list of felts, mats, or other built-up roofing products that are used in each specification. The enumeration of products should include both the name and, parenthetically, both the applicable ASTM descriptive standard under which the product can be classified and the applicable classification number.

Among the more commonly referenced ASTM descriptive standards are the following:

D 173-86 *Standard Specification for Bitumen-Saturated Cotton Fabrics Used in Roofing and Waterproofing*

D 226-88 *Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing*

D 227-89 *Standard Specification for Coal Tar-Saturated Organic Felt Used in Roofing and Waterproofing*

D 249-89 *Standard Specification for Asphalt Roll Roofing (Organic Felt) Surfaced with Mineral Granules*

D 1668-86 *Standard Specification for Glass Fabrics (Woven and Treated) for Roofing and Waterproofing*

D 2178-89 *Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing*

D 2626-88 *Standard Specification for Asphalt-Saturated and Coated Organic Felt Base Sheet Used in Roofing*

D 3909-91 *Standard Specification for Asphalt Roll Roofing (Glass Mat) Surfaced with Mineral Granules*

D 4601-91 *Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing*

D 4897-87 *Standard Specification for Asphalt-Coated Glass-Fiber Venting Base Sheet Used in Roofing*

D 4990-89 *Standard Specification for Coal Tar Glass Felt Used in Roofing and Waterproofing*

Parenthetical references by manufacturers to standards in this list do not include the date.

Other ASTM descriptive standards may be cited, depending on the nature of the product under consideration.

Item 8 Specification Number This is where the manufacturer is to provide the number and/or name of the built-up roofing specification; each specification indicates a distinct combination, quantity, and configuration of felts, interply adhesive, and/or surfacings.

Item 11 Slope Requirements In this space, the lister indicates the minimum and maximum slope approved for the specification, in inches per foot.

Item 12 Number of Plies The total number of plies, item 12A, is the sum of the number of plies indicated in items 12B, 12C, and 12D. If interplies are the only plies used in a specification, 12C and 12A will be the same number. Although cap sheets (12D) are really surfacing rather than plies, they are included here for clarity; see item 15 *Other* for a reference to cap sheets as surfacing.

Item 17 Restricted Regions If a specification is restricted to a particular region of the country, manufacturers will indicate this with a code—for example, *N* for northern region. Readers need to refer to the manufacturer's literature for an interpretation of the codes and their geographical significance. Absent regional restrictions, manufacturers simply enter *None*.

Modified Bitumens

General Information

Polymer modified bitumen membranes were developed in Europe in the mid-1960s and have been in use in the United States since 1975. They are composed of one or more premanufactured sheets consisting of asphalt, reinforcing layers, and, in some cases, surfacing. During manufacture, plastic or rubber (APP, or atactic polypropylene, and SBS, or styrene butadiene styrene, are the most common) is added to the bitumen while heating, which "modifies," or changes, its properties, giving it a higher softening point and greater elasticity. There is at least one sheet made of either polyethylene, polyester, or fiberglass sandwiched between the bitumen layers. Factory-installed surfacings include metal, mineral granules, and synthetic coatings. In many instances, modified bitumen membrane specifications may incorporate non-modified bitumen organic or fiberglass felts or mats, generally as a base sheet.

Modified bitumen membrane sheets generally are torch applied (APP and SBS modifieds), mopped in with hot asphalt (SBS modifieds), installed in cold adhesive, or self-adhered. Sometimes a combination of these application methods will be used in one system installation.

There are generally three major types of installation systems, sometimes associated with modified bitumen but more often with single-ply membranes: (1) loose-laid and ballasted, which involves attaching the membrane at the perimeters, terminations, and penetrations only and holding it in place everywhere else with ballast; (2) partially adhered, which involves mechanically attaching the membrane or spot adhering it with an adhesive; and (3) fully adhered systems, in which the membrane is fully bonded to the substrate with field-applied adhesive. There is also a configuration known as the protected roof membrane assembly, or inverted roof system. Here, the membrane is applied to the deck or existing roof, roof board insulation is loosely laid on top of the membrane, and the system is weighted down with ballast. See item 7 under each kind of membrane product for data pertaining to these installation systems.

Notes on the Modified Bitumen Section

Part 1: General Information

Item 3 Product Description Item 3A provides for the name of the material used to modify the asphalt during the manufacture of the membrane; see the general information section on modified bitumens for further details. Item 3B asks for the total thickness of the modified membrane sheet in mils (thousandths of an inch). Item 3F requests the weight per square foot of the membrane as it would be installed on the roof, minus any surfacing ballast that might be added.

Item 7 Types of Roof Systems For item 7A, the information requested is the weight of the ballast per square foot that is recommended for application in the loose-laid/ballasted system. Absent a weight, it can be assumed that there is no loose-laid/ballasted specification for the listed product. For items 7B and 7C, the data requested is the **method** by which a product is partially or fully adhered, not simply whether a partially adhered or fully adhered specification exists. Any response besides a method will be blank. For item 7D, an *X* indicates whether there is a protected roof membrane assembly for the product; a blank indicates that none is available.

Item 9 Acceptable Substrates Item 7A through 7M are insulation board and decks over which membranes are normally applied. The manufacturer can respond with an *O*, an *X*, or both. An *O* means that the membrane can be installed over the substrate but that some kind of overlayment (e.g., a base sheet, insulation) is required in at least some circumstances; an *X* means that application is permitted directly to the substrate. Item 7N refers to application over an existing built-up membrane, to which the *O* and *X* responses are also applicable. Readers will need to refer to the manufacturer's specification manual for details concerning these requirements.

Item 10 Restricted Regions If a use of a membrane is restricted to a particular region of the country, manufacturers will indicate this with a code—for example, *N* for northern region. Readers need to refer to the manufacturer's literature for an interpretation of the codes and their geographical significance. Absent regional restrictions, manufacturers simply enter *None*.

Item 11 Workable Temperature Range This is the range of ambient temperatures in degrees Fahrenheit within which the manufacturer recommends application of the membrane material.

Item 12 Flashing Material This item provides for information concerning the material used with the mem-

brane product for flashing terminations and perimeters. It can be the same as the membrane product (generally indicated by the response *same material*), another of the manufacturer's membrane products (indicated by a trade name), or another of the manufacturer's types of products (e.g., any of the mineral-granule products offered by the manufacturer).

Item 13 Flashing Method The method for attaching the flashings may be the same as the field lap joint method indicated in item 6, or it may be different. It is not uncommon for the field sheet to be mopped and the flashings torched, for example.

Item 20 Licensed Applicator Agreement The manufacturer indicates here whether it has a licensed applicator program involving agreements with specific contractors approved to install the company's membrane products.

Part 2: Test Results

Unlike the ASTM standard used for many of part 2 sections for roof membranes, ASTM D 5147-95 is a collection of test methods without pass/fail criteria. For this reason, there are no minimum or maximum values in parentheses. For further information on many of the tests included here, see the physical properties section of the general introduction to single-ply membranes.

Part 3: Specifications

The purpose of Part 3 is to enumerate the specifications and the various configurations for the modified bitumen sheets described in Part 1. As can be seen, modified bitumen membranes are often installed in multi-ply configurations, not unlike built-up roofing. In column 1, the specification numbers are listed under the categories used to classify them. These categories refer to the kind of roof installation involved: (1) new construction or replacement (*replacement* meaning that the old roof was torn off and replaced), (2) recover (meaning that a new membrane is being installed over an existing roof), and (3) recover, insulation added (meaning that the new membrane is being installed over an existing roof but one to which new insulation has been applied). There are subcategories of roofs within the category of new/replacement that describe the substrate: insulated, nailable, or nonnailable.

The second column enumerates the total number of plies in the membrane assembly; this should equal the number of sheets named in the subsequent four columns.

The third column lists the base sheet required in the membrane assembly, but **only** if it is not a modified bitumen sheet. Sometimes a trade name will appear in this column; often simply a generic description, such as

fiberglass, will be given, indicating that a fiberglass base sheet is required. Modified bitumen base sheets will appear in the next column, entitled first sheet.

The next three columns are for listing the modified bitumen sheets used in the specification. The first sheet should be the modified sheet on the bottom of the membrane assembly; the last sheet listed, whether second or third, should be the sheet on top of the assembly.

Single-Ply Roof Membranes

General Information

There are three types of single-ply, or elastoplastic, products in use today that are defined by the chemical properties they possess. These are: (1) cured (or vulcanized) elastomers, (2) uncured elastomers, and (3) plastomers. Cured elastomers, sometimes referred to as *thermosets*, are synthetic rubbers that have undergone the vulcanization, or curing, process. Distinguishing features are that the membrane material exhibits the "rubber-like" quality of returning to its original shape after being stretched. In addition, membrane material can only be bonded to itself with adhesives, not heat.

Uncured elastomers are installed in a manner similar to thermoplastics in that they can be heat or solvent welded. The material cures over time once exposed to the elements, however, and then exhibits the same qualities of vulcanized elastomers.

Plastomers, or thermoplastics, can be heat or solvent welded and develop strength in the welds at least equal to the original membrane material. Plastomers do not cure on the roof.

Single-Ply Product Types

The single-ply product types, categorized according to chemical classification, are as listed below. (The following information is excerpted from *Single-Ply Roofing: A Professional's Guide to Specifications*, courtesy of SPRI.)

Vulcanized Elastomers

EPDM is an elastomeric compound synthesized from ethylene, propylene, and a small amount of diene monomer. It is generally used for roofing as a vulcanized material, although it is also possible to formulate EPDM membranes that are nonvulcanized. Used as a roofing material in the United States since the early 1960s, EPDM sheets range in thickness from 30 to 60 mils and are usually black or white in color. EPDM membranes exhibit a high degree of ozone, ultraviolet, weathering, and abrasion resistance and good low-temperature flexibility. EPDM's properties of resilience, tensile strength, elongation, and hardness are largely retained in

aging tests at elevated temperatures. Resistance is excellent to acids, alkalis, animal and vegetable oils, and oxygenated solvents, such as ketones, esters, and alcohols. On the other hand, exposure to aromatic, halogenated, and aliphatic solvents should be avoided to prevent swelling and distortion of the membrane.

Neoprene, or chloroprene rubber, was the first commercially available synthetic rubber product. Neoprene is formulated from polymers of chloroprene that were initially developed by E.I. DuPont de Nemours and Company, which has been manufacturing neoprene products since 1931. Neoprene may be used in a variety of elastomeric applications. It can be molded or extruded into hose, belts, heels, soles, tires, gaskets, coated fabrics, or wire and cable insulation. Neoprenes are also used to make quick-setting and high-strength adhesives. Neoprenes may be calendered into sheets that vary in thickness from 30 to 120 mils, and it is in this form that neoprene is used for roofing membranes. Chloroprene synthetic rubber sheets have been used as a single-ply roofing membrane since 1957. Sheets are available plain or with a reinforcing fabric. Neoprene roof membranes have excellent resistance to weather, heat, oils, solvents, and abrasion. The characteristics of neoprene adhesives allow fabrication of field splices that achieve high seam strength to provide a reliable continuous weatherproofing membrane. Some formulations are available that will receive a coating of liquid Hypalon synthetic rubber when a stable uniform color is desired for the roof membrane. These special nonstaining neoprene products require such a coating for weather protection.

Nonvulcanized Elastomers

CSPE Chlorosulfonated polyethylene, a synthetic rubber manufactured by DuPont, was introduced in 1951 under the trade name Hypalon. It is a self-curing nonvulcanized elastomer and is available as a liquid coating or in sheet form for single-ply membrane application. CSPE sheet roofing membranes have been in use since 1966. They may be reinforced with polyester scrim or laminated to felt backing materials, and have a finished thickness of 30 to 60 mils. CSPE is a non-vulcanized product that exhibits thermoplastic qualities during processing and field installation. During roof exposure, curing or cross-linking occurs. CSPE exhibits strong resistance to weathering and a broad range of chemicals and pollutants, as well as being inherently ozone resistant. It may be produced in many colors and offers design versatility because of its adaptability to a variety of roof shapes and substrates.

CPE Chlorinated polyethylene was first introduced to the single-ply membrane roofing market in 1964. The raw

materials used are manufactured by the Dow Chemical Co. CPE may be formulated for use as roofing membranes as both cured and uncured elastomers. They may be nonreinforced or reinforced with scrim and range in thickness from 40 to 48 mils. They are inherently flexible and do not require the addition of plasticizers in their formulations. CPE exhibits strong resistance to oils and chemicals, excellent weatherability, and ozone resistance. They are also resistant to bitumen and can therefore be installed directly over existing asphalt or coal tar pitch roofs. Although usually produced in white or light gray for reflectivity and energy efficiency, CPE can also be pigmented to a variety of colors.

PIB (polyisobutylene) is an elastomeric compound, made of isobutylene and other polymers, which was first used as a roofing membrane in Europe in the 1960s. It has been available domestically in the form used today since the mid-1970s. The 60-mil PIB membrane is laminated to a 40-mil non-woven synthetic fleece backing with an unbacked prefabricated sealing edge for the side laps. PIB exhibits good resistance to weathering, ultraviolet light, and radiant heat. It is compatible with asphalt, but is not resistant to petroleum distillates, organic oil and fats, or substances containing tar.

NBP NBP nitrile alloy membranes are compounded from butadiene-acrylonitril copolymers with other proprietary ingredients. They are typically reinforced with polyester and range in thickness from 30 to 45 mils. First developed in the mid-1960s, nitrile alloys have been used in engineering applications in the aircraft, automotive, and geomembrane industries. Used extensively for weather and waterproofing applications since the mid-1960s, NBP reinforced single-ply membranes exhibit excellent tear and puncture resistance, good weatherability, remain flexible at low temperatures, and have a low water vapor permeability. They are resistant to most chemicals but are sensitive to aromatic hydrocarbons.

Thermoplastics

PVC (polyvinyl chloride) polymers, originally produced in Germany almost thirty years ago, are among the most versatile of thermoplastics for industrial and commercial applications. They are produced by the polymerization of vinyl chloride monomer, a gaseous substance resulting from the reaction of ethylene with oxygen and hydrochloric acid. In its most basic form, the resin is a relatively hard material that requires the addition of other compounds, commonly plasticizers and stabilizers, as well as certain other ingredients, to produce the desired physical properties for end use. PVC membranes may be produced by calendering, extruding, or spread-coating, and they may be nonreinforced or reinforced with glass fibers

or polyester fabric. They are usually 40 to 48 mils thick. PVC membranes are available that have provided up to twenty years of service life as exposed roofing. They are resistant to bacterial growth, industrial chemical atmospheres, roof penetration, and extreme weather conditions. PVC membranes properly formulated have shown excellent fire resistance and seaming capabilities. PVC membranes are chemically incompatible with bituminous materials.

EIP EIP are thermoplastic compounds consisting of ethylene interpolymers, stabilizers, pigments, anti-oxidants, and modifying polymers. EIP membranes are generally reinforced with polyester fabric and are usually 32 mils thick. They possess good resistance to fire, chemicals, and oils and have high tear strength. Many formulations utilizing combinations of ethylene polymers with other basic ingredients can be produced.

Physical Properties

Although it is difficult to directly correlate physical property data with actual performance or life expectancy, the following list of twelve basic material properties has been identified by SPRI's Technical Committee as being pertinent to all roofing membranes, regardless of chemical composition.

1. Thickness
2. Tensile strength
3. Ultimate elongation
4. Modulus
5. Tear resistance
6. Water vapor transmission rate
7. Water absorption
8. Dimensional stability
9. Factory seam strength
10. Low-temperature resistance
11. Results after heat aging
12. Results after accelerated weathering

Test Procedures for Evaluation of Materials

The test methods used to evaluate each of these properties vary depending upon the chemical composition and construction of the finished membrane. Different test methods are used for different generic types of material, as well as for reinforced and nonreinforced membranes.

To understand the results reported by manufacturers, it is important to know the test methods from which the data are derived. Frequently, attempts are made to compare the test results of different products to try to draw conclusions about their relative performance capabilities. Often the conclusions drawn are invalid because the comparison is of data obtained using different test methods. Sometimes a particular test method is preferred for

a particular generic membrane type. In other cases, there are multiple tests that are equally applicable; the selection of which to use is made by individual manufacturers based on such factors as availability of necessary testing equipment or apparatus. Some testing may be performed by independent laboratories, while other tests are routinely performed by the manufacturer in-house.

In most cases, standard test methods are available. These are established by (ASTM). There are also other agencies worldwide that define testing methods for single-ply membranes that may be similar to, but not exactly the same as, the ASTM methods.

Significance of the Reported Physical Properties of Membrane Materials

1. Thickness The distance between opposite surfaces of a material. Units of measure are mils, fractions of an inch, or millimeters.

The relationship of thickness to actual performance is not entirely clear, and membranes are available in thickness ranging from 30 mils to as many as 160 mils. This rather significant variance may be accounted for by such factors as the polymer type and formulation, method of manufacture, physical construction of the finished sheet (e.g., surfacing, reinforcements, etc.), as well as the intended method of application. Thickness is related to quality control procedures in that the manufacturer must verify that a uniform thickness is maintained. The performance-related factors usually associated with membrane thickness are its resistance to mechanical damage, hail, traffic, and surface wear, although there are certainly other factors, such as compressibility of the substrate, that also contribute to all of these. In other words, the susceptibility of a membrane to damage does not in any way rely solely on the thickness of the material.

2. Tensile strength The maximum force of stress required to break a membrane sample. For nonreinforced membranes, strength is reported as a stress (pounds per square inch, or "psi"); for reinforced membranes, strength is reported as a force (pounds, or "lbf").

This physical property relates to the ability of a membrane to withstand stresses that might be imposed by such things as building movement, wind uplift, and thermal loading. The presence of reinforcing material and the type of material used as reinforcement may also affect tensile strength.

3. Ultimate elongation The amount a membrane sample stretches during tensile testing before it ruptures, usually expressed as a percentage of the original length.

The elongation of a membrane may contribute to its ability to accommodate movement in the substrate or

structure without rupturing. There is a broad range of elongation values exhibited by products that are appropriate for use as single-ply roofing membranes. The variance from product to product depends on chemical composition and sometimes on the presence of reinforcing materials. In some cases, a reinforcing material may break internally at a low strain level without affecting the integrity of the sheet, thereby allowing the membrane itself to stretch and achieve its elongation property. In other cases, the reinforcement has a high resistance to elongation and imparts this characteristic to the finished sheet, producing a membrane with a low elongation property. The selection is made by the manufacturer and is based largely on the manner in which the material will be installed.

4. Modulus is a measure of the stiffness of a polymeric sheet. Since polymeric materials do not exhibit traditional elastic behavior over their entire range of elongation, the modulus is not a constant; rather it is reported as the tensile stress required to produce a prescribed elongation. When the modulus at 50 percent elongation is reported for a number of products, it allows for a comparison of their relative stiffness. This is expressed as psi at a given percent elongation.

The presence of reinforcement affects the modulus of a material by significantly increasing its stiffness; it may also affect the elongation properties in the direction of the reinforcing medium. Like elongation, this property is an indicator of the suitability of the formulation for use as a roofing membrane, but it is not a direct predictor of its performance once installed. However, modulus, in combination with other factors, such as coefficient of thermal expansion and dimensional stability, may have an effect on the manner of attachment of the membrane at terminations.

5. Tear resistance The load required to tear a material when the stress is concentrated on a small area of the specimen by the introduction of a prescribed flaw, expressed in psi or pounds-force.

This property indicates a membrane's ability to resist initiation and/or propagation of a tear. Recognizing that occasionally mechanical damage occurs that results in a tear or puncture, it is important that during installation—or membrane expansion and contraction due to structural or substrate movement or wind uplift pressures—the membrane be able to resist further tearing. Resistance to tear is also of importance in mechanically attached membrane systems in which the membrane is penetrated by fasteners, and wherever penetration of the membrane occurs at terminations. Different test methods are used to test the tear resistance of reinforced and nonreinforced membranes.

6. Water vapor transmission A measure of the rate of transmission of water vapor through the membrane material under controlled laboratory conditions of temperature and humidity, expressed as grains/hour/square/foot or grams/24 hours/square meter.

This property, which is measured under prescribed testing procedures, determines the rate at which vapor passes through the membrane. The actual vapor transmission rate of a specific membrane is important in the design of a total roofing assembly with regard to the inclusion or exclusion of a vapor retarder.

7. Water absorption The amount of water absorbed by a material after immersion for a prescribed period of time, expressed as a percentage of the original weight of the material.

The membrane must be resistant to water absorption from continuous submersion in water due to ponding, whether because of poor drainage or snow and ice buildup. A significant loss or gain of weight during immersion would indicate that the membrane may not perform satisfactorily over a long period of time. This water absorption may indicate that the membrane may affect dimensional stability and membrane thickness, and may cause internal stress that could lead to cracking.

8. Dimensional stability The change in length and/or width of a material that results from exposure to elevated temperatures over time, expressed as a percent.

Dimensional change that occurs after installation of the membrane may affect its watertight integrity and build up forces within the roof system. Such changes in sheet dimension can occur for a number of reasons: (a) stress induced on the membrane during some manufacturing processes, (b) stress introduced during the windup operation phase of some post-manufacturing processes, and (c) the extraction of certain components of the compound due to contact with incompatible materials or through volatility of the compound.

The effect of all of the above conditions can often be accelerated by testing at elevated temperatures.

9. Factory seam strength The force required to cause failure (in peel or shear) of a seam that has been created by the material supplier, expressed in psi or as a percentage of the strength of the sheet itself.

Not all manufacturers supply membranes containing factory seams. However, this property is considered to be as significant to the overall performance as are field seams. The most disruptive forces to which a membrane will be subjected occur during installation. The factory seam must resist unfolding, stretching, pulling, and fluttering by the installers during placement and final positioning of the sheet.

10. Low-temperature resistance The lowest temperature at which the material does not fracture or crack under prescribed impact and flexing conditions, expressed in F or C.

It is important for the membrane to be able to accommodate, without cracking, the combination of low temperatures and mechanical impact during application, structural movement, or rooftop traffic that occurs in cold climates. However, there may be a strong correlation between low-temperature flexibility as tested in the laboratory and the actual temperature service range of the membrane on the roof.

11. Heat aging This test procedure is an attempt to accelerate the effect that solar heating will have on the properties of the installed roof membrane. The change(s) in physical properties (such as tensile properties) that result from exposure are then compared to those of the original unexposed material.

The results may provide some insight into, but no direct correlation with, the actual changes in physical properties that may occur during natural aging. It is particularly difficult to relate the exposure time during testing to real time during the life of the exposed membrane.

12. Accelerated weathering The process in which materials are exposed to a controlled environment where various phenomena, such as heat, water, condensation, and light, are altered to magnify their effects, thereby accelerating the weathering process. The physical properties that result from this exposure are then measured and compared to those of the original unexposed material.

These tests are an attempt to provide insight into the long-term performance of the membrane under exposure to the climatic variables of sunlight and precipitation. Again, there is no clear correlation between the test results and actual performance, and the relationship between test exposure time and real time is difficult to determine.

Notes on the PVC Section

Part 1: General Information

Item 3 Product Description Item 3A provides for information on the material used to reinforce the PVC sheet; fiberglass and polyester are the most common reinforcements. Absent a reinforcement, the entry will state *None*. Item 3C requests the weight per square foot of the membrane as it would be installed on the roof, minus any surfacing ballast that might be added.

Item 7 Types of Roof Systems For item 7A, the infor-

mation requested is the weight of the ballast per square foot that is recommended for application in the loose-laid/ballasted system. Absent a weight, it can be assumed that there is no loose-laid/ballasted specification for the listed product. For items 7B and 7C, the data requested is the **method** by which a product is partially or fully adhered, not simply whether a partially adhered or fully adhered specification exists. Any response besides a method will be blank. For item 7D, an *X* indicates whether there is a protected roof membrane assembly for the product; a blank indicates that none is available.

Item 9 Acceptable Substrates Item 7A through 7M are insulation board and decks over which membranes are normally applied. The manufacturer can respond with an *O*, an *S*, or an *X*, or any two or all three. An *O* means that the membrane can be installed over the substrate but that some kind of overlayment (e.g., a base sheet, insulation) is required in at least some circumstances; an *S* means that a sheet of material is required to separate the membrane from the substrate; and an *X* means that application is permitted directly to the substrate. Item 7N refers to application over an existing built-up membrane, to which the *O* and *X* responses are also applicable. Readers will need to refer to the manufacturer's specification manual for details concerning these requirements.

Item 10 Restricted Regions If a use of a membrane is restricted to a particular region of the country, manufacturers will indicate this with a code—for example, *N* for northern region. Readers need to refer to the manufacturer's literature for an interpretation of the codes and their geographical significance. Absent regional restrictions, manufacturers simply enter *None*.

Item 11 Workable Temperature Range This is the range of ambient temperatures in degrees Fahrenheit within which the manufacturer recommends application of the membrane material.

Item 12 Flashing Material This item provides for information concerning the material used with the membrane product for flashing terminations and perimeters. It can be the same as the membrane product (generally indicated by the response *same material*), another of the manufacturer's membrane products (indicated by a trade name), or another of the manufacturer's types of products (e.g., any PVC-clad metal).

Item 13 Flashing Method The method for attaching the flashings may be the same as the field lap joint method indicated in item 6, or it may be different. For example, in some cases the membrane is seamed with hot air but the flashing adhered with solvent.

Item 20 Licensed Applicator Agreement The manufacturer indicates here whether it has a licensed applicator program involving agreements with specific contractors approved to install the company's membrane products.

Part 2: Test Results

In this section, manufacturers provide results according to tests in ASTM D 4434-95. The figures and/or test result information (e.g., *negligible*) to the right of the test categories are the minimum or maximum values or the required outcome necessary for the material to pass the test in that category.

Notes on the EPDM and Neoprene Sections

(Note: No manufacturer listed a Neoprene product in the 1997 edition of the *Guide*; therefore, the section was not produced.)

Part 1: General Information

Item 3 Product Description Item 3A provides for information on the material used to reinforce the EPDM or Neoprene sheet. Absent a reinforcement, the entry will state *None*. Item 3C requests the weight per square foot of the membrane as it would be installed on the roof, minus any surfacing ballast that might be added.

Item 7 Types of Roof Systems For item 7A, the information requested is the weight of the ballast per square foot that is recommended for application in the loose-laid/ballasted system. Absent a weight, it can be assumed that there is no loose-laid/ballasted specification for the listed product. For items 7B and 7C, the data requested is the **method** by which a product is partially or fully adhered, not simply whether a partially adhered or fully adhered specification exists. Any response besides a method will be blank. For item 7D, an *X* indicates whether there is a protected roof membrane assembly for the product; a blank indicates that none is available.

Item 9 Acceptable Substrates Item 7A through 7M are insulation board and decks over which membranes are normally applied. The manufacturer can respond with an *O*, an *S*, or an *X*, or any two or all three. An *O* means that the membrane can be installed over the substrate but that some kind of overlayment (e.g., a base sheet, insulation) is required in at least some circumstances; an *S* means that a sheet of material is required to separate the membrane from the substrate; and an *X* means that application is permitted directly to the substrate. Item 7N refers to application over an existing built-up membrane, to which the *O* and *X* responses are also applicable. Readers will need to refer to the manufacturer's specifica-

tion manual for details concerning these requirements.

Item 10 Restricted Regions If a use of a membrane is restricted to a particular region of the country, manufacturers will indicate this with a code—for example, *N* for northern region. Readers need to refer to the manufacturer's literature for an interpretation of the codes and their geographical significance. Absent regional restrictions, manufacturers simply enter *None*.

Item 11 Workable Temperature Range This is the range of ambient temperatures in degrees Fahrenheit within which the manufacturer recommends application of the membrane material.

Item 12 Flashing Material This item provides for information concerning the material used with the membrane product for flashing terminations and perimeters. It can be the same as the membrane product (generally indicated by the response *same material*), another of the manufacturer's membrane products (indicated by a trade name), or another of the manufacturer's types of products (e.g., uncured neoprene).

Item 13 Flashing Method In the case of EPDM membranes, the method for attaching the flashings will be essentially the same as the field lap joint method indicated in item 6, because only contact adhesive can be used on cured elastomers. The indication that sealant is used in addition to contact adhesive refers to sealant applied to ensure secure bonding of the laps and/or flashing material.

Item 20 Licensed Applicator Agreement The manufacturer indicates here whether it has a licensed applicator program involving agreements with specific contractors approved to install the company's membrane products.

Part 2: Test Results

In this section, manufacturers provide results according to tests in ASTM D 4637-96. The figures and/or test result information (e.g., *no cracks*) to the right of the test categories are the minimum or maximum values or the required outcome necessary for the material to pass the test in that category.

Notes on the CSPE, PIB, CPE, and Other Prefabricated Sheet-applied Membrane Sections

(Note: No manufacturer listed a CPE product in the 1997 edition of the *Guide*; therefore, the section was not produced.)

Part 1: General Information

Item 3 Product Description Item 3A provides for information on the material used to reinforce the sheet. Absent a reinforcement, the entry will state *None*. Item 3C requests the weight per square foot of the membrane as it would be installed on the roof, minus any surfacing ballast that might be added.

Item 7 Types of Roof Systems For item 7A, the information requested is the weight of the ballast per square foot that is recommended for application in the loose-laid/ballasted system. Absent a weight, it can be assumed that there is no loose-laid/ballasted specification for the listed product. For items 7B and 7C, the data requested is the **method** by which a product is partially or fully adhered, not simply whether a partially adhered or fully adhered specification exists. Any response besides a method will be blank. For item 7D, an *X* indicates whether there is a protected roof membrane assembly for the product; a blank indicates that none is available.

Item 9 Acceptable Substrates Item 7A through 7M are insulation board and decks over which membranes are normally applied. The manufacturer can respond with an *O*, an *S*, or an *X*, or any two or all three. An *O* means that the membrane can be installed over the substrate but that some kind of overlayment (e.g., a base sheet, insulation) is required in at least some circumstances; an *S* means that a sheet of material is required to separate the membrane from the substrate; and an *X* means that application is permitted directly to the substrate. Item 7N refers to application over an existing built-up membrane, to which the *O* and *X* responses are also applicable. Readers will need to refer to the manufacturer's specification manual for details concerning these requirements.

Item 10 Restricted Regions If a use of a membrane is restricted to a particular region of the country, manufacturers will indicate this with a code—for example, *N* for northern region. Readers need to refer to the manufacturer's literature for an interpretation of the codes and their geographical significance. Absent regional restrictions, manufacturers simply enter *None*.

Item 11 Workable Temperature Range This is the range of ambient temperatures in degrees Fahrenheit within which the manufacturer recommends application of the membrane material.

Item 12 Flashing Material This item provides for information concerning the material used with the membrane product for flashing terminations and perimeters. It can be the same as the membrane product (generally indicated by the response *same material*), another of the manufacturer's membrane products (indicated by a trade name), or another of the manufacturer's types of products

(e.g., reinforced Hypalon).

Item 13 Flashing Method The method for attaching the flashings may be the same as the field lap joint method indicated in item 6, or it may be different. For example, in some cases the membrane is seamed with hot air but the flashing adhered with solvent.

Item 20 Licensed Applicator Agreement The manufacturer indicates here whether it has a licensed applicator program involving agreements with specific contractors approved to install the company's membrane products.

Part 2: Test Results

In the Part 2 sections for CSPE, PIB, and CPE, manufacturers provide results according to tests in ASTM D 5019-96. The figures and/or test result information (e.g., *pass*) to the right of the test categories are the minimum or maximum values or the required outcome necessary for the material to pass the test in that category.

In the Part 2 section for Other Prefabricated Sheet-applied Single-Ply Membranes, there are 18 categories of material properties that manufacturers may report test results on. They may use any test method they wish, and need only enter the method used and the results indicated. Obviously there are no pass/fail criterion for the results in the Part 2 section.

Spray-applied Polyurethane Foam Roof Systems

This portion of the Roof Membrane Section of the *Commercial Roofing Materials Guide* provides information on spray-applied polyurethane foam roof systems. It is divided into two parts, representing the two separate systems components: Part 1: Protective Coatings and Part 2: Insulation.

General Information

The first component of the polyurethane foam roof system is the rigid, closed-cell sprayed-in-place polyurethane foam insulation. The foam comprises two components: isocyanate and polyol; transfer pumps are used to get the components to a proportioning unit, which properly meters the two at a one-to-one ratio and heats and pumps them through dual hoses. They are mixed at the spray gun, which is used to apply them to the substrate.

The second component, the protective coating, is normally sprayed on as well, although hand and power rollers can be used. The purpose of the coatings is to protect the foam from ultraviolet exposure and moisture. The generic types of coatings include acrylic, butyl, Hypalon, neoprene, silicone, urethane, vinyl, and modi-

fied asphalts.

The spray-applied polyurethane foam roof system is often characterized as "self-flashing." The foam is applied so that it forms a transition from the vertical to the horizontal, which in many cases precludes the need for pipe flashings, lead boots, and other metal components. Pitch pans and equipment supports are generally encapsulated in the foam and then coated. The polyurethane foam is tapered around drains to prevent ponding.

Part 1: Protective Coatings

Item 3 Vapor Retarder A coating is considered a vapor retarder if it has a moisture transmission rating (MVT) of one U.S. perm or less as defined by ASTM E 96. A vapor retarder is usually required when there are extreme temperature differentials; it is advisable when spray-applied polyurethane is applied to a roof over a high-humidity interior.

Item 4 Name of Product: If a coating is used as both the base and top coating, it will be so listed in a single-column format. Products that are "paired" in a specification are listed together in two columns without a line separating them; in these cases, data is provided separately, where appropriate, for the base and top coating.

Item 16 Physical Properties of the Coating Responses of *NA* were not permitted in this section. When *NA* was entered, the response was left blank; no differentiation can therefore be made between a response omitted by a manufacturer and one in which the response was *NA*.

Item 17 UL 790 Flammability Class A Rating in Any System For information on UL 790, see the general introduction to the *Guide*. It should be noted that the question is whether a Class A rating is available for any specification (combination of insulation and coating). The exact specification is not requested; therefore readers should refer to the appropriate UL directory for details concerning such the rating.

Item 18 Foam Insulation Requirements These are the requirements that the coating manufacturer has for the insulation on which the specified coating will be used in polyurethane foam roof system.

Item 19 Foam Available from Manufacturer In many instances, the coating manufacturer neither manufacture nor markets the foam insulation. See Item 4 in Part 2 for a cross-reference to insulation manufacturers that market systems coatings as well as insulation.

Part 2: Insulation

Item 6 Physical Properties of the Foam Responses of *NA* were not permitted in this section. When *NA* was entered, the response was left blank; no differentiation can therefore be made between a response omitted by a manufacturer and one in which the response was *NA*.

Item 7 UL 790 Flammability Class A Rating in Any System For information on UL 790, see the general introduction to the *Guide*. It should be noted that the question is whether a Class A rating is available for any specification (combination of insulation and coating). The exact specification is not requested; therefore readers should refer to the appropriate UL directory for details concerning such the rating.

Metal Roof Panels

General Information

Metal roofing systems are traditionally divided into two categories, architectural and structural. The architectural system is likened to the traditional steep shingled roof, in that it is considered a water shedder. Structural systems can be compared to and compete with traditional low-slope roofs because they are designed to better resist moisture on low-slope applications. Architectural panels are usually seamed by a double-interlock method, which performs well on a slope of at least 3 in 12 inches. They require solid decking, and a felt underlayment is usually recommended. Structural metal systems are designed to resist the passage of water under hydrostatic pressure. They have the structural capability of spanning joists without being supported by a solid deck and do not require an underlayment.

Panel Types

Following is a brief description of panel types that appear in the *Commercial Guide*.

Corrugated The corrugated seam panel has a ribbed profile and exposed fasteners. It can be described as a lap-and-fasten system, in which panels are lapped at the edges and a fastener is used to secure the joint.

Flat Seam The flat seam is created with individual panels applied in shingled application. One panel edge is folded back on top of itself; the other panel is folded under, and the two panels are hooked together.

Standing Seam The term standing seam is often used as a generic description for a class of metal roof seams. More properly, the term refers to one of two kinds of profiles, or seam types: (1) the vertical leg/flat pan and (2) the trapezoidal seam. The name standing seam

derives from the fact that the seams are joined together above the panel flats. The trapezoidal standing seam is more commonly associated with structural panels.

Batten Seam The original batten seam consisted of vertical leg panels placed between wood batten strips and covered with a cap. Many batten seam panels today are constructed entirely of metal.

Standing Seam Systems Because architectural standing seam roof systems are installed on steep slopes with short panel lengths, they are designed to shed water at a rapid rate and, therefore, they may or may not have sealant in the seam. The use of short panel lengths also limits the amount of thermal movement that can occur. For this reason, the panels are attached to the decking with a clip, consisting often of a single piece without designed allowance for movement, although two-piece clips are available. The panels slide back and forth on the clips.

Structural standing seam roof systems typically have a factory-applied sealant in seams to ensure watertightness. The systems commonly employ either glass fiber insulation rolls or rigid-board insulation. Because the insulation can become compressed at the structural members, spacer blocks are often placed over the member to prevent thermal bridging.

Allowance for thermal movement of the roof panel is provided by the concealed clips that are formed into the standing seams during the seaming operation. These clips are typically of two-piece design and are attached to secondary structures. The amount of thermal movement is a factor of the length of the panel run, the temperature changes that the panel will undergo, and the type of material that makes up the panels.

The seaming process varies. For both the vertical leg/flat pan and trapezoidal profiles, each panel typically has a male and female profile. There are a variety of seaming, or panel interlock, methods. Some are formed by mechanical seamers or by hand, such as the crimped (45 degrees), roll formed (180 degrees), double roll formed (two 180 degrees), and roll and lock. Other seam systems do not require mechanical seaming, such as the snap-on cap and snap-together methods.

Notes on the Metal Roof Panel Section

Item 6 Panel Profile This item provides for information concerning the profile of the listed panel. Although only one category may be designated by a manufacturer for a given product, the inference should not be made that this designation excludes description of a profile in another category as well (e.g., batten and vertical leg). The intent of this category is simply to provide information concerning what the panel profile looks like, not necessarily its total configuration.

Items 11, 12 ASTM E331 and E283 Actual test results are to be recorded; the only other response permitted was *NONE*.

Item 13 FM-UL Wind Uplift Ratings This item provides for information concerning the availability of any specification in the manufacturer's product line with an FM or UL wind uplift rating. As indicated in the general introduction, implicit reference is made to the FM rating of I-60, I-90 in Roof Cover Standard 4470 and to Class 15, 30, 60, or 90 under the wind-resistance tests found in UL 580.

The exact specification(s) with such ratings are not requested. Therefore readers should refer to the appropriate UL or FM guides and directories for details concerning such ratings.

Index to Listed Membranes and Cements and Coatings

	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	OTHER PRE-FABRICATED POLYURETHANE FOAM SYSTEMS	METAL ROOF PANEL	ROOFING CEMENTS AND WARRANTIES			BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	OTHER PRE-FABRICATED POLYURETHANE FOAM SYSTEMS	METAL ROOF PANEL	ROOFING CEMENTS AND WARRANTIES		
ACRYMAX TECHNOLOGIES, INC. 221 Brooke St. Media, PA 19063 610/566-7470 FAX 610/891-0834								308			ARS INDUSTRIES 9606 Parkway East, Suite E Birmingham AL 35215 205/836-6777 FAX 205/836-4090							244		
AEP-SPAN, A UNITED DOMINION COMPANY POB 150449 Dallas, TX 75315 800/527-2503 Texas: 214/827-1740 FAX 214/828-1394							238				ATAS INTERNATIONAL, INC. Iron Run Industrial Park 6612 Snowdrift Rd. Allentown, PA 18106 610/395-8445 FAX 610/395-9342							246		
ALCO-NVC, INC. Detroit, MI 48214 800/323-0029 FAX 313/331-4726								308			AVARD PRODUCTS 10461 Margarita Ave. Fountain Valley, CA 92708 714/839-4494 FAX 714/775-8415							316		
ALDO PRODUCTS CO., INC. 1604 N. Main St. Kannapolis, NC 28081 704/932-3054 FAX 704/932-3041						214					BARRETT COMPANY 3422 Old Capitol Trail Wilmington, DE 19808 800/647-0100	33	68						418	
ALLIEDSIGNAL COMMERCIAL ROOFING SYSTEMS 2000 Regency Parkway, Suite 255 Cary, NC 27511 919/461-4701 (NC) 800/221-6490 FAX 919/461-4720	32							414			BERRIDGE MANUFACTURING CO. Roof Division Houston, TX 77026 713/223-4971 FAX 713/236-7422						249			
ALLIED-TRENT ROOFING SYSTEMS INC. 925 Orchard Lake Rd. Pontiac, MI 48341 800/955-2001 FAX 810/338-3891				170	192			416			BHP STEEL BUILDING PRODUCTS USA INC. 2110 Enterprise Boulevard West Sacramento, CA 95691 916/372-6851 FAX 916/372-5442							252		
					196															
ALUMINUM COATING MANUFACTURERS 7301 Bessemer Avenue Cleveland, OH 44127 800/556-8030 FAX 216/341-5833								309			BITEC INC. #2 Industrial Park Dr. Morrilton, AR 72110 800/535-8597 FAX 501/354-3019		69						422	
AMERICAN BUILDINGS ROOFING & ARCHITECTURAL PRODUCTS P.O. Box 800 Eufaula, AL 36072 334/687-2032 FAX 334/687-0298							241				BITUFA BV Ln. v. Spitsbergen 99 NL 7336 AR Apeldoorn Holland 011-31-55-422622 FAX 011-31-55-427220		71							
AMERICAN LUBRICANTS CO. 1227 Deeds Avenue Dayton, OH 45401 513/222-2851		68						418			BONDNOTE ROOFING SYSTEMS 984 Southford Road Middlebury, CT 06762 800/368-2160					198			424	
AMERICAN STEEL BUILDING CO. INC. P.O. Box 14244 Houston, TX 77221 713/433-5661 FAX 713/433-0847							244				THE BREWER COMPANY 30060 Lakeland Blvd. Wickliffe, OH 44090 216/944-3800 FAX 216/944-1492							316		
AMERICAN TAR COMPANY 2240 Taylor Way Tacoma, WA 98421 206/627-4098 FAX 206/627-3859								312			BURKE INDUSTRIES 2250 South 10th St. San Jose, Ca 95112 408/297-3500 800/297-7010 FAX 408/280-0938				192				424	
ANDEK CORP. P.O. Box 392 850 Glen Ave Moorestown, NJ 08057 888/88ANDEK FAX 888/44ANDEK						214					BUTLER MANUFACTURING CO. BMA Tower Penn Valley Park Kansas City, MO 64141 816/968-2370 FAX 816/968-2371						255			
ARMOR PLUS INTERNATIONAL, INC. 1222 18th St. Racine, WI 53403 414/632-3370 FAX 414/632-6145								316			CARLISLE ENGINEERED METALS P.O. Box 968 Stafford, TX 77497-0968 713/495-0244 800/669-9324 FAX 713/495-3646						256			

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CARLISLE SYNTEC INCORPORATED P.O. Box 7000 Carlisle, PA 17013 717/245-7000				170		199		426
THE CELOTEX CORP. 4010 Boy Scout Blvd. Tampa, FL 33607 813/873-1700	35	71		171				320 430
CONKLIN CO. P.O. Box 155 Shakopee, MN 55379-0155 800/394-6076 FAX 612/496-4285					192		215	321 434
CONSOLIDATED COATINGS CORP. 2614 Pearl Rd. P.O. Box 10 Brunswick, OH 44212-0010 800/321-7886 FAX 330/220-6761		72				199		322 436
CONTINENTAL RUBBER CO. 327 Blake Road North Minneapolis, MN 55343 612/936-9999				173				
COOLEY ENGINEERED MEMBRANE INC. 50 Esten Avenue Box 939 Pawtucket, RI 02862-0939 401/724-0490					199			
CURVELINE INC. P.O. Box 4268 Ontario, CA 91761 909/947-6022 FAX 909/947-1510							262	
DANOSA CARIBBEAN INC. Box 13757 Santurce Station San Juan, PR 00908 809/785-4545 FAX 809/787-3902		73						438
DERMABIT, WATERPROOFING INDUSTRIES INC. P. O Box 273 Alexandria, VA 22313-0273 703/739-2801 FAX 703/739-2802		74						438
DEWITT PRODUCTS CO. 5860 Plumer Detroit, MI 48209 313/554-0575 800/962-8599 FAX 313/554-2171								323
DIBITEN 4301 E. Firestone Blvd. South Gate, CA 90280 213/564-7220 800/DIBITEN FAX 213/564-9732		74						440
DOW CORNING CORPORATION P.O. Box 994 Midland, MI 48686-0994 517/496-6000 FAX 517/496-8026						216		
DURO-LAST INC. 525 Morley Drive Saginaw, MI 48601 800/248-0280 (All U.S.)					199			444

	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	OTHER PRE-FABRICATED POLYURETHANE FOAM SYSTEMS	METAL ROOF PANEL	ROOFING CEMENTS AND WARRANTIES
ENGLERT INC. 1200 Amboy Ave. Perth Amboy, NJ 08862 908/826-8614 FAX 908/826-8865							262	
ERSYSTEMS Elastomeric Roofing Systems, Inc. 2950 Niagara Lane North Minneapolis, MN 55447-4854 612/550-0038 800/403-7747 FAX 612/550-1237				173		200 216 234		325 446
FABRAL 3449 Hempland Road Lancaster, PA 17601 717/397-2741 FAX 717/397-1040							263	
FIELDS CORPORATION 2240 Taylor Way Tacoma, WA 98421 206/627-4098 FAX 206/383-2181	37							326
FIRESTONE BUILDING PRODUCTS CO. 525 Congressional Blvd. Carmel, IN 46032 800/428-4442		75	162	174				450
FLEX MEMBRANE INTERNATIONAL, INC. Bethlehem Drive Morgantown, PA 19543 610/286-7788 FAX 610/286-7786			162			200		456
FOAM ENTERPRISES, INC. 13630 Watertown Circle Minneapolis, MN 55441 800/888-3342 FAX 612/559-0945							217 234	
FOLLANSBEE STEEL P.O. Box 610 Follansbee, WV 26037 800/624-6906 FAX 304/527-1269							266	
FUTURA COATINGS, INC. 9200 Latty Avenue Hazelwood, MO 63042 314/521-4100 FAX 314/521-7255						217		
GAF MATERIALS CORP. 1361 Alps Road Wayne, NJ 07470 201/628-3000	42	77						329 456
GACO WESTERN, INC. P.O. Box 88698 Seattle, WA 98138-2698 800/456-4226 FAX 206/575-0587						219 234		
GALVAMET, S.A. DE C.V. Av. Rep. Mexicana 450 Col. Cuauhtemoc San Nicolas De Los Garza, N.L. 66450 Mexico 011-52-8-3309090 FAX 011-52-8-3396515							268	
GARDNER ASPHALT CORP./APOC DIVISION P.O. Box 5449 Tampa, FL 33675-5449 800/237-1155 FAX 813/248-6768						223		

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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	OTHER PRE-FABRICATED POLYURETHANE FOAM SYSTEMS	METAL ROOF PANEL	ROOFING CEMENTS AND WARRANTIES			BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	OTHER PRE-FABRICATED POLYURETHANE FOAM SYSTEMS	METAL ROOF PANEL	ROOFING CEMENTS AND WARRANTIES		
GARLAND COMPANY INC. 3800 E. 91st Street Cleveland, OH 44105 216/641-7500		78					269	331				83				201				476
GCS COATINGS, INC. 1999 Beaver Avenue Monaca, PA 15061 412/774-6232 FAX 412/774-0818						224	235					83								
GENERAL ELECTRIC 260 Hudson River Rd. Bldg. 25-73 Waterford, NY 12188 518/237-3330 FAX 518/233-3931						225						84								478
GENFLEX ROOFING SYSTEMS (Division of GenCorp Inc.) 1722 Indian Wood Circle Maumee, OH 43537			162	175		200			460								271			
GMX, INC. 9105 Way Ave. Cleveland, OH 44105 216/641-7502 FAX 216/641-0633								333										339		
GRACE & CO., W.R. 62 Whittemore Avenue Cambridge, MA 02140 617/876-1400		81							464			49								478
GRUNDY INDUSTRIES, INC. 1301 Herkimer St. Joliet, IL 60432 815/726-5087 800/435-1210 FAX 815/726-7301								333					176							480
GS ROOFING PRODUCTS CO. INC. 5525 MacArthur Blvd. Suite 900 Irving, TX 75038 214/580-5600	45	81							466			50							339	
HAARTZ-MASON, INC. P.O. Box 9128 270 Pleasant Street Watertown, MA 02272-9128 617/926-2300 FAX 617/923-3080					192				472										341	
HENRY COMPANY 2911 Slauson Avenue Huntington Park, CA 90255 213/583-5000 FAX 213/582-6429	47							337	472										342	
H.H. ROBERTSON 400 Holiday Drive Pittsburgh, PA 15220 412/928-7500 FAX 412/928-7591							269					51	85							482
HICKMAN SYSTEMS INC. 30700 Solon Industrial Parkway Solon, OH 44139 216/248-7760	48	82			193				474			52	86							474
HPG ROOFING SYSTEMS 200 Cottontail Lane Somerset, NJ 08873 800/457-6634 FAX 908/302-4220			163														273			
HYLOAD INC. 9976 Rittman Rd Wadsworth, OH 44281 330/334-5022 FAX 330/336-5512																				
IKO INDUSTRIES 120 Hay Rd. Wilmington, DE 19809 302/764-3100 FAX 302/764-5852																				
IMPER ITALIA S.P.A. Strada Lanzo 131 10148 TORINO, Italy 11/2620941 TELEX 220130 IMPER I FAX 11/2621621																				
INNOVATIVE METALS COMPANY, INC. 2070 Steel Drive Tucker, GA 30084 770/908-1030 FAX 770/908-2264																				
INSULATING COATING CORPORATION 122 State St. Binghamton, NY 13901 800/223-8494 607-723-1700																				
INTEC/PERMAGLAS P.O. Box 1438 Corvallis, OR 97339-1438 541/754-7534 FAX 541/758-5332																				
INTERNATIONAL DIAMOND SYSTEMS INC. P.O. Box 351950 Toledo, OH 43635 419/382-0111 FAX 419/382-3275																				
KARNAK CORPORATION 330 Central Avenue Clark, NJ 07066 908/388-0300 800/526-4236 FAX 908/388-9422																				
KEMPER SYSTEMS, INC. 550 S. Michigan St. Seattle, WA 98108 206/767-9505 800/541-5455 FAX 206/767-9531																				
KOKEM PRODUCTS INC. 4432 N.E. Davis Portland, OR 97213 503/235-9206 FAX 503/235-9206																				
KOPPERS INDUSTRIES INC. 436 Seventh Avenue Pittsburgh, PA 15219 800/558-2706																				
MALARKEY ROOFING CO. P.O. Box 17217 Portland, OR 97217-0217 503/283-1191 800/545-1191																				
MBCI P.O. Box 38217 Houston, TX 77238 281/445-8555 FAX 281/445-1791																				

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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	OTHER PRE-FABRICATED POLYURETHANE FOAM SYSTEMS	METAL ROOF PANEL	ROOFING CEMENTS AND WARRANTIES	
MBTECHNOLOGY CORPORATION 188 South Teilman Ave Fresno, CA 93706 800/621-9281		87							486
MCELROY METAL CO. 1500 Hamilton Road Bossier City, LA 71111 318/747-8000 FAX 318/747-8029							279		
MERCHANT & EVANS INC. 100 Connecticut Drive Burlington, NJ 08016 609/387-3033 FAX 609/387-4838							282		
METACRYLICS ACRYLIC-POLYESTER ROOFING PRODUCTS 142 N. 27th Street San Jose, CA 95116 408/280-7733 FAX 408/280-6329								342	
METAL SALES MANUFACTURING CORPORATION 7800 State Rd. 60 Sellersburg, IN 47172 812/246-0819 FAX 812/246-0829							285		
MFM BUILDING PRODUCTS CORP. P.O. Box 340 520 Orange St. Coshocton, OH 43812 614/622-2645 800/882-7663	61	89							
MONSEY BAKOR Cold Stream Road Kimberton, PA 19442 800/523-0268 FAX 610/933-4598		89						343	488
MULE HIDE PRODUCTS CO., INC. 2924 Wyetta Drive Beloit, WI 53511 608/365-3111			164	176	193				490
NATIONAL COATINGS CORP 1201 Calle Suerte Camarillo, CA 93012 805/388-7112 FAX 805/388-8140						225		347	
NEOGARD, A DIVISION OF JONES-BLAIR 6900 Maple Avenue P.O. Box 35288 Dallas, TX 75235 800/321-6588 FAX 214/357-7532						225			
NORTH CAROLINA FOAM INDUSTRIES 511 Carter St. P.O. Box 1528 Mount Airy, NC 27030 910/789-9161 FAX 910/789-9586						235			
OLYMPIC RUBBER ROOFING SYSTEMS INC. P.O. Box 09636 Milwaukee, WI 53209 800/552-5393 414/442-3117				177					492
PALMER ASPHALT COMPANY P.O. Box 58 Bayonne, NJ 07002 800/352-9898 FAX 201/339-8320								347	

	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	OTHER PRE-FABRICATED POLYURETHANE FOAM SYSTEMS	METAL ROOF PANEL	ROOFING CEMENTS AND WARRANTIES	
PERFORMANCE ROOF SYSTEMS, INC. 4821 Chelsea Ave. Kansas City, MO 64130 816/921-0221 FAX 816/921-5540		91							492
PETERSEN ALUMINUM 1005 Tonne Rd. Elk Grove Village, IL 60007 800/323-1960 FAX 800/722-7150							286		
PLASTIC COATINGS CORP. P.O. Box 1068 St. Albans, WV 25177 304/755-9151 FAX 304/755-9153						226			
POLAR SEAL 4461 W. 500 N. Huntington, IN 46750 219/356-1859 800/343-7663 FAX 219/356-1859								351	
POLYDYNE 1606 Pearl St. Waukesha, WI 53186 414/542-8800 FAX 414/542-2305						227			
POLYGLASS USA 150 Lyon Drive Fernley, NV 89408 702/575-6007 FAX 702/575-2314		92							
POLYTHANE SYSTEMS, INC. P.O. Box 1452 Spring, TX 77383-6450 713/350-9000 FAX 713/288-6450						228		235	
PREMIUM POLYMERS GROUP FLEXIBLE PRODUCTS COMPANY P.O. Box 141159 Austin, TX 78714-1159 512/272-5531 800/756-3626 FAX 512/272-4154				177		229		235	494
PROSPEX ROOFING PRODUCTS INC. 3250 Lenworth Dr. Mississauga, ON L4X 2G1 Canada 905/629-1014 FAX 905/629-1778 800/361-8706 (U.S.)			164						496
PROTECTIVE COATINGS INC. 3001 Reynolds St. Fort Wayne, IN 46803 800/992-8299				178					496
REPUBLIC POWDERED METALS 2628 Pearl Road Medina, OH 44256 216/225-3192 800/255-1136 312/523-4300 FAX 312/523-3290					196			351	498
R.M. LUCAS CO. 3211 South Wood St. Chicago, IL 60608 312/523-4300 FAX 312/523-3290								352	
ROOFING PRODUCTS INTERNATIONAL, INC. 5120 Beck Drive Elkhart, IN 46516 800/628-2957 219/293-9096 FAX 219/522-2231				179					500

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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	OTHER PRE-FABRICATED POLYURETHANE FOAM SYSTEMS	METAL ROOF PANEL	ROOFING CEMENTS AND WARRANTIES	
ROYAL ALUMINUM, INC. P.O. Box 895008 Leesburg, FL 34789-5008 904/787-4000 800/874-9065 FAX 904/787-6031							289		
SARNAFIL INC. Canton Commerce Center 100 Dan Road Canton, MA 02021 800/451-2504			165						502
SCHULLER INTERNATIONAL INC. Roofing Systems Division P.O. Box 5108 Denver, CO 80217 303/978-2000 FAX 303/978-2808	61	95		180					502
SEAL-DRY/USA, INC. 3300 S. Woodrow Little Rock, AR 72204 501/663-3063 FAX 501/663-1926					202				510
SEAMAN CORPORATION FiberTite Single Ply Roof System 1000 Venture Blvd. Wooster, OH 44691 800/927-8578					202				514
SIPLAST INC. Hwy 67 South Arkadelphia, AR 71923 501/246-8094		98							516
SMITH STEELITE 1005 Beaver Grade Road Moon Township, PA 15108-2944 412/299-8000 FAX 412/299-8036							290		
SOMAY PRODUCTS, INC. 4301 N.W. 35th Avenue Miami, FL 33142-4382 305/633-6333 FAX 305/638-5524								354	
SOPREMA, INC. 310 Quadral Drive Wadsworth, OH 44281 330/334-0066 800/356-3521 FAX 330/334-4289			100						518
SOUTHEASTERN METALS MANUFACTURING CO., INC. 11801 Industry Drive Jacksonville, FL 32218 904/757-4200 FAX 904/757-7683							290		
SOUTHWESTERN PETROLEUM CORPORATION (SWEPCO) 534 No. Main St. P.O. Box 961005 Fort Worth, TX 76161-0005 817/332-2336 800/877-9372 FAX 817/877-4047	63	103						355	520
SPM THERMO-SHIELD INC. Rt. 2, Box 208A Custer, SD 57730 605/673-3201 FAX 605/673-3200								356	
STEELUX SYSTEMS INC. P.O. Box 8181 Mason, OH 45040-8181 513/573-5200 FAX 513/573-5511							292		
STEVENS ROOFING SYSTEMS J.P.S. Elastomerics Corp. 9 Sullivan Road Holyoke, MA 01040-2800 800/621-ROOF FAX 413/552-1198					193	202			480
SUNGUARD MARKETING CORP. 4432 N.E. Davis Portland, OR 97213 503/235-9206 FAX 503/235-9206									356
SWD URETHANE COMPANY 222 South Date St. Mesa, AZ 85210 602/969-8413 800/828-1394 FAX 602/461-6926						230 235			
TAMKO ROOFING PRODUCTS, INC. 220 West 4th Street PO Box 1404 Joplin, MO 64802 417/624-6644 FAX 417/624-8935	63	103						357	520
TEXAS REFINERY CORP. One Refinery Place P.O. Box 711 Ft. Worth, TX 76101 817/332-1161 FAX 817/332-2340		105						358	526
TEXSA, S.A. Poligono Can Pelegri San Andreu de la Barca, Spain 34-3-6820770 FAX 34-3-6820752		105							
THE 3E GROUP INC. 3 E Corporate Center P. O. Box 392 Moorestown, NJ 08057 800/800-2844 FAX 609/866-7603		106						359	
THERMO MATERIALS 401 E. Ray Rd. Chandler, AZ 85225 602/821-9594 FAX 602/821-9047	64								
TOPCOAT, A DIVISION OF MAJOR GROUP, INC. 24 Industrial Road Walpole, MA 02081-1305 800/323-0009 FAX 508/660-2471									360
TREMCO INC. 3735 Green Rd. P.O. Box 228069 Beachwood, OH 44122-8069 216/292-5000	65	106			193			361	526
TRI-PLY 1250 Fourteen Mile Rd. Clawson, MI 48017 313/288-9780 800/445-9856	66	107							528
ULTRA SEAM INCORPORATED P.O. Box 710 Morganfield, KY 42437 810/960-0540 FAX 313/960-0460							292		
UNIFLEX, INDUSTRIAL DIV. OF KOOL SEAL, INC. 1499 Enterprise Parkway Twinsburg, OH 44087 216/425-4717 FAX 216/425-9778								363	

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UNIROOF CORPORATION P.O. Box 160133 Altamonte Springs, FL 32716-0133 407/869-5110					193	202				365	532	
UNITED COATINGS 19011 E Cataldo Greenacres, WA 99016 509/926-7143 FAX 509/928-1116							230			365		
UNITED STEEL DECK INC. 475 Springfield Avenue P.O. Box 662 Summit, NJ 07902-0662 908/277-1617 FAX 908/277-1619									296			
URETHANE CONTRACTORS SUPPLY & CONSULTING (UCSC) 1208 N. Grand Roswell, NM 88201 505/623-9726 FAX 505/623-1908							233 235					
U.S. INTEC INC. P.O. Box 2845 Port Arthur, TX 77643 800/624-6832 (Tech Hotline) 800/231-4631 (US) 800/392-4216 (TX)		108										534
VERSICO INCORPORATED 3485 Fortuna Drive Akron, OH 44312 216/644-6700 800/992-7663 FAX 216/644-2613				181		203						534
VINCENT METAL GOODS P.O. Box 360 Minneapolis, MN 55440 612/717-9000 FAX 612/717-7122								299				

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

ALLIEDSIGNAL												
1. NUMBER OF REGIONAL SERVICE LOCATIONS:	5											
2. LICENSED APPLICATOR AGREEMENT (yes/no):	YES											
3. DISTRIBUTION METHOD (distributors and/or direct):	DISTRIBUTORS, DIRECT											
4. PREFORMED ACCESSORIES AVAILABLE (yes/no):	YES											
5. LIMITATIONS/RESTRICTIONS:	SEE ALLIEDSIGNAL COMM. ROOFING SYSTEMS MANUAL											
6. FOR SALES/TECHNICAL INFORMATION:	800/221-6490											
7. FELTS DATA: TRADE NAME (applicable ASTM standard):	BLACK ARMOR TARRED FELT (D 227) BLACK ARMOR GLASS FIBER FELT (D 2178, TYPE IV) BLACK ARMOR PREM. GLASS FIBER FELT (D 2178, TYPE VI) BLACK ARMOR COAL TAR COATED GLASS FIBER (D 4990) BLACK ARMOR PREMIUM COAL TAR COATED GLASS FIBER FELT											
8. SPECIFICATION NUMBER	RP-40	RP-41	RP-50	RP-51	RP-40-5	RP-41-5	RP-60	RP-61	RP-60-5	RP-61-5	RP-50-TC	RP-51-TC
9. HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT							HOT	HOT
10. DECK TYPE												
A. NAILABLE	X		X		X		X		X		X	
B. INSULATED		X		X		X		X		X		X
C. NONNAILABLE		X		X		X		X		X		X
11. SLOPE REQUIREMENTS (range in inches)	0 - 1/2	0 - 1/2	0 - 1/4	0 - 1/4	0 - 1/2	0 - 1/2	0 - 1/8	0 - 1/8	0 - 1/8	0 - 1/8	1/4	1/4
12. NUMBER OF PLIES												
A. TOTAL PLIES	4	4	4	4	5	5	4	4	5	5	4	4
B. BASE SHEET	1		1		1		1		1		1	
C. INTERPLY(IES)	3	4	3	4	4	5	3	4	4	5	3	4
D. CAP SHEET												
13. TYPES OF FELT												
A. GLASS FIBER			X	X			X	X	X	X	X	X
B. ORGANIC	X	X			X	X	X	X	X	X		
C. ASBESTOS												
D. POLYESTER												
E. OTHER												
14. INTERPLY ADHESIVE												
A. ASPHALT												
B. MODIFIED ASPHALT												
C. COAL TAR	X	X	X	X	X	X	X	X	X	X	X	X
D. ELASTOMERIC ADHESIVE												
15. SURFACING												
AGGREGATE												
A. GRAVEL (lbs./ft ²)	4	4	4	4	4	4	4	4	4	4	4	4
B. SLAG (lbs./ft ²)	3	3	3	3	3	3	3	3	3	3	3	3
C. CRUSHED ROCK (lbs./ft ²)												
SMOOTH												
D. ASPHALT												
E. COAL TAR												
F. EMULSION/CUTBACK												
G. ALUMINUM COATING												
H. VINYL/VINYL COATING												
OTHER												
I. MINERAL GRANULES												
J. CAP SHEET	X	X	X	X	X	X	X	X	X	X		
K. OTHER												
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)												
A. AGGREGATE	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.0	6.5	6.5	6.0	6.0
B. SMOOTH												
C. CAP SHEET												
17. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE							NONE	NONE
18. YEAR OF FIRST COMMERCIAL USE	1987	1987	1987	1987	1987	1987	1991	1991	1991	1991		
19. TEST RESULTS PER NBS BSS #55												
MD = MACHINE DIRECTION												
XD = CROSS DIRECTION												
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD												
-XD												
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD												
-XD												
C. THERMAL BASE SHOCK (not < 100°F) -MD												
-XD												
20. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X	X	X	X	X	X	X	X	X

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

BARRETT COMPANY, THE

3
 YES
 DISTRIBUTORS, DIRECT
 YES
 SEE BARRETT MANUAL
 SALES OFFICE
 POLY-FELT 165 VP POLYESTER (NONE)
 POLY-FELT 265 VP POLYESTER (NONE)
 RAM-GLASSPLY IV (D 2178, TYPE IV)
 RAM-GLASS VI (D 2178, TYPE VI)
 RAM BASE PLY NO. 32 GLASS (D 4601, TYPE II)
 RAM-BASE PLY NO. 30 POLYESTER (NONE)
 RAM-FLASH 327HDR NEOPRENE (NONE)
 RAM HYPALON FLASHING (NONE)
 RAM 306, RAM 309 (D 5147)

KLB 100-1PG	KLB 100-2PG	KLB 100-3PG	KLB 100-4PG	KLB 100-1P	KLB 100-2P	KLB 100-3P	KLB 100-4P	KLB 100-2F	KLB 100-3F	KLB 100-4F	KLB 100-2M	KLB 100-3M	KLB 100-4M	K312 2F	K312 3F	K312 4F	K312 2P
HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
0-3	0-3	0-6	0-6	0-6	0-3	0-6	0-6	0-3	0-6	0-6	0-3	0-3	0-3	0-3	0-6	0-6	0-6
1	2	3	4	1	2	3	4	2	3	4	2	3	4	2	3	4	2
1	2	3	4	1	2	3	4	2	3	4	2	3	4	2	3	4	2
X	X	X	X					X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X				X	X	X				X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	4 3 10	4 3 10	4 3 10		4 3 10	4 3 10	4 3 10	4 3 10	4 3 10	4 3 10	4 3 10	4 3 10	4 3 10	4 3 10	4 3 10	4 3 10	4 3 10
X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
0.70 1.40	4.0 1.0 1.85	4.25 1.25 2.10	4.50 1.50 2.35	0.75 1.60	4.0 1.0 1.85	4.25 1.25 2.10	4.50 1.50 2.35	4.15 1.15 2.0	4.50 1.50 2.35	4.85 1.85 2.70	4.10 1.10 1.95	4.45 1.45 2.30	4.80 1.80 2.65	4.15 1.15 2.0	4.50 1.50 2.35	4.90 1.90 2.75	4.0 1.0 1.85
NONE 1984	NONE 1984	NONE 1984	NONE 1985	NONE 1985	NONE 1984	NONE 1984	NONE 1982	NONE 1982	NONE 1983	NONE 1983	NONE 1984	NONE 1984	NONE 1984	NONE 1985	NONE 1985	NONE 1985	NONE 1985
		> 200 > 200	> 200 > 200			> 200 > 200	> 200 > 200		> 200 > 200	> 200 > 200		> 200 > 200	> 200 > 200		> 200 > 200	> 200 > 200	
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

<div> <div>1. NUMBER OF REGIONAL SERVICE LOCATIONS:</div> <div>2. LICENSED APPLICATOR AGREEMENT (yes/no):</div> <div>3. DISTRIBUTION METHOD (distributors and/or direct):</div> <div>4. PREFORMED ACCESSORIES AVAILABLE (yes/no):</div> <div>5. LIMITATIONS/RESTRICTIONS:</div> <div>6. FOR SALES/TECHNICAL INFORMATION:</div> <div>7. FELTS DATA: TRADE NAME (applicable ASTM standard):</div> </div> <div> BARRETT COMPANY, THE 3 YES DISTRIBUTORS, DIRECT YES SEE BARRETT MANUAL SALES OFFICE POLY-FELT 165 VP POLYESTER (NONE) POLY-FELT 265 VP POLYESTER (NONE) RAM-GLASSPLY IV (D 2178, TYPE IV) RAM-GLASS VI (D 2178, TYPE VI) RAM BASE PLY NO. 32 GLASS (D 4601, TYPE II) RAM-BASE PLY NO. 30 POLYESTER (NONE) RAM-FLASH 327HDR NEOPRENE (NONE) RAM HYPALON FLASHING (NONE) RAM 306, RAM 309 (D 5147) </div>											
8. SPECIFICATION NUMBER	K312 3P	K312 4P	T-3. 1P	T-3. 2P	T-3. 3P	T-3. 4P	CP-50 3P	CP-50 2P	CP-80 2P	CP-80 3P	CP-80 3 G.BS
9. HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT	HOT	HOT	COLD	COLD	COLD	COLD	COLD
10. DECK TYPE											
A. NAILABLE	X	X	X	X	X	X	X	X	X	X	X
B. INSULATED	X	X	X	X	X	X	X	X	X	X	X
C. NONNAILABLE	X	X	X	X	X	X	X	X	X	X	X
11. SLOPE REQUIREMENTS (range in inches)	0 – 6	0 – 6	1 – 6	1/8 – 6	1/8 – 6	1/8 – 6	1/8 – 6	1/8 – 6	1/8 – 6	1/8 – 6	1/8 – 6
12. NUMBER OF PLIES											
A. TOTAL PLIES	3	4	1	2	3	4	3	2	2	3	3
B. BASE SHEET											
C. INTERPLY(IES)	3	4	1	2	3	4	3	2	2	3	3
D. CAP SHEET											
13. TYPES OF FELT											
A. GLASS FIBER											X
B. ORGANIC											
C. ASBESTOS											
D. POLYESTER	X	X	X	X	X	X	X	X	X	X	
E. OTHER											
14. INTERPLY ADHESIVE											
A. ASPHALT			X	X	X	X	X	X			
B. MODIFIED ASPHALT											
C. COAL TAR											
D. ELASTOMERIC ADHESIVE	X	X							X	X	X
15. SURFACING											
AGGREGATE											
A. GRAVEL (lbs./ft ²)	4	4		4	4	4	4	4	4	4	4
B. SLAG (lbs./ft ²)	3	3		3	3	3	3	3	3	3	3
C. CRUSHED ROCK (lbs./ft ²)	10	10		10	10	10	10	10	10	10	10
SMOOTH											
D. ASPHALT			X	X	X	X					
E. COAL TAR											
F. EMULSION/CUTBACK	X	X	X	X	X	X	X	X	X	X	X
G. ALUMINUM COATING	X	X	X	X	X	X	X	X	X	X	X
H. VINYL/VINYL COATING	X	X	X	X	X	X	X	X	X	X	X
OTHER											
I. MINERAL GRANULES	X	X	X	X	X	X	X	X	X	X	X
J. CAP SHEET	X	X	X	X	X	X	X	X	X	X	X
K. OTHER	X	X	X	X	X	X	X	X	X	X	X
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)											
A. AGGREGATE	4.25	4.50		4.25	4.50	4.50	4.50	4.15	4.15	4.50	6.0
B. SMOOTH	1.25	1.50	0.75	1.25	1.50	1.50	1.50	1.15	1.15	1.50	2.0
C. CAP SHEET	2.10	2.35	1.60	2.10	2.35	2.35	2.35	2.00	2.00	2.35	2.85
17. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
18. YEAR OF FIRST COMMERCIAL USE	1985	1985	1985	1983	1985	1983	1978	1978	1985	1985	1978
19. TEST RESULTS PER NBS BSS #55											
MD = MACHINE DIRECTION XD = CROSS DIRECTION											
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD	> 200	> 200			> 200	> 200	> 200			> 200	> 200
-XD	> 200	> 200			> 200	> 200	> 200			> 200	> 200
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD											
-XD											
C. THERMAL BASE SHOCK (not < 100°F) -MD											
-XD											
20. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X	X	X	X	X	X	X	X

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

CELOTEX CORP., THE

7
 YES
 DISTRIBUTORS, DIRECT
 YES
 SEE CELOTEX BUR & MB RFG SYS MANUAL
 S.A.FUNK/D. RICH
 CELO-GLASS IV (D 2178, TYPE IV)
 CELO-GLASS AGS (D 2178, TYPE VI)
 VAPORBAR GB (D 4601, TYPE II)
 CHANNEL VENT GB (D 4897, TYPE II)
 VAPORBAR BASE SHEET (D 2626)
 HYDRO-STOP VAPOR BARRIER/VENTING BASE SHEET (NONE)

G/A-4- W-G	AGS-4- W-G	G/A-4- F-G	AGS-4- F-G	G/A-3- W-G	G/A-3- C-G	G/A-4- W-S	AGS-4- W-S	G/A-4- F-S	AGS-4- F-S	G/A-4- C-S	AGS-4- C-S	G/A-4- C-G	AGS-4- C-G	G/A-3- W-S	G/A-3- W-M	G/A-4- W-M	AGS-4- W-M
HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
0-3	0-3	0-3	0-3	0-3	0-3	0-9	0-9	0-9	0-9	0-9	0-9	0-3	0-3	0-9	0-9	0-9	0-9
4 1 3	4 1 3	4 1 3	4 1 3	3 1 2	3 3	4 1 3	4 1 3	4 1 3	4 1 3	4 4	4 4	4 4	4 4	3 1 2	3 1 1	4 1 2	4 1 2
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4 3	4 3	4 3	4 3	4 3	4 3							4 3	4 3	4 3	4 3	4 3	4 3
						X X X	X X X	X X X	X X X	X X X	X X X			X X X			
															X	X	X
5.80	5.80	5.60	5.60	5.60	5.60	1.50	1.50	1.60	1.60	1.70	1.70	5.80	5.80	1.70	0.90	1.30	1.30
NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1962	NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1962	NONE 1962	NONE 1983	NONE 1983	W 1980	W 1983	W 1980	W 1980
X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X
	X		X				X		X		X		X		X		X

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

CELOTEX CORP., THE												
1. NUMBER OF REGIONAL SERVICE LOCATIONS: 2. LICENSED APPLICATOR AGREEMENT (yes/no): 3. DISTRIBUTION METHOD (distributors and/or direct): 4. PREFORMED ACCESSORIES AVAILABLE (yes/no): 5. LIMITATIONS/RESTRICTIONS: 6. FOR SALES/TECHNICAL INFORMATION: 7. FELTS DATA: TRADE NAME (applicable ASTM standard):												
7 YES DISTRIBUTORS, DIRECT YES SEE CELOTEX BUR & MB RFG SYS MANUAL S.A.FUNK/D. RICH CELO-GLASS IV (D 2178, TYPE IV) CELO-GLASS AGS (D 2178, TYPE VI) VAPORBAR GB (D 4601, TYPE II) CHANNEL VENT GB (D 4897, TYPE II) VAPORBAR BASE SHEET (D 2626) HYDRO-STOP VAPOR BARRIER/VENTING BASE SHEET (NONE)												
8. SPECIFICATION NUMBER	G/A-4- F-M	AGS-4- F-M	G/A-4- C-M	AGS-4- C-M	G/A-H+ 3-W-G	AGS-H+ 3-W-G	AGS-H+ 4-W-M	G/A-H+ 4-W-M	AGS-H+ 3-W-M	G/A-H+ 3-W-M	AGS-H+ 3-W-S	G/A-H+ 3-W-S
9. HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
10. DECK TYPE												
A. NAILABLE					X	X	X	X	X	X	X	X
B. INSULATED	X	X	X	X								
C. NONNAILABLE	X	X	X	X								
11. SLOPE REQUIREMENTS (range in inches)	0-9	0-9	0-9	0-9	0-3	0-3	0-9	0-9	0-9	0-9	0-9	0-9
12. NUMBER OF PLIES												
A. TOTAL PLIES	4	4	4	4	4	4	5	5	4	4	4	4
B. BASE SHEET	1	1	1	1	1	1	1	1	1	1	1	1
C. INTERPLY(IES)	2	2	2	2	2	2	3	3	2	2	3	3
D. CAP SHEET	1	1	1	1	1	1	1	1	1	1	3	3
13. TYPES OF FELT												
A. GLASS FIBER	X	X	X	X	X	X	X	X	X	X	X	X
B. ORGANIC												
C. ASBESTOS												
D. POLYESTER												
E. OTHER					X	X	X	X	X	X	X	X
14. INTERPLY ADHESIVE												
A. ASPHALT	X	X	X	X	X	X	X	X	X	X	X	X
B. MODIFIED ASPHALT												
C. COAL TAR												
D. ELASTOMERIC ADHESIVE												
15. SURFACING												
AGGREGATE												
A. GRAVEL (lbs./ft ²)					4	4						
B. SLAG (lbs./ft ²)					3	3						
C. CRUSHED ROCK (lbs./ft ²)												
SMOOTH												
D. ASPHALT												
E. COAL TAR												
F. EMULSION/CUTBACK	X				X	X					X	X
G. ALUMINUM COATING	X										X	X
H. VINYL/VINYL COATING	X				X	X					X	X
OTHER												
I. MINERAL GRANULES												
J. CAP SHEET	X	X	X	X	X	X	X	X	X	X		
K. OTHER												
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)												
A. AGGREGATE												
B. SMOOTH	1.70											
C. CAP SHEET	1.20	1.20	1.30	1.30	1.20	1.20						
17. RESTRICTED REGIONS (refer to manufacturer's literature)	W	W	W	W	NONE	NONE						
18. YEAR OF FIRST COMMERCIAL USE	1980											
19. TEST RESULTS PER NBS BSS #55												
MD = MACHINE DIRECTION XD = CROSS DIRECTION												
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD	X	X	X	X	X	X						
-XD	X	X	X	X	X	X						
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD												
-XD												
C. THERMAL BASE SHOCK (not < 100°F) -MD												
-XD												
20. SEE MEMBRANE APPENDIX IF CHECKED		X		X		X						

General information with test description and suggested values as specified in NBS BSS #55/1974

15
YES
DISTRIBUTORS
NO
SEE FIELD'S BUR MANUAL
800/627-4098
FIELDS F51 BASE SHEET (D 4601 TYPE II)
FIELDS F50 VENTING BASE SHEET (D 4601 TYPE I)
FIELDS F52 PLY SHEET (D 2178 TYPE III)
FIELDS F54 PLY SHEET (D 2178 TYPE IV)
FIELDS F56 PLY SHEET (D 2178 TYPE VI)
FIELDS F58 CAP SHEET (D 3909)
FIELDS M60 POLYMOP POLYESTER (NONE)
FIELDS M62 SBS BASE SHEET 25 LB. (D 4601 TYPE II)
FIELDS F69 SBS BASE SHEET 40 LB. (D 4601 TYPE II)
FIELDS M68 SBS CAP SHEET (D 5142)
FIELDS M66 SBS CAP MEMBRANE (D 5147)
E3N RUFON POLYESTER (NONE)

[illegible]

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

FIELDS CORPORATION												
1. NUMBER OF REGIONAL SERVICE LOCATIONS:	15											
2. LICENSED APPLICATOR AGREEMENT (yes/no):	YES											
3. DISTRIBUTION METHOD (distributors and/or direct):	DISTRIBUTORS											
4. PREFORMED ACCESSORIES AVAILABLE (yes/no):	NO											
5. LIMITATIONS/RESTRICTIONS:	SEE FIELD'S BUR MANUAL											
6. FOR SALES/TECHNICAL INFORMATION:	800/627-4098											
7. FELTS DATA: TRADE NAME (applicable ASTM standard):	FIELDS F51 BASE SHEET (D 4601 TYPE II) FIELDS F50 VENTING BASE SHEET (D 4601 TYPE I) FIELDS F52 PLY SHEET (D 2178 TYPE III) FIELDS F54 PLY SHEET (D 2178 TYPE IV) FIELDS F56 PLY SHEET (D 2178 TYPE VI) FIELDS F58 CAP SHEET (D 3909) FIELDS M60 POLYMOP POLYESTER (NONE) FIELDS M62 SBS BASE SHEET 25 LB. (D 4601 TYPE II) FIELDS F69 SBS BASE SHEET 40 LB. (D 4601 TYPE II) FIELDS M68 SBS CAP SHEET (D 5142) FIELDS M66 SBS CAP MEMBRANE (D 5147) E3N RUFON POLYESTER (NONE)											
8. SPECIFICATION NUMBER	IV: 141-4 VI: 141-6	IV: 142-4 VI: 142-6	IV: 143-4 VI: 143-6	IV: 202-4 VI: 202-6	IV: 203-4 VI: 203-6	IV: 204-4 VI: 204-6	IV: 212-4 VI: 212-6	IV: 213-4 VI: 213-6	IV: 214-4 VI: 214-6	IV: 223-4 VI: 223-6	IV: 224-4 VI: 224-6	IV: 232-4 VI: 232-6
9. HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
10. DECK TYPE												
A. NAILABLE				X	X	X						
B. INSULATED	X	X	X									
C. NONNAILABLE							X	X	X	X	X	X
11. SLOPE REQUIREMENTS (range in inches)	1/4 - 6	1/4 - 6	1/4 - 6	0 - 3	0 - 3	0 - 3	0 - 3	0 - 3	0 - 3	0 - 3	0 - 3	0 - 3
12. NUMBER OF PLIES												
A. TOTAL PLIES	3	4	5	4	5	6	3	4	5	3	4	3
B. BASE SHEET	1	1	1	1	1	1	1	1	1	1	1	1
C. INTERPLY(IES)	1	2	3	2	3	4	2	2	4	3	3	2
D. CAP SHEET	1	1	1	1	1	1						
13. TYPES OF FELT												
A. GLASS FIBER	X	X	X	X	X	X	X	X	X	X	X	X
B. ORGANIC												
C. ASBESTOS												
D. POLYESTER												
E. OTHER												
14. INTERPLY ADHESIVE												
A. ASPHALT	X	X	X	X	X	X	X	X	X	X	X	X
B. MODIFIED ASPHALT												
C. COAL TAR												
D. ELASTOMERIC ADHESIVE												
15. SURFACING												
AGGREGATE												
A. GRAVEL (lbs./ft ²)				4	4	4	4	4	4	4	4	4
B. SLAG (lbs./ft ²)				3	3	3	3	3	3	3	3	3
C. CRUSHED ROCK (lbs./ft ²)				4	4	4	4	4	4	4	4	4
SMOOTH												
D. ASPHALT												
E. COAL TAR												
F. EMULSION/CUTBACK												
G. ALUMINUM COATING												
H. VINYL/VINYL COATING												
OTHER												
I. MINERAL GRANULES												
J. CAP SHEET	X	X	X									
K. OTHER												
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)												
A. AGGREGATE				5.60	5.90	6.30	5.50	5.80	6.20	5.65	6.05	5.85
B. SMOOTH												
C. CAP SHEET	1.60	2.0	2.30									
17. RESTRICTED REGIONS (refer to manufacturer's literature)												
18. YEAR OF FIRST COMMERCIAL USE	1988	NONE	NONE	1988	NONE	NONE	1988	NONE	NONE	1988	1988	1988
19. TEST RESULTS PER NBS BSS #55												
MD = MACHINE DIRECTION XD = CROSS DIRECTION												
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD -XD												
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD -XD												
C. THERMAL BASE SHOCK (not < 100°F) -MD -XD												
20. SEE MEMBRANE APPENDIX IF CHECKED												

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

IV: 233-4 VI: 233-6	IV: 234-4 VI: 234-6	IV: 242-4 VI: 242-6	IV: 243-4 VI: 243-6	IV: 244-4 VI: 244-6	IV: 303-4 VI: 303-6	IV: 304-4 VI: 304-6	IV: 313-4 VI: 313-6	IV: 314-4 VI: 314-6	IV: 323-4 VI: 323-6	IV: 324-4 VI: 324-6	IV: 343-4 VI: 343-6	IV: 344-4 VI: 344-6	3-B-N	3-BG-N	3-(2)BG-N	3-BP-N	3-BGP-N
HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	COLD	COLD	COLD	COLD	COLD
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0	0-3	0-3	0-3	0-3
4 1 3	5 1 4	3 1 2	4 1 3	5 1 4	4 1 3	5 1 4	4 1 3	5 1 4	3 3	4 4	4 1 3	5 1 4	3 3	3 1 2	3 2 1	3 2 1	3 1 1
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4 3 4	4 3 4	4 3 4	4 3 4	4 3 4													
					X	X	X	X	X	X	X	X	X	X	X	X	X
					X	X	X	X	X	X	X	X	X	X	X	X	X
6.15	6.55	5.6	5.90	6.30	1.55	1.95	1.75	2.15	1.30	1.70	1.55	1.95	1.40	1.10	1.25	1.20	1.05
NONE 1988	NONE 1988	NONE 1988	NONE 1988	NONE 1988	NONE 1988	NONE 1988	NONE 1988	NONE 1988	1988	NONE 1988	NONE 1988	NONE 1988	NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1980

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

		FIELDS CORPORATION											
1. NUMBER OF REGIONAL SERVICE LOCATIONS:		15											
2. LICENSED APPLICATOR AGREEMENT (yes/no):		YES											
3. DISTRIBUTION METHOD (distributors and/or direct):		DISTRIBUTORS											
4. PREFORMED ACCESSORIES AVAILABLE (yes/no):		NO											
5. LIMITATIONS/RESTRICTIONS:		SEE FIELD'S BUR MANUAL											
6. FOR SALES/TECHNICAL INFORMATION:		800/627-4098											
7. FELTS DATA: TRADE NAME (applicable ASTM standard):		FIELDS F51 BASE SHEET (D 4601 TYPE II) FIELDS F50 VENTING BASE SHEET (D 4601 TYPE I) FIELDS F52 PLY SHEET (D 2178 TYPE III) FIELDS F54 PLY SHEET (D 2178 TYPE IV) FIELDS F56 PLY SHEET (D 2178 TYPE VI) FIELDS F58 CAP SHEET (D 3909) FIELDS M60 POLYMOP POLYESTER (NONE) FIELDS M62 SBS BASE SHEET 25 LB. (D 4601 TYPE II) FIELDS F69 SBS BASE SHEET 40 LB. (D 4601 TYPE II) FIELDS M68 SBS CAP SHEET (D 5142) FIELDS M66 SBS CAP MEMBRANE (D 5147) E3N RUFON POLYESTER (NONE)											
8. SPECIFICATION NUMBER		3-BGC-N	4-B-N	4-BG-N	4-(2)BG-N	4-BGP-N	4-(2)BGP-N	4-BGC-N	3-B-I	3-BG-I	3-(2)BG-I	3-BP-I	3-BGP-I
9. HOT AND/OR COLD APPLIED		COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD
10. DECK TYPE													
A. NAILABLE		X	X	X	X	X	X	X					
B. INSULATED									X	X	X	X	X
C. NONNAILABLE													
11. SLOPE REQUIREMENTS (range in inches)		0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3
12. NUMBER OF PLIES													
A. TOTAL PLIES		3	4	4	4	4	4	4	3	3	3	3	3
B. BASE SHEET		1	4	1	2	1	2	1	3	1	2	2	1
C. INTERPLY(IES)		1		3	2	2	1	2		2	1		1
D. CAP SHEET		1				1	1	1				1	1
13. TYPES OF FELT													
A. GLASS FIBER		X	X	X	X	X	X	X	X	X	X	X	X
B. ORGANIC													
C. ASBESTOS													
D. POLYESTER												X	X
E. OTHER						X	X						
14. INTERPLY ADHESIVE													
A. ASPHALT		X	X	X	X	X	X	X	X	X	X	X	X
B. MODIFIED ASPHALT													
C. COAL TAR													
D. ELASTOMERIC ADHESIVE													
15. SURFACING													
AGGREGATE													
A. GRAVEL (lbs./ft ²)													
B. SLAG (lbs./ft ²)													
C. CRUSHED ROCK (lbs./ft ²)													
SMOOTH													
D. ASPHALT													
E. COAL TAR													
F. EMULSION/CUTBACK			X	X	X	X	X		X	X	X	X	X
G. ALUMINUM COATING			X	X	X	X	X		X	X	X	X	X
H. VINYL/VINYL COATING													
OTHER													
I. MINERAL GRANULES													
J. CAP SHEET		X						X					
K. OTHER													
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)													
A. AGGREGATE													
B. SMOOTH		1.75	1.85	1.40	1.55	1.35	1.50	2.05	1.60	1.30	1.55	1.50	1.25
C. CAP SHEET													
17. RESTRICTED REGIONS (refer to manufacturer's literature)		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
18. YEAR OF FIRST COMMERCIAL USE		1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980
19. TEST RESULTS PER NBS BSS #55													
MD = MACHINE DIRECTION													
XD = CROSS DIRECTION													
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD													
-XD													
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD													
-XD													
C. THERMAL BASE SHOCK (not < 100°F) -MD													
-XD													
20. SEE MEMBRANE APPENDIX IF CHECKED													

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

3-BGC-I	4-B-I	4-BG-I	4-(2)BG-I	4-BGP-I	4-(2)BGP-I	4-BGC-I	3-B-NN	3-BG-NN	3-BP-NN	3-BGP-NN	3-BGC-NN	4-B-NN	4-BG-NN	4-BGP-NN	4-BGC-NN
COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3
3 1 1 1	4 4	4 1 3	4 2 2	4 1 2 1	4 2 1 1	4 2 1 1	3 3	3 1 2	3 2 1	3 1 1 1	3 1 1 1	4 4	4 1 3	4 1 2 1	4 1 2 1
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
				X	X				X	X	X			X	
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X		X	X	X	X		X	X	X	
	X	X	X	X	X		X	X	X	X		X	X	X	
X						X					X				X
1.95	2.05	1.60	1.75	1.55	1.70	2.25	1.55	1.25	1.35	1.20	1.90	2.00	1.55	1.50	2.20
NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1980	NONE 1980

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

GAF MATERIALS CORPORATION												
1. NUMBER OF REGIONAL SERVICE LOCATIONS:	5											
2. LICENSED APPLICATOR AGREEMENT (yes/no):	YES											
3. DISTRIBUTION METHOD (distributors and/or direct):	DISTRIBUTORS											
4. PREFORMED ACCESSORIES AVAILABLE (yes/no):	YES											
5. LIMITATIONS/RESTRICTIONS:	SEE GAFMC GAFGLAS SPEC MANUAL											
6. FOR SALES/TECHNICAL INFORMATION:	REGIONAL OFFICE, TECHNICAL SERVICE OFFICE											
7. FELTS DATA: TRADE NAME (applicable ASTM standard):	GAFGLAS PLY 4 (D 2178, TYPE IV)											
	GAFGLAS PLY 6 (D 2178, TYPE VI & IV)											
	GAFGLAS MINERAL SURFACED CAP SHEET (D 3909)											
	GAFGLAS#75 BASE SHEET (D 4601, TYPE II)											
	GAFGLAS STRATAVENT PERFORATED BASE SHEET (D 4897)											
	GAFGLAS STRATAVENT NAILABLE BASE SHEET (D 4897)											
8. SPECIFICATION NUMBER	NN-0-4-G	I-0-4-G	NN-0-4-C	I-0-4-C	NN-B-4-G	I-B-4-G	NN-B-4-C	I-B-4-C	NN-O-3-G	I-O-3-G	NN-B-3-G	I-B-3-G
9. HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
10. DECK TYPE												
A. NAILABLE												
B. INSULATED												
C. NONNAILABLE	X	X	X	X	X	X	X	X	X	X	X	X
11. SLOPE REQUIREMENTS (range in inches)	0-3	0-3	0-6	0-6	0-3	0-3	0-6	0-6	0-3	0-3	0-3	0-3
12. NUMBER OF PLIES												
A. TOTAL PLIES	4	4	4	4	4	4	4	4	3	3	3	3
B. BASE SHEET					1	1	1	1			1	1
C. INTERPLY(IIES)	4	4	4	4	3	3	3	3	3	3	2	2
D. CAP SHEET												
13. TYPES OF FELT												
A. GLASS FIBER	X	X	X	X	X	X	X	X	X	X	X	X
B. ORGANIC												
C. ASBESTOS												
D. POLYESTER												
E. OTHER												
14. INTERPLY ADHESIVE												
A. ASPHALT	X	X	X	X	X	X	X	X	X	X	X	X
B. MODIFIED ASPHALT	X	X	X	X	X	X	X	X	X	X	X	X
C. COAL TAR												
D. ELASTOMERIC ADHESIVE												
15. SURFACING												
AGGREGATE												
A. GRAVEL (lbs./ft ²)	4	4			4	4			4	4	4	4
B. SLAG (lbs./ft ²)	3	3			3	3			3	3	3	3
C. CRUSHED ROCK (lbs./ft ²)	4	4			4	4			4	4	4	4
SMOOTH												
D. ASPHALT			X	X			X	X				
E. COAL TAR												
F. EMULSION/CUTBACK			X	X			X	X				
G. ALUMINUM COATING			X	X			X	X				
H. VINYL/VINYL COATING												
OTHER												
I. MINERAL GRANULES												
J. CAP SHEET												
K. OTHER												
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)												
A. AGGREGATE	6.0	6.0			6.0	6.0			6.0	6.0	6.0	6.0
B. SMOOTH			2.0	2.0			2.0	2.0				
C. CAP SHEET												
17. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
18. YEAR OF FIRST COMMERCIAL USE	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974
19. TEST RESULTS PER NBS BSS #55												
MD = MACHINE DIRECTION												
XD = CROSS DIRECTION												
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD												
-XD												
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD												
-XD												
C. THERMAL BASE SHOCK (not < 100°F) -MD												
-XD												
20. SEE MEMBRANE APPENDIX IF CHECKED												

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

NN-0-3-C	I-0-3-C	NN-B-3-C	I-B-3-C	NN-0-4-M	I-0-4-M	NN-B-4-M	I-B-4-M	NN-0-3-M	I-0-3-M	N-B-4-G	N-B-4-C	N-B-3-G	N-B-3-C	N-B-4-M	N-B-3-M	I-B-5-M	NN-B-5-M
HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
	X		X		X		X		X	X	X	X	X	X		X	
X		X		X		X		X									X
0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-3	0-6	0-3	0-6	0-6	0-6	0-6	0-6
3	3	3	3	4	4	4	4	3	3	4	4	3	3	4	3	5	5
3	3	1	1	3	3	1	1	2	2	1	1	2	2	1	1	1	1
		2	2	1	1	2	2	1	1	3	3	2	2	2	1	3	3
																1	1
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
										4		4					
										3		3					
										4		4					
X	X	X	X								X		X				
X	X	X	X								X		X				
X	X	X	X								X		X				
				X	X	X	X	X	X					X	X	X	X
2.0	2.0	2.0	2.0							6.0	2.0	6.0	2.0				
				2.0	2.0	2.0	2.0	2.0	2.0					2.0	2.0	3.0	3.0
N	N	N	N	NONE	NONE	NONE	NONE	N	N	NONE	NONE	NONE	N	NONE	N & S	NONE	NONE
1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974	1974

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

GAF MATERIALS CORPORATION					
1. NUMBER OF REGIONAL SERVICE LOCATIONS: 2. LICENSED APPLICATOR AGREEMENT (yes/no): 3. DISTRIBUTION METHOD (distributors and/or direct): 4. PREFORMED ACCESSORIES AVAILABLE (yes/no): 5. LIMITATIONS/RESTRICTIONS: 6. FOR SALES/TECHNICAL INFORMATION: 7. FELTS DATA: TRADE NAME (applicable ASTM standard):	5 YES DISTRIBUTORS YES SEE GAFMC GAFGLAS SPEC MANUAL REGIONAL OFFICE, TECHNICAL SERVICE OFFICE GAFGLAS PLY 4 (D 2178, TYPE IV) GAFGLAS PLY 6 (D 2178, TYPE VI & IV) GAFGLAS MINERAL SURFACED CAP SHEET (D 3909) GAFGLAS#75 BASE SHEET (D 4601, TYPE II) GAFGLAS STRATAVENT PERFORATED BASE SHEET (D 4897) GAFGLAS STRATAVENT NAILABLE BASE SHEET (D 4897)				
8. SPECIFICATION NUMBER	N-B-5-G	N-B-5-C	N-B-5-M	I-O-5-M	NN-0-5-M
9. HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT	HOT
10. DECK TYPE					
A. NAILABLE	X	X	X		
B. INSULATED				X	
C. NONNAILABLE					X
11. SLOPE REQUIREMENTS (range in inches)	0-3	0-6	0-6	0-6	0-6
12. NUMBER OF PLIES					
A. TOTAL PLIES	5	5	5	5	5
B. BASE SHEET	1	1	1		
C. INTERPLY(IES)	4	4	3	4	4
D. CAP SHEET			1	1	1
13. TYPES OF FELT					
A. GLASS FIBER	X	X	X	X	X
B. ORGANIC					
C. ASBESTOS					
D. POLYESTER					
E. OTHER					
14. INTERPLY ADHESIVE					
A. ASPHALT	X	X	X	X	X
B. MODIFIED ASPHALT	X	X	X	X	X
C. COAL TAR					
D. ELASTOMERIC ADHESIVE					
15. SURFACING					
AGGREGATE					
A. GRAVEL (lbs./ft ²)	4				
B. SLAG (lbs./ft ²)	3				
C. CRUSHED ROCK (lbs./ft ²)	4				
SMOOTH					
D. ASPHALT		X			
E. COAL TAR					
F. EMULSION/CUTBACK		X			
G. ALUMINUM COATING		X			
H. VINYL/VINYL COATING					
OTHER					
I. MINERAL GRANULES					
J. CAP SHEET			X	X	X
K. OTHER					
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)					
A. AGGREGATE	6.0				
B. SMOOTH		2.0			
C. CAP SHEET			3.0	3.0	3.0
17. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE
18. YEAR OF FIRST COMMERCIAL USE	1974	1974	1974	1974	1974
19. TEST RESULTS PER NBS BSS #55					
MD = MACHINE DIRECTION					
XD = CROSS DIRECTION					
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD					
-XD					
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD					
-XD					
C. THERMAL BASE SHOCK (not < 100°F) -MD					
-XD					
20. SEE MEMBRANE APPENDIX IF CHECKED					

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

GS ROOFING PRODUCTS COMPANY INC.

2
YES
DISTRIBUTORS
NO
SEE COMMERCIAL ROOFING SYSTEMS MANUAL
COMMERCIAL ROOFING DEPT/REGION OFFICE
FLINTGLAS MS CAP SHEET (D 3909)
GLASBASE BASE SHEET (D 4601, TYPE I)
FLINTGLAS PLY SHEET TYPE VI (D 2178, TYPE VI)
FLINTGLAS PLY SHEET TYPE IV (D 2178, TYPE IV)
YOSEMITE MS BOFFER SHEET (D 249)
ALL WEATHER EMPIRE BASE SHEET (D 2626)
NO.15 PERFORATED FELT (D 226, TYPE I)

AAA-1-3	AAA-2-3	AAA-3-23	AAA-4-3	AAA-5-3	AAA-7-3	AAA-8-3	AAA-9-3	A-1-M-3	A-2-M-3-M-2	A-3-M-3	A-4-M-3	A-5-M-3	A-6-M-2	MC-1R-3	MW-2R-3	EMS-1-C	EMS-2-W
HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT/CA	HOT/CA	HOT/CA	HOT/CA	HOT/CA	HOT/CA	HOT/CA	HOT/CA
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6
4	4	4	4	4	3	3	3	4	4	4	4	3	3	3	3	4	4
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	3	3	3	4	2	2	3	2	2	2	2	1	1	2	2	3	3
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
										X	X	X	X	X	X	X	X
4	4	4	4	4	4	4	4										
4	4	4	4	4	4	4	4										
								X	X	X	X	X	X				
6.0	6.0	6.0	6.0	6.0	5.70	5.50	5.60										
								2.40	2.30	2.30	2.10	1.80	1.70	1.90	1.70	1.80	1.60
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	1	1	1&2	1&2	NONE	NONE

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

		GS ROOFING PRODUCTS COMPANY INC.	
1. NUMBER OF REGIONAL SERVICE LOCATIONS: 2. LICENSED APPLICATOR AGREEMENT (yes/no): 3. DISTRIBUTION METHOD (distributors and/or direct): 4. PREFORMED ACCESSORIES AVAILABLE (yes/no): 5. LIMITATIONS/RESTRICTIONS: 6. FOR SALES/TECHNICAL INFORMATION: 7. FELTS DATA: TRADE NAME (applicable ASTM standard):		2 YES DISTRIBUTORS NO SEE COMMERCIAL ROOFING SYSTEMS MANUAL COMMERCIAL ROOFING DEPT/REGION OFFICE FLINTGLAS MS CAP SHEET (D 3909) GLASBASE BASE SHEET (D 4601, TYPE I) FLINTGLAS PLY SHEET TYPE VI (D 2178, TYPE VI) FLINTGLAS PLY SHEET TYPE IV (D 2178, TYPE IV) YOSEMITE MS BOFFER SHEET (D 249) ALL WEATHER EMPIRE BASE SHEET (D 2626) NO.15 PERFORATED FELT (D 226, TYPE I)	
8. SPECIFICATION NUMBER	EMS-3-C	EMS-4-W	
9. HOT AND/OR COLD APPLIED	HOT/CA	HOT/CA	
10. DECK TYPE			
A. NAILABLE		X	
B. INSULATED	X	X	
C. NONNAILABLE	X		
11. SLOPE REQUIREMENTS (range in inches)	0-6	0-6	
12. NUMBER OF PLIES			
A. TOTAL PLIES	3	3	
B. BASE SHEET	1	1	
C. INTERPLY(IES)	2	2	
D. CAP SHEET			
13. TYPES OF FELT			
A. GLASS FIBER	X	X	
B. ORGANIC			
C. ASBESTOS			
D. POLYESTER			
E. OTHER			
14. INTERPLY ADHESIVE			
A. ASPHALT	X	X	
B. MODIFIED ASPHALT			
C. COAL TAR			
D. ELASTOMERIC ADHESIVE	X	X	
15. SURFACING			
AGGREGATE			
A. GRAVEL (lbs./ft ²)			
B. SLAG (lbs./ft ²)			
C. CRUSHED ROCK (lbs./ft ²)			
SMOOTH			
D. ASPHALT			
E. COAL TAR			
F. EMULSION/CUTBACK	X	X	
G. ALUMINUM COATING			
H. VINYL/VINYL COATING			
OTHER			
I. MINERAL GRANULES			
J. CAP SHEET			
K. OTHER			
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)			
A. AGGREGATE			
B. SMOOTH	1.50	1.30	
C. CAP SHEET			
17. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	
18. YEAR OF FIRST COMMERCIAL USE			
19. TEST RESULTS PER NBS BSS #55			
MD = MACHINE DIRECTION XD = CROSS DIRECTION			
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD -XD			
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD -XD			
C. THERMAL BASE SHOCK (not < 100°F) -MD -XD			
20. SEE MEMBRANE APPENDIX IF CHECKED			

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

HENRY COMPANY

6
YES
DISTRIBUTORS
NO
CONTACT MANUFACTURER
JIM HAY/KEN JACOBS
HENRY 604 (D 4601, TYPE II)
HENRY 605 TYPE G3 (ASTM D 3909)
HENRY 607 (D 4601, TYPE II)
HENRY 184 RUFON E3N POLYESTER
HENRY 195 TIETEX T272 POLYESTER
HENRY 196 TIETEX T326 POLYESTER
HENRY 600 RUFTAC

HM107W	HM107-1C	HM107C	HM107-IC	HM107S	HM107LWC	HM106W	HM106IW	HCA 107W	HPC 203W	HCG 203W	HCG 403W	HCG 307W	HCG 403I
HOT/CA	HOT/CA	HOT/CA	HOT/CA	HOT/CA	HOT/CA	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD
X	X		X	X	X	X	X	X	X	X	X	X	X
	X		X	X			X				X		X
		X	X	X							X		X
0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6
3	3	3	3	3	3	3	3	3	3	3	3	3	3
1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2
X	X	X	X	X	X	X	X	X	X	X	X	X	X
						X	X		X				
X	X	X	X	X	X	X							
X	X	X	X	X	X	X	X	X	X	X	X	X	X
										3	4		4
X	X	X	X	X	X	X	X	X	X				
X	X	X	X	X	X	X	X	X	X				
X	X	X	X	X	X	X	X	X	X				
										X		X	
200	253	205	245	215	200	175	2.28	1.24	.84	4.10	5.54	2.70	5.35
X	X	X	X	X	X	X							

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

		HICKMAN											
1. NUMBER OF REGIONAL SERVICE LOCATIONS: 2. LICENSED APPLICATOR AGREEMENT (yes/no): 3. DISTRIBUTION METHOD (distributors and/or direct): 4. PREFORMED ACCESSORIES AVAILABLE (yes/no): 5. LIMITATIONS/RESTRICTIONS: 6. FOR SALES/TECHNICAL INFORMATION: 7. FELTS DATA: TRADE NAME (applicable ASTM standard):		5 YES DIRECT YES SEE HICKMAN REP R. GALLION / K BRZOZOWSKI/ C FITZGERALD MULTI-PLY GLASS(D 4601, TYPE II) MULTI-PLY GLASS C/L(NONE) PERFORMANCE PLY(NONE) POLYESTER PLY(NONE) PREMIUM PLY (ASTM D 2178, TYPE VI) PIKA PLY CAP SHEET HICKMAN PREMIUM CAP HK TARRD FELT (D 227)											
8. SPECIFICATION NUMBER		BUR PLUS COMBI- NATION	BUR PLUS COMBI- NATION	BUR PLUS CAP SHEET	BUR PLUS PREMIUM CAP SHT	TAR PLUS	M-PLY CAP SHEET	PREMIUM CAP SHEET	BUR PLUS GLASS	BUR PLUS GLASS	BUR PLUS POLY- ESTER	BUR PLUS POLY- ESTER	M-PLY GLASS
9. HOT AND/OR COLD APPLIED		HOT	HOT	HOT	HOT	HOT	COLD	COLD	HOT	HOT	HOT	HOT	COLD
10. DECK TYPE													
A. NAILABLE		X	X	X	X	X	X	X	X	X	X	X	X
B. INSULATED		X	X	X	X	X	X	X	X	X	X	X	X
C. NONNAILABLE		X	X	X	X	X	X	X	X	X	X	X	X
11. SLOPE REQUIREMENTS (range in inches)		1/8 - 3	1/8 - 3	1/8 - 3	1/8 - 3	0 - 1/2	1/8 - 4	1/8 - 4	1/8 - 3	1/8 - 3	1/8 - 3	1/8 - 3	1/8 - 4
12. NUMBER OF PLIES													
A. TOTAL PLIES		4	4	3	3	4	3	3	3	3	3	3	3
B. BASE SHEET		1	1										
C. INTERPLY(IES)		3	3	2	2	4	2	2	3	3	3	3	3
D. CAP SHEET				1	1		1	1					
13. TYPES OF FELT													
A. GLASS FIBER		X	X	X	X	X	X	X	X	X			X
B. ORGANIC						X							
C. ASBESTOS													
D. POLYESTER		X	X		X			X			X	X	
E. OTHER													
14. INTERPLY ADHESIVE													
A. ASPHALT							X	X					X
B. MODIFIED ASPHALT													
C. COAL TAR						X							
D. ELASTOMERIC ADHESIVE		X	X	X	X				X	X	X	X	
15. SURFACING													
AGGREGATE													
A. GRAVEL (lbs./ft ²)			4			4				4		4	
B. SLAG (lbs./ft ²)													
C. CRUSHED ROCK (lbs./ft ²)													
SMOOTH													
D. ASPHALT													
E. COAL TAR													
F. EMULSION/CUTBACK		X							X		X		X
G. ALUMINUM COATING		X							X		X		X
H. VINYL/VINYL COATING		X							X		X		X
OTHER													
I. MINERAL GRANULES													X
J. CAP SHEET				X	X		X	X					X
K. OTHER													
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)													
A. AGGREGATE			5.25			6.0				5.25		5.25	
B. SMOOTH		1.90							1.85		1.80		2.35
C. CAP SHEET				1.85	2.10		2.25	2.50					
17. RESTRICTED REGIONS (refer to manufacturer's literature)		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
18. YEAR OF FIRST COMMERCIAL USE		1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985
19. TEST RESULTS PER NBS BSS #55													
MD = MACHINE DIRECTION XD = CROSS DIRECTION													
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD									260	260	275	275	335
-XD									245	245	255	255	300
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD													
-XD													
C. THERMAL BASE SHOCK (not < 100°F) -MD													
-XD													
20. SEE MEMBRANE APPENDIX IF CHECKED													

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

INTEC/PERMAGLAS

6
YES
DISTRIBUTORS
YES
SEE BUILT-UP ROOFING SYSTEMS MANUAL
800/624-6832
COMBINATION BASE (D 4601, TYPE I)
INSUL-BASE (D 4601, TYPE I)
ULTRA BASE (D 4601, TYPE I/II)
TOUGH PLY IV (D 2178, TYPE IV)
ULTRA PLY VI (D 2178, TYPE VI)
ULTRA CAP (D 3909)
PERMAVENT (D 4897, TYPE II)
FLEX BASE 30 (D 4601, TYPE II)

M-PLY GLASS	M-PLY POLY-ESTER	M-PLY POLY-ESTER	M-PLY COMBI-NATION	M-PLY COMBI-NATION	M-B5UP-N	M-B4UP-N	ERA-4UP-RI	ERA-B5TP-RI	G-4UP-RI	G-B5TP-RI	G-B4UP-N	M-4UP-RI	ERA-B4UP-N
COLD	COLD	COLD	COLD	COLD	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
X	X	X	X	X	X	X					X		X
X	X	X	X	X			X	X	X	X		X	
X	X	X	X	X									
1/8 - 4	1/8 - 4	1/8 - 4	1/8 - 4	1/8 - 4	1/4 - 3	1/4 - 3	1/4 - 3	1/4 - 3	1/4 - 3	1/4 - 3	1/4 - 3	1/4 - 3	1/4 - 3
3	3	3	4	4	5	4	4	5	4	5	4	4	4
3	3	3	1	1	1	1		1		1	1		1
			3	3	3	2	4	4	4	4	3	3	3
					1	1						1	
X			X	X	X	X	X	X	X	X	X	X	X
	X	X	X	X									
X	X	X	X	X	X	X	X	X	X	X	X	X	X
4		4		4					4	4	4		
									3	3	3		
									4	4	4		
	X		X				X	X					X
	X		X										
	X		X										
	X		X		X	X						X	
	X		X										
5.75		5.85		5.80					6.0	6.0	6.0		
	2.40		2.40		2.0	2.0	2.0	2.0				2.0	2.0
NONE 1985	NONE 1985	NONE 1985	NONE 1985	NONE 1985	NONE 1976	1976	1976	NONE 1976	NONE 1976	NONE 1976	NONE 1976	1976	1976
335													
300													

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

KARNAK CORPORATION	
1. NUMBER OF REGIONAL SERVICE LOCATIONS:	7
2. LICENSED APPLICATOR AGREEMENT (yes/no):	NO
3. DISTRIBUTION METHOD (distributors and/or direct):	DISTRIBUTORS
4. PREFORMED ACCESSORIES AVAILABLE (yes/no):	NO
5. LIMITATIONS/RESTRICTIONS:	SEE KARNAK SPECIFICATIONS
6. FOR SALES/TECHNICAL INFORMATION:	800/526-4236
7. FELTS DATA: TRADE NAME (applicable ASTM standard):	POLY-MAT REMAY INC
	RESAT-MAT
	43-LB. BASE CHOICE OF MANUFACTURERS
	NO. 31 GLASS MEMBRANE (D1668)
8. SPECIFICATION NUMBER	P-21 P-22 P-23 P-24 RENU-TOP AR SYSTEM RC-W SYSTEM RC-W
9. HOT AND/OR COLD APPLIED	COLD COLD COLD COLD COLD COLD COLD COLD
10. DECK TYPE	
A. NAILABLE	X X X X X X X X
B. INSULATED	X X X X X X X X
C. NONNAILABLE	X X X X X X X X
11. SLOPE REQUIREMENTS (range in inches)	0-6 0-6 0-6 0-6 0-6 0-6 0-6 0-6
12. NUMBER OF PLIES	
A. TOTAL PLIES	1 2 3 4 1 1 1 1
B. BASE SHEET	1 2 1 1 1 1 1 1
C. INTERPLY(IIES)	
D. CAP SHEET	
13. TYPES OF FELT	
A. GLASS FIBER	
B. ORGANIC	
C. ASBESTOS	
D. POLYESTER	X X X X X X X X
E. OTHER	
14. INTERPLY ADHESIVE	
A. ASPHALT	X X X X X
B. MODIFIED ASPHALT	X X X X
C. COAL TAR	
D. ELASTOMERIC ADHESIVE	X X X X X X X X
15. SURFACING	
AGGREGATE	
A. GRAVEL (lbs./ft ²)	4 4 4 4
B. SLAG (lbs./ft ²)	3 3 3 3
C. CRUSHED ROCK (lbs./ft ²)	
SMOOTH	
D. ASPHALT	X X X X X X
E. COAL TAR	
F. EMULSION/CUTBACK	X X X X X
G. ALUMINUM COATING	X X X X X X
H. VINYL/VINYL COATING	
OTHER	
I. MINERAL GRANULES	X X X X X X
J. CAP SHEET	
K. OTHER	X X X X X X
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)	
A. AGGREGATE	1.13 1.32 1.53 1.75 1.11 1.11 1.13 1.13
B. SMOOTH	0.63 0.72 0.93 1.15 0.61 0.61 0.63 0.63
C. CAP SHEET	
17. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE NONE NONE NONE NONE NONE NONE NONE
18. YEAR OF FIRST COMMERCIAL USE	1965 1965 1965 1965 1952 1972 1975 1975
19. TEST RESULTS PER NBS BSS #55	
MD = MACHINE DIRECTION	
XD = CROSS DIRECTION	
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD	
-XD	
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD	
-XD	
C. THERMAL BASE SHOCK (not < 100°F) -MD	
-XD	
20. SEE MEMBRANE APPENDIX IF CHECKED	

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

KOPPERS INDUSTRIES, INC.

32
YES
DISTRIBUTORS, DIRECT
NO
MAX. SLOPE REQUIREMENTS (SEE BELOW)
800/558-2706
NO.-15 TARRED FELT (D 227)
ASPHALT GLASS FELT (D 2178, TYPE IV)
TAR GLASS FELT (D 4990 I)
PREMIUM TAR-GLASS FELT (D 4990 II)

220-4	210-4	420-4	410-4	495-4	490-4	IR-264	IR-274	IR-464	IR-474	220-3	420-3	495-3	IR-263	IR-273	IR-463	IR-473
HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
0 - 1/2	0 - 1/2	0 - 1/4	0 - 1/4	0 - 1/4	0 - 1/4	0 - 1/4	0 - 1/4	0 - 1/4	0 - 1/4	0 - 1/2	0 - 1/4	0 - 1/4	0 - 1/4	0 - 1/4	0 - 1/4	0 - 1/4
4	4	4	4	4	4	5	4	5	4	3	3	3	4	3	4	3
4	1	4	1	4	1	1	4	1	4	1	3	3	1	3	1	3
	3		3		3	4		4		3			3		3	
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4	4	4	4	4	4					4	4	4				
3	3	3	3	3	3	10	10	10	10	3	3	3	10.0	10.0	10.0	10.0
						X	X	X	X				X	X	X	X
6.0	6.0	6.0	6.0	6.0	6.0	12	12	12	12	5.50	5.50	5.50	11.50	11.50	11.50	11.50
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
1928	1928	1986	1986	1990	1990	1991	1991	1991	1991	1928	1986	1990	1991	1991	1991	1991
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

<div> <div> 1. NUMBER OF REGIONAL SERVICE LOCATIONS: 2. LICENSED APPLICATOR AGREEMENT (yes/no): 3. DISTRIBUTION METHOD (distributors and/or direct): 4. PREFORMED ACCESSORIES AVAILABLE (yes/no): 5. LIMITATIONS/RESTRICTIONS: 6. FOR SALES/TECHNICAL INFORMATION: 7. FELTS DATA: TRADE NAME (applicable ASTM standard): </div> <div> MALARKEY ROOFING CO. 15 YES DISTRIBUTORS NO SEE MALARKEY SPEC MANUAL J. DECHANDT AND S. WADDING #515 STANDARD BASE (D 4601) #501 PREMIUM 1 SBS BASE (D 4601) #508 PREMIUM SBS VENTED BASE (D 4897) #601 HP POLYGLASS SBS MINERAL (D 5147) #602 ARCTIC SHIELD SBS BASE (D 4601) #603 SUPER BASE SBS (D 4601) #605 PANOPLY SBS BASE (D 4601) #1000 ESHAVENT THERMAL SBS (D 4897) #500 PREMIUM PLY (D 2178) #350 PREMIUM SBS MINERAL (D 5147) #502 PREMIUM MINERAL (D 3909) #506 SUPER 6 PLY TYPE VI (D 2178) #625 PARAGON SBS MINERAL (D 5147) #650 PANOPLY SBS MINERAL (D 5147) #917 POLYGLASS SBS MINERAL (D 5147) #919 POLYGLASS SBS SMOOTH (D 5147) #160 APP SMOOTH (D 5147) #161 APP MINERAL (D 5147) #162 APP MINERAL (D 5147) #916 SBS WALK BOARD </div> </div>												
8. SPECIFICATION NUMBER	M3-XHA M3-XIA	M3-AHA M3-AIA	M3-BHA M3-BIA	M4-XHA M4-XIA	M4-BHA M4-BIA	M4-EHA M4-EIA	M5-BHA M5-BIA	M5-EHA M5-EIA	S3-XHX S3-XIX	S3-XXB	S3-BBX	S3-XEX
9. HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT/CLD	HOT/CLD	HOT/CLD
10. DECK TYPE												
A. NAILABLE		X	X		X	X	X	X			X	
B. INSULATED	X	X	X	X	X	X	X	X	X	X	X	X
C. NONNAILABLE	X	X	X	X	X	X	X	X	X	X	X	X
11. SLOPE REQUIREMENTS (range in inches)	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6
12. NUMBER OF PLIES												
A. TOTAL PLIES	3	3	3	4	4	4	5	5	3	3	3	3
B. BASE SHEET		1	1		1	1	1	1			1	
C. INTERPLY(IES)	2	1	1	3	2	2	3	3	3	3	2	3
D. CAP SHEET	1	1	1	1	1	1	1	1				
13. TYPES OF FELT												
A. GLASS FIBER	X	X	X	X	X	X	X	X	X	X	X	X
B. ORGANIC												
C. ASBESTOS												
D. POLYESTER												
E. OTHER												
14. INTERPLY ADHESIVE												
A. ASPHALT	X	X	X	X	X	X	X	X	X	X	X	X
B. MODIFIED ASPHALT	X	X	X	X	X	X	X	X	X	X	X	X
C. COAL TAR												
D. ELASTOMERIC ADHESIVE										X	X	X
15. SURFACING												
AGGREGATE												
A. GRAVEL (lbs./ft ²)												
B. SLAG (lbs./ft ²)												
C. CRUSHED ROCK (lbs./ft ²)												
SMOOTH												
D. ASPHALT												
E. COAL TAR												
F. EMULSION/CUTBACK									X	X	X	X
G. ALUMINUM COATING												
H. VINYL/VINYL COATING												
OTHER												
I. MINERAL GRANULES												
J. CAP SHEET	X	X	X	X	X	X	X	X				
K. OTHER												
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)												
A. AGGREGATE												
B. SMOOTH												
C. CAP SHEET	1.75	1.67	1.69	2.01	2.05	2.25	2.41	2.61	1.32	1.89	1.64	2.49
17. RESTRICTED REGIONS (refer to manufacturer's literature)	2,3	2,3	2,3	NONE	NONE	NONE	NONE	NONE	2,3	2,3	2,3	2,3
18. YEAR OF FIRST COMMERCIAL USE												
19. TEST RESULTS PER NBS BSS #55												
MD = MACHINE DIRECTION XD = CROSS DIRECTION												
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD -XD												
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD -XD												
C. THERMAL BASE SHOCK (not < 100°F) -MD -XD												
20. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X	X	X	X	X	X	X	X	X

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

S3-BEX	S4-BBX	G3-XHX G3-XIX	G4-XHX G4-XIX	G3-BHX G3-BIX	G4-BHX G4-BIX	S2-BXF	S2-CXF	S2-DXF	S4-BEX	S4-EEX	S4-AHX S4-AIX	S4-BHX S4-BIX	G3-BBX	G3-EEX	G4-BBX	S2-EXF	S3-BBF
HOT/CLD	HOT/CLD	HOT	HOT	HOT	HOT	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD	HOT	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD
X	X			X	X	X	X	X	X	X		X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
0-6	0-6	0-3	0-3	0-3	0-3	3-0	3-0	3-0	0-6	0-6	0-6	0-6	0-3	0-3	0-3	0-3	0-3
3	4	3	4	3	4	2	2	2	4	4	4	4	3	3	4	2	3
1	1			1	1	1	1	1	1	1		1	1	1	1	1	1
2	3	3	4	2	3	1	1	1	3	3	4	3	2	2	3	1	1
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X					X	X	X	X	X			X	X	X	X	X
		4	4	4	4								4	4	4		
X	X					X	X	X	X	X	X	X				X	X
						X	X	X								X	X
2.04	2.19	5.68	6.04	5.62	5.98								6.00	6.60	6.55		
2.3	NONE	NONE	NONE	NONE	NONE	2.19	2.36	2.64	2.79	2.99	1.60	1.62	2.3	NONE	NONE	2.39	2.74
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

<div> <div> 1. NUMBER OF REGIONAL SERVICE LOCATIONS: 2. LICENSED APPLICATOR AGREEMENT (yes/no): 3. DISTRIBUTION METHOD (distributors and/or direct): 4. PREFORMED ACCESSORIES AVAILABLE (yes/no): 5. LIMITATIONS/RESTRICTIONS: 6. FOR SALES/TECHNICAL INFORMATION: 7. FELTS DATA: TRADE NAME (applicable ASTM standard): </div> <div> MALARKEY ROOFING CO. 15 YES DISTRIBUTORS NO SEE MALARKEY SPEC MANUAL J. DECHANDT AND S. WADDING #515 STANDARD BASE (D 4601) #501 PREMIUM 1 SBS BASE (D 4601) #508 PREMIUM SBS VENTED BASE (D 4897) #601 HP POLYGLASS SBS MINERAL (D 5147) #602 ARCTIC SHIELD SBS BASE (D 4601) #603 SUPER BASE SBS (D 4601) #605 PANOPLY SBS BASE (D 4601) #1000 ESHAVENT THERMAL SBS (D 4897) #500 PREMIUM PLY (D 2178) #350 PREMIUM SBS MINERAL (D 5147) #502 PREMIUM MINERAL (D 3909) #506 SUPER 6 PLY TYPE VI (D 2178) #625 PARAGON SBS MINERAL (D 5147) #650 PANOPLY SBS MINERAL (D 5147) #917 POLYGLASS SBS MINERAL (D 5147) #919 POLYGLASS SBS SMOOTH (D 5147) #160 APP SMOOTH (D 5147) #161 APP MINERAL (D 5147) #162 APP MINERAL (D 5147) #916 SBS WALK BOARD </div> </div>												
8. SPECIFICATION NUMBER	S3-EBF	S3-EEF	S3-FHF S3-FIF	S3-FBF	S3-FEF	S4-BBF	S4-EBF	A2-BXF	A2-CXF	A2-DXF	A2-EXF	A3-BBF
9. HOT AND/OR COLD APPLIED	HOT/CLD	HOT/CLD	HOT	HOT	HOT	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD
10. DECK TYPE												
A. NAILABLE	X	X				X	X	X	X	X	X	X
B. INSULATED	X	X	X	X	X	X	X	X	X	X	X	X
C. NONNAILABLE	X	X	X	X	X	X	X	X	X	X	X	X
11. SLOPE REQUIREMENTS (range in inches)	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3
12. NUMBER OF PLIES												
A. TOTAL PLIES	3	3	3	3	3	4	4	2	2	2	2	3
B. BASE SHEET	1	1	1	1	1	1	1	1	1	1	1	1
C. INTERPLY(IES)	1	1	1	1	1	2	2					
D. CAP SHEET	1	1	1	1	1	1	1	1	1	1	1	1
13. TYPES OF FELT												
A. GLASS FIBER	X	X	X	X	X	X	X	X	X	X	X	X
B. ORGANIC												
C. ASBESTOS												
D. POLYESTER												
E. OTHER												
14. INTERPLY ADHESIVE												
A. ASPHALT	X	X	X	X	X	X	X	X	X	X	X	X
B. MODIFIED ASPHALT	X	X	X	X	X	X	X	X	X	X	X	X
C. COAL TAR												
D. ELASTOMERIC ADHESIVE	X	X				X	X	X	X	X	X	X
15. SURFACING												
AGGREGATE												
A. GRAVEL (lbs./ft ²)												
B. SLAG (lbs./ft ²)												
C. CRUSHED ROCK (lbs./ft ²)												
SMOOTH												
D. ASPHALT												
E. COAL TAR												
F. EMULSION/CUTBACK	X	X	X	X	X	X	X					
G. ALUMINUM COATING								X	X	X	X	X
H. VINYL/VINYL COATING												
OTHER												
I. MINERAL GRANULES												
J. CAP SHEET	X	X	X	X	X	X	X	X	X	X	X	X
K. OTHER												
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)												
A. AGGREGATE												
B. SMOOTH												
C. CAP SHEET	2.94	3.14	2.63	2.82	3.02	3.29	3.03	2.13	2.32	2.58	2.33	2.68
17. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
18. YEAR OF FIRST COMMERCIAL USE												
19. TEST RESULTS PER NBS BSS #55												
MD = MACHINE DIRECTION XD = CROSS DIRECTION												
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD -XD												
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD -XD												
C. THERMAL BASE SHOCK (not < 100°F) -MD -XD												
20. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X	X	X	X	X	X	X	X	X

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

A3-EBF	A4-BBF	A4-EBF	M2-CXB	M2-DXB	M2-EXB	M3-BHB M3-BIB	M3-BBB	M3-BCB	M3-BDB	M3-EHB M3-EIB	M3-EBB	M3-EEB	M3-FHB M3-FIB	M3-FBB	M3-FEB	M4-BHB M4-BIB	M4-BBB
HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD	HOT	HOT/CLD	HOT/CLD	HOT/CLD	HOT	HOT/CLD	HOT/CLD	HOT	HOT	HOT	HOT/CLD	HOT/CLD
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3
3	4	4	2	2	2	3	3	3	3	3	3	3	3	3	3	4	4
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.88	3.23	3.43	1.99	2.27	2.02	1.93	2.12	2.29	2.57	2.12	2.32	2.52	2.01	2.45	2.40	2.29	2.67
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

MALARKEY ROOFING CO.												
1. NUMBER OF REGIONAL SERVICE LOCATIONS: 15 2. LICENSED APPLICATOR AGREEMENT (yes/no): YES 3. DISTRIBUTION METHOD (distributors and/or direct): DISTRIBUTORS 4. PREFORMED ACCESSORIES AVAILABLE (yes/no): NO 5. LIMITATIONS/RESTRICTIONS: SEE MALARKEY SPEC MANUAL 6. FOR SALES/TECHNICAL INFORMATION: J. DECHANDT AND S. WADDING 7. FELTS DATA: TRADE NAME (applicable ASTM standard):												
#515 STANDARD BASE (D 4601) #501 PREMIUM 1 SBS BASE (D 4601) #508 PREMIUM SBS VENTED BASE (D 4897) #601 HP POLYGLASS SBS MINERAL (D 5147) #602 ARCTIC SHIELD SBS BASE (D 4601) #603 SUPER BASE SBS (D 4601) #605 PANOPLY SBS BASE (D 4601) #1000 ESHAVENT THERMAL SBS (D 4897) #500 PREMIUM PLY (D 2178) #350 PREMIUM SBS MINERAL (D 5147)												
#502 PREMIUM MINERAL (D 3909) #506 SUPER 6 PLY TYPE VI (D 2178) #625 PARAGON SBS MINERAL (D 5147) #650 PANOPLY SBS MINERAL (D 5147) #917 POLYGLASS SBS MINERAL (D 5147) #919 POLYGLASS SBS SMOOTH (D 5147) #160 APP SMOOTH (D 5147) #161 APP MINERAL (D 5147) #162 APP MINERAL (D 5147) #916 SBS WALK BOARD												
8. SPECIFICATION NUMBER	M4-EBB	M4-FHB M4-FIB	M4-FBB	M4-FEB	M5-BHB M5-BIB	M5-EHB M5-EIB	M2-CXC	M2-DXC	M2-EXC	M3-BHC M3-BIC	M3-BBC	M3-EHC M3-EIC
9. HOT AND/OR COLD APPLIED	HOT/CLD	HOT	HOT	HOT	HOT	HOT	HOT/CLD	HOT/CLD	HOT/CLD	HOT	HOT/CLD	HOT
10. DECK TYPE												
A. NAILABLE	X				X	X				X	X	X
B. INSULATED	X	X	X	X	X	X	X	X	X	X	X	X
C. NONNAILABLE	X	X	X	X	X	X	X	X	X	X	X	X
11. SLOPE REQUIREMENTS (range in inches)	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3
12. NUMBER OF PLIES												
A. TOTAL PLIES	4	4	4	4	5	5	2	2	2	3	3	3
B. BASE SHEET	1	1	1	1	1	1	1	1	1	1	1	1
C. INTERPLY(IES)	2	2	2	2	3	3				1	1	1
D. CAP SHEET	1	1	1	1	1	1	1	1	1	1	1	1
13. TYPES OF FELT												
A. GLASS FIBER	X	X	X	X	X	X	X	X	X	X	X	X
B. ORGANIC												
C. ASBESTOS												
D. POLYESTER												
E. OTHER												
14. INTERPLY ADHESIVE												
A. ASPHALT	X	X	X	X	X	X	X	X	X	X	X	X
B. MODIFIED ASPHALT	X	X	X	X	X	X	X	X	X	X	X	X
C. COAL TAR												
D. ELASTOMERIC ADHESIVE	X						X	X	X		X	
15. SURFACING												
AGGREGATE												
A. GRAVEL (lbs./ft ²)												
B. SLAG (lbs./ft ²)												
C. CRUSHED ROCK (lbs./ft ²)												
SMOOTH												
D. ASPHALT												
E. COAL TAR												
F. EMULSION/CUTBACK												
G. ALUMINUM COATING												
H. VINYL/VINYL COATING												
OTHER												
I. MINERAL GRANULES												
J. CAP SHEET	X	X	X	X	X	X	X	X	X	X	X	X
K. OTHER												
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)												
A. AGGREGATE												
B. SMOOTH												
C. CAP SHEET	2.87	2.37	2.75	3.15	2.61	2.85	1.99	2.27	2.02	1.91	2.12	2.13
17. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
18. YEAR OF FIRST COMMERCIAL USE												
19. TEST RESULTS PER NBS BSS #55												
MD = MACHINE DIRECTION XD = CROSS DIRECTION												
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD -XD												
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD -XD												
C. THERMAL BASE SHOCK (not < 100°F) -MD -XD												
20. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X	X	X	X	X	X	X	X	X

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

M3-EBC	M3-EEC	M3-FHC M3-FIC	M3-FBC	M3-FCC	M3-FDC	M3-FEC	M4-BHC M4-BIC	M4-BBC	M4-EHC M4-EIC	M4-EBC	M4-FHC M4-FIC	M4-FBC	M4-FEC	M5-BHC M5-BIC	M5-BBC	M5-EBC	M5-FHC M5-FIC
HOT/CLD	HOT/CLD	HOT	HOT	HOT	HOT	HOT	HOT	HOT/CLD	HOT	HOT/CLD	HOT	HOT	HOT	HOT	HOT/CLD	HOT/CLD	HOT
X	X						X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3
3	3	3	3	3	3	3	4	4	4	4	4	4	4	5	5	5	5
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X							X		X					X	X	
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2.32	2.52	2.01	2.20	2.37	2.65	2.40	2.04	2.67	2.49	2.87	2.37	2.75	3.15	2.61	3.22	3.42	2.59
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

<div> <div> 1. NUMBER OF REGIONAL SERVICE LOCATIONS: 2. LICENSED APPLICATOR AGREEMENT (yes/no): 3. DISTRIBUTION METHOD (distributors and/or direct): 4. PREFORMED ACCESSORIES AVAILABLE (yes/no): 5. LIMITATIONS/RESTRICTIONS: 6. FOR SALES/TECHNICAL INFORMATION: 7. FELTS DATA: TRADE NAME (applicable ASTM standard): </div> <div> MALARKEY ROOFING CO. 15 YES DISTRIBUTORS NO SEE MALARKEY SPEC MANUAL J. DECHANDT AND S. WADDING #515 STANDARD BASE (D 4601) #501 PREMIUM 1 SBS BASE (D 4601) #508 PREMIUM SBS VENTED BASE (D 4897) #601 HP POLYGLASS SBS MINERAL (D 5147) #602 ARCTIC SHIELD SBS BASE (D 4601) #603 SUPER BASE SBS (D 4601) #605 PANOPLY SBS BASE (D 4601) #1000 ESHAVENT THERMAL SBS (D 4897) #500 PREMIUM PLY (D 2178) #350 PREMIUM SBS MINERAL (D 5147) #502 PREMIUM MINERAL (D 3909) #506 SUPER 6 PLY TYPE VI (D 2178) #625 PARAGON SBS MINERAL (D 5147) #650 PANOPLY SBS MINERAL (D 5147) #917 POLYGLASS SBS MINERAL (D 5147) #919 POLYGLASS SBS SMOOTH (D 5147) #160 APP SMOOTH (D 5147) #161 APP MINERAL (D 5147) #162 APP MINERAL (D 5147) #916 SBS WALK BOARD </div> </div>												
8. SPECIFICATION NUMBER	M5-FBC	M2-CXD	M2-DXD	M2-EXD	M3-BHD M3-BID	M3-BBD	M3-EHD M3-EID	M3-EBD	M3-EED	M3-FHD M3-FID	M3-FBD	M3-FED
9. HOT AND/OR COLD APPLIED	HOT	HOT/CLD	HOT/CLD	HOT/CLD	HOT	HOT/CLD	HOT	HOT/CLD	HOT/CLD	HOT	HOT	HOT
10. DECK TYPE												
A. NAILABLE					X	X	X	X	X			
B. INSULATED	X	X	X	X	X	X	X	X	X	X	X	X
C. NONNAILABLE	X	X	X	X	X	X	X	X	X	X	X	X
11. SLOPE REQUIREMENTS (range in inches)	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3
12. NUMBER OF PLIES												
A. TOTAL PLIES	5	2	2	2	3	3	3	3	3	3	3	3
B. BASE SHEET	1	1	1	1	1	1	1	1	1	1	1	1
C. INTERPLY(IES)	3				1	1	1	1	1	1	1	1
D. CAP SHEET	1	1	1	1	1	1	1	1	1	1	1	1
13. TYPES OF FELT												
A. GLASS FIBER	X	X	X	X	X	X	X	X	X	X	X	X
B. ORGANIC												
C. ASBESTOS												
D. POLYESTER												
E. OTHER												
14. INTERPLY ADHESIVE												
A. ASPHALT	X	X	X	X	X	X	X	X	X	X	X	X
B. MODIFIED ASPHALT	X	X	X	X	X	X	X	X	X	X	X	X
C. COAL TAR												
D. ELASTOMERIC ADHESIVE		X	X	X		X		X	X			
15. SURFACING												
AGGREGATE												
A. GRAVEL (lbs./ft ²)												
B. SLAG (lbs./ft ²)												
C. CRUSHED ROCK (lbs./ft ²)												
SMOOTH												
D. ASPHALT												
E. COAL TAR												
F. EMULSION/CUTBACK												
G. ALUMINUM COATING												
H. VINYL/VINYL COATING												
OTHER												
I. MINERAL GRANULES												
J. CAP SHEET	X	X	X	X	X	X	X	X	X	X	X	X
K. OTHER												
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)												
A. AGGREGATE												
B. SMOOTH												
C. CAP SHEET	3.30	2.17	2.45	2.20	2.11	2.30	2.31	2.50	2.70	2.19	2.38	2.58
17. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
18. YEAR OF FIRST COMMERCIAL USE												
19. TEST RESULTS PER NBS BSS #55												
MD = MACHINE DIRECTION XD = CROSS DIRECTION												
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD -XD												
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD -XD												
C. THERMAL BASE SHOCK (not < 100°F) -MD -XD												
20. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X	X	X	X	X	X	X	X	X

General information with test description and suggested values as specified in NBS BSS #55/1974

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Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

		MALARKEY ROOFING CO.									
1. NUMBER OF REGIONAL SERVICE LOCATIONS: 2. LICENSED APPLICATOR AGREEMENT (yes/no): 3. DISTRIBUTION METHOD (distributors and/or direct): 4. PREFORMED ACCESSORIES AVAILABLE (yes/no): 5. LIMITATIONS/RESTRICTIONS: 6. FOR SALES/TECHNICAL INFORMATION: 7. FELTS DATA: TRADE NAME (applicable ASTM standard):		15 YES DISTRIBUTORS NO SEE MALARKEY SPEC MANUAL J. DECHANDT AND S. WADDING #515 STANDARD BASE (D 4601) #501 PREMIUM 1 SBS BASE (D 4601) #508 PREMIUM SBS VENTED BASE (D 4897) #601 HP POLYGLASS SBS MINERAL (D 5147) #602 ARCTIC SHIELD SBS BASE (D 4601) #603 SUPER BASE SBS (D 4601) #605 PANOPLY SBS BASE (D 4601) #1000 ESHAVENT THERMAL SBS (D 4897) #500 PREMIUM PLY (D 2178) #350 PREMIUM SBS MINERAL (D 5147) #502 PREMIUM MINERAL (D 3909) #506 SUPER 6 PLY TYPE VI (D 2178) #625 PARAGON SBS MINERAL (D 5147) #650 PANOPLY SBS MINERAL (D 5147) #917 POLYGLASS SBS MINERAL (D 5147) #919 POLYGLASS SBS SMOOTH (D 5147) #160 APP SMOOTH (D 5147) #161 APP MINERAL (D 5147) #162 APP MINERAL (D 5147) #916 SBS WALK BOARD									
8. SPECIFICATION NUMBER		M3-FHE M3-FIE	M3-FBE	M3-FEE	M4-BBE	M4-EBE	F2-BXG	F2-EXG	F3-BHG F3-BIG	F3-BBG	F3-EHG F3-EIG
9. HOT AND/OR COLD APPLIED		HOT	HOT	HOT	HOT/CLD	HOT/CLD	HOT	HOT	HOT	HOT	HOT
10. DECK TYPE											
A. NAILABLE					X	X			X	X	X
B. INSULATED		X	X	X	X	X	X	X	X	X	X
C. NONNAILABLE		X	X	X	X	X	X	X	X	X	X
11. SLOPE REQUIREMENTS (range in inches)		0-3	0-3	0-3	0-3	0-3	0-3	NONE	NONE	NONE	NONE
12. NUMBER OF PLIES											
A. TOTAL PLIES		3	3	3	4	4	2	2	3	3	3
B. BASE SHEET		1	1	1	1	1	1	1	1	1	1
C. INTERPLY(IES)		1	1	1	2	2			1	1	1
D. CAP SHEET		1	1	1	1	1	1	1	1	1	1
13. TYPES OF FELT											
A. GLASS FIBER		X	X	X	X	X	X	X	X	X	X
B. ORGANIC											
C. ASBESTOS											
D. POLYESTER											
E. OTHER											
14. INTERPLY ADHESIVE											
A. ASPHALT		X	X	X	X	X	X	X	X	X	X
B. MODIFIED ASPHALT		X	X	X	X	X	X	X	X	X	X
C. COAL TAR											
D. ELASTOMERIC ADHESIVE					X	X					
15. SURFACING											
AGGREGATE											
A. GRAVEL (lbs./ft ²)											
B. SLAG (lbs./ft ²)											
C. CRUSHED ROCK (lbs./ft ²)											
SMOOTH											
D. ASPHALT											
E. COAL TAR											
F. EMULSION/CUTBACK											
G. ALUMINUM COATING											
H. VINYL/VINYL COATING											
OTHER											
I. MINERAL GRANULES											
J. CAP SHEET		X	X	X	X	X	X	X	X	X	X
K. OTHER											
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)											
A. AGGREGATE											
B. SMOOTH											
C. CAP SHEET		2.59	2.78	2.98	3.25	3.45	1.55	1.75	1.91	2.10	2.11
17. RESTRICTED REGIONS (refer to manufacturer's literature)		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
18. YEAR OF FIRST COMMERCIAL USE											
19. TEST RESULTS PER NBS BSS #55											
MD = MACHINE DIRECTION XD = CROSS DIRECTION											
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD -XD											
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD -XD											
C. THERMAL BASE SHOCK (not < 100°F) -MD -XD											
20. SEE MEMBRANE APPENDIX IF CHECKED		X	X	X	X	X	X	X	X	X	X

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

MFM BUILDING PRODUCTS CORP.

YES

NO

STEVE FOSTER/WES SIMPSON
DURAPLY IV (D 3178, TYPE IV)
DURABASE (NONE)
POLYPLY (NONE)

SCHULLER INTERNATIONAL INC.

ROOFING SYSTEMS DIVISION

10

YES

DISTRIBUTORS

YES

SEE BUR PRODUCT & SPECIFICATIONS MANUAL

REGIONAL OFFICE

GLASPLY PREMIER (D 2178, TYPE VI)

GLASPLY IV (D 2178, TYPE IV)

GLASBASE (D 4601)

PERMAPLY 28

GLASKAP (D 3909)

VENTSULATION (D 4897, TYPE II)

GLASTITE FLEXIBLE (NONE)

GLASBASE PLUS (D 4601)

DYNAFLEX (NONE)

43-GAW	43-GSW	43-GAC	44-GSC	52-PAW	52-PSW	52-PSC	52-PAC	5GNS	4GIS	4GNS	3GIS	3GNS	4GIG	3GIG	5GNG	4GNG	3GNG
HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1/2-3	1/2-6	1/2-3	1/2-6	1/2-3	1/2-3	1/2-3	1/2-3	0-6	0-6	0-6	0-6	0-6	0-3	0-3	0-3	0-3	0-3
4	4	3	4	3	3	2	2	5	4	4	3	3	4	3	5	4	3
1	1			1				1		1		1			1	1	1
3	3	3	4	2	2	2	2	4	4	3	3	2	4	3	4	3	2
X	X	X	X					X	X	X	X	X	X	X	X	X	X
				X	X	X	X										
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
													X	X		X	X
4		4		4			4						4	4	4	4	4
													3	3	3	3	3
	X		X					X	X	X	X	X					
	X		X		X	X		X	X	X	X	X					
6.0	2.0	6.0	2.0	5.0	2.0	2.0	6.0	1.80	1.40	1.60	1.10	1.30	6.30	6.0	6.90	6.60	6.30
1976	1976	1976	1976	1982	1982	1982	1982	1978	1976	1978	1980	2,3 1980	1978	1978	1978	1978	2,3 1980
343 257	343 257	293 241	382 333						404 351	357 343	310 331	288 247	404 351	310 331		357 343	288 247
23.5 27.9	23.5 27.9	18.8 16.8	21.7 21.3														
687 523	687 523	840 840	866 883														
X	X	X	X	X	X	X	X										

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

		SCHULLER INTERNATIONAL INC. ROOFING SYSTEMS DIVISION								
1. NUMBER OF REGIONAL SERVICE LOCATIONS:		10								
2. LICENSED APPLICATOR AGREEMENT (yes/no):		YES								
3. DISTRIBUTION METHOD (distributors and/or direct):		DISTRIBUTORS								
4. PREFORMED ACCESSORIES AVAILABLE (yes/no):		YES								
5. LIMITATIONS/RESTRICTIONS:		SEE BUR PRODUCT & SPECIFICATIONS MANUAL								
6. FOR SALES/TECHNICAL INFORMATION:		REGIONAL OFFICE								
7. FELTS DATA: TRADE NAME (applicable ASTM standard):		GLASPLY PREMIER (D 2178, TYPE VI)								
		GLASPLY IV (D 2178, TYPE IV)								
		GLASBASE (D 4601)								
		PERMAPLY 28								
		GLASKAP (D 3909)								
		VENTSULATION (D 4897, TYPE II)								
		GLASTITE FLEXIBLE (NONE)								
		GLASBASE PLUS (D 4601)								
		DYNAFLEX (NONE)								
8. SPECIFICATION NUMBER		5GIC	5GNC	4GIC	4GNC	3GIC	3GNC	5GLG	4GLG	3GLG
9. HOT AND/OR COLD APPLIED		HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
10. DECK TYPE										
A. NAILABLE			X		X		X	X	X	X
B. INSULATED		X		X		X				
C. NONNAILABLE		X		X		X				
11. SLOPE REQUIREMENTS (range in inches)		1/4 - 6	1/4 - 6	1/4 - 6	1/4 - 6	1/4 - 6	1/4 - 6	0 - 3	0 - 3	0 - 3
12. NUMBER OF PLIES										
A. TOTAL PLIES		5	5	4	4	3	3	5	4	3
B. BASE SHEET			1		1		1	1	1	1
C. INTERPLY(IIES)		4	3	3	2	2	1	4	3	2
D. CAP SHEET		1	1	1	1	1	1			
13. TYPES OF FELT										
A. GLASS FIBER		X	X	X	X	X	X	X	X	X
B. ORGANIC										
C. ASBESTOS										
D. POLYESTER										
E. OTHER										
14. INTERPLY ADHESIVE										
A. ASPHALT		X	X	X	X	X	X	X	X	X
B. MODIFIED ASPHALT										
C. COAL TAR									X	X
D. ELASTOMERIC ADHESIVE										
15. SURFACING										
AGGREGATE										
A. GRAVEL (lbs./ft ²)								4	4	4
B. SLAG (lbs./ft ²)								3	3	3
C. CRUSHED ROCK (lbs./ft ²)										
SMOOTH										
D. ASPHALT										
E. COAL TAR										
F. EMULSION/CUTBACK										
G. ALUMINUM COATING										
H. VINYL/VINYL COATING										
OTHER										
I. MINERAL GRANULES										
J. CAP SHEET		X	X	X	X	X	X			
K. OTHER										
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)								6.9	6.3	6
A. AGGREGATE										
B. SMOOTH										
C. CAP SHEET		2.40	2.40	2.0	2.20	2.0	1.80			
17. RESTRICTED REGIONS (refer to manufacturer's literature)					2,3	3	3			2,3
18. YEAR OF FIRST COMMERCIAL USE		1978	1978	1978	1978	1978	1980	1978	1978	1978
19. TEST RESULTS PER NBS BSS #55										
MD = MACHINE DIRECTION										
XD = CROSS DIRECTION										
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD										
-XD										
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD										
-XD										
C. THERMAL BASE SHOCK (not < 100°F) -MD										
-XD										
20. SEE MEMBRANE APPENDIX IF CHECKED										

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

SOUTHWESTERN PETROLEUM CORPORATION

NO
DIRECT
NO
SEE COLD PROCESS BUR SYSTEM 301 APPLICATION GUIDE
R. KLEINTOP
ASPHALT ROLL ROOFING (D 2626)

COLD PRO-
CESS BUR
301 SYSTEM

COLD
X
X
X
1/4 & UP
3
3
X
X
4-6
X
X
X
X
6.7
1.5
NONE
1971

TAMKO ROOFING PRODUCTS INC.

13
YES
DISTRIBUTORS
NO
SEE TAMKO COMMERCIAL ROOFING MANUAL
DISTRICT OFFICE/TECHNICAL SERVICE
NO. 15 PERF (D 226, TYPE I)
TYPE 43 BASE (D 2626)
TAM CAP (3909), TAM-PLY IV (D 2178 TYPE IV)
VAPOR CHAN (D 4897 TYPE II)
GLASS-BASE (D 4601 TYPE II)
TAM-GLASS PREMIUM (D 2178, TYPE VI)
TAM-PLY IV (D 2178 TYPE IV)
BASE-N-PLY (D4601 TYPE II)

401	402	412	501 601	502 602	503 603	504 604	505 605	507 607	512 612
HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
X	X	X	X	X	X	X	X	X	X
0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-1 1/2
4 1 3	4 4	4 1 3	3 3	4 3 1	4 4	3 3	4 4	5 4 1	4 1 2 1
X	X	X	X	X	X	X	X	X	X X
X	X	X	X	X	X	X	X	X	X
4 3	4 3	4 3	4 3	4 3	4 3	X X X	X X X		
				X				X	X
6.50	6.0	6.0	6.0	2.0	6.0	1.50	1.50	2.1	2.0
NONE	NONE	NONE	NONE	NONE	NONE		NONE	NONE	NONE

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

1. NUMBER OF REGIONAL SERVICE LOCATIONS: 2. LICENSED APPLICATOR AGREEMENT (yes/no): 3. DISTRIBUTION METHOD (distributors and/or direct): 4. PREFORMED ACCESSORIES AVAILABLE (yes/no): 5. LIMITATIONS/RESTRICTIONS: 6. FOR SALES/TECHNICAL INFORMATION: 7. FELTS DATA: TRADE NAME (applicable ASTM standard):	TAMKO ROOFING PRODUCTS INC. 13 YES DISTRIBUTORS NO SEE TAMKO COMMERCIAL ROOFING MANUAL DISTRICT OFFICE/TECHNICAL SERVICE NO. 15 PERF (D 226, TYPE I) TYPE 43 BASE (D 2626) TAM CAP (3909), TAM-PLY IV (D 2178 TYPE IV) VAPOR CHAN (D 4897 TYPE II) GLASS-BASE (D 4601 TYPE II) TAM-GLASS PREMIUM (D 2178, TYPE VI) TAM-PLY IV (D 2178 TYPE IV) BASE-N-PLY (D4601 TYPE II)		
8. SPECIFICATION NUMBER	514 614	515 615	516 616
9. HOT AND/OR COLD APPLIED	HOT	HOT	HOT
10. DECK TYPE			
A. NAILABLE	X	X	X
B. INSULATED			
C. NONNAILABLE			
11. SLOPE REQUIREMENTS (range in inches)	0-3	0-3	0-1
12. NUMBER OF PLIES			
A. TOTAL PLIES	4	4	4
B. BASE SHEET	1	1	1
C. INTERPLY(IES)	3	3	3
D. CAP SHEET			
13. TYPES OF FELT			
A. GLASS FIBER	X	X	X
B. ORGANIC	X		X
C. ASBESTOS			
D. POLYESTER			
E. OTHER			
14. INTERPLY ADHESIVE			
A. ASPHALT	X	X	X
B. MODIFIED ASPHALT			
C. COAL TAR			
D. ELASTOMERIC ADHESIVE			
15. SURFACING			
AGGREGATE			
A. GRAVEL (lbs./ft ²)	4	4	
B. SLAG (lbs./ft ²)	3	3	
C. CRUSHED ROCK (lbs./ft ²)			
SMOOTH			
D. ASPHALT			X
E. COAL TAR			
F. EMULSION/CUTBACK			X
G. ALUMINUM COATING			X
H. VINYL/VINYL COATING			
OTHER			
I. MINERAL GRANULES			
J. CAP SHEET			
K. OTHER			
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)			
A. AGGREGATE	6.0	7.0	
B. SMOOTH			1.50
C. CAP SHEET			
17. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE
18. YEAR OF FIRST COMMERCIAL USE			
19. TEST RESULTS PER NBS BSS #55			
MD = MACHINE DIRECTION XD = CROSS DIRECTION			
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD -XD			
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD -XD			
C. THERMAL BASE SHOCK (not < 100°F) -MD -XD			
20. SEE MEMBRANE APPENDIX IF CHECKED			

THERMO MATERIALS

7
 YES
 DIRECT
 YES
 SEE THERMO REP.

THERMOGLAS BASE (D 4601)
 THERMOGLAS PLY IV (D 2178, TYPE IV)
 THERMOGLAS PLY VI (D 2178, TYPE VI)
 THERMO POLYESTER PS-100 (D 4830),
 PN-100 (D 4830), SB-100 (D 4830)
 THERMO HOT ALLOY (D 4830)

TRS-2	TRS-3	TRS-4	MBUR-2	MBUR-3
COLD	COLD	COLD	HOT	HOT
X	X	X	X	X
X	X	X	X	X
X	X	X	X	X
1/8-6	1/8-6	1/8-6	1/8-3	1/8-3
3	4	5	3	4
1	1	1	1	1
2	3	4	2	3
			X	X
X	X	X	X	X
X	X	X	X	X
X	X	X		
X	X	X	X	X
4.7	4.9	4.9	5.3	5.7
0.8	1.0	1.0	1.1	1.5
			1.6	2.0
1976	1976	1976	1985	1985
185	220	325	280	425
175	200	290	250	395

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

TREMCO, INC.

18
YES
DIRECT
YES
SEE TREMCO REP
V. SOPKO/J. ZDENEK
BURMASTIC COMPOSITE PLY SHEET (NONE)
BURMASTIC GLASS PLY SHEET (D 4601, TYPE II)
THERMGLASS ROOFING PLY (D 2178, TYPE VI)
POLYTHERM PLY SHEET (NONE)

TBUR-3	TBUR-4	THER- MO GLAS IV	THER- MO GLAS VI	BURMAS- TIC 100	BURMAS- TIC 100	BURMAS- TIC 200	BURMAS- TIC 200	THERM 100	THERM 100	THERM 200	THERM 200
HOT	HOT	HOT	HOT	COLD	COLD	COLD	COLD	HOT	HOT	HOT	HOT
X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X
1/8-3	1/8-3	1/8-3	1/8-3	1/8-4	1/8-4	1/8-4	1/8-4	1/8-3	1/8-3	1/8-3	1/8-3
4	5	4	4	3	3	3	3	3	3	3	3
1	1										
3	4	4	4								
		X	X	X	X			X	X		
X	X					X	X			X	X
X	X	X	X	X	X	X	X				
X	X	X	X								
								X	X	X	X
4	4	4	4		4.0		4.0		4.0		4.0
3	3	3	3								
X	X	X	X								
X	X	X	X	X		X		X		X	
X	X	X	X	X		X		X		X	
		X	X	X		X		X		X	
X	X	X	X	X		X		X		X	
5.7	5.9	5.9	5.9		5.70		5.70		5.20		5.0
1.5	1.7	1.7	1.7	2.30		2.30		1.80		1.60	
2.0	2.2	2.2	2.2								
1985	1985	1965	1965	NONE 1978	NONE 1978	NONE 1986	NONE 1986	NONE 1982	NONE 1982	NONE 1983	NONE 1983
425	505	404	425	330	330	390	390	255	255	265	265
395	470	351	380	295	295	400	400	240	240	225	225

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

		TRI-PLY											
1. NUMBER OF REGIONAL SERVICE LOCATIONS: 2. LICENSED APPLICATOR AGREEMENT (yes/no): 3. DISTRIBUTION METHOD (distributors and/or direct): 4. PREFORMED ACCESSORIES AVAILABLE (yes/no): 5. LIMITATIONS/RESTRICTIONS: 6. FOR SALES/TECHNICAL INFORMATION: 7. FELTS DATA: TRADE NAME (applicable ASTM standard):		5 YES DISTRIBUTORS YES SEE TRI-PLY DOMINIC MORAN/ROBERT WHITE EAGLE BASE ULTRA TYPE I/II EAGLE BONDABLE 28 TYPE I/II EAGLE SUPER GLASS TYPE III EAGLE TOUGH GLASS TYPE IV EAGLE ULTRA GLASS TYPE VI EAGLE CAP (3909)											
8. SPECIFICATION NUMBER		I-5-4P-M	I-4-4P-G	I-4-4P-S	I-4-3P	I-3-3P-G	I-3-3P-S	I-3-2P-M	N-3-B2P-G	N-3-B2P-S	N-3-BP-M	N-4-B3P-G	N-4-B3P-S
9. HOT AND/OR COLD APPLIED		HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
10. DECK TYPE													
A. NAILABLE		X	X	X	X				X	X	X	X	X
B. INSULATED						X	X	X					
C. NONNAILABLE													
11. SLOPE REQUIREMENTS (range in inches)		0-6	0-3	0-6	0-6	0-3	0-6	0-6	0-3	0-6	0-6	0-3	0-6
12. NUMBER OF PLIES													
A. TOTAL PLIES		5	4	4	4	3	3	3	3	3	3	4	4
B. BASE SHEET					3			2	1	1	1	1	1
C. INTERPLY(IES)		4	4	4		3	3	1	2	2	1	3	3
D. CAP SHEET		1			1						1		
13. TYPES OF FELT													
A. GLASS FIBER		X	X	X	X	X	X	X	X	X	X	X	X
B. ORGANIC													
C. ASBESTOS													
D. POLYESTER													
E. OTHER													
14. INTERPLY ADHESIVE													
A. ASPHALT		X	X	X	X	X	X	X	X	X	X	X	X
B. MODIFIED ASPHALT													
C. COAL TAR													
D. ELASTOMERIC ADHESIVE													
15. SURFACING													
AGGREGATE													
A. GRAVEL (lbs./ft ²)			4			4			4			4	
B. SLAG (lbs./ft ²)			3			3			3			3	
C. CRUSHED ROCK (lbs./ft ²)													
SMOOTH													
D. ASPHALT				X			X			X			X
E. COAL TAR													
F. EMULSION/CUTBACK				X			X			X			X
G. ALUMINUM COATING				X			X			X			X
H. VINYL/VINYL COATING													
OTHER													
I. MINERAL GRANULES													
J. CAP SHEET		X			X		X				X		
K. OTHER													
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft ²)													
A. AGGREGATE													
B. SMOOTH													
C. CAP SHEET													
17. RESTRICTED REGIONS (refer to manufacturer's literature)		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
18. YEAR OF FIRST COMMERCIAL USE		1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985
19. TEST RESULTS PER NBS BSS #55													
MD = MACHINE DIRECTION													
XD = CROSS DIRECTION													
A. TENSILE STRENGTH (>200 lb/in @ 0°F) -MD													
-XD													
B. THERMAL EXPANSION (not > 40x10 ⁻⁶ /°F @ 0°F to -30°F) -MD													
-XD													
C. THERMAL BASE SHOCK (not < 100°F) -MD													
-XD													
20. SEE MEMBRANE APPENDIX IF CHECKED													

Built-up Roofing

General information with test description and suggested values as specified in NBS BSS #55/1974

N-4- B2P-M	NN-3 B2P-G	NN-3 B2P-S	NN-3 BP-M	N-5 B3P-M	NN-5-B 3P-M	NN-4 B3P-G	NN-4 B3P-S	NN-4 B2P-M
HOT	HOT	HOT	HOT		HOT	HOT	HOT	HOT
X				X				
	X	X	X		X	X	X	X
0-6	0-3	0-6	0-6	0-6	0-6	0-3	0-6	0-6
4	3	3	3	5	5	4	4	4
1	1	1	1	1	1	1	1	1
2	2	2	1	3	3	3	3	2
1			1	1	1			1
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
		4				4		
		3				3		
			X				X	
			X				X	
			X				X	
X			X	X	X			X
NONE 1985	NONE 1985	NONE 1985	NONE 1985	NONE 1985	NONE 1985	NONE 1985	NONE 1985	NONE 1985

Modified Bitumen Part 1: General Information

1. COMPANY NAME	AMERICAN LUBRICANTS CO. INC.	BARRETT CO.	BARRETT CO.	BARRETT CO.	BARRETT CO.	BARRETT CO.	BARRETT CO.
2. PRODUCT NAME	TIFFANY	RAM-TOUGH TM-500	RAM 306	RAM 306 FR	RAM 306 HP	RAM 309	RAM TOUGH 250
3. PRODUCT DESCRIPTION A. TYPE OF MODIFIER B. THICKNESS (mils) C. TOP SURFACE D. REINFORCING MATERIAL E. COLOR(S) F. INSTALLED WEIGHT (lbs./ft ² without ballast)	APP 157 MODIFIED BITUMEN NONWOVEN POLYESTER FABRIC BLACK 0.88	SBS POLY-PROPYLENE FIBERGLASS BLACK	SBS GRANULAR POLYESTER VARIOUS	SBS GRANULAR POLYESTER VARIOUS	SBS GRANULAR POLYESTER VARIOUS	SBS GRANULAR FIBERGLASS VARIOUS	SBS 215 PMR POLYESTER BLACK 2
4. KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE	CAP SHEET OR PMR
5. USE IN: A. NEW ROOFING B. REROOFING	X X	X X	X X	X X	X X	X X	X X
6. FIELD LAP JOINT METHOD	TORCH	SELF-ADHERING	HOT MOP	HOT MOP	HOT MOP	HOT MOP	THERMAL FUSION
7. TYPES OF ROOF SYSTEMS: A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²) B. PARTIALLY ADHERED (method) C. FULLY ADHERED (method) D. PROTECTED ROOF MEMBRANE ASSEMBLY	TORCH	SELF-ADHERED X	HOT MOP X	HOT MOP X	HOT MOP X	HOT MOP X	X
8. MINIMUM SLOPE REQUIRED	POS DRAIN	TO DRAIN	TO DRAIN	TO DRAIN	TO DRAIN	TO DRAIN	NONE
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	O		X	X	X	X	O
B. MINERAL FIBER	O						O
C. POLYSTYRENE	O						O
D. CELLULAR GLASS	O		X	X	X	X	O
E. PHENOLIC	O						
F. FIBERBOARD	O		X	X	X	X	O
G. PERLITE	O		X	X	X	X	O
H. POLYISOCYANURATE	O			O	O	O	O
I. POLYURETHANE	O						O
J. GYPSUM	O		O	O	O	O	X
K. CONCRETE	X	X	X	X	X	X	X
L. WOOD PLANK			O	O	O	O	O
M. PLYWOOD	O	O	O	O	O	O	X
N. EXISTING BUILT-UP MEMBRANE	X	X	X	X	X	X	X
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	0 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120
12. FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	NEOPRENE SHEET
13. FLASHING METHOD	TORCH	SELF-ADHERING	HOT MOP	HOT MOP	HOT MOP	HOT MOP	ADHERED
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	YES	YES	YES	YES	YES	YES
15. COUNTRY OF: A. ORIGIN B. MANUFACTURE	ITALY USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA
16. YEAR OF FIRST COMMERCIAL USE A. OUTSIDE USA B. WITHIN USA	1961 1978	1983 1984	1972 1978	1986 1986	1990 1990	1972 1978	1982
17. NUMBER OF SQUARES INSTALLED (100 ft ²) A. OUTSIDE USA B. WITHIN USA	NONE 500,000	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DISTR,DIRECT	DISTR,DIRECT	DISTR,DIRECT	DISTR,DIRECT	DISTR,DIRECT	DISTR,DIRECT
19. NUMBER OF REGIONAL LOCATIONS		21	21	21	21	21	21
20. LICENSED APPLICATOR AGREEMENT (yes/no)	NO	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	R. G. READ 513/222-2851	CUST SERVICE	CUST SERVICE	CUST SERVICE	CUST SERVICE	CUST SERVICE	CUST SERVICE
22. FOR TECHNICAL INFORMATION, CONTACT:	R. G. READ 513/222-2851	TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH SERVICE
23. SEE MEMBRANE APPENDIX IF CHECKED		X	X	X	X	X	

Modified Bitumen Part 1: General Information

BARRETT CO.	BARRETT CO.	BARRETT CO.	BARRETT CO.	BARRETT CO.	BITEC INC.	BITEC INC.	BITEC INC.	BITEC INC.	BITEC INC.
RAM 309 FR	RAM 309 HT	RAM 200	RAM 201	RAM 203	APS-4T	APM-4T	APM-4.5T	COMPABASE FA-2T	COMPABASE FAV-2T
SBS	SBS	SBS	SBS	SBS	APP 160	APP 160	APP 180	APP 80	APP 80
GRANULAR	GRANULAR	MICA	MICA	MICA	MODIFIED BITUMEN	GRANULES	GRANULES	MODIFIED BITUMEN	MODIFIED BITUMEN
FIBERGLASS	FIBERGLASS	POLYESTER	FIBERGLASS	FIBERGLASS	SPUNBOND POLYESTER	SPUNBOND POLYESTER	SPUNBOND POLYESTER	NONWOVEN FIBERGLASS	NONWOVEN FIBERGLASS
VARIOUS	VARIOUS	GRAY/BLACK	GRAY/BLACK	GRAY/BLACK	BLACK	VARIOUS	VARIOUS	BLACK	BLACK
NONE	NONE				0.90	1.00	0.92	0.47	0.42
					NONE	NONE	NONE	APS4T, APM4T APM4.5T	APS4T, APM4T APM4.5T
X	X	X	X	X	X	X	X	X	X
HOT MOP	HOT MOP	HOT MOP	HOT MOP	HOT MOP	TORCH	TORCH	TORCH	TORCH	TORCH
HOT MOP	HOT MOP	HOT MOP	HOT MOP	HOT MOP	TORCH	TORCH	TORCH	NAIL TORCH	NAIL
X	X	X	X	X					X
TO DRAIN	TO DRAIN	TO DRAIN	TO DRAIN	TO DRAIN	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	POS DRAIN	POS DRAIN
X	X	X	X	X	O	O	O	O	O
					O	O	O	O	O
X	X	X	X	X	O	O	O	O	O
					O	O	O	O	O
X	X	X	X	X	O	O	O	O	O
X	X	X	X	X	O	O	O	O	O
					O	O	O	O	O
					O	O	O	O	O
X	X	X	X	X	O	O	O	O	O
X	X	X	X	X	O	O	O	O	O
X	X	X	X	X	O	O	O	O	O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 130	40 – 130	40 – 130	40 – 130	40 – 130
SAME MATERIAL	SAME MATERIAL	SBS/POLY SHEET	SBS/POLY SHEET	SBS/POLY SHEET	SAME MATERIAL OR APM	SAME MATERIAL	SAME MATERIAL		
HOT MOP	HOT MOP	HOT MOP	HOT MOP	HOT MOP	TORCH	TORCH	TORCH		
YES	YES	YES	YES	YES	NO	NO	NO	NO	NO
USA	USA	USA	USA	USA	ITALY	ITALY	ITALY	ITALY	ITALY
USA	USA				USA	USA	USA	USA	USA
1991	1990				1978	1978	1978	1978	1978
1991	1990	1978	1992	1992	1987	1987	1987	1988	1988
THOUSANDS	THOUSANDS	> 20,000	< 5,000	< 5,000	> 2 MILLION	> 2 MILLION	1 MILLION	100,000	5,000
					> 2 MILLION	> 1 MILLION	50,000	1,500	1,000
DISTR,DIRECT	DISTR,DIRECT	DISTR,DIRECT	DISTR,DIRECT	DISTR,DIRECT	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
21	21	21	21	21	13	13	13	13	13
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
CUST SERVICE	CUST SERVICE	CUST SERVICE	CUST SERVICE	CUST SERVICE	800/535-8597	800/535-8597	800/535-8597	800/535-8597	800/535-8597
TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH SERVICE	D. ALLEN	D. ALLEN	D. ALLEN	D. ALLEN	D. ALLEN
					800/535-8597	800/535-8597	800/535-8597	800/535-8597	800/535-8597
X	X	X	X	X					

Modified Bitumen Part 1: General Information

1. COMPANY NAME	BITEC INC.	BITEC INC.	BITEC INC.	BITEC INC.	BITEC INC.	BITEC INC.	BITEC INC.
2. PRODUCT NAME	SPM-4.5T	SPM-3.5H	SFM-3.5H	SPM-4H	COMPABASE PS-2H	COMPABASE FS-2H	COMPABASE FSV-2H
3. PRODUCT DESCRIPTION							
A. TYPE OF MODIFIER	SBS	SBS	SBS	SBS	SBS	SBS	SBS
B. THICKNESS (mils)	180	140	140	160	80	80	80
C. TOP SURFACE	GRANULES	GRANULES	GRANULES	GRANULES	MODIFIED BITUMEN	MODIFIED BITUMEN	MODIFIED BITUMEN
D. REINFORCING MATERIAL	SPUNBOND POLYESTER	SPUNBOND POLYESTER	NONWOVEN FIBERGLASS	SPUNBOND POLYESTER	SPUNBOND POLYESTER	NONWOVEN FIBERGLASS	NONWOVEN FIBERGLASS
E. COLOR(S)	VARIOUS	VARIOUS	VARIOUS	VARIOUS	BLACK	BLACK	BLACK
F. INSTALLED WEIGHT (lbs./ft ² without ballast)	1.23	1.00	1.00	1.10	0.47	0.47	0.42
4. KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	SPM OR SFM SHEETS	SPM OR SFM SHEETS	SPM OR SFM SHEETS
5. USE IN:							
A. NEW ROOFING	X	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	TORCH	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES
7. TYPES OF ROOF SYSTEMS:							
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)							
B. PARTIALLY ADHERED (method)							
C. FULLY ADHERED (method)	TORCH	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	NAIL
D. PROTECTED ROOF MEMBRANE ASSEMBLY							X
8. MINIMUM SLOPE REQUIRED	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	O	O	O	O	O	O	O
B. MINERAL FIBER	O	O	O	O	O	O	O
C. POLYSTYRENE	O	O	O	O	O	O	O
D. CELLULAR GLASS	O	O	O	O	O	O	O
E. PHENOLIC	O	O	O	O	O	O	O
F. FIBERBOARD	O	O	O	O	O	O	O
G. PERLITE	O	O	O	O	O	O	O
H. POLYISOCYANURATE	O	O	O	O	O	O	O
I. POLYURETHANE	O	O	O	O	O	O	O
J. GYPSUM	O	O	O	O	O	O	O
K. CONCRETE	X	O	O	O	O	O	O
L. WOOD PLANK	O	O	O	O	O	O	O
M. PLYWOOD	O	O	O	O	O	O	O
N. EXISTING BUILT-UP MEMBRANE	X	O	O	O	O	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	30 – 120	30 – 130	30 – 130	30 – 130	30 – 130	30 – 130	30 – 130
12. FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL OR SPM-4.5T	SAME MATERIAL OR SPM-4.5T	SAME MATERIAL OR SPM-4.5T			
13. FLASHING METHOD	TORCH	HOT MOP OR TORCH	HOT MOP OR TORCH	HOT MOP OR TORCH			
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO	NO
15. COUNTRY OF:							
A. ORIGIN	ITALY	ITALY	ITALY	ITALY	ITALY	ITALY	ITALY
B. MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE							
A. OUTSIDE USA	1978	1978	1978	1978	1978	1978	1978
B. WITHIN USA	1987	1987	1989	1989	1988	1988	1988
17. NUMBER OF SQUARES INSTALLED (100 ft ²)							
A. OUTSIDE USA	20,000	500,000					
B. WITHIN USA	>6,000	2 MILLION	> 200,000	> 5,000	> 3,000	> 10,000	1,000
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	13	13	13	13	13	13	13
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	800/535-8597	800/535-8597	800/535-8597	800/535-8597	800/535-8597	800/535-8597	800/535-8597
22. FOR TECHNICAL INFORMATION, CONTACT:	D. ALLEN 800/535-8597	D. ALLEN 800/535-8597	D. ALLEN 800/535-8597	D. ALLEN 800/535-8597	D. ALLEN 800/535-8597	D. ALLEN 800/535-8597	D. ALLEN 800/535-8597
23. SEE MEMBRANE APPENDIX IF CHECKED							

Modified Bitumen Part 1: General Information
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Modified Bitumen Part 1: General Information

1. COMPANY NAME	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CONSOLIDATED COATINGS CORPORATION	CONSOLIDATED COATINGS CORPORATION
2. PRODUCT NAME	CELOTEX APP 4/M CAP SHEET	CELOTEX SBS/170 CAP SHEET	CELOTEX SBS/250 CAP SHEET	CELOTEX SBS DUEL PLY FR BASE SHEET	CELOTEX SBS DUEL PLY FR CAP SHEET	CONSO-GARD II	CONSO-GARD III
3. PRODUCT DESCRIPTION							
A. TYPE OF MODIFIER	APP	SBS	SBS	SBS	SBS	APP	SBS
B. THICKNESS (mils)	157	149	177	98	157	157	140
C. TOP SURFACE	GRANULAR	GRANULAR	GRANULAR	SMOOTH	GRANULAR	PLAIN	PLAIN
D. REINFORCING MATERIAL	POLYESTER	POLYESTER	POLYESTER	GLASS FIBER	GLASS FIBER	POLYESTER	POLYESTER
E. COLOR(S)	BLACK OR WHITE	BLACK OR WHITE	BLACK OR WHITE	BLACK	BLACK	BLACK	BLACK
F. INSTALLED WEIGHT (lbs./ft ² without ballast)	1.13	1.13		0.70	0.95	0.90	0.90
4. KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	CAP SHEET	NONE	COATING	COATING
5. USE IN:							
A. NEW ROOFING	X	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	TORCH	HOT MOP	HOT MOP	HOT MOP	HOT MOP	TORCH	TORCH OR ADHESIVE
7. TYPES OF ROOF SYSTEMS:							
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)						10	10
B. PARTIALLY ADHERED (method)							
C. FULLY ADHERED (method)							
D. PROTECTED ROOF MEMBRANE ASSEMBLY							
8. MINIMUM SLOPE REQUIRED	POS DRAIN	POS DRAIN	POS DRAIN			DEAD LEVEL	DEAD LEVEL
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	O	X	X	X	X	X	O
B. MINERAL FIBER	O	X	X	X	X	O	O
C. POLYSTYRENE	O	X	X		O	O	O
D. CELLULAR GLASS	O		O	X	X	O	O
E. PHENOLIC	O	O	O		O	O	O
F. FIBERBOARD	O	X	X	X	X	O	O
G. PERLITE	O	X	X	X	X	O	O
H. POLYISOCYANURATE	O	X	X	X	X	X	O
I. POLYURETHANE	O		X	X	X	O	O
J. GYPSUM	O	X	X	X	X	X	X
K. CONCRETE	O	X	X	X	X	X	X
L. WOOD PLANK	O		O	O	O	O	O
M. PLYWOOD	O	O	O	O	O	O	O
N. EXISTING BUILT-UP MEMBRANE	O	O	O	O	O	X	X
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	30 – 120	30 – 120	30 – 120	30 – 120	30 – 120	50 – 115	20 – 115
12. FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SPEC FLASH 250	SPEC FLASH 250	SPEC FLASH 250	SAME MATERIAL	SAME MATERIAL
13. FLASHING METHOD	TORCH	HOT MOP	HOT MOP	HOT MOP	HOT MOP	TORCH	TORCH OR ADHESIVE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO	NO
15. COUNTRY OF:							
A. ORIGIN	USA	USA	USA	USA	USA	USA	USA
B. MANUFACTURE	USA	USA	USA	USA	USA	USA	CANADA
16. YEAR OF FIRST COMMERCIAL USE							
A. OUTSIDE USA	1963	1965	1965			1972	1971
B. WITHIN USA	1983	1986		1985	1985	1980	1984
17. NUMBER OF SQUARES INSTALLED (100 ft ²)							
A. OUTSIDE USA						40,000	30,000
B. WITHIN USA							
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DIRECT	DIRECT
19. NUMBER OF REGIONAL LOCATIONS	6	6	6	6	6	4	4
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	NO	NO
21. FOR SALES INFORMATION, CONTACT:	REG. OFFICE 800/CELOTEX	REG. OFFICE 800/CELOTEX	REG. OFFICE 800/CELOTEX	REG. OFFICE 800/CELOTEX	REG. OFFICE 800/CELOTEX	F. MALLOY	F. MALLOY
22. FOR TECHNICAL INFORMATION, CONTACT:	REG. OFFICE 800/CELOTEX	REG. OFFICE 800/CELOTEX	REG. OFFICE 800/CELOTEX	REG. OFFICE 800/CELOTEX	REG. OFFICE 800/CELOTEX	J. KAVOURAS	J. KAVOURAS
23. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X				

Modified Bitumen Part 1: General Information
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Modified Bitumen Part 1: General Information

1. COMPANY NAME	DANOSA CARIBBEAN, INC.	DANOSA CARIBBEAN, INC.	DERMABIT WATER-PROOFING INDUSTRIES	DERMABIT WATER-PROOFING INDUSTRIES	DERMABIT WATER-PROOFING INDUSTRIES	DERMABIT WATER-PROOFING INDUSTRIES	DIBITEN
2. PRODUCT NAME	ESTERDAN RM-5	ESTERDAN RM-PLUS	DERMABIT 4170 SMOOTH	DERMABIT 4170 GRANULE	ELASPHALT 4170 SMOOTH	ELASPHALT 4170 GRANULE	DIBITEN POLY/4
3. PRODUCT DESCRIPTION							
A. TYPE OF MODIFIER	SBS	SBS	APP	APP	SBS	SBS	APP
B. THICKNESS (mils)	177	197	160	160	160	160	160
C. TOP SURFACE	MINERAL GRANULES	MINERAL GRANULES	SMOOTH	GRANULE	SMOOTH	GRANULE	MODIFIED BITUMEN
D. REINFORCING MATERIAL	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	NONWOVEN POLYESTER
E. COLOR(S)	WHITE/OTHER	WHITE/OTHER	BLACK	VARIOUS	BLACK	VARIOUS	BLACK
F. INSTALLED WEIGHT (lbs./ft ² without ballast)	1.07	1.19	0.88	0.95	0.88	0.95	0.90
4. KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	COATING	NONE	NONE
5. USE IN:							
A. NEW ROOFING	X	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HOT MOP OR TORCH	HOT MOP OR TORCH	TORCH	TORCH	HOT MOP OR TORCH	HOT MOP OR TORCH	TORCH
7. TYPES OF ROOF SYSTEMS:							
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)							
B. PARTIALLY ADHERED (method)							
C. FULLY ADHERED (method)	MOP OR TORCH	MOP OR TORCH	TORCH	TORCH	MOP OR TORCH	MOP OR TORCH	TORCH
D. PROTECTED ROOF MEMBRANE ASSEMBLY							
8. MINIMUM SLOPE REQUIRED	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	POS DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	X	X	O	O	O	O	O
B. MINERAL FIBER	X	X	O	O	O	O	O
C. POLYSTYRENE	O	O	O	O	O	O	O
D. CELLULAR GLASS	X	X	O	O	O	O	O
E. PHENOLIC	X	X	O	O	O	O	O
F. FIBERBOARD	O	O	O	O	O	O	O
G. PERLITE	O	X	O	O	O	O	O
H. POLYISOCYANURATE	O	O	O	O	O	O	O
I. POLYURETHANE	O	O	O	O	O	O	O
J. GYPSUM	O	O	X	X	X	X	O
K. CONCRETE	X	X	X	X	X	X	X
L. WOOD PLANK	X	X	O	O	X	O	O
M. PLYWOOD	X	X	O	O	X	O	O
N. EXISTING BUILT-UP MEMBRANE	O	O	X	X	X	X	X
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	SEE SPECS
11. WORKABLE TEMPERATURE RANGE (degrees F)	14 – 120	14 – 120	20 – 140	20 – 140	0 – 120	0 – 120	40 – 120
12. FLASHING MATERIAL	SAME	SAME	SAME	SAME	SAME	SAME	SAME
	MATERIAL OR GLASDAN AL-80	MATERIAL OR GLASDAN AL-80	MATERIAL OR GRANULATED	MATERIAL	MATERIAL OR GRANULATED	MATERIAL OR GRANULATED	MATERIAL
13. FLASHING METHOD	HOT MOP OR TORCH	HOT MOP OR TORCH	TORCH	TORCH	TORCH OR MOP	TORCH OR MOP	TORCH
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO	NO
15. COUNTRY OF:							
A. ORIGIN	PUERTO RICO	PUERTO RICO	SA/ITALY	SA/ITALY	SA/ITALY	SA/ITALY	ITALY
B. MANUFACTURE	PUERTO RICO	PUERTO RICO	SA/ITALY	SA/ITALY	SA/ITALY	SA/ITALY	USA
16. YEAR OF FIRST COMMERCIAL USE							
A. OUTSIDE USA			1976	1976	1976	1976	1968
B. WITHIN USA	1985	1995	1987	1987	1987	1987	1978
17. NUMBER OF SQUARES INSTALLED (100 ft ²)							
A. OUTSIDE USA	MILLIONS		3.5 MILLION	1.5 MILLION	200,000	300,000	10.7 MILLION
B. WITHIN USA	THOUSANDS		200,000	100,000			4.6 MILLION
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	2	2	1	1	1	1	9
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	NO
21. FOR SALES INFORMATION, CONTACT:	W. RIVERA	W. RIVERA	G. JERMSTAD	G. JERMSTAD	G. JERMSTAD	G. JERMSTAD	R. BIANCHI
22. FOR TECHNICAL INFORMATION, CONTACT:	F. ROMERO	F. ROMERO	G. JERMSTAD	G. JERMSTAD	G. JERMSTAD	G. JERMSTAD	B. DEMBOWSKI
23. SEE MEMBRANE APPENDIX IF CHECKED			X	X	X	X	X

Modified Bitumen Part 1: General Information
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Modified Bitumen Part 1: General Information

1. COMPANY NAME	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.
2. PRODUCT NAME	SBS SMOOTH	SBS	SBS FR	SBS PREMIUM	SBS PREMIUM FR	SBS GLASS	SBS GLASS FR
3. PRODUCT DESCRIPTION							
A. TYPE OF MODIFIER	SBS	SBS	SBS	SBS	SBS	SBS	SBS
B. THICKNESS (mils)	145	150	150	160	160	150	150
C. TOP SURFACE	SMOOTH	GRANULES	GRANULES	GRANULES	GRANULES	GRANULES	GRANULES
D. REINFORCING MATERIAL	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	FIBERGLASS	FIBERGLASS
E. COLOR(S)	BLACK	VARIOUS	VARIOUS	VARIOUS	VARIOUS	VARIOUS	VARIOUS
F. INSTALLED WEIGHT (lbs./ft ² without ballast)	0.98	1.00	1.00	1.13	1.13	1.00	1.00
4. KINDS OF FIELD SURFACING REQUIRED	FLOOD COAT/ GRAVEL	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:							
A. NEW ROOFING	X	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	MOP OR WELD	MOP OR WELD	MOP OR WELD	MOP OR WELD	MOP OR WELD	MOP OR WELD	MOP OR WELD
7. TYPES OF ROOF SYSTEMS:							
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)							
B. PARTIALLY ADHERED (method)							
C. FULLY ADHERED (method)	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES
D. PROTECTED ROOF MEMBRANE ASSEMBLY	X	X	X	X	X	X	X
8. MINIMUM SLOPE REQUIRED	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	O	O	O	O	O	O	O
B. MINERAL FIBER	O	O	O	O	O	O	O
C. POLYSTYRENE	O	O	O	O	O	O	O
D. CELLULAR GLASS	O	O	O	O	O	O	O
E. PHENOLIC	O	O	O	O	O	O	O
F. FIBERBOARD	O	O	O	O	O	O	O
G. PERLITE	O	O	O	O	O	O	O
H. POLYISOCYANURATE	O	O	O	O	O	O	O
I. POLYURETHANE	O	O	O	O	O	O	O
J. GYPSUM	O	O	O	O	O	O	O
K. CONCRETE	O	O	O	O	O	O	O
L. WOOD PLANK	O	O	O	O	O	O	O
M. PLYWOOD	O	O	O	O	O	O	O
N. EXISTING BUILT-UP MEMBRANE	O	O	O	O	O	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	30 – 130	30 – 130	30 – 130	30 – 130	30 – 130	30 – 130	30 – 130
12. FLASHING MATERIAL	SBS GRANULE SURFACE	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SBS GRANULE (POLYESTER)	SBS GRANULE (POLYESTER)
13. FLASHING METHOD	HOT MOP	HOT MOP	HOT MOP	HOT MOP	HOT MOP	HOT MOP	HOT MOP
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO	NO
15. COUNTRY OF:							
A. ORIGIN	USA	USA	USA	USA	USA	USA	USA
B. MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE							
A. OUTSIDE USA	1965	1965					
B. WITHIN USA	1991	1989	1994	1991	1992	1991	1991
17. NUMBER OF SQUARES INSTALLED (100 ft ²)							
A. OUTSIDE USA							
B. WITHIN USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT
19. NUMBER OF REGIONAL LOCATIONS	5	5	5	5	5	5	5
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	800/428-4442	800/428-4442	800/428-4442	800/428-4442	800/428-4442	800/428-4442	800/428-4442
22. FOR TECHNICAL INFORMATION, CONTACT:	800/428-4511	800/428-4511	800/428-4511	800/428-4511	800/428-4511	800/428-4511	800/428-4511
23. SEE MEMBRANE APPENDIX IF CHECKED							

Modified Bitumen Part 1: General Information
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Modified Bitumen Part 1: General Information

1. COMPANY NAME	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GARLAND COMPANY INC., THE	GARLAND COMPANY INC., THE
2. PRODUCT NAME	RUBEROID 20	RUBEROID 30	RUBEROID 30 FR	RUBEROID MOP (SMOOTH)	MODIFIED BASE SHEET	STRESSPLY	STRESSPLY MINERAL
3. PRODUCT DESCRIPTION A. TYPE OF MODIFIER B. THICKNESS (mils) C. TOP SURFACE D. REINFORCING MATERIAL E. COLOR(S) F. INSTALLED WEIGHT (lbs./ft ² without ballast)	SBS 82 SMOOTH FIBERGLASS BLACK 0.65	SBS 130 GRANULES FIBERGLASS WHITE/BLACK 0.92	SBS 130 GRANULES FIBERGLASS WHITE/BLACK 0.92	SBS 160 SMOOTH POLYESTER BLACK 0.90	SBS SMOOTH FIBERGLASS BLACK	SBS 80 DUAL FIBERGLASS BLACK	SBS 135 MINERAL GRANULES DUAL FIBERGLASS OFF WHITE 1.00
4. KINDS OF FIELD SURFACING REQUIRED	CAP SHEET	NONE	NONE	CAP SHEET	CAP SHEET	NONE	NONE
5. USE IN: A. NEW ROOFING B. REROOFING	X X	X X	X X	X X	X X	X X	X X
6. FIELD LAP JOINT METHOD	HOT MOP OR COLD	HOT MOP OR COLD	HOT MOP OR COLD	HOT MOP OR COLD	HOT MOP OR COLD	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES
7. TYPES OF ROOF SYSTEMS: A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²) B. PARTIALLY ADHERED (method) C. FULLY ADHERED (method) D. PROTECTED ROOF MEMBRANE ASSEMBLY	HOT MOP HOT MOP/COLD X	HOT MOP HOT MOP/COLD X	HOT MOP HOT MOP/COLD X	HOT MOP HOT MOP/COLD X	HOT MOP HOT MOP/COLD X	MOP/COLD ADH X	MOP/COLD ADH X
8. MINIMUM SLOPE REQUIRED	MUST DRAIN	MUST DRAIN	MUST DRAIN	MUST DRAIN	MUST DRAIN	POS DRAIN	POS DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	O	O	O	O	O	X	X
B. MINERAL FIBER	O	O	O	O	O	X	X
C. POLYSTYRENE						O	O
D. CELLULAR GLASS	O	O	O	O	O	X	X
E. PHENOLIC	O	O	O	O	O	O	O
F. FIBERBOARD	X	O	O	O	X	X	X
G. PERLITE	X	O	O	O	X	X	X
H. POLYISOCYANURATE	O	O	O	O	O	O	O
I. POLYURETHANE	O	O	O	O	O	O	O
J. GYPSUM	O	O	O	O	X	O	O
K. CONCRETE	O	O	O	X	X	O	O
L. WOOD PLANK	O	O	O	O	X	O	O
M. PLYWOOD	O	O	O	O	X	O	O
N. EXISTING BUILT-UP MEMBRANE	O	O	O	O	X	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	CONTACT GAF	CONTACT GAF	CONTACT GAF	CONTACT GAF	CONTACT GAF	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	30 – 100	30 – 100	30 – 100	30 – 100	30 – 100	35 – 120	35 – 120
12. FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
13. FLASHING METHOD	HOT MOP OR MOD BIT FLASH- ING CEMENT	HOT MOP OR FLASHING CEMENT	HOT MOP OR FLASHING CEMENT	HOT MOP OR MOD BIT FLASH- ING CEMENT	HOT MOP OR MOD BIT FLASH- ING CEMENT	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	YES	NO	YES	YES
15. COUNTRY OF: A. ORIGIN B. MANUFACTURE	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA
16. YEAR OF FIRST COMMERCIAL USE A. OUTSIDE USA B. WITHIN USA	1992	1992	1992	1986	1996	1978	1989
17. NUMBER OF SQUARES INSTALLED (100 ft ²) A. OUTSIDE USA B. WITHIN USA							
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DIRECT	DIRECT
19. NUMBER OF REGIONAL LOCATIONS	5	5	5	5	5	165	165
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	D. SOKOL	D. SOKOL
22. FOR TECHNICAL INFORMATION, CONTACT:	TECHNICAL SERVICES	TECHNICAL SERVICES	TECHNICAL SERVICES	TECHNICAL SERVICES	TECHNICAL SERVICES	B. LAMBERT F. JANOCH	B. LAMBERT F. JANOCH
23. SEE MEMBRANE APPENDIX IF CHECKED							

Modified Bitumen Part 1: General Information
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Modified Bitumen Part 1: General Information

1. COMPANY NAME	GARLAND COMPANY INC., THE	GARLAND COMPANY INC., THE	GARLAND COMPANY INC., THE	GARLAND COMPANY INC., THE	GARLAND COMPANY INC., THE	GARLAND COMPANY INC., THE	GARLAND COMPANY INC., THE
2. PRODUCT NAME	STRESSPLY- PLUS MINERAL FR	STRESSPLY IV	STRESSPLY IV MINERAL	STRESSPLY "E"	STRESSPLY "E" FR	STRESSPLY "E" MINERAL	STRESSPLY "E" MINERAL-FR
3. PRODUCT DESCRIPTION							
A. TYPE OF MODIFIER	SEBS/SBS	SBS	SBS	SBS/SIS	SBS/SIS	SBS/SIS	SBS/SIS
B. THICKNESS (mils)	135	135	165	80	80	135	135
C. TOP SURFACE	MINERAL GRANULES		MINERAL GRANULES				
D. REINFORCING MATERIAL	QUAD-AXIAL FIBERGLASS	DUAL FIBERGLASS	DUAL FIBERGLASS	POLYESTER/ FIBERGLASS	POLYESTER/ FIBERGLASS	POLYESTER/ FIBERGLASS	POLYESTER/ FIBERGLASS
E. COLOR(S)	OFF WHITE	BLACK	OFF WHITE	BLACK	BLACK	OFF WHITE	OFF WHITE
F. INSTALLED WEIGHT (lbs./ft ² without ballast)	1.00	0.90	1.05	0.85	0.85	1.00	1.00
4. KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:							
A. NEW ROOFING	X	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HOT MOP OR COLD ADHES	TORCH	TORCH	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES
7. TYPES OF ROOF SYSTEMS:							
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)							
B. PARTIALLY ADHERED (method)							
C. FULLY ADHERED (method)	MOP/COLD ADH	TORCH	TORCH	MOP/COLD ADH	MOP/COLD ADH	MOP/COLD ADH	MOP/COLD ADH
D. PROTECTED ROOF MEMBRANE ASSEMBLY	X		X	X	X	X	X
8. MINIMUM SLOPE REQUIRED	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	X	O	O	X	X	X	X
B. MINERAL FIBER	X	O	O	X	X	X	X
C. POLYSTYRENE	O	O	O	O	O	O	O
D. CELLULAR GLASS	X	O	O	X	X	X	X
E. PHENOLIC	O	O	O	O	O	O	O
F. FIBERBOARD	X	O	O	X	X	X	X
G. PERLITE	X	O	O	X	X	X	X
H. POLYISOCYANURATE	O	O	O	O	O	O	O
I. POLYURETHANE	O	O	O	O	O	O	O
J. GYPSUM	O	O	O	O	O	O	O
K. CONCRETE	O	O	O	O	O	O	O
L. WOOD PLANK	O	O	O	O	O	O	O
M. PLYWOOD	O	O	O	O	O	O	O
N. EXISTING BUILT-UP MEMBRANE	O	O	O	O	O	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	35 – 120	35 – 120	35 – 120	35 – 120	35 – 120	35 – 120	35 – 120
12. FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
13. FLASHING METHOD	HOT MOP OR COLD ADHESIVE	TORCH	TORCH	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES	YES
15. COUNTRY OF:							
A. ORIGIN	USA	USA	USA	USA	USA	USA	USA
B. MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE							
A. OUTSIDE USA							
B. WITHIN USA	1990	1991	1991	1993	1995	1994	1994
17. NUMBER OF SQUARES INSTALLED (100 ft ²)							
A. OUTSIDE USA							
B. WITHIN USA							
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT
19. NUMBER OF REGIONAL LOCATIONS	165	165	165	165	165	165	165
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL
22. FOR TECHNICAL INFORMATION, CONTACT:	B. LAMBERT F. JANOCH	B. LAMBERT F. JANOCH	B. LAMBERT F. JANOCH	B. LAMBERT F. JANOCH	B. LAMBERT F. JANOCH	B. LAMBERT F. JANOCH	B. LAMBERT F. JANOCH
23. SEE MEMBRANE APPENDIX IF CHECKED							

Modified Bitumen Part 1: General Information
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Modified Bitumen Part 1: General Information

1. COMPANY NAME	GS ROOFING PRODUCTS CO. INC.	GS ROOFING PRODUCTS CO. INC.	GS ROOFING PRODUCTS CO. INC.	GS ROOFING PRODUCTS CO. INC.	W P HICKMAN SYSTEMS INC.	W P HICKMAN SYSTEMS INC.	W P HICKMAN SYSTEMS INC.
2. PRODUCT NAME	FLINTLASTIC FR CAP	BLACK DIAMOND BASE SHEET	POLY SMS BASE SHEET	FLINTLASTIC GTA-FR	PIKA PLY SS-4	PIKA PLY MS-4	PIKA PLY SA-3
3. PRODUCT DESCRIPTION							
A. TYPE OF MODIFIER	SBS	SBS	SBS	APP	SBS	SBS	APP
B. THICKNESS (mils)	160	50	120	180	160	160	120
C. TOP SURFACE	MINERAL GRANULES	MINERAL GRANULES	SAND	MINERAL GRANULES	POLYESTER	POLYESTER	POLYESTER
D. REINFORCING MATERIAL	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER
E. COLOR(S)	VARIOUS	BLACK	BLACK	WHITE	BLACK	OFF WHITE	BLACK
F. INSTALLED WEIGHT (lbs./ft ² without ballast)	0.95	.038	.045	1.05			
4. KINDS OF FIELD SURFACING REQUIRED	NONE	CAP SHEET		NONE	GRAVEL/ALUMINUM / WHITE	NONE	ALUMINUM OR WHITE
5. USE IN:							
A. NEW ROOFING	X	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HOT MOP OR COLD ADHES	SELF-ADHESIVE		TORCH	HOT MOP COLD ADHES	HOT MOP COLD ADHES	TORCH
7. TYPES OF ROOF SYSTEMS:							
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)							
B. PARTIALLY ADHERED (method)	COLD ADHES	SELF-ADHERED	MECH. MOP/COLD ADH	TORCH	MOP OR ADHES	MOP OR ADHES	TORCH
C. FULLY ADHERED (method)	HOT MOP				X		
D. PROTECTED ROOF MEMBRANE ASSEMBLY							
8. MINIMUM SLOPE REQUIRED	POS DRAIN				1/8"	1/8"	1/8"
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	O	X	X	O	O	O	O
B. MINERAL FIBER	O	X	X	O	O	O	O
C. POLYSTYRENE	O	X	X	O	O	O	O
D. CELLULAR GLASS	O	X	X	O	O	O	O
E. PHENOLIC	O	X	X	O	O	O	O
F. FIBERBOARD	O	X	X	O	O	O	O
G. PERLITE	O	X	X	O	O	O	O
H. POLYISOCYANURATE	O	X	X	O	O	O	O
I. POLYURETHANE	O	X	X	O	O	O	O
J. GYPSUM	O	X	X	O	O	O	O
K. CONCRETE	O	X	X	O	X	X	X
L. WOOD PLANK	O		O	O	O	O	O
M. PLYWOOD	O		O	O	O	O	O
N. EXISTING BUILT-UP MEMBRANE	X	O	O	X	O	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	30 – 130			30 – 130	35 – 120	35 – 120	35 – 120
12. FLASHING MATERIAL	SAME MATERIAL	FLINTLASTIC STA, GTA, GMS	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL OR HYPALON	SAME MATERIAL OR HYPALON	SAME MATERIAL
13. FLASHING METHOD	HOT MOP OR COLD ADHESIVE	TORCH, MOP, COLD ADHESIVE	MOP OR COLD ADHESIVE	TORCH	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	TORCH
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	YES	YES	YES
15. COUNTRY OF:							
A. ORIGIN	USA	USA	USA	USA	USA	USA	USA
B. MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE							
A. OUTSIDE USA							
B. WITHIN USA	1989	1989	1989	1996	1985	1985	1985
17. NUMBER OF SQUARES INSTALLED (100 ft ²)							
A. OUTSIDE USA							
B. WITHIN USA	100,000	50,000	40,000		THOUSANDS	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DIRECT	DIRECT	DIRECT
19. NUMBER OF REGIONAL LOCATIONS	2	2	2	2	5	5	5
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	GS REGIONAL OFFICE COMMERCIAL ROOFING DEPT	GS REGIONAL OFFICE COMMERCIAL ROOFING DEPT	GS REGIONAL OFFICE COMMERCIAL ROOFING DEPT	GS REGIONAL OFFICE COMMERCIAL ROOFING DEPT	C FITZGERALD	C FITZGERALD	C FITZGERALD
22. FOR TECHNICAL INFORMATION, CONTACT:	GS REGIONAL OFFICE COMMERCIAL ROOFING DEPT	GS REGIONAL OFFICE COMMERCIAL ROOFING DEPT	GS REGIONAL OFFICE COMMERCIAL ROOFING DEPT	GS REGIONAL OFFICE COMMERCIAL ROOFING DEPT	R GALLION K BRZOZOWSKI	R GALLION K BRZOZOWSKI	R GALLION K BRZOZOWSKI
23. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X			

Modified Bitumen Part 1: General Information

W P HICKMAN SYSTEMS INC.	W P HICKMAN SYSTEMS INC.	W P HICKMAN SYSTEMS INC.	W P HICKMAN SYSTEMS INC.	W P HICKMAN SYSTEMS INC.	W P HICKMAN SYSTEMS INC.	W P HICKMAN SYSTEMS INC.	HYLOAD, INC.	HYLOAD, INC.	IKO INDUSTRIES INC.
PIKA PLY SA-4	PIKA PLY MA-4	PIKA PLY 808	PIKA PLY SS-3P	PIKA PLY SS-2	PIKA PLY 808-MS	PIKA PLY MS-3G	HYBASE	HYBASE SAM	ARMOURPLAST GRANULAR
APP 160	APP 160 MINERAL	SBS 100	SBS 120	SBS 60	SBS 120 MINERAL	SBS 120	SBS 71 GRANULAR	SBS 84 GRANULAR	APP 165 GRANULAR
POLYESTER	POLYESTER	WOVEN GLASS/ GLASS MAT	POLYESTER	POLYESTER	WOVEN GLASS/ GLASS MAT	GLASS			180-GRAM POLYESTER
BLACK	OFF WHITE	BLACK	BLACK	BLACK	OFF WHITE	OFF WHITE	GREY	GREY	BROWN/GRAY/ BLACK
0.90	0.95								1.0
ALUMINUM OR WHITE	NONE	GRAVEL/ALUM- INUM / WHITE	GRAVEL/ALUM- INUM / WHITE	GRAVEL/ALUM- INUM / WHITE	NONE	NONE	NONE	NONE	NONE
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
TORCH	TORCH	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	NAILED	SELF- ADHESIVE	TORCH
TORCH X	TORCH	MOP OR ADHES X	MOP OR ADHES X	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	NAILED	SELF-ADHESIVE	TORCH TORCH
POS DRAIN	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	DEAD LEVEL	DEAD LEVEL	1/4" OR P. DRAIN
O	O	O	O	O	O	O	X		O
O		O	O	O	O	O	X		O
O	O	O	O	O	O	O	X		O
							X		O
O	O	O	O	O	O	O	X	X	O
O	O	O	O	O	O	O	X		O
O	O	O	O	O	O	O	X	X	O
O	O	O	O	O	O	O	X		O
O	O	O	O	O	O	O	X		O
X	X	X	X	X	X	X	X	X	O
O	O	O	O	O	O	O	X	X	O
O	O	O	O	O	O	O	X	X	O
O	O	O	O	O	O	O	X	X	O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
35 – 120	35 – 120	35 – 120	35 – 120	35 – 120	35 – 120	35 – 120	40 – 120	50 – 120	40 – 120
SAME MATERIAL	SAME MATERIAL	SAME MATERIAL OR HYPALON	SAME MATERIAL OR HYPALON	SAME MATERIAL OR HYPALON	SAME MATERIAL OR HYPALON	SAME MATERIAL OR HYPALON	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
TORCH	TORCH	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	NAILED	SELF- ADHERED	TORCH
YES	YES	YES	YES	YES	YES	YES	NO	NO	NO
USA	USA	USA	USA	USA	USA	USA	USA	USA	BELGIUM CANADA
1985	1985	1985	1985	1985	1985	1985	1996	1996	1979 1988
THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	2,000	2,000	
DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DISTRIBUTORS
5	5	5	5	5	5	5	20	20	
YES	YES	YES	YES	YES	YES	YES	YES	YES	NO
C FITZGERALD	C FITZGERALD	C FITZGERALD	C FITZGERALD	C FITZGERALD	C FITZGERALD	C FITZGERALD	800/457-4056	800/457-4056	800/323-7171
R GALLION K BRZOZOWSKI	R GALLION K BRZOZOWSKI	R GALLION K BRZOZOWSKI	R GALLION K BRZOZOWSKI	R GALLION K BRZOZOWSKI	R GALLION K BRZOZOWSKI	R GALLION K BRZOZOWSKI	800/457-4056	800/457-4056	800/323-7171

Modified Bitumen Part 1: General Information

1. COMPANY NAME	IKO INDUSTRIES INC.	IKO INDUSTRIES INC.	IKO INDUSTRIES INC.	IKO INDUSTRIES INC.	IKO INDUSTRIES INC.	IMPERITALIA S P A	IMPERITALIA S P A
2. PRODUCT NAME	ARMOURPLAST CLASSIC	MODIFLEX MP-180-CAP	MODIFLEX MP-250-CAP	TORCHFLEX TP-180-CAP	TORCHFLEX TP-250-CAP	PARALON NT4	TRIPLANE
3. PRODUCT DESCRIPTION A. TYPE OF MODIFIER B. THICKNESS (mils) C. TOP SURFACE D. REINFORCING MATERIAL E. COLOR(S) F. INSTALLED WEIGHT (lbs./ft ² without ballast)	APP 157 SMOOTH 180-GRAM POLYESTER BLACK 0.88	SBS 138 GRANULAR 180-GRAM POLYESTER BROWN/GRAY 0.95	SBS 157 GRANULAR 250-GRAM POLYESTER BROWN/GRAY 1.05	SBS 157 GRANULAR 180-GRAM POLYESTER BROWN/GRAY 1.17	SBS 157 GRANULAR 250-GRAM POLYESTER BROWN/GRAY 1.17	APP 160 PLAIN POLYESTER BLACK 0.83	APP PLAIN FIBERGLASS BLACK
4. KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN: A. NEW ROOFING B. REROOFING	X X	X X	X X	X X	X X	X X	X X
6. FIELD LAP JOINT METHOD	TORCH	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	TORCH	TORCH	TORCH	TORCH
7. TYPES OF ROOF SYSTEMS: A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²) B. PARTIALLY ADHERED (method) C. FULLY ADHERED (method) D. PROTECTED ROOF MEMBRANE ASSEMBLY	TORCH TORCH			TORCH TORCH	TORCH TORCH	10 TORCH TORCH	10 TORCH TORCH
8. MINIMUM SLOPE REQUIRED	1/4" OR P. DRAIN	1/4" OR P. DRAIN	1/4" OR P. DRAIN	1/4" OR P. DRAIN	1/4" OR P. DRAIN	1/4"	1/4"
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	O	O	O	O	O	O	O
B. MINERAL FIBER	O	O	O	O	O	X	O
C. POLYSTYRENE	O	O	O	O	O	O	O
D. CELLULAR GLASS	O	O	O	O	O	O	O
E. PHENOLIC	O	O	O	O	O	O	O
F. FIBERBOARD	O	O	O	O	O	O	O
G. PERLITE	O	O	O	O	O	O	O
H. POLYISOCYANURATE	O	O	O	O	O	O	O
I. POLYURETHANE	O	O	O	O	O	O	O
J. GYPSUM	O	O	O	O	O	O	O
K. CONCRETE	O	O	O	O	O	O	O
L. WOOD PLANK	O	O	O	O	O	O	O
M. PLYWOOD	O	O	O	O	O	O	O
N. EXISTING BUILT-UP MEMBRANE	X	X	X	X	X		
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120
12. FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
13. FLASHING METHOD	TORCH	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	TORCH	TORCH	TORCH	TORCH
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO	NO
15. COUNTRY OF: A. ORIGIN B. MANUFACTURE	BELGIUM CANADA	CANADA	CANADA	CANADA	CANADA	ITALY ITALY	ITALY ITALY
16. YEAR OF FIRST COMMERCIAL USE A. OUTSIDE USA B. WITHIN USA	1979 1988	1992	1992	1992	1992	1968 1980	1966 1980
17. NUMBER OF SQUARES INSTALLED (100 ft ²) A. OUTSIDE USA B. WITHIN USA						3,000,000 50,000	3,500,000 25,000
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRS,DIRECT	DISTRS,DIRECT
19. NUMBER OF REGIONAL LOCATIONS						2	2
20. LICENSED APPLICATOR AGREEMENT (yes/no)	NO	NO	NO	NO	NO	YES	YES
21. FOR SALES INFORMATION, CONTACT:	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171	G CALABRESE	G CALABRESE
22. FOR TECHNICAL INFORMATION, CONTACT:	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171	G CALABRESE	G CALABRESE
23. SEE MEMBRANE APPENDIX IF CHECKED						X	X

Modified Bitumen Part 1: General Information

IMPERITALIA S P A	IMPERITALIA S P A	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.
ARWENOL AL	ARWENOL ARD/S	2040-M APP	2040-S APP	2050-S APP	2041-M SBS	2041-S SBS	2045-M SBS	2045 MFR-CAP	2042 MFR-CAP
APP 150 ALUMINUM FIBERGLASS VARIOUS 0.73 NONE	APP 170 GRANULAR POLYESTER VARIOUS 0.99 NONE	APP 160 MINERAL POLYESTER GREY/WHITE 0.95 NONE	APP 160 SMOOTH POLYESTER BLACK 0.90 ALUMINUM	APP 200 SMOOTH POLYESTER BLACK 1.10 ALUMINUM	SBS 160 MINERAL POLYESTER GREY/WHITE 0.95 NONE	SBS 160 SMOOTH POLYESTER BLACK 0.90 ALUMINUM	SBS 180 MINERAL POLYESTER GREY/WHITE 1.05 NONE	SBS 180 MINERAL LAMINATED INTERWOVEN FIBERGLASS GREY/WHITE 1.05 NONE	SBS 160 MINERAL FIBERGLASS GREY/WHITE 0.95 NONE
X X TORCH	X X TORCH	X X TORCH	X X TORCH	X X TORCH	X X MOP/TORCH	X X MOP/TORCH	X X MOP/TORCH	X X MOP	X X MOP
TORCH TORCH	TORCH TORCH	TORCH	TORCH	TORCH	MOP	MOP	MOP	MOP	MOP
1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
NONE 40 – 120 SAME MATERIAL TORCH NO	NONE 40 – 120 SAME MATERIAL TORCH NO	NONE 40 – 120 SAME MATERIAL TORCH NO	NONE 40 – 120 SAME MATERIAL TORCH NO	NONE 40 – 120 SAME MATERIAL TORCH NO	NONE 40 – 120 SAME MATERIAL HOT MOP, TORCH NO	NONE 40 – 120 SAME MATERIAL HOT MOP, TORCH NO	NONE 40 – 120 SAME MATERIAL HOT MOP, TORCH NO	NONE 40 – 120 SAME MATERIAL HOT MOP NO	NONE 40 – 120 SAME MATERIAL HOT MOP NO
ITALY ITALY 1972 1981 1,000,000 7,500 DISTR,S,DIRECT 2 YES G CALABRESE G CALABRESE X	ITALY ITALY 1972 1981 1,500,000 10,000 DISTR,S,DIRECT 2 YES G CALABRESE G CALABRESE X	ITALY USA 1967 1983 MILLIONS THOUSANDS DISTR,S,DIRECT YES 800/558-2706 800/558-2706 X	ITALY USA 1967 1983 MILLIONS MILLIONS DISTR,S,DIRECT YES 800/558-2706 800/558-2706 X	ITALY USA 1967 1983 THOUSANDS THOUSANDS DISTR,S,DIRECT YES 800/558-2706 800/558-2706 X	ITALY USA 1977 1984 MILLIONS THOUSANDS DISTR,S,DIRECT YES 800/558-2706 800/558-2706 X	ITALY USA 1977 1984 MILLIONS MILLIONS DISTR,S,DIRECT YES 800/558-2706 800/558-2706 X	ITALY USA 1977 1984 MILLIONS THOUSANDS DISTR,S,DIRECT YES 800/558-2706 800/558-2706 X	ITALY USA 1988 1979 MILLIONS THOUSANDS DISTR,S,DIRECT YES 800/558-2706 800/558-2706 X	ITALY USA 1988 1979 MILLIONS THOUSANDS DISTR,S,DIRECT YES 800/558-2706 800/558-2706 X

Modified Bitumen Part 1: General Information

1. COMPANY NAME	KOPPERS INDUSTRIES INC.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.
2. PRODUCT NAME	2042 FR-BASE	PREMIUM SBS 601	PARAGON SBS 625	PANOPLY SBS 650	POLYGLASS SBS 917	POLYGLASS SBS 919	ESHALUM SBS 1020
3. PRODUCT DESCRIPTION							
A. TYPE OF MODIFIER	SBS	SBS	SBS	SBS	SBS	SBS	SBS
B. THICKNESS (mils)	112	120	125	150	180	160	160
C. TOP SURFACE	MINERAL	GRANULE	GRANULE	GRANULE	GRANULE	SMOOTH	ALUMINUM
D. REINFORCING MATERIAL	FIBERGLASS	POLYGLASS	FIBERGLASS	FIBERGLASS	POLYGLASS	POLYGLASS	FIBERGLASS
E. COLOR(S)	BLACK	WHITE/BLACK/ VARIOUS	WHITE/BLACK/ VARIOUS	WHITE/BLACK/ VARIOUS	WHITE/ VARIOUS	BLACK	ALUMINUM
F. INSTALLED WEIGHT (lbs./ft ² without ballast)	0.70						
4. KINDS OF FIELD SURFACING REQUIRED	CAP SHEET	NONE	NONE	NONE	NONE	EMULSION/ GRANULE/ALUM.	NONE
5. USE IN:							
A. NEW ROOFING	X	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	MOP	HOT/COLD	HOT/COLD	HOT/COLD	HOT/COLD/ TORCH	HOT/COLD/ TORCH	HOT/TORCH
7. TYPES OF ROOF SYSTEMS:							
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)							
B. PARTIALLY ADHERED (method)							
C. FULLY ADHERED (method)	MOP	HOT/COLD	HOT/COLD	HOT/COLD	HOT/COLD/TORCH	HOT/COLD/TORCH	HOT/COLD/TORCH
D. PROTECTED ROOF MEMBRANE ASSEMBLY		X	X	X	X	X	X
8. MINIMUM SLOPE REQUIRED	1/4"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	O	X	X	X	X	X	X
B. MINERAL FIBER	O	X	X	X	X	X	X
C. POLYSTYRENE	O	X	X	X	X	X	X
D. CELLULAR GLASS	O	O	O	O	O	O	O
E. PHENOLIC	O						
F. FIBERBOARD	O	X	X	X	X	X	X
G. PERLITE	O	X	X	X	X	X	X
H. POLYISOCYANURATE	O	X	X	X	X	X	X
I. POLYURETHANE	O	X	X	X	X	X	X
J. GYPSUM	O	X	X	X	X	X	X
K. CONCRETE	O	X	X	X	X	X	X
L. WOOD PLANK	O	X	X	X	X	X	X
M. PLYWOOD	O	X	X	X	X	X	X
N. EXISTING BUILT-UP MEMBRANE	O	X	X	X	X	X	X
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	40 – 120						
12. FLASHING MATERIAL	SAME MATERIAL	SAME	SAME	SAME	601, 625, 650	601, 625, 650	SAME
13. FLASHING METHOD	HOT MOP	HOT/COLD	HOT/COLD	HOT/COLD	HOT/COLD	HOT/COLD	TORCH
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO	NO
15. COUNTRY OF:							
A. ORIGIN	ITALY	USA	USA	USA	USA	USA	HOLLAND
B. MANUFACTURE	USA	USA	USA	USA	USA	USA	GERMANY
16. YEAR OF FIRST COMMERCIAL USE							
A. OUTSIDE USA	1988	1982			1982	1982	1985
B. WITHIN USA	1979	1982	1993	1992	1981	1981	1991
17. NUMBER OF SQUARES INSTALLED (100 ft ²)							
A. OUTSIDE USA							
B. WITHIN USA							
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTR, DIRECT	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS		100 +	100 +	100 +	100 +	100 +	100 +
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	800/558-2706	G MALARKEY	G MALARKEY	G MALARKEY	G MALARKEY	G MALARKEY	G MALARKEY
22. FOR TECHNICAL INFORMATION, CONTACT:	800/558-2706	J DECHANDT S WADDING	J DECHANDT S WADDING	J DECHANDT S WADDING	J DECHANDT S WADDING	J DECHANDT S WADDING	J DECHANDT S WADDING
23. SEE MEMBRANE APPENDIX IF CHECKED							

Modified Bitumen Part 1: General Information

MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MBTECHNOLOGY	MBTECHNOLOGY	MBTECHNOLOGY	MBTECHNOLOGY	MBTECHNOLOGY	MBTECHNOLOGY	MBTECHNOLOGY
APP 160 SMOOTH	APP 161 MINERAL	APP 162 MINERAL	SUPERCAP SBS SC-100GWH	METALFLEX SBS MF-160WAL	SUPERFLEX SBS SF-160 PSA	FIREGUARD FASTORCH SBS FGFT160 CWH	FIREGUARD SBS FG160 CWH	FIREGUARD SBS FG160 GWH	FIREGUARD SBS FG90 GWH
APP 160 SMOOTH POLYESTER BLACK	APP 160 GRANULE POLYESTER WHITE	APP 160 GRANULE POLYESTER WHITE	SBS 150 GRANULES FIBERGLASS VARIOUS 1.00	SBS EMBOSSED COPPER/ALUM. SCRIM- WOVEN ALUMINUM/ VARIOUS 1.01	SBS 123 PLAIN POLYESTER BLACK 0.90	SBS 172 GRANULES POLYESTER & FIBERGLASS VARIOUS 1.20	SBS GRANULES POLYESTER & FIBERGLASS VARIOUS 1.10	SBS FIBERGLASS VARIOUS 1.10	SBS GRANULES FIBERGLASS VARIOUS 0.90
EMULSION/ GRANULE/ALUM.	NONE	NONE	NONE	NONE	GRAVEL, EMUL- SIONS, ACRYLC	NONE	NONE	NONE	NONE
X X TORCH	X X TORCH	X X TORCH	X X HOT MOP OR COLD ADHES	X X HOT MOP OR TORCH	X X HOT MOP OR COLD ADHES	X X TORCH	X X TORCH, MOP, OR COLD ADHES	X X TORCH, MOP, OR COLD ADHES	X X HOT MOP OR COLD ADHES
10 TORCH X	10 TORCH X	10 TORCH X	MOP/CLD ADH	MOP/TORCH	MOP/CLD ADH	TORCH	MOP/CLD ADH	MOP/CLD ADH	MOP/CLD ADH
1/8"	1/8"	1/8"	TO DRAIN	TO DRAIN	TO DRAIN	TO DRAIN	TO DRAIN	TO DRAIN	TO DRAIN
X X X O O	X X X O O	X X X O O	O O O O	O O O O	X O O O O	O O O O	O O O O	O O O O	O O O O
X X X O O X X X O O	X X X O O X X X O O	X X X O O X X X O O	O O O O O O O O O	O O O O O O O O O	X O O O O O O O O	O O O O O O O O O	O O O O O O O O O	O O O O O O O O O	
NONE 20	NONE 20	NONE 20	NONE 50 – 120	NONE 50 – 120	NONE 50 – 120	NONE 50 – 120	NONE 50 – 120	NONE 50 – 120	NONE 40 – 120
SAME	SAME	SAME	MF160WAL, SF160PWH	MF160WAL	MF160WAL, SF160PWH	FT160CWH MF160WAL	SF160PWH MF160WAL	SF160PWH MF160WAL	SF160PWH MF160WAL
TORCH	TORCH	TORCH	TORCH OR HOT MOP	TORCH OR HOT MOP	TORCH OR HOT MOP	TORCH	HOT MOP	HOT MOP	HOT MOP OR TORCH
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA
1960 1990	1960 1990	1960 1990	1989	1984	1966 1983				1985
			THOUSANDS	THOUSANDS	MILLIONS THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
DISTRIBUTORS 100 + YES	DISTRIBUTORS 100 + YES	DISTRIBUTORS 100 + YES	DISTRIBUTORS YES	DISTRIBUTORS YES	DISTRIBUTORS YES	DISTRIBUTORS YES	DISTRIBUTORS YES	DISTRIBUTORS YES	DISTRIBUTORS YES
G MALARKEY J DECHANDT S WADDING	G MALARKEY J DECHANDT S WADDING	G MALARKEY J DECHANDT S WADDING	SALES MANAGER TECHNICAL MANAGER	SALES MANAGER TECHNICAL MANAGER	SALES MANAGER TECHNICAL MANAGER	SALES MANAGER TECHNICAL MANAGER	SALES MANAGER TECHNICAL MANAGER	SALES MANAGER TECHNICAL MANAGER	SALES MANAGER TECHNICAL MANAGER

Modified Bitumen Part 1: General Information

1. COMPANY NAME	MBTECHNOLOGY	MBTECHNOLOGY	MBTECHNOLOGY	MBTECHNOLOGY	MBTECHNOLOGY	MBTECHNOLOGY	MBTECHNOLOGY
2. PRODUCT NAME	LAYFLAT SBS LF25	LAYFLAT SBS LF40	LAYFLAT SBS LF60	LAYFLAT SBS LF60P	SUPERFLEX SBS SF-160PWH	FASTORCH SBS FT-160CWH	FASTORCH SBS FT-160CSA
3. PRODUCT DESCRIPTION A. TYPE OF MODIFIER B. THICKNESS (mils) C. TOP SURFACE D. REINFORCING MATERIAL E. COLOR(S) F. INSTALLED WEIGHT (lbs./ft ² without ballast)	SBS SAND/SMOOTH FIBERGLASS BLACK 0.28	SBS SAND/SMOOTH FIBERGLASS BLACK 0.45	SBS SAND/SMOOTH FIBERGLASS BLACK 0.70	SBS SAND/SMOOTH POLYESTER BLACK 0.70	SBS 157 GRANULES POLYESTER VARIOUS 1.00	SBS 172 GRANULES POLYESTER & FIBERGLASS VARIOUS 1.20	SBS SAND/SMOOTH POLYESTER & FIBERGLASS BLACK 1.10
4. KINDS OF FIELD SURFACING REQUIRED	CAPSHEET, GRAVEL, EMULSION	CAPSHEET, GRAVEL, EMULSION	CAPSHEET, GRAVEL, EMULSION	CAPSHEET, GRAVEL, EMULSION	NONE	NONE	EMULSION, GRAVEL, ACRYLIC
5. USE IN: A. NEW ROOFING B. REROOFING	X X	X X	X X	X X	X X	X X	X X
6. FIELD LAP JOINT METHOD	NAIL, MOP, OR COLD ADHES	NAIL, MOP, OR COLD ADHES	NAIL, MOP, OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	TORCH
7. TYPES OF ROOF SYSTEMS: A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²) B. PARTIALLY ADHERED (method) C. FULLY ADHERED (method) D. PROTECTED ROOF MEMBRANE ASSEMBLY	MOP/CLD ADH	MOP/CLD ADH	MOP/CLD ADH	MOP/CLD ADH	MOP/CLD ADH	TORCH	TORCH
8. MINIMUM SLOPE REQUIRED	TO DRAIN	TO DRAIN	TO DRAIN	TO DRAIN	TO DRAIN	TO DRAIN	TO DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	X	X	X	X	O	O	X
B. MINERAL FIBER	X	X	X	X	O	O	X
C. POLYSTYRENE	O	O	O	O	O	O	O
D. CELLULAR GLASS	O	O	O	O	O	O	O
E. PHENOLIC							
F. FIBERBOARD	X	X	X	X	O	O	X
G. PERLITE	X	X	X	X	O	O	X
H. POLYISOCYANURATE	O	O	O	O	O	O	O
I. POLYURETHANE	O	O	O	O	O	O	O
J. GYPSUM	O	O	O	O	O	O	O
K. CONCRETE	X	X	X	X	O	O	X
L. WOOD PLANK	X	X	X	X	O	O	X
M. PLYWOOD	X	X	X	X	O	O	X
N. EXISTING BUILT-UP MEMBRANE	X	X	X	X	O	O	X
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	50 – 120	50 – 120	50 – 120	50 – 120	50 – 120	50 – 120	50 – 120
12. FLASHING MATERIAL	MF160WAL FT160CWH SF160PWH	MF160WAL FT160CWH SF160PWH	MF160WAL FT160CWH SF160PWH	MF160WAL FT160CWH SF160PWH	SF160PWH MF160WAL	SF160PWH MF160WAL	SF160PWH MF160WAL
13. FLASHING METHOD	HOT ASPHALT OR TORCH	HOT ASPHALT OR TORCH	HOT ASPHALT OR TORCH	HOT ASPHALT OR TORCH	TORCH OR HOT MOP	TORCH	TORCH
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO	NO
15. COUNTRY OF: A. ORIGIN B. MANUFACTURE	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA
16. YEAR OF FIRST COMMERCIAL USE A. OUTSIDE USA B. WITHIN USA		1984	1985		1985	1988	1988
17. NUMBER OF SQUARES INSTALLED (100 ft ²) A. OUTSIDE USA B. WITHIN USA		THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS							
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	SALES MANAGER	SALES MANAGER	SALES MANAGER	SALES MANAGER	SALES MANAGER	SALES MANAGER	SALES MANAGER
22. FOR TECHNICAL INFORMATION, CONTACT:	TECHNICAL MANAGER	TECHNICAL MANAGER	TECHNICAL MANAGER	TECHNICAL MANAGER	TECHNICAL MANAGER	TECHNICAL MANAGER	TECHNICAL MANAGER
23. SEE MEMBRANE APPENDIX IF CHECKED							

Modified Bitumen Part 1: General Information
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MBTECHNOLOGY	MBTECHNOLOGY	MBTECHNOLOGY	MFM BUILDING PRODUCTS CORP.	MONSEY BAKOR	MONSEY BAKOR	MONSEY BAKOR	MONSEY BAKOR	MONSEY BAKOR	MONSEY BAKOR
FASTORCH SBS FT-160GWH	FASTORCH SBS FT-120GSA	SF160 PW PREMIUM 250	BITUFLEX PLUS	MODIFIED PLUS G100 s/s [p/s] [p/p]	MODIFIED PLUS NP180s/s [p/s] [p/p]	MODIFIED PLUS NP180gM (T)	MODIFIED PLUS NP250gM4 (T4)	MODIFIED PLUS NP250gT5	MODIFIED PLUS G100gM
SBS	SBS	SBS 160	APP 150	SBS 80	SBS 90	SBS 160	SBS 160	SBS 200	SBS 130
GRANULES	SAND	GRANULES	MODIFIED BITUMEN	SMOOTH	SMOOTH	GRANULE	GRANULE	GRANULE	GRANULE
FIBERGLASS	FIBERGLASS	POLYESTER	POLYESTER	NONWOVEN GLASS	NONWOVEN POLYESTER	NONWOVEN POLYESTER	NONWOVEN POLYESTER	NONWOVEN POLYESTER	NONWOVEN GLASS
VARIOUS	BLACK	VARIOUS	BLACK			BLACK/WHITE/ GREY/BROWN	BLACK/WHITE/ GREY/BROWN	BLACK/WHITE/ GREY/BROWN	BLACK/WHITE/ GREY/BROWN
1.20	0.90	1.07	0.85	0.57	0.57	1.04	1.06	1.20	0.97
NONE		NONE	NONE	GRANULE SHEET	GRANULE SHEET	NONE	NONE	NONE	NONE
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
TORCH	TORCH	HOT MOP OR COLD ADHES	TORCH	HOT MOP	HOT MOP OR TORCH	MOP, TORCH, OR COLD ADHES	MOP, TORCH, OR COLD ADHES	TORCH	HOT MOP OR COLD ADHES
TORCH	TORCH	MOP/CLD ADH	TORCH	MOP/COLD ADH X	MOP/COLD ADH X	MOP/COLD ADH X	MOP/TORCH/ADH X	MOP/TORCH/ADH X	MOP/TORCH/ADH
TO DRAIN	TO DRAIN	TO DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
O	O	O	O	X	X	X	X	X	X
O	O	O	O	X	X	X	X	X	X
O	O	O	O						
O	O	O	O						
O	O	O	O						
O	O	O	O						
O	O	O	O						
O	O	O	O						
O	O	O	O						
O	O	O	O						
O	O	O	O						
O	O	O	O						
O	O	O	O						
O	O	O	O						
O	O	O	O						
O	O	O	O						
NONE	NONE	NONE	NONE	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS
50 – 120	50 – 120	50 – 120	20 – 120	20 – 115	20 – 115	20 – 115	20 – 115	20 – 115	20 – 115
SF160PWH	FT160CWH	SAME	SAME			SAME	SAME	SAME	SAME
MF160WAL	MF160WAL	MATERIAL	MATERIAL			MATERIAL	MATERIAL	MATERIAL	MATERIAL
TORCH	TORCH	HOT ASPHALT	TORCH			MOP, TORCH, OR COLD ADHESIVE	MOP, TORCH, OR COLD ADHESIVE	TORCH	MOP, TORCH, OR COLD ADHESIVE
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
USA	USA	USA	USA	GERMANY	GERMANY	GERMANY	GERMANY	GERMANY	CANADA
USA	USA	USA	USA	CANADA	CANADA	CANADA	CANADA	CANADA	CANADA
1988		1985	1985	1971	1971	1971	1971	1971	1981
				1985	1988	1988	1988	1988	1985
THOUSANDS			250,000	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	THOUSANDS
DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
YES	YES	YES	NO	7	7	7	7	7	7
SALES	SALES	SALES	S FOSTER	NO	NO	NO	NO	NO	NO
MANAGER	MANAGER	MANAGER	S FOSTER	W. MULLEN	W. MULLEN	W. MULLEN	W. MULLEN	W. MULLEN	W. MULLEN
TECHNICAL	TECHNICAL	TECHNICAL		800/523-0268	800/523-0268	800/523-0268	800/523-0268	800/523-0268	800/523-0268
MANAGER	MANAGER	MANAGER		D. TAYLOR	D. TAYLOR	D. TAYLOR	D. TAYLOR	D. TAYLOR	D. TAYLOR
				800/387-9598	800/387-9598	800/387-9598	800/387-9598	800/387-9598	800/387-9598
				X	X	X	X	X	X

Modified Bitumen Part 1: General Information

1. COMPANY NAME	MONSEY BAKOR	MONSEY BAKOR	MONSEY BAKOR	MONSEY BAKOR	MONSEY BAKOR	MONSEY BAKOR	MONSEY BAKOR
2. PRODUCT NAME	MODIFIED PLUS G100gMFR	MODIFIED PLUS NP180gMFR (TFR)	MODIFIED PLUS NP250gMFR (TFR)	MODIFIED PLUS 170 MOP GRANULE	MODIFIED PLUS 170 TORCH GRANULE	MODIFIED PLUS 170 MOP SMOOTH	MODIFIED PLUS 170 TORCH SMOOTH
3. PRODUCT DESCRIPTION A. TYPE OF MODIFIER B. THICKNESS (mils) C. TOP SURFACE D. REINFORCING MATERIAL E. COLOR(S) F. INSTALLED WEIGHT (lbs./ft ² without ballast)	SBS 148 GRANULE NONWOVEN GLASS WHITE/BLACK/ GREY/BROWN 1.15	SBS 160 GRANULE NONWOVEN POLYESTER WHITE/BLACK/ GREY/BROWN 1.25	SBS 160 GRANULE NONWOVEN POLYESTER WHITE/BLACK/ GREY/BROWN 1.25	SBS 160 GRANULE NONWOVEN POLYESTER BLACK/WHITE/ GREY/BROWN NONE	SBS 160 GRANULE NONWOVEN POLYESTER BLACK/WHITE/ GREY/BROWN NONE	SBS 140 SMOOTH NONWOVEN POLYESTER GRAVEL OR REF- LECTIVE COAT.	SBS 140 SMOOTH NONWOVEN POLYESTER GRAVEL OR REF- LECTIVE COAT.
4. KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	NONE	GRAVEL OR REF- LECTIVE COAT.	GRAVEL OR REF- LECTIVE COAT.
5. USE IN: A. NEW ROOFING B. REROOFING	X X	X X	X X	X X	X X	X X	X X
6. FIELD LAP JOINT METHOD	HOT MOP OR COLD ADHES	MOP, TORCH, OR COLD ADHES	MOP, TORCH, OR COLD ADHES	HOT MOP OR COLD ADHES	TORCH	HOT MOP OR COLD ADHES	TORCH
7. TYPES OF ROOF SYSTEMS: A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²) B. PARTIALLY ADHERED (method) C. FULLY ADHERED (method) D. PROTECTED ROOF MEMBRANE ASSEMBLY	MOP/COLD ADH X	MOP/TORCH/ADH X	MOP/TORCH/ADH X	MOP/COLD ADH X	TORCH X	MOP/COLD ADH X	TORCH X
8. MINIMUM SLOPE REQUIRED	POS DRAIN	POS DRAIN	POS DRAIN				
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	X	X	X	X	X	X	X
B. MINERAL FIBER	X	X	X	X	X	X	X
C. POLYSTYRENE	O	O	O	O	O	O	O
D. CELLULAR GLASS	O	O	O	O	O	O	O
E. PHENOLIC							
F. FIBERBOARD	X	X	X	X	O	X	O
G. PERLITE	X	X	X	X	X	X	X
H. POLYISOCYANURATE	O	O	O	O	O	O	O
I. POLYURETHANE	O	O	O	O	O	O	O
J. GYPSUM	O	O	O	O	O	O	O
K. CONCRETE	O	O	O	O	O	O	O
L. WOOD PLANK	O	O	O	O	O	O	O
M. PLYWOOD	X	X	X	X	X	X	X
N. EXISTING BUILT-UP MEMBRANE	O	O	O	O	O	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	SEE SPECS 20 – 115	SEE SPECS 20 – 115	SEE SPECS 20 – 115	SEE SPECS 20 – 115	SEE SPECS 20 – 115	SEE SPECS 20 – 115	SEE SPECS 20 – 115
11. WORKABLE TEMPERATURE RANGE (degrees F)							
12. FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
13. FLASHING METHOD	MOP OR COLD ADHESIVE	MOP, TORCH, OR COLD ADHESIVE	MOP, TORCH, OR COLD ADHESIVE	MOP OR COLD ADHESIVE	TORCH	MOP OR COLD ADHESIVE	TORCH
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO	NO
15. COUNTRY OF: A. ORIGIN B. MANUFACTURE	GERMANY CANADA	GERMANY CANADA	GERMANY CANADA	GERMANY CANADA	GERMANY CANADA	GERMANY CANADA	GERMANY CANADA
16. YEAR OF FIRST COMMERCIAL USE A. OUTSIDE USA B. WITHIN USA	1992	1992	1992	1990 1990	1990 1990	1990 1990	1990 1990
17. NUMBER OF SQUARES INSTALLED (100 ft ²) A. OUTSIDE USA B. WITHIN USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	7	7	7	7	7	7	7
20. LICENSED APPLICATOR AGREEMENT (yes/no)	NO	NO	NO	NO	NO	NO	NO
21. FOR SALES INFORMATION, CONTACT:	W. MULLEN 800/523-0268	W. MULLEN 800/523-0268	W. MULLEN 800/523-0268	W. MULLEN 800/523-0268	W. MULLEN 800/523-0268	W. MULLEN 800/523-0268	W. MULLEN 800/523-0268
22. FOR TECHNICAL INFORMATION, CONTACT:	D. TAYLOR 800/387-9598	D. TAYLOR 800/387-9598	D. TAYLOR 800/387-9598	D. TAYLOR 800/387-9598	D. TAYLOR 800/387-9598	D. TAYLOR 800/387-9598	D. TAYLOR 800/387-9598
23. SEE MEMBRANE APPENDIX IF CHECKED				X	X	X	X

Modified Bitumen Part 1: General Information

MONSEY BAKOR	PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.
MODIFIED PLUS BASE S/S	DERBIGUM-XPS	DERBICOLOR XPS	DERBIGUM XPS FR	DERBICOLOR XPS FR	DERBIGUM GP	DERBICOLOR GP	DERBIGUM GP FR	DERBICOLOR GP FR	DERBIBASE
SBS 56 SMOOTH NONWOVEN GLASS	APP 160 MODIFIED BITUMEN FIBRGLS LAMIN & POLYESTER SCRIM BLACK	APP 160 SLATE FIBRGLS LAMIN & POLYESTER SCRIM VARIOUS	APP 160 MODIFIED BITUMEN FIBRGLS LAMIN & POLYESTER SCRIM BLACK	APP 180 SLATE FIBRGLS LAMIN & POLYESTER SCRIM VARIOUS	APP 150 MODIFIED BITUMEN FIBRGLS MAT & POLYESTER SCRIM BLACK	APP 180 SLATE FIBRGLS MAT & POLYESTER SCRIM VARIOUS	APP 160 MODIFIED BITUMEN FIBRGLS MAT & POLYESTER SCRIM BLACK	APP 180 SLATE FIBRGLS MAT & POLYESTER SCRIM VARIOUS	APP 80 MODIFIED BITUMEN FIBERRGLASS MAT BLACK
GRANULE SHEET	0.95	1.08	0.95	1.08	.93	1.06	.93	1.06	.45
X	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
X	X	X	X	X	X	X	X	X	X
HOT MOP OR COLD ADHES	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH
MOP/COLD ADH X	TRCH OR MASTIC	TRCH OR MASTIC	TRCH OR MASTIC	TRCH OR MASTIC	TRCH OR MASTIC	TRCH OR MASTIC	TRCH OR MASTIC	TRCH OR MASTIC	MECHANICAL TRCH OR MASTIC
	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
X	O	O	O	O	O	O	O	O	X
X	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
X	O	O	O	O	O	O	O	O	X
X	O	O	O	O	O	O	O	O	X
O	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
X	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
SEE SPECS 20 – 115	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120
SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
MOP OR COLD ADHESIVE	TORCH OR MASTIC	TORCH OR MASTIC	TORCH OR MASTIC	TORCH OR MASTIC	TORCH OR MASTIC	TORCH OR MASTIC	TORCH OR MASTIC	TORCH OR MASTIC	MASTIC OR MECHANICAL
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
GERMANY CANADA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA
1990 1990	1981	1993	1993	1994	1978	1993	1994	1994	1993
THOUSANDS									
DISTRIBUTORS 7 NO	DISTR/DIRECT YES	DISTR/DIRECT YES	DISTR/DIRECT YES	DISTR/DIRECT YES	DISTR/DIRECT YES	DISTR/DIRECT YES	DISTR/DIRECT YES	DISTR/DIRECT YES	DISTR/DIRECT YES
W. MULLEN 800/523-0268 D. TAYLOR 800/387-9598	CUST SERVICE 800/722-9872 K. HUNT 800/727-9872	CUST SERVICE 800/722-9872 K. HUNT 800/727-9872	CUST SERVICE 800/722-9872 K. HUNT 800/727-9872	CUST SERVICE 800/722-9872 K. HUNT 800/727-9872	CUST SERVICE 800/722-9872 K. HUNT 800/727-9872	CUST SERVICE 800/722-9872 K. HUNT 800/727-9872	CUST SERVICE 800/722-9872 K. HUNT 800/727-9872	CUST SERVICE 800/722-9872 K. HUNT 800/727-9872	CUST SERVICE 800/722-9872 K. HUNT 800/727-9872
X	X	X	X	X	X	X	X	X	X

Modified Bitumen Part 1: General Information

1. COMPANY NAME	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA
2. PRODUCT NAME	POLYFLEX	POLYFLEX 5	POLYBOND	POLYBOND G	POLYFLEX G	DIAMOND BACK	DUFLEX
3. PRODUCT DESCRIPTION							
A. TYPE OF MODIFIER	APP	APP	APP	APP	APP	APP	APP
B. THICKNESS (mils)	160	200	160	180	180	160	160
C. TOP SURFACE	SMOOTH	SMOOTH	SMOOTH	MINERAL	MINERAL	MINERAL	SMOOTH
D. REINFORCING MATERIAL	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER, FIBERGLASS
E. COLOR(S)	BLACK	BLACK	BLACK	VARIOUS	VARIOUS	BLACK	BLACK
F. INSTALLED WEIGHT (lbs./ft ² without ballast)	0.90	1.10	0.90	1.05	1.05	0.90	0.90
4. KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:							
A. NEW ROOFING	X	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH
7. TYPES OF ROOF SYSTEMS:							
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)							
B. PARTIALLY ADHERED (method)							
C. FULLY ADHERED (method)							
D. PROTECTED ROOF MEMBRANE ASSEMBLY							
8. MINIMUM SLOPE REQUIRED	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	O	O	O	O	O	O	O
B. MINERAL FIBER	O	O	O	O	O	O	O
C. POLYSTYRENE	O	O	O	O	O	O	O
D. CELLULAR GLASS	O	O	O	O	O	O	O
E. PHENOLIC	O	O	O	O	O	O	O
F. FIBERBOARD	O	O	O	O	O	O	O
G. PERLITE	O	O	O	O	O	O	O
H. POLYISOCYANURATE	O	O	O	O	O	O	O
I. POLYURETHANE	O	O	O	O	O	O	O
J. GYPSUM	O	O	O	O	O	O	O
K. CONCRETE	X	X	X	X	X	X	X
L. WOOD PLANK	O	O	O	O	O	O	O
M. PLYWOOD	O	O	O	O	O	O	O
N. EXISTING BUILT-UP MEMBRANE	X	X	X	X	X	X	X
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120
12. FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	POLYFLEX	POLYFLEX	SAME MATERIAL
13. FLASHING METHOD	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES	YES
15. COUNTRY OF:							
A. ORIGIN	ITALY	ITALY	ITALY	ITALY	ITALY	ITALY	ITALY
B. MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE							
A. OUTSIDE USA	1961	1961	1961	1961	1961	1961	1961
B. WITHIN USA	1991	1991	1991	1991	1991	1991	1991
17. NUMBER OF SQUARES INSTALLED (100 ft ²)							
A. OUTSIDE USA	100 MILLION	100 MILLION	80 MILLION	10 MILLION	MILLIONS	MILLIONS	MILLIONS
B. WITHIN USA	3 MILLION	1 MILLION	200,000	50,000	MILLIONS	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	1	1	1	1	1	1	1
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782
22. FOR TECHNICAL INFORMATION, CONTACT:	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782
23. SEE MEMBRANE APPENDIX IF CHECKED							

Modified Bitumen Part 1: General Information
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Modified Bitumen Part 1: General Information

1. COMPANY NAME	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA
2. PRODUCT NAME	ELASTOSHIELD TS4	ELASTOFLEX S6	ELASTOFLEX GS-6	ELASTOFLEX G S6-FR	ELASTOBASE	ELASTOBASE POLY	MODIBASE
3. PRODUCT DESCRIPTION							
A. TYPE OF MODIFIER	SBS	SBS	SBS	SBS	SBS	SBS	SBS
B. THICKNESS (mils)	180	120	140	140	80	80	60
C. TOP SURFACE	MINERAL	SMOOTH	MINERAL	MINERAL	SMOOTH	SMOOTH	SMOOTH
D. REINFORCING MATERIAL	POLYESTER	POLYESTER	POLYESTER	POLYESTER	FIBERGLASS	POLYESTER	FIBERGLASS
E. COLOR(S)	VARIOUS	BLACK	VARIOUS	VARIOUS	BLACK	BLACK	BLACK
F. INSTALLED WEIGHT (lbs./ft ² without ballast)	1.05	.80	.85	.85	.80	.80	.60
4. KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:							
A. NEW ROOFING	X	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HOT/ TORCH	HOT	HOT	HOT	HOT/COLD/ MECHANICAL	HOT/COLD/ MECHANICAL	HOT/COLD/ MECHANICAL
7. TYPES OF ROOF SYSTEMS:							
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)							
B. PARTIALLY ADHERED (method)					MECHANICAL	MECHANICAL	MECHANICAL
C. FULLY ADHERED (method)	HOT/TORCH	HOT	HOT	HOT	HOT/COLD	HOT/COLD	HOT/COLD
D. PROTECTED ROOF MEMBRANE ASSEMBLY	X	X	X	X	X	X	X
8. MINIMUM SLOPE REQUIRED	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	O	O	O	O	X	X	X
B. MINERAL FIBER	O	O	O	O	X	X	X
C. POLYSTYRENE	O	O	O	O	X	X	X
D. CELLULAR GLASS	O	O	O	O	X	X	X
E. PHENOLIC	O	O	O	O	X	X	X
F. FIBERBOARD	O	O	O	O	X	X	X
G. PERLITE	O	O	O	O	X	X	X
H. POLYISOCYANURATE	O	O	O	O	X	X	X
I. POLYURETHANE	O	O	O	O	X	X	X
J. GYPSUM	O	O	O	O	X	X	X
K. CONCRETE	O	O	O	O	X	X	X
L. WOOD PLANK	O	O	O	O	X	X	X
M. PLYWOOD	O	O	O	O	X	X	X
N. EXISTING BUILT-UP MEMBRANE	O	O	O	O	X	X	X
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120
12. FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
13. FLASHING METHOD	HOT	HOT	HOT	HOT	HOT/COLD	HOT/COLD	TORCH
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES	YES
15. COUNTRY OF:							
A. ORIGIN	ITALY	ITALY	ITALY	ITALY	ITALY	ITALY	ITALY
B. MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE							
A. OUTSIDE USA	1961	1961	1961	1961	1961	1961	1961
B. WITHIN USA	1991	1991	1991	1991	1991	1991	1991
17. NUMBER OF SQUARES INSTALLED (100 ft ²)							
A. OUTSIDE USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
B. WITHIN USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	1	1	1	1	1	1	1
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782
22. FOR TECHNICAL INFORMATION, CONTACT:	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782
23. SEE MEMBRANE APPENDIX IF CHECKED							

Modified Bitumen Part 1: General Information

POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.
ELASTOFLEX V	ELASTOFLEX VG	ELASTOFLEX VG-FR	DYNAKAP	DYNAKAP FR	DYNAGLAS	DYNAPLY	DYNAGLAS FR	DYNALASTIC 250	DYNALASTIC 180
SBS 120 SMOOTH	SBS 140 MINERAL	SBS 140 MINERAL	SBS 160 GRANULE	SBS 160 GRANULE	SBS 150 GRANULE	SBS 125 SAND	SBS 150 GRANULE	SBS 158 GRANULE	SBS 150 GRANULE
FIBERGLASS	FIBERGLASS	FIBERGLASS	FIBERGLASS & POLYESTER	FIBERGLASS & POLYESTER	FIBERGLASS	FIBERGLASS & POLYESTER	FIBERGLASS	POLYESTER	POLYESTER
BLACK	VARIOUS	VARIOUS	WHITE/BLACK	WHITE/BLACK	WHITE/BLACK	BLACK	WHITE/BLACK	WHITE/BLACK	WHITE/BLACK/ TAN
.80	.90	.90	1.10	1.10	0.88	0.78	0.88	0.96	0.88
NONE	NONE	NONE	NONE	NONE	NONE	ASPHALT & GRAVEL	NONE	NONE	NONE
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
HOT	HOT	HOT	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES
HOT	HOT	HOT	HOT OR COLD	HOT OR COLD	HOT OR COLD	HOT OR COLD	HOT OR COLD	HOT OR COLD	HOT OR COLD
X	X	X	X	X	X	X	X	X	X
POS DRAIN	POS DRAIN	POS DRAIN	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"
O	O	O	X	X	X	X	X	X	X
O	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
O	O	O	X	X	X	X	X	X	X
O	O	O	X	X	X	X	X	X	X
O	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
O	O	O	X	X	X	X	X	X	X
O	O	O	X	X	X	X	X	X	X
O	O	O	X	X	X	X	X	X	X
O	O	O	X	X	X	X	X	X	X
O	O	O	O	O	O	O	O	O	O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
40 – 120	40 – 120	40 – 120	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX
SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	HOT MOP OR MEMB. FLASH- ING CEMENT	HOT MOP OR MEMB. FLASH- ING CEMENT	HOT MOP OR MEMB. FLASH- ING CEMENT	HOT MOP OR MEMB. FLASH- ING CEMENT	HOT MOP OR MEMB. FLASH- ING CEMENT	HOT MOP OR MEMB. FLASH- ING CEMENT	HOT MOP OR MEMB. FLASH- ING CEMENT
HOT	HOT	HOT	NO	NO	NO	NO	NO	NO	NO
YES	YES	YES	NO	NO	NO	NO	NO	NO	NO
ITALY USA	ITALY USA	ITALY USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA
1961 1991	1961 1991	1961 1991	1983	1986	1987	1987	1988	1995	1993
THOUSANDS THOUSANDS	THOUSANDS THOUSANDS	THOUSANDS THOUSANDS	MILLIONS	MILLIONS	MILLIONS	100,000	MILLIONS	10,000	THOUSANDS
DISTRIBUTORS 1	DISTRIBUTORS 1	DISTRIBUTORS 1	DISTRIBUTORS 5	DISTRIBUTORS 5	DISTRIBUTORS 5	DISTRIBUTORS 5	DISTRIBUTORS 5	DISTRIBUTORS 5	DISTRIBUTORS 5
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
800/222-9782	800/222-9782	800/222-9782	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE
800/222-9782	800/222-9782	800/222-9782	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES

Modified Bitumen Part 1: General Information

1. COMPANY NAME	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.
2. PRODUCT NAME	DYNALASTIC 180 FR	DYNAGLAS 30 FR	DYNABASE	DYNALASTIC 180 S	SBS 170	DYNALASTIC 250 FR	DYNAMAX
3. PRODUCT DESCRIPTION							
A. TYPE OF MODIFIER	SBS	SBS	SBS	SBS	SBS	SBS	SBS
B. THICKNESS (mils)	150	125	100	118	145	160	160
C. TOP SURFACE	GRANULE	GRANULE	GRANULE	GRANULE	GRANULE	GRANULE	GRANULE
D. REINFORCING MATERIAL	POLYESTER	FIBERGLASS	FIBERGLASS	POLYESTER	POLYESTER	POLYESTER	FIBERGLASS POLYESTER
E. COLOR(S)	WHITE/BLACK	WHITE/BLACK	BLACK	BLACK	WHITE/BLACK/TAN	WHITE/BLACK	WHITE/BLACK
F. INSTALLED WEIGHT (lbs./ft ² without ballast)	0.88	0.78	0.58	0.80	0.85	1.06	1.16
4. KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	CAP SHEET	CAP SHEET	NONE	NONE	NONE
5. USE IN:							
A. NEW ROOFING	X	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES
7. TYPES OF ROOF SYSTEMS:							
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)							
B. PARTIALLY ADHERED (method)							
C. FULLY ADHERED (method)	HOT OR COLD	HOT OR COLD	HOT OR COLD	HOT OR COLD	HOT OR COLD	HOT OR COLD	HOT OR COLD
D. PROTECTED ROOF MEMBRANE ASSEMBLY	X	X					
8. MINIMUM SLOPE REQUIRED	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	X	X	X	X	X	X	X
B. MINERAL FIBER	O	O	O	O	O	O	O
C. POLYSTYRENE	O	O	O	O	O	O	O
D. CELLULAR GLASS	O	O	O	O	O	O	O
E. PHENOLIC							
F. FIBERBOARD	X	X	X	X	X	X	X
G. PERLITE	X	X	X	X	X	X	X
H. POLYISOCYANURATE	O	O	O	O	O	O	O
I. POLYURETHANE	O	O	O	O	O	O	O
J. GYPSUM	X	X	X	X	X	X	X
K. CONCRETE	X	X	X	X	X	X	X
L. WOOD PLANK	X	X	X	X	X	X	X
M. PLYWOOD	X	X	X	X	X	X	X
N. EXISTING BUILT-UP MEMBRANE	O	O	O	O	O	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)							
12. FLASHING MATERIAL	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX
13. FLASHING METHOD	HOT MOP OR MEMB. FLASHING CEMENT	HOT MOP OR COLD FLASHING CEMENT	HOT MOP OR MEMB. FLASHING CEMENT	HOT MOP OR MEMB. FLASHING CEMENT	HOT MOP OR MEMB. FLASHING CEMENT	HOT MOP OR MEMB. FLASHING CEMENT	HOT MOP OR MEMB. FLASHING CEMENT
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO	NO
15. COUNTRY OF:							
A. ORIGIN	USA	USA	USA	USA	USA	USA	USA
B. MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE							
A. OUTSIDE USA							
B. WITHIN USA	1994	1993	1987	1979	1979	1996	1995
17. NUMBER OF SQUARES INSTALLED (100 ft ²)							
A. OUTSIDE USA							
B. WITHIN USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS					DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	5	5	5	5	5	5	5
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	DIST OFFICE	DIST OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE
22. FOR TECHNICAL INFORMATION, CONTACT:	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES
23. SEE MEMBRANE APPENDIX IF CHECKED							

Modified Bitumen Part 1: General Information

SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.
DYNAMAX FR	SCHULLER APPEX 5S	SCHULLER APPEX 4S	SCHULLER APPEX 4M	SCHULLER APPEX 4M FR	SCHULLER APPEX 200	BLACK BEAR	CLASSIC MINERAL	CLASSIC FR	TRICOR-M FR
SBS 160 GRANULE	APP 200 SMOOTH	APP 160 SMOOTH	APP 160 MINERAL	APP 160 MINERAL	APP 160 SMOOTH	APP 160 MINERAL	160 MINERAL	160 SMOOTH OR GRANULAR POLYESTER	APP 180 MINERAL
FIBERGLASS POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	LAMINATED GLASS FIBER/ POLYESTER
WHITE/BLACK	BLACK	BLACK	GREY/WHITE	GREY/WHITE	BLACK	BLACK	BLACK AND WHITE	BLACK AND WHITE	GRAY/WHITE
1.16	1.10	0.90	0.95	0.95	0.90	0.95	0.95	0.95	1.0
NONE	ALUMINUM OR AGGREGATE	ALUMINUM OR AGGREGATE	NONE	NONE	ALUMINUM OR AGGREGATE	NONE	NONE	NONE	NONE
X	X	X	X	X	X	X	X	X	X
HOT MOP OR COLD ADHES	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	MOP, TORCH, OR CLD ADHES	MOP, TORCH, OR CLD ADHES	TORCH
	10	10			10				10
HOT OR COLD	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	MOP/COLD ADHES	MOP/COLD ADHES	TORCH
1/8"	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
X	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
X	O	O	O	O	O	O	O	O	O
X	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
X	O	O	O	O	O	O	O	O	O
X	O	O	O	O	O	O	O	O	O
X	O	O	O	O	O	O	O	O	O
X	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
X	O	O	O	O	O	O	O	O	O
X	O	O	O	O	O	O	O	O	O
X	O	O	O	O	O	O	O	O	O
X	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O	O	O
NONE	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 30 – 120	NONE 30 – 120	NONE 40 – 120
DYNAFLEX	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL OR SCHULLER APPEX 4S	SAME MATERIAL OR SCHULLER APPEX 4S	SAME MATERIAL	SAME MATERIAL OR SCHULLER APPEX 4S	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
HOT MOP OR MEMB. FLASH-ING CEMENT	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	MOP, TORCH, COLD ADHESIVE	MOP, TORCH, COLD ADHESIVE	TORCH
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
USA	USA	USA	USA	USA	USA	USA	USA	USA	USA
1995	1967 1979	1967 1979	1967 1979	1967 1990	1967 1979	1991	1989	1989	1994
THOUSANDS	190,000 55,000	83,400,000 8,000,000	18,350,000 600,000	12,000 50,000	400,000 400,000	50,000	60,000	15,000	
DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
5	8	8	8	8	8	8	8	8	8
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES

Modified Bitumen Part 1: General Information

1. COMPANY NAME	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SIPLAST, INC.
2. PRODUCT NAME	TRICOR	BICOR	SCHULLER APPEX 4.5M	SCHULLER APPEX 4.5M FR	CLASSIC SMOOTH	CLASSIC FR PREMIUM	PARADIENE 20
3. PRODUCT DESCRIPTION A. TYPE OF MODIFIER B. THICKNESS (mils) C. TOP SURFACE D. REINFORCING MATERIAL E. COLOR(S) F. INSTALLED WEIGHT (lbs./ft ² without ballast)	APP 160 SMOOTH LAMINATED GLASS FIBER/ POLYESTER BLACK 0.95	APP 160 SMOOTH FIBERGLASS AND POLYESTER BLACK 0.95	APP 160 MINERAL POLYESTER GRAY/WHITE 1.05	APP 160 MINERAL POLYESTER GRAY/WHITE 1.12	PAO 160 SMOOTH POLYESTER BLACK 0.90	PAO 160 SMOOTH OR GRANULAR POLYESTER BLACK/WHITE 0.95	SBS 91 PLAIN GLASS MAT BLACK 0.60
4. KINDS OF FIELD SURFACING REQUIRED	ALUMINUM OR AGGREGATE	ALUMINUM OR AGGREGATE	NONE	NONE	ALUMINUM OR AGGREGATE	NONE	PARADIENE 30
5. USE IN: A. NEW ROOFING B. REROOFING	X X	X X	X X	X X	X X	X X	X X
6. FIELD LAP JOINT METHOD	TORCH	TORCH	TORCH	TORCH	MOP OR COLD ADHES	MOP OR COLD ADHES	HOT MOP
7. TYPES OF ROOF SYSTEMS: A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²) B. PARTIALLY ADHERED (method) C. FULLY ADHERED (method) D. PROTECTED ROOF MEMBRANE ASSEMBLY	TORCH/COLD X	TORCH/COLD X	TORCH X	TORCH X	MOP/COLD ADHES X	MOP/COLD ADHES X	HOT MOP HOT MOP X
8. MINIMUM SLOPE REQUIRED	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	DEAD LEVEL
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	O	O	O	O	O	O	X
B. MINERAL FIBER	O	O	O	O	O	O	X
C. POLYSTYRENE	O	O	O	O	O	O	O
D. CELLULAR GLASS	O	O	O	O	O	O	X
E. PHENOLIC	O	O	O	O	O	O	O
F. FIBERBOARD	O	O	O	O	O	O	X
G. PERLITE	O	O	O	O	O	O	X
H. POLYISOCYANURATE	O	O	O	O	O	O	X
I. POLYURETHANE							O
J. GYPSUM	X	X	O	O	X	X	O
K. CONCRETE	O	O	X	O	O	O	O
L. WOOD PLANK	O	O	O	O	O	O	O
M. PLYWOOD	O	O	O	O	O	O	O
N. EXISTING BUILT-UP MEMBRANE	X	X	O	O	X	X	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	
11. WORKABLE TEMPERATURE RANGE (degrees F)	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120
12. FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL OR SCHULLER APPEX 4S	SAME MATERIAL OR SCHULLER APPEX 4S	SAME MATERIAL		
13. FLASHING METHOD	TORCH	TORCH	TORCH	TORCH	HOT MOP, TORCH, OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO	NO
15. COUNTRY OF: A. ORIGIN B. MANUFACTURE	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	FRANCE USA
16. YEAR OF FIRST COMMERCIAL USE A. OUTSIDE USA B. WITHIN USA	1994	1994	1994	1994	1994	1994	1968 1979
17. NUMBER OF SQUARES INSTALLED (100 ft ²) A. OUTSIDE USA B. WITHIN USA			5,000	5,000	25,000		
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DIRECT
19. NUMBER OF REGIONAL LOCATIONS	8	8	8	8	8	8	9
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	J. MOLLENHOFF 214/869-0070
22. FOR TECHNICAL INFORMATION, CONTACT:							K. WOLFORD 214/869-0070
23. SEE MEMBRANE APPENDIX IF CHECKED							X

Modified Bitumen Part 1: General Information

SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.
PARADIENE 20 HT	PARADIENE 20 PR	PARADIENE 20 EG	PARADIENE-30	PARADIENE 30 HT	PARATECH	PARADIENE 40 FR	PARAFOR 50 LT	VERAL (ALUM FACED)	VERAL (COPPER)
SBS 91 PLAIN	SBS 91 PLAIN	SBS 118 PLAIN	SBS 130 MINERAL	SBS 130 MINERAL	SBS 140 MINERAL	SBS 150 MINERAL	SBS 180 MINERAL	SBS 134 ALUMINUM	SBS 134 COPPER
GLASS MAT, GLASS SCRIM	GLASS SCRIM, POLYESTER	FIBERGLASS MAT, SCRIM	GLASS MAT	GLASS MAT, GLASS SCRIM	GLASS MAT, GLASS SCRIM	GLASS MAT, GLASS SCRIM	POLYESTER, GLASS SCRIM	GLASS SCRIM	GLASS SCRIM
BLACK	BLACK	BLACK	VARIOUS	VARIOUS	VARIOUS	VARIOUS	VARIOUS	ALUMINUM	COPPER
0.60	0.60	0.90	0.90	0.90	1.12	1.12	1.47	0.90	1.05
PARADIENE 30	PARADIENE 30	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
X X	X X	X X	X X	X X	X X	X X	X X	X X	X X
HOT MOP	HOT MOP	HOT MOP	HOT MOP	HOT MOP	HOT MOP	HOT MOP	HOT MOP OR TORCH	HOT MOP OR TORCH	HOT MOP OR TORCH
HOT MOP HOT MOP X	HOT MOP HOT MOP X	HOT MOP	HOT MOP X	HOT MOP X	HOT MOP X	HOT MOP X	MOP OR TORCH	MOP OR TORCH	MOP OR TORCH
DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	1/8"	1/4"	1/2"	1/2"	1/2 "
X X O X O X X X O O O O O O O	X X O X O X X X O O O O O O O	X X O X O X X X O O O O O O O	X X O X O X X X O O O O O O O	X X O X O X X X O O O O O O O	X X O X O X X X O O O O O O O	X X O X O X X X O O O O O O O	X X O X O X X X O O O O O O O	X X O X O X X X O O O O O O O	X X O X O X X X O O O O O O O
NONE 40 – 120	40 – 120	40 – 120	NONE 40 – 120 VERAL	NONE 40 – 120 VERAL	40 – 120 SAME MATERIAL	40 – 120 VERAL	NONE 40 – 120 SAME/VERAL	40 – 120 SAME MATERIAL	40 – 120 SAME MATERIAL
TORCH		TORCH	TORCH	TORCH	TORCH OR HOT MOP	TORCH	TORCH	TORCH	TORCH
NO	NO		NO	NO	NO	NO	NO	NO	NO
FRANCE USA	FRANCE USA	USA USA	FRANCE USA	FRANCE USA	USA USA	FRANCE USA	FRANCE USA	FRANCE USA	FRANCE USA
			1968 1979		1988				
DIRECT 9 YES	DIRECT 9 YES	DIRECT 9 YES	DIRECT 9 YES	DIRECT 9 YES	DIRECT 9 YES	DIRECT 9 YES	DIRECT 9 YES	DIRECT 9 YES	DIRECT 9 YES
J. MOLLENHOFF 214/869-0070 K. WOLFORD 214/869-0070	J. MOLLENHOFF 214/869-0070 K. WOLFORD 214/869-0070	J. MOLLENHOFF 214/869-0070 K. WOLFORD 214/869-0070	J. MOLLENHOFF 214/869-0070 K. WOLFORD 214/869-0070	J. MOLLENHOFF 214/869-0070 K. WOLFORD 214/869-0070	J. MOLLENHOFF 214/869-0070 K. WOLFORD 214/869-0070	J. MOLLENHOFF 214/869-0070 K. WOLFORD 214/869-0070	J. MOLLENHOFF 214/869-0070 K. WOLFORD 214/869-0070	J. MOLLENHOFF 214/869-0070 K. WOLFORD 214/869-0070	J. MOLLENHOFF 214/869-0070 K. WOLFORD 214/869-0070
X	X	X	X	X	X	X	X	X	X

Modified Bitumen Part 1: General Information

1. COMPANY NAME	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.
2. PRODUCT NAME	VERAL (STAINLESS STEEL)	VERAL SPECTRA	PARDIENE 20 HV	SOPRALENE 180	SOPRALENE FLAM 180	SOPRALENE 180 GRANULES	SOPRALENE FLAM 180 GRANULES
3. PRODUCT DESCRIPTION A. TYPE OF MODIFIER B. THICKNESS (mils) C. TOP SURFACE D. REINFORCING MATERIAL E. COLOR(S) F. INSTALLED WEIGHT (lbs./ft ² without ballast)	SBS 134 STAINLESS STEEL GLASS SCRIM STAIN/STEEL 0.90	SBS 134 DURAMAT COAT-ED ALUMINUM GLASS SCRIM VARIOUS	SBS 118 PLAIN GLASS MAT BLACK 0.90	SBS 120 SAND NONWOVEN POLYESTER BLACK 0.80	SBS 120 PLASTIC FILM NONWOVEN POLYESTER BLACK 0.77	SBS 160 CERAMIC GRANULES NONWOVEN POLYESTER VARIOUS 1.05	SBS 160 CERAMIC GRANULES NONWOVEN POLYESTER VARIOUS 1.16
4. KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	PARADIENE 30	GRAVEL ALUMINUM	GRAVEL ALUMINUM	NONE	NONE
5. USE IN: A. NEW ROOFING B. REROOFING	X X	X X	X X	X X	X X	X X	X X
6. FIELD LAP JOINT METHOD	HOT MOP OR TORCH	TORCH	HOT MOP	MOP OR COLD ADHESIVE	TORCH	MOP OR COLD ADHESIVE	TORCH
7. TYPES OF ROOF SYSTEMS: A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²) B. PARTIALLY ADHERED (method) C. FULLY ADHERED (method) D. PROTECTED ROOF MEMBRANE ASSEMBLY	MOP OR TORCH	TORCH	HOT MOP HOT MOP	MOP OR ADHES X	TORCH X	MOP OR ADHES X	TORCH X
8. MINIMUM SLOPE REQUIRED	1/2 "	1/2 "	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	X	X	X	X	X	O	O
B. MINERAL FIBER	X	X	X	X	X	O	O
C. POLYSTYRENE	O	O	O	O	O	O	O
D. CELLULAR GLASS	X	O	O	X	X	O	O
E. PHENOLIC	O	O	O	O	O	O	O
F. FIBERBOARD	X	X	X	X	X	O	O
G. PERLITE	X	X	X	X	X	O	O
H. POLYISOCYANURATE	X	X	X	O	O	O	O
I. POLYURETHANE	O	O	O	O	O	O	O
J. GYPSUM	O	O	O	X	X	O	X
K. CONCRETE	O	O	O	X	X	O	O
L. WOOD PLANK	O	O	O	O	O	O	O
M. PLYWOOD	O	O	O	O	O	O	O
N. EXISTING BUILT-UP MEMBRANE	O	O	O	O	O	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)				NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	40 – 120	40 – 120	40 – 120	35 – 120	35 – 120	35 – 120	35 – 120
12. FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL		SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
13. FLASHING METHOD	TORCH	TORCH		TORCH OR HOT MOP	TORCH	TORCH OR HOT MOP	TORCH
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO		YES	YES	YES	YES
15. COUNTRY OF: A. ORIGIN B. MANUFACTURE	FRANCE FRANCE	FRANCE USA	USA USA	FRANCE USA, CANADA	FRANCE USA, CANADA	FRANCE USA, CANADA	FRANCE USA, CANADA
16. YEAR OF FIRST COMMERCIAL USE A. OUTSIDE USA B. WITHIN USA				1975 1984	1975 1984	1975 1984	1975 1984
17. NUMBER OF SQUARES INSTALLED (100 ft ²) A. OUTSIDE USA B. WITHIN USA				MILLIONS	MILLIONS	MILLIONS	MILLIONS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DIRECT	DIRECT	DISTR,DIRECT	DISTR,DIRECT	DISTR,DIRECT	DISTR,DIRECT
19. NUMBER OF REGIONAL LOCATIONS	9	9	9	5	5	5	5
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	J. MOLLENHOFF 214/869-0070	J. MOLLENHOFF 214/869-0070	J. MOLLENHOFF 214/869-0070	M. GAY 800/356-3521	M. GAY 800/356-3521	M. GAY 800/356-3521	M. GAY 800/356-3521
22. FOR TECHNICAL INFORMATION, CONTACT:	K. WOLFORD 214/869-0070	K. WOLFORD 214/869-0070	K. WOLFORD 214/869-0070	C. HALLENBECK 330/334-0066	C. HALLENBECK 330/334-0066	C. HALLENBECK 330/334-0066	C. HALLENBECK 330/334-0066
23. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X				

Modified Bitumen Part 1: General Information

[illegible]

Modified Bitumen Part 1: General Information

1. COMPANY NAME	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.
2. PRODUCT NAME	ELASTOPHENE FLAM GRANULES	ELASTOPHENE PS	ELASTOPHENE 180	ELASTOPHENE 180 PS	ELASTOPHENE FLAM GRANULES FR	ELASTOPHENE GRANULES FR	SOPRALAST 50 TV ALU
3. PRODUCT DESCRIPTION A. TYPE OF MODIFIER B. THICKNESS (mils) C. TOP SURFACE D. REINFORCING MATERIAL E. COLOR(S) F. INSTALLED WEIGHT (lbs./ft ² without ballast)	SBS 148 CERAMIC GRANULES FIBERGLASS VARIOUS	SBS 90 PLASTIC FILM FIBERGLASS BLACK	SBS 90 PLAIN BLACK	SBS 90 SAND BLACK	SBS 148 CERAMIC GRANULES FIBERGLASS VARIOUS	SBS 136 CERAMIC GRANULES FIBERGLASS VARIOUS	SBS 168 ALUMINUM FIBERGLASS ALUMINUM
4. KINDS OF FIELD SURFACING REQUIRED	NONE	ELASTOPHENE OR SOPRALENE GRAN	ELASTOPHENE OR SOPRALENE GRAN	ELASTOPHENE OR SOPRALENE GRAN	NONE	NONE	NONE
5. USE IN: A. NEW ROOFING B. REROOFING	X X	X X	X X	X X	X X	X X	X X
6. FIELD LAP JOINT METHOD	TORCH	HOT MOP	MOP OR COLD ADHESIVE	HOT MOP	TORCH	HOT MOP	TORCH
7. TYPES OF ROOF SYSTEMS: A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²) B. PARTIALLY ADHERED (method) C. FULLY ADHERED (method) D. PROTECTED ROOF MEMBRANE ASSEMBLY	TORCH	MOP	MOP OR ADHESIVE	MOP OR TORCH	TORCH	HOT MOP	TORCH
8. MINIMUM SLOPE REQUIRED	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	1/2"
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	O	O	X O	O	O	O	O
B. MINERAL FIBER	O	X O	X O	X O	O	O	O
C. POLYSTYRENE	O	O	O	O	O	O	O
D. CELLULAR GLASS	O	X O	X O	X O	O	O	O
E. PHENOLIC							
F. FIBERBOARD	O	O	O	X O	O	O	O
G. PERLITE	O	X O	X O	X O	O	O	O
H. POLYISOCYANURATE	O	O	O	O	O	O	O
I. POLYURETHANE	O	O	O	O	O	O	O
J. GYPSUM	O	X O	X O	X O	O	O	O
K. CONCRETE	O	X O	X O	X O	O	O	O
L. WOOD PLANK	O	O	O	O	O	O	O
M. PLYWOOD	O	O	O	O	O	O	O
N. EXISTING BUILT-UP MEMBRANE	X O	X O	O	O	O	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	0 – 120	0 – 120	0 – 120	0 – 120	0 – 120	35 – 120	0 – 120
12. FLASHING MATERIAL	SOPRALENE	SOPRALENE	SAME MATL OR SOPRALENE	SAME MATL OR SOPRALENE	ALUMINUM	ALUMINUM OR SOPRALENE	SAME MATERIAL
13. FLASHING METHOD	HOT MOP OR TORCH	HOT MOP OR TORCH	HOT MOP OR TORCH	HOT MOP OR TORCH	TORCH	TORCH OR HOT MOP	TORCH
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES	YES
15. COUNTRY OF: A. ORIGIN B. MANUFACTURE	FRANCE USA, CANADA	FRANCE USA, CANADA	FRANCE USA, CANADA	FRANCE USA, CANADA	FRANCE USA, CANADA	FRANCE USA, CANADA	FRANCE USA
16. YEAR OF FIRST COMMERCIAL USE A. OUTSIDE USA B. WITHIN USA	1972 1984	1972 1984	1972 1984	1972 1984	1972 1984	1975 1985	1985
17. NUMBER OF SQUARES INSTALLED (100 ft ²) A. OUTSIDE USA B. WITHIN USA	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT
19. NUMBER OF REGIONAL LOCATIONS	5	5	5	5	5	5	5
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	M. GAY 800/356-3521	M. GAY 800/356-3521	M. GAY 800/356-3521	M. GAY 800/356-3521	M. GAY 800/356-3521	M. GAY 800/356-3521	M. GAY 800/356-3521
22. FOR TECHNICAL INFORMATION, CONTACT:	C. HALLENBECK 330/334-0066	C. HALLENBECK 330/334-0066	C. HALLENBECK 330/334-0066	C. HALLENBECK 330/334-0066	C. HALLENBECK 330/334-0066	C. HALLENBECK 330/334-0066	C. HALLENBECK 330/334-0066
23. SEE MEMBRANE APPENDIX IF CHECKED							

Modified Bitumen Part 1: General Information

SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOUTH- WESTERN PETROLEUM CORPORATION	SOUTH- WESTERN PETROLEUM CORPORATION	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.
SOPRALAST TV COPPER	SOPRALAST TV STAINLESS	SOPRAFIX	SOPRALENE 350 PS	SOPRALENE 180 SP 3.5 mm	ELASTOPHENE HD	SWEPCO UNI+SHIELD SYS 302	SWEPCO UNI+SHIELD II SYS 303	AWAPLAN PREMIUM	AWAPLAN 170
SBS 140 COPPER FIBERGLASS COPPER 0.93 NONE	SBS 160 STAINLESS FIBERGLASS STAINLESS 01.15 NONE	SBS 120 PLASTIC FILM POLYESTER BLACK 0.80 GRAVEL ALUMINUM	SBS 160 PLASTIC FILM POLYESTER BLACK 1.06 GRAVEL ALUMINUM	SBS 140 SANDED POLYESTER BLACK GRAVEL ALUMINUM	SBS 120 SANDED FIBERGLASS BLACK GRAVEL ALUMINUM	APP 160 MODIFIED ASPHALT POLYESTER BLACK 0.90 SWEPCO COATING	SBS 53 MODIFIED ASPHALT POLYESTER BLACK 0.33 SWEPCO COATING	SBS 155 GRANULE POLYESTER VARIOUS 1.04 NONE	SBS 154 GRANULE POLYESTER VARIOUS 0.99 NONE
X X	X X	X X	X X	X X	X X	X X	X X	X X	X X
TORCH	TORCH	TORCH	HOT MOP	TORCH	HOT MOP	TORCH	COLD ADHESIVE	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES
TORCH	TORCH	MECH ATTACH	HOT MOP	TORCH	HOT MOP	TORCH TORCH	COLD ADHES	HOT MOP/COLD	HOT MOP/COLD
1/2"	1/2"	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	1/4"	1/4"	POS DRAIN	POS DRAIN
O O O O	O O O O	X O O O	X O O O	X O O O	X O O O	O X O X	X O X O	X X O X	X X O X
O O O O	O O O O	X O O O	X O O O	X O O O	X O O O	O O O O	O O O O	X X O X	X X O X
O O O O	O O O O	X O O O	X O O O	X O O O	X O O O	O O O O	O O O O	X X O X	X X O X
O O O O	O O O O	X O O O	X O O O	X O O O	X O O O	O O O O	O O O O	X X O X	X X O X
O O O O	O O O O	X O O O	X O O O	X O O O	X O O O	O O O O	O O O O	X X O X	X X O X
O O O O	O O O O	X O O O	X O O O	X O O O	X O O O	O O O O	O O O O	X X O X	X X O X
NONE 0 – 120 SAME MATERIAL TORCH YES	NONE 0 – 120 SAME MATERIAL TORCH YES	NONE 0 – 120 SOPRALENE TORCH	NONE 0 – 120 SOPRALENE TORCH	NONE 0 – 120 SOPRALENE TORCH	NONE 35 – 120 SOPRALENE TORCH	NONE 5 – 125 SAME MATERIAL TORCH NO	NONE 40 – 125 SAME MATERIAL COLD ADHESIVE NO	NONE SAME MATERIAL OR VERSA- FLASH HOT MOP OR COLD ADHESIVE NO	NONE SAME MATERIAL OR VERSA- FLASH HOT MOP OR COLD ADHESIVE NO
FRANCE USA	FRANCE USA	FRANCE USA	FRANCE USA	FRANCE USA	FRANCE USA	USA	USA USA	W GERMANY USA	W GERMANY USA
1985	1975	1975 1984	1975 1993	1975 1985	1975 1985	1963 1981	1990 1993	1970 1978	1986
MILLIONS DISTRSDIRECT 5 YES	MILLIONS DISTRSDIRECT 5 YES	MILLIONS DISTRSDIRECT 5 YES	MILLIONS DISTRSDIRECT 5 YES	MILLIONS DISTRSDIRECT 5 YES	MILLIONS DISTRSDIRECT 5 YES	100,000 + DIRECT NO	10,000 + DIRECT NO	DISTRIBUTORS 13 YES	DISTRIBUTORS 13 YES
M. GAY 800/356-3521 C. HALLENBECK 330/334-0066	M. GAY 800/356-3521 C. HALLENBECK 330/334-0066	M. GAY 800/356-3521 C. HALLENBECK 330/334-0066	M. GAY 800/356-3521 C. HALLENBECK 330/334-0066	M. GAY 800/356-3521 C. HALLENBECK 330/334-0066	M. GAY 800/356-3521 C. HALLENBECK 330/334-0066	R. KLEINTOP 800/877-9372 R. KLEINTOP 800/877-9372	R. KLEINTOP 800/877-9372 R. KLEINTOP 800/877-9372	DIST OFFICE TECH SERVICE 800/641-4691 X	DIST OFFICE TECH SERVICE 800/641-4691 X

Modified Bitumen Part 1: General Information

1. COMPANY NAME	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.
2. PRODUCT NAME	AWAPLAN PREMIUM FR	AWAPLAN 170 FR	AWAPLAN VERSA-SMOOTH	VERSA-CAP FR	AWAPLAN HEAT WELDING	AWAFLEX	SPEEDWELD APP GRANULATED
3. PRODUCT DESCRIPTION							
A. TYPE OF MODIFIER	SBS	SBS	SBS	SBS	SBS	SBS	APP
B. THICKNESS (mils)	155	154	160	140	185	125	180
C. TOP SURFACE	GRANULE	GRANULE	SMOOTH	GRANULE	GRANULE	GRANULE	GRANULE
D. REINFORCING MATERIAL	POLYESTER	POLYESTER	POLYESTER	GLASS MAT	POLYESTER	POLYESTER	POLYESTER
E. COLOR(S)	VARIOUS	VARIOUS	BLACK	VARIOUS	VARIOUS	WHITE/BLACK	WHITE/BLACK
F. INSTALLED WEIGHT (lbs./ft ² without ballast)	1.04	0.99	1.0	0.87	1.04	0.76	1.05
4. KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	AWAPLAN, COAT-ING, GRAVEL	NONE	NONE	NONE	NONE
5. USE IN:							
A. NEW ROOFING	X	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HOT MOP	HOT MOP	HOT MOP OR TORCH	HOT MOP	TORCH	HOT MOP OR COLD ADHES	TORCH
7. TYPES OF ROOF SYSTEMS:							
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)							
B. PARTIALLY ADHERED (method)							
C. FULLY ADHERED (method)	HOT MOP	HOT MOP	MOP/TORCH/ADHES	HOT MOP/COLD	TORCH	HOT MOP/COLD	TORCH
D. PROTECTED ROOF MEMBRANE ASSEMBLY							
8. MINIMUM SLOPE REQUIRED	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	X	X	X	X	X	X	X
B. MINERAL FIBER	X	X	X	X	X	X	X
C. POLYSTYRENE	O	O	O	O	O	O	O
D. CELLULAR GLASS	X	X	X	X	X	X	X
E. PHENOLIC	X	X	X	X	X	X	X
F. FIBERBOARD	X	X	X	X	X	X	X
G. PERLITE	X	X	X	X	X	X	X
H. POLYISOCYANURATE	O	O	O	O	O	O	O
I. POLYURETHANE	X	X	X	X	X	X	X
J. GYPSUM	X	X	X	X	X	X	X
K. CONCRETE	O	O	O	O	O	O	O
L. WOOD PLANK	X	X	X	X	X	X	X
M. PLYWOOD	X	X	X	X	X	X	X
N. EXISTING BUILT-UP MEMBRANE	X	X	X	X	X	X	X
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)							
12. FLASHING MATERIAL	SAME MATERIAL OR VERSA-FLASH	SAME MATERIAL OR VERSA-FLASH	SAME MATERIAL OR VERSA-FLASH	AWAPLAN PREM, AWAPLAN 170 OR VERSA-FLSH	SAME MATERIAL OR VERSA-FLASH	SAME MATERIAL	SAME MATERIAL
13. FLASHING METHOD	HOT MOP	HOT MOP	HOT MOP OR TORCH	HOT MOP	HOT MOP OR TORCH	HOT MOP	TORCH
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO	NO
15. COUNTRY OF:							
A. ORIGIN	W GERMANY	W GERMANY	W GERMANY	W GERMANY	W GERMANY	USA	USA
B. MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE							
A. OUTSIDE USA							
B. WITHIN USA	1988	1991	1986	1989	1981	1995	1995
17. NUMBER OF SQUARES INSTALLED (100 ft ²)							
A. OUTSIDE USA							
B. WITHIN USA							
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	13	13	13	13	13	13	13
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	NO	YES
21. FOR SALES INFORMATION, CONTACT:	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE
22. FOR TECHNICAL INFORMATION, CONTACT:	TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH SERVICE
	800/641-4691	800/641-4691	800/641-4691	800/641-4691	800/641-4691	800/641-4691	800/641-4691
23. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X	X		

Modified Bitumen Part 1: General Information	
1.01	Section Includes
1.02	Related Sections
1.03	Notes
1.04	Quantities
1.05	Installation
1.06	Materials
1.07	Testing
1.08	Acceptance
1.09	Warranty
1.10	Other

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Modified Bitumen Part 1: General Information

1. COMPANY NAME	TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.	3 E GROUP INC.	TREMCO INC.	TREMCO INC.
2. PRODUCT NAME	TEXSELF AL 45	TEXSELF ICE AND WATER SCREEN	TEXSELF GAS SCREEN	TEXSELF FP	FLASHBAND-28	THERM MB 2C6S	THERM MB 2C2S
3. PRODUCT DESCRIPTION A. TYPE OF MODIFIER B. THICKNESS (mils) C. TOP SURFACE D. REINFORCING MATERIAL E. COLOR(S) F. INSTALLED WEIGHT (lbs./ft ² without ballast)	SBS 80 ALUMINUM NONE ALUMINUM 0.43	SBS 60 POLYETHYLENE NONE BLACK 0.36	SBS 80 SMOOTH POLYETHYLENE FILM + ALUMINUM FOIL BLACK 0.48	SBS 80 SMOOTH NONWOVEN POLYESTER BLACK 0.48	APE 52 ALUMINUM NONE SILVER 0.33	SBS/SEBS 85 SMOOTH POLYESTER/GLASS BLACK 0.48	SBS/SEBS 85 SMOOTH POLYESTER/GLASS BLACK 0.50
4. KINDS OF FIELD SURFACING REQUIRED		NONE	NONE	NONE	NONE	EMULSIONS OR GRAVEL	EMULSIONS OR GRAVEL
5. USE IN: A. NEW ROOFING B. REROOFING	X X	X X	X X	X X	X X	X X	X X
6. FIELD LAP JOINT METHOD	SELF-ADHESIVE	SELF-ADHESIVE	SELF-ADHESIVE	SELF-ADHESIVE	PRESSURE BOND	MOP MOD BIT/ COLD ADHES	HOT MOP W/ MOD BITUMEN
7. TYPES OF ROOF SYSTEMS: A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²) B. PARTIALLY ADHERED (method) C. FULLY ADHERED (method) D. PROTECTED ROOF MEMBRANE ASSEMBLY	SELF-ADHERING	SELF-ADHERING	SELF-ADHERING	SELF-ADHERING	SELF-ADHERING X	MOP/COLD ADHES	MOP/CLD ADHES
8. MINIMUM SLOPE REQUIRED			TO DRAIN	TO DRAIN	NONE	1/8"	1/8"
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	X	X	X	X	X	X	X
B. MINERAL FIBER	O	O	O	O	X		
C. POLYSTYRENE					X		
D. CELLULAR GLASS	X	X	X	X	X		
E. PHENOLIC	X	X	X	X	X		
F. FIBERBOARD	X	X	X	X	X	X	X
G. PERLITE	X	X	X	X	X	X	X
H. POLYISOCYANURATE	X	X	X	X	X	O	O
I. POLYURETHANE	X	X	X	X	X	O	O
J. GYPSUM	O	O	O	O	X	O	O
K. CONCRETE	X	X	X	X	X	X	X
L. WOOD PLANK	X	X	X	X	X	O	O
M. PLYWOOD	X	X	X	X	X	O	O
N. EXISTING BUILT-UP MEMBRANE	X	X	X	X	X	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	50 – 120	50 – 120	50 – 120	50 – 120	0 – 100		
12. FLASHING MATERIAL	SELF-ADHESIVE TEXSELF CAP SHEET	SELF-ADHESIVE TEXSELF CAP SHEET	SELF-ADHESIVE TEXSELF CAP SHEET	SELF-ADHESIVE TEXSELF CAP SHEET	SAME MATERIAL	SAME MATERIAL, CSPE, OR COMP. MEMB.	SAME MATERIAL, CSPE, OR COMP. MEMB.
13. FLASHING METHOD	SELF-ADHERING	SELF-ADHERING	SELF-ADHERING	SELF-ADHERING	PRESSURE BOND	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	YES	YES	YES
15. COUNTRY OF: A. ORIGIN B. MANUFACTURE	SPAIN SPAIN	SPAIN SPAIN	SPAIN SPAIN	SPAIN SPAIN	GREAT BRIT. GREAT BRIT.	USA USA	USA USA
16. YEAR OF FIRST COMMERCIAL USE A. OUTSIDE USA B. WITHIN USA	1994	1995	1995	1996	1964 1973	1987	1995
17. NUMBER OF SQUARES INSTALLED (100 ft ²) A. OUTSIDE USA B. WITHIN USA					780,000 147,000		
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRIBUTORS	DIRECT	DIRECT
19. NUMBER OF REGIONAL LOCATIONS					112	14	14
20. LICENSED APPLICATOR AGREEMENT (yes/no)					NO	YES	YES
21. FOR SALES INFORMATION, CONTACT:	CUST SERVICE	CUST SERVICE	CUST SERVICE	CUST SERVICE	M. DIAMOND 800/800-2844 N. SHEARER 609/866-7600	V. SOPKO	V. SOPKO
22. FOR TECHNICAL INFORMATION, CONTACT:	TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH SERVICE		J. ZDENEK	J. ZDENEK
23. SEE MEMBRANE APPENDIX IF CHECKED							

Modified Bitumen Part 1: General Information

TREMCO INC.	TREMCO INC.	TREMCO INC.	TREMCO INC.	TRI-PLY	TRI-PLY	TRI-PLY	TRI-PLY	TRI-PLY	TRI-PLY
THERM MB LTD	THERM MB 4PFR	THERM MB 2PS	THERM MB GLASS BASE	KARIFALT 306	TP4	KARIFALT 307	KARIFALT 308	KARIFALT 307 FR	TP4G
SBS 125 GRANULE GLASS VARIOUS	SBS 160 GRANULE POLYESTER WHITE	SBS 94 SMOOTH POLYESTER BLACK	SBS SMOOTH GLASS BLACK	SBS 135 GRANULES FIBERGLASS VARIOUS	APP 157 MODIFIED BITUMEN NONWOVEN POLYESTER BLACK	SBS 138 GRANULES FIBERGLASS VARIOUS	SBS 150 GRANULES NONWOVEN POLYESTER VARIOUS	SBS 177 GRANULES FIBERGLASS VARIOUS	APP 170 GRANULES POLYESTER VARIOUS
0.89	1.10	0.60	0.30	0.95	0.88	1.05	0.95	1.05	1.10
NONE	NONE	CAP SHEET	CAP SHEET	NONE		NONE	NONE	NONE	GRANULES
X	X	X	X	X	X	X	X	X	X
MOP MOD BIT/ COLD ADHES	HOT MOP	HOT MOP OR COLD ADHES	HOT MOP OR COLD ADHES	HOT MOP	TORCH	HOT MOP	HOT MOP	HOT MOP	TORCH
					10				
MOP/COLD ADHES	MOP	MOP/COLD ADHES	MOP/COLD ADHES	HOT MOP	TORCH X	HOT MOP	HOT MOP	HOT MOP	TORCH
1/8"	1/8"	1/8"	1/8"	POS DRAIN	1/4"	1/4"	1/4"	1/4"	POS DRAIN
X	X	X	X	O	O	O	O	O	O
				O	O	O	O	O	O
				O	O	O	O	O	O
				O	O	O	O	O	O
X	X	X	X	O	O	O	O	O	O
X	X	X	X	O	O	O	O	O	O
				O	O	O	O	O	O
				O	O	O	O	O	O
				O	O	O	O	O	O
X	X	X	X	O	X	O	O	O	X
				O	O	O	O	O	O
				O	O	O	O	O	O
				O	O	O	O	O	O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
CSPE OR COMPARABLE MEMBRANE	CSPE, MOD. BIT. OR COMP. MEMBRANE	CSPE, MOD. BIT. OR COMP. MEMBRANE	CSPE, MOD. BIT. OR COMP. MEMBRANE	0 - 120 SAME MATERIAL	0 - 120 SAME MATERIAL	0 - 120 SAME MATERIAL	0 - 120 SAME MATERIAL	0 - 120 SAME MATERIAL	0 - 120 SAME MATERIAL
HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP	TORCH	HOT MOP	HOT MOP	HOT MOP	TORCH
YES	YES	YES	YES	NO	YES	YES	YES	YES	YES
USA	USA	USA	USA		USA	CANADA	CANADA	USA	USA
1990	1990		1995			1976	1976		
	1990		1995			1984	1984		
DIRECT	DIRECT	DIRECT	DIRECT	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
14	14	14	14	5	5	5	5	5	5
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
V. SOPKO	V. SOPKO	V. SOPKO	V. SOPKO	D. MORELLI	D. MORELLI	D. MORELLI	D. MORELLI	D. MORELLI	D. MORELLI
J. ZDENEK	J. ZDENEK	J. ZDENEK	J. ZDENEK	R. WHITE	R. WHITE	R. WHITE	R. WHITE	R. WHITE	R. WHITE
				X	X	X	X	X	X

Modified Bitumen Part 1: General Information

1. COMPANY NAME	TRI-PLY	TRI-PLY	TRI-PLY	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.
2. PRODUCT NAME	KARIFALT 306 FR	EAGLE BASE MODIFIED	EAGLE BASE MODIFIED PLUS	INTEC SP4	INTEC/FLEX M	INTEC/FLEX 190	INTEC/FLEX FR4.5
3. PRODUCT DESCRIPTION A. TYPE OF MODIFIER B. THICKNESS (mils) C. TOP SURFACE D. REINFORCING MATERIAL E. COLOR(S) F. INSTALLED WEIGHT (lbs./ft ² without ballast)	SBS 140 GRANULES FIBERGLASS VARIOUS	SBS 80 SMOOTH FIBERGLASS BLACK	SBS 90 SMOOTH FIBERGLASS BLACK	APP 160 MODIFIED BITUMEN POLYESTER BLACK	SBS 160 GRANULES POLYESTER VARIOUS	SBS 160 GRANULES POLYESTER VARIOUS	SBS 160 GRANULES FIBERGLASS VARIOUS
4. KINDS OF FIELD SURFACING REQUIRED	NONE	KARIFALT 306	KARIFALT 306	ROOF COAT, GRAN, GRAVEL	NONE	NONE	NONE
5. USE IN: A. NEW ROOFING B. REROOFING	X X	X X	X X	X X	X X	X X	X X
6. FIELD LAP JOINT METHOD	HOT MOP	HOT MOP	HOT MOP	TORCH	MOP/ADHESIVE	MOP/ADHESIVE	MOP/ADHESIVE
7. TYPES OF ROOF SYSTEMS: A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²) B. PARTIALLY ADHERED (method) C. FULLY ADHERED (method) D. PROTECTED ROOF MEMBRANE ASSEMBLY	HOT MOP	HOT MOP X	HOT MOP X	TORCH	HOT MOP	HOT MOP	HOT MOP
8. MINIMUM SLOPE REQUIRED	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	O	O	O	O	O	O	O
B. MINERAL FIBER	O	O	O	O	O	O	O
C. POLYSTYRENE	O	O	O	O	O	O	O
D. CELLULAR GLASS	O	O	O	O	O	O	O
E. PHENOLIC	O	O	O	O	O	O	O
F. FIBERBOARD	O	O	O	O	O	O	O
G. PERLITE	O	O	O	O	O	O	O
H. POLYISOCYANURATE	O	O	O	O	O	O	O
I. POLYURETHANE	O	O	O	O	O	O	O
J. GYPSUM	O	O	O	O	O	O	O
K. CONCRETE	O	O	O	X	O	O	O
L. WOOD PLANK	O	O	O	O	O	O	O
M. PLYWOOD	O	O	O	O	O	O	O
N. EXISTING BUILT-UP MEMBRANE	O	O	O	X	O	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	SEE SPECS	SEE SPECS	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120
12. FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
13. FLASHING METHOD	HOT MOP	HOT MOP	HOT MOP	TORCH	MOP/CEMENT	MOP/CEMENT	MOP/CEMENT
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES	YES
15. COUNTRY OF: A. ORIGIN B. MANUFACTURE	USA USA	USA USA	USA USA	ITALY USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE A. OUTSIDE USA B. WITHIN USA				1961 1978	1985 1985	1985 1985	1985 1985
17. NUMBER OF SQUARES INSTALLED (100 ft ²) A. OUTSIDE USA B. WITHIN USA							
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	5	5	5	9	9	9	9
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	D. MORELLI	D. MORELLI	D. MORELLI	S. WALKER	S. WALKER	S. WALKER	S. WALKER
22. FOR TECHNICAL INFORMATION, CONTACT:	R. WHITE	R. WHITE	R. WHITE	C. NOBLE	C. NOBLE	C. NOBLE	C. NOBLE
23. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X				

Modified Bitumen Part 1: General Information

U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.
INTEC GBSP4	INTEC GBSP4FR	INTEC/FLEX S	INTEC/FLEX FR3 HS	FLEXBASE 60 FR HS	INTEC MODIFIED BASE PLUS HS	INTEC GBSP 250 FR	INTEC/FLEX 190 FR	INTEC/FLEX 250 FR	INTEC/FLEX G4 CAP
APP 160 GRANULES POLYESTER VARIOUS 1.05 NONE	APP 160 GRANULES POLYESTER VARIOUS 1.05 NONE	SBS 138 SMOOTH POLYESTER CAP SHEET/ MOP GRAVEL 0.85	SBS 150 GRANULES GLASS MAT GLASS SCRIM VARIOUS 0.93	SBS 80 SMOOTH GLASS MAT GLASS SCRIM VARIOUS 0.45	SBS 95 SMOOTH GLASS MAT GLASS SCRIM CAP SHEET/ MOP GRAVEL 0.60	APP 177 GRANULES POLYESTER COMPOSITE VARIOUS 1.1 NONE	SBS 160 GRANULES POLYESTER VARIOUS 0.98	SBS 177 GRANULES POLYESTER COMPOSITE VARIOUS 0.98	SBS 160 GRANULES FIBERGLASS VARIOUS 0.98
X X	X X	X X	X X	X X	X X	X X	X X	X X	X X
TORCH	TORCH	MOP/ ADHESIVE	MOP/ ADHESIVE	MOP/ MECH. FAST.	MOP/ MECH. FAST.	TORCH	MOP/ ADHESIVE	MOP/ ADHESIVE	MOP/ ADHESIVE
TORCH	TORCH	MOP/ADHES	MOP/ADHES	MOP/ADHES	MOP/ADHES	TORCH	MOP/ADHES	MOP/ADHES	MOP/ADHES
POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
O O O O	O O O O	X O O O	X O O O	X O O O	X O O O	O O O O	X O O O	X O O O	X O O O
O O O O	O O O O	X O O O	X O O O	X O O O	X O O O	O O O O	X O O O	X O O O	X O O O
X O O O	X O O O	X O O O	X O O O	X O O O	X O O O	O O O O	O O O O	O O O O	O O O O
X O O O	X O O O	X O O O	X O O O	X O O O	X O O O	O O O O	O O O O	O O O O	O O O O
NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 40 – 120
SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
TORCH	TORCH	MOP/CEMENT	MOP/CEMENT	MOP/CEMENT	MOP/CEMENT	TORCH	MOP/CEMENT	MOP/CEMENT	MOP/CEMENT
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
ITALY USA	ITALY USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA
1976 1983	1976 1991	1985 1985	1985 1985	1985 1985	1985 1985	1990 1990	1990 1990	1990 1990	1985 1985
DISTRIBUTORS 9 YES	DISTRIBUTORS 9 YES	DISTRIBUTORS 9 YES	DISTRIBUTORS 9 YES	DISTRIBUTORS 9 YES	DISTRIBUTORS 9 YES	DISTRIBUTORS 9 YES	DISTRIBUTORS 9 YES	DISTRIBUTORS 9 YES	DISTRIBUTORS 9 YES
S. WALKER C. NOBLE	S. WALKER C. NOBLE	S. WALKER C. NOBLE	S. WALKER C. NOBLE	S. WALKER C. NOBLE	S. WALKER C. NOBLE	S. WALKER C. NOBLE	S. WALKER C. NOBLE	S. WALKER C. NOBLE	S. WALKER C. NOBLE

Modified Bitumen Part 1: General Information

1. COMPANY NAME	U S INTEC, INC.	U S INTEC, INC.
2. PRODUCT NAME	FLEXBASE 60 FR	INTEC MODIFIED BASE PLUS
3. PRODUCT DESCRIPTION A. TYPE OF MODIFIER B. THICKNESS (mils) C. TOP SURFACE D. REINFORCING MATERIAL E. COLOR(S) F. INSTALLED WEIGHT (lbs./ft ² without ballast)	SBS 80 SMOOTH FIBERGLASS 0.40	SBS 95 SMOOTH FIBERGLASS 0.54
4. KINDS OF FIELD SURFACING REQUIRED	CAP SHEET/ MOP GRAVEL	CAP SHEET/ MOP GRAVEL
5. USE IN: A. NEW ROOFING B. REROOFING	 X X	 X X
6. FIELD LAP JOINT METHOD	MOP/ ADHESIVE	MOP/ ADHESIVE
7. TYPES OF ROOF SYSTEMS: A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²) B. PARTIALLY ADHERED (method) C. FULLY ADHERED (method) D. PROTECTED ROOF MEMBRANE ASSEMBLY	 MOP/MECH FAS	 MOP/MECH FAS
8. MINIMUM SLOPE REQUIRED	POS DRAIN	POS DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)		
A. GLASS FIBER	X	X
B. MINERAL FIBER	X	X
C. POLYSTYRENE		O
D. CELLULAR GLASS	X	O
E. PHENOLIC		
F. FIBERBOARD	X	X
G. PERLITE	X	X
H. POLYISOCYANURATE	X	O
I. POLYURETHANE	X	O
J. GYPSUM	X	O
K. CONCRETE	X	O
L. WOOD PLANK	X	O
M. PLYWOOD	X	O
N. EXISTING BUILT-UP MEMBRANE	X	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	40 – 120	40 – 120
12. FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL
13. FLASHING METHOD	MOP/CEMENT	MOP/CEMENT
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES
15. COUNTRY OF: A. ORIGIN B. MANUFACTURE	USA USA	USA USA
16. YEAR OF FIRST COMMERCIAL USE A. OUTSIDE USA B. WITHIN USA	1988 1988	1989 1989
17. NUMBER OF SQUARES INSTALLED (100 ft ²) A. OUTSIDE USA B. WITHIN USA		
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	9	9
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES
21. FOR SALES INFORMATION, CONTACT:	S. WALKER	S. WALKER
22. FOR TECHNICAL INFORMATION, CONTACT:	C. NOBLE	C. NOBLE
23. SEE MEMBRANE APPENDIX IF CHECKED		

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	AMERICAN LUBRICANTS CO.	BARRETT CO.	BARRETT CO.	BARRETT CO.	BARRETT CO.
2. PRODUCT NAME	TIFFANY	RAMTOUGH TM500	RAM 306	RAM 306 FR	RAM 306 HP
3. SHEET THICKNESS (average thickness, inches)	0.157				
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 208 XD 180.4	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 64 XD 74	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD 461 XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 43 XD 42	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	NIL				
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS	NIL				
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD +5 XD +5	MD XD	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD +7 XD +7	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD +10 XD +10	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	NA				
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)	>302	>300			
12. SEE MEMBRANE APPENDIX IF CHECKED		X	X	X	X

1. COMPANY NAME	BARRETT CO.	BARRETT CO.	BARRETT CO.	BARRETT CO.	BARRETT CO.
2. PRODUCT NAME	RAM 309	RAM 309 FR	RAM TOUGH 250	RAM 309 HT	RAM 200
3. SHEET THICKNESS (average thickness, inches)					
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS					
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)					NA
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)					
12. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X	X

NA=not applicable
MD=machine direction
XD=cross direction

Test description as specified in ASTM D 5147–95

[illegible]

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	BITEC INC.	BITUFA BV	BITUFA BV	BITUFA BV	BITUFA BV
2. PRODUCT NAME	SFM-3.5H-FR	FLEXOPER	FLEXOBIT	UNIPER	UNIBASE
3. SHEET THICKNESS (average thickness, inches)	0.160	0.20	0.20		
4. LOAD STRAIN PROPERTIES (at 0°F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD 96 XD 90	MD 96 XD 90	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD 1,000 XD 1,000	MD 1,000 XD 1,000	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD 50,000 XD 50,000	MD 50,000 XD 50,000	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD 124 XD 123	MD 124 XD 123	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD 1,000 XD 1,000	MD 1,000 XD 1,000	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD 63,000 XD 63,000	MD 63,000 XD 63,000	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD 120 XD 120	MD 120 XD 120	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD 1,000 XD 1,000	MD 1,000 XD 1,000	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD 60,000 XD 60,000	MD 60,000 XD 60,000	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD 8 XD 9	MD 8 XD 9	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS					
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD 0.13 XD 0.05	MD 0.13 XD 0.05	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -4 XD -4	MD -40 XD -40	MD -40 XD -40	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD -40 XD -40	MD -40 XD -40	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD -40 XD -40	MD -40 XD -40	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)					
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)		240	240		
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	BITUFA BV	BITUFA BV	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE
2. PRODUCT NAME	FLEXOPER MF	FLEXOWALL	CELOTEX APP 4/S CAP SHEET	CELOTEX APP 4/M CAP SHEET	CELOTEX SBS/170 CAP SHEET
3. SHEET THICKNESS (average thickness, inches)	0.20	0.20	0.157	0.157	0.149
4. LOAD STRAIN PROPERTIES (at 0°F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 96 XD 90	MD XD	MD 164 XD 125	MD 160 XD 121	MD 149 XD 106
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 1,000 XD 1,000	MD XD	MD 46 XD 60	MD 48 XD 38	MD 55 XD 44
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD 50,000 XD 50,000	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 124 XD 123	MD XD	MD 197 XD 176	MD 185 XD 155	MD 178 XD 123
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 1,000 XD 1,000	MD XD	MD 24 XD 12	MD 29 XD 21	MD 40 XD 14
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD 63,000 XD 63,000	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 120 XD 120	MD XD	MD 197 XD 158	MD 152 XD 135	MD 198 XD 117
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 1,000 XD 1,000	MD XD	MD 41 XD 17	MD 30 XD 23	MD 51 XD 37
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD 60,000 XD 60,000	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 8 XD 9	MD XD	MD 179 XD 149	MD 177 XD 147	MD 149 XD 109
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS			0.15	0.15	0.20
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS			0.7	1.7	2.6
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0.13 XD 0.05	MD XD	MD 0.9 XD 0.5	MD 0.9 XD 0.6	MD 0.9 XD 0.6
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -40 XD -40	MD -25 XD -25	MD 12.2 XD	MD 12.2 XD	MD -13 XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -40 XD -40	MD -25 XD -25	MD 21 XD	MD 19 XD	MD -10 XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -40 XD -40	MD -25 XD -25	MD 20 XD	MD 18 XD	MD -11 XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)			NA	0.096	0.064
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)	240	240	275	275	245
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable
MD=machine direction
XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CONSOLIDATED COATINGS CORPORATION	CONSOLIDATED COATINGS CORPORATION	CONSOLIDATED COATINGS CORPORATION	DANOSA CARIBBEAN, INC.	DANOSA CARIBBEAN, INC.
CELOTEX SBS/250 CAP SHEET	CELOTEX SBS DUEL PLY FR BASE SHEET	CELOTEX SBS DUEL PLY FR CAP SHEET	CONSO-GARD II	CONSO-GARD III	CONSO-GARD IV	ESTERDAN RM	GLASDAN AL-80
0.173	0.102	0.1496				0.14	0.15
MD 167 XD 160 MD 44 XD 40 MD	MD 228 XD 129 MD 9 XD 7 MD	MD 182 XD 154 MD 10 XD 7 MD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 200 XD 185 MD 5.5 XD 5.5 MD 4.5 XD 4.5	MD 200 XD 190 MD 5 XD 5 MD 4 XD 4
MD 178 XD 123 MD 49 XD 44 MD	MD 251 XD 198 MD 11 XD 6 MD	MD 264 XD 218 MD 9 XD 8 MD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 200 XD 185 MD 5.5 XD 5.5 MD 4.5 XD 4.5	MD 200 XD 190 MD 5 XD 5 MD 4 XD 4
MD 207 XD 184 MD 43 XD 37 MD	MD 298 XD 198 MD 11 XD 6 MD	MD 280 XD 215 MD 8 XD 6 MD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD 197 XD 166 0.10	MD 134 XD 142 0.20	MD 157 XD 139 0.15	MD XD	MD XD	MD XD	MD 130 XD 100 < 0.1	MD 80 XD 60 < 0.1
2.3	1.0	1.9				< 0.2	< 0.2
MD 0.3 XD 0.1	MD < 0.1 XD < 0.1	MD < 0.1 XD < 0.1	MD XD	MD XD	MD XD	MD XD	MD XD
MD -18.4 XD MD -16 XD MD -17 XD	MD -9.4 XD MD -6 XD MD -7 XD	MD -9.4 XD MD -6 XD MD -7 XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD -22 XD -22 MD -20 XD -20 MD -13 XD -13	MD -22 XD -22 MD -20 XD -20 MD -13 XD -13
0.057	NA	0.064				< 0.05	NA
245	245	245				250	250

DANOSA CARIBBEAN, INC.	DANOSA CARIBBEAN, INC.	DANOSA CARIBBEAN, INC.	DANOSA CARIBBEAN, INC.	DANOSA CARIBBEAN, INC.	DANOSA CARIBBEAN, INC.	DANOSA CARIBBEAN, INC.	DANOSA CARIBBEAN, INC.
GLASDAN R-36	ESTERDAN R-36	GLASDAN AL-80-3	GLASDAN RM	GLASDAN R-36-3	GLASDAN RM-5	ESTERDAN R-36-3	ESTERDAN RM-5
0.15	0.15	0.13	0.14	0.13		0.13	0.19
MD 180 XD 160 MD 4 XD 4 MD 3 XD 3	MD 200 XD 185 MD 5.5 XD 5.5 MD 4.5 XD 4.5	MD 200 XD 190 MD 5 XD 5 MD 4 XD 4	MD 180 XD 160 MD 4 XD 4 MD 3.5 XD 3.5	MD 180 XD 160 MD 4 XD 4 MD 3.5 XD 3.5	MD 180 XD 160 MD 4 XD 4 MD 3.5 XD 3.5	MD 200 XD 185 MD 5.5 XD 5.5 MD 4.5 XD 4.5	MD 200 XD 185 MD 5.5 XD 5.5 MD 4.5 XD 4.5
MD 180 XD 160 MD 4 XD 4 MD 3 XD 3	MD 200 XD 185 MD 5.5 XD 5.5 MD 4.5 XD 4.5	MD 200 XD 190 MD 5 XD 5 MD 4 XD 4	MD 180 XD 160 MD 4 XD 4 MD 3.5 XD 3.5	MD 180 XD 160 MD 4 XD 4 MD 3.5 XD 3.5	MD 180 XD 160 MD 4 XD 4 MD 3.5 XD 3.5	MD 200 XD 185 MD 5.5 XD 5.5 MD 4.5 XD 4.5	MD 200 XD 185 MD 5.5 XD 5.5 MD 4.5 XD 4.5
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD 78 XD 45 < 0.1	MD 120 XD 95 < 0.1	MD 80 XD 60 < 0.1	MD 68 XD 42 < 0.1	MD 75 XD 50 < 0.1	MD 115 XD 110 < 0.1	MD 120 XD 95 < 0.1	MD 140 XD 110 < 0.1
< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
MD XD	MD XD	MD XD	MD XD	MD 0 XD 0	MD XD	MD XD	MD XD
MD -22 XD -22 MD -20 XD -20 MD -13 XD -13	MD -22 XD -22 MD -20 XD -20 MD -13 XD -13	MD -22 XD -22 MD -20 XD -20 MD -13 XD -13	MD -22 XD -22 MD -20 XD -20 MD -13 XD -13	MD -22 XD -22 MD -20 XD -20 MD -13 XD -13	MD -22 XD -22 MD -20 XD -20 MD -13 XD -13	MD -22 XD -22 MD -20 XD -20 MD -13 XD -13	MD -22 XD -22 MD -20 XD -20 MD -13 XD -13
NA	NA	NA	< 0.05	NA	< 0.05	NA	< 0.05
250	250	250	250	250	250	250	250

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	DANOSA CARIBBEAN INC.	DERMABIT WATERPROOFING INDUSTRIES	DERMABIT WATERPROOFING INDUSTRIES	DERMABIT WATERPROOFING INDUSTRIES	DERMABIT WATERPROOFING INDUSTRIES
2. PRODUCT NAME	ESTERDAN RM-PLUS	DERMABIT 4170 SMOOTH	DERMABIT 4170 GRANULE	ELASPHALT 4170 SMOOTH	ELASPHALT 4170 GRANULE
3. SHEET THICKNESS (average thickness, inches)	0.20				
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 240 XD 200	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 8 XD 8	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD 6 XD 6	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 240 XD 200	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 8 XD 8	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD 6 XD 6	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 160 XD 100	MD XD	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	< 0.1				
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS	< 0.2				
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD < 1.0 XD < 1.0	MD XD	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -22 XD -22	MD XD	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -20 XD -20	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -13 XD -13	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	< 0.05				
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)	250				
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	DIBITEN	DIBITEN	DIBITEN	DIBITEN	DIBITEN
2. PRODUCT NAME	DIBITEN POLY/4	DIBITEN POLY/4.5 GRANULAR	DIBITEN POLY/5	DIBITEN BLACK GRANITE	DIBITEN MINERAL
3. SHEET THICKNESS (average thickness, inches)	0.16	0.18	0.20	0.16	0.18
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 220 XD 160	MD 210 XD 160	MD 240 XD 200	MD 220 XD 160	MD 210 XD 160
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 22 XD 25	MD 21 XD 24	MD 22 XD 25	MD 22 XD 25	MD 21 XD 24
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 102 XD 84	MD 124 XD 100	MD 145 XD 118	MD 104 XD 66	MD 124 XD 100
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS	< 0.4	< 0.5	< 0.4	< 0.4	< 0.5
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0.1 XD 0.1	MD 0.1 XD 0.1	MD 0.1 XD 0.1	MD 0.1 XD 0.1	MD 0.1 XD 0.1
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 14 XD 14	MD 23 XD 23	MD 14 XD 14	MD 14 XD 14	MD 23 XD 23
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	NA	< 0.05		NA	< 0.05
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)	>250	> 250	> 250	> 250	> 250
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable
MD=machine direction
XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

FIRESTONE BUILDING PRODUCTS CO. APP160	FIRESTONE BUILDING PRODUCTS CO. APP170	FIRESTONE BUILDING PRODUCTS CO. APP180	FIRESTONE BUILDING PRODUCTS CO. APP180 FR	FIRESTONE BUILDING PRODUCTS CO. SBS BASE SHEET	FIRESTONE BUILDING PRODUCTS CO. SBS PREMIUM BASE SHEET	FIRESTONE BUILDING PRODUCTS CO. SBS SMOOTH	FIRESTONE BUILDING PRODUCTS CO. SBS
0.160	0.170	0.180	0.180	0.90	0.90	0.145	0.150
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 135 XD 115 MD 5 XD 7 MD XD	MD 190 XD 150 MD 5.5 XD 4 MD XD	MD 125 XD 90 MD 50 XD 45 MD XD	MD 125 XD 90 MD 50 XD 45 MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD 120 XD 90	MD 120 XD 90	MD 120 XD 90	MD 115 XD 85	MD 100 XD 105	MD 130 XD 115	MD 115 XD 80	MD 115 XD 80
MD <0.5 XD <0.45	MD <0.4 XD <0.4	MD <0.6 XD <0.5	MD <0.7 XD <0.6	MD <0.1 XD <0.1	MD <0.1 XD <0.1	MD <0.5 XD <0.6	MD <0.6 XD <0.6
MD 14 XD 14	MD 14 XD 14	MD 14 XD 14	MD 14 XD 14	MD -30 XD -30	MD -30 XD -30	MD -15 XD -15	MD -15 XD -15
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
NA	NA	< 0.07	< 0.07	NA	NA	NA	< 0.05
280	280	320	320	260	260	260	260

FIRESTONE BUILDING PRODUCTS CO. SBS FR	FIRESTONE BUILDING PRODUCTS CO. SBS PREMIUM	FIRESTONE BUILDING PRODUCTS CO. SBS PREMIUM FR	FIRESTONE BUILDING PRODUCTS CO. SBS GLASS	FIRESTONE BUILDING PRODUCTS CO. SBS GLASS FR	FIRESTONE BUILDING PRODUCTS CO. SBS TORCH	FIRESTONE BUILDING PRODUCTS CO. SBS FLASHING	GAF MATERIALS CORPORATION RUBEROID TORCH (SMOOTH)
0.150	0.160	0.160	0.150	0.150	0.150	0.150	
MD 125 XD 90 MD 50 XD 45 MD XD	MD 180 XD 135 MD 55 XD 50 MD XD	MD 168 XD 120 MD 55 XD 50 MD XD	MD 120 XD 110 MD 5 XD 5 MD XD	MD 145 XD 120 MD 5 XD 5 MD XD	MD 115 XD 80 MD 40 XD 40 MD XD	MD 125 XD 90 MD 50 XD 45 MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD 115 XD 80	MD 165 XD 120	MD 165 XD 120	MD 95 XD 80	MD 105 XD 90	MD 115 XD 80	MD 115 XD 80	MD XD
MD <0.7 XD <0.7	MD <0.7 XD <0.7	MD <0.6 XD <0.6	MD 0.1 XD 0.1	MD 0.1 XD 0.1	MD <0.7 XD <0.7	MD <0.6 XD <0.6	MD XD
MD -15 XD -15	MD -15 XD -15	MD -15 XD -15	MD -15 XD -15	MD -15 XD -15	MD -15 XD -15	MD -15 XD -15	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
< 0.05	< 0.07	< 0.05	< 0.05	< 0.05	NA		
260	260						

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION
2. PRODUCT NAME	RUBEROID TORCH (GRANULE)	RUBEROID MOP (GRANULE)	RUBEROID TORCH PLUS	RUBEROID TORCH FR	RUBEROID MOP PLUS
3. SHEET THICKNESS (average thickness, inches)					
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS					
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)					
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)					
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION
2. PRODUCT NAME	RUBEROID MOP FR	RUBEROID MOP 170 FR	RUBEROID 20	RUBEROID 30	RUBEROID 30 FR
3. SHEET THICKNESS (average thickness, inches)					
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS					
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)					
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)					
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable
MD=machine direction
XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147–95

[illegible]

GARLAND COMPANY INC., THE	GARLAND COMPANY INC., THE	GARLAND COMPANY INC., THE	GARLAND COMPANY INC., THE	GARLAND COMPANY INC., THE	GARLAND COMPANY INC., THE	GARLAND COMPANY INC., THE	GARLAND COMPANY INC., THE
VERSIPLY 80	PITCHPLY SELF-ADHERED	STRESSPLY MINERAL	STRESSPLY PLUS	STRESSPLY PLUS FR	STRESSPLY PLUS MINERAL	STRESSPLY PLUS MINERAL-FR	STRESSPLY IV
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	GARLAND COMPANY INC., THE		GARLAND COMPANY INC., THE		GARLAND COMPANY INC., THE	
2. PRODUCT NAME	STRESSPLY IV MINERAL		STRESSPLY "E"		STRESSPLY "E" FR MINERAL	
3. SHEET THICKNESS (average thickness, inches)						
4. LOAD STRAIN PROPERTIES (at 0° F)						
4.1 INITIAL						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD
5. TENSILE TEAR STRENGTH (at 77° F)						
AVERAGE TEAR STRENGTH (pounds force)	MD	XD	MD	XD	MD	XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS						
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)						
AVERAGE PERCENT OF DRY MASS						
8. DIMENSIONAL STABILITY						
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD	XD	MD	XD	MD	XD
9. LOW TEMPERATURE FLEXIBILITY						
9.1 INITIAL						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD
10. GRANULE EMBEDMENT						
AVERAGE GRANULE LOSS (ounces or NA)						
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)						
12. SEE MEMBRANE APPENDIX IF CHECKED						

1. COMPANY NAME	GARLAND COMPANY INC., THE		GRACE, W.R. & CO.	GS ROOFING PRODUCTS CO. INC.	GS ROOFING PRODUCTS CO. INC.	GS ROOFING PRODUCTS CO. INC.
2. PRODUCT NAME	HPR TORCH BASE SHEET		PRMA-350 PRMA-450	FLINTLASTIC GTA	FLINTLASTIC STA	FLINTLASTIC GTS
3. SHEET THICKNESS (average thickness, inches)			0.05	0.17	0.16	0.18
4. LOAD STRAIN PROPERTIES (at 0° F)						
4.1 INITIAL						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD 50 XD 75	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD 250 XD 150	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD 11,000 XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD 50 XD 75	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD 250 XD 150	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD 11,000 XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD 50 XD 75	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD 250 XD 150	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD 11,000 XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)						
AVERAGE TEAR STRENGTH (pounds force)	MD	XD	MD 4.5 XD 4.5	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS			0.1	0.0004	0.0008	0.0004
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)						
AVERAGE PERCENT OF DRY MASS			0.1	0.0018	0.0018	0.0014
8. DIMENSIONAL STABILITY						
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD	XD	MD XD	MD 0.5 XD 0.3	MD 0.5 XD 0.3	MD 0.5 XD 0.3
9. LOW TEMPERATURE FLEXIBILITY						
9.1 INITIAL						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD -45 XD -45	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD -45 XD -45	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD -45 XD -45	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT						
AVERAGE GRANULE LOSS (ounces or NA)			NA	<0.035	NA	<0.07
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)			>250	0	>250	>250
12. SEE MEMBRANE APPENDIX IF CHECKED						

NA=not applicable
MD=machine direction
XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147–95

GS ROOFING PRODUCTS CO. INC.		GS ROOFING PRODUCTS CO. INC.		GS ROOFING PRODUCTS CO. INC.		GS ROOFING PRODUCTS CO. INC.		GS ROOFING PRODUCTS CO. INC.		GS ROOFING PRODUCTS CO. INC.		GS ROOFING PRODUCTS CO. INC.		GS ROOFING PRODUCTS CO. INC.	
FLINTLASTIC GMS		FLINTLASTIC FR PG		GTA BLACK DIAMOND		FRP		FR BASE		FR CAP		BLACK DIAMOND BASE SHEET		POLY SMS BASE SHEET	
0.16		0.16		0.157		0.185		0.080		0.120					
MD	XD	MD	XD	MD 153	XD 115	MD 122	XD 87	MD 121	XD 72	MD 121	XD 72	MD	XD	MD	XD
MD	XD	MD	XD	MD 37	XD 39	MD 42	XD 43	MD 4	XD 4	MD 4	XD 4	MD	XD	MD	XD
MD	XD	MD	XD	MD 57	XD 45	MD 51	XD 37	MD 5	XD 3	MD 5	XD 3	MD	XD	MD	XD
MD	XD	MD	XD	MD 161	XD 119	MD 130	XD 91	MD 127	XD 81	MD 127	XD 81	MD	XD	MD	XD
MD	XD	MD	XD	MD 31	XD 33	MD 34	XD 36	MD 4	XD 4	MD 4	XD 4	MD	XD	MD	XD
MD	XD	MD	XD	MD 50	XD 39	MD	XD	MD 5	XD 3	MD 5	XD 3	MD	XD	MD	XD
MD	XD	MD	XD	MD 156	XD 117	MD 128	XD 90	MD 125	XD 80	MD 125	XD 80	MD	XD	MD	XD
MD	XD	MD	XD	MD 36	XD 37	MD 40	XD 39	MD 4	XD 4	MD 4	XD 4	MD	XD	MD	XD
MD	XD	MD	XD	MD 56	XD 43	MD 51	XD 35	MD 5	XD 3	MD 5	XD 3	MD	XD	MD	XD
MD	XD	MD	XD	MD 136	XD 105	MD 132	XD 94	MD 124	XD 75	MD 124	XD 75	MD	XD	MD	XD
0.0004		0.0005		<0.1		<0.1		<0.1		<0.1					
0.0019		0.002		<0.4		<0.4		<0.4		<0.4					
MD 0.5	XD 0.3	MD 0.5	XD 0.3	MD 0.5	XD 0.3	MD 0.5	XD 0.3	MD <0.05	XD <0.05	MD <0.05	XD <0.05	MD	XD	MD	XD
MD	XD	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
MD	XD	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
MD	XD	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
<0.07		<0.07		NA		<0.07		NA		NA					
>250		>250		280		225		225		225					
				X		X		X		X					

GS ROOFING PRODUCTS CO. INC.	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.
FLINTLASTIC GTA-FR	PIKA PLY SS-4	PIKA PLY MS-4	PIKA PLY SA-4	PIKA PLY MA-4	PIKA PLY 808	PIKA PLY SS-3P	PIKA PLY SA-3
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.	HYLOAD, INC.	HYLOAD, INC.
2. PRODUCT NAME	PIKA PLY SS-2	PIKA PLY 808-MS	PIKA PLY MS-3G	HYBASE	HYBASE SAM
3. SHEET THICKNESS (average thickness, inches)				0.071	0.084
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD 70 XD 70	MD 70 XD 70
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD 55 XD 55	MD 55 XD 55
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS				0	0
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)				0	0
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD <1 XD 0	MD <1 XD 0
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)				0.2	0.2
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)				225	225
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	IKO INDUSTRIES INC.	IKO INDUSTRIES INC.	IKO INDUSTRIES INC.	IKO INDUSTRIES INC.	IKO INDUSTRIES INC.
2. PRODUCT NAME	ARMOURPLAST GRANULAR	ARMOURPLAST CLASSIC	MODIFLEX MP-180-CAP	MODIFLEX MP-250-CAP	TORCHFLEX TP-180-CAP
3. SHEET THICKNESS (average thickness, inches)	.165	.150	.138	.157	.157
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS					
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)					
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)					
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable
MD=machine direction
XD=cross direction

Test description as specified in ASTM D 5147-95

KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.
2041-M SBS	2041-S SBS	2045-M SBS	2045 MFR-CAP	2042 MFR-CAP	2042 FR-BASE	PREMIUM SBS 601	PARAGON SBS 625
						0.120	0.125
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 126 XD 115 MD 5.9 XD 5.8 MD XD	MD 145 XD 118 MD 6.3 XD 6.1 MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD 95 XD 95	MD 110 XD 100
						0	0
						0	0
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD 0 XD 0	MD 0 XD 0
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD -10 XD	MD -20 XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
						0.2	0.5
						250	250

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.
2. PRODUCT NAME	PANOPLY SBS 650	POLYGLASS SBS 917	POLYGLASS SBS 919	ESHALUM SBS 1020	APP 160 SMOOTH
3. SHEET THICKNESS (average thickness, inches)	0.150	0.180	0.160	0.160	0.160
4. LOAD STRAIN PROPERTIES (at 0°F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 219 XD 183	MD 213 XD 185	MD 215 XD 189	MD 90 XD 90	MD 190 XD 150
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 7.5 XD 7.3	MD 8.2 XD 8.6	MD 8.2 XD 8.5	MD XD	MD 50 XD 55
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD NA XD NA	MD 200 XD 170
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD 40 XD 45
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD 200 XD 170
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD 45 XD 45
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 190 XD 175	MD 100 XD 100	MD 100 XD 100	MD XD	MD 130 XD 100
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	0	0	0	0	<0.2
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS	0	0	0	0	<0.4
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0 XD 0	MD 0 XD 0	MD 0 XD 0	MD 0 XD	MD 0.5 XD 0.3
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -20 XD	MD -5 XD	MD -5 XD	MD NA XD	MD 5 XD 5
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD NA XD	MD 14 XD 14
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD 10 XD 10
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	0.5	0.5	NA	NA	NA
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)	250	250	250	250	266
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MBTECHNOLOGY	MBTECHNOLOGY	MBTECHNOLOGY
2. PRODUCT NAME	APP 161 MINERAL	APP 162 MINERAL	SUPERCAP SBS SC-75GAL	SUPERCAP SBS SC-75GWH	METAFLEX SBS MF-160WAL
3. SHEET THICKNESS (average thickness, inches)	0.180	0.180			
4. LOAD STRAIN PROPERTIES (at 0°F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 190 XD 150	MD 190 XD 150	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 50 XD 55	MD 50 XD 55	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 200 XD 170	MD 200 XD 170	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 40 XD 45	MD 40 XD 45	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 200 XD 170	MD 200 XD 170	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 45 XD 45	MD 40 XD 45	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 130 XD 100	MD 130 XD 100	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	0.15	<0.2			
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS	<0.2	<0.4			
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0.5 XD 0.3	MD 0.5 XD 0.3	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 5 XD 5	MD 5 XD 5	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 14 XD 14	MD 14 XD 14	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 10 XD 10	MD 10 XD 10	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	<0.05	<0.05			
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)	266	266			
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable

MD=machine direction

XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	MONSEY BAKOR		MONSEY BAKOR		MONSEY BAKOR		MONSEY BAKOR		MONSEY BAKOR	
2. PRODUCT NAME	MODIFIED PLUS G100 s/s [p/s] [p/p]		MODIFIED PLUS NP180s/s [p/s] [p/p]		MODIFIED PLUS NP180gM(T)		MODIFIED PLUS NP250gM4(T4)		MODIFIED PLUS NP250gT5	
3. SHEET THICKNESS (average thickness, inches)	0.090		0.094		0.163		0.166		0.202	
4. LOAD STRAIN PROPERTIES (at 0° F)										
4.1 INITIAL										
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD 69	MD 81.2	XD 54.7	MD 105	XD 54.7	MD 111	XD 82	MD 148	XD 106
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD 4.9	MD 42.9	XD 57.8	MD 58.3	XD 46.5	MD 53.1	XD 65.3	MD 59	XD 77.1
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)										
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)										
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
5. TENSILE TEAR STRENGTH (at 77° F)										
AVERAGE TEAR STRENGTH (pounds force)	MD	XD 49	MD 84.5	XD 78.9	MD 111	XD 99	MD 137.3	XD 100.4	MD 169	XD 147
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS										
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)										
AVERAGE PERCENT OF DRY MASS										
8. DIMENSIONAL STABILITY										
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0	XD 0	MD +0.4	XD -0.4	MD 0	XD 0	MD 0	XD 0	MD +0.4	XD -0.4
9. LOW TEMPERATURE FLEXIBILITY										
9.1 INITIAL										
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -18	XD -18	MD -13	XD -13	MD -13	XD -13	MD -25	XD -20	MD -13	XD -13
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)										
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)										
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
10. GRANULE EMBEDMENT										
AVERAGE GRANULE LOSS (ounces or NA)	NA		NA		0.065		0.142		0.166	
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)	226		226		226		226		226	
12. SEE MEMBRANE APPENDIX IF CHECKED										

1. COMPANY NAME	MONSEY BAKOR		MONSEY BAKOR		MONSEY BAKOR		MONSEY BAKOR		MONSEY BAKOR	
2. PRODUCT NAME	MODIFIED PLUS G100gM		MODIFIED PLUS G100gMFR		MODIFIED PLUS NP180gMFR(TFR)		MODIFIED PLUS NP250gMFR(TFR)		MODIFIED PLUS 170 MOP GRANULE	
3. SHEET THICKNESS (average thickness, inches)	0.162								160	
4. LOAD STRAIN PROPERTIES (at 0° F)										
4.1 INITIAL										
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD 81	MD	XD 81	MD 105	XD 54.7	MD 148	XD 106	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD 7.4	MD	XD 7.4	MD 58.3	XD 46.5	MD 59	XD 77.1	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)										
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)										
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
5. TENSILE TEAR STRENGTH (at 77° F)										
AVERAGE TEAR STRENGTH (pounds force)	MD	XD 50	MD	XD 50	MD 111	XD 99	MD 169	XD 147	MD	XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS										
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)										
AVERAGE PERCENT OF DRY MASS										
8. DIMENSIONAL STABILITY										
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD +0.4	XD -0.4	MD +0.4	XD -0.4	MD 0	XD 0	MD 0	XD 0	MD	XD
9. LOW TEMPERATURE FLEXIBILITY										
9.1 INITIAL										
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -18	XD -18	MD	XD	MD	XD	MD	XD	MD	XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)										
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)										
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
10. GRANULE EMBEDMENT										
AVERAGE GRANULE LOSS (ounces or NA)	0.278									
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)	226		226		226		226			
12. SEE MEMBRANE APPENDIX IF CHECKED										

NA=not applicable
MD=machine direction
XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.
2. PRODUCT NAME	POLYBOND G	POLYFLEX G	DIAMOND BACK	DUFLEX	DUFLEX 5
3. SHEET THICKNESS (average thickness, inches)					
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS					
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)					
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)					
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.
2. PRODUCT NAME	DUFLEX G	POLYGLASS BASE	POLYGLASS G-FR	POLYALL	POLYRAM
3. SHEET THICKNESS (average thickness, inches)			0.18	0.18	0.18
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS					
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)					
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)					
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable
MD=machine direction
XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.
POLYBOND G-SAND	INSULROOFING	INSULROOFING-GR	INSULBASE	ELASTOFLEX GS6-FR	ELASTOSHIELD TS4	ELASTOFLEX S6	ELASTOFLEX G-S6
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD

POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.
ELASTOBASE	ELASTOBASE POLY	MODI BASE	ELASTOFLEX V	ELASTOFLEX VG	ELASTOFLEX VG-FR	DYNAPAK	DYNAPAK FR
						0.158	0.158
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 180 XD 120 MD 5 XD 5 MD XD	MD 180 XD 120 MD 5 XD 5 MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD 115 XD 100 <1.0	MD 115 XD 100 <1.0
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD 0.2 XD 0.05	MD 0.2 XD 0.05
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD -5 XD -5	MD -5 XD -5
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
						<0.5	<0.5
						>250	>250

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.
2. PRODUCT NAME	DYNAGLAS	DYNAPLY	DYNAGLAS FR	DYNALASTIC 250	DYNALASTIC 180
3. SHEET THICKNESS (average thickness, inches)	0.150	0.125	0.150	0.158	0.150
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 120 XD 150	MD 180 XD 120	MD 120 XD 150	MD 190 XD 115	MD 135 XD 95
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 4.5 XD 4.5	MD 5 XD 5	MD 4.5 XD 4.5	MD 60 XD 60	MD 50 XD 50
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 95 XD 90	MD 115 XD 100	MD 95 XD 90	MD 190 XD 120	MD 145 XD 105
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	<1.0	<1.0	<1.0	<1.0	<1.0
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0.1 XD 0.05	MD 0.2 XD 0.05	MD 0.1 XD 0.05	MD 0.3 XD 0.1	MD 0.4 XD 0.25
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -15 XD -15
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	<0.5	NA	<0.5	<0.5	<0.5
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)	>250	>250	>250	>250	>250
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.
2. PRODUCT NAME	DYNALASTIC 180 FR	DYNAGLAS 30 FR	DYNABASE	DYNALASTIC 180 S	SBS 170
3. SHEET THICKNESS (average thickness, inches)	0.150	0.125	0.100	0.118	0.145
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 135 XD 95	MD 75 XD 65	MD 90 XD 70	MD 135 XD 90	MD 135 XD 95
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 50 XD 50	MD 4 XD 4	MD 4 XD 4	MD 55 XD 65	MD 50 XD 40
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 145 XD 105	MD 100 XD 100	MD 85 XD 60	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	<1.0	<1.0	<1.0	<1.0	<1.0
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0.4 XD 0.25	MD 0.1 XD 0.1	MD 0.1 XD 0.1	MD 0.4 XD 0.25	MD 0.7 XD 0.6
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -15 XD -15	MD -5 XD -5	MD -5 XD -5	MD -15 XD -15	MD -10 XD -10
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	<0.5	<0.5	NA	NA	<1.0
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)	>250	>250	>250	>250	>240
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable

MD=machine direction

XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL
DYNALASTIC 250 FR	DYNAMAX	DYNAMAX FR	SCHULLER APPEX 5S	SCHULLER APPEX 4S	SCHULLER APPEX 4M	SCHULLER APPEX 4M FR	SCHULLER APPEX 200
0.158	0.157		200	160	160	160	152
MD 190 XD 115 MD 60 XD 60 MD	MD 225 XD 225 MD 3 XD 3 MD	MD 225 XD 225 MD 3 XD 3 MD	MD 169 XD 131 MD 48 XD 62 MD	MD 164 XD 125 MD 46 XD 60 MD	MD 156 XD 104 MD 31 XD 24 MD	MD 130 XD 118 MD 34 XD 26 MD	MD 154 XD 119 MD 44 XD 58 MD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 199 XD 79 MD 25 XD 14 MD	MD 197 XD 176 MD 24 XD 12 MD	MD 170 XD 112 MD 32 XD 11 MD	MD 142 XD 118 MD 42 XD 38 MD	MD 191 XD 170 MD 24 XD 11 MD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 200 XD 159 MD 42 XD 19 MD	MD 197 XD 158 MD 41 XD 17 MD	MD 156 XD 146 MD 27 XD 21 MD	MD 162 XD 123 MD 31 XD 23 MD	MD 192 XD 152 MD 39 XD 15 MD
MD 190 XD 120 <1.0	MD XD <1.0	MD XD <1.0	MD 184 XD 55 0.10	MD 179 XD 149 0.15	MD 147 XD 112 0.10	MD 194 XD 146 0.15	MD 173 XD 141 0.18
			0.05	0.7	2.4	1.9	0.9
MD 0.3 XD 0.1	MD 0.1 XD 0.1	MD 0.1 XD 0.1	MD 0.8 XD 0.5	MD 0.9 XD 0.5	MD 0.9 XD 0.7	MD 0.3 XD 0.1	MD 0.9 XD 0.5
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 12.2 XD 12.2 MD 21 XD 21 MD 20 XD 20	MD 12.2 XD 12.2 MD 21 XD 21 MD 20 XD 20	MD 12.2 XD 12.2 MD 21 XD 21 MD 20 XD 20	MD 12.2 XD 12.2 MD 21 XD 21 MD 20 XD 20	MD 14 XD 14 MD 22 XD 22 MD 21 XD 21
<1.0	<1.0	<1.0	NA	NA	1.8	1.0	NA
>250	>250	>250	275	275	275	275	275

SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL
BLACKBEAR	CLASSIC MINERAL	CLASSIC FR	TRICOR-M FR	TRICOR	BICOR	SCHULLER APPEX 4.5M	SCHULLER APPEX 4.5M FR
160	160	160	160	180	160	180	160
MD 160 XD 121 MD 48 XD 38 MD	MD 133 XD 106 MD 48 XD 38 MD	MD 133 XD 106 MD 48 XD 38 MD	MD 300 XD 300 MD 4.7 XD 5.3 MD	MD 300 XD 300 MD 4.7 XD 5.3 MD	MD 180 XD 180 MD 4 XD 3.5 MD	MD 168 XD 114 MD 28 XD 21 MD	MD 158 XD 104 MD 28 XD 21 MD
MD 185 XD 155 MD 29 XD 21 MD	MD 134 XD 106 MD 38 XD 31 MD	MD 134 XD 106 MD 38 XD 31 MD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 186 XD 131 MD 24 XD 18 MD	MD 173 XD 122 MD 26 XD 19 MD
MD 152 XD 135 MD 30 XD 23 MD	MD 162 XD 123 MD 31 XD 23 MD	MD 162 XD 123 MD 31 XD 23 MD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 184 XD 133 MD 26 XD 19 MD	MD 175 XD 126 MD 27 XD 20 MD
MD 177 XD 147 0.15	MD 157 XD 122 0.05	MD 157 XD 122 0.05	MD 280 XD 280 0.05	MD 280 XD 280 0.05	MD 280 XD 280 0.05	MD 159 XD 121 0.15	MD 157 XD 118 0.10
1.7	1.7	1.7	1.3	1.3	1.3	1.8	2.2
MD 0.9 XD 0.6	MD 0.1 XD 0.2	MD 0.1 XD 0.2	MD 0 XD 0	MD 0 XD 0	MD 0 XD 0	MD 0.9 XD 0.7	MD 0.6 XD 0.5
MD 6.8 XD 6.8 MD 19 XD 19 MD 18 XD 18	MD -0.4 XD -0.4 MD 3.2 XD 3.2 MD 20 XD 20	MD -0.4 XD -0.4 MD 3.2 XD 3.2 MD 20 XD 20	MD 5 XD 5 MD 23 XD 23 MD XD	MD 5 XD 5 MD 23 XD 23 MD XD	MD 5 XD 5 MD 23 XD 23 MD XD	MD 13.1 XD 13.1 MD 21 XD 21 MD 20 XD 20	MD 14.8 XD 14.8 MD 23 XD 23 MD 22 XD 22
0.3	0.5	0.5	NA	NA	NA	2.0	2.0
275	270	270	230	230	230	275	275

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.
2. PRODUCT NAME	CLASSIC SMOOTH	CLASSIC FR PREMIUM	PARADIENE 20	PARADIENE 20 HT	PARADIENE 20 PR
3. SHEET THICKNESS (average thickness, inches)	160	160	0.091	0.091	0.091
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD 150 XD 112	MD 170 XD 155	MD XD 70	MD XD 150	MD XD 150
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 48 XD 39	MD 48 XD 38	MD XD 3.7	MD XD 4.6	MD XD 4.6
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD 1.9	MD XD 4	MD XD 4
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD 146 XD 112	MD 200 XD 162	MD XD 70	MD XD 160	MD XD 160
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 35 XD 33	MD 38 XD 31	MD XD 3.6	MD XD 4.6	MD XD 4.6
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD 1.9	MD XD 4	MD XD 4
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD 162 XD 123	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD 31 XD 23	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 157 XD 122	MD 197 XD 175	MD XD 45	MD XD 140	MD XD 140
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	0.05	0.05	<0.1	<0.1	<0.1
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS	1.3	1.7	<0.2	<0.2	<0.2
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0.1 XD 0.2	MD 0.1 XD 0.2	MD 0 XD 0	MD 0 XD 0	MD 0.2 XD 0.2
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 5 XD 5	MD -0.04 XD -0.04	MD -15 XD -15	MD -15 XD -15	MD -15 XD -15
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 3.2 XD 3.2	MD 3.2 XD 3.2	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD 20 XD 20	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	0.5	0.5	NA	NA	NA
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)	270	270	250	250	250
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.
2. PRODUCT NAME	PARADIENE 20EG	PARADIENE 30	PARADIENE 30 HT	PARATECH	PARADIENE 40 FR
3. SHEET THICKNESS (average thickness, inches)	0.118	0.130	0.130	0.140	0.150
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD 160	MD XD 160	MD XD 155	MD XD 160	MD XD 160
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD 4.6	MD XD 3.9	MD XD 5	MD XD 5	MD XD 5
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD 4	MD XD 2.2	MD XD 4.5	MD XD 4.5	MD XD 4.5
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD 160	MD XD 80	MD XD 155	MD XD 160	MD XD 160
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD 4.6	MD XD 3.8	MD XD 5	MD XD 5	MD XD 5
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD 4	MD XD 1.9	MD XD 4.5	MD XD 4.5	MD XD 4.5
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD 150	MD XD 45	MD XD 150	MD XD 160	MD XD 160
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	<0.1	<0.1	<0.1	<0.1	<0.1
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS	<0.2	<0.2	<0.2	<0.2	<0.2
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0 XD 0	MD 0 XD 0	MD 0 XD 0	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -10 XD -10	MD -15 XD -15	MD -15 XD -15	MD -10 XD -10	MD -10 XD -10
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 0 XD 0	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	NA	<0.05	<0.05	<0.05	<0.05
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)	250	250	250	250	250
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable

MD=machine direction

XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SOPREMA, INC.	SOPREMA, INC.
PARAFOR 50LT	VERAL (ALUMINUM FACED)	VERAL (COPPER)	VERAL (STAINLESS STEEL)	VERAL SPECTRA	PARADIENE 20 HV	SOPRALENE 180	SOPRALENE FLAM 180
0.180	0.134	0.134	0.134	0.134	0.118	0.120	.120
MD XD 185 MD XD 4.5 MD XD 4.5	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD MD XD MD XD	MD 130 XD 100 MD 35 XD 30 MD 40 XD 30	MD 130 XD 100 MD 35 XD 30 MD 40 XD 30
MD XD 185 MD XD 4.5 MD XD 4.5	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD MD XD MD XD	MD 115 XD 85 MD 25 XD 15 MD 20 XD 10	MD 115 XD 85 MD 25 XD 15 MD 20 XD 10
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD 150 <0.1 <0.2	MD XD 150 <0.1 <0.2	MD XD 170 <0.1 <0.2	MD XD 180 <0.1 <0.2	MD XD 150 <0.1 <0.2	MD XD <0.1 <0.2	MD 120 XD 90 0.6 0.6	MD 120 XD 90 0.6 0.6
MD XD MD -10 XD -10 MD 0 XD 0 MD XD	MD XD MD 0 XD 0 MD 10 XD 10 MD XD	MD XD MD 0 XD 0 MD 10 XD 10 MD XD	MD XD MD 0 XD 0 MD 10 XD 10 MD XD	MD XD MD 0 XD 0 MD 10 XD 10 MD XD	MD <- .5 XD <- .5 MD -15 XD -15 MD -0.5 XD -0.5 MD XD	MD <-0.5 XD <+0.5 MD -15 XD -15 MD -5 XD -5 MD XD	MD <-0.5 XD <+0.5 MD -15 XD -15 MD -5 XD -5 MD XD
<0.05 250	NA 250	NA 250	NA 250	NA 250	NA > 250	NA > 250	NA >250

SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.
SOPRALENE 180 GRANULES	SOPRALENE FLAM 180 GRANULES	SOPRALENE 250	SOPRALENE FLAM 250	SOPRALENE 250 GRANULES	SOPRALENE FLAM 250 GRANULES	SOPRALENE 350	SOPRALENE 350 GRANULES
.160	.160	.160	.160	.160	.160	.160	0.200
MD 130 XD 100 MD 35 XD 30 MD 40 XD 30	MD 130 XD 100 MD 35 XD 30 MD 40 XD 30	MD 170 XD 120 MD 35 XD 35 MD 50 XD 35	MD 170 XD 120 MD 35 XD 35 MD 50 XD 35	MD 170 XD 120 MD 35 XD 35 MD 50 XD 35	MD 170 XD 120 MD 35 XD 35 MD 50 XD 35	MD 210 XD 170 MD 40 XD 45 MD 65 XD 50	MD 210 XD 170 MD 40 XD 45 MD 65 XD 50
MD 115 XD 85 MD 25 XD 15 MD 20 XD 10	MD 115 XD 85 MD 25 XD 15 MD 20 XD 10	MD 160 XD 115 MD 35 XD 30 MD 55 XD 45	MD 160 XD 115 MD 35 XD 30 MD 55 XD 45	MD 160 XD 115 MD 35 XD 30 MD 55 XD 45	MD 160 XD 115 MD 35 XD 30 MD 55 XD 45	MD 190 XD 150 MD 35 XD 40 MD 55 XD 50	MD 190 XD 150 MD 35 XD 40 MD 55 XD 50
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD 120 XD 90 0.6 0.6	MD 120 XD 90 0.6 0.6	MD 165 XD 125 0.6 0.6	MD 165 XD 125 0.6 0.6	MD 165 XD 125 0.6 0.6	MD 165 XD 125 0.6 0.6	MD 205 XD 160 0.6 0.6	MD 205 XD 160 0.6 0.6
MD <-0.5 XD <+0.5	MD <-0.5 XD <+0.5	MD <-0.3 XD <+0.3	MD <-0.3 XD <+0.3	MD < 0.3 XD < 0.3	MD < 0.3 XD < 0.3	MD <-0.2 XD <+0.2	MD <-0.2 XD <+0.2
MD -15 XD -15 MD -5 XD -5 MD XD	MD -15 XD -15 MD -5 XD -5 MD XD	MD -15 XD -15 MD -5 XD -5 MD XD	MD -15 XD -15 MD -5 XD -5 MD XD	MD -15 XD -15 MD -5 XD -5 MD XD	MD -15 XD -15 MD -5 XD -5 MD XD	MD -15 XD -15 MD -5 XD -5 MD XD	MD -15 XD -15 MD -5 XD -5 MD XD
0.03 >250	0.03 >250	NA >250	NA >250	0.03 >250	0.03 >250	NA >250	0.03 >250

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.
2. PRODUCT NAME	SOPRALENE FLAM STICK	ELASTOPHENE	ELASTOPHENE FLAM	ELASTOPHENE GRANULES	ELASTOPHENE FLAM GRANULES
3. SHEET THICKNESS (average thickness, inches)		0.90	0.120	0.136	0.140
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD 100 XD 91	MD 100 XD 91	MD 100 XD 91	MD 100 XD 91
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD 4.4 XD 4.5	MD 4.4 XD 4.5	MD 4.4 XD 4.5	MD 4.4 XD 4.5
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD 2.7 XD 2.5	MD 2.7 XD 2.5	MD 2.7 XD 2.5	MD 2.7 XD 2.5
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD 116 XD 104	MD 116 XD 104	MD 116 XD 104	MD 116 XD 104
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD 4.3 XD 4	MD 4.3 XD 4	MD 4.3 XD 4	MD 4.3 XD 4
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD 2.7 XD 2.4	MD 2.7 XD 2.4	MD 2.7 XD 2.4	MD 2.7 XD 2.4
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD 82 XD 73	MD 82 XD 73	MD 82 XD 73	MD 82 XD 73
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS		0.6	0.6	0.6	0.6
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS		0.6	0.6	0.6	0.6
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD 0 XD 0	MD 0 XD 0	MD 0 XD 0	MD 0 XD 0
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD -15 XD -15	MD -15 XD -15	MD -15 XD -15	MD -15 XD -15
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)		NA	NA	0.03	0.03
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)		> 250	> 250	> 250	> 250
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.
2. PRODUCT NAME	ELASTOPHENE PS	ELASTOPHENE 180	ELASTOPHENE 180 PS	ELASTOPHENE FLAM GRANULES FR	ELASTOPHENE GRANULES FR
3. SHEET THICKNESS (average thickness, inches)	0.90	0.90	0.90	0.140	0.136
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 100 XD 91	MD 130 XD 100	MD 130 XD 100	MD 100 XD 91	MD 100 XD 91
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 4.4 XD 4.5	MD 35 XD 30	MD 35 XD 30	MD 4.4 XD 4.5	MD 4.4 XD 4.5
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD 2.7 XD 2.5	MD 40 XD 30	MD 40 XD 30	MD 2.7 XD 2.5	MD 2.7 XD 2.5
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD 116 XD 104	MD 115 XD 85	MD 115 XD 85	MD 116 XD 104	MD 116 XD 104
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 4.3 XD 4	MD 25 XD 15	MD 25 XD 15	MD 4.3 XD 4	MD 4.3 XD 4
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD 2.7 XD 2.4	MD 20 XD 10	MD 20 XD 10	MD 2.7 XD 2.4	MD 2.7 XD 2.4
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 82 XD 73	MD 120 XD 90	MD 120 XD 90	MD 120 XD 90	MD 120 XD 90
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	0.6	0.6	0.6	0.6	0.6
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS	0.6	0.6	0.6	0.6	0.6
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0 XD 0	MD <-0.5 XD <+0.5	MD <-0.5 XD <+0.5	MD <-0.5 XD <-0.5	MD <-0.5 XD <-0.5
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -15 XD -15	MD -15 XD -15	MD -15 XD -15	MD -15 XD -15	MD -15 XD -15
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	NA	NA	NA	0.03	0.03
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)	> 250	> 250	> 250	> 250	
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable

MD=machine direction

XD=cross direction

Test description as specified in ASTM D 5147-95

SOUTHWESTERN PETROLEUM CORPORATION	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.
SWPCO UNI + SHIELD II SYS 303	AWAPLAN PREMIUM	AWAPLAN 170	AWAPLAN PREMIUM FR	AWAPLAN 170 FR	AWAPLAN VERSA-SMOOTH	VERSA-CAP FR	AWAPLAN HEAT WELDING
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TEXAS REFINERY CORP.	TEXSA, S.A.
2. PRODUCT NAME	TAM-FLEX	POLY-PRO GP	POLY-PRO SP	MIGHTYPLATE	HIPER M.P.
3. SHEET THICKNESS (average thickness, inches)				0.157	0.16
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD 208 XD 180.4	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD 45 XD 45	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD 461 XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD 43 XD 42	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD 465 XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD 40 XD 40	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD XD	MD 105 XD 100
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS				NIL	< 0.1
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS				NIL	< 0.2
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD XD	MD < 0.5 XD < 0.5
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD 8 XD 8	MD 5 XD 5
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD 10 XD 10	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD 10 XD 10	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)				NA	
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)				>30	250
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.
2. PRODUCT NAME	MIN TEXAL -15 FP-S	TEXAL -10 FV 3MM	TEXAL -15 FP-S 4MM	MIN MOFLEX -20 FP-S	TEXSELF
3. SHEET THICKNESS (average thickness, inches)	0.158	0.12	0.158	0.158	0.06
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 105 XD 100	MD 75 XD 50	MD 105 XD 100	MD 105 XD 100	MD 35 XD 35
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD < 0.5 XD < 0.5	MD 0.1 XD 0.05	MD < 0.5 XD < 0.5	MD < 0.5 XD < 0.5	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 5 XD 5	MD 10 XD 10	MD < 5 XD < 5	MD -5 XD -5	MD -5 XD -5
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)					
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)	>250	225	>250	225	225
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable
MD=machine direction
XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.	3 E GROUP INC.	TREMCO INC.
M.P. PARKING	MINERAL M.P. 5KGFM	TEXSELF AL 45	TEXSELF ICE AND WATER SCREEN	TEXSELF GAS SCREEN	TEXSELF FP	FLASHBAND-28	THERM MB 2C6S
0.17	0158	0.08	0.06	0.08	0.08		
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 360 XD 320 MD 5.9 XD 5.1 MD 11.5 XD 9
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 395 XD 360 MD 6.7 XD 5.7 MD 14.2 XD 10.9
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD	MD 35 XD 35	MD 35 XD	MD 35 XD	MD XD	MD XD	MD XD	MD 330 XD 360
	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		
	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2		2.85
MD < 0.5 XD < 0.5	MD < 0.3 XD < 0.3	MD XD	MD XD	MD XD	MD < 0.5 XD < 0.5	MD XD	MD 0 XD 0
MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD XD	MD -50 XD -50
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD -45 XD -40
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
225	225	225	225	225	225		250

TREMCO INC.	TREMCO INC.	TREMCO INC.	TREMCO INC.	TREMCO INC.	TRI-PLY	TRI-PLY	TRI-PLY
THERM MB 2C2S	THERM MB LTD	THERM MB 4PFR	THERM MB 2PS	THERM MB GLASS BASE	KARIFALT 306	TP-4	KARIFALT 307 FR
	0.125				0.158	0.150	0.150
MD 391 XD 364 MD 6.3 XD 5.4 MD 13.1 XD 10.4	MD 120 XD 118 MD 2.6 XD 2.5 MD 1.8 XD 1.8	MD 140 XD 120 MD 58 XD 55 MD XD	MD 78 XD 80 MD 60 XD 55 MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD 384 XD 290 MD 5.6 XD 5 MD 11.5 XD 8.2	MD 130 XD 129 MD 2.3 XD 2.6 MD 1.9 XD 2	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD 130 XD 117 MD 2.6 XD 2.2 MD 2 XD 1.6	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD 375 XD 414	MD 79 XD 80	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
	0.03						
2.15	0.07						
MD 0 XD 0	MD 0 XD 0	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD -45 XD -45	MD 0 XD 0	MD -15 XD	MD -15 XD	MD XD	MD XD	MD XD	MD XD
MD -45 XD -45	MD 5 XD 5	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD 0 XD 0	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
	2.6				>0.5	>0.5	>0.5
250	250				>250	>250	>250

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	TRI-PLY	TRI-PLY	TRI-PLY	TRI-PLY	TRI-PLY
2. PRODUCT NAME	TP-4G	KARIFALT 306 FR	KARIFALT 307	KARIFALT 308	EAGLE BASE MODIFIED
3. SHEET THICKNESS (average thickness, inches)			0.150	0.125	0.125
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS					
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD 0.6 XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)					>0.5
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)					>250
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	TRI-PLY	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.
2. PRODUCT NAME	EAGLE BASE MODIFIED PLUS	INTEC SP4	INTEC/FLEX M	INTEC/FLEX 190	INTEC/FLEX FR4.5
3. SHEET THICKNESS (average thickness, inches)		160	160	160	160
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD 120 XD 90	MD 160 XD 140	MD 130 XD 90	MD 110 XD 80
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD 80 XD 70	MD 80 XD 85	MD 80 XD 70	MD 8 XD 8
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD 120 XD 85	MD 160 XD 140	MD 130 XD 90	MD 110 XD 85
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD 55 XD 50	MD 65 XD 70	MD 60 XD 60	MD 5 XD 5
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD 145 XD 115	MD 165 XD 145	MD 145 XD 115	MD 95 XD 95
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS					
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD < 0.5 XD < 0.5	MD < 0.5 XD < 0.5	MD < 0.5 XD < 0.5	MD < 0.01 XD < 0.01
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD 15 XD	MD -5 XD	MD -5 XD	MD 5 XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD 20 XD	MD 0 XD	MD 0 XD	MD 5 XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)			< 0.07	< 0.07	< -0.07
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)		250	220	220	220
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable
MD=machine direction
XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.
INTEC GBSP-4	INTEC GBSP-4-FR	INTEC/FLEX S	INTEC/FLEX FR3 HS	FLEXBASE 60 FR HS	INTEC MODIFIED BASE PLUS HS	INTEC GBSP 250 FR	INTEC/FLEX 190 FR
160	160	138	150	80	95	197	160
MD 120 XD 90 MD 90 XD 70 MD	MD 120 XD 90 MD 80 XD 80 MD	MD 130 XD 90 MD 80 XD 70 MD	MD 220 XD 220 MD 5 XD 5 MD	MD 220 XD 220 MD 5 XD 5 MD	MD 220 XD 220 MD 5 XD 5 MD	MD 130 XD 110 MD 90 XD 90 MD	MD 130 XD 90 MD 80 XD 90 MD
MD 120 XD 85 MD 60 XD 55 MD	MD 120 XD 40 MD 50 XD 55 MD	MD 130 XD 90 MD 60 XD 60 MD	MD 220 XD 220 MD 5 XD 5 MD	MD 220 XD 220 MD 5 XD 5 MD	MD 220 XD 220 MD 5 XD 5 MD	MD 130 XD 110 MD 80 XD 75 MD	MD 130 XD 90 MD 55 XD 60 MD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD 145 XD 115	MD 145 XD 115	MD 145 XD 115	MD 140 XD 140	MD 140 XD 140	MD 140 XD 140	MD 150 XD 120	MD 145 XD 115
MD < 0.05 XD < 0.05	MD < 0.05 XD < 0.05	MD < 0.05 XD < 0.05	MD < 0.01 XD < 0.01	MD < 0.01 XD < 0.01	MD < 0.01 XD < 0.01	MD < 0.05 XD < 0.05	MD < 0.05 XD < 0.05
MD 15 XD MD 20 XD MD XD	MD 15 XD MD 20 XD MD XD	MD -5 XD MD -5 XD MD XD	MD 5 XD MD 5 XD MD XD	MD -5 XD MD XD MD XD	MD -5 XD MD XD MD XD	MD 15 XD MD 20 XD MD XD	MD 5 XD MD 5 XD MD XD
< -0.07	< -0.07	< -0.07	< -0.07			< -0.07	< -0.07
250	250	220	220	220	220	250	220

U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.
INTEC/FLEX 250 FR	INTEC/FLEX G4 CAP	FLEXBASE 60 FR	INTEC MODIFIED BASE PLUS
177	160	80	95
MD 130 XD 110 MD 90 XD 90 MD	MD 100 XD 80 MD 8 XD 8 MD	MD 80 XD 75 MD 4 XD 5 MD	MD 85 XD 80 MD 4 XD 5 MD
MD 130 XD 110 MD 80 XD 75 MD	MD 100 XD 80 MD 6 XD 5 MD	MD 85 XD 80 MD 4 XD 4 MD	MD 85 XD 80 MD 4 XD 4 MD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD 150 XD 170	MD 90 XD 90	MD 80 XD 80	MD 80 XD 80
MD < 0.05 XD < 0.05	MD < 0.01 XD < 0.01	MD < 0.01 XD < 0.01	MD < 0.01 XD < 0.01
MD 5 XD MD 5 XD MD XD	MD -5 XD MD -5 XD MD XD	MD -5 XD MD 0 XD MD XD	MD -5 XD MD 0 XD MD XD
< -0.07	< -0.07	< -0.07	< -0.07
220	220	220	220

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	GARLAND COMPANY INC., THE		GARLAND COMPANY INC., THE		GARLAND COMPANY INC., THE	
2. PRODUCT NAME	STRESSPLY IV MINERAL		STRESSPLY "E"		STRESSPLY "E" FR MINERAL	
3. SHEET THICKNESS (average thickness, inches)						
4. LOAD STRAIN PROPERTIES (at 0° F)						
4.1 INITIAL						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD
5. TENSILE TEAR STRENGTH (at 77° F)						
AVERAGE TEAR STRENGTH (pounds force)	MD	XD	MD	XD	MD	XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS						
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)						
AVERAGE PERCENT OF DRY MASS						
8. DIMENSIONAL STABILITY						
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD	XD	MD	XD	MD	XD
9. LOW TEMPERATURE FLEXIBILITY						
9.1 INITIAL						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD
10. GRANULE EMBEDMENT						
AVERAGE GRANULE LOSS (ounces or NA)						
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)						
12. SEE MEMBRANE APPENDIX IF CHECKED						

1. COMPANY NAME	GARLAND COMPANY INC., THE		GRACE, W.R. & CO.	GS ROOFING PRODUCTS CO. INC.	GS ROOFING PRODUCTS CO. INC.	GS ROOFING PRODUCTS CO. INC.
2. PRODUCT NAME	HPR TORCH BASE SHEET		PRMA-350 PRMA-450	FLINTLASTIC GTA	FLINTLASTIC STA	FLINTLASTIC GTS
3. SHEET THICKNESS (average thickness, inches)			0.05	0.17	0.16	0.18
4. LOAD STRAIN PROPERTIES (at 0° F)						
4.1 INITIAL						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD 50 XD 75	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD 250 XD 150	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD 11,000 XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD 50 XD 75	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD 250 XD 150	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD 11,000 XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD 50 XD 75	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD 250 XD 150	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD 11,000 XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)						
AVERAGE TEAR STRENGTH (pounds force)	MD	XD	MD 4.5 XD 4.5	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS			0.1	0.0004	0.0008	0.0004
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)						
AVERAGE PERCENT OF DRY MASS			0.1	0.0018	0.0018	0.0014
8. DIMENSIONAL STABILITY						
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD	XD	MD XD	MD 0.5 XD 0.3	MD 0.5 XD 0.3	MD 0.5 XD 0.3
9. LOW TEMPERATURE FLEXIBILITY						
9.1 INITIAL						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD -45 XD -45	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD -45 XD -45	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD -45 XD -45	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT						
AVERAGE GRANULE LOSS (ounces or NA)			NA	<0.035	NA	<0.07
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)			>250	0	>250	>250
12. SEE MEMBRANE APPENDIX IF CHECKED						

NA=not applicable
MD=machine direction
XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147–95

GS ROOFING PRODUCTS CO. INC.		GS ROOFING PRODUCTS CO. INC.		GS ROOFING PRODUCTS CO. INC.		GS ROOFING PRODUCTS CO. INC.		GS ROOFING PRODUCTS CO. INC.		GS ROOFING PRODUCTS CO. INC.		GS ROOFING PRODUCTS CO. INC.		GS ROOFING PRODUCTS CO. INC.	
FLINTLASTIC GMS		FLINTLASTIC FR PG		GTA BLACK DIAMOND		FRP		FR BASE		FR CAP		BLACK DIAMOND BASE SHEET		POLY SMS BASE SHEET	
0.16		0.16		0.157		0.185		0.080		0.120					
MD XD	MD XD	MD XD	MD XD	MD 153 XD 115	MD 122 XD 87	MD 121 XD 72	MD 121 XD 72	MD 121 XD 72	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD 37 XD 39	MD 42 XD 43	MD 4 XD 4	MD 4 XD 4	MD 4 XD 4	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD 57 XD 45	MD 51 XD 37	MD 5 XD 3	MD 5 XD 3	MD 5 XD 3	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD 161 XD 119	MD 130 XD 91	MD 127 XD 81	MD 127 XD 81	MD 127 XD 81	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD 31 XD 33	MD 34 XD 36	MD 4 XD 4	MD 4 XD 4	MD 4 XD 4	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD 50 XD 39	MD XD	MD 5 XD 3	MD 5 XD 3	MD 5 XD 3	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD 156 XD 117	MD 128 XD 90	MD 125 XD 80	MD 125 XD 80	MD 125 XD 80	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD 36 XD 37	MD 40 XD 39	MD 4 XD 4	MD 4 XD 4	MD 4 XD 4	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD 56 XD 43	MD 51 XD 35	MD 5 XD 3	MD 5 XD 3	MD 5 XD 3	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD 136 XD 105	MD 132 XD 94	MD 124 XD 75	MD 124 XD 75	MD 124 XD 75	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
0.0004		0.0005		<0.1		<0.1		<0.1		<0.1					
0.0019		0.002		<0.4		<0.4		<0.4		<0.4					
MD 0.5 XD 0.3	MD 0.5 XD 0.3	MD 0.5 XD 0.3	MD 0.5 XD 0.3	MD 0.5 XD 0.3	MD 0.5 XD 0.3	MD <0.05 XD <0.05	MD <0.05 XD <0.05	MD <0.05 XD <0.05	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
<0.07		<0.07		NA		<0.07		NA		NA					
>250		>250		280		225		225		225					
				X		X		X		X					

GS ROOFING PRODUCTS CO. INC.	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.
FLINTLASTIC GTA-FR	PIKA PLY SS-4	PIKA PLY MS-4	PIKA PLY SA-4	PIKA PLY MA-4	PIKA PLY 808	PIKA PLY SS-3P	PIKA PLY SA-3
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.	WP HICKMAN SYSTEMS INC.	HYLOAD, INC.	HYLOAD, INC.
2. PRODUCT NAME	PIKA PLY SS-2	PIKA PLY 808-MS	PIKA PLY MS-3G	HYBASE	HYBASE SAM
3. SHEET THICKNESS (average thickness, inches)				0.071	0.084
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD 70 XD 70	MD 70 XD 70
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD 55 XD 55	MD 55 XD 55
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS				0	0
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)				0	0
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD <1 XD 0	MD <1 XD 0
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)				0.2	0.2
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)				225	225
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	IKO INDUSTRIES INC.	IKO INDUSTRIES INC.	IKO INDUSTRIES INC.	IKO INDUSTRIES INC.	IKO INDUSTRIES INC.
2. PRODUCT NAME	ARMOURPLAST GRANULAR	ARMOURPLAST CLASSIC	MODIFLEX MP-180-CAP	MODIFLEX MP-250-CAP	TORCHFLEX TP-180-CAP
3. SHEET THICKNESS (average thickness, inches)	.165	.150	.138	.157	.157
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS					
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)					
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)					
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable
MD=machine direction
XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147–95

IKO INDUSTRIES INC.	IMPERITALIA SPA	IMPERITALIA SPA	IMPERITALIA SPA	IMPERITALIA SPA	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.
TORCHFLEX TP-250-CAP .157	PARALON NT4	TRIPLENE	ARWENOL AL	ARWENOL ARD/S	2040-M APP	2040-S APP	2050-S APP
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD

KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.
2041-M SBS	2041-S SBS	2045-M SBS	2045 MFR-CAP	2042 MFR-CAP	2042 FR-BASE	PREMIUM SBS 601	PARAGON SBS 625
						0.120	0.125
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 126 XD 115 MD 5.9 XD 5.8 MD XD	MD 145 XD 118 MD 6.3 XD 6.1 MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD 95 XD 95	MD 110 XD 100
						0	0
						0	0
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD 0 XD 0	MD 0 XD 0
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD -10 XD	MD -20 XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
						0.2	0.5
						250	250

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.
2. PRODUCT NAME	PANOPLY SBS 650	POLYGLASS SBS 917	POLYGLASS SBS 919	ESHALUM SBS 1020	APP 160 SMOOTH
3. SHEET THICKNESS (average thickness, inches)	0.150	0.180	0.160	0.160	0.160
4. LOAD STRAIN PROPERTIES (at 0°F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD 219 XD 183	MD 213 XD 185	MD 215 XD 189	MD 90 XD 90	MD 190 XD 150
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 7.5 XD 7.3	MD 8.2 XD 8.6	MD 8.2 XD 8.5	MD XD	MD 50 XD 55
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD NA XD NA	MD 200 XD 170
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD 40 XD 45
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD 200 XD 170
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD 45 XD 45
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 190 XD 175	MD 100 XD 100	MD 100 XD 100	MD XD	MD 130 XD 100
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	0	0	0	0	<0.2
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS	0	0	0	0	<0.4
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0 XD 0	MD 0 XD 0	MD 0 XD 0	MD 0 XD	MD 0.5 XD 0.3
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -20 XD	MD -5 XD	MD -5 XD	MD NA XD	MD 5 XD 5
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD NA XD	MD 14 XD 14
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD 10 XD 10
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	0.5	0.5	NA	NA	NA
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)	250	250	250	250	266
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MBTECHNOLOGY	MBTECHNOLOGY	MBTECHNOLOGY
2. PRODUCT NAME	APP 161 MINERAL	APP 162 MINERAL	SUPERCAP SBS SC-75GAL	SUPERCAP SBS SC-75GWH	METAFLEX SBS MF-160WAL
3. SHEET THICKNESS (average thickness, inches)	0.180	0.180			
4. LOAD STRAIN PROPERTIES (at 0°F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD 190 XD 150	MD 190 XD 150	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 50 XD 55	MD 50 XD 55	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD 200 XD 170	MD 200 XD 170	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 40 XD 45	MD 40 XD 45	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD 200 XD 170	MD 200 XD 170	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 45 XD 45	MD 40 XD 45	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 130 XD 100	MD 130 XD 100	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	0.15	<0.2			
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS	<0.2	<0.4			
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0.5 XD 0.3	MD 0.5 XD 0.3	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 5 XD 5	MD 5 XD 5	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 14 XD 14	MD 14 XD 14	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 10 XD 10	MD 10 XD 10	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	<0.05	<0.05			
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)	266	266			
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable
MD=machine direction
XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	MONSEY BAKOR		MONSEY BAKOR		MONSEY BAKOR		MONSEY BAKOR		MONSEY BAKOR	
2. PRODUCT NAME	MODIFIED PLUS G100 s/s [p/s] [p/p]		MODIFIED PLUS NP180s/s [p/s] [p/p]		MODIFIED PLUS NP180gM(T)		MODIFIED PLUS NP250gM4(T4)		MODIFIED PLUS NP250gT5	
3. SHEET THICKNESS (average thickness, inches)	0.090		0.094		0.163		0.166		0.202	
4. LOAD STRAIN PROPERTIES (at 0° F)										
4.1 INITIAL										
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD 69	MD 81.2	XD 54.7	MD 105	XD 54.7	MD 111	XD 82	MD 148	XD 106
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD 4.9	MD 42.9	XD 57.8	MD 58.3	XD 46.5	MD 53.1	XD 65.3	MD 59	XD 77.1
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)										
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)										
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
5. TENSILE TEAR STRENGTH (at 77° F)										
AVERAGE TEAR STRENGTH (pounds force)	MD	XD 49	MD 84.5	XD 78.9	MD 111	XD 99	MD 137.3	XD 100.4	MD 169	XD 147
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS										
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)										
AVERAGE PERCENT OF DRY MASS										
8. DIMENSIONAL STABILITY										
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0	XD 0	MD +0.4	XD -0.4	MD 0	XD 0	MD 0	XD 0	MD +0.4	XD -0.4
9. LOW TEMPERATURE FLEXIBILITY										
9.1 INITIAL										
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -18	XD -18	MD -13	XD -13	MD -13	XD -13	MD -25	XD -20	MD -13	XD -13
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)										
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)										
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
10. GRANULE EMBEDMENT										
AVERAGE GRANULE LOSS (ounces or NA)	NA		NA		0.065		0.142		0.166	
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)	226		226		226		226		226	
12. SEE MEMBRANE APPENDIX IF CHECKED										

1. COMPANY NAME	MONSEY BAKOR		MONSEY BAKOR		MONSEY BAKOR		MONSEY BAKOR		MONSEY BAKOR	
2. PRODUCT NAME	MODIFIED PLUS G100gM		MODIFIED PLUS G100gMFR		MODIFIED PLUS NP180gMFR(TFR)		MODIFIED PLUS NP250gMFR(TFR)		MODIFIED PLUS 170 MOP GRANULE	
3. SHEET THICKNESS (average thickness, inches)	0.162								160	
4. LOAD STRAIN PROPERTIES (at 0° F)										
4.1 INITIAL										
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD 81	MD	XD 81	MD 105	XD 54.7	MD 148	XD 106	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD 7.4	MD	XD 7.4	MD 58.3	XD 46.5	MD 59	XD 77.1	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)										
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)										
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch2)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
5. TENSILE TEAR STRENGTH (at 77° F)										
AVERAGE TEAR STRENGTH (pounds force)	MD	XD 50	MD	XD 50	MD 111	XD 99	MD 169	XD 147	MD	XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS										
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)										
AVERAGE PERCENT OF DRY MASS										
8. DIMENSIONAL STABILITY										
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD +0.4	XD -0.4	MD +0.4	XD -0.4	MD 0	XD 0	MD 0	XD 0	MD	XD
9. LOW TEMPERATURE FLEXIBILITY										
9.1 INITIAL										
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -18	XD -18	MD	XD	MD	XD	MD	XD	MD	XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)										
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)										
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD	MD	XD	MD	XD
10. GRANULE EMBEDMENT										
AVERAGE GRANULE LOSS (ounces or NA)	0.278									
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)	226		226		226		226			
12. SEE MEMBRANE APPENDIX IF CHECKED										

NA=not applicable
MD=machine direction
XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.
2. PRODUCT NAME	POLYBOND G	POLYFLEX G	DIAMOND BACK	DUFLEX	DUFLEX 5
3. SHEET THICKNESS (average thickness, inches)					
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS					
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)					
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)					
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.
2. PRODUCT NAME	DUFLEX G	POLYGLASS BASE	POLYGLASS G-FR	POLYALL	POLYRAM
3. SHEET THICKNESS (average thickness, inches)			0.18	0.18	0.18
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS					
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)					
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)					
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable

MD=machine direction

XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.
POLYBOND G-SAND	INSULROOFING	INSULROOFING-GR	INSULBASE	ELASTOFLEX GS6-FR	ELASTOSHIELD TS4	ELASTOFLEX S6	ELASTOFLEX G-S6
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD

POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	POLYGLASS USA, INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.
ELASTOBASE	ELASTOBASE POLY	MODI BASE	ELASTOFLEX V	ELASTOFLEX VG	ELASTOFLEX VG-FR	DYNAPAK	DYNAPAK FR
						0.158	0.158
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 180 XD 120 MD 5 XD 5 MD XD	MD 180 XD 120 MD 5 XD 5 MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD 115 XD 100 <1.0	MD 115 XD 100 <1.0
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD 0.2 XD 0.05	MD 0.2 XD 0.05
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD -5 XD -5	MD -5 XD -5
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
						<0.5	<0.5
						>250	>250

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.
2. PRODUCT NAME	DYNAGLAS	DYNAPLY	DYNAGLAS FR	DYNALASTIC 250	DYNALASTIC 180
3. SHEET THICKNESS (average thickness, inches)	0.150	0.125	0.150	0.158	0.150
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD 120 XD 150	MD 180 XD 120	MD 120 XD 150	MD 190 XD 115	MD 135 XD 95
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 4.5 XD 4.5	MD 5 XD 5	MD 4.5 XD 4.5	MD 60 XD 60	MD 50 XD 50
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 95 XD 90	MD 115 XD 100	MD 95 XD 90	MD 190 XD 120	MD 145 XD 105
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	<1.0	<1.0	<1.0	<1.0	<1.0
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0.1 XD 0.05	MD 0.2 XD 0.05	MD 0.1 XD 0.05	MD 0.3 XD 0.1	MD 0.4 XD 0.25
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -15 XD -15
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	<0.5	NA	<0.5	<0.5	<0.5
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)	>250	>250	>250	>250	>250
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.
2. PRODUCT NAME	DYNALASTIC 180 FR	DYNAGLAS 30 FR	DYNABASE	DYNALASTIC 180 S	SBS 170
3. SHEET THICKNESS (average thickness, inches)	0.150	0.125	0.100	0.118	0.145
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD 135 XD 95	MD 75 XD 65	MD 90 XD 70	MD 135 XD 90	MD 135 XD 95
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 50 XD 50	MD 4 XD 4	MD 4 XD 4	MD 55 XD 65	MD 50 XD 40
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 145 XD 105	MD 100 XD 100	MD 85 XD 60	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	<1.0	<1.0	<1.0	<1.0	<1.0
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0.4 XD 0.25	MD 0.1 XD 0.1	MD 0.1 XD 0.1	MD 0.4 XD 0.25	MD 0.7 XD 0.6
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -15 XD -15	MD -5 XD -5	MD -5 XD -5	MD -15 XD -15	MD -10 XD -10
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	<0.5	<0.5	NA	NA	<1.0
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)	>250	>250	>250	>250	>240
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable

MD=machine direction

XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL
DYNALASTIC 250 FR	DYNAMAX	DYNAMAX FR	SCHULLER APPEX 5S	SCHULLER APPEX 4S	SCHULLER APPEX 4M	SCHULLER APPEX 4M FR	SCHULLER APPEX 200
0.158	0.157		200	160	160	160	152
MD 190 XD 115 MD 60 XD 60 MD	MD 225 XD 225 MD 3 XD 3 MD	MD 225 XD 225 MD 3 XD 3 MD	MD 169 XD 131 MD 48 XD 62 MD	MD 164 XD 125 MD 46 XD 60 MD	MD 156 XD 104 MD 31 XD 24 MD	MD 130 XD 118 MD 34 XD 26 MD	MD 154 XD 119 MD 44 XD 58 MD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 199 XD 79 MD 25 XD 14 MD	MD 197 XD 176 MD 24 XD 12 MD	MD 170 XD 112 MD 32 XD 11 MD	MD 142 XD 118 MD 42 XD 38 MD	MD 191 XD 170 MD 24 XD 11 MD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 200 XD 159 MD 42 XD 19 MD	MD 197 XD 158 MD 41 XD 17 MD	MD 156 XD 146 MD 27 XD 21 MD	MD 162 XD 123 MD 31 XD 23 MD	MD 192 XD 152 MD 39 XD 15 MD
MD 190 XD 120 <1.0	MD XD <1.0	MD XD <1.0	MD 184 XD 55 0.10	MD 179 XD 149 0.15	MD 147 XD 112 0.10	MD 194 XD 146 0.15	MD 173 XD 141 0.18
			0.05	0.7	2.4	1.9	0.9
MD 0.3 XD 0.1	MD 0.1 XD 0.1	MD 0.1 XD 0.1	MD 0.8 XD 0.5	MD 0.9 XD 0.5	MD 0.9 XD 0.7	MD 0.3 XD 0.1	MD 0.9 XD 0.5
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 12.2 XD 12.2 MD 21 XD 21 MD 20 XD 20	MD 12.2 XD 12.2 MD 21 XD 21 MD 20 XD 20	MD 12.2 XD 12.2 MD 21 XD 21 MD 20 XD 20	MD 12.2 XD 12.2 MD 21 XD 21 MD 20 XD 20	MD 14 XD 14 MD 22 XD 22 MD 21 XD 21
<1.0	<1.0	<1.0	NA	NA	1.8	1.0	NA
>250	>250	>250	275	275	275	275	275

SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL
BLACKBEAR	CLASSIC MINERAL	CLASSIC FR	TRICOR-M FR	TRICOR	BICOR	SCHULLER APPEX 4.5M	SCHULLER APPEX 4.5M FR
160	160	160	160	180	160	180	160
MD 160 XD 121 MD 48 XD 38 MD	MD 133 XD 106 MD 48 XD 38 MD	MD 133 XD 106 MD 48 XD 38 MD	MD 300 XD 300 MD 4.7 XD 5.3 MD	MD 300 XD 300 MD 4.7 XD 5.3 MD	MD 180 XD 180 MD 4 XD 3.5 MD	MD 168 XD 114 MD 28 XD 21 MD	MD 158 XD 104 MD 28 XD 21 MD
MD 185 XD 155 MD 29 XD 21 MD	MD 134 XD 106 MD 38 XD 31 MD	MD 134 XD 106 MD 38 XD 31 MD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 186 XD 131 MD 24 XD 18 MD	MD 173 XD 122 MD 26 XD 19 MD
MD 152 XD 135 MD 30 XD 23 MD	MD 162 XD 123 MD 31 XD 23 MD	MD 162 XD 123 MD 31 XD 23 MD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 184 XD 133 MD 26 XD 19 MD	MD 175 XD 126 MD 27 XD 20 MD
MD 177 XD 147 0.15	MD 157 XD 122 0.05	MD 157 XD 122 0.05	MD 280 XD 280 0.05	MD 280 XD 280 0.05	MD 280 XD 280 0.05	MD 159 XD 121 0.15	MD 157 XD 118 0.10
1.7	1.7	1.7	1.3	1.3	1.3	1.8	2.2
MD 0.9 XD 0.6	MD 0.1 XD 0.2	MD 0.1 XD 0.2	MD 0 XD 0	MD 0 XD 0	MD 0 XD 0	MD 0.9 XD 0.7	MD 0.6 XD 0.5
MD 6.8 XD 6.8 MD 19 XD 19 MD 18 XD 18	MD -0.4 XD -0.4 MD 3.2 XD 3.2 MD 20 XD 20	MD -0.4 XD -0.4 MD 3.2 XD 3.2 MD 20 XD 20	MD 5 XD 5 MD 23 XD 23 MD XD	MD 5 XD 5 MD 23 XD 23 MD XD	MD 5 XD 5 MD 23 XD 23 MD XD	MD 13.1 XD 13.1 MD 21 XD 21 MD 20 XD 20	MD 14.8 XD 14.8 MD 23 XD 23 MD 22 XD 22
0.3	0.5	0.5	NA	NA	NA	2.0	2.0
275	270	270	230	230	230	275	275

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	SCHULLER INTERNATIONAL	SCHULLER INTERNATIONAL	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.
2. PRODUCT NAME	CLASSIC SMOOTH	CLASSIC FR PREMIUM	PARADIENE 20	PARADIENE 20 HT	PARADIENE 20 PR
3. SHEET THICKNESS (average thickness, inches)	160	160	0.091	0.091	0.091
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD 150 XD 112	MD 170 XD 155	MD XD 70	MD XD 150	MD XD 150
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 48 XD 39	MD 48 XD 38	MD XD 3.7	MD XD 4.6	MD XD 4.6
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD 1.9	MD XD 4	MD XD 4
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD 146 XD 112	MD 200 XD 162	MD XD 70	MD XD 160	MD XD 160
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 35 XD 33	MD 38 XD 31	MD XD 3.6	MD XD 4.6	MD XD 4.6
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD 1.9	MD XD 4	MD XD 4
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD 162 XD 123	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD 31 XD 23	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 157 XD 122	MD 197 XD 175	MD XD 45	MD XD 140	MD XD 140
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	0.05	0.05	<0.1	<0.1	<0.1
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS	1.3	1.7	<0.2	<0.2	<0.2
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0.1 XD 0.2	MD 0.1 XD 0.2	MD 0 XD 0	MD 0 XD 0	MD 0.2 XD 0.2
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 5 XD 5	MD -0.04 XD -0.04	MD -15 XD -15	MD -15 XD -15	MD -15 XD -15
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 3.2 XD 3.2	MD 3.2 XD 3.2	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD 20 XD 20	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	0.5	0.5	NA	NA	NA
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)	270	270	250	250	250
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.
2. PRODUCT NAME	PARADIENE 20EG	PARADIENE 30	PARADIENE 30 HT	PARATECH	PARADIENE 40 FR
3. SHEET THICKNESS (average thickness, inches)	0.118	0.130	0.130	0.140	0.150
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD 160	MD XD 160	MD XD 155	MD XD 160	MD XD 160
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD 4.6	MD XD 3.9	MD XD 5	MD XD 5	MD XD 5
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD 4	MD XD 2.2	MD XD 4.5	MD XD 4.5	MD XD 4.5
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD 160	MD XD 80	MD XD 155	MD XD 160	MD XD 160
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD 4.6	MD XD 3.8	MD XD 5	MD XD 5	MD XD 5
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD 4	MD XD 1.9	MD XD 4.5	MD XD 4.5	MD XD 4.5
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD 150	MD XD 45	MD XD 150	MD XD 160	MD XD 160
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	<0.1	<0.1	<0.1	<0.1	<0.1
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS	<0.2	<0.2	<0.2	<0.2	<0.2
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0 XD 0	MD 0 XD 0	MD 0 XD 0	MD XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -10 XD -10	MD -15 XD -15	MD -15 XD -15	MD -10 XD -10	MD -10 XD -10
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 0 XD 0	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)	NA	<0.05	<0.05	<0.05	<0.05
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)	250	250	250	250	250
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable

MD=machine direction

XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SOPREMA, INC.	SOPREMA, INC.
PARAFOR 50LT	VERAL (ALUMINUM FACED)	VERAL (COPPER)	VERAL (STAINLESS STEEL)	VERAL SPECTRA	PARADIENE 20 HV	SOPRALENE 180	SOPRALENE FLAM 180
0.180	0.134	0.134	0.134	0.134	0.118	0.120	.120
MD XD 185 MD XD 4.5 MD XD 4.5	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD MD XD MD XD	MD 130 XD 100 MD 35 XD 30 MD 40 XD 30	MD 130 XD 100 MD 35 XD 30 MD 40 XD 30
MD XD 185 MD XD 4.5 MD XD 4.5	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD 190 MD XD 4.6 MD XD 5.8	MD XD MD XD MD XD	MD 115 XD 85 MD 25 XD 15 MD 20 XD 10	MD 115 XD 85 MD 25 XD 15 MD 20 XD 10
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD 150 <0.1 <0.2	MD XD 150 <0.1 <0.2	MD XD 170 <0.1 <0.2	MD XD 180 <0.1 <0.2	MD XD 150 <0.1 <0.2	MD XD <0.1 <0.2	MD 120 XD 90 0.6 0.6	MD 120 XD 90 0.6 0.6
MD XD MD -10 XD -10 MD 0 XD 0 MD XD	MD XD MD 0 XD 0 MD 10 XD 10 MD XD	MD XD MD 0 XD 0 MD 10 XD 10 MD XD	MD XD MD 0 XD 0 MD 10 XD 10 MD XD	MD XD MD 0 XD 0 MD 10 XD 10 MD XD	MD <- .5 XD <- .5 MD -15 XD -15 MD -0.5 XD -0.5 MD XD	MD <-0.5 XD <+0.5 MD -15 XD -15 MD -5 XD -5 MD XD	MD <-0.5 XD <+0.5 MD -15 XD -15 MD -5 XD -5 MD XD
<0.05 250	NA 250	NA 250	NA 250	NA 250	NA > 250	NA > 250	NA >250

SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.
SOPRALENE 180 GRANULES	SOPRALENE FLAM 180 GRANULES	SOPRALENE 250	SOPRALENE FLAM 250	SOPRALENE 250 GRANULES	SOPRALENE FLAM 250 GRANULES	SOPRALENE 350	SOPRALENE 350 GRANULES
.160	.160	.160	.160	.160	.160	.160	0.200
MD 130 XD 100 MD 35 XD 30 MD 40 XD 30	MD 130 XD 100 MD 35 XD 30 MD 40 XD 30	MD 170 XD 120 MD 35 XD 35 MD 50 XD 35	MD 170 XD 120 MD 35 XD 35 MD 50 XD 35	MD 170 XD 120 MD 35 XD 35 MD 50 XD 35	MD 170 XD 120 MD 35 XD 35 MD 50 XD 35	MD 210 XD 170 MD 40 XD 45 MD 65 XD 50	MD 210 XD 170 MD 40 XD 45 MD 65 XD 50
MD 115 XD 85 MD 25 XD 15 MD 20 XD 10	MD 115 XD 85 MD 25 XD 15 MD 20 XD 10	MD 160 XD 115 MD 35 XD 30 MD 55 XD 45	MD 160 XD 115 MD 35 XD 30 MD 55 XD 45	MD 160 XD 115 MD 35 XD 30 MD 55 XD 45	MD 160 XD 115 MD 35 XD 30 MD 55 XD 45	MD 190 XD 150 MD 35 XD 40 MD 55 XD 50	MD 190 XD 150 MD 35 XD 40 MD 55 XD 50
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD 120 XD 90 0.6 0.6	MD 120 XD 90 0.6 0.6	MD 165 XD 125 0.6 0.6	MD 165 XD 125 0.6 0.6	MD 165 XD 125 0.6 0.6	MD 165 XD 125 0.6 0.6	MD 205 XD 160 0.6 0.6	MD 205 XD 160 0.6 0.6
MD <-0.5 XD <+0.5	MD <-0.5 XD <+0.5	MD <-0.3 XD <+0.3	MD <-0.3 XD <+0.3	MD < 0.3 XD < 0.3	MD < 0.3 XD < 0.3	MD <-0.2 XD <+0.2	MD <-0.2 XD <+0.2
MD -15 XD -15 MD -5 XD -5 MD XD	MD -15 XD -15 MD -5 XD -5 MD XD	MD -15 XD -15 MD -5 XD -5 MD XD	MD -15 XD -15 MD -5 XD -5 MD XD	MD -15 XD -15 MD -5 XD -5 MD XD	MD -15 XD -15 MD -5 XD -5 MD XD	MD -15 XD -15 MD -5 XD -5 MD XD	MD -15 XD -15 MD -5 XD -5 MD XD
0.03 >250	0.03 >250	NA >250	NA >250	0.03 >250	0.03 >250	NA >250	0.03 >250

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	SOPREMA, INC.		SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.
2. PRODUCT NAME	SOPRALENE FLAM STICK		ELASTOPHENE	ELASTOPHENE FLAM	ELASTOPHENE GRANULES	ELASTOPHENE FLAM GRANULES
3. SHEET THICKNESS (average thickness, inches)			0.90	0.120	0.136	0.140
4. LOAD STRAIN PROPERTIES (at 0° F)						
4.1 INITIAL						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD 100	XD 91	MD 100	XD 91
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD 4.4	XD 4.5	MD 4.4	XD 4.5
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD	XD	MD 2.7	XD 2.5	MD 2.7	XD 2.5
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD 116	XD 104	MD 116	XD 104
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD 4.3	XD 4	MD 4.3	XD 4
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD	XD	MD 2.7	XD 2.4	MD 2.7	XD 2.4
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD	XD	MD	XD	MD	XD
5. TENSILE TEAR STRENGTH (at 77° F)						
AVERAGE TEAR STRENGTH (pounds force)	MD	XD	MD 82	XD 73	MD 82	XD 73
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS			0.6	0.6	0.6	0.6
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)						
AVERAGE PERCENT OF DRY MASS			0.6	0.6	0.6	0.6
8. DIMENSIONAL STABILITY						
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD	XD	MD 0	XD 0	MD 0	XD 0
9. LOW TEMPERATURE FLEXIBILITY						
9.1 INITIAL						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD -15	XD -15	MD -15	XD -15
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD -5	XD -5	MD -5	XD -5
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD
10. GRANULE EMBEDMENT						
AVERAGE GRANULE LOSS (ounces or NA)			NA	NA	0.03	0.03
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)			> 250	> 250	> 250	> 250
12. SEE MEMBRANE APPENDIX IF CHECKED						

1. COMPANY NAME	SOPREMA, INC.		SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.
2. PRODUCT NAME	ELASTOPHENE PS		ELASTOPHENE 180	ELASTOPHENE 180 PS	ELASTOPHENE FLAM GRANULES FR	ELASTOPHENE GRANULES FR
3. SHEET THICKNESS (average thickness, inches)	0.90		0.90	0.90	0.140	0.136
4. LOAD STRAIN PROPERTIES (at 0° F)						
4.1 INITIAL						
AVERAGE MAXIMUM LOAD (lb/in.)	MD 100	XD 91	MD 130	XD 100	MD 100	XD 91
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 4.4	XD 4.5	MD 35	XD 30	MD 4.4	XD 4.5
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD 2.7	XD 2.5	MD 40	XD 30	MD 2.7	XD 2.5
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)						
AVERAGE MAXIMUM LOAD (lb/in.)	MD 116	XD 104	MD 115	XD 85	MD 116	XD 104
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD 4.3	XD 4	MD 25	XD 15	MD 4.3	XD 4
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD 2.7	XD 2.4	MD 20	XD 10	MD 2.7	XD 2.4
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)						
AVERAGE MAXIMUM LOAD (lb/in.)	MD	XD	MD	XD	MD	XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD	XD	MD	XD	MD	XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD	XD	MD	XD	MD	XD
5. TENSILE TEAR STRENGTH (at 77° F)						
AVERAGE TEAR STRENGTH (pounds force)	MD 82	XD 73	MD 120	XD 90	MD 120	XD 90
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	0.6		0.6	0.6	0.6	0.6
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)						
AVERAGE PERCENT OF DRY MASS	0.6		0.6	0.6	0.6	0.6
8. DIMENSIONAL STABILITY						
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD 0	XD 0	MD <-0.5	XD <+0.5	MD <-0.5	XD <-0.5
9. LOW TEMPERATURE FLEXIBILITY						
9.1 INITIAL						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -15	XD -15	MD -15	XD -15	MD -15	XD -15
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD -5	XD -5	MD -5	XD -5	MD -5	XD -5
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)						
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD	XD	MD	XD	MD	XD
10. GRANULE EMBEDMENT						
AVERAGE GRANULE LOSS (ounces or NA)	NA		NA	NA	0.03	0.03
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0°F)	> 250		> 250	> 250	> 250	
12. SEE MEMBRANE APPENDIX IF CHECKED						

NA=not applicable

MD=machine direction

XD=cross direction

Test description as specified in ASTM D 5147-95

SOUTHWESTERN PETROLEUM CORPORATION	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.
SWPCO UNI + SHIELD II SYS 303	AWAPLAN PREMIUM	AWAPLAN 170	AWAPLAN PREMIUM FR	AWAPLAN 170 FR	AWAPLAN VERSA-SMOOTH	VERSA-CAP FR	AWAPLAN HEAT WELDING
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TAMKO ROOFING PRODUCTS INC.	TEXAS REFINERY CORP.	TEXSA, S.A.
2. PRODUCT NAME	TAM-FLEX	POLY-PRO GP	POLY-PRO SP	MIGHTYPLATE	HIPER M.P.
3. SHEET THICKNESS (average thickness, inches)				0.157	0.16
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD 208 XD 180.4	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD 45 XD 45	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD 461 XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD 43 XD 42	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD 465 XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD 40 XD 40	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD XD	MD 105 XD 100
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS				NIL	< 0.1
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS				NIL	< 0.2
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD XD	MD < 0.5 XD < 0.5
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD 8 XD 8	MD 5 XD 5
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD 10 XD 10	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD 10 XD 10	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)				NA	
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)				>30	250
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.
2. PRODUCT NAME	MIN TEXAL -15 FP-S	TEXAL -10 FV 3MM	TEXAL -15 FP-S 4MM	MIN MOFLEX -20 FP-S	TEXSELF
3. SHEET THICKNESS (average thickness, inches)	0.158	0.12	0.158	0.158	0.06
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lbf/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD 105 XD 100	MD 75 XD 50	MD 105 XD 100	MD 105 XD 100	MD 35 XD 35
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD < 0.5 XD < 0.5	MD 0.1 XD 0.05	MD < 0.5 XD < 0.5	MD < 0.5 XD < 0.5	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD 5 XD 5	MD 10 XD 10	MD < 5 XD < 5	MD -5 XD -5	MD -5 XD -5
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)					
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)	>250	225	>250	225	225
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable
MD=machine direction
XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.	TEXSA, S.A.	3 E GROUP INC.	TREMCO INC.
M.P. PARKING	MINERAL M.P. 5KGFM	TEXSELF AL 45	TEXSELF ICE AND WATER SCREEN	TEXSELF GAS SCREEN	TEXSELF FP	FLASHBAND-28	THERM MB 2C6S
0.17	0158	0.08	0.06	0.08	0.08		
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 360 XD 320 MD 5.9 XD 5.1 MD 11.5 XD 9
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD 395 XD 360 MD 6.7 XD 5.7 MD 14.2 XD 10.9
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD	MD 35 XD 35	MD 35 XD	MD 35 XD	MD XD	MD XD	MD XD	MD 330 XD 360
	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		
	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2		2.85
MD < 0.5 XD < 0.5	MD < 0.3 XD < 0.3	MD XD	MD XD	MD XD	MD < 0.5 XD < 0.5	MD XD	MD 0 XD 0
MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD -5 XD -5	MD XD	MD -50 XD -50
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD -45 XD -40
MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
225	225	225	225	225	225		250

TREMCO INC.	TREMCO INC.	TREMCO INC.	TREMCO INC.	TREMCO INC.	TRI-PLY	TRI-PLY	TRI-PLY
THERM MB 2C2S	THERM MB LTD	THERM MB 4PFR	THERM MB 2PS	THERM MB GLASS BASE	KARIFALT 306	TP-4	KARIFALT 307 FR
	0.125				0.158	0.150	0.150
MD 391 XD 364 MD 6.3 XD 5.4 MD 13.1 XD 10.4	MD 120 XD 118 MD 2.6 XD 2.5 MD 1.8 XD 1.8	MD 140 XD 120 MD 58 XD 55 MD XD	MD 78 XD 80 MD 60 XD 55 MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD 384 XD 290 MD 5.6 XD 5 MD 11.5 XD 8.2	MD 130 XD 129 MD 2.3 XD 2.6 MD 1.9 XD 2	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD XD MD XD MD XD	MD 130 XD 117 MD 2.6 XD 2.2 MD 2 XD 1.6	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD 375 XD 414	MD 79 XD 80	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
	0.03						
2.15	0.07						
MD 0 XD 0	MD 0 XD 0	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD -45 XD -45	MD 0 XD 0	MD -15 XD	MD -15 XD	MD XD	MD XD	MD XD	MD XD
MD -45 XD -45	MD 5 XD 5	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
MD XD	MD 0 XD 0	MD XD	MD XD	MD XD	MD XD	MD XD	MD XD
	2.6				>0.5	>0.5	>0.5
250	250				>250	>250	>250

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

1. COMPANY NAME	TRI-PLY	TRI-PLY	TRI-PLY	TRI-PLY	TRI-PLY
2. PRODUCT NAME	TP-4G	KARIFALT 306 FR	KARIFALT 307	KARIFALT 308	EAGLE BASE MODIFIED
3. SHEET THICKNESS (average thickness, inches)			0.150	0.125	0.125
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD XD	MD XD	MD XD	MD XD
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS					
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD XD	MD XD	MD 0.6 XD	MD XD
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)					>0.5
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)					>250
12. SEE MEMBRANE APPENDIX IF CHECKED					

1. COMPANY NAME	TRI-PLY	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.
2. PRODUCT NAME	EAGLE BASE MODIFIED PLUS	INTEC SP4	INTEC/FLEX M	INTEC/FLEX 190	INTEC/FLEX FR4.5
3. SHEET THICKNESS (average thickness, inches)		160	160	160	160
4. LOAD STRAIN PROPERTIES (at 0° F)					
4.1 INITIAL					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD 120 XD 90	MD 160 XD 140	MD 130 XD 90	MD 110 XD 80
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD 80 XD 70	MD 80 XD 85	MD 80 XD 70	MD 8 XD 8
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD 120 XD 85	MD 160 XD 140	MD 130 XD 90	MD 110 XD 85
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD 55 XD 50	MD 65 XD 70	MD 60 XD 60	MD 5 XD 5
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
4.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
AVERAGE MAXIMUM LOAD (lb/in.)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE ELONGATION AT MAXIMUM LOAD (%)	MD XD	MD XD	MD XD	MD XD	MD XD
AVERAGE STRAIN ENERGY AT MAXIMUM LOAD (inch-pound/inch ²)	MD XD	MD XD	MD XD	MD XD	MD XD
5. TENSILE TEAR STRENGTH (at 77° F)					
AVERAGE TEAR STRENGTH (pounds force)	MD XD	MD 145 XD 115	MD 165 XD 145	MD 145 XD 115	MD 95 XD 95
6. MOISTURE CONTENT AVERAGE PERCENT OF DRY MASS					
7. WATER ABSORPTION (distilled water immersion, 4 hrs. at 122° F)					
AVERAGE PERCENT OF DRY MASS					
8. DIMENSIONAL STABILITY					
AVERAGE ABSOLUTE DIMENSIONAL CHANGE (%)	MD XD	MD < 0.5 XD < 0.5	MD < 0.5 XD < 0.5	MD < 0.5 XD < 0.5	MD < 0.01 XD < 0.01
9. LOW TEMPERATURE FLEXIBILITY					
9.1 INITIAL					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD 15 XD	MD -5 XD	MD -5 XD	MD 5 XD
9.2 AFTER HEAT CONDITIONING (158° F for 90 days)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD 20 XD	MD 0 XD	MD 0 XD	MD 5 XD
9.3 AFTER ACCELERATED WEATHERING (2,000 cycles)					
LOW TEMPERATURE CRACKING DOES NOT OCCUR (°F)	MD XD	MD XD	MD XD	MD XD	MD XD
10. GRANULE EMBEDMENT					
AVERAGE GRANULE LOSS (ounces or NA)			< 0.07	< 0.07	< -0.07
11. COMPOUND STABILITY TEMPERATURE AT WHICH FLOW DRIP DROP FORMATION OBSERVED (0° F)		250	220	220	220
12. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable
MD=machine direction
XD=cross direction

Modified Bitumen Part 2: Test Results

Test description as specified in ASTM D 5147-95

U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.
INTEC GBSP-4	INTEC GBSP-4-FR	INTEC/FLEX S	INTEC/FLEX FR3 HS	FLEXBASE 60 FR HS	INTEC MODIFIED BASE PLUS HS	INTEC GBSP 250 FR	INTEC/FLEX 190 FR
160	160	138	150	80	95	197	160
MD 120 XD 90 MD 90 XD 70 MD	MD 120 XD 90 MD 80 XD 80 MD	MD 130 XD 90 MD 80 XD 70 MD	MD 220 XD 220 MD 5 XD 5 MD	MD 220 XD 220 MD 5 XD 5 MD	MD 220 XD 220 MD 5 XD 5 MD	MD 130 XD 110 MD 90 XD 90 MD	MD 130 XD 90 MD 80 XD 90 MD
MD 120 XD 85 MD 60 XD 55 MD	MD 120 XD 40 MD 50 XD 55 MD	MD 130 XD 90 MD 60 XD 60 MD	MD 220 XD 220 MD 5 XD 5 MD	MD 220 XD 220 MD 5 XD 5 MD	MD 220 XD 220 MD 5 XD 5 MD	MD 130 XD 110 MD 80 XD 75 MD	MD 130 XD 90 MD 55 XD 60 MD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD 145 XD 115	MD 145 XD 115	MD 145 XD 115	MD 140 XD 140	MD 140 XD 140	MD 140 XD 140	MD 150 XD 120	MD 145 XD 115
MD < 0.05 XD < 0.05	MD < 0.05 XD < 0.05	MD < 0.05 XD < 0.05	MD < 0.01 XD < 0.01	MD < 0.01 XD < 0.01	MD < 0.01 XD < 0.01	MD < 0.05 XD < 0.05	MD < 0.05 XD < 0.05
MD 15 XD MD 20 XD MD XD	MD 15 XD MD 20 XD MD XD	MD -5 XD MD -5 XD MD XD	MD 5 XD MD 5 XD MD XD	MD -5 XD MD XD MD XD	MD -5 XD MD XD MD XD	MD 15 XD MD 20 XD MD XD	MD 5 XD MD 5 XD MD XD
< -0.07	< -0.07	< -0.07	< -0.07			< -0.07	< -0.07
250	250	220	220	220	220	250	220

U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.	U S INTEC, INC.
INTEC/FLEX 250 FR	INTEC/FLEX G4 CAP	FLEXBASE 60 FR	INTEC MODIFIED BASE PLUS
177	160	80	95
MD 130 XD 110 MD 90 XD 90 MD	MD 100 XD 80 MD 8 XD 8 MD	MD 80 XD 75 MD 4 XD 5 MD	MD 85 XD 80 MD 4 XD 5 MD
MD 130 XD 110 MD 80 XD 75 MD	MD 100 XD 80 MD 6 XD 5 MD	MD 85 XD 80 MD 4 XD 4 MD	MD 85 XD 80 MD 4 XD 4 MD
MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD	MD XD MD XD MD XD
MD 150 XD 170	MD 90 XD 90	MD 80 XD 80	MD 80 XD 80
MD < 0.05 XD < 0.05	MD < 0.01 XD < 0.01	MD < 0.01 XD < 0.01	MD < 0.01 XD < 0.01
MD 5 XD MD 5 XD MD XD	MD -5 XD MD -5 XD MD XD	MD -5 XD MD 0 XD MD XD	MD -5 XD MD 0 XD MD XD
< -0.07	< -0.07	< -0.07	< -0.07
220	220	220	220

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET
MANUFACTURER'S SPECIFICATION NO. BITEC INC.					
COMPANY NAME					
NEW/REPLACEMENT					
NONNAILABLE					
APS-4T.1	2	BETA BASE	APS-4T		
APM-4T.1	2	BETA BASE	APM-4T		
APM-4.5T.1	2	BETA BASE	APM-4.5T		
SPM-4.5T.1	2	BETA BASE	SPM-4.5T		
SPM-3.5H.1	2	BETA BASE	SPM-3.5H		
SFM-3.5H.1	2	BETA BASE	SFM-3.5H		
SPM-4H.1	2	BETA BASE	SPM-4H		
SPS-3H.1	2	BETA BASE	SPS-3H		
APM-4T.1.15	3	BETA BASE	FA-2T	APS-4T	
APM-4T.1.15	3	BETA BASE	FA-2T	APM-4T	
APM4.5T.1.15	3	BETA BASE	FA-2T	APM-4.5T	
SPM4.5T.1.15	3	BETA BASE	PS-2H OR FS-2H	SPM-4.5T	
SPM3.5H.1.15	3	BETA BASE	PS-2H OR FS-2H	SPM-3.5H	
SFM3.5H.1.15	3	BETA BASE	PS-2H OR FS-2H	SFM-3.5H	
SPM-4H.1.15	3	BETA BASE	PS-2H OR FS-2H	SPM-4H	
SPS-3H.1.20	3	BETA BASE	SPS-3H	SPS-3H GRAVEL	
SPS-3H.1.20	3	NONE	PS-2H OF FS-2H	SPS-3H	SPS-3H GRAVEL
APS-4T.1.20	3	BETA BASE	APS-4T	APS-4T	
APS-4T.1.20	3	NONE	FA-2T	APS-4T	APS-4T
APM-4T.1.20	3	BETA BASE	APS-4T	APM-4T	
APM-4T.1.20	3	NONE	FA-2T	APS-4T	APM-4T
APM4.5T.1.20	3	BETA BASE	APS-2T	APM-4.5T	
APM4.5T.1.20	3	NONE	FA-2T	APS-2T	APM-4.5T
SPM4.5T.1.20	3	BETA BASE	SPS-3H	SPM-4.5T	
SPM4.5T.1.20	3	NONE	PS-2H OR FS-2H	SPS-3H	SPM-4.5T
SPM3.5H.1.20	3	BETA BASE	SPS-3H	SPM-3.5H	
SPM3.5H.1.20	3	NONE	PS-2H OR FS-2H	SPS-3H	SPM-3.5H
SFM3.5H.1.20	3	BETA BASE	SPS-3H	SFM-3.5H	
SFM3.5H.1.20	3	NONE	PS-2H OR FS-2H	SPS-3H	SFM-3.5H
SPM-4H.1.20	3	BETA BASE	SPS-3H	SPM-4H	
SPM-4H.1.20	3	NONE	PS-2H OR FS-2H	SPS-3H	SPM-4H
NEW/REPLACEMENT					
NAILABLE					
APS-4T.2	2	BETA BASE	APS-4T		
APM-4T.2	2	BETA BASE	APM-4T		
APM-4.5T.2	2	BETA BASE	APM-4.5T		
SPM-4.5T.2	2	BETA BASE	SPM-4.5T		
SPM-3.5H.2	2	BETA BASE	SPM-3.5H		
SFM-3.5H.2	2	BETA BASE	SFM-3.5H		
SPM-4H.2	2	BETA BASE	SPM-4H		
SPS-3H.2	2	BETA BASE	SPS-3H		
APM-4T.2.15	3	BETA BASE	FA-2T	APS-4T	
APM-4T.2.15	3	BETA BASE	FA-2T	APM-4T	
APM4.5T.2.15	3	BETA BASE	FA-2T	APM-4.5T	
SPM4.5T.2.15	3	BETA BASE	PS-2H OR FS-2H	SPM-4.5T	
SPM3.5H.2.15	3	BETA BASE	PS-2H OR FS-2H	SPM-3.5H	
SFM3.5H.2.15	3	BETA BASE	PS-2H OR FS-2H	SFM-3.5H	
SPM-4H.2.15	3	BETA BASE	PS-2H OR FS-2H	SPM-4H	
SPS-3H.2.20	3	BETA BASE	SPS-3H	SPS-3H GRAVEL	
SPS-3H.2.20	3	NONE	PS-2H OF FS-2H	SPS-3H	SPS-3H GRAVEL
APS-4T.2.20	3	BETA BASE	APS-4T	APS-4T	
APS-4T.2.20	3	NONE	FA-2T	APS-4T	APS-4T
APM-4T.2.20	3	BETA BASE	APS-4T	APM-4T	
APM-4T.2.20	3	NONE	FA-2T	APS-4T	APM-4T
APM4.5T.2.20	3	BETA BASE	APS-2T	APM-4.5T	
APM4.5T.2.20	3	NONE	FA-2T	APS-2T	APM-4.5T
SPM4.5T.2.20	3	BETA BASE	SPS-3H	SPM-4.5T	
SPM4.5T.2.20	3	NONE	PS-2H OR FS-2H	SPS-3H	SPM-4.5T
SPM3.5H.2.20	3	BETA BASE	SPS-3H	SPM-3.5H	
SPM3.5H.2.20	3	NONE	PS-2H OR FS-2H	SPS-3H	SPM-3.5H
SFM3.5H.2.20	3	BETA BASE	SPS-3H	SFM-3.5H	
SFM3.5H.2.20	3	NONE	PS-2H OR FS-2H	SPS-3H	SFM-3.5H
SPM-4H.2.20	3	BETA BASE	SPS-3H	SPM-4H	
SPM-4H.2.20	3	NONE	PS-2H OR FS-2H	SPS-3H	SPM-4H
NEW/REPLACEMENT					
INSULATED					
See New Replacement, Nailable and Nonnailable					

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET

COMPANY NAME **BITEC INC.**

RECOVER EXISTING ROOF	See New Replacement, Nailable and Nonnailable				
RECOVER EXISTING ROOF INSULATION ADDED					

COMPANY NAME **BITUFA B V**

NEW/REPLACEMENT NONNAILABLE	1 2	NONE NONE	FLEXOPER UNIBASE	FLEXOPER	
NEW/REPLACEMENT INSULATED					
NEW/REPLACEMENT NAILABLE	1 1 2	NONE NONE NONE	FLEXOPER MF FLEXOPER UNIBASE	FLEXOPER	
RECOVER EXISTING ROOF					
RECOVER EXISTING ROOF INSULATION ADDED	1 2	NONE NONE	FLEXOPER MF UNIBASE	FLEXOPER	

COMPANY NAME **CELOTEX CORPORATION, THE**

NEW/REPLACEMENT NONNAILABLE and NEW/REPLACEMENT INSULATED	4 3 2 4 3 2 4 4 3 3 2 2	D 4601 TYPE II BASE SHEET & 2 TYPE VI PLY SHEETS D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS D 4601 TYPE II BASE SHEET & 2 TYPE VI PLY SHEETS D 4601 TYPE II BASE SHEET & 2 TYPE VI PLY SHEETS D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS D 4601 TYPE II BASE SHEET	SBS 250 CAP SHEET SBS 250 CAP SHEET SBS 250 CAP SHEET SBS DUEL PLY FR BASE SHEET SBS DUEL PLY FR BASE SHEET SBS DUEL PLY FR BASE SHEET APP 4M CAP SHEET APP 4S CAP SHEET APP 4M CAP SHEET APP 4S CAP SHEET APP 4M CAP SHEET APP 4S CAP SHEET	SBS DUEL PLY FR CAP SHEET SBS DUEL PLY FR CAP SHEET SBS DUEL PLY FR CAP SHEET	
SBS-4-C-M					
SBS-3-C-M					
SBS-2-C-M					
SBS-DP-4-C-M					
SBS-DP-3-C-M					
SBS-DP-2-C-M					
APP-4-C-M					
APP-4-C-S					
APP-3-C-M					
APP-3-C-S					
APP-2-C-M					
APP-2-C-S					
NEW/REPLACEMENT NAILABLE	4 3 2 4 3 2	D 4601 TYPE II BASE SHEET & 2 TYPE VI PLY SHEETS D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS D 4601 TYPE II BASE SHEET	SBS 250 CAP SHEET SBS 250 CAP SHEET SBS 250 CAP SHEET SBS DUEL PLY FR BASE SHEET SBS DUEL PLY FR BASE SHEET	SBS DUEL PLY FR CAP SHEET SBS DUEL PLY FR CAP SHEET	
SBS-4-W-M					
SBS-3-W-M					
SBS-2-W-M					
SBS-DP-4-W-M					
SBS-DP-3-W-M					
SBS-DP-2-W-M					

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET
MANUFACTURER'S SPECIFICATION NO.					
COMPANY NAME					
CELOTEX CORPORATION, THE					
NEW/REPLACEMENT					
AVAILABLE (CONT'D)					
APP-4-W-M	4	D 4601 TYPE II BASE SHEET & 2 TYPE VI PLY SHEETS	APP 4M CAP SHEET		
APP-4-W-S	4	D 4601 TYPE II BASE SHEET & 2 TYPE VI PLY SHEETS	APP 4S CAP SHEET		
APP-3-W-M	3	D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS	APP 4M CAP SHEET		
APP-3-W-S	3	D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS	APP 4S CAP SHEET		
APP-2-W-M	2	D 4601 TYPE II BASE SHEET	APP 4M CAP SHEET		
APP-2-W-S	2	D 4601 TYPE II BASE SHEET	APP 4S CAP SHEET		
SBS-H+3-W-M	4	HYDRO-STOP VAP. BARRIER & 2 TYPE VI PLY SHEETS	SBS 250 CAP SHEET		
SBS-H+2-W-M	3	HYDRO-STOP VAP. BARRIER & 1 TYPE VI PLY SHEETS	SBS 250 CAP SHEET		
SBS-H+2-IV-W-M	3	HYDRO-STOP VAP. BARRIER & 1 TYPE IV PLY SHEETS	SBS 250 CAP SHEET		
SBS-DP-H+3-W-M	4	HYDRO-STOP VAP. BARRIER & 1 TYPE VI PLY SHEETS	SBS DUEL PLY FR BASE SHEET	SBS DUEL PLY FR CAP SHEET	
SBS-DP-H+2-W-M	3	HYDRO-STOP VAP. BARRIER	SBS DUEL PLY FR BASE SHEET	SBS DUEL PLY FR CAP SHEET	
APP-H+3-W-M	4	HYDRO-STOP VAP. BARRIER & 2 TYPE VI PLY SHEETS	APP 4/M CAP SHEET		
APP-H+3-W-S	3	HYDRO-STOP VAP. BARRIER & 1 TYPE VI PLY SHEETS	APP 4/S CAP SHEET		
APP-H+2-W-M	3	HYDRO-STOP VAP. BARRIER & 1 TYPE VI PLY SHEETS	APP 4/M CAP SHEET		
APP-H+2-W-S	3	HYDRO-STOP VAP. BARRIER & 1 TYPE VI PLY SHEETS	APP 4/S CAP SHEET		
APP-H+2-IV-W-M	3	HYDRO-STOP VAP. BARRIER & 1 TYPE IV PLY SHEETS	APP 4/M CAP SHEET		
APP-H+2-IV-W-S	3	HYDRO-STOP VAP. BARRIER & 1 TYPE IV PLY SHEETS	APP 4/S CAP SHEET		
RECOVER					
EXISTING ROOF INSULATION ADDED	See New/Replacement, Insulated				

Company Name **DANOSA CARIBBEAN, INC.**

NEW/REPLACEMENT NONNAILABLE					
1-RC	2		GLASDAN R-36	GLASDAN AL-80-3	
3-RC	2		ESTERDAN R-36	ESTERDAN RM	
6-RC	1		GLASDAN AL-80		
7-RC	1		ESTERDAN RM-5		
8-RC	2		GLASDAN R-36	ESTERDAN RM	
9-RC	2		GLASDAN R-36	GLASDAN RM	
9-RC	2	BASEDAN IV	GLASDAN RM		
NEW/REPLACEMENT INSULATED, RECOVER					
EXISTING ROOF, AND RECOVER					
EXISTING ROOF INSULATION ADDED					
1-ID	3	BASEDAN II	ESTERDAN R-36	ESTERDAN RM	
4-ID	3	BASEDAN II	GLASDAN R-36	ESTERDAN RM	
NEW/REPLACEMENT NAILABLE					
1-LW	3	BASEDAN II	ESTERDAN R-36	ESTERDAN RM	
3-LW	3	BASEDAN II	GLASDAN R-36	ESTERDAN RM	
1-WP	3	BASEDAN II	ESTERDAN R-36	ESTERDAN RM	
2-WP	2	BASEDAN II	ESTERDAN RM-5		
3-WP	3	BASEDAN II	GLASDAN R-36	ESTERDAN RM	
5-ID (H/A)	3	BASEDAN II	ESTERDAN RM		

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
MANUFACTURER'S SPECIFICATION NO.			FIRST SHEET	SECOND SHEET	THIRD SHEET

Company Name **DIBITEN**

NEW/REPLACEMENT NONNAILABLE					
403	1	NONE	POLY/4		
453	1	NONE	POLY/4.5 GRANULAR, DIBITEN MINERAL, OR BLACK GRANITE		
403-2	2	NONE	POLY/4	POLY/4	
453-2	2	NONE	POLY/4	POLY/4.5 GRANULAR OR BLACK GRANITE	
503	2	NONE	POLY/4		
NEW/REPLACEMENT INSULATED and RECOVER EXISTING ROOF INSULATION ADDED					
402	2	FIBERGLASS	POLY/4		
452	2	FIBERGLASS	POLY/4.5 GRANULAR, DIBITEN MINERAL, OR BLACK GRANITE		
404	2	FIBERGLASS	DIBITEN POLY/4		
454	2	FIBERGLASS	POLY/4.5 GRANULAR, DIBITEN MINERAL, OR BLACK GRANITE		
402-2	3	FIBERGLASS	POLY/4	POLY/4	
452-2	3	FIBERGLASS	POLY/4	POLY/4.5 GRANULAR OR BLACK GRANITE	
404-2	3	FIBERGLASS	POLY/4		
454-2	3	FIBERGLASS	POLY/4	POLY/4.5 GRANULAR OR BLACK GRANITE	
502	2	FIBERGLASS	POLY/5		
504	2	FIBERGLASS	POLY/5		
NEW/REPLACEMENT NAILABLE					
401	2	APPROVED	POLY/4		
451	2	APPROVED	POLY/4.5 GRANULAR, DIBITEN MINERAL, OR BLACK GRANITE		
401-2	3	APPROVED	POLY/4	POLY/4	
451-2	3	APPROVED	POLY/4	POLY/4.5 GRANULAR OR BLACK GRANITE	
501	2	APPROVED	POLY/5		
RECOVER EXISTING ROOF					
R405	2	FIBERGLASS	POLY/4		
R455	2	FIBERGLASS	POLY/4.5 GRANULAR, DIBITEN MINERAL, OR BLACK GRANITE		
R406	2	FIBERGLASS	POLY/4		
R456	2	FIBERGLASS	POLY/4.5 GRANULAR, DIBITEN MINERAL, OR BLACK GRANITE		
R505	2	FIBERGLASS	POLY/5		
R506	2	FIBERGLASS	POLY/5		

Company Name **FIRESTONE BUILDING PRODUCTS**

NEW/REPLACEMENT NONNAILABLE					
C-PM-16-C	2	MB BASE SHEET	APP160		
C-PM-17-C	2	MB BASE SHEET	APP170		
C-PM-18-M	2	MB BASE SHEET	APP180		
C-PM-18FR-M	2	MB BASE SHEET	APP180FR		
C-PM16-18-M	3	MB BASE SHEET	APP160	APP180	
C-PM16-18FR-M	3	MB BASE SHEET	APP160	APP180FR	
C-PM-30-M	2	MB BASE SHEET	SBS		
C-PM-31-M	2	MB BASE SHEET	SBS FR		
C-PM-32-G	2	MB BASE SHEET	SBS SMOOTH		
C-PM-33-M	2	MB BASE SHEET	SBS PREMIUM		
C-PS-36-M	2	MB BASE SHEET	SBS PREMIUM FR		
C-PS-40-M	2	MB BASE SHEET	SBS TORCH		
C-PS-34-M	2		SBS BASE SHEET	SBS GLASS	
C-PS-35-M	2		SBS BASE SHEET	SBS GLASS FR	
C-PX-34-M	2		SBS PREMIUM BASE SHEET	SBS GLASS	
C-PX-35-M	2		SBS PREMIUM BASE SHEET	SBS GLASS FR	
C-P32-33-M	2		SBS SMOOTH	SBS PREMIUM	
C-P32-36-M	2		SBS SMOOTH	SBS PREMIUM FR	

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET
Company Name FIRESTONE BUILDING PRODUCTS					
NEW/REPLACEMENT					
INSULATED					
I-M16-C	2	MB BASE SHEET	APP160		
I-M17-C	2	MB BASE SHEET	APP170		
I-M18-M	2	MB BASE SHEET	APP180		
I-M18FR-M	2	MB BASE SHEET	APP180 FR		
I-M16-18-M	3	MB BASE SHEET	APP160	APP180	
I-M16-18FR-M	3	MB BASE SHEET	APP160	APP180 FR	
I-M30-M	2	MB BASE SHEET	SBS		
I-M31-M	2	MB BASE SHEET	SBS FR		
I-M32-G	2	MB BASE SHEET	SBS SMOOTH		
I-M33-M	2	MB BASE SHEET	SBS PREMIUM		
I-M36-M	2	MB BASE SHEET	SBS PREMIUM FR	SBS	
I-M41-M	2	MB BASE SHEET	SBS TORCH		
I-S34-M	2		SBS BASE SHEET	SBS SMOOTH	
I-S35-M	2		SBS BASE SHEET	SBS PREMIUM	
I-X34-M	2		SBS PREMIUM BASE SHEET	SBS PREMIUM FR	
I-X35-M	2		SBS PREMIUM BASE SHEET		
I-3233-M	2		SBS SMOOTH	SBS GLASS	
I-3236-M	2		SBS SMOOTH	SBS GLASS FR	
NEW/REPLACEMENT					
NAILABLE					
W-M16-C	2	MB BASE SHEET	APP160		
W-M17-C	2	MB BASE SHEET	APP170		
W-M-18-M	2	MB BASE SHEET	APP180		
W-M-18FR-M	2	MB BASE SHEET	APP180FR		
W-M16-18-M	3	MB BASE SHEET	APP160	APP180	
W-M16-18FR-M	3	MB BASE SHEET	APP160	APP180FR	
W-M30-M	2	MB BASE SHEET	SBS		
W-M31-M	2	MB BASE SHEET	SBS FR		
W-M32-G	2	MB BASE SHEET	SBS SMOOTH		
W-M33-M	2	MB BASE SHEET	SBS PREMIUM		
W-M36-M	2	MB BASE SHEET	SBS PREMIUM FR		
W-M40-M	2	MB BASE SHEET	SBS TORCH		
W-MS34-M	3	MB BASE SHEET	SBS BASE SHEET	SBS GLASS	
W-MS35-M	3	MB BASE SHEET	SBS BASE SHEET	SBS GLASS FR	
NEW/REPLACEMENT					
NAILABLE (cont'd)					
W-MX34-M	3	MB BASE SHEET	SBS PREMIUM BASE SHEET	SBS GLASS	
W-MX35-M	3	MB BASE SHEET	SBS PREMIUM BASE SHEET	SBS GLASS FR	
W-M32-33-M	3	MB BASE SHEET	SBS SMOOTH	SBS PREMIUM	
W-M32-36-M	3	MB BASE SHEET	SBS SMOOTH	SBS PREMIUM FR	
L-M-16-C	2	MB BASE SHEET	APP160		
L-M-17-C	2	MB BASE SHEET	APP170		
L-M-18-M	2	MB BASE SHEET	APP180		
L-M-18FR-M	2	MB BASE SHEET	APP180FR		
L-M16-18-M	3	MB BASE SHEET	APP160	APP180	
L-M16-18FR-M	3	MB BASE SHEET	APP160	APP180FR	
L-M30-M	2	MB BASE SHEET	SBS		
L-M31-M	2	MB BASE SHEET	SBS FR		
L-M32-G	2	MB BASE SHEET	SBS SMOOTH		
L-M33-M	2	MB BASE SHEET	SBS PREMIUM		
L-M36-M	2	MB BASE SHEET	SBS PREMIUM FR		
L-M40-M	2	MB BASE SHEET	SBS TORCH		
L-MS-34-M	3	MB BASE SHEET	SBS BASE SHEET	SBS GLASS	
L-MS-35-M	3	MB BASE SHEET	SBS BASE SHEET	SBS GLASS FR	
L-MX-34-M	3	MB BASE SHEET	SBS PREMIUM BASE SHEET	SBS GLASS	
L-MX-35-M	3	MB BASE SHEET	SBS PREMIUM BASE SHEET	SBS GLASS FR	
L-M32-33-M	3	MB BASE SHEET	SBS SMOOTH	SBS PREMIUM	
L-M32-36-M	3	MB BASE SHEET	SBS SMOOTH	SBS PREMIUM FR	
RECOVER					
EXISTING ROOF					
E-M16-C	2	MB BASE SHEET	APP160		
E-M17-C	2	MB BASE SHEET	APP170		
E-M18-M	2	MB BASE SHEET	APP180		
E-M18FR-M	2	MB BASE SHEET	APP180 FR		
E-M30-M	2	MB BASE SHEET	SBS		
E-M31-M	2	MB BASE SHEET	SBS FR		
E-M32-G	2	MB BASE SHEET	SBS SMOOTH		
E-M33-M	2	MB BASE SHEET	SBS PREMIUM		
E-M36-M	2	MB BASE SHEET	SBS PREMIUM FR		
E-M40-M	2	MB BASE SHEET	SBS TORCH		
E-MS-34-M	3	MB BASE SHEET	SBS BASE SHEET	SBS GLASS	
E-MS-35-M	3	MB BASE SHEET	SBS BASE SHEET	SBS GLASS FR	

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET

Company Name **FIRESTONE BUILDING PRODUCTS**

RECOVER EXISTING ROOF INSULATION ADDED					
I-M16-C	2	MB BASE SHEET	APP160		
I-M17-C	2	MB BASE SHEET	APP170		
I-M18-M	2	MB BASE SHEET	APP180		
I-M18FR-M	2	MB BASE SHEET	APP180 FR		
I-M30-M	2	MB BASE SHEET	SBS		
I-M31-M	2	MB BASE SHEET	SBS FR		
I-M32-G	2	MB BASE SHEET	SBS SMOOTH		
I-M33-M	2	MB BASE SHEET	SBS PREMIUM		
I-M36-M	2	MB BASE SHEET	SBS PREMIUM FR		
I-M40-M	2	MB BASE SHEET	SBS TORCH		
I-S34-M	2	MB BASE SHEET	SBS GLASS		
I-S35-M	2	MB BASE SHEET	SBS GLASS FR		

Company Name **GAF MATERIALS CORPORATION**

NEW/REPLACEMENT NONAVAILABLE					
NN-0-1-TS	1	NONE	RUBEROID TORCH (SMOOTH)		
NN-1-1-TG	2	GAFLAS 75 BASE SHEET	RUBEROID TORCH (GRANULE)		
NN-1-1-MG	2	GAFLAS 75 BASE SHEET	RUBEROID MOP (GRANULE)		
NN-1-1-TS	2	GAFLAS 75 BASE SHEET	RUBEROID TORCH (SMOOTH)		
NN-01-TG	1	NONE	RUBEROID TORCH GRANULE		
NN-01-TSC	1	NONE	RUBEROID TORCH		
NN-1-1-TSC	2	GAFLAS 75 BASE SHEET	RUBEROID TORCH		
NN-1-2-20/30	3	GAFLAS 75 BASE SHEET	RUBEROID 20	RUBEROID 30	
NN-1-2-20/30 FR	3	GAFLAS 75 BASE SHEET	RUBEROID 20	RUBEROID 30 FR	
NEW/REPLACEMENT INSULATED					
I-1-1-TG	2	GAFLAS 75 BASE SHEET	RUBEROID TORCH (GRANULE)		
I-1-1-MG	2	GAFLAS 75 BASE SHEET	RUBEROID MOP (GRANULE)		
I-1-1-TSC	2	GAFLAS 75 BASE SHEET	RUBEROID TORCH (SMOOTH)		
I-2-1-MGP	3	GAFLAS 75 BASE SHEET AND 1 PLY 4 OR PLY 6	RUBEROID MOP PLUS		
I-3-1-TGP	4	3 GAFLAS PLY 4 OR 6	RUBEROID TORCH PLUS		
I-3-1-MGP	4	3 GAFLAS PLY 4 OR 6	RUBEROID MOP PLUS		
I-1-2-TGPFR	3	GAFLAS 75 BASE SHEET	RUBEROID TORCH	RUBEROID TORCH FR	
I-2-1-TGPFR	3	GAFLAS 75 BASE SHEET AND 1 PLY 4 OR PLY 6	RUBEROID TORCH FR		
I-2-1-MGPFR	3	GAFLAS 75 BASE SHEET AND 1 PLY 4 OR PLY 6	RUBEROID MOP FR		
I-0-2-20-MGPFR	2	NONE	RUBEROID 20 (SMOOTH)	RUBERIOD MOP FR	
I-3-1-TGPFR	4	3 GAFLAS PLY 4 OR 6	RUBEROID TORCH FR		
I-3-1-MGPFR	4	3 GAFLAS PLY 4 OR 6	RUBEROID MOP FR		
I-1-2-20-MGP	3	GAFLAS 75 BASE SHEET	RUBEROID MOP 20	RUBEROID MOP PLUS	
I-1-2-MGPFR	3	GAFLAS 75 BASE SHEET	RUBEROID MOP (SMOOTH)	RUBEROID MOP FR	
I-1-1-TSC	2	GAFLAS 75 BASE SHEET	RUBEROID TORCH (SMOOTH)		
I-2-1-TGP	3	GAFLAS 75 BASE SHEET 1 PLY 4 OR PLY 6	RUBEROID TORCH PLUS		
I-0-2-MGP	2	NONE	RUBEROID MOP 20	RUBEROID MOP PLUS	
I-1-2-20/30	3	GAFLAS 75 BASE SHEET	RUBEROID 20	RUBEROID 30	
I-1-2-20/30 FR	3	GAFLAS 75 BASE SHEET	RUBEROID 20	RUBEROID 30 FR	
I-0-2-20/30	2	NONE	RUBEROID 20	RUBEROID 30	

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
MANUFACTURER'S	ASSEMBLY				
SPECIFICATION NO.		BITUMEN SHEET	FIRST SHEET	SECOND SHEET	THIRD SHEET
Company Name GAF MATERIALS CORPORATION					
NEW/REPLACEMENT					
INSULATED (CONT'D)					
I-O-2-20/30 FR	2	NONE	RUBEROID 20	RUBEROID 30 FR	
I-1-2-20/MG	3	GAFLAS 75 BASE SHEET	RUBEROID 20	RUBEROID MOP (GRANULE)	
I-1-2-20/MGP	3	GAFLAS 75 BASE SHEET	RUBEROID 20	RUBEROID MOP PLUS	
I-1-2-20/MGPFR	3	GAFLAS 75 BASE SHEET	RUBEROID 20	RUBEROID MOP FR	
I-1-1-MGFR	2	GAFLAS BASE SHEET	RUBEROID MOP 170FR		
I-1-1-MGP	2	GAFLAS BASE SHEET	RUBEROID MOP PLUS		
I-2-1-MG	3	GAFLAS PLY 4 OR 6	RUBEROID MOP (GRANULE)		
I-2-1-MGFR	3	GAFLAS PLY 4 OR 6	RUBEROID MOP 170FR		
I-O-2-20/MG	2	NONE	RUBEROID 20	RUBEROID MOP (GRANULE)	
I-O-2-20/MGP	2	NONE	RUBEROID 20	RUBEROID MOP PLUS	
I-O-2-20/MGFR	2	NONE	RUBEROID 20	RUBEROID MOP FR	
NEW/REPLACEMENT					
NONAVAILABLE					
N-1-1-TG	2	GAFLAS 75 BASE SHEET	RUBEROID TORCH (GRANULE)		
N-1-1-MG	2	GAFLAS 75 BASE SHEET	RUBEROID MOP (GRANULE)		
N-1-1-TS	2	GAFLAS 75 BASE SHEET	RUBEROID TORCH (SMOOTH)		
N-1-1-TSC	2	GAFLAS 75 BASE SHEET	RUBEROID TORCH (SMOOTH)		
N-1-1-M170FR	2	GAFLAS 75 BASE SHEET	RUBEROID MOP 170 FR		
N-1-1-MG	3	GAFLAS 75 BASE SHEET	RUBEROID MOP (GRANULE)		
N-1-2-MGP	3	GAFLAS 75 BASE SHEET	RUBEROID MOP (SMOOTH)	RUBEROID MOP PLUS	
N-1-2-MGPFR	3	GAFLAS 75 BASE SHEET	RUBEROID MOP (SMOOTH)	RUBEROID MOP FR	
N-2-1-MGP	3	GAFLAS 75 BASE SHEET	RUBEROID MOP PLUS		
N-2-1-MGPFR	3	AND 1 PLY 4 OR PLY 6 GAFLAS STRATAVENT	RUBEROID MOP FR		
N-2-(20/P6)-1-M6P	3	GAFLAS PLY 6	RUBEROID 20	RUBEROID MOP PLUS	
N-2-(20/P6)-1-M6PFR	3	GAFLAS PLY 6	RUBEROID 20	RUBEROID MOP FR	
N-3-1-MGP	4	GAFLAS STRATAVENT AND 2 PLY 4 OR PLY 6	RUBEROID MOP PLUS		
N-3-1-MGPFR	4	GAFLAS STRATAVENT AND 2 PLY 4 OR PLY 6	RUBEROID MOP FR		
N-1-2-20/30	3	GAFLAS 75 BASE SHEET OR 1 PLY 4 OR PLY 6	RUBEROID 20	RUBEROID 30	
N-1-2-20/30 FR	3	GAFLAS 75 BASE SHEET OR 1 PLY 4 OR PLY 6	RUBEROID 20	RUBEROID 30 FR	
N-1-2-20/MG	3	GAFLAS STRATAVENT BASE SHEET	RUBEROID 20	RUBEROID MOP (GRANULE)	
N-1-2-20/MGP	3	GAFLAS STRATAVENT BASE SHEET	RUBEROID 20	RUBEROID MOP PLUS	
N-1-2-20/MGPFR	3	GAFLAS STRATAVENT BASE SHEET	RUBEROID 20	RUBEROID MOP FR	
RECOVER					
EXISTING ROOF					
R-1-1-TG	2	GAFLAS 75 BASE SHEET	RUBEROID TORCH		
R-1-1-MG	2	GAFLAS 75 BASE SHEET	RUBEROID MOP		
R-1-1-TS	2	GAFLAS 75 BASE SHEET	RUBEROID TORCH		
R11M6FR	2	GAFLAS STRATVENT	RUBEROID MOP 170FR		
R-0-1-TG	1	NONE	RUBEROID TORCH		
R-0-1-TS	1	NONE	RUBEROID TORCH		
R-1-1-TSC	2	GAFLAS 75 BASE SHEET	RUBEROID TORCH		

Company Name **W. R. GRACE & COMPANY**

NEW/REPLACEMENT				
NONAVAILABLE				
PRMA	1	NONE	PRMA 350 OR 450	

Company Name **GS ROOFING PRODUCTS INC.**

NEW/REPLACEMENT				
NONAVAILABLE				
STA-1-3	2	GLASBASE BASE	FLINTLASTIC STA	
GTA-1-3	2	GLASBASE BASE	FLINTLASTIC GTA	
GTS-1-3	2	GLASBASE BASE	FLINTLASTIC GTS	
GMS-1-3	2	GLASBASE BASE	FLINTLASTIC GMS	
FRP-1-3	2	GLASBASE BASE	FLINTLASTIC FRP	
FRPG-1-3	2	GLASBASE BASE	FLINTLASTIC FRPG	
FRBC-1-3	2	FR BASE	FR CAP	

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET

Company Name **GS ROOFING PRODUCTS INC.**

NEW/REPLACEMENT INSULATION					
STA-1-3-INS-C	2	GLASBASE BASE	FLINTLASTIC STA		
STA-1-3-INS-S	2	GLASBASE BASE	FLINTLASTIC STA		
STA-1-3-INS-W	2	GLASBASE BASE	FLINTLASTIC STA		
GTA-1-3-INS-C	2	GLASBASE BASE	FLINTLASTIC GTA		
GTA-1-3-INS-S	2	GLASBASE BASE	FLINTLASTIC GTA		
GTA-1-3-INS-W	2	GLASBASE BASE	FLINTLASTIC GTA		
GTS-1-3-INS-C	2	GLASBASE BASE	FLINTLASTIC GTS		
GTS-1-3-INS-S	2	GLASBASE BASE	FLINTLASTIC GTS		
GTS-1-3-INS-W	2	GLASBASE BASE	FLINTLASTIC GTS		
GMS-1-3-INS-C	2	GLASBASE BASE	FLINTLASTIC GMS		
GMS-1-3-INS-S	2	GLASBASE BASE	FLINTLASTIC GMS		
GMS-1-3-INS-W	2	GLASBASE BASE	FLINTLASTIC GMS		
FR-1-3-INS-C	2	GLASBASE BASE	FLINTLASTIC FR		
FR-1-3-INS-S	2	GLASBASE BASE	FLINTLASTIC FR		
FR-1-3-INS-W	2	GLASBASE BASE	FLINTLASTIC FR		
NEW/REPLACEMENT NAILED					
STA-Z3	2	GLASBASE BASE	FLINTLASTIC STA		
GTA-Z3	2	GLASBASE BASE	FLINTLASTIC GTA		
GTS-Z3	2	GLASBASE BASE	FLINTLASTIC GTS		
GMS-Z3	2	GLASBASE BASE	FLINTLASTIC GMS		
FRP-2-3	2	GLASBASE BASE	FLINTLASTIC FRP		
FRPG-2-3	2	GLASBASE BASE	FLINTLASTIC FRPG		
FRBC-2-3	3	GLASBASE BASE	FR BASE	FLINTLASTIC FRPG	
RECOVER EXISTING ROOF					
STA-1-3 RRC	2	YOSEMITE BUFFER	FLINTLASTIC STA		
STA-2-3 RRW	2	YOSEMITE BUFFER	FLINTLASTIC STA		
GTA-1-3 RRW	2	YOSEMITE BUFFER	FLINTLASTIC GTA		
GTA-2-3 RRW	2	YOSEMITE BUFFER	FLINTLASTIC GTA		
GTS-1-3 RRW	2	YOSEMITE BUFFER	FLINTLASTIC GTS		
GTS-2-3 RRW	2	YOSEMITE BUFFER	FLINTLASTIC GTS		
GMS-1-3 RRW	2	YOSEMITE BUFFER	FLINTLASTIC GMS		
GMS-2-3 RRW	2	YOSEMITE BUFFER	FLINTLASTIC GMS		
FRP-1-3 RRC	2	YOSEMITE BUFFER	FLINTLASTIC FRP		
FRP-2-3 RRW	2	YOSEMITE BUFFER	FLINTLASTIC FRP		
RECOVER EXISTING ROOF INSULATION ADDED					
STA-1-3 RRI	2	GLASBASE BASE	FLINTLASTIC STA		
GTA-1-3 RRI	2	GLASBASE BASE	FLINTLASTIC GTA		
GTS-1-3 RRI	2	GLASBASE BASE	FLINTLASTIC GTS		
GMS-1-3 RRI	2	GLASBASE BASE	FLINTLASTIC GMS		
FRP-1-3 RRI	2	GLASBASE BASE	FLINTLASTIC FRP		
FRBC-1-3 RRI	3	YOSEMITE BUFFER	FR BASE	FR CAP	

Company Name **IKO INDUSTRIES INC.**

NEW/REPLACEMENT NONNAILED					
IKO #5	2	IKO GLASS BASE OR IKO ORGANIC BASE	IKO ARMOURPLAST OR IKO MODIFLEX OR IKO TORCHFLEX		
NEW/REPLACEMENT NAILED					
IKO #3	2	IKO GLASS BASE OR IKO ORGANIC BASE	IKO ARMOURPLAST OR IKO MODIFLEX OR IKO TORCHFLEX		
NEW/REPLACEMENT INSULATED					
IKO #4	2	IKO GLASS BASE OR IKO ORGANIC BASE	IKO ARMOURPLAST OR IKO MODIFLEX OR IKO TORCHFLEX		
RECOVER EXISTING ROOF					
IKO #1	2	IKO GLASS BASE OR IKO ORGANIC BASE	IKO ARMOURPLAST OR IKO MODIFLEX OR IKO TORCHFLEX		

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET

Company Name **IKO INDUSTRIES INC.**

RECOVER	2	IKO GLASS BASE OR IKO ORGANIC BASE	IKO ARMOURPLAST OR IKO MODIFLEX OR IKO TORCHFLEX		
EXISTING ROOF					
INSULATION ADDED					
IKO #2					

Company Name **KOPPERS INDUSTRIES, INC.**

NEW/REPLACEMENT	2	KOPPERS BASE SHEET	2040-S, 2040-M		
NONAVAILABLE					
403					
403					
415					
415					
NEW/REPLACEMENT	2	KOPPERS BASE SHEET	2040-S, 2040-M		
INSULATED					
404					
404					
416					
416	3	KOPPERS BASE SHEET	2042 FR BASE	2042 MFR CAP	
423					
428					
NEW/REPLACEMENT	2	KOPPERS BASE SHEET	2040-S, 2040-M		
NAILABLE					
401					
401					
402					
402					
412					
412					
414					
414					
421					
422					
426					
427					
RECOVER	2	KOPPERS BASE SHEET	2040-S, 2040-M		
EXISTING ROOF					
406					
406					
418					
RECOVER	2	KOPPERS BASE SHEET	2040-S, 2040-M		
EXISTING ROOF					
INSULATION ADDED					
405					
405					
417	3	KOPPERS BASE SHEET	2042 FR BASE	2042 MFR CAP	
417					
424					
429	3	KOPPERS BASE SHEET	2042 FR BASE	2045 MFR CAP	
429					

Company Name **MALARKEY ROOFING COMPANY**

NEW/REPLACEMENT	2		#501 PREMIUM I	#501 PREMIUM I	#919 POLYGLASS SMOOTH
NONAVAILABLE					
S2-BXF					
S2-CXF					
S2-DXF					
S2-EXF					
S3-BBF					
S3-EBF					
S3-EEF					
S3-FHF					
S3-FIF					
S3-FBF					
S3-FEF					
S4-BBF					
S4-EBF					
A2-BXF					
A2-CXF					
A2-DXF					
A2-EXF					
A3-BBF					
A3-EBF					
A4-BBF					
A4-EBF					

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
MANUFACTURER'S SPECIFICATION NO.			FIRST SHEET	SECOND SHEET	THIRD SHEET
Company Name MALARKEY ROOFING COMPANY					
NEW/REPLACEMENT					
NONAVAILABLE (CONTD)					
M2-CXB	2		#602 ARCTIC SHIELD		#601 PREMIUM MINERAL
M2-DXB	2		#603 SUPERBASE		#601 PREMIUM MINERAL
M2-EXB	2		#605 PANOLPY		#601 PREMIUM MINERAL
M3-BHB	3		#501 PREMIUM I	#500 PREMIUM	#601 PREMIUM MINERAL
M3-BIB	3		#501 PREMIUM I	#506 SUPER 6	#601 PREMIUM MINERAL
M3-BBB	3		#501 PREMIUM I	#501 PREMIUM I	#601 PREMIUM MINERAL
M3-BCB	3		#501 PREMIUM I	#602 ARCTIC SHIELD	#601 PREMIUM MINERAL
M3-BDB	3		#501 PREMIUM I	#603 SUPER BASE	#601 PREMIUM MINERAL
M3-EHB	3		#605 PANOLPY	#500 PREMIUM	#601 PREMIUM MINERAL
M3-EIB	3		#605 PANOLPY	#506 SUPER 6	#601 PREMIUM MINERAL
M3-EBB	3		#605 PANOLPY	#501 PREMIUM I	#601 PREMIUM MINERAL
M3-EEB	3		#605 PANOLPY	#605 PANOLPY	#601 PREMIUM MINERAL
M3-FHB	3		#1000 ESHAVENT	#500 PREMIUM	#601 PREMIUM 1 MINERAL
M3-FIB	3		#1000 ESHAVENT	#506 SUPER 6	#601 PREMIUM 1 MINERAL
M3-FBB	3		#1000 ESHAVENT	#501 PREMIUM I	#601 PREMIUM 1 MINERAL
M3-FEB	3		#1000 ESHAVENT	#605 PANOLPY	#601 PREMIUM 1 MINERAL
M4-BHB	4		#501 PREMIUM I	#500 PREMIUM	#601 PREMIUM 1 MINERAL
M4-BIB	4		#501 PREMIUM I	#506 SUPER 6	#601 PREMIUM 1 MINERAL
M4-BBB	4		#501 PREMIUM I	#501 PREMIUM I	#601 PREMIUM 1 MINERAL
M4-EBB	4		#605 PANOLPY	#501 PREMIUM I	#601 PREMIUM 1 MINERAL
M4-EHB	4		#1000 ESHAVENT	#500 PREMIUM	#601 PREMIUM 1 MINERAL
M4-FIB	4		#1000 ESHAVENT	#506 SUPER 6	#601 PREMIUM 1 MINERAL
M4-FBB	4		#1000 ESHAVENT	#501 PREMIUM I	#601 PREMIUM 1 MINERAL
M4-FEB	4		#1000 ESHAVENT	#605 PANOLPY	#601 PREMIUM 1 MINERAL
M5-BHB	5		#501 PREMIUM I	#500 PREMIUM	#601 PREMIUM 1 MINERAL
M5-EIB	5		#501 PREMIUM I	#506 SUPER 6	#601 PREMIUM 1 MINERAL
M5-EHB	5		#605 PANOLPY	#500 PREMIUM	#601 PREMIUM 1 MINERAL
M5-BIB	5		#605 PANOLPY	#506 SUPER 6	#601 PREMIUM 1 MINERAL
M2-CXC	2		#602 ARCTIC SHIELD		#625 PARAGON MINERAL
M2-DXC	2		#603 SUPERBASE		#625 PARAGON MINERAL
M2-EXC	2		#605 PANOLPY		#625 PARAGON MINERAL
M3-BHC	3		#501 PREMIUM I	#500 PREMIUM	#625 PARAGON MINERAL
M3-BIC	3		#501 PREMIUM I	#506 SUPER 6	#625 PARAGON MINERAL
M3-BBC	3		#501 PREMIUM I	#501 PREMIUM I	#625 PARAGON MINERAL
M3-EHC	3		#605 PANOLPY	#500 PREMIUM	#625 PARAGON MINERAL
M3-EIC	3		#605 PANOLPY	#506 SUPER 6	#625 PARAGON MINERAL
M3-EBC	3		#605 PANOLPY	#501 PREMIUM I	#625 PARAGON MINERAL
M3-EEC	3		#605 PANOLPY	#605 PANOLPY	#625 PARAGON MINERAL
M3-FHC	3		#1000 ESHAVENT	#500 PREMIUM	#625 PARAGON MINERAL
M3-FIC	3		#1000 ESHAVENT	#506 SUPER 6	#625 PARAGON MINERAL
M3-FBC	3		#1000 ESHAVENT	#501 PREMIUM I	#625 PARAGON MINERAL
M3-FCC	3		#1000 ESHAVENT	#602 ARCTIC SHIELD	#625 PARAGON MINERAL
M3-FDC	3		#1000 ESHAVENT	#603 SUPERBASE	#625 PARAGON MINERAL
M3-FEC	3		#1000 ESHAVENT	#605 PANOLPY	#625 PARAGON MINERAL
M4-BHC	4		#501 PREMIUM I	#500 PREMIUM	#625 PARAGON MINERAL
M4-BIC	4		#501 PREMIUM I	#506 SUPER 6	#625 PARAGON MINERAL
M4-BBC	4		#501 PREMIUM I	#501 PREMIUM I	#625 PARAGON MINERAL
M4-EHC	4		#605 PANOLPY	#500 PREMIUM	#625 PARAGON MINERAL
M4-EIC	4		#605 PANOLPY	#506 SUPER 6	#625 PARAGON MINERAL
M4-EBC	4		#605 PANOLPY	#501 PREMIUM I	#625 PARAGON MINERAL
M4-FHC	4		#1000 ESHAVENT	#500 PREMIUM	#625 PARAGON MINERAL
M4-FIC	4		#1000 ESHAVENT	#506 SUPER 6	#625 PARAGON MINERAL
M4-FBC	4		#1000 ESHAVENT	#501 PREMIUM I	#625 PARAGON MINERAL
M4-FEC	4		#1000 ESHAVENT	#605 PANOLPY	#625 PARAGON MINERAL
M5-BHC	5		#501 PREMIUM I	#500 PREMIUM	#625 PARAGON MINERAL
M5-BIC	5		#501 PREMIUM I	#506 SUPER 6	#625 PARAGON MINERAL
M5-BBC	5		#501 PREMIUM I	#501 PREMIUM I	#625 PARAGON MINERAL
M5-EBC	5		#605 PANOLPY	#501 PREMIUM I	#625 PARAGON MINERAL
M5-FHC	5		#1000 ESHAVENT	#500 PREMIUM	#625 PARAGON MINERAL
M5-FIC	5		#1000 ESHAVENT	#506 SUPER 6	#625 PARAGON MINERAL
M5-FBC	5		#1000 ESHAVENT	#501 PREMIUM I	#625 PARAGON MINERAL
M2-CXD	2		#602 ARCTIC SHIELD		#650 PANOLPY MINERAL
M2-DXD	2		#603 SUPERBASE		#650 PANOLPY MINERAL
M2-EXD	2		#605 PANOLPY		#650 PANOLPY MINERAL
M3-BHD	3		#501 PREMIUM I	#500 PREMIUM	#650 PANOLPY MINERAL
M3-BID	3		#501 PREMIUM I	#506 SUPER 6	#650 PANOLPY MINERAL
M3-BBD	3		#501 PREMIUM I	#501 PREMIUM I	#650 PANOLPY MINERAL
M3-EHD	3		#605 PANOLPY	#500 PREMIUM	#650 PANOLPY MINERAL
M3-EID	3		#605 PANOLPY	#506 SUPER 6	#650 PANOLPY MINERAL
M3-EBD	3		#605 PANOLPY	#501 PREMIUM I	#650 PANOLPY MINERAL
M3-EED	3		#605 PANOLPY	#605 PANOLPY	#650 PANOLPY MINERAL
M3-FHD	3		#1000 ESHAVENT	#500 PREMIUM	#650 PANOLPY MINERAL
M3-FID	3		#1000 ESHAVENT	#506 SUPER 6	#650 PANOLPY MINERAL
M3-FBD	3		#1000 ESHAVENT	#501 PREMIUM I	#650 PANOLPY MINERAL
M3-FED	3		#1000 ESHAVENT	#605 PANOLPY	#650 PANOLPY MINERAL
M4-BHD	4		#501 PREMIUM I	#500 PREMIUM	#650 PANOLPY MINERAL
M4-BID	4		#501 PREMIUM I	#506 SUPER 6	#650 PANOLPY MINERAL

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET
MANUFACTURER'S SPECIFICATION NO.	Company Name				
MALARKEY ROOFING COMPANY					
NEW/REPLACEMENT					
NONAVAILABLE (cont'd)					
M4-BBD	4		#501 PREMIUM I	#501 PREMIUM I	#650 PANOPLY MINERAL
M4-EHD	4		#605 PANOPLY	#500 PREMIUM	#650 PANOPLY MINERAL
M4-EID	4		#605 PANOPLY	#506 SUPER 6	#650 PANOPLY MINERAL
M4-EBD	4		#605 PANOPLY	#501 PREMIUM I	#650 PANOPLY MINERAL
M4-FHD	4		#1000 ESHAVENT	#500 PREMIUM	#650 PANOPLY MINERAL
M4-FID	4		#1000 ESHAVENT	#506 SUPER 6	#650 PANOPLY MINERAL
M4-FBD	4		#1000 ESHAVENT	#501 PREMIUM I	#650 PANOPLY MINERAL
M4-FED	4		#1000 ESHAVENT	#605 PANOPLY	#650 PANOPLY MINERAL
M5-EHD	5		#605 PANOPLY	#500 PREMIUM	#650 PANOPLY MINERAL
M5-EID	5		#605 PANOPLY	#506 SUPER 6	#650 PANOPLY MINERAL
M5-EBD	5		#605 PANOPLY	#501 PREMIUM I	#650 PANOPLY MINERAL
M5-FHD	5		#1000 ESHAVENT	#500 PREMIUM	#650 PANOPLY MINERAL
M5-FID	5		#1000 ESHAVENT	#506 SUPER 6	#650 PANOPLY MINERAL
M5-FBD	5		#1000 ESHAVENT	#501 PREMIUM I	#650 PANOPLY MINERAL
M2-BXE	2		#501 PREMIUM I		#917 POLYGLASS MINERAL
M2-CXE	2		#602 ARCTIC SHIELD		#917 POLYGLASS MINERAL
M2-DXE	2		#603 SUPERBASE		#917 POLYGLASS MINERAL
M2-EXE	2		#605 PANOPLY		#917 POLYGLASS MINERAL
M3-BBE	3		#501 PREMIUM I	#501 PREMIUM I	#917 POLYGLASS MINERAL
M3-EBE	3		#605 PANOPLY	#501 PREMIUM I	#917 POLYGLASS MINERAL
M3-EEE	3		#605 PANOPLY	#605 PANOPLY	#917 POLYGLASS MINERAL
M3-FHE	3		#1000 ESHAVENT	#500 PREMIUM	#917 POLYGLASS MINERAL
M3-FIE	3		#1000 ESHAVENT	#506 SUPER 6	#917 POLYGLASS MINERAL
M3-FBE	3		#1000 ESHAVENT	#501 PREMIUM I	#917 POLYGLASS MINERAL
M3-FEE	3		#1000 ESHAVENT	#605 PANOPLY	#917 POLYGLASS MINERAL
M4-BBE	4		#501 PREMIUM I	#501 PREMIUM I	#917 POLYGLASS MINERAL
M4-EBE	4		#605 PANOPLY	#501 PREMIUM I	#917 POLYGLASS MINERAL
F2-BXG	2		#501 PREMIUM I		#1020 ESHALUM
F2-EXG	2		#605 PANOPLY		#1020 ESHALUM
F3-BHG	3		#501 PREMIUM I	#500 PREMIUM	#1020 ESHALUM
F3-BIG	3		#501 PREMIUM I	#506 SUPER 6	#1020 ESHALUM
F3-BBG	3		#501 PREMIUM I	#501 PREMIUM I	#1020 ESHALUM
F3-EHG	3		#605 PANOPLY	#500 PREMIUM	#1020 ESHALUM
F3-EIG	3		#605 PANOPLY	#506 SUPER 6	#1020 ESHALUM
F3-EBG	3		#605 PANOPLY	#501 PREMIUM I	#1020 ESHALUM
NEW/REPLACEMENT	See description of the following specs under				
AVAILABLE	NEW/REPLACEMENT NONAVAILABLE				
S2-BXF	S2-CXF	S2-DXF			
S2-EXF	S3-BBF	S3-EBF			
S3-EEF	S4-BBF	S4-EBF			
A3-BBF	A3-EBF	A4-BBF			
A4-EBF	N3-BHB	N3-BIB			
M3-BBB	M3-BCB	M3-BDB			
M3-EHB	M3-EIB	M3-EBB			
M3-EEB	M4-BHB	M4-BIB			
M4-BBB	M4-EEB	M5-BHB			
M5-BIB	M5-EHB	M5-EIB			
M3-BHC	M3-BIC	M3-BBC			
M3-EHC	M3-EIC	M3-EBC			
M3-EEC	M4-BHC	M4-BIC			
M4-BBC	M4-EHC	M4-EIC			
M4-EBC	M5-BHC	M5-BIC			
M5-BBC	M5-EBC	M3-BHD			
M3-BID	M3-BBD	M3-EHD			
M3-EID	M3-EBD	M3-EED			
M4-BHD	M4-BID	M4-BBD			
M4-EHD	M4-EID	M4-EBD			
M5-EHD	M5-EID	M5-EBD			
M2-BXE	M2-CXE	M2-DXE			
M2-EXE	M3-BBE	M3-EBE			
M3-EEE	M4-BBE	M4-EBE			
M3-FEE	M4-BBE	M4-EBE			
F2-BXG	F2-EXG	F3-BHG			
F3-BIG	F3-BBG	F3-EHG			
F3-EIG	F3-EBG				
NEW/REPLACEMENT	See description of the following specs under				
INSULATED	NEW/REPLACEMENT NONAVAILABLE				
S2-BXF	S2-CXF	S2-DXF			
S2-EXF	S3-BBF	S3-EBF			
S3-EEF	S3-FHF	S3-FIF			
S3-FBF	S3-FEF	S4-BBF			
S4-EBF	A2-BXF	A2-CXF			

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
MANUFACTURER'S SPECIFICATION NO.			FIRST SHEET	SECOND SHEET	THIRD SHEET
Company Name MALARKEY ROOFING COMPANY					
NEW/REPLACEMENT		See description of the following specs under			
INSULATED (CONT'D)		NEW/REPLACEMENT NONNAILABLE			
A2-DXF	A2-EXF	A3-BBF			
A3-EBF	A4-BBF	A4-EBF			
M2-CXB	M2-DXB	M2-EXB			
M3-BHB	MS-BIB	M3-BBB			
M3-BCB	M3-BDB	M3-EHB			
M3-EIB	M3-EBB	M3-EEB			
M3-FHB	M3-FIB	M3-FBB			
M3-FEB	M4-BHB	M4-BIB			
M4-BBB	M4-EBB	M4-FEB			
M5-BHB	M5-BIB	M5-EIB			
M2-CXC	M2-DXC	M2-EXC			
M3-BHC	M3-BIC	M3-BBC			
M3-EHC	M3-EIC	M3-EBC			
M3-EEC	M3-FHC	M3-FIC			
M3-FBC	M3-FCC	M3-FDC			
M3-FEC	M4-BHC	M4-BIC			
M4-BBC	M4-EHC	M4-EIC			
M4-EBC	M4-FHC	M4-FIC			
M4-FBC	M4-FEC	M5-BHC			
M5-BIC	M5-BBC	M5-EBC			
M6-FHC	M5-FIC	M5-FBC			
M2-CXD	M2-DXD	M2-EXD			
M3-BHD	M3-BID	M3-BBD			
M3-EHD	M3-EID	M3-EBD			
M3-EED	M3-FHD	M3-FID			
M3-FBD	M3-FED	M4-BHD			
M4-BID	M4-BBD	M4-EHD			
M4-EID	M4-EBD	M4-FHD			
M4-FID	M4-FBD	M4-FED			
M5-EHD	M5-EID	M5-EBD			
M5-FHD	M5-FID	M5-FBD			
M2-BXE	M2-CXE	M2-DXE			
M2-EXE	M3-BBE	M3-EBE			
M3-EEE	M3-FHE	M3-FIE			
M3-FBE	M3-FEE	M4-BBE			
M4-EBE	F2-BXG	F2-EXG			
F3-BHG	F3-BIG	F3-BBG			
F3-EHG	F3-EIG	F3-EBG			
RECOVER		See description of the following specs under			
EXISTING ROOF		NEW/REPLACEMENT NONNAILABLE			
S3-BBF	S3-EBF	S3-EEF			
S3-FHF	S3-FIF	S3-FBF			
S3-FEF	S4-BBF	S4-EBF			
A3-BBF	A3-EBF	A4-BBF			
A4-EBF	M3-BHB	MS-BIB			
M3-BBB	M3-BCB	M3-BDB			
M3-EHB	M3-EIB	M3-EBB			
M3-EEB	M3-FHB	M3-FIB			
M3-FBB	M3-FEB	M4-BHB			
M4-BIB	M4-BBB	M4-EBB			
M4-FHB	M4-FIB	M4-FBB]			
M4-FEB	M5-BHB	M5-BIB			
M5-RHB	M5-EIB	M3-BHC			
M3-BIC	M3-BBC	M3-EHC			
M3-EIC	M3-EBC	N3-EEC			
M3-FHC	M3-FIC	M3-FBC			
M3-FCC	M3-FDC	M3-FEC			
M4-BHC	M4-BIC	M4-BBC			
M4-EHC	M4-EIC	M4-EBC			
M4-FHC	M4-FIC	M4-FBC			
M4-FEC	M5-BHC	M5-BIC			
M5-BBC	M5-EBC	M5-FHC			
M5-FIC	M5-FBC	M3-BHD			
M3-BID	M3-BBD	M3-EHD			
M3-EID	M3-EBD	M3-EED			
M3-FHD	M3-FID	M3-FBD			
M3-FED	M4-BHD	M4-BID			
M4-BBD	M4-EHD	M4-EID			
M4-EBD	M4-FHD	M4-FID			
ME-FBD	M4-FED	M5-EHD			
M5-EID	M5-EBD	M5-FHD			
M5-FID	M5-FBD	M3-BBE			
M3-EBE	M3-EEE	M3-FHE			
M3-FIE	M3-FBE	M3-FEE			
M4-BBE	M4-EBE	F3-BHG			
F3-BIG	F3-BBG	F3-EHG			
F3-EIG	F3-EBG				

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE		TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
MANUFACTURER'S SPECIFICATION NO.				FIRST SHEET	SECOND SHEET	THIRD SHEET
Company Name MALARKEY ROOFING COMPANY						
RECOVER		See description of the following specs under				
EXISTING ROOF		NEW/REPLACEMENT NONNAILABLE				
INSULATION ADDED						
S2-BXF	S2-CXF	S2-DXF				
S2-EXF	S3-BBF	S3-EBF				
S3-EEF	S3-FHF	S3-FIF				
S3-FBF	S3-FEF	S4-BBF				
S4-EBF	A2-BXF	A2-CXF				
A2-DXF	A2-EXF	A3-BBF				
A3-EBF	A4-BBF	A4-EBF				
M2-CXB	M2-DXB	M2-EXB				
M3-BHB	MS-BIB	M3-BBB				
M3-BCB	M3-BDB	M3-EHB				
M3-EIB	M3-EBB	M3-EEB				
M3-FHB	M3-FIB	M3-FBB				
M3-FEB	M4-BHB	M4-BIB				
M4-BBB	M4-EBB	M4-EHB				
M5-BHB	M5-EIB	M5-EHB				
M5-BIB	M2-CXC	M2-DXC				
M2-EXC	M3-BHC	M3-BIC				
M3-BBC	M3-EHC	M3-EIC				
M3-EBC	M3-EEC	M3-FHC				
M3-FIC	M3-FBC	M3-FCC				
M3-FDC	M3-FEC	M4-BHC				
M4-BIC	M4-BBC	M4-EHC				
M4-EIC	M4-EBC	M4-FHC				
M4-FIC	M4-FBC	M4-FEC				
M5-BHC	M5-BIC	M5-BBC				
M5-EBC	M5-FHC	M5-FIC				
M5-FBC	M2-CXD	M2-DXD				
M2-EXD	M3-BHD	M3-BID				
M3-BBD	M3-EHD	M3-EID				
M3-EBD	M3-EED	M3-FHD				
M3-FID	M3-FBD	M3-FED				
M4-BHD	M4-BID	M4-BBD				
M4-EHD	M4-EID	M4-EBD				
M4-FHD	M4-FID	M4-FBD				
M4-FED	M4-EHD	M4-EID				
M4-EBD	M5-FHD	M5-FID				
M5-FBD	M2-BXE	M2-CXE				
M2-DXE	M2-EXE	M3-BBE				
M3-EBE	M3-EEE	M3-FHE				
M3-FIE	M3-FBE	M3-FEE				
M4-BBE	M4-EBE	F2-BXG				
F2-EXG	F3-BHG	F3-BIG				
F3-BBG	F3-EHG	F3-EIG				
F3-EBG						

Company Name **MBTECHNOLOGY**

NEW/REPLACEMENT NONNAILABLE					
C4H-SC100GWH	4		LF25	LF25 (2)	SC100GWH
C3H-FG90GWH	3		LF25	LF60	FG90GWH
C3H-FG160GWH	3		LF25	LF25	FG160CWH
C3H-FG160GWH	3		LF25	LF60	FG160GWH
C2H-FG160CWH	2		LF25	FG160CWH	
C3H-FG160CWH	3		LF25	SF160PSA	FG160CWH
C3H-MF160WAL	3		LF25	LF60	MF160WAL
C3H-MF160WAL	3		LF25	SF160PSA	MF160WAL
C4H-LF25	4		LF25	LF 25 (2)	LF 25 + PROTECTION
NEW/REPLACEMENT INSULATED					
I4H-SC100GWH	4		LF25	LF25 (2)	SC100GWH
I2H-FG90GWH	2			LF60	FG90GWH
I3H-FG160CWH	3		LF25	LF25	FG160CWH
I2H-FG160CWH	2			LF60	FG160CWH
I2H-FG160CWH	2			SF160PSA	FG160CWH
I2H-FG160CWH	2		LF25		FG160CWH
I2H-MF160WAL	2			LF60	MF160WAL
I2H-MF160WAL	2			SF160PSA	MF160WAL
I2T-FGFT160CWH	2		LF25		FGFT160CWH
I3T-FGFT160CWH	3		LF25	FT160CSA	FGFT160CWH
I3HT-FG160CWH	3		LF25	SF160PSA	FG160CWH

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET

Company Name **MBTECHNOLOGY**

NEW/REPLACEMENT NAILABLE					
W4H-SC100GWH	4		LF25	LF25 (2)	SC100GWH
W3H-FG90GWH	3		LF25	LF60	FG90GWH
W3H-FG160CWH	3		LF25	LF25	FG160CWH
W3H-FG160CWH	3		LF25	LF60	FG160GWH
W3H-FG160CWH	3		LF25	SF160PSA	FG160GWH
W2H-FG160CWH	2		LF25	FG160CWH	
W3H-MF160WAL	3		LF25	LF60	MF160WAL
W3H-MF160WAL	3		LF25	SF160PSA	MF160WAL
W2T-FGFT160CWH	2		LF25	FGFT160CWH	
W3T-FGFT160CWH	3		LF25	FT160CSA	FGFT160CWH
W3T-MF160WAL	3		LF25	FT160CSA	MF160WAL
L3T-MF160WAL	3		LF25	FT160CSA	MF160WAL
L4H-SC75GWH	4		LF25	LF25 (2)	SC75GWH
L2H-FG90GWH	3		LF25	LF60	FG90GWH
L3H-FG160CWH	3		LF25	LF25	FG160CWH
L3H-FG160CWH	3		LF25	LF60	FG160GWH
L3H-FG160CWH	3		LF25	SF160PSA	FG160GWH
L2H-FG160CWH	2		LF25	FG160CWH	
L3H-MF160WAL	3		LF25	LF60	MF160WAL
L3H-MF160WAL	3		LF25	SF160PSA	MF160WAL

Company Name **MFM BUILDING PRODUCTS CORP.**

NEW/REPLACEMENT NONNAILABLE					
MFM-21-BC	1	NONE	BITUFLEX		
NEW/REPLACEMENT INSULATED					
MFM-22-BC	2	DURABASE	BITUFLEX		
NEW/REPLACEMENT NAILABLE					
MFM-22-BW	2	DURABASE	BITUFLEX		
RECOVER EXISTING ROOF					
MFM-21-BR	2	DURABASE	BITUFLEX		

Company Name **MONSEY BAKOR**

NEW/REPLACEMENT NAILABLE					
WDU/PMR 2005	2	NONE	NP180s/s[p/s][p/p] OR G100s/s[p/s]	G100gM[MFR] OR NP180gM[MFR] or NP250gM[MFR] or NP250gT4[TFR]	
WDU/PMR 2005	2	COATED GLASS BASE	NP180gM[MFR] or NP180gT[TFR] or NP250gM[MFR] or NP250gT4[TFR]		
NEW/REPLACEMENT NONNAILABLE					
CDU/PMR 2004	2	G100s/s[p/s] OR NP180s/s[p/s][p/p]	G100gM[MFR] OR NP180gM[MFR] or NP250gM[MFR] or NP250gT4[TFR]		
CDU 2004	2	COATED GLASS BASE	NP180gM[MFR] or NP180gT[TFR] or NP250gM[MFR] or NP250gT4[TFR]		
NEW/REPLACEMENT INSULATED					
SDI-2000	2	NONE	G100s/s[p/s] OR NP180s/s[p/p][p/s]	G100gM[MFR] OR NP180gM[MFR] or NP250gM[MFR] or NP250gT4[TFR]	
CDI-2001	2	NONE	G100s/s[p/s] OR NP180s/s[p/p][p/s]	G100gM[MFR] OR NP180gM[MFR] or NP250gM[MFR] or NP250gT4[TFR]	
WDI-2002	2	NONE	G100s/s[p/s] OR NP180s/s[p/p][p/s]	G100gM[MFR] OR NP180gM[MFR] or NP250gM[MFR] or NP250gT4[TFR]	
SDI-2000	2	COATED GLASS SHEET	NP180gM[MFR] or NP180gT[TFR] or NP250gM[MFR] or NP250gT4[TFR]		
CDI-2001	2	COATED GLASS SHEET	NP180gM[MFR] or NP180gT[TFR] or NP250gM[MFR] or NP250gT4[TFR]		
WDI-2002	2	COATED GLASS SHEET	NP180gM[MFR] or NP180gT[TFR] or NP250gM[MFR] or NP250gT4[TFR]		
REC-2006	1	NONE	NP180gM[MFR] or NP180gT[TFR] or NP250gM[MFR] or NP250gT4[TFR]		
RECOVER EXISTING ROOF INSULATION ADDED					
REC-2006	2	NONE	G100s/s[p/s] OR NP180s/s[p/s][p/p]	G100gM[MFR] OR NP180gM[MFR] or NP250gM[MFR] or NP250gT4[TFR]	
REC-2006	2	COATED BASE SHEET	G100gM[MFR] OR NP180gM[MFR] or NP250gM[MFR] or NP250gT4[TFR]		

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE			
MANUFACTURER'S SPECIFICATION NO.			FIRST SHEET	SECOND SHEET	THIRD SHEET	
Company Name PERFORMANCE ROOF SYSTEMS, INC.						
NEW/REPLACEMENT						
NONNAILABLE						
1C1X-()	2	NONE	DERBIGUM-XPS/DERBICOLOR-XPS	DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP		
1C1G-()	2	NONE	DERBIGUM-GP/DERBICOLOR-GP			
2C1X-()	3	GLASS FIBER	DERBIGUM-XPS/DERBICOLOR-XPS			
2C1G-()	3	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
3C1X-()	4	GLASS FIBER	DERBIGUM-XPS/DERBICOLOR-XPS			
3C1G-()	4	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
1C2X-()	3	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
1C2G-()	3	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
2C2X-()	4	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
2C2G-()	4	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
OC2X-()	2	NONE	DERBIGUM-XPS/DERBICOLOR-XPS			
OC2G-()	2	NONE	DERBIGUM-GP/DERBICOLOR-GP			
310-BG	3	G-2	B-XTRA 250			
311-BG	3	G-2	B-SPECIAL			
320-BG	4	G-2	B-XTRA 250			
321-BG	4	G-2	B-SPECIAL			
610-BG	2	G-2	B-FR			
611-BG	2	NONE	B-BASE FR II		B-SPECIAL FR II	
620-BG	4	G-2	B-FR			
621-BG	4	G-1	B-BASE FR II		B-SPECIAL FR II	
NEW/REPLACEMENT						
NAILABLE						
1N1X-()	2	GLASS FIBER	DERBIGUM-XPS/DERBICOLOR-XPS			
1N1G-()	2	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
2N1X-()	3	GLASS FIBER	DERBIGUM-XPS/DERBICOLOR-XPS			
2N1G-()	3	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
3N1X-()	4	GLASS FIBER	DERBIGUM-XPS/DERBICOLOR-XPS			
3N1G-()	4	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
1N2X-()	3	GLASS FIBER	DERBIGUM-XPS/DERBICOLOR-XPS			
1N2G-()	3	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
2N2X-()	4	GLASS FIBER	DERBIGUM-XPS/DERBICOLOR-XPS			
2N2G-()	4	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
NEW/REPLACEMENT						
INSULATED						
1I1X-()	2	GLASS FIBER	DERBIGUM-XPS/DERBICOLOR-XPS	DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP DERBIGUM-XPS/DERBICOLOR-XPS DERBIGUM-GP/DERBICOLOR-GP		
1I1G-()	2	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
2I1X-()	3	GLASS FIBER	DERBIGUM-XPS/DERBICOLOR-XPS			
2I1G-()	3	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
3I1X-()	4	GLASS FIBER	DERBIGUM-XPS/DERBICOLOR-XPS			
3I1G-()	4	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
1I2X-()	3	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
1I2G-()	3	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
2I2X-()	4	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
2I2G-()	4	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
0I2X-()	2	NONE	DERBIGUM-XPS/DERBICOLOR-XPS			
0I2G-()	2	NONE	DERBIGUM-GP/DERBICOLOR-GP			
RECOVER						
EXISTING ROOF						
INSULATION ADDED						
	SEE NEW/REPLACEMENT INSULATED					
RECOVER						
EXISTING ROOF						
1R1X-()	2	GLASS FIBER	DERBIGUM-XPS/DERBICOLOR-XPS			
1R1G-()	2	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			
2R1X-()	3	GLASS FIBER	DERBIGUM-XPS/DERBICOLOR-XPS			
2R1G-()	3	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP			

Company Name **POLYGLASS USA, INC.**

NEW/REPLACEMENT NONNAILABLE					
101PS	1	NONE	POLYFLEX SMOOTH		
101PG	1	NONE	POLYFLEX GRANULAR		
201PS	2	APPROVED	POLYFLEX SMOOTH		
201PG	2	APPROVED	POLYFLEX GRANULAR		
201PGFR	2	APPROVED	POLYFLEX GRANULAR FR		
211DS/DG	2	APPROVED	DUFLEX SMOOTH/GRANULAR		
211EST	2	APPROVED	ELASTOSHIELD TS4		
311/DS/DG	3	APPROVED	APPROVED	DUFLEX SMOOTH/GRANULAR	
321EST	3	APPROVED	APPROVED	ELASTOSHIELD TS4	

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET
MANUFACTURER'S SPECIFICATION NO.					
Company Name POLYGLASS USA, INC.					
NEW/REPLACEMENT					
NONNAILABLE					
341EFGSF	3	APPROVED	APPROVED	ELASTOFLEX G S6-FR	
341FVG	3	APPROVED	APPROVED	ELASTOFLEX VG	
341FVGF	3	APPROVED	APPROVED	ELASTOFLEX VG-FR	
391PS	3	APPROVED	APPROVED	POLYFLEX SMOOTH	
391PG	3	APPROVED	APPROVED	POLYFLEX GRANULAR	
391DS/DG	3	APPROVED	APPROVED	DUFLEX SMOOTH/GRANULAR	
NEW/REPLACEMENT					
NAILABLE					
202PS	2	APPROVED	POLYFLEX SMOOTH		
202PG	2	APPROVED	POLYFLEX GRANULAR		
104IN	1	NONE	INSULROOFING		
NEW/REPLACEMENT					
INSULATED					
103PS	1	NONE	POLYFLEX SMOOTH		
103PG	1	NONE	POLYFLEX GRANULAR		
203PS	2	APPROVED	POLYFLEX SMOOTH		
203PG	2	APPROVED	POLYFLEX GRANULAR		
203PGFR	2	APPROVED	POLYFLEX GRANULAR FR		
204PS	2	APPROVED	POLYFLEX SMOOTH		
204PG	2	APPROVED	POLYFLEX GRANULAR		
204PGFR	2	APPROVED	POLYFLEX GRANULAR FR		
213DS/DG	2	APPROVED	DUFLEX SMOOTH/GRANULAR		
223EST	2	APPROVED	ELASTOSHIELD TS4		
224EST	2	APPROVED	ELASTOSHIELD TS4		
223PA/PR	2	APPROVED	POLYALL OR POLYRAM		
303PGFR	3	APPROVED	APPROVED	POLYFLEX GRANULAR FR	
393PS/PG	3	APPROVED	POLYFLEX SMOOTH/GRANULAR		
304PG/FR	3	APPROVED	POLYFLEX GRANULAR FR		
313DS/DG	3	APPROVED	DUFLEX SMOOTH/GRANULAR		
343EFGS	3	APPROVED	ELASTOFLEX GL-S6		
343EFVG	3	APPROVED	ELASTOFLEX VG		
343EFVGF	3	APPROVED	ELASTOFLEX VG-FR		
333PA/PR	3	APPROVED	POLYALL OR POLYRAM		
RECOVER					
EXISTING ROOF	SEE NEW REPLACEMENT, NAILABLE AND NONNAILABLE				
RECOVER					
EXISTING ROOF					
INSULATION ADDED	SEE NEW REPLACEMENT, NAILABLE AND NONNAILABLE				

Company Name **SCHULLER INTERNATIONAL INC.**

NEW/REPLACEMENT NONNAILABLE					
2CID	2	GLASPLY PREMIER	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	
2CID	2	GLASBASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	
2CID	2	NONE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	
2CID-C	2	GLASBASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	
2CID-C	2	NONE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	
2CIG	2	GLASPLY PREMIER OR GLASBASE	DYNAPLY OR DYNAKAP	DYNAPLY OR DYNAKAP	
2CIG	2	NONE	DYNABASE	DYNAPLY OR DYNAKAP	
2FID	2	GLASPLY IV OR GLASBASE	DYNAGLAS OR DYNAGLAS FR	DYNAGLAS, DYNAGLAS 30FR, OR DYNAGLAS FR	
2FID	2	NONE	DYNABASE	DYNAGLAS, DYNAGLAS 30FR, OR DYNAGLAS FR	
2FID-C	2	NONE	DYNABASE	DYNAGLAS, DYNAGLAS 30FR, OR DYNAGLAS FR	
2PID	2	GLASPLY PREMIER	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR	
2PID	2	GLASBASE	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR	
2PID	2	NONE	DYNALASTIC 180S	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR	

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET
MANUFACTURER'S SPECIFICATION NO.					
Company Name SCHULLER INTERNATIONAL INC.					
NEW/REPLACEMENT					
NONAVAILABLE (CONT'D)					
3CID	3	TWO GLASPLY PREMIER	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR		
3CID-C	3	TWO GLASPLY PREMIER	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR		
3FID	3	TWO GLASPLY PREMIER	DYNAGLAS OR DYNAGLAS FR		
3FID-C	3	TWO GLASPLY PREMIER	DYNAGLAS OR DYNAGLAS FR		
3PID	3	TWO GLASPLY PREMIER	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR		
3PID-C	3	TWO GLASPLY PREMIER	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR		
2CBS-W/2PBS-W	2	GLASBASE, PP28	CLASSIC SERIES, TRICOR, BICOR, OR APPEX SERIES		
2CBN-W/2PBN-W	2	GLASBASE, PP28	CLASSIC SERIES, TRICOR M, TRICOR M FR, OR APPEX SERIES		
3CBS-W/3PBS-W	3	GLASBASE, PP28	SCHULLER APP BASE	CLASSIC SERIES, TRICOR, BICOR, OR APPEX SERIES	
3CBN-W/3PBN-W	3	GLASBASE, PP28	SCHULLER APP BASE	CLASSIC SERIES, TRICOR M, TRICOR M FR, OR APPEX SERIES	
NEW/REPLACEMENT					
INSULATED					
1CIN-W/1PIS-W	1	NONE	CLASSIC SERIES, TRICOR, BICOR, OR APPEX SERIES		
1CIN-W/1PIN-W	1	NONE	CLASSIC SERIES, TRICOR M, TRICOR M FR, OR APPEX SERIES		
2CIS-W/2PIS-W	2	GLASBASE, PP28	CLASSIC SERIES, TRICOR, BICOR, OR APPEX SERIES		
2CIS-W/2PIN-W	2	NONE	SCHULLER APP BASE	CLASSIC SERIES, TRICOR M, TRICOR M FR, OR APPEX SERIES	
2CIN-W/2PIN-W	2	GLASBASE, PP28	CLASSIC SERIES, TRICOR M, TRICOR M FR, OR APPEX SERIES		
2CIN-W/2PIN-W	2	NONE	SCHULLER APP BASE	CLASSIC SERIES, TRICOR M, TRICOR M FR, OR APPEX SERIES	
3CIS-W/3PIS-W	3	GLASBASE, PP28	SCHULLER APP BASE	CLASSIC SERIES, TRICOR, BICOR, OR APPEX SERIES	
3CIS-W/3PIN-W	3	NONE	SCHULLER APP BASE	APPEX SERIES	CLASSIC SERIES, TRICOR, BICOR, OR APPEX SERIES
3CIN-W/3PIN-W	3	GLASBASE, PP28	SCHULLER APP BASE	CLASSIC SERIES, TRICOR M, TRICOR M FR, OR APPEX SERIES	
3CIN-W/3PIN-W	3	NONE	SCHULLER APP BASE	APPEX SERIES	CLASSIC SERIES, TRICOR M, TRICOR M FR, OR APPEX SERIES
NEW/REPLACEMENT					
NAILABLE					
2CND	2	VENTSULATION OR GLASBASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR		
2CND	2	NONE	DYNABASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	
2CND-C	2	VENTSULATION OR GLASBASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR		
2CND-C	2	NONE	DYNABASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	
2CNG	2	VENTSULATION OR GLASBASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR		
2CNG	2	NONE	DYNABASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	
2FND	2	VENTSULATION OR GLASBASE	DYNAGLAS OR DYNAGLAS FR		
2FND	2	NONE	DYNABASE	DYNAGLAS, DYNAGLAS 30FR, OR DYNAGLAS FR	
2FND-C	2	VENTSULATION OR GLASBASE	DYNAGLAS OR DYNAGLAS FR		
2PND	2	VENTSULATION OR GLASBASE	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR		
2PND	2	NONE	DYNALASTIC 180S	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR	
2PND-C	2	VENTSULATION OR GLASBASE	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR		
3CND	3	VENTSULATION OR GLASBASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR		
3CLD	3	VENTSULATION	DYNABASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET
MANUFACTURER'S SPECIFICATION NO.					
Company Name SCHULLER INTERNATIONAL INC.					
NEW/REPLACEMENT					
NAILABLE (CONT'D)					
3FND	3	VENTSULATION OR GLASBASE	DYNAGLAS OR DYNAGLAS FR		
3FLD	3	VENTSULATION	DYNABASE	DYNAGLAS, DYNAGLAS 30 FR, OR DYNAGLAS FR	
3PND	3	VENTSULATION OR GLASBASE	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR		
3PLD	3	VENTSULATION	DYNALASTIC 180S	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR	
2CNS-W/2PNS-W	2	GLASBASE, PP28	CLASSIC SERIES, TRICOR, BICOR, OR APPEX SERIES	CLASSIC SERIES, TRICOR, BICOR, OR APPEX SERIES	
2CNS-W/2PNS-W	2	NONE	SCHULLER APP BASE		
2CNN-W/2PNN-W	2	GLASBASE, PP28	CLASSIC SERIES, TRICOR M, TRICOR M FR, OR APPEX SERIES		
2CNN-W/2PNN-W	2	NONE	SCHULLER APP BASE	CLASSIC SERIES, TRICOR M, TRICOR M FR, OR APPEX SERIES	
3CNS-W/3PNS-W	3	GLASBASE, PP28	SCHULLER APP BASE	CLASSIC SERIES, TRICOR, BICOR, OR APPEX SERIES	
3CNS-W/3PNS-W	3	NONE	SCHULLER APP BASE	APPEX SERIES	CLASSIC SERIES, TRICOR, BICOR, OR APPEX SERIES
3CNN-W/3PNN-W	3	GLASBASE, PP28	SCHULLER APP BASE	CLASSIC SERIES, TRICOR M, TRICOR M FR, OR APPEX SERIES	
3CNN-W/3PNN-W	3	NONE	SCHULLER APP BASE	APPEX SERIES	CLASSIC SERIES, TRICOR M, TRICOR M FR, OR APPEX SERIES
RECOVER					
EXISTING ROOF INSULATION ADDED	See New/Replacement, Nonnailable and Insulated				

Company Name SIPLAST INC					
NEW/REPLACEMENT NONAVAILABLE					
2030CPH	3	PUNCHED GLASS BASE	PARADIENE 20	PARADIENE 30	
2030CAA	3	PUNCHED GLASS BASE	PARADIENE 20	PARADIENE 30	
4040CPT	3	PUNCHED GLASS BASE	IREX	VERAL	
5000CPH	2	PUNCHED GLASS BASE	PARAFOR 50		
5000CAA	2	PUNCHED GLASS BASE	PARAFOR 50		
5000CPT	2	PUNCHED GLASS BASE	PARAFOR 50		
1035CPH	3	PUNCHED GLASS BASE & PARABASE	PARATECH		
NEW/REPLACEMENT INSULATED					
2030IH	2	NONE	PARADIENE 20	PARADIENE 30	
2030IA	2	NONE	PARADIENE 20	PARADIENE 30	
4040IT	2	NONE	IREX	VERAL	
5000IH	1	NONE	PARAFOR 50		
5000IA	1	NONE	PARAFOR 50		
5000IT	1	NONE	PARAFOR 50		
1035IH	2	PARABASE	PARATECH		
NEW/REPLACEMENT NAILABLE					
2030PSH	3	PARAGLAS	PARADIENE 20	PARADIENE 30	
2030WSH	3	PARAGLAS	PARADIENE 20	PARADIENE 30	
2030CBH	3	PARABASE	PARADIENE 20	PARADIENE 30	
2030PSA	3	PARAGLAS	PARADIENE 20	PARADIENE 30	
2030WSA	3	PARAGLAS	PARADIENE 20	PARADIENE 30	
2030CBA	3	PARABASE	PARADIENE 20	PARADIENE	
4040PST	3	PARAGLAS	IREX	VERAL	
4040WST	3	PARAGLAS	IREX	VERAL	
4040CBT	3	PARABASE	IREX	VERAL	
5000PSH	2	PARAGLAS	PARAFOR 50		
5000WSH	2	PARAGLAS	PARAFOR 50		
5000CBH	2	PARABASE	PARAFOR 50		
5000PSA	2	PARAGLAS	PARAFOR 50		
5000WSA	2	PARAGLAS	PARAFOR 50		
5000CBA	2	PARABASE	PARAFOR 50		
5000PIT	2	NONE	IREX	PARAFOR 50	
5000WIT	2	NONE	IREX	PARAFOR 50	
5000CBT	2	PARABASE	PARAFOR 50		
3040PGH	2	PARABASE	PARADIENE 40		
3040CGH	2	PARABASE	PARADIENE 40		
1035CBH	3	PARABASE & PARAGLAS	PARATECH		

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
MANUFACTURER'S SPECIFICATION NO.			FIRST SHEET	SECOND SHEET	THIRD SHEET

Company Name **SIPLAST INC**

RECOVER EXISTING ROOF INSULATION ADDED					
2030IH	2	NONE	PARADIENE 20	PARADIENE 30	
2030IA	2	NONE	PARADIENE 20	PARADIENE 30	
4040IT	2	NONE	IREX	VERAL	
5000IH	1	NONE	PARAFOR 50		
5000IA	1	NONE	PARAFOR 50		
5000IT	1	NONE	PARAFOR 50		
1035IH	2	PARABASE	PARATECH		

Company Name **SOUTHWESTERN PETROLEUM CORPORATION**

NEW/REPLACEMENT NONAVAILABLE					
302	1	NONE	UNI+SHIELD		
302	2	APPROVED	UNI+SHIELD		
303	2	NONE	UNI+SHIELD II	UNI+SHIELD II	
NEW/REPLACEMENT INSULATED					
302	1	NONE	UNI+SHIELD		
302	2	NONE	UNI+SHIELD		
303	2	NONE	UNI+SHIELD II	UNI+SHIELD II	
NEW/REPLACEMENT AVAILABLE					
302	1	NONE	UNI+SHIELD		
302	2	APPROVED	UNI+SHIELD		
303	3	ASTM 2626	UNI+SHIELD II	UNI+SHIELD II	
RECOVER EXISTING ROOF					
302	1	NONE	UNI+SHIELD		
302	2	APPROVED	UNI+SHIELD		
303	2	NONE	UNI+SHIELD II	UNI+SHIELD II	
303	3	ASTM 2626	UNI+SHIELD II	UNI+SHIELD II	
RECOVER EXISTING ROOF INSULATION ADDED					
302	1	NONE	UNI+SHIELD		
302	2	APPROVED	UNI+SHIELD		
303	2	NONE	UNI+SHIELD II	UNI+SHIELD II	

Company Name **TAMKO ROOFING PRODUCTS INC.**

NEW/REPLACEMENT INSULATED					
101	2	GLASS BASE	AWAPLAN PREMIUM		
102	3	2 TAMKO PLY SHEETS	AWAPLAN PREMIUM		
103	2	NONE	AWAPLAN VERSA SMOOTH	AWAPLAN PREMIUM	
107	2	NONE	VERSA BASE	AWAPLAN PREMIUM	
108	4	3 TAMKO PLY SHEETS	AWAPLAN PREMIUM		
109	3	NONE	VERSA BASE	TAM-GLASS PREMIUM (NONMOD)	AWAPLAN PREMIUM
101C	2	GLASS BASE	AWAPLAN PREMIUM		
107C	2	NONE	VERSA BASE	AWAPLAN PREMIUM	
243	3	NONE	AWAPLAN VERSA SMOOTH	2 TAMKO PLY SHEETS (NONMOD)	
201C	2	GLASS BASE	AWAPLAN 170		
207C	2	NONE	VERSA BASE	AWAPLAN 170	
101HW	2	GLASS BASE	AWAPLAN HEAT WELDING		
102HW	3	2 TAMKO PLY SHEETS	AWAPLAN HEAT WELDING		
103HW	2	NONE	AWAPLAN VERSA SMOOTH	AWAPLAN HEAT WELDING	
107HW	2	NONE	VERSA BASE	AWAPLAN HEAT WELDING	
108HW	4	3 TAMKO PLY SHEETS	AWAPLAN VERSA SMOOTH		
109HW	3	NONE	VERSA BASE	TAM-GLASS PREMIUM (NONMOD)	AWAPLAN HEAT WELDING
101FR	2	GLASS BASE	AWAPLAN PREMIUM FR		
102FR	3	2 TAMKO PLY SHEETS	AWAPLAN PREMIUM FR		
107FR	2	NONE	VERSA BASE	AWAPLAN PREMIUM FR	
108FR	4	3 TAMKO PLY SHEETS	AWAPLAN PREMIUM FR		
109FR	3	NONE	VERSA BASE	TAM-GLASS PREMIUM (NONMOD)	AWAPLAN PREMIUM FR

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
MANUFACTURER'S SPECIFICATION NO.			FIRST SHEET	SECOND SHEET	THIRD SHEET

Company Name **TAMKO ROOFING PRODUCTS INC.**

NEW/REPLACEMENT					
INSULATED (cont'd)					
201	2	GLASS BASE	AWAPLAN 170		
202	2	NONE	AWAPLAN VERSA SMOOTH	AWAPLAN 170	
203	3	2 TAMKO PLY SHEETS	AWAPLAN 170		
204	2	NONE	AWAPLAN VERSA SMOOTH	GLASS CAP SHEET (NONMOD)	
207	2	NONE	VERSA BASE	AWAPLAN 170	
208	4	3 TAMKO PLY SHEETS	AWAPLAN 170		
209	3	NONE	VERSA BASE	TAM-GLASS PREMIUM (NONMOD)	AWAPLAN 170
201FR	2	GLASS BASE	AWAPLAN 170 FR		
203FR	3	2 TAMKO PLY SHEETS	AWAPLAN 170 FR		
207FR	2	NONE	VERSA BASE	AWAPLAN 170 FR	
208FR	4	3 TAMKO PLY SHEETS	AWAPLAN 170 FR		
209FR	3	NONE	VERSA BASE	TAM-GLASS PREMIUM (NONMOD)	AWAPLAN 170 FR
244	2	NONE	AWAPLAN VERSA-SMOOTH	TAM-CAP	
701	2	NONE	VERSA BASE	VERSA CAP FR	
702	2	NONE	VERSA BASE FR	VERSA CAP FR	
744	2	GLASS BASE (OPTIONAL)	AWAPLAN VERSA SMOOTH	VERSA CAP FR	
703	3	NONE	2 PLIES VERSA BASE	VERSA CAP FR	
704	3	2 PLIES TAM-PLY IV	VERSA CAP FR		
705	4	3 PLIES TAM-PLY IV	VERSA CAP FR		
706	5	4 PLIES TAM-PLY IV	VERSA CAP FR		
1001	2	BASE-N-PLY	AWAFLEX		
1002	3	2 TAMKO PLY SHEETS	AWAFLEX		
103FR	2	NONE	AWAPLAN VERSA SMOOTH	AWAPLAN PREMIUM FR	
203FR	2	NONE	AWAPLAN VERSA SMOOTH	AWAPLAN 170 FR	
1101/1101 M	2	GLASS BASE	SPEEDWELD GRANULATED		
1102	3	2 TAMKO PLY SHEETS	SPEEDWELD GRANULATED		
1201/1201 M	2	GLASS BASE	SPEEDWELD SMOOTH		
1202	3	2 TAMKO PLY SHEETS	SPEEDWELD SMOOTH		
NEW/REPLACEMENT					
AVAILABLE					
111	2	VAPOR CHAN	AWAPLAN PREMIUM		
112	2	43 BASE/BASE-N-PLY	AWAPLAN PREMIUM		
113	3	VAPOR CHAN	TAM-GLASS PREMIUM (NONMOD)	AWAPLAN PREMIUM	
114	3	43 BASE/BASE-N-PLY	TAM-GLASS PREMIUM (NONMOD)	AWAPLAN PREMIUM	
111C	2	VAPOR CHAN	AWAPLAN PREMIUM		
111HW	2	VAPOR CHAN	AWAPLAN HEAT WELD		
112C	2	43 BASE/BASE-N-PLY	AWAPLAN PREMIUM		
112HW	2	43 BASE/BASE-N-PLY	AWAPLAN HEAT WELD		
113HW	3	VAPOR CHAN	TAM-GLASS PREMIUM (NONMOD)	AWAPLAN HEAT WELD	
114HW	3	43 BASE/BASE-N-PLY	TAM-GLASS PREMIUM (NONMOD)	AWAPLAN HEAT WELD	
111FR	2	VAPOR CHAN	AWAPLAN PREMIUM FR		
112FR	2	VAPOR CHAN	AWAPLAN PREMIUM FR		
113FR	3	VAPOR CHAN	TAM-GLASS PREMIUM (NONMOD)	AWAPLAN PREMIUM FR	
114FR	3	GLASS BASE	TAM-GLASS PREMIUM (NONMOD)	AWAPLAN PREMIUM FR	
211	2	VAPOR CHAN	AWAPLAN 170		
212	2	43 BASE/BASE-N-PLY	AWAPLAN 170		
213	3	VAPOR CHAN	TAM-GLASS PREMIUM (NONMOD)	AWAPLAN 170	
214	3	43 BASE/BASE-N-PLY	TAM-GLASS PREMIUM (NONMOD)		
211C	2	VAPOR CHAN	AWAPLAN 170		
212C	2	43 BASE/BASE-N-PLY	AWAPLAN 170		
211FR	2	VAPOR CHAN	AWAPLAN 170		
212FR	2	GLASS BASE	AWAPLAN 170		
213FR	3	VAPOR CHAN	TAM-GLASS PREMIUM (NONMOD)	AWAPLAN 170 FR	
214FR	3	GLASS BASE	TAM-GLASS PREMIUM (NONMOD)	AWAPLAN 170 FR	
711	3	VAPOR CHAN	VERSA BASE	VERSA CAP FR	
712	3	GLASS BASE	VERSA BASE FR	VERSA CAP FR	
745	3	VAPOR CHAN	AWAPLAN VERSA SMOOTH	VERSA CAP FR	
1013	3	VAPOR CHAN	TAM-PLY IV	AWAFLEX	
1014	3	BASE-N-PLY	TAM-PLY IV	AWAFLEX	
1111	2	VAPOR CHAN	SPEEDWELD GRANULATED		
1112	2	GLASS BASE	SPEEDWELD GRANULATED		
1211	2	VAPOR CHAN	SPEEDWELD SMOOTH		
1212	2	GLASS BASE	SPEEDWELD SMOOTH		

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET

Company Name **TAMKO ROOFING PRODUCTS INC.**

RECOVER EXISTING ROOF					
135	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)	AWAPLAN PREMIUM	
136	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)	AWAPLAN PREMIUM	
135HW	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)	AWAPLAN HEAT WELDING	
136HW	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)	AWAPLAN HEAT WELDING	
135FR	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)	AWAPLAN PREMIUM FR	
136FR	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)	AWAPLAN PREMIUM FR	
235	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)	AWAPLAN 170	
236	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)	AWAPLAN 170	
235FR	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)	AWAPLAN 170 FR	
236FR	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)	AWAPLAN 170 FR	
1134	2	VAPOR CHAN	SPEEDWELD GRANULATED		
1234	2	VAPOR CHAN	SPEEDWELD SMOOTH		
RECOVER EXISTING ROOF INSULATION ADDED					
See New/Replacement, Insulated					

Company Name **TEXAS REFINERY CORP.**

NEW/REPLACEMENT NONAVAILABLE					
N-101	3	TYPE II GLASBASE	MIGHTYPLATE	MIGHTYPLATE	
N-102	3	APPROVED	MIGHTYPLATE	MIGHTYPLATE	
NEW/REPLACEMENT INSULATED					
N-201	3	TYPE II GLASBASE	MIGHTYPLATE	MIGHTYPLATE	
N-202	3	APPROVED	MIGHTYPLATE	MIGHTYPLATE	
N-203	2	NONE	MIGHTYPLATE	MIGHTYPLATE	
NEW/REPLACEMENT AVAILABLE					
N-301	3	TYPE II GLASBASE	MIGHTYPLATE	MIGHTYPLATE	
N-302	3	APPROVED	MIGHTYPLATE	MIGHTYPLATE	
RECOVER EXISTING ROOF					
E-401	1	NONE	MIGHTYPLATE		
RECOVER EXISTING ROOF INSULATION ADDED					
E-501	1	NONE	MIGHTYPLATE		
E-502	2	TYPE II GLASBASE	MIGHTYPLATE		
E-503	2	APPROVED	MIGHTYPLATE		

COMPANY NAME **TEXSA, S.A.**

NEW/REPLACEMENT NONAVAILABLE					
	1		HIPER M.P.		
	1		MIN TEXAL -15 FP-S		
	2		TEXAL FV 3MM	TEXAL -15 FP-S 4MM	
	1		TEXAL -15 FP-S 4MM		
	1		MIN MOFLEX -20 FP-S		
	2		TEXAL FV 3MM	MIN MOFLEX -20 FP-S	
	1		M.P. PARKING		
NEW/REPLACEMENT INSULATED					
	2		TEXAL FV 3MM	TEXAL -15 FP-S 4MM	
	2		HIPER M.P.	TEXAL PY MIN	
	2		TEXAL FV 3MM	MIN MOFLEX -20 FP-S	
NEW/REPLACEMENT AVAILABLE					
	1		MINERAL M.P. 5KG FM		

COMPANY NAME **3 E GROUP**

NEW/REPLACEMENT NONAVAILABLE					
B.P. 27	2	NONE	FLASHBAND R.F.	FLASHBAND-28	

Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION AND SUBSTRATE	TOTAL NO. OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION IF OTHER THAN MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
MANUFACTURER'S SPECIFICATION NO.			FIRST SHEET	SECOND SHEET	THIRD SHEET

COMPANY NAME **3 E GROUP**

NEW/REPLACEMENT INSULATED					
B.P. 23	2	NONE	FLASHBAND R.F.	FLASHBAND-28	
NEW/REPLACEMENT AVAILABLE					
B.P. 21	2	NONE	FLASHBAND R.F.	FLASHBAND-28	
RECOVER EXISTING ROOF					
B.P. 17	1	NONE	FLASHBAND-28		
RECOVER EXISTING ROOF INSULATED ADDED					
B.P. 14	1	NONE	FLASHBAND-28		

Company Name **TRI-PLY**

NEW/REPLACEMENT NONNAILABLE					
KA-230-NN	2	EAGLE BASE	KARIFALT MEMBRANE		
KA-330-NN	3	EAGLE BASE AND GLASS	KARIFALT MEMBRANE		
KA-430-NN	4	EAGLE BASE AND 2 GLASS	KARIFALT MEMBRANE		
TP-230-NN	1	NONE	TP-4 OR TP-4G		
TP-330-NN	2	NONE	TP-4	TP-4 OR TP4G	
NEW/REPLACEMENT INSULATED					
KA-200-NI	2	EAGLE BASE	KARIFALT MEMBRANE		
KA-300-NI	3	2 EAGLE GLASS	KARIFALT MEMBRANE		
KA-400-NI	4	2 EAGLE GLASS	KARIFALT MEMBRANE		
KA-220-NNI	2	EAGLE BASE	KARIFALT MEMBRANE		
KA-320-NNI	3	2 EAGLE GLASS	KARIFALT MEMBRANE		
KA-420-NNI	4	3 EAGLE GLASS	KARIFALT MEMBRANE		
TP-200-NI	2	EAGLE BASE	TP-4 OR TP-4G	TP-4 OR TP-4G	
TP-300-NI	3	EAGLE BASE	TP-4		
TP-220-NNI	2	EAGLE BASE	TP-4 OR TP-4G	TP-4 OR TP-4G	
TP-320-NNI	3	EAGLE BASE	TP-4		
NEW/REPLACEMENT AVAILABLE					
KA-210-N	2	EAGLE BASE	KARIFALT MEMBRANE		
KA-310-N	3	EAGLE BASE AND GLASS	KARIFALT MEMBRANE		
KA-410-N	4	EAGLE BASE AND 2 GLASS	KARIFALT MEMBRANE		
TP-210-N	2	EAGLE BASE	TP-4 OR TP-4G		
TP-310-N	3	EAGLE BASE	TP-4	TP-4 OR TP4G	
RECOVER EXISTING ROOF					
KA-RRS	2	EAGLE BASE	KARIFALT MEMBRANE		
TP-RRS	1	EAGLE BASE (OPTIONAL)	TP-4 OR TP-4G		
RECOVER EXISTING ROOF INSULATION ADDED					
KA-RRG	2	EAGLE BASE	KARIFALT MEMBRANE		
TP-RRG	2	EAGLE BASE	TP-4 OR TP-4G		

PVC Part 1: General Information

1. COMPANY NAME	FIRESTONE BUILDING PRODUCTS	FIRESTONE BUILDING PRODUCTS	FLEX MEMBRANE INTERNATIONAL INC.	FLEX MEMBRANE INTERNATIONAL INC.	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS
2. PRODUCT NAME	ULTRAPLY .045	ULTRAPLY .060	FLEX MF/R 50	FLEX MF/R 60	GENFLEX RM .048	GENFLEX RM .060
3. PRODUCT DESCRIPTION A. REINFORCEMENT B. COLOR(S) C. INSTALLED WEIGHT (lbs./ft ² w/o ballast)	POLYESTER WHITE 0.30 NOM	POLYESTER WHITE 0.40 NOM	REINF POLY. WHITE/ OFFWHITE 0.35	REINF POLY. WHITE/ OFFWHITE 0.45	POLYESTER WHITE/GREY/ TAN 0.30	POLYESTER WHITE/GREY/ TAN 0.40
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN: A. NEW ROOFING B. REROOFING	 X X	 X X	 X X	 X X	 X X	 X X
6. FIELD LAP JOINT METHOD	HEAT WELD	HEAT WELD	HOT AIR OR SOLVENT WELD	HOT AIR OR SOLVENT WELD	HEAT	HEAT
7. TYPES OF ROOF SYSTEMS A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²) B. PARTIALLY ADHERED (method) C. FULLY ADHERED (method) D. PROTECTED ROOF MEMBRANE ASSEMBLY	 MECH. FAST. 	 MECH. FAST. 	 10 MIN. MECH. FAST. CONT. ADHES.	 10 MIN. MECH. FAST. CONT. ADHES.	 MECH. FAST. CONT. ADHES.	 MECH. FAST. CONT. ADHES.
8. MINIMUM SLOPE REQUIRED	POS DRAIN	POS DRAIN	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
A. GLASS FIBER	O	O	S O	S O	X	X
B. MINERAL FIBER	O	O	S O	S O	X	X
C. POLYSTYRENE	O	O	S O	S O	S	S
D. CELLULAR GLASS	O	O	S O	S O	X	X
E. PHENOLIC						
F. FIBERBOARD	X	X	X	X	X	X
G. PERLITE			X O	X O	X	X
H. POLYISOCYANURATE	X	X	X	X	X	X
I. POLYURETHANE			O	O		
J. GYPSUM	O	O	X O	X O	X	X
K. CONCRETE	O	O	S O	S O	O	O
L. WOOD PLANK	O	O	S O	S O	O	O
M. PLYWOOD	O	O	X S	X S	O	O
N. EXISTING BUILTUP MEMBRANE	O	O	S O	S O	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	SEE SPECS	SEE SPECS
11. WORKABLE TEMPERATURE RANGE (degrees F)	0 – 120	0 – 120	0 – 120	0 – 120	0 – 140	0 – 140
12. FLASHING MATERIAL	ULTRAPLY CTD METAL/ REINF'D MEMB.	ULTRAPLY CTD METAL/ REINF'D MEMB.	ROOF MEMBRANE/ CTD METAL	ROOF MEMBRANE/ CTD METAL	PVC MEMBRANE OR PVC-COAT- ED MATERIAL	PVC MEMBRANE OR PVC-COAT- ED MATERIAL
13. FLASHING METHOD	HEAT WELD	HEAT WELD	HOT AIR WELD OR ADHESIVE	HOT AIR WELD OR ADHESIVE	SOLVENT ADHESIVE OR HEAT	SOLVENT ADHESIVE OR HEAT
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF: A. ORIGIN B. MANUFACTURE	 USA USA	 USA USA	 USA USA	 USA USA	 USA USA	 USA USA
16. YEAR OF FIRST COMMERCIAL USE A. OUTSIDE USA B. WITHIN USA	 1992 1986	 1994	 1988	 1988	 1983 1980	 1983 1980
17. NUMBER OF SQUARES INSTALLED (100 ft ²) A. OUTSIDE USA B. WITHIN USA	 THOUSANDS THOUSANDS	 THOUSANDS THOUSANDS	 THOUSANDS	 THOUSANDS	 MILLIONS	 MILLIONS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTR'S, DIRECT	DISTR'S, DIRECT	DIRECT	DIRECT	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	5	5	4	4	8	8
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	800/428-4442	800/428-4442	J. DOYLE 610/286-7788	J. DOYLE 610/286-7788	SALES OFFICE	SALES OFFICE
22. FOR TECHNICAL INFORMATION, CONTACT:	800/428-4511	800/428-4511	S. EDDINGER 610/286-7788	S. EDDINGER 610/286-7788	TECH. SERVICE 800/443-4272	TECH. SERVICE 800/443-4272
23. SEE MEMBRANE APPENDIX IF CHECKED						

PVC Part 1: General Information

[illegible]

PVC Part 1: General Information

1. COMPANY NAME	MULE-HIDE PRODUCTS CO. INC.	MULE-HIDE PRODUCTS CO. INC.	PROSPEX ROOFING PROD. INC.	PROSPEX ROOFING PROD. INC.	PROSPEX ROOFING PROD. INC.	PROSPEX ROOFING PROD. INC.
2. PRODUCT NAME	MH50	MH60	PROSEAL MF	PROSEAL MF 40	PROSEAL LL	PROSEAL FA
3. PRODUCT DESCRIPTION A. REINFORCEMENT B. COLOR(S) C. INSTALLED WEIGHT (lbs./ft ² w/o ballast)	POLYESTER WHITE 0.42	POLYESTER WHITE 0.44	POLYESTER GREY 0.33	POLYESTER GREY 0.30	FIBERGLASS GREEN 0.33	FIBERGLASS GREY 0.33
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN: A. NEW ROOFING B. REROOFING	X X	X X	X X	X X	X X	X X
6. FIELD LAP JOINT METHOD	HEAT	HEAT	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD
7. TYPES OF ROOF SYSTEMS A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²) B. PARTIALLY ADHERED (method) C. FULLY ADHERED (method) D. PROTECTED ROOF MEMBRANE ASSEMBLY	MECH. FAST. CONT. ADHES.	MECH. FAST. CONT. ADHES.	MECH. FAST.	MECH. FAST.	10	CONT. ADHES.
8. MINIMUM SLOPE REQUIRED	NONE	NONE	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances) A. GLASS FIBER B. MINERAL FIBER C. POLYSTYRENE D. CELLULAR GLASS E. PHENOLIC F. FIBERBOARD G. PERLITE H. POLYISOCYANURATE I. POLYURETHANE J. GYPSUM K. CONCRETE L. WOOD PLANK M. PLYWOOD N. EXISTING BUILTUP MEMBRANE	S S S X X X X X X S S S S	S S S X X X X X X S S S S	X X S X X X X X X X X X X	O O O S X X X X X O O O O	O O O O O X X X X O O O O	O O O O O X X X X O O O O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	SEE SPECS	SEE SPECS	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	0 – 120	0 – 120	0 – 120	0 – 120	0 – 120	0–120
12. FLASHING MATERIAL	PVC-COATED METAL/REINFORCED MEM.	PVC-COATED METAL/REINFORCED MEM.	PVC OR PVC-CLAD METAL	PVC OR PVC-CLAD METAL	PVC OR PVC-CLAD METAL	PVC OR PVC-CLAD METAL
13. FLASHING METHOD	ADHESIVE AND HEAT	ADHESIVE AND HEAT	ADHESIVE AND HEAT WELD	ADHESIVE AND HEAT WELD	ADHESIVE AND HEAT WELD	ADHESIVE AND HEAT WELD
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF: A. ORIGIN B. MANUFACTURE	USA	USA	CANADA CANADA	CANADA CANADA	CANADA CANADA	CANADA CANADA
16. YEAR OF FIRST COMMERCIAL USE A. OUTSIDE USA B. WITHIN USA	1989	1986	1985	1985	1985	1985
17. NUMBER OF SQUARES INSTALLED (100 ft ²) A. OUTSIDE USA B. WITHIN USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DIRECT	DIRECT	DIRECT	DIRECT
19. NUMBER OF REGIONAL LOCATIONS	12	12	5	5	5	5
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	L. PUNZEL 608/365-3111	L. PUNZEL 608/365-3111	F. JORDAN	F. JORDAN	F. JORDAN	F. JORDAN
22. FOR TECHNICAL INFORMATION, CONTACT:	T. MCFARLAND 608/365-3111	T. MCFARLAND 608/365-3111	T. JORDAN	T. JORDAN	T. JORDAN	T. JORDAN
23. SEE MEMBRANE APPENDIX IF CHECKED			X	X	X	X

PVC Part 1: General Information

PROSPEX ROOFING PROD. INC.	SARNAFIL INC.	SARNAFIL INC.	SARNAFIL INC.	SARNAFIL INC.
PROSEAL PMA	SARNAFIL G410	SARNAFIL S327	SARNAFIL G442	SARNAFIL G476
FIBERGLASS GREEN	FIBERGLASS ASSORTED	POLYESTER ASSORTED ASSORTED	FIBERGLASS	FIBERGLASS ORANGE
0.33	0.33	0.33	0.33	0.33
NONE	NONE	NONE	NONE	NONE
X	X	X	X	X
X	X	X	X	X
HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD
		MECH. FAST.	10	
X	CONT. ADHES.		X	X
DEAD LEVEL	NONE	NONE	NONE	NONE
X	O	O	O	O
O	O	O	O	O
O	O	S	S	S
O	O	O		
X	X	X		
X	O	O		
X	X	X	X	X
X	X	X	X	X
X	O	S	S	S
X	O	S	S	S
O	O	S	S	S
X	X	X		
O	O	S	O	O
NONE	NONE	NONE	NONE	NONE
0 – 120	0 – 120	0 – 120	0 – 120	0 – 120
PVC OR PVC- CLAD METAL	G410, G459, CLAD METAL	G410, G459, S327, OR CLAD METAL	G410, G459, CLAD METAL	G410, G442, G459, OR CLAD METAL
ADHESIVE AND HEAT WELD	ADHESIVE AND HEAT WELD	ADHESIVE AND HEAT WELD	ADHESIVE AND HEAT WELD	ADHESIVE AND HEAT WELD
YES	YES	YES	YES	YES
CANADA CANADA	SWITZERLAND USA	SWITZERLAND USA	SWITZERLAND USA	SWITZERLAND USA
1985	1964 1975	1964 1978	1964 1977	1964 1981
THOUSANDS	THOUSANDS THOUSANDS	THOUSANDS THOUSANDS	THOUSANDS THOUSANDS	THOUSANDS THOUSANDS
DIRECT	DIRECT	DIRECT	DIRECT	DIRECT
5	6	6	6	6
YES	YES	YES	YES	YES
F. JORDAN	SALES DEPT.	SALES DEPT.	SALES DEPT.	SALES DEPT.
T. JORDAN	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.
X	X	X	X	X

PVC Part 2: Test Results

Test description and suggested values as specified in ASTM D 4434-95

1. COMPANY NAME		FIRESTONE BUILDING PRODUCTS	FIRESTONE BUILDING PRODUCTS	FLEX MEMBRANE INTERNATIONAL INC.	FLEX MEMBRANE INTERNATIONAL INC.	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS
2. PRODUCT NAME		ULTRAPLY .045	ULTRAPLY .060	FLEX MF/R 50	FLEX MF/R 60	GENFLEX RM .048	GENFLEX RM .060
3. TYPE I (unreinforced sheet) TYPE II (unreinforced sheet) GRADE 1 (containing fibers) GRADE 2 (containing fabrics) TYPE III (reinforced sheet containing fibers of fabrics)		III	III	III	III	III	III
4. OVERALL THICKNESS (min. in.)	0.045	0.045	0.060	0.050	0.060	0.048	0.060
5. TENSILE STRENGTH AT BREAK (min. psi) TYPE I; TYPE II, GRADE 1 MACHINE DIRECTION CROSS-MACHINE DIRECTION	1500 1500	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
6. BREAKING STRENGTH (min. lbf/in.) TYPE II, GRADE 2; TYPE III	200	250	250	> 230	> 250	210	210
7. ELONGATION AT BREAK (min. %) TYPE I; TYPE II, GRADE 1 MACHINE DIRECTION CROSS-MACHINE DIRECTION TYPE II, GRADE 2; TYPE III MACHINE DIRECTION CROSS-MACHINE DIRECTION	250 220 15* 15*	NA NA 30 30	NA NA 30 30	NA NA > 20 > 20	NA NA > 20 > 20	NA NA 15 15	NA NA 15 15
8. SEAM STRENGTH (min. % of tensile or breaking strength)	75.0	75.0	75.0	> 80	> 80	>75.0	>75.0
9. RETENTION OF PROPERTIES AFTER HEAT AGING (minimum % of original) TENSILE STRENGTH TYPE I; TYPE II, GRADE 1 BREAKING STRENGTH TYPE II, GRADE 1; TYPE III ELONGATION	80.0 80.0 80.0	80 80 80	80 80 80	NA > 80 90	NA > 80 90	NA NA >95	NA NA >95
10. TEAR RESISTANCE (min. lbf) TYPE I; TYPE II, GRADE	10.0			NA	NA	NA	NA
11. TEARING STRENGTH (min. lbf) TYPE II, GRADE 2; TYPE III	45.0	80	80	> 50	> 50	50	50
12. LOW TEMPERATURE BEND	pass	PASS	PASS	PASS	PASS	PASS	PASS
13. ACCELERATED WEATHERING TEST CRACKING (7X magnification) DISCOLORATION (by observation) CRAZING (7X magnification)	none negligible none	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE
14. LINEAR DIMENSIONAL CHANGE (max. %) TYPE I TYPE II TYPE III	3.0 0.1 0.5	NA NA 0.3	NA NA 0.3	NA NA < 0.2	NA NA < 0.2	NA NA <0.1	NA NA <0.1
15. CHANGE IN WEIGHT AFTER IMMERSION IN WATER (max. %)	±3.0	PASS	PASS	< 0.2	< 0.2	+3.0	+3.0
16. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

* for reinforcing fabric only; elongation of PVC material shall be the same as Type I

PVC Part 2: Test Results

Test description and suggested values as specified in ASTM D 4434–95

GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	HPG ROOFING SYSTEM	HPG ROOFING SYSTEM	HPG ROOFING SYSTEM	HPG ROOFING SYSTEM	HPG ROOFING SYSTEM	HPG ROOFING SYSTEM	HPG ROOFING SYSTEM
GENFLEX RM-T .080	GENFLEX RM-C .048	GENFLEX RM-C .060	SRB-50	SRB-60	V2-50	V2-60	SR-50	SR-60	SR-80
III	III	III	II 1	II 1	III	III	III	III	III
0.080	0.048	0.060	0.050	0.060	0.047	0.054	0.047	0.054	0.073
NA NA	NA NA	NA NA	1800 1800	1800 1800	NA NA	NA NA	NA NA	NA NA	NA NA
300	210	210	NA	NA	> 320	> 325	>320	>325	> 325
NA NA	NA NA	NA NA	250 220	250 220	NA NA	NA NA	NA NA	NA NA	NA NA
35 40	15 15	15 15	NA NA	NA NA	> 20 > 20	> 20 > 20	>20 >20	>20 >20	> 20 > 20
> 90.0	>75.0	>75.0	>75.0	>75.0	>75.0	>75.0	>75.0	>75.0	>75.0
NA 80.0 80.0	NA NA >95	NA NA >95	>80.0 NA >80.0	>80.0 NA >80.0	NA >80.0 >80.0	NA >80.0 >80.0	NA >80.0 >80.0	NA >80.0 >80.0	NA >80.0 >80.0
NA	NA	NA	15	16	NA	NA	NA	NA	18
100	50	50	NA	NA	> 50.0	> 50.0	> 50.0	> 50.0	> 50.0
PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE
NA NA .3	NA NA <0.1	NA NA <0.1	NA <0.1	NA <0.1	NA NA <0.2	NA NA <0.2	NA NA <0.2	NA NA <0.2	NA NA <0.2
+1.0	+3.0	+3.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0

PVC Part 2: Test Results

Test description and suggested values as specified in ASTM D 4434-95

1. COMPANY NAME		MULE-HIDE PRODUCTS CO. INC.	MULE-HIDE PRODUCTS CO. INC.	PROSPEX ROOFING PROD. INC.	PROSPEX ROOFING PROD. INC.	PROSPEX ROOFING PROD. INC.	PROSPEX ROOFING PROD. INC.
2. PRODUCT NAME		MH-50	MH-60	PROSEAL MF	PROSEAL MF 40	PROSEAL LL	PROSEAL FA
3. TYPE I (unreinforced sheet) TYPE II (unreinforced sheet) GRADE 1 (containing fibers) GRADE 2 (containing fabrics) TYPE III (reinforced sheet containing fibers of fabrics)						II 1	II 1
4. OVERALL THICKNESS (min. in.)	0.045	0.050	0.060	0.047	0.040	0.047	0.047
5. TENSILE STRENGTH AT BREAK (min. psi) TYPE I; TYPE II, GRADE 1 MACHINE DIRECTION CROSS-MACHINE DIRECTION	1500 1500	NA NA	NA NA	NA NA	NA NA	2200 1800	2200 1800
6. BREAKING STRENGTH (min. lbf/in.) TYPE II, GRADE 2; TYPE III	200	> 320	> 325	350	450	NA	NA
7. ELONGATION AT BREAK (min. %) TYPE I; TYPE II, GRADE 1 MACHINE DIRECTION CROSS-MACHINE DIRECTION TYPE II, GRADE 2; TYPE III MACHINE DIRECTION CROSS-MACHINE DIRECTION	250 220 15* 15*	NA NA > 20 > 20	NA NA > 20 > 20	NA NA 60 45	NA NA 45 45	300 250 NA NA	300 250 NA NA
8. SEAM STRENGTH (min. % of tensile or breaking strength)	75.0	>75.0	>75.0	>80	>80	>80	>80
9. RETENTION OF PROPERTIES AFTER HEAT AGING (minimum % of original) TENSILE STRENGTH TYPE I; TYPE II, GRADE 1 BREAKING STRENGTH TYPE II, GRADE 1; TYPE III ELONGATION	80.0 80.0 80.0	NA >80 >80	NA >80 >80	NA >90 >90	NA >90 >85	>80 NA	>80 NA
10. TEAR RESISTANCE (min. lbf) TYPE I; TYPE II, GRADE	10.0	NA	NA	NA	NA	25	25
11. TEARING STRENGTH (min. lbf) TYPE II, GRADE 2; TYPE III	45.0	50	50	60	65	NA	NA
12. LOW TEMPERATURE BEND	pass	PASS	PASS	PASS	PASS	PASS	PASS
13. ACCELERATED WEATHERING TEST CRACKING (7X magnification) DISCOLORATION (by observation) CRAZING (7X magnification)	none negligible none	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE
14. LINEAR DIMENSIONAL CHANGE (max. %) TYPE I TYPE II TYPE III	3.0 0.1 0.5	NA NA <0.2	NA NA <0.2	NA NA 0.5	NA NA 0.47	NA 0.1 NA	NA 0.1 NA
15. CHANGE IN WEIGHT AFTER IMMERSION IN WATER (max. %)	±3.0	< +3.0	< +3.0	+0.2	+0.1	+2.0	+2.0
16. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

* for reinforcing fabric only; elongation of PVC material shall be the same as Type I

PVC Part 2: Test Results

Test description and suggested values as specified in ASTM D 4434–95

PROSPEX ROOFING PROD. INC.	SARNAFIL INC.	SARNAFIL INC.	SARNAFIL INC.	SARNAFIL INC.
PROSEAL PMA	SARNAFIL G410	SARNAFIL S327	SARNAFIL G442	SARNAFIL G476
II 1	II 1	III	II 1	II 1
0.047	0.048	0.048	0.048	0.048
2200 1800	1600 1600	NA NA	1600 1600	1650 1650
NA	NA	230	NA	NA
300 250	270 250	NA NA	270 250	280 260
NA NA	NA NA	20 20	NA NA	NA NA
>80	>80	>85	>80	>80
>80 NA	95 NA 90	NA 95 90	95 NA 90	95 NA 90
25	14	NA	14	14
NA	NA	50	NA	NA
PASS	PASS	PASS	PASS	PASS
NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	NONE NEGLIGIBLE NONE	
NA 0.1 NA	NA 0.02 NA	NA NA 0.1	NA 0.02 NA	NA 0.02 NA
+2.0	2.5	2.5	2.5	2.5
	X	X	X	X

EPDM Part 1: General Information

1. COMPANY NAME	ALLIED-TRENT ROOFING SYSTEMS INC.	ALLIED-TRENT ROOFING SYSTEMS INC.	ALLIED-TRENT ROOFING SYSTEMS INC.	ALLIED-TRENT ROOFING SYSTEMS INC.	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED
2. PRODUCT NAME	EPT (EPDM) TALC FREE 0.045	EPT (EPDM) TALC FREE RE- INFORCED 0.045	EPT (EPDM) TALC FREE 0.060	EPT (EPDM) TALC FREE RE- INFORCED 0.060	SURE-SEAL EPDM .045	SURE-SEAL FR EPDM .060
3. PRODUCT DESCRIPTION						
A. REINFORCEMENT	NONE	POLYESTER	NONE	POLYESTER	NONE	NONE
B. COLOR(S)	BLACK/WHITE	BLACK/WHITE	BLACK/WHITE	BLACK/WHITE	BLACK	BLACK
C. INSTALLED WEIGHT (lbs./ft ² w/o ballast)	0.27	0.27	0.39	0.39	0.30	0.35
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:						
A. NEW ROOFING	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	CONT. ADHES. OR CURABLE SEAM TAPE	CONT. ADHES. OR CURABLE SEAM TAPE	CONT. ADHES. OR CURABLE SEAM TAPE	CONT. ADHES. OR CURABLE SEAM TAPE	TAPE OR CONTACT ADHESIVE	TAPE OR CONTACT ADHESIVE
7. TYPES OF ROOF SYSTEMS						
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)	10 MIN MECH. FAST.	10 MIN MECH. FAST.	10 MIN MECH. FAST.	10 MIN MECH. FAST.	10	10
B. PARTIALLY ADHERED (method)	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.		CONT. ADHES.
C. FULLY ADHERED (method)	X	X	X	X	X	X
D. PROTECTED ROOF MEMBRANE ASSEMBLY						
8. MINIMUM SLOPE REQUIRED					NONE	NONE
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
A. GLASS FIBER	X	X	X	X	X O	X O
B. MINERAL FIBER					X O	X O
C. POLYSTYRENE	X		X		X O	X O
D. CELLULAR GLASS					X	X
E. PHENOLIC		X O		X O		
F. FIBERBOARD	X	X	X	X	X	X
G. PERLITE		X		X	X O	X O
H. POLYISOCYANURATE	X	X O	X	X O	X	X
I. POLYURETHANE					X	X
J. GYPSUM	X O		X O		X O	X O
K. CONCRETE	X O		X O		X O	X O
L. WOOD PLANK					X O	X O
M. PLYWOOD					X O	X O
N. EXISTING BUILTUP MEMBRANE	X O	X O	X O	X O	X O	X O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)					-49 TO 180	-49 TO 180
12. FLASHING MATERIAL	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM
13. FLASHING METHOD	CONT. ADHES. OR CURABLE SEAM TAPE	CONT. ADHES. OR CURABLE SEAM TAPE	CONT. ADHES. OR CURABLE SEAM TAPE	CONT. ADHES. OR CURABLE SEAM TAPE	CONTACT ADHESIVE	CONTACT ADHESIVE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF:						
A. ORIGIN	CANADA	CANADA	CANADA	CANADA	USA	USA
B. MANUFACTURE	CANADA	CANADA	CANADA	CANADA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE						
A. OUTSIDE USA	1982	1982	1982	1982	1963	1983
B. WITHIN USA	1983	1983	1983	1983	1963	1983
17. NUMBER OF SQUARES INSTALLED (100 ft ²)						
A. OUTSIDE USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	MILLIONS	MILLIONS
B. WITHIN USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS		
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT
19. NUMBER OF REGIONAL LOCATIONS	6	6	6	6	70	70
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	800/955-2001	800/955-2001	800/955-2001	800/955-2001	C. KUHL 717/245-7000	C. KUHL 717/245-7000
22. FOR TECHNICAL INFORMATION, CONTACT:	800/955-2001	800/955-2001	800/955-2001	800/955-2001	S. IBRAHIM 717/245-7000	S. IBRAHIM 717/245-7000
23. SEE MEMBRANE APPENDIX IF CHECKED						

EPDM Part 1: General Information

CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE
SURE-SEAL FR PLUS EPDM 0.060	BRITE-PLY .060	SURE-SEAL EPDM .045 REINFORCED	BRITE-PLY EPDM .045 REINFORCED	SURE-SEAL REINFORCED EXTRA EPDM	SURE-SEAL FLEECEBACK EPDM	BRITE-PLY FLEECEBACK EPDM	CELO I .045 LOOSE LAID & BALLASTED	CELO I .060 FULLY ADHERED	CELO I .060 FULLY ADHERED
NONE	NONE	YES	YES	YES	YES	YES	NONE	NONE	NONE
BLACK	WHITE ON BLACK	BLACK	WHITE ON BLACK	BLACK	BLACK	WHITE ON BLACK	BLACK	BLACK	WHITE ON BLACK
0.35	0.35	0.30	0.30	0.35	0.32	0.32	0.27	0.36	0.36
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
X X	X X	X X	X X	X X	X X	X X	X X	X X	X X
TAPE OR CONTACT ADHESIVE	TAPE OR CONTACT ADHESIVE	TAPE OR CONTACT ADHESIVE	TAPE OR CONTACT ADHESIVE	TAPE OR CONTACT ADHESIVE	TAPE OR CONTACT ADHESIVE	CONTACT ADHESIVE	CONT. ADHES. & SEALANT OR SEAM TAPE	CONT. ADHES. & SEALANT OR SEAM TAPE	CONT. ADHES. & SEALANT OR SEAM TAPE
10		10		10			10		
CONT. ADHES. X	CONT. ADHES.	MECH. FAST. CONT. ADHES. X	MECH. FAST. CONT. ADHES.	CONT. ADHES. X	URETHANE ADHES	URETHANE ADHES		CONT. ADHES.	CONT. ADHES.
NONE	NONE	NONE	NONE	NONE	NONE	NONE	DEAD LEV W/DRN	DEAD LEV W/DRN	DEAD LEV W/DRN
X O X O X O X	X O X O X	X O X O X O X	X O X O X O X	X O X O X O X	X O X O X O X	X O X O X O X	X X X X		
X O X O X O X O X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O X O X O X O X O	X X X X X X X X X X X X	X X X X X X X X X X X X	X X X X X X X X X X X X
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
-49 TO 180	-49 TO 180	-49 TO 180	-49 TO 180	-49 TO 180	-49 TO 180	-49 TO 180	UNCURED EPDM	UNCURED EPDM	UNCURED WHITE EPDM
UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	CONT. ADHES. OR SELF-FLASH TAPE	CONT. ADHES. OR SELF-FLASH TAPE	CONT. ADHES. OR SELF-FLASH TAPE
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA
1983 1983	1977 1977	1986 1986	1986 1986	1986 1986	1985	1985	1965	1965	1965
MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS			
DISTRS,DIRECT 70	DISTRS,DIRECT 70	DISTRS,DIRECT 70	DISTRS,DIRECT 70	DISTRS,DIRECT 70	DISTRS,DIRECT 70	DISTRS,DIRECT 70	DISTRS,DIRECT 6	DISTRS,DIRECT 6	DISTRS,DIRECT 6
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
C. KUHL 717/245-7000 S. IBRAHIM 717/245-7000	C. KUHL 717/245-7000 S. IBRAHIM 717/245-7000	C. KUHL 717/245-7000 S. IBRAHIM 717/245-7000	C. KUHL 717/245-7000 S. IBRAHIM 717/245-7000	C. KUHL 717/245-7000 S. IBRAHIM 717/245-7000	C. KUHL 717/245-7000 S. IBRAHIM 717/245-7000	C. KUHL 717/245-7000 S. IBRAHIM 717/245-7000	REGIONAL OFFICE REGIONAL OFFICE	REGIONAL OFFICE REGIONAL OFFICE	REGIONAL OFFICE REGIONAL OFFICE

EPDM Part 1: General Information

1. COMPANY NAME	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE
2. PRODUCT NAME	CELO I .045 MECHANICALLY FASTENED	CELO I .045 MECHANICALLY FASTENED	CELO I .060 MECHANICALLY FASTENED	CELO I .060 MECHANICALLY FASTENED	CELO I .045 REINFORCED MEC. FASTENED	CELO I .060 REINFORCED MEC. FASTENED
3. PRODUCT DESCRIPTION						
A. REINFORCEMENT	NONE	NONE	NONE	NONE	POLYESTER	POLYESTER
B. COLOR(S)	BLACK	WHITE ON BLACK	BLACK	WHITE ON BLK	WHITE ON BLK	WHITE ON BLK
C. INSTALLED WEIGHT (lbs./ft ² w/o ballast)	0.27	0.27	0.36	0.36		
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:						
A. NEW ROOFING	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	CONT. ADHES. & SEALANT OR SEAM TAPE	CONT. ADHES. & SEALANT OR SEAM TAPE	CONT. ADHES. & SEALANT OR SEAM TAPE	CONT. ADHES. & SEALANT OR SEAM TAPE	CONTACT ADHESIVE OR SEAM TAPE	CONTACT ADHESIVE OR SEAM TAPE
7. TYPES OF ROOF SYSTEMS						
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)						
B. PARTIALLY ADHERED (method)	MECH. FAST.	MECH. FAST.	MECH. FAST.	MECH. FAST.		
C. FULLY ADHERED (method)					X	X
D. PROTECTED ROOF MEMBRANE ASSEMBLY						
8. MINIMUM SLOPE REQUIRED	DEAD LEV W/DRN	DEAD LEV W/DRN	DEAD LEV W/DRN	DEAD LEV W/DRN		
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
A. GLASS FIBER	X	X	X	X		
B. MINERAL FIBER	X	X	X	X		
C. POLYSTYRENE	X	X	X	X		
D. CELLULAR GLASS	X	X	X	X		
E. PHENOLIC						
F. FIBERBOARD	X	X	X	X	X	X
G. PERLITE	X	X	X	X	X	X
H. POLYISOCYANURATE	X	X	X	X	X	X
I. POLYURETHANE						
J. GYPSUM	X	X	X			
K. CONCRETE					X	X
L. WOOD PLANK	X	X	X	X	X	X
M. PLYWOOD	X	X	X	X	X	X
N. EXISTING BUILTUP MEMBRANE	X O	X O	X O	X	X	X
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)						
12. FLASHING MATERIAL	UNCURED EPDM	UNCURED WHITE EPDM	UNCURED EPDM	UNCURED WHITE EPDM	UNCURED EPDM	UNCURED EPDM
13. FLASHING METHOD	CONT. ADHES. OR SELF-FLASH TAPE	CONT. ADHES. OR SELF-FLASH TAPE	CONT. ADHES. OR SELF-FLASH TAPE	CONTACT ADHESIVE	CONT. ADHES. OR SELF-FLASH TAPE	CONT. ADHES. OR SELF-FLASH TAPE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF:						
A. ORIGIN	USA	USA	USA	USA	USA	USA
B. MANUFACTURE	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE						
A. OUTSIDE USA						
B. WITHIN USA	1965	1965	1965	1965		
17. NUMBER OF SQUARES INSTALLED (100 ft ²)						
A. OUTSIDE USA						
B. WITHIN USA						
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	6	6	6	6	6	6
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE
22. FOR TECHNICAL INFORMATION, CONTACT:	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE
23. SEE MEMBRANE APPENDIX IF CHECKED						

EPDM Part 1: General Information

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EPDM Part 1: General Information

1. COMPANY NAME	ERSYSTEMS	ERSYSTEMS	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.
2. PRODUCT NAME	ER SYSTEMS POLY-BOND .060 BLACK	ER SYSTEMS REINFORCED-90 .060 BLACK	RUBBERGARD .045	RUBBERGARD .060	RUBBERGARD .045 FR	RUBBERGARD .060 FR
3. PRODUCT DESCRIPTION						
A. REINFORCEMENT	NONWOVEN POLY BACKING BLACK	WOVEN POLY INSERT BLACK	NONE	NONE	NONE	NONE
B. COLOR(S)			BLACK	BLACK	BLACK	BLACK
C. INSTALLED WEIGHT (lbs./ft ² w/o ballast)	0.40	0.40	0.28	0.38	0.32	0.43
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:						
A. NEW ROOFING	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	COVER TAPE ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	SEAM TAPE	SEAM TAPE	SEAM TAPE	SEAM TAPE
7. TYPES OF ROOF SYSTEMS						
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)	10 MIN MECH. FAST. ASPHALT	10 MIN MECH. FAST. CONT. ADHES.	10 BATTENS CONT. ADHES.	10 BATTENS CONT. ADHES.	10 BATTENS CONT. ADHES.	10 BATTENS CONT. ADHES.
B. PARTIALLY ADHERED (method)			X	X	X	X
C. FULLY ADHERED (method)	X	X				
D. PROTECTED ROOF MEMBRANE ASSEMBLY						
8. MINIMUM SLOPE REQUIRED	DEAD LEVEL	DEAD LEVEL	POS. DRAIN	POS. DRAIN	POS. DRAIN	POS. DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
A. GLASS FIBER	O	O	X	O	X	O
B. MINERAL FIBER	O	O	X	O	X	O
C. POLYSTYRENE	O	O	X	O	X	O
D. CELLULAR GLASS	X	O	X		X	
E. PHENOLIC	X	O				
F. FIBERBOARD	X	X	X		X	
G. PERLITE	X	O	X	O	X	O
H. POLYISOCYANURATE	X	X	X		X	
I. POLYURETHANE	O	O	X		X	
J. GYPSUM	X	O	X	O	X	O
K. CONCRETE	X	O	X	O	X	O
L. WOOD PLANK	S	O	X	O	X	O
M. PLYWOOD	S	O	X	O	X	O
N. EXISTING BUILTUP MEMBRANE	X	O	X	O	X	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	0 – 120	0–120	0–100	0 – 100	0 – 100	0 – 100
12. FLASHING MATERIAL	UNCURED EPDM OR NEOPRENE	UNCURED EPDM OR NEOPRENE	UNCURED EPDM QUICKSEAM FLASHING	UNCURED EPDM QUICKSEAM FLASHING	UNCURED EPDM QUICKSEAM FLASHING	UNCURED EPDM QUICKSEAM FLASHING
13. FLASHING METHOD	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE/ TAPE	CONTACT ADHESIVE/ TAPE	CONTACT ADHESIVE/ TAPE	CONTACT ADHESIVE/ TAPE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF:						
A. ORIGIN	USA	USA	USA	USA	USA	USA
B. MANUFACTURE	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE						
A. OUTSIDE USA						
B. WITHIN USA	1988	1989	1982	1982	1985	1985
17. NUMBER OF SQUARES INSTALLED (100 ft ²)						
A. OUTSIDE USA			THOUSANDS MILLIONS	THOUSANDS MILLIONS	THOUSANDS MILLIONS	THOUSANDS MILLIONS
B. WITHIN USA	THOUSANDS	THOUSANDS				
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT
19. NUMBER OF REGIONAL LOCATIONS	14	14	5	5	5	5
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	R. BAKER 800/403-7747	R. BAKER 800/403-7747	800/428-4442	800/428-4442	800/428-4442	800/428-4442
22. FOR TECHNICAL INFORMATION, CONTACT:	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	800/428-4511	800/428-4511	800/428-4511	800/428-4511
23. SEE MEMBRANE APPENDIX IF CHECKED						

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FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS
RUBBERGARD .090	RUBBERGARD .045 REINFORCED	RUBBERGARD .060 REINFORCED	RUBBERGARD 0.045 LSFR	RUBBERGARD 0.060 LSFR	GENFLEX .045 BLACK	GENFLEX .060 BLACK	GENFLEX FRM .045 BLACK	GENFLEX FRM .060 BLACK	GENFLFEX AFR .060 BLACK
NONE	POLYESTER	POLYESTER	NONE	NONE	NONE	NONE	YES	YES	NONE
BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
0.64	0.28	0.38	0.28	0.38	0.28	0.38	0.28	0.38	0.38
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
X X	X X	X X	X X	X X	X X	X X	X X	X X	X X
SEAM TAPE	SEAM TAPE	SEAM TAPE	SEAM TAPE	SEAM TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	TAPE	TAPE	CONTACT ADHESIVE OR TAPE
CONT. ADHES.	10 PLATES CONT. ADHES. X	10 BATTENS/PLATES CONT. ADHES. X	10 BATTENS CONT. ADHES. X	10 BATTENS CONT. ADHES. X	10 MECH. FAST. CONT. ADHES. X	10 MECH. FAST. CONT. ADHES. X	10 MECH. FAST. CONT. ADHES. X	10 MECH. FAST. CONT. ADHES. X	10 MECH. FAST. CONT. ADHES. X
POS. DRAIN	POS. DRAIN	POS. DRAIN	POS. DRAIN	POS. DRAIN	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL
X O X O X O X	X O X O X O X	X O X O X O X	X O X O X O X	X O X O X O X	X X X X	X X X X	X X X X	X X X X	X X X X
X O X O X O X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O X O X O X O	X X X X X X X X X X X	X X X X X X X X X X X	X X X X X X X X X X X	X X X X X X X X X X X	X X X X X X X X X X X
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
0 – 100	0 – 100	0 – 100	0 – 100	0 – 100	0 – 100	0 – 100	0 – 100	0 – 100	0 – 100
UNCURED EPDM QUICKSEAM FLASHING	UNCURED EPDM QUICKSEAM FLASHING	UNCURED EPDM QUICKSEAM FLASHING	UNCURED EPDM QUICKSEAM FLASHING	UNCURED EPDM QUICKSEAM FLASHING	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM
CONTACT ADHESIVE/ TAPE	CONTACT ADHESIVE/ TAPE	CONTACT ADHESIVE/ TAPE	CONTACT ADHESIVE/ TAPE	CONTACT ADHESIVE/ TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	TAPE	TAPE	CONTACT ADHESIVE OR TAPE
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA
1982	1990	1990 1990	1994	1994	1979	1979	1989	1989	1994
HUNDREDS HUNDREDS	THOUSANDS THOUSANDS	THOUSANDS THOUSANDS	THOUSANDS MILLIONS	THOUSANDS MILLIONS	MILLIONS	MILLIONS	THOUSANDS	THOUSANDS	MILLIONS
DISTRS,DIRECT 5	DISTRS,DIRECT 5	DISTRS,DIRECT 5	DISTRS,DIRECT 5	DISTRS,DIRECT 5	DISTRIBUTORS 8	DISTRIBUTORS 8	DISTRIBUTORS 8	DISTRIBUTORS 8	DISTRIBUTORS 8
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
800/428-4442	800/428-4442	800/428-4442	800/428-4442	800/428-4442	SALES	SALES	SALES	SALES	SALES
800/428-4511	800/428-4511	800/428-4511	800/428-4511	800/428-4511	TECH SERVICE 800/443-4272	TECH SERVICE 800/443-4272	TECH SERVICE 800/443-4272	TECH SERVICE 800/443-4272	TECH SERVICE 800/443-4272
X									

EPDM Part 1: General Information

1. COMPANY NAME	INTERNATIONAL DIAMOND SYSTEMS, INC.	INTERNATIONAL DIAMOND SYSTEMS, INC.	INTERNATIONAL DIAMOND SYSTEMS, INC.	INTERNATIONAL DIAMOND SYSTEMS, INC.	INTERNATIONAL DIAMOND SYSTEMS, INC.	MULE-HIDE PRODUCTS CO. INC.
2. PRODUCT NAME	INTERNATIONAL BLACK EPDM .045	INTERNATIONAL BLACK .060	INTERNATIONAL FIRE RETAR- DANT .060	INTERNATIONAL REINFORCED .045	INTERNATIONAL REINFORCED .060	M-H EPDM .045
3. PRODUCT DESCRIPTION						
A. REINFORCEMENT	NONE	NONE	NONE	SCRIM	SCRIM	NONE
B. COLOR(S)	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
C. INSTALLED WEIGHT (lbs./ft ² w/o ballast)	0.30	0.40	0.50	0.40	0.50	0.30
4. COATING REQUIRED	NONE	NONE	NONE	SCRIM	SCRIM	NONE
5. USE IN:						
A. NEW ROOFING	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONT. ADHES. & SEALANT OR SEAM TAPE
7. TYPES OF ROOF SYSTEMS						
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)						10
B. PARTIALLY ADHERED (method)						
C. FULLY ADHERED (method)						CONT. ADHES. X
D. PROTECTED ROOF MEMBRANE ASSEMBLY						
8. MINIMUM SLOPE REQUIRED	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	NONE
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
A. GLASS FIBER	X	X	X	X	X	O
B. MINERAL FIBER	X	X	X	X	X	O
C. POLYSTYRENE	O	O	O	O	O	X
D. CELLULAR GLASS	X	X	X	X	X	O
E. PHENOLIC						
F. FIBERBOARD	X	X	X	X	X	X
G. PERLITE	O	O	O	O	O	X
H. POLYISOCYANURATE	X	X	X	X	X	X
I. POLYURETHANE	X	X	X	X	X	X
J. GYPSUM	X	X	X	X	X	X
K. CONCRETE	S	S	S	S	S	O
L. WOOD PLANK	S	S	S	S	S	O
M. PLYWOOD	X	X	X	X	X	O
N. EXISTING BUILTUP MEMBRANE	S	S	S	S	S	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	-49 – 180
12. FLASHING MATERIAL	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED OR CURED EPDM
13. FLASHING METHOD	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONT. ADHES. OR FLASHING TAPE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF:						
A. ORIGIN	USA	USA	USA	USA	USA	USA
B. MANUFACTURE	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE						
A. OUTSIDE USA	1982	1982	1982	1982	1982	1986
B. WITHIN USA	1982	1982	1982	1982	1982	1963
17. NUMBER OF SQUARES INSTALLED (100 ft ²)						
A. OUTSIDE USA						
B. WITHIN USA	MILLIONS	MILLIONS	MILLIONS	THOUSANDS	THOUSANDS	MILLIONS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	40	40	40	40	40	12
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	J. DIAS S. HALL	J. DIAS S. HALL	J. DIAS S. HALL	J. DIAS S. HALL	J. DIAS S. HALL	L. PUNZEL 608/365-3111
22. FOR TECHNICAL INFORMATION, CONTACT:	A. HONSBERGER 419/382-0111	A. HONSBERGER 419/382-0111	A. HONSBERGER 419/382-0111	A. HONSBERGER 419/382-0111	A. HONSBERGER 419/382-0111	T. MCFARLAND 608/365-3111
23. SEE MEMBRANE APPENDIX IF CHECKED						

EPDM Part 1: General Information

MULE-HIDE PRODUCTS CO. INC.	MULE-HIDE PRODUCTS CO. INC.	MULE-HIDE PRODUCTS CO. INC.	MULE-HIDE PRODUCTS CO. INC.	MULE-HIDE PRODUCTS CO. INC.	OLYMPIC RUBBER ROOFING SYSTEMS INC.	OLYMPIC RUBBER ROOFING SYSTEMS INC.	PREMIUM POLYMERS INC.	PREMIUM POLYMERS INC.	PREMIUM POLYMERS INC.
M-H EPDM .060	M-H REINFORCED .045	M-H REINFORCED .060	M-H W/B REINFORCED .045	M-H W/B .060	WATERSHIELD .045 .060	WATERGUARD .060	PREMIUM 0.045	PREMIUM 0.060	PREMIUM REINFORCED 0.045
NONE	YES	YES	YES	NONE	NONE	NONE	POLYESTER	POLYESTER	NONE
BLACK	BLACK	BLACK	WHITE/BLACK	WHITE/BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
0.40	0.30	0.40	0.30	0.40	0.26	0.36	0.30	0.40	0.40
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
X X	X X	X X	X X	X X	X X	X X	X X	X X	X X
CONT. ADHES. & SEALANT OR SEAM TAPE	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE	CONTACT ADHESIVE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE
10 CONT. ADHES. X	10 MECH. FAST. CONT. ADHES.	10 MECH. FAST. CONT. ADHES.	MECH. FAST. CONT. ADHES.	MECH. FAST. CONT. ADHES.	10 MIN X	 CONT. ADHES.	10 – 15	10 – 15 CONT. ADHES.	10 – 15 MECH. FAST. CONT. ADHES.
NONE	NONE	NONE	NONE	NONE	DEAD LEVEL	DEAD LEVEL			
X O O X O O	X O O X O O	X O O X O O	X O O X O O	X O O X O O	X O O X O O	X O O X O O	X O O X O O	X O O X O O	X O O X O O
X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O	X O X O X O X O X O X O X O X O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
-49 – 180	-49 – 180	-49 – 180	-49 – 180	-49 – 180	0 – 110	0 – 110	-20 – 180	-20 – 180	-20 – 180
UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED NEOPRENE	UNCURED NEOPRENE	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM
CONT. ADHES. OR FLASHING TAPE	CONT. ADHES. OR FLASHING TAPE	CONT. ADHES. OR FLASHING TAPE	CONTACT ADHESIVE	CONTACT ADHESIVE	CONTACT ADHESIVE	CONTACT ADHESIVE	PRESSURE SENSITIVE	PRESSURE SENSITIVE	PRESSURE SENSITIVE
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA
1986 1963	1986	1986	1986	1986	1981	1981	1980	1980	1988
MILLIONS DISTRIBUTORS 12	MILLIONS DISTRIBUTORS 12	MILLIONS DISTRIBUTORS 12	MILLIONS DISTRIBUTORS 12	MILLIONS DISTRIBUTORS 12	THOUSANDS DISTRS,DIRECT	THOUSANDS DISTRS,DIRECT	THOUSANDS DISTRS,DIRECT 9	THOUSANDS DISTRS,DIRECT 9	THOUSANDS DISTRS,DIRECT 9
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
L. PUNZEL 608/365-3111 T. MCFARLAND 608/365-3111	L. PUNZEL 608/365-3111 T. MCFARLAND 608/365-3111	L. PUNZEL 608/365-3111 T. MCFARLAND 608/365-3111	L. PUNZEL 608/365-3111 T. MCFARLAND 608/365-3111	L. PUNZEL 608/365-3111 T. MCFARLAND 608/365-3111	GRINWALD 414/442-3117 800/552-5393	GRINWALD 414/442-3117 800/552-5393	SALES 800/756-3626 TECH SERVICE 800/756-3626	SALES 800/756-3626 TECH SERVICE 800/756-3626	SALES 800/756-3626 TECH SERVICE 800/756-3626

EPDM Part 1: General Information

1. COMPANY NAME	PREMIUM POLYMERS INC.	PROTECTIVE COATINGS, INC.	PROTECTIVE COATINGS, INC.	PROTECTIVE COATINGS, INC.	PROTECTIVE COATINGS, INC.	PROTECTIVE COATINGS, INC.
2. PRODUCT NAME	PREMIUM-PLY 0.045	PRO SHIELD BLACK	PRO SHIELD BLACK	PRO SHIELD BLACK	PRO SHIELD WHITE	PRO SHIELD WHITE
3. PRODUCT DESCRIPTION						
A. REINFORCEMENT	NONE	NONE	NONE	NONE	NONE	NONE
B. COLOR(S)	BLACK/GREY	BLACK	BLACK	BLACK	WHITE	WHITE
C. INSTALLED WEIGHT (lbs./ft ² w/o ballast)	0.40	0.40	0.50	0.60	0.40	0.50
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:						
A. NEW ROOFING	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT
7. TYPES OF ROOF SYSTEMS						
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)		10	10	10	10	10
B. PARTIALLY ADHERED (method)		PLATE BONDED	PLATE BONDED	PLATE BONDED	PLATE BONDED	PLATE BONDED
C. FULLY ADHERED (method)		CONT. CEMENT	CONT. CEMENT	CONT. CEMENT	CONT. CEMENT	CONT. CEMENT
D. PROTECTED ROOF MEMBRANE ASSEMBLY	URETHANE	X	X	X		
8. MINIMUM SLOPE REQUIRED		DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
A. GLASS FIBER		X O	X O	X O	X O	X O
B. MINERAL FIBER		X O	X O	X O	X O	X O
C. POLYSTYRENE	X	X O	X O	X O	X O	X O
D. CELLULAR GLASS	X	X O	X O	X O	X O	X O
E. PHENOLIC	X	X O	X O	X O	X O	X O
F. FIBERBOARD	X	X O	X O	X O	X O	X O
G. PERLITE	X	X	X	X	X	X
H. POLYISOCYANURATE	X	X	X	X	X	X
I. POLYURETHANE	X	X O	X O	X O	X O	X O
J. GYPSUM	X	X O	X O	X O	X O	X O
K. CONCRETE	X	X O	X O	X O	X O	X O
L. WOOD PLANK	X	X O	X O	X O	X O	X O
M. PLYWOOD	X	X O	X O	X O	X O	X O
N. EXISTING BUILTUP MEMBRANE	X	X O	X O	X O	X O	X O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	40 – 140	0 – 120	0 – 120	0 – 120	0 – 160	0 – 160
12. FLASHING MATERIAL	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM
13. FLASHING METHOD	PRESSURE SENSITIVE	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF:						
A. ORIGIN	USA	USA	USA	USA	USA	USA
B. MANUFACTURE	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE						
A. OUTSIDE USA		1982	1982	1982		
B. WITHIN USA	1987	1965	1965	1965	1965	1965
17. NUMBER OF SQUARES INSTALLED (100 ft ²)						
A. OUTSIDE USA						
B. WITHIN USA	THOUSANDS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT
19. NUMBER OF REGIONAL LOCATIONS	9	10	10	10	10	10
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	SALES	SALES	SALES	SALES	SALES	SALES
	800/756-3626	MANAGER	MANAGER	MANAGER	MANAGER	MANAGER
22. FOR TECHNICAL INFORMATION, CONTACT:	TECH SERVICE	MURRELL	MURRELL	MURRELL	MURRELL	MURRELL
	800/756-3626					
23. SEE MEMBRANE APPENDIX IF CHECKED						

EPDM Part 1: General Information

[illegible]

EPDM Part 1: General Information

1. COMPANY NAME	ROOFING PRODUCTS INTERNATIONAL INC.	ROOFING PRODUCTS INTERNATIONAL INC.	ROOFING PRODUCTS INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.
2. PRODUCT NAME	RPI EPDM FR BLACK .060	RPI EPDM BLACK .045 E-Z	RPI EPDM BLACK .060 E-Z	SPM 45 BLACK	SPM 45R BLACK	SPM 60 BLACK
3. PRODUCT DESCRIPTION						
A. REINFORCEMENT	NONE	NONE	NONE	NONE	POLYESTER	NONE
B. COLOR(S)	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
C. INSTALLED WEIGHT (lbs./ft ² w/o ballast)	0.40	0.30	0.40	0.29	0.30	0.38
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:						
A. NEW ROOFING	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	CONTACT ADHESIVE & SEALANT OR TAPE	CONTACT ADHESIVE & SEALANT OR TAPE	CONTACT ADHESIVE & SEALANT OR TAPE	CONTACT ADHESIVE & SEALANT OR TAPE	CONTACT ADHESIVE & SEALANT OR TAPE	CONTACT ADHESIVE & SEALANT OR TAPE
7. TYPES OF ROOF SYSTEMS						
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)	10			10 MIN	10 MIN	10 MIN
B. PARTIALLY ADHERED (method)					MECH. FAST.	MECH. FAST.
C. FULLY ADHERED (method)	CONT. ADHES.	COATED MEMB.	COATED MEMB.		ADHESIVE	ADHESIVE
D. PROTECTED ROOF MEMBRANE ASSEMBLY	X					
8. MINIMUM SLOPE REQUIRED	LEVEL	LEVEL	LEVEL	NONE	NONE	NONE
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
A. GLASS FIBER	O	O	O	O	O	O
B. MINERAL FIBER	O	O	O	O	O	O
C. POLYSTYRENE	O	O	O	O	O	O
D. CELLULAR GLASS	O	O	O	O	O	O
E. PHENOLIC	O	O	O	O	O	O
F. FIBERBOARD	X	X	X	X	X	X
G. PERLITE	O	O	O	X	X	O
H. POLYISOCYANURATE	X O	X	X	X	X	X
I. POLYURETHANE	O	O	O	X	X	X
J. GYPSUM	X O	O	O	X O	X O	O
K. CONCRETE	X O	O	O	X O	X O	X O
L. WOOD PLANK	O	X	X	X O	X O	X O
M. PLYWOOD	X O	X	X	X O	X O	X O
N. EXISTING BUILTUP MEMBRANE	S O	O	O	O	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)		40 & ABOVE	40 & ABOVE	25 – 160	25 – 160	25 – 160
12. FLASHING MATERIAL	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM
13. FLASHING METHOD	CONTACT ADHESIVE	CONTACT ADHESIVE	CONTACT ADHESIVE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF:						
A. ORIGIN	USA	USA	USA	USA	USA	USA
B. MANUFACTURE	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE						
A. OUTSIDE USA						
B. WITHIN USA	1965	1996	1996	1979	1993	1979
17. NUMBER OF SQUARES INSTALLED (100 ft ²)						
A. OUTSIDE USA						
B. WITHIN USA	THOUSANDS			MILLIONS	THOUSANDS	MILLIONS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT
19. NUMBER OF REGIONAL LOCATIONS	75	75	75	5	5	5
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	800/628-2957	800/628-2957	800/628-2957	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE
22. FOR TECHNICAL INFORMATION, CONTACT:	800/628-2957	800/628-2957	800/628-2957	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES
23. SEE MEMBRANE APPENDIX IF CHECKED		X	X			

EPDM Part 1: General Information

SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	VERSICO INCORPO- RATED	VERSICO INCORPO- RATED	VERSICO INCORPO- RATED	VERSICO INCORPO- RATED	VERSICO INCORPO- RATED	VERSICO INCORPO- RATED	VERSICO INCORPO- RATED
SPM 60R BLACK	SP 60 FR BLACK	SPM 60W WHITE	VERSIGARD EPDM.045	VERSIGARD EPDM.050	VERSIGARD EPDM.060	VERSIGARD PE ROOFING SYS- TEM EPDM .050	VERSIGARD II FR EPDM.060	VERSIGARD REINFORCED EPDM.045	VERSIGARD II FR REINFORCED
POLYESTER	NONE	NONE	NONE	NONE	NONE	NONE	NONE	YES	YES
BLACK	BLACK	WHITE	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
0.39	0.39	0.41	0.28	0.31	0.38	0.31	0.40	0.30	0.30
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
X X	X X	X X	X X	X X	X X	X	X X	X X	X X
CONTACT AD- HESIVE & SEAL- ANT OR TAPE	CONTACT AD- HESIVE & SEAL- ANT OR TAPE	CONTACT AD- HESIVE & SEAL- ANT OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE		CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE	CONTACT ADHE- SIVE AND SEAL- OR TAPE
10 MIN MECH. FAST. ADHESIVE	MECH. FAST. ADHESIVE	MECH. FAST. ADHESIVE	10 – 15 BATTENS	10 – 15 BATTENS	10 – 15 BATTENS CONT. ADHES. X	METAL RAIL ASSY.	10 – 15 CONT. ADHES. X	10 – 15 MECH. FAST. CONT. ADHES.	10 – 15 MECH. FAST. CONT. ADHES.
NONE	NONE	NONE	NONE	NONE	NONE	1/2" IN 12"	NONE	NONE	NONE
O O O O	O O O O	O O O O	X X X X	X O X O X O X O	O O O O	O	O O O O	X O X O O O	X O X O O O
X X O X X	X X O X X	X X O X X	X X X	X X X	X O O	X	X O O	X O O	X O O
X O X O X O O	X O X O X O O	X O X O X O O	S O S O S O S O	S O O	X O O O		X O O O	X O O O	X O O O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
25 – 160	25 – 160	25 – 160	–25 – 180	–25 – 180	–25 – 180	–25 – 180	–25 – 180	–25 – 180	–25 – 180
UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED EPDM, WING- PRENE, METAL	UNCURED EPDM, WING- PRENE, METAL	UNCURED EPDM, WING- PRENE, METAL	GALVALUME	UNCURED EPDM, WING- PRENE, METAL	UNCURED EPDM, WING- PRENE, METAL	UNCURED EPDM, WING- PRENE, METAL
CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	METAL RAIL ASSEMBLY OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA
1993	1983	1983	1982 1965	1986 1986	1982 1965	1986	1983	1986	1986
THOUSANDS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
DISTRS.DIRECT 5	DISTRS.DIRECT 5	DISTRS.DIRECT 5	DISTRIBUTORS 125	DISTRIBUTORS 125	DISTRIBUTORS 125	DISTRIBUTORS 125	DISTRIBUTORS 125	DISTRIBUTORS 125	DISTRIBUTORS 125
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	REGIONAL OFFICE GUARANTEE SERVICES	P. MCGRADY 800/992-7663 R. RAULIE 800/992-7663	P. MCGRADY 800/992-7663 R. RAULIE 800/992-7663	P. MCGRADY 800/992-7663 R. RAULIE 800/992-7663	P. MCGRADY 800/992-7663 R. RAULIE 800/992-7663	P. MCGRADY 800/992-7663 R. RAULIE 800/992-7663	P. MCGRADY 800/992-7663 R. RAULIE 800/992-7663	P. MCGRADY 800/992-7663 R. RAULIE 800/992-7663
			X	X	X	X	X	X	X

EPDM Part 1: General Information

1. COMPANY NAME	VERSICO INCORPORATED	VERSICO INCORPORATED
2. PRODUCT NAME	VERSIGARD-1 WHITE	VERSIGARD REINFORCED WHITE
3. PRODUCT DESCRIPTION		
A. REINFORCEMENT	NONE	YES
B. COLOR(S)	WHITE ON BLK	WHITE ON BLK
C. INSTALLED WEIGHT (lbs./ft ² w/o ballast)	0.40	0.33
4. COATING REQUIRED	NONE	NONE
5. USE IN:		
A. NEW ROOFING	X	X
B. REROOFING	X	X
6. FIELD LAP JOINT METHOD	CONTACT ADHESIVE AND SEAL-OR TAPE	CONTACT ADHESIVE AND SEAL-OR TAPE
7. TYPES OF ROOF SYSTEMS		
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)		
B. PARTIALLY ADHERED (method)		MECH. FAST.
C. FULLY ADHERED (method)	CONT. ADHES.	CONT. ADHES.
D. PROTECTED ROOF MEMBRANE ASSEMBLY		
8. MINIMUM SLOPE REQUIRED	1/8"	1/8"
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)		
A. GLASS FIBER	X O	X O
B. MINERAL FIBER	X O	X O
C. POLYSTYRENE	O	O
D. CELLULAR GLASS	X	X O
E. PHENOLIC		
F. FIBERBOARD	X	X
G. PERLITE	O	X O
H. POLYISOCYANURATE	X	X
I. POLYURETHANE		
J. GYPSUM	O	S O
K. CONCRETE	X O	X O
L. WOOD PLANK	O	O
M. PLYWOOD	X O	X O
N. EXISTING BUILTUP MEMBRANE	O	X S
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	-25 - 180	-25 - 180
12. FLASHING MATERIAL	UNCURED EPDM, WING- PRENE, METAL	UNCURED EPDM, WING- PRENE, METAL
13. FLASHING METHOD	CONTACT ADHESIVE	CONTACT ADHESIVE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES
15. COUNTRY OF:		
A. ORIGIN	USA	USA
B. MANUFACTURE	USA	USA
16. YEAR OF FIRST COMMERCIAL USE		
A. OUTSIDE USA	1977	
B. WITHIN USA	1977	1986
17. NUMBER OF SQUARES INSTALLED (100 ft ²)		
A. OUTSIDE USA		
B. WITHIN USA	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	125	125
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES
21. FOR SALES INFORMATION, CONTACT:	P. MCGRADY 800/992-7663	P. MCGRADY 800/992-7663
22. FOR TECHNICAL INFORMATION, CONTACT:	R. RAULIE 800/992-7663	R. RAULIE 800/992-7663
23. SEE MEMBRANE APPENDIX IF CHECKED	X	X

EPDM Part 2: Test Results

Test description and suggested values as specified in ASTM D 4637–96

1. COMPANY NAME		ALLIED-TRENT ROOFING SYSTEMS INC.	ALLIED-TRENT ROOFING SYSTEMS INC.	ALLIED-TRENT ROOFING SYSTEMS INC.	ALLIED-TRENT ROOFING SYSTEMS INC.	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED
2. PRODUCT NAME		EPT (EPDM) TALC FREE 0.045	EPT (EPDM) TALC FREE RE- INFORCED 0.045	EPT (EPDM) TALC FREE 0.060	EPT (EPDM) TALC FREE RE- INFORCED 0.060	SURE-SEAL EPDM .045	SURE-SEAL FR EPDM .060
3. GRADE 1 (greater than 95% principal polymer) or GRADE 2 (50% to 95% principal polymer)		1	1	1	1	1	1
4. CLASS U (unreinforced) or CLASS SR (scrim or fabric internally reinforced)		U	SR	U	SR	U	U
5. THICKNESS (min. in.)							
SHEET OVERALL	0.039	0.045	0.045	0.060	0.060	0.045	0.060
COATING OVER SCRIM CLASS SR	0.015	0.020	0.020	0.020	0.020	NA	NA
6. BREAKING STRENGTH (min. lbf) CLASS SR	90		90		90	NA	NA
7. TENSILE STRENGTH (min. psi) CLASS U	1305	1500	NA	1500	NA	1630	1630
8. ELONGATION, ULTIMATE (min. %)							
CLASS U	300	300		300	NA	520	520
CLASS SR	250	NA	250	NA	250	NA	NA
9. TENSILE SET (max. %) CLASS U	10	10	NA	10	NA	5	5
10. TEAR RESISTANCE (min. lbf/in.) CLASS U	150	200	NA	200	NA	230	230
11. TEARING STRENGTH (min. lbf) CLASS SR	5	NA	25	NA	25	NA	NA
12. BRITTLENESS POINT (max. F)	-49	-50	-50	-50	-50	-85	-85
13. OZONE RESISTANCE (pass/fail)	no cracks	PASS	PASS	PASS	PASS	PASS	PASS
14. HEAT AGING							
BREAKING STRENGTH (min. lbf) CLASS SR	80	NA	80	NA	80	NA	NA
TENSILE STRENGTH (min. psi) CLASS U	1205	1205	NA	1205	NA	1600	1600
ELONGATION, ULTIMATE (min. %)	200	200	200	200	200	310	310
TEAR RESISTANCE (min. lbf/in.) CLASS U	125	125	NA	125	NA	240	240
LINEAR DIMENSIONAL CHANGE (max. %)	±2	±2	±2	±2	±2	-0.4	-0.4
15. WATER ABSORPTION (max. mass %)	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2	2.0	2.0
16. FACTORY SEAM STRENGTH (min. lbf/in.)	51 or sheet failure	X		X		X	X
17. WEATHER RESISTANCE (pass/fail)	no cracks or crazing	PASS	PASS	PASS	PASS	PASS	PASS
18. SEE MEMBRANE APPENDIX IF CHECKED							

1. COMPANY NAME		CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED
2. PRODUCT NAME		SURE-SEAL FR- PLUS EPDM 0.060	BRITE-PLY .060	SURE-SEAL EPDM .045 REINFORCED	BRITE-PLY EPDM .045 REINFORCED	SUPER-SEAL REINFORCED EXTRA EPDM	SURE-SEAL FLEECEBACK EPDM
3. GRADE 1 (greater than 95% principal polymer) or GRADE 2 (50% to 95% principal polymer)		1	1	1	1	1	1
4. CLASS U (unreinforced) or CLASS SR (scrim or fabric internally reinforced)		U	U	SR	SR	SR	FB
5. THICKNESS (min. in.)							
SHEET OVERALL	0.039	0.060	0.060	0.045	0.045	0.066	0.100, 0.115
COATING OVER SCRIM CLASS SR	0.015	NA	NA	0.016	0.016	0.020	0.045
6. BREAKING STRENGTH (min. lbf) CLASS SR	90	NA	NA	210	210	230	200
7. TENSILE STRENGTH (min. psi) CLASS U	1305	1830	1685	NA	NA	NA	NA
8. ELONGATION, ULTIMATE (min. %)							
CLASS U	300	580	550	NA	NA	NA	NA
CLASS SR	250	NA	NA	500	500	500	500
9. TENSILE SET (max. %) CLASS U	10	5	7	NA	NA	NA	NA
10. TEAR RESISTANCE (min. lbf/in.) CLASS U	150	230	200	NA	NA	NA	NA
11. TEARING STRENGTH (min. lbf) CLASS SR	5	NA	NA	50	50	60	45
12. BRITTLENESS POINT (max. F)	-49	-85	-75	-75	-75	-75	-75
13. OZONE RESISTANCE (pass/fail)	no cracks	PASS	PASS	PASS	PASS	PASS	PASS
14. HEAT AGING							
BREAKING STRENGTH (min. lbf) CLASS SR	80	NA	NA	200	200	220	200
TENSILE STRENGTH (min. psi) CLASS U	1205	1860	1550	NA	NA	NA	NA
ELONGATION, ULTIMATE (min. %)	200	250	250	250	250	250	310
TEAR RESISTANCE (min. lbf/in.) CLASS U	125	240	185	NA	NA	NA	NA
LINEAR DIMENSIONAL CHANGE (max. %)	±2	-0.6	-0.5	-0.7	-0.5	-0.7	-0.7
15. WATER ABSORPTION (max. mass %)	+8, -2	2.0	3.6	2.0	3.6	2.0	2.0
16. FACTORY SEAM STRENGTH (min. lbf/in.)	51 or sheet failure	X	X	X	X	X	X
17. WEATHER RESISTANCE (pass/fail)	no cracks or crazing	PASS	PASS	PASS	PASS	PASS	PASS
18. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

EPDM Part 2: Test Results

Test description and suggested values as specified in ASTM D 4637-96

CARLISLE SYNTEC INCORPORATED	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE
BRITE-PLY FLEECEBACK EPDM	CELO I .045 BLACK	CELO I .060 BLACK	CELO I .060 WHITE ON BLACK	CELO I .045 BLACK	CELO I .045 WHITE ON BLACK	CELO I .060 BLACK	CELO I .060 FR BLACK	CELO I .045 REINFORCED MEC. FASTENED	CELO I .060 REINFORCED MEC. FASTENED
1	1	1							
FB	U	U	U	SR	SR	SR	U		
0.100, 0.115 NA	NA	NA	NA				NA		
200 NA	NA	NA	NA	NA	NA	NA	NA		
NA 500	NA	NA	NA	NA	NA	NA	NA		
NA NA 45 -75 PASS	NA	NA	NA	NA NA	NA NA	NA NA	NA		
200 NA 250 NA -0.7	NA	NA	NA	NA	NA	NA	NA		
3.6 X PASS									

CONTINENTAL RUBBER CO.	CONTINENTAL RUBBER CO.	CONTINENTAL RUBBER CO.	CONTINENTAL RUBBER CO.	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS
CONTINENTAL EPDM .045 BLACK	CONTINENTAL EPDM .045 WHITE	CONTINENTAL EPDM .060 BLACK	CONTINENTAL EPDM .060 WHITE	ER SYSTEMS RUBBER ROOF .060 BLACK	ER SYSTEMS RUBBER ROOF .045 BLACK	ER SYSTEMS RUBBER ROOF .060 BLACK FR	ER SYSTEMS RUBBER ROOF .045 BLACK FR	ER SYSTEMS POLY-BOND .045 BLACK	ER SYSTEMS REINFORCED-90 .045 BLACK
1	1	1	1	1	1	1	1	1	1
U	U	U	U	U	U	U	U	SR	SR
0.040 NA	0.040 NA	0.055 NA	0.055 NA	0.055 NA	0.040 NA	0.055 NA	0.040 NA	0.045 NA	0.045 0.015
NA 1305	NA 1305	NA 1305	NA 1305	NA 1305	NA 1305	NA 1305	NA 1305	60 1305	100 NA
300 NA	300 NA	300 NA	300 NA	300 NA	300 NA	300 NA	300 NA	NA 400	NA 400
10 150 NA -49 PASS	10 150 NA -49 PASS	10 150 NA -49 PASS	10 150 NA -49 PASS	10 150 NA -49 PASS	10 150 NA -49 PASS	10 150 NA -49 PASS	10 150 NA -49 PASS	NA 200 -75 PASS	NA 200 -75 PASS
NA 1205 200 125 ±2 +8, -2 X PASS	NA 1205 200 125 ±2 +8, -2 X PASS	NA 1205 200 125 ±2 +8, -2 X PASS	NA 1205 200 125 ±2 +8, -2 X PASS	NA 1205 200 125 ±2 +8, -2 X PASS	NA 1205 200 125 ±2 +8, -2 X PASS	NA 1205 200 125 ±2 +8, -2 X PASS	NA 1205 200 125 ±2 +8, -2 X PASS	45 NA 250 NA +1.0 +1.0 50 PASS	90 NA 250 NA +1.0 +1.0 50 PASS

EPDM Part 2: Test Results

Test description and suggested values as specified in ASTM D 4637–96

1. COMPANY NAME		ERSYSTEMS	ERSYSTEMS	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.
2. PRODUCT NAME		ER SYSTEMS POLY-BOND .060 BLACK	ER SYSTEMS REINFORCED-90 .060 BLACK	RUBBERGARD .045	RUBBERGARD .060	RUBBERGARD .045 FR	RUBBERGARD .060 FR
3. GRADE 1 (greater than 95% principal polymer) or GRADE 2 (50% to 95% principal polymer)		1	1	1	1	1	1
4. CLASS U (unreinforced) or CLASS SR (scrim or fabric internally reinforced)		SR	SR	U	U	U	U
5. THICKNESS (min. in.)							
SHEET OVERALL	0.039	0.060	0.060	0.045	0.060	0.045	0.060
COATING OVER SCRIM CLASS SR	0.015	NA	NA	NA	NA	NA	NA
6. BREAKING STRENGTH (min. lbf) CLASS SR	90			NA	NA	NA	NA
7. TENSILE STRENGTH (min. psi) CLASS U	1305	NA	NA	1305	1305	1305	1305
8. ELONGATION, ULTIMATE (min. %)							
CLASS U	300	NA	NA	300	300	300	300
CLASS SR	250	400	400	NA	NA	NA	NA
9. TENSILE SET (max. %) CLASS U	10	NA	NA	10	10	10	10
10. TEAR RESISTANCE (min. lbf/in.) CLASS U	150	NA	NA	150	150	150	150
11. TEARING STRENGTH (min. lbf) CLASS SR	5	200	200	NA	NA	NA	NA
12. BRITTLENESS POINT (max. F)	-49	-75	-75	-49	-49	-49	-49
13. OZONE RESISTANCE (pass/fail)	no cracks	PASS	PASS	PASS	PASS	PASS	PASS
14. HEAT AGING							
BREAKING STRENGTH (min. lbf) CLASS SR	80	45	90	NA	NA	NA	NA
TENSILE STRENGTH (min. psi) CLASS U	1205	NA	NA	1205	1205	1205	1205
ELONGATION, ULTIMATE (min. %)	200	250	250	200	200	200	200
TEAR RESISTANCE (min. lbf/in.) CLASS U	125	NA	NA	125	125	125	125
LINEAR DIMENSIONAL CHANGE (max. %)	± 2	+1.0	+1.0	± 1	± 1	± 1	± 1
15. WATER ABSORPTION (max. mass %)	+8, -2	+1.0	+1.0	+8, -2	+8, -2	+8, -2	+8, -2
16. FACTORY SEAM STRENGTH (min. lbf/in.)	51 or sheet failure	50	50	X	X	X	X
17. WEATHER RESISTANCE (pass/fail)	no cracks or crazing	PASS	PASS	PASS	PASS	PASS	PASS
18. SEE MEMBRANE APPENDIX IF CHECKED							

1. COMPANY NAME		FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	GENFLEX ROOFING SYSTEMS
2. PRODUCT NAME		RUBBERGARD .090	RUBBERGARD .045 REINFORCED	RUBBERGARD .060 REINFORCED	RUBBERGARD .045 LSFR	RUBBERGARD .060 LSFR	GENFLEX .045 BLACK
3. GRADE 1 (greater than 95% principal polymer) or GRADE 2 (50% to 95% principal polymer)		1	1	1	1	1	1
4. CLASS U (unreinforced) or CLASS SR (scrim or fabric internally reinforced)		U	SR	SR	U	U	U
5. THICKNESS (min. in.)							
SHEET OVERALL	0.039	0.090	0.045	0.060	0.045	0.045	0.043
COATING OVER SCRIM CLASS SR	0.015	NA	0.015	0.015	NA	NA	NA
6. BREAKING STRENGTH (min. lbf) CLASS SR	90	NA	90	90	NA	NA	NA
7. TENSILE STRENGTH (min. psi) CLASS U	1305	1305	NA	NA	1305	1305	1305
8. ELONGATION, ULTIMATE (min. %)							
CLASS U	300	300	NA	NA	300	300	300
CLASS SR	250	NA	250	250	NA	NA	NA
9. TENSILE SET (max. %) CLASS U	10	10	NA	NA	10	10	10
10. TEAR RESISTANCE (min. lbf/in.) CLASS U	150	150	NA	NA	150	150	150
11. TEARING STRENGTH (min. lbf) CLASS SR	5	NA	10	5	NA	NA	NA
12. BRITTLENESS POINT (max. F)	-49	-49	-49	-49	-49	-49	-49
13. OZONE RESISTANCE (pass/fail)	no cracks	PASS	PASS	PASS	PASS	PASS	PASS
14. HEAT AGING							
BREAKING STRENGTH (min. lbf) CLASS SR	80	NA	80	80	NA	NA	NA
TENSILE STRENGTH (min. psi) CLASS U	1205	1205	NA	NA	1205	1205	1500
ELONGATION, ULTIMATE (min. %)	200	200	200	200	200	200	225
TEAR RESISTANCE (min. lbf/in.) CLASS U	125	125	NA	NA	125	125	230
LINEAR DIMENSIONAL CHANGE (max. %)	± 2	± 1	± 1	± 1	± 1	± 1	+1.0
15. WATER ABSORPTION (max. mass %)	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2
16. FACTORY SEAM STRENGTH (min. lbf/in.)	51 or sheet failure	X	X	X	X	X	X
17. WEATHER RESISTANCE (pass/fail)	no cracks or crazing	PASS	PASS	PASS	PASS	PASS	PASS
18. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

EPDM Part 2: Test Results

Test description and suggested values as specified in ASTM D 4637–96

GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	INTERNATIONAL DIAMOND SYSTEMS, INC.	INTERNATIONAL DIAMOND SYSTEMS, INC.	INTERNATIONAL DIAMOND SYSTEMS, INC.	INTERNATIONAL DIAMOND SYSTEMS, INC.	INTERNATIONAL DIAMOND SYSTEMS, INC.	MULE-HIDE PRODUCTS CO. INC.
GENFLEX .060 BLACK	GENFLEX FRM .045 BLACK	GENFLEX FRM .060 BLACK	GENFLEX AFR .060 BLACK	INTERNATIONAL BLACK EPDM .045	INTERNATIONAL BLACK .060	INTERNATIONAL FIRE RETARDANT .060	INTERNATIONAL REINFORCED .045	INTERNATIONAL REINFORCED .060	M-H EPDM .045
1	1	1	1	1	1	1	1	1	1
U	SR	SR	U	U	U	U			U
0.058 NA	0.043 0.015	0.058 0.015	0.043 NA	0.045 NA	0.060 NA	0.060 NA			0.045 NA
NA 1500	90 NA	90 NA	NA 1305	NA 1305	NA 1305	NA 1305			NA 1405+
450 NA	NA 300	NA 300	300 NA	300 NA	300 NA	300 NA			350+ NA
10 150 NA NA -49 PASS	NA NA 50 -49 PASS	NA NA 50 -49 PASS	10 150 NA -49 PASS	5 150 NA -49 PASS	5 150 NA -49 PASS	5 150 NA -49 PASS			10 175 NA -75 PASS
NA 1500 225 230 +1.0 +8, -2 X PASS	80 NA 200 NA +1.0 +8, -2 X PASS	80 NA 200 NA +1.0 +8, -2 X PASS	NA 1500 225 230 +1.0 +8, -2 X PASS	NA 1305 300 150 +2 +8, -2 30 PASS	NA 1305 300 150 +2 +8, -2 30 PASS	NA 1305 300 150 +2 +8, -2 30 PASS			NA 1205+ 250 150 ± 2 +2 X PASS

MULE-HIDE PRODUCTS CO. INC.	MULE-HIDE PRODUCTS CO. INC.	MULE-HIDE PRODUCTS CO. INC.	MULE-HIDE PRODUCTS CO. INC.	MULE-HIDE PRODUCTS CO. INC.	OLYMPIC RUBBER ROOFING SYSTEM	OLYMPIC RUBBER ROOFING SYSTEM	PREMIUM POLYMERS, INC.	PREMIUM POLYMERS, INC.	PREMIUM POLYMERS, INC.
M-H EPDM .060	M-H REINFORCED EPDM .045	M-H REINFORCED EPDM .060	M-H W/B REINFORCED EPDM .045	M-H W/B EPDM .060	WATERSHIELD .045 .060	WATERGUARD .060	PREMIUM 0.045	PREMIUM 0.060	PREMIUM REINFORCED 0.045
1	1	1	1	1	1	1	1	1	1
U	SR	SR	SR	U	U	U	U	U	SR
0.060 NA	0.045 NA	0.060 NA	0.045 NA	0.060 NA	0.045 NA	0.060 NA	0.040	0.054	0.040 0.15
NA 1405+	210 NA	210 NA	210 NA	NA 1405+	NA 1305	NA 1305	1305	1305	90
350+ NA	NA 250+	NA 250+	NA 250+	350+ NA	300 NA	300 NA	300	300	300
10 175 NA NA -75 PASS	NA NA 50 -75 PASS	NA NA 50 -75 PASS	NA NA 50 -75 PASS	10 175 NA -75 PASS	<5 150 NA PASS	<5 150 NA PASS	10 150 -49 no cracks	10 150 -49 no cracks	10 -49 no cracks
NA 1205+ 250 150 ± 2 +2 X PASS	220 NA 250 NA ± 2 +3.6 X PASS	220 NA 250 NA ± 2 +3.6 X PASS	220 NA 250 NA ± 2 +3.6 X PASS	NA 1205+ 250 150 ± 2 +2 X PASS	NA 1205 200 125 ± 2 +8 X PASS	NA 1205 200 125 ± 2 -2 X PASS	1205 200 125 ± 2 +8, -2 51 PASS	1205 200 125 ± 2 +8, -2 51 PASS	80 200 125 ± 2 +8, -2 51 PASS

EPDM Part 2: Test Results

Test description and suggested values as specified in ASTM D 4637–96

1. COMPANY NAME		PREMIUM POLYMERS, INC.	PROTECTIVE COATINGS, INC.	PROTECTIVE COATINGS, INC.	PROTECTIVE COATINGS, INC.	PROTECTIVE COATINGS, INC.	PROTECTIVE COATINGS, INC.
2. PRODUCT NAME		PREMIUM-PLY 0.045	PRO SHIELD BLACK	PRO SHIELD BLACK	PRO SHIELD BLACK	PRO SHIELD WHITE	PRO SHIELD WHITE
3. GRADE 1 (greater than 95% principal polymer) or GRADE 2 (50% to 95% principal polymer)		1	1	1	1	1	1
4. CLASS U (unreinforced) or CLASS SR (scrim or fabric internally reinforced)		SR	U	U	U	U	U
5. THICKNESS (min. in.)							
SHEET OVERALL	0.039	0.041	0.040	0.050	0.060	0.040	0.050
COATING OVER SCRIM CLASS SR	0.015	0.041	NA	NA	NA	NA	NA
6. BREAKING STRENGTH (min. lbf) CLASS SR	90	90	NA	NA	NA	NA	NA
7. TENSILE STRENGTH (min. psi) CLASS U	1305		1400	1400	1400	1400	1400
8. ELONGATION, ULTIMATE (min. %)							
CLASS U	300		300	300	300	300	300
CLASS SR	250	300	NA	NA	NA	NA	NA
9. TENSILE SET (max. %) CLASS U	10		10	10	10	10	10
10. TEAR RESISTANCE (min. lbf/in.) CLASS U	150		200	200	200	200	200
11. TEARING STRENGTH (min. lbf) CLASS SR	5	10	NA	NA	NA	NA	NA
12. BRITTLINESS POINT (max. F)	-49	-49	-70	-70	-70	-70	-70
13. OZONE RESISTANCE (pass/fail)	no cracks	no cracks	PASS	PASS	PASS	PASS	PASS
14. HEAT AGING							
BREAKING STRENGTH (min. lbf) CLASS SR	80	80	NA	NA	NA	NA	NA
TENSILE STRENGTH (min. psi) CLASS U	1205		1205	1205	1205	1205	1205
ELONGATION, ULTIMATE (min. %)	200	200	200	200	200	200	200
TEAR RESISTANCE (min. lbf/in.) CLASS U	125		125	125	125	125	125
LINEAR DIMENSIONAL CHANGE (max. %)	± 2	± 2	+2	+2	+2	+2	+2
15. WATER ABSORPTION (max. mass %)	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2
16. FACTORY SEAM STRENGTH (min. lbf/in.)	51 or sheet failure	51	X	X	X	X	X
17. WEATHER RESISTANCE (pass/fail)	no cracks or crazing	PASS	PASS	PASS	PASS	PASS	PASS
18. SEE MEMBRANE APPENDIX IF CHECKED							

1. COMPANY NAME		PROTECTIVE COATINGS, INC.	PROTECTIVE COATINGS, INC.	PROTECTIVE COATINGS, INC.	ROOFING PRODUCTS INTERNATIONAL INC.	ROOFING PRODUCTS INTERNATIONAL INC.	ROOFING PRODUCTS INTERNATIONAL INC.
2. PRODUCT NAME		PRO SHIELD WHITE	PRO SHIELD WHITE FIRE RETARDANT	PRO SHIELD WHITE FIRE RETARDANT	RPI EPDM BLACK .045	RPI EPDM BLACK .060	RPI EPDM BLACK .045
3. GRADE 1 (greater than 95% principal polymer) or GRADE 2 (50% to 95% principal polymer)		1	1	1	1	1	1
4. CLASS U (unreinforced) or CLASS SR (scrim or fabric internally reinforced)		U	U	U	U	U	R
5. THICKNESS (min. in.)							
SHEET OVERALL	0.039	0.060	0.040	0.060	0.040	0.054	
COATING OVER SCRIM CLASS SR	0.015	NA	NA	NA	NA	NA	
6. BREAKING STRENGTH (min. lbf) CLASS SR	90	NA	NA	NA	NA	NA	
7. TENSILE STRENGTH (min. psi) CLASS U	1305	1400	1400	1400	1305	1305	
8. ELONGATION, ULTIMATE (min. %)							
CLASS U	300	300	300	300	300	300	
CLASS SR	250	NA	NA	NA	NA	NA	
9. TENSILE SET (max. %) CLASS U	10	10	10	10			
10. TEAR RESISTANCE (min. lbf/in.) CLASS U	150	200	200	200	150	150	
11. TEARING STRENGTH (min. lbf) CLASS SR	5	NA	NA	NA	NA	NA	
12. BRITTLINESS POINT (max. F)	-49	-70	-70	-70	-49	-49	
13. OZONE RESISTANCE (pass/fail)	no cracks	PASS	PASS	PASS	PASS	PASS	
14. HEAT AGING							
BREAKING STRENGTH (min. lbf) CLASS SR	80	NA	NA	NA	NA	NA	
TENSILE STRENGTH (min. psi) CLASS U	1205	1205	1205	1205	1205	1205	
ELONGATION, ULTIMATE (min. %)	200	200	200	200	200	200	
TEAR RESISTANCE (min. lbf/in.) CLASS U	125	125	125	125	125	125	
LINEAR DIMENSIONAL CHANGE (max. %)	± 2	+2	+2	+2	-2	-2	
15. WATER ABSORPTION (max. mass %)	+8, -2	+8, -2	+8, -2	+8, -2	0.05	0.05	
16. FACTORY SEAM STRENGTH (min. lbf/in.)	51 or sheet failure	X	X	X	X	X	
17. WEATHER RESISTANCE (pass/fail)	no cracks or crazing	PASS	PASS	PASS	PASS	PASS	
18. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

EPDM Part 2: Test Results

Test description and suggested values as specified in ASTM D 4637-96

ROOFING PRODUCTS INTERNATIONAL INC.	ROOFING PRODUCTS INTERNATIONAL INC.	ROOFING PRODUCTS INTERNATIONAL INC.	ROOFING PRODUCTS INTERNATIONAL INC.	ROOFING PRODUCTS INTERNATIONAL INC.	ROOFING PRODUCTS INTERNATIONAL INC.	ROOFING PRODUCTS INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.
RPI EPDM BLACK .060	RPI EPDM WHITE .045	RPI EPDM WHITE .060	RPI EPDM FR BLACK 0.045	RPI EPDM FR BLACK 0.060	RPI EPDM BLACK 0.045 E-Z	RPI EPDM BLACK 0.060 E-Z	SPM 45 BLACK	SPM 45R BLACK	SPM 60 BLACK
1	1	1	1	1	1	1	1	1	1
R	U	U	U	U	U	U	U	SR	U
	0.040 NA	0.054 NA	0.040 NA	0.054 NA	0.040 NA	0.054 NA	0.043 NA	0.040 0.015	0.058 NA
	NA 1305	NA 1305	NA 1305	NA 1305	NA 1305	NA 1305	NA 1650	90 NA	NA 1485
	300 NA	300 NA	300 NA	300 NA	300 NA	300 NA	450 NA	NA 250	470 NA
	125 NA -49 PASS	125 NA -49 PASS	150 NA -49 PASS	150 NA -49 PASS	150 NA -49 PASS	150 NA -49 PASS	4 200 NA -72 PASS	NA NA 10 -49 PASS	4 192 NA -72 PASS
	NA 1205 200 125 -2	NA 1205 200 125 -2	NA 1205 200 125 -2	NA 1205 200 125 -2	NA 1205 200 125 -2	NA 1205 200 125 -2	NA 1650 320 182 -0.50	80 NA 200 NA ± 2	NA 1750 285 182 -0.50
	0.05 X PASS	0.05 X PASS	0.05 X PASS	0.05 X PASS	0.05 X PASS	0.05 X PASS	+1.7 X PASS	+4.0 X PASS	+1.7 X PASS
					X	X			

SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	VERSICO INCORPORATED	VERSICO INCORPORATED	VERSICO INCORPORATED	VERSICO INCORPORATED	VERSICO INCORPORATED	VERSICO INCORPORATED	VERSICO INCORPORATED
SPM 60R BLACK	SP 60 FR BLACK	SPM 60W WHITE	VERSIGARD EPDM .045	VERSIGARD EPDM .050	VERSIGARD EPDM .060	VERSIGARD PE ROOFING SYSTEM EPDM .050	VERSIGARD II FR EPDM .060	VERSIGARD REINFORCED EPDM .045	VERSIGARD II FR REINFORCED EPDM .045
1	1	1	1	1	1	1	1	1	1
SR	U	U	U	U	U	U	U	SR	SR
0.058 0.025	0.058 NA	0.058 NA	0.040 NA	0.045 NA	0.054 NA	0.045 NA	0.054 NA	0.045 0.015	0.045 0.015
90 NA	NA 1470	NA 1440	NA 1305	NA 1305	NA 1305	NA 1305	NA 1780	210 NA	210 NA
NA 250	425 NA	635 NA	300 NA	300 NA	300 NA	300 NA	495 NA	NA 290	NA 290
NA 10 -49 PASS	3 201 NA -64 PASS	2 211 NA -80 PASS	10 150 NA -75 PASS	10 150 NA -75 PASS	10 150 NA -75 PASS	10 150 NA -75 PASS	0.10 215 NA -85 PASS	NA NA 50 -75 PASS	NA NA 50 -75 PASS
80 NA 200 171 ± 2 +4.0 X PASS	NA 1510 300 171 -0.60 +2.8 X PASS	NA 1480 390 143 -1.50 +7.4 X PASS	NA 1205 200 125 ± 2 +8, -2 X PASS	NA 1205 200 125 ± 2 +8, -2 X PASS	NA 1205 200 125 ± 2 +8, -2 X PASS	NA 1205 200 125 ± 2 +8, -2 X PASS	NA 1205 200 125 ± 2 +8, -2 X PASS	220 NA 200 NA -0.7 +4.0 X PASS	220 NA 200 NA -0.7 +4.0 X PASS
			X	X	X	X	X		

EPDM Part 2: Test Results

Test description and suggested values as specified in ASTM D 4637–96

1. COMPANY NAME		VERSICO INCORPO- RATED	VERSICO INCORPO- RATED
2. PRODUCT NAME		VERSIGARD WHITE/BLACK 0.060	VERSIGARD WHT REINFORCED EPDM .045
3. GRADE 1 (greater than 95% principal polymer) or GRADE 2 (50% to 95% principal polymer)		1	1
4. CLASS U (unreinforced) or CLASS SR (scrim or fabric internally reinforced)		U	SR
5. THICKNESS (min. in.)			
SHEET OVERALL	0.039	0.054	0.041
COATING OVER SCRIM CLASS SR	0.015	NA	0.015
6. BREAKING STRENGTH (min. lbf) CLASS SR	90	NA	90
7. TENSILE STRENGTH (min. psi) CLASS U	1305	1305	NA
8. ELONGATION, ULTIMATE (min. %)			
CLASS U	300	300	NA
CLASS SR	250	NA	250
9. TENSILE SET (max. %) CLASS U	10	10	NA
10. TEAR RESISTANCE (min. lbf/in.) CLASS U	150	150	NA
11. TEARING STRENGTH (min. lbf) CLASS SR	5	NA	10
12. BRITTLINESS POINT (max. F)	-49	-75	-49
13. OZONE RESISTANCE (pass/fail)	no cracks	PASS	PASS
14. HEAT AGING			
BREAKING STRENGTH (min. lbf) CLASS SR	80	NA	80
TENSILE STRENGTH (min. psi) CLASS U	1205	1200	NA
ELONGATION, ULTIMATE (min. %)	200	200	200
TEAR RESISTANCE (min. lbf/in.) CLASS U	125	125	NA
LINEAR DIMENSIONAL CHANGE (max. %)	± 2	± 2	± 2
15. WATER ABSORPTION (max. mass %)	+8, -2	+4	+4.0
16. FACTORY SEAM STRENGTH (min. lbf/in.)	51 or sheet failure	X	X
17. WEATHER RESISTANCE (pass/fail)	no cracks or crazing	PASS	PASS
18. SEE MEMBRANE APPENDIX IF CHECKED			

NA=not applicable

CSPE (Hypalon) Part 1: General Information

1. COMPANY NAME	ALLIED-TRENT ROOFING SYSTEMS INC.	BURKE INDUSTRIES	BURKE INDUSTRIES	BURKE INDUSTRIES	CONKLIN CO. INC.	HAARTZ- MASON, INC.	HAARTZ- MASON, INC.
2. PRODUCT NAME	CSM(CSPE)	BURKELINE M-358 MF	BURKELINE M-358 FA	BURKELINE M-560 VAC Q	HY-CROWN 45 MILS	HYSHIELD EIP	HYSHIELD HYPALON
3. PRODUCT DESCRIPTION							
A. REINFORCEMENT	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	10 X 10 POLYESTER
B. COLOR	ALL COLORS	VARIOUS	VARIOUS	VARIOUS	VARIOUS	VARIOUS	WHITE
C. INSTALLED WEIGHT (lbs./ft ² w/o ballast)	0.29	0.32	0.32	0.29	0.32	0.30	0.30
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:							
A. NEW ROOFING	X	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HEAT WELD OR CURABLE SEAM TAPE	SOLVENT, HEAT, OR WELD SOLUTION	SOLVENT, HEAT, OR WELD SOLUTION	SOLVENT, HEAT, OR WELD SOLUTION	WELD SOLUTION OR HEAT WELD	HEAT WELD	HEAT WELD
7. TYPES OF ROOF SYSTEMS							
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)	10	10	10	10	MECH. FAST.	10	10
B. PARTIALLY ADHERED (method)	MECH. FAST.	MECH. FAST.	CONT. ADHES.	CONT. ADHES.	MECH. FAST.	MECH. FAST.	MECH. FAST.
C. FULLY ADHERED (method)	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	MECH. FAST.	MECH. FAST.	MECH. FAST.
D. PROTECTED ROOF MEMBRANE ASSEMBLY	X	X	X	X	X	X	X
8. MINIMUM SLOPE REQUIRED		DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	POS DRAIN		POS DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some/all circumstances)							
A. GLASS FIBER	X O	X	X	X	X	X	X
B. MINERAL FIBER	X	X	X	X	X	X	X
C. POLYSTYRENE	X O	S	O	S	S	O	O
D. CELLULAR GLASS	X O	X	X	X	X	X	X
E. PHENOLIC	X O	X	X	X	X	X	X
F. FIBERBOARD	X	X	X	X	X	X	X
G. PERLITE	X O	X	O	X	X	X	X
H. POLYISOCYANURATE	X O	X	X	X	X	X	X
I. POLYURETHANE	X	X	X	X	X	X	X
J. GYPSUM	X	X	O	X	X	O	O
K. CONCRETE	X	O	X	X	S	O	O
L. WOOD PLANK	X	S	O	X	O	X	X
M. PLYWOOD	X	S	X	X	O	X	X
N. EXISTING BUILT-UP MEMBRANE	X O	O	O	X	S	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)		-40 - 140	-40 - 140	-40 - 140	-25 - 140	-25 - 150	-25 - 150
12. FLASHING MATERIAL	REINFORCED & UNREINFORCED CSM (CSPE)	REINFORCED & UNREINFORCED CLAD METAL	REINFORCED & UNREINFORCED CLAD METAL	REINFORCED & UNREINFORCED CLAD METAL	REINFORCED & UNREINFORCED HYPALON	REINFORCED & UNREINFORCED CLAD METAL	REINFORCED & UNREINFORCED CLAD METAL
13. FLASHING METHOD	HEAT WELD, CONT. ADHES., CUR. SEAM TAPE	CONT. ADHES. AND SOLUTION OR HEAT WELD	CONT. ADHES. AND SOLUTION OR HEAT WELD	CONT. ADHES. AND SOLUTION OR HEAT WELD	CONT. ADHES. AND SOLUTION OR HEAT WELD	CONTACT ADHESIVE AND HEAT WELD	CONTACT ADHESIVE AND HEAT WELD
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES	YES
15. COUNTRY OF:							
A. ORIGIN	CANADA	USA	USA	USA	USA	USA	USA
B. MANUFACTURE	CANADA	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE							
A. OUTSIDE USA	1983	1982	1982	1986		1996	1985
B. WITHIN USA	1983	1976	1976	1986	1985	1996	1983
17. NUMBER OF SQUARES INSTALLED (100 ft ²)							
A. OUTSIDE USA	THOUSANDS	MILLIONS	MILLIONS	>100,000	> 1,000,000	< 500,000	THOUSANDS
B. WITHIN USA	THOUSANDS	MILLIONS	MILLIONS	>100,000	> 1,000,000	< 500,000	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRIBUTORS	DIRECT	DIRECT
19. NUMBER OF REGIONAL LOCATIONS	6	54	54	54	5	11	11
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	800/955-2001	B. ROADES	B. ROADES	B. ROADES	BLDG. PRODS. 800/394-6076	J. MILLIKEN 800/255-1136	J. MILLIKEN 800/255-1136
22. FOR TECHNICAL INFORMATION, CONTACT:	800/955-2001	B. ROADES 800/669-7010	B. ROADES 800/669-7010	B. ROADES 800/669-7010	PROD. SERVS. 800/394-6076	J. SAMA 800/255-1136	J. SAMA 800/255-1136
23. SEE MEMBRANE APPENDIX IF CHECKED							

CSPE (Hypalon) Part 1: General Information

WP HICKMAN SYSTEMS, INC.	MULE-HIDE PRODUCTS CO, INC.	STEVENS ROOFING SYSTEMS	STEVENS ROOFING SYSTEMS	TREMCO INC.	UNIROOF CORPORATION	UNIROOF CORPORATION
HK 3000	M-H HYPALON 0.045	HI-TUFF HYPALON .045	HI-TUFF HYPALON .060	TREMCO HP 4510	UNIROOF REINFORCED	UNIROOF BACKED
10 X 10 WOVEN POLYESTER WHITE/BLACK	10 X 10 POLYESTER WHITE 0.29 MIN	10 X 10 POLYESTER WHITE/GRAY 0.29 MIN	10 X 10 POLYESTER WHITE/GRAY 0.43 MIN	10 X 10 WOVEN POLYESTER WHITE/BLACK	POLYESTER ALL COLORS 0.25	NONE ALL COLORS 0.25
NONE	NONE	NONE	NONE	NONE	NONE	NONE
X X	X X	X X	X X	X X	X X	X X
CONTACT ADHESIVE	HEAT WELD	HEAT WELD	HEAT WELD	CONTACT ADHESIVE OR HEAT WELD	HEAT WELD	HEAT WELD
10 MECH. FAST. COLD/HOT ADHES. X	10 MECH. FAST. CONT. ADHES.	10 MECH. FAST. CONT. ADHES.	10 MECH. FAST. CONT. ADHES.	10 MECH. FAST. CONT. ADHES. X	10 MECH. FAST. X	LATEX ADHES. X
1/8"	NONE	NONE	NONE	1/4"	DEAD LEVEL	DEAD LEVEL
X O O X X X X O X O O O	X X S O X X X X X X X X X O	X X X O X O X O X O X O X O X O X O X O X O	X X X O X O X O X O X O X O X O X O X O X O	X O O X X O O O O O O	X X X X O O X O X O X O	X X X X O O X O X O X O
NONE	NONE	NONE	NONE	NONE	NONE	NONE
50 - 120	-25 - 140	-25 - 140	-25 - 140		0 - 120	10 - 120
SAME MATERIAL	REINFORCED & UNREINFORCED HYPALON	REINFORCED & UNREINFORCED HYPALON	REINFORCED & UNREINFORCED HYPALON	REINFORCED HYPALON	REINFORCED AND NONREIN- FORCED	BACKED UNIROOF
CONTACT ADHESIVE	CONTACT ADHESIVE AND HEAT WELD	CONTACT ADHESIVE AND HEAT WELD	CONTACT ADHESIVE AND HEAT WELD	CONTACT ADHESIVE AND HEAT WELD	CONT.ADHES. SOLUTION AND HEAT WELD	CONT.ADHES. SOLUTION AND HEAT WELD
YES	YES	YES	YES	YES	YES	YES
USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	UK UK
1985	1978	1977 1978	1977 1978	1981		1969 1976
THOUSANDS	MILLIONS	MILLIONS MILLIONS				THOUSANDS THOUSANDS
DIRECT	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DIRECT	DIRECT	DIRECT
5	12	67	67	18	8	8
YES	YES	YES	YES	YES	YES	YES
C. FITZGERALD R. GALLION K. BRZOZOWSKI	L. PUNZEL 608/365-3111 T. MCFARLAND 608/365-3111	D. ABBOTT D. BROWN TECH. DEPT. 800/621-ROOF	D. ABBOTT D. BROWN TECH. DEPT. 800/621-ROOF	V. SOPKO J. ZDENEK	D. KONSTAN 407/869-5110 D. KONSTAN 407/869-5110	D. KONSTAN 407/869-5110 D. KONSTAN 407/869-5110

CSPE (Hypalon) Part 2: Test Results

Test description and suggested values as specified in ASTM D 5019–96

1. COMPANY NAME	ALLIED-TRENT ROOFING SYSTEMS INC.	BURKE INDUSTRIES	BURKE INDUSTRIES	BURKE INDUSTRIES	CONKLIN CO. INC	HAARTZ- MASON
2. PRODUCT NAME	CSM (CSPE)	BURKELINE M-358 MF	BURKELINE M-358 FA	BURKELINE M-560 VAC Q	HY-CROWN 45 MILLS	HYSHIELD EIP
3. SHEET CONSTRUCTION						
GRADE 1 (backed with fibers)						
GRADE 2 (internally reinforced with fabric)	2	2	2	2	2	2

PHYSICAL PROPERTIES OF SHEET

4. THICKNESS (min. in.)	0.036	0.036	0.045	0.045	0.040	0.045	0.045
5. BREAKING STRENGTH (min. lbf)							
GRADE 1	50	NA	NA	NA	NA	NA	NA
GRADE 2 (fabric)	125	220	225	225	225	225	225
6. ELONGATION (min. %)							
GRADE 1	250	NA	NA	NA	NA	NA	NA
GRADE 2 (fabric)	15	30	81	81	31	81	25
7. TEARING STRENGTH (min. lbf)							
GRADE 1	10	NA	NA	NA	NA	NA	NA
GRADE 2 (fabric)	25	90	90	90	110	90	90
8. LOW-TEMPERATURE BEND	pass	PASS	PASS	PASS	PASS	PASS	PASS
9. LINEAR DIMENSIONAL CHANGE (max. %)							
GRADE 1	1.0	NA	NA	NA	NA	NA	NA
GRADE 2 (fabric)	2.0	2.0	1.0	1.0	1.0	1.0	1.5
10. FABRIC ADHESION (min. lbf/in. width)							
GRADE 1	A*	NA	NA	NA	NA	NA	NA
11. PLY ADHESION (min. lbf/in.)							
GRADE 2	6	6	10	10	10	10	10
12. HYDROSTATIC RESISTANCE (min. psi)							
GRADE 1	15	NA	NA	NA	NA	NA	NA
GRADE 2	160	300	300	300	300	300	300
13. OZONE RESISTANCE OF SHEET (no cracks)	pass	PASS	PASS	PASS	PASS	PASS	PASS
14. WEATHER RESISTANCE (no cracks or crazing)	pass	PASS	PASS	PASS	PASS	PASS	PASS

PHYSICAL PROPERTIES OF THE COATING PORTION OF THE WEATHER SIDE OF SHEET

13. TENSILE STRENGTH (min. psi)	700	1500	1000	1000	1000	1000	795
14. ELONGATION (min. %)	300	300	400	400	400	400	425
15. TEAR RESISTANCE (min. lbf/in.)	150	150	320	320	320	320	190
16. OZONE RESISTANCE (no cracks)	pass	PASS	PASS	PASS	PASS	PASS	PASS
17. WATER ABSORPTION (max. mass %)	10	10	8	8	8	8	8
18. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

A=internal delamination of backing occurs prior to failure at bond between backing and coating

CSPE (Hypalon) Part 2: Test Results

HAARTZ-MASON	WP HICKMAN SYSTEMS INC	MULE-HIDE PRODUCTS CO INC	STEVENS ROOFING SYSTEMS	STEVENS ROOFING SYSTEMS	TREMCO INC	UNIROOF CORPORATION	UNIROOF CORPORATION
HYSHIELD HYPALON	HK 3000	M-H HYPALON 0.045	HI-TUFF HYPALON .045	HI-TUFF HYPALON .060	TREMCO HP 4510	UNIROOF REINFORCED	UNIROOF BACKED
2	2	2	2	2			

0.045	0.045	0.045	0.0405	.054			
NA 225		NA 225	NA 280	NA 280			
NA 25		NA 15	NA 15	NA 15			
NA 90		NA 90	NA 110	NA 110			
PASS		PASS	PASS	PASS			
NA 1.5		NA 2.0	NA .1	NA .1			
NA		NA	NA	NA			
10		10	10	10			
NA 400		NA 300	NA 400	NA 400			
PASS		PASS	PASS	PASS			
PASS		PASS	PASS	PASS			

795		1000	1000	1000			
425		300	300	300			
190		150	150	150			
PASS		PASS	PASS	PASS			
8		10	10	10			

PIB (Polyisobutylene) Part 1: General Information

1. COMPANY NAME	ALLIED-TRENT ROOFING SYSTEMS INC.	REPUBLIC POWDERED METALS
2. PRODUCT NAME	TRENT-GARD	GEOFLEX
3. PRODUCT DESCRIPTION A. REINFORCEMENT B. COLOR(S) C. INSTALLED WEIGHT (lbs./ft ² w/o ballast)	POLYESTER WHITE 0.60	POLYESTER WHITE 0.57
4. COATING REQUIRED	NONE	NONE
5. USE IN: A. NEW ROOFING B. REROOFING	X X	X X
6. FIELD LAP JOINT METHOD	PIB ADHESIVE	PEEL AND STICK
7. TYPES OF ROOF SYSTEMS A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²) B. PARTIALLY ADHERED (method) C. FULLY ADHERED (method) D. PROTECTED ROOF MEMBRANE ASSEMBLY	10 ASPHALT ADHESIVE X	10 ASPH OR ADHES ADHESIVE X
8. MINIMUM SLOPE REQUIRED	1" PER 10'	POS DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances) A. GLASS FIBER B. MINERAL FIBER C. POLYSTYRENE D. CELLULAR GLASS E. PHENOLIC F. FIBERBOARD G. PERLITE H. POLYISOCYANURATE I. POLYURETHANE J. GYPSUM K. CONCRETE L. WOOD PLANK M. PLYWOOD N. EXISTING BUILT-UP MEMBRANE	X X O X X X X X O O O O O O O O	X X O X X X X O O O O O O O O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	20 – 100	20 – 100
12. FLASHING MATERIAL	PIB BUTYLTAPE	REINFORCED AND UNREIN- FORCED PIB
13. FLASHING METHOD	PIB ADHESIVE	SELF-SEAL AND CONTACT ADHESIVE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES
15. COUNTRY OF: A. ORIGIN B. MANUFACTURE	GERMANY USA-CANADA	GERMANY USA
16. YEAR OF FIRST COMMERCIAL USE A. OUTSIDE USA B. WITHIN USA	1935 1980	1950 1977
17. NUMBER OF SQUARES INSTALLED (100 ft ²) A. OUTSIDE USA B. WITHIN USA	MILLIONS THOUSANDS	THOUSANDS THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DIRECT
19. NUMBER OF REGIONAL LOCATIONS	6	4
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES
21. FOR SALES INFORMATION, CONTACT:	800/955–2001	800/255–1136
22. FOR TECHNICAL INFORMATION, CONTACT:	705/324–6891	800/255–1136
23. SEE MEMBRANE APPENDIX IF CHECKED		

PIB (Polyisobutylene) Part 2: Test Results

Test description and suggested values as specified in ASTM D 5019–96

1. COMPANY NAME	ALLIED-TRENT ROOFING SYSTEMS INC.	REPUBLIC POWDERED METALS
2. PRODUCT NAME	TRENT-GARD	GEOFLEX
PHYSICAL PROPERTIES OF SHEET		
3. THICKNESS (min. in.)	0.087	0.120
4. BREAKING STRENGTH (min. lbf)	140	190
5. ELONGATION (min. %)	50	120
6. TEARING STRENGTH (min. lbf)	30	30
7. LOW TEMPERATURE BEND	pass	PASS
8. LINEAR DIMENSIONAL CHANGE (max. %)	1.0	0.5
9. FABRIC ADHESION (min. lbf/in.)	7	12
10. HYDROSTATIC RESISTANCE (min. psi)	175	200
11. OZONE RESISTANCE (no cracks)	pass	PASS
12. WEATHER RESISTANCE (no cracks or crazing)	pass	PASS
PHYSICAL PROPERTIES OF THE COATING PORTION ON THE WEATHER SIDE OF SHEET		
13. TENSILE STRENGTH (min. psi)	600	600
14. ELONGATION (min. %)	400	400
15. TEAR RESISTANCE (min. lbf/in.)	100	120
16. OZONE RESISTANCE (no cracks)	pass	PASS
17. WATER ABSORPTION (max. mass %)	1.0	0.2
18. SEE MEMBRANE APPENDIX IF CHECKED		

NA=not applicable

Other Prefabricated Sheet-applied Membranes Part 1: General Information

1. COMPANY NAME	BONDCOTE ROOFING SYSTEMS	BONDCOTE ROOFING SYSTEMS	BONDCOTE ROOFING SYSTEMS	BONDCOTE ROOFING SYSTEMS	BONDCOTE ROOFING SYSTEMS	BONDCOTE ROOFING SYSTEMS
2. PRODUCT NAME	BONDCOTE 300 SERIES	BONDCOTE 350 SERIES	BONDCOTE 400 SERIES	BONDCOTE 500 SERIES	BONDCOTE 600 SERIES	BONDCOTE 800 SERIES
3. PRODUCT DESCRIPTION						
A. REINFORCEMENT	18 X 12 POLYESTER	18 X 12 POLYESTER	18 X 12 POLYESTER	18 X 12 POLYESTER	18 X 12 POLYESTER	18 X 12 POLYESTER
B. COLOR	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
C. INSTALLED WEIGHT (lbs./ft ² w/o ballast)	0.21	0.24	0.28	0.33	0.40	0.55
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:						
A. NEW ROOFING	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HEAT WELD	HEAT WELD	HEAT WELD	HEAT WELD	HEAT WELD	HEAT WELD
7. TYPES OF ROOF SYSTEMS						
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)	10	10	10	10	10	10
B. PARTIALLY ADHERED (method)	MECHANICALLY	MECHANICALLY	MECHANICALLY	MECHANICALLY	MECHANICALLY	MECHANICALLY
C. FULLY ADHERED (method)		CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.
D. PROTECTED ROOF MEMBRANE ASSEMBLY	X	X	X	X	X	X
8. MINIMUM SLOPE REQUIRED (inches per foot)	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
A. GLASS FIBER	X O	X O	X O	X O	X O	X O
B. MINERAL FIBER	X O	X O	X O	X O	X O	X O
C. POLYSTYRENE	S	S	S	S	S	S
D. CELLULAR GLASS	X	X	X	X	X	X
E. PHENOLIC						
F. FIBERBOARD	X	X	X	X	X	X
G. PERLITE	X	X	X	X	X	X
H. POLYISOCYANURATE	X	X	X	X	X	X
I. POLYURETHANE	X	X	X	X	X	X
J. GYPSUM	X	X	X	X	X	X
K. CONCRETE	O	O	O	O	O	O
L. WOOD PLANK	O	O	O	O	O	O
M. PLYWOOD	O	O	O	O	O	O
N. EXISTING BUILT-UP MEMBRANE	O	O	O	O	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	0 – 180	0 – 180	0 – 180	0 – 180	0 – 180	0 – 180
12. FLASHING MATERIAL	ROOF MEMB NBP-COATED METAL	ROOF MEMB NBP-COATED METAL	ROOF MEMB NBP-COATED METAL	ROOF MEMB NBP-COATED METAL	ROOF MEMB NBP-COATED METAL	ROOF MEMB NBP-COATED METAL
13. FLASHING METHOD	HEAT WELD AND CONTACT ADHESIVE	HEAT WELD AND CONTACT ADHESIVE	HEAT WELD AND CONTACT ADHESIVE	HEAT WELD AND CONTACT ADHESIVE	HEAT WELD AND CONTACT ADHESIVE	HEAT WELD AND CONTACT ADHESIVE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF:						
A. ORIGIN	USA	USA	USA	USA	USA	USA
B. MANUFACTURE	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE						
A. OUTSIDE USA			1987			
B. WITHIN USA	1977	1977	1977	1995	1995	1995
17. NUMBER OF SQUARES INSTALLED (100 ft ²)						
A. OUTSIDE USA						
B. WITHIN USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT
19. NUMBER OF REGIONAL LOCATIONS	5	5	5	5	5	5
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	SALES DEPT. 800/368-2160	SALES DEPT. 800/368-2160	SALES DEPT. 800/368-2160	SALES DEPT. 800/368-2160	SALES DEPT. 800/368-2160	SALES DEPT. 800/368-2160
22. FOR TECHNICAL INFORMATION, CONTACT:	TECH. DEPT. 800/368-2160	TECH. DEPT. 800/368-2160	TECH. DEPT. 800/368-2160	TECH. DEPT. 800/368-2160	TECH. DEPT. 800/368-2160	TECH. DEPT. 800/368-2160
23. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X			

Other Prefabricated Sheet-applied Membranes Part 1: General Information

[illegible]

Other Prefabricated Sheet-applied Membranes Part 1: General Information

1. COMPANY NAME	DURO-LAST INC.	ERSYSTEMS	ERSYSTEMS	FLEX MEMBRANE INTERNATIONAL INC.	FLEX MEMBRANE INTERNATIONAL INC.	GENFLEX ROOFING SYSTEMS
2. PRODUCT NAME	DURO-LAST 45 MIL	PERMAWELD FLEECE-BACKED	PERMAWELD	FLEX FB ELVALOY	FLEX MF/R ELVALOY	GENFLEX .045 TPO
3. PRODUCT DESCRIPTION						
A. REINFORCEMENT	REINFORCED POLYESTER	CPA MEMB. REINFORCED W/ FLEECE-BACKED POLY. FAB.	CPA POLYESTER REINFORCED	REINFORCED POLYESTER W/ FLEECE BACK.	REINFORCED POLYESTER	POLYESTER
B. COLOR	WHITE, TAN, GREY	WHITE	WHITE	WHITE/OFF-WHITE	WHITE/OFF-WHITE	WHITE/BLACK/GREY
C. INSTALLED WEIGHT (lbs./ft ² w/o ballast)	0.35	0.35	0.25	0.35	0.30	0.21
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:						
A. NEW ROOFING	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HEAT WELD	HEAT WELD OR SOLVENT WELD	HEAT WELD	HOT AIR OR SOLVENT WELD	HOT AIR OR SOLVENT WELD	HEAT WELD
7. TYPES OF ROOF SYSTEMS						
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)	10	10	10	10 MIN	10 MIN	10-15
B. PARTIALLY ADHERED (method)	MECHANICALLY	MECH. FAST.	MECHANICALLY	MECH. FAST.	MECH. FAST.	MECH. FAST.
C. FULLY ADHERED (method)		HOT AS./CLD AD./FO	COLD ADHES	HOT AS./CLD AD.	CONT. ADHES.	CONT. ADHES.
D. PROTECTED ROOF MEMBRANE ASSEMBLY	X	X	X	X	X	X
8. MINIMUM SLOPE REQUIRED (inches per foot)	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	LEVEL
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
A. GLASS FIBER	X	X	X	X	X	O
B. MINERAL FIBER	X	X	X	O	X	X
C. POLYSTYRENE	S	X	O	X	S	O
D. CELLULAR GLASS	X	O	O	X	O	X
E. PHENOLIC	O	X	X	X	X	X
F. FIBERBOARD	X	X	X	X	X	X
G. PERLITE	X	X	X	X	O	X
H. POLYISOCYANURATE	X	X	X	O	X	X
I. POLYURETHANE	S	X	X	O	X	X
J. GYPSUM	X	X	X	O	X	X
K. CONCRETE	X	X	O	X	S	O
L. WOOD PLANK	X	X	X	O	O	O
M. PLYWOOD	X	X	X	O	X	O
N. EXISTING BUILT-UP MEMBRANE	S O	S O	S O	X O	X O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	-30 - 120	-30 - 160	-30 - 160	0 - 120	0 - 120	0 - 140
12. FLASHING MATERIAL	SAME MATERIAL	ROOF MEMBRANE/COATED METAL	ROOF MEMBRANE/COATED METAL	ROOF MEMBRANE/COATED METAL	ROOF MEMBRANE/COATED METAL	MEMBRANE OR COATED METAL
13. FLASHING METHOD	HEAT WELD	HEAT WELD OR WALL MASTIC	HEAT WELD OR WALL MASTIC	HOT AIR WELD OR ADHESIVE	HOT AIR WELD OR ADHESIVE	CONTACT ADHESIVE AND HEAT WELD
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF:						
A. ORIGIN	USA	USA	USA	USA	USA	USA
B. MANUFACTURE	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE						
A. OUTSIDE USA						
B. WITHIN USA	1988	1994	1984	1988	1988	1995
17. NUMBER OF SQUARES INSTALLED (100 ft ²)						
A. OUTSIDE USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
B. WITHIN USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DISTR, DIRECT	DISTR, DIRECT	DIRECT	DIRECT	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	4	14	14	4	4	
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	SALES DEPT. 800/248-0280	R. BAKER 800/403-7747	R. BAKER 800/403-7747	J. DOYLE 610/286-7788	J. DOYLE 610/286-7788	SALES DEPT.
22. FOR TECHNICAL INFORMATION, CONTACT:	ENGR. DEPT. 800/248-0280	J. LEONARD 800/403-7747	R. BAKER 800/403-7747	S. EDDINGER 610/286-7788	S. EDDINGER 610/286-7788	TECH. DEPT. 800/443-4272
23. SEE MEMBRANE APPENDIX IF CHECKED		X				

Other Prefabricated Sheet-applied Membranes Part 1: General Information

GENFLEX ROOFING SYSTEMS	HYLOAD INC.	HYLOAD INC.	HYLOAD INC.	HYLOAD INC.	HYLOAD INC.	HYLOAD INC.	HYLOAD INC.	HYLOAD INC.	HYLOAD INC.
GENFLEX .060 TPO	HYLOAD 250	HYLOAD SAM	ALPROOF	ALPROOF CP	HYLOAD 150E	ALPSAM WS	HYLOAD WS	ALPSAM	PMVB
POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	
WHITE/BLACK/ GREY	BLACK	BLACK	WHITE		BLACK	WHITE	BLACK	WHITE	
	0.40	0.40	0.40	0.40	0.40	0.40	0.50	0.40	0.70
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	
X X	X X	X X	X X	X X	X X	X X	X X	X X	X X
HEAT WELD	HEAT WELD	SELF-ADHERED	HEAT WELD	HEAT WELD	HEAT WELD	HEAT WELD	HEAT WELD	HEAT WELD	SELF-ADHERED
10-15 MECH. FAST. CONT. ADHES. X	CONT. ADHES. X	SELF-ADHERED	BITUMEN X	ADHESIVE X	BITUMEN X	SELF-ADHERED	SELF-ADHERED	SELF-ADHERED	SELF-ADHERED
LEVEL	DEAD LEVEL	DEAD LEVEL	1/2"	1/2"	DEAD LEVEL	1/2"	DEAD LEVEL	1/2"	DEAD LEVEL
X	O	O	O	O	O	O	O	O	
X	O	O	O	O	O	O	O	O	
X	O	O	O	O	O	O	O	O	
X	O	O	O	O	O	O	O	O	
X	O	O	O	O	O	O	O	O	
X	O	O	O	O	O	O	O	O	
X	O	O	O	O	O	O	O	O	
X	O	O	O	O	O	O	O	O	
O	O	O	O	O	O	O	O	O	X
O	O	O	O	O	O	O	O	O	X
O	O	O	O	O	O	O	O	O	X
O	O	O	O	O	O	O	O	O	X
O	O	O	O	O	O	O	O	O	O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	
0 - 140	40 - 120	40 - 120	40 - 120	40 - 120	40 - 120	40 - 120	40 - 120	40 - 120	
MEMBRANE OR COATED METAL	HYLOAD WS	SAME MATERIAL	ALPSAM WS	ALPSAM WS	H 150E, HYLOAD SAM, WS	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
CONTACT ADHESIVE AND HEAT WELD	SELF-ADHERING W/ HEAT WELD	SELF-ADHERING	SELF-ADHERING W/ HEAT WELD	SELF-ADHERING W/ HEAT WELD	SELF-ADHERING W/ HEAT WELD	SELF-ADHERING W/ HEAT WELD	SELF-ADHERING W/ HEAT WELD	SELF- ADHERING	SELF- ADHERING
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	
1995	1977	1985	1989	1989	1969	1989	1985	1989	
THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	> 1 MILLION	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
DISTRIBUTORS	DIRECT 20	DIRECT 20	DIRECT 20	DIRECT 20	DIRECT 20	DIRECT 20	DIRECT 20	DIRECT 20	DIRECT 20
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
SALES DEPT.									
TECH. DEPT. 800/443-4272									

Other Prefabricated Sheet-applied Membranes Part 1: General Information

1. COMPANY NAME	SEAL-DRY/ USA, INC.	SEAL-DRY/ USA, INC.	SEAMAN CORP.	STEVENS ROOFING SYSTEMS	STEVENS ROOFING SYSTEMS	UNIROOF CORPORATION
2. PRODUCT NAME	SEAL-DRY SYSTEM 5000	SEAL-DRY SYSTEM 3000	FIBERTITE	HI-TUFF/EP .045	HI-TUFF/EP .060	TRAFFIGARD
3. PRODUCT DESCRIPTION						
A. REINFORCEMENT	POLYESTER	POLYESTER	REINFORCED POLYESTER	10 X 10 POLYESTER	10 X 10 POLYESTER	FIBERGLASS REIN ACRYLIC
B. COLOR	WHITE	WHITE	LIGHT BEIGE	BLACK/WHITE/ GREY/OTHER	BLACK/WHITE/ GREY/OTHER	VARIOUS
C. INSTALLED WEIGHT (lbs./ft ² w/o ballast)	0.25	0.25	< 0.25			0.125
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:						
A. NEW ROOFING	X	X	X	X	X	X
B. REROOFING	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HEAT WELD	HEAT WELD	HEAT WELD	HEAT WELD	HEAT WELD	SEAMLESS
7. TYPES OF ROOF SYSTEMS						
A. LOOSE LAID/BALLASTED (ballast: lbs./ft ²)	10	10	10 MIN	10	10	
B. PARTIALLY ADHERED (method)	MECH. FAST.	MECH. FAST.	BONDING ADHE.	MECH. FAST.	MECH. FAST.	
C. FULLY ADHERED (method)	ADHESIVE	ADHESIVE	BONDING ADHE.	CONT. ADHES.	CONT. ADHES.	
D. PROTECTED ROOF MEMBRANE ASSEMBLY	X	X	X	X	X	SELF-ADHERING
8. MINIMUM SLOPE REQUIRED (inches per foot)	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	NONE	NONE	1/8"
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
A. GLASS FIBER	X	X	X	X	X	
B. MINERAL FIBER	X	X	X	X	X	
C. POLYSTYRENE	X O	X O	X S O	X O	X O	O
D. CELLULAR GLASS	X O	X O	X S O	X O	X O	
E. PHENOLIC	X	X	X	X O	X O	O
F. FIBERBOARD	X	X	X	X O	X O	X
G. PERLITE	X	X	X	X O	X O	X
H. POLYISOCYANURATE	X	X	X	X	X	O
I. POLYURETHANE	X	X	X	X	X	O
J. GYPSUM	X	X	X O	X	X	X
K. CONCRETE	S O	S O	S	X	X	X
L. WOOD PLANK	X	X	S	X	X	X
M. PLYWOOD	X	X	X S O	X	X	X
N. EXISTING BUILT-UP MEMBRANE	S O	S O	X S O	X O	X O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	-30 - 160	-30 - 160	-30 - NO LIMIT	-15 - 140	-15 - 140	50 - 90
12. FLASHING MATERIAL	ROOF MEMBRANE COATED METAL	ROOF MEMBRANE COATED METAL	ROOF MEMBRANE COATED METAL	REINFORCED & UNREINFORCED EP MEMBRANE	REINFORCED & UNREINFORCED EP MEMBRANE	SAME MATERIAL
13. FLASHING METHOD	HEAT WELD	HEAT WELD OR WALL MASTIC	HEAT WELD OR WALL MASTIC	CONTACT ADHESIVE & HEAT WELD	CONTACT ADHESIVE & HEAT WELD	ROLLER, SPRAY, OR BRUSH
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	NO
15. COUNTRY OF:						
A. ORIGIN	USA	USA	USA	USA	USA	AUSTRALIA
B. MANUFACTURE	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE						
A. OUTSIDE USA			1974	1992	1992	1969
B. WITHIN USA	1984	1984	1968	1992	1992	1980
17. NUMBER OF SQUARES INSTALLED (100 ft ²)						
A. OUTSIDE USA				MILLIONS	MILLIONS	
B. WITHIN USA	THOUSANDS	THOUSANDS	750,000	MILLIONS	MILLIONS	
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DIRECT	DIRECT	DISTRIBUTORS	DISTRIBUTORS	DISTRs, DIRECT
19. NUMBER OF REGIONAL LOCATIONS			20	67	67	8
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	J. NEWMAN	J. NEWMAN	T. L. ANDERSON 800/927-8578	B. ABBOT D. BROWN	B. ABBOT D. BROWN	D. KONSTAN 407/869-5110
22. FOR TECHNICAL INFORMATION, CONTACT:	T. NATHAN	T. NATHAN	J. BEALL 800/927-8578	TECHNICAL DEPT.	TECHNICAL DEPT.	OFFICE 407/869-5110
23. SEE MEMBRANE APPENDIX IF CHECKED			X			

Other Prefabricated Sheet-applied Membranes Part 1: General Information

UNI-ROOF CORPORATION	VERSICO INCORPORATED	VERSICO INCORPORATED	VERSICO INCORPORATED	VERSICO INCORPORATED
FORMFLEX	VERSIWELD II	VERSIWELD PREMIER	VERSIWELD	VERSIWELD
ACRYLIC	NONE		NONE	NONE
WHITE	BLACK	WHITE ON BLACK	BLACK	BLACK/WHITE
0.125	0.222	0.22	0.185	0.222
NONE	NONE	NONE	NONE	NONE
X X	X X	X X	X X	X X
SEAMLESS	HEAT WELD	HEAT WELD	HEAT WELD	HEAT WELD
SELF-ADHERING	MECH. FAST. CONT. ADHES.	10-15 MECH. FAST. CONT. ADHES.	10-15	MECH. FAST. CONT. ADHES.
	X	X	X	X
1/8"	NONE	NONE	NONE	NONE
	O	O	O	O
O	X	X	X	X
O	X	X	X	X
X	X	X	X	X
X	X	X	X	X
O	X	X	X	X
O	X	X	X	X
X	X	X	X	X
X	O	O	O	O
X	O	O	O	O
X	O	O	O	O
X	O	O	O	O
NONE	NONE	NONE	NONE	NONE
50 – 90	-25 – 180	-25 – 180	-25 – 180	-25 – 180
SAME MATERIAL	VERSIWELD FLASHING OR COATED METAL	VERSIWELD FLASHING OR COATED METAL	VERSIWELD FLASHING OR COATED METAL	VERSIWELD FLASHING OR COATED METAL
ROLLER, SPRAY, OR BRUSH	CONTACT ADHESIVE AND HEAT WELD	CONTACT ADHESIVE AND HEAT WELD	CONTACT ADHESIVE AND HEAT WELD	CONTACT ADHESIVE AND HEAT WELD
NO	YES	YES	YES	YES
ENGLAND USA	USA USA	USA USA	USA USA	USA USA
1972 1985	1992 1991	1994	1992 1991	1992 1991
	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
DISTR., DIRECT	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
8	125	125	125	125
YES	YES	YES	YES	YES
D. KONSTAN 407/869-5110 OFFICE 407/869-5110	P. MCGRADY 800/992-7663 R. RAULIE 800/992-7663	P. MCGRADY 800/992-7663 R. RAULIE 800/992-7663	P. MCGRADY 800/321-1692 R. RAULIE 800/992-7663	P. MCGRADY 800/321-1692 R. RAULIE 800/992-7663
	X	X	X	X

Other Prefabricated Sheet-applied Membranes Part 2: Test Results

1. COMPANY NAME		BONDCOTE ROOFING SYSTEMS	BONDCOTE ROOFING SYSTEMS	BONDCOTE ROOFING SYSTEMS	BONDCOTE ROOFING SYSTEMS
2. PRODUCT NAME		BONDCOTE 300 SERIES	BONDCOTE 350 SERIES	BONDCOTE 400 SERIES	BONDCOTE 500 SERIES
3. PRODUCT DESCRIPTION		ACRYLONITRILE BUTADIENE POLYMER BLEND (NBP)	ACRYLONITRILE BUTADIENE POLYMER BLEND (NBP)	ACRYLONITRILE BUTADIENE POLYMER BLEND (NBP)	ACRYLONITRILE BUTADIENE POLYMER BLEND (NBP)
4. THICKNESS	METHOD	ASTM D 751	ASTM D 751	ASTM D 751	ASTM D 751
	RESULTS	30 MILS	35 MILS	40 MILS	50 MILS
5. TENSILE STRENGTH	METHOD	ASTM D 751 GRAB METHOD ASTM D 882	ASTM D 751 GRAB METHOD ASTM D 882	ASTM D 751 GRAB METHOD ASTM D 882	ASTM D 751 GRAB METHOD ASTM D 882
	RESULTS	390 X 300 LBS. 6000 PSI	390 X 300 LBS. 6000 PSI	390 X 300 LBS. 6000 PSI	450 X 330 LBS. 7500 PSI
6. LAP JOINT METHOD	METHOD	ASTM D 751	ASTM D 751	ASTM D 751	ASTM D 751
	RESULTS	EXCEED PRODUCT STRENGTH	EXCEED PRODUCT STRENGTH	EXCEED PRODUCT STRENGTH	EXCEED PRODUCT STRENGTH
7. ELONGATION AT BREAK	METHOD	ASTM D 751	ASTM D 751	ASTM D 751	ASTM D 751
	RESULTS	30 X 35%	30 X 35%	30 X 35%	30 X 35%
8. TENSILE SET	METHOD				
	RESULTS				
9. LOW TEMPERATURE FLEXIBILITY	METHOD	ASTM D 2136	ASTM D 2136	ASTM D 2136	ASTM D 2136
	RESULTS	-40 F, NO CRACKS	-40 F, NO CRACKS	-40 F, NO CRACKS	-40 F, NO CRACKS
10. WATER ABSORPTION	METHOD	ASTM D 570	ASTM D 570	ASTM D 570	ASTM D 570
	RESULTS	<3%	<3%	<3%	<3%
11. DIMENSIONAL STABILITY AFTER WATER ABSORPTION	METHOD				
	RESULTS				
12. HEATING AGING	METHOD	ASTM D 3045	ASTM D 3045	ASTM D 3045	ASTM D 3045
	RESULTS	> 95% OF BREAKING STRENGTH > 90% OF ELONGATION	> 95% OF BREAKING STRENGTH > 90% OF ELONGATION	> 95% OF BREAKING STRENGTH > 90% OF ELONGATION	> 95% OF BREAKING STRENGTH > 90% OF ELONGATION
13. OZONE RESISTANCE	METHOD	ASTM D 1149, 100 PPHM, 104 F, 1/8" BENT LOOP	ASTM D 1149, 100 PPHM, 104 F, 1/8" BENT LOOP	ASTM D 1149, 100 PPHM, 104 F, 1/8" BENT LOOP	ASTM D 1149, 100 PPHM, 104 F, 1/8" BENT LOOP
	RESULTS	NO CRACKS, 7X MAGN.	NO CRACKS, 7X MAGN.	NO CRACKS, 7X MAGN.	NO CRACKS, 7X MAGN.
14. RESISTANCE TO ACCELERATED WEATHERING	METHOD	FS191, METHOD 5804, CARBON ASTM G 90 EMMAGUA	FS191, METHOD 5804, CARBON ASTM G 90 EMMAGUA	FS191, METHOD 5804, CARBON ASTM G 90 EMMAGUA	FS191, METHOD 5804, CARBON ASTM G 90 EMMAGUA
	RESULTS	NO CRACKING, 10,000 HOURS 4,000,000 LANGLEYS	NO CRACKING, 10,000 HOURS 4,000,000 LANGLEYS	NO CRACKING, 10,000 HOURS 4,000,000 LANGLEYS	NO CRACKING, 10,000 HOURS 4,000,000 LANGLEYS
15. DYNAMIC IMPACTING (PUNCTURING)	METHOD	FS 1018, METHOD 2031	FS 1018, METHOD 2031	FS 1018, METHOD 2031	FS 1018, METHOD 2031
	RESULTS	290 LBS.	290 LBS.	290 LBS.	325 LBS.
16. TEAR RESISTANCE	METHOD				
	RESULTS				
17. TEARING STRENGTH	METHOD	ASTM D 751, 8" X 10" SAMPLE	ASTM D 751, 8" X 10" SAMPLE	ASTM D 751, 8" X 10" SAMPLE	ASTM D 751, 8" X 10" SAMPLE
	RESULTS	115 X 110 LBS.	120 X 110 LBS.	125 X 115 LBS.	130 X 120 LBS.
18. LOW TEMPERATURE IMPACT	METHOD				
	RESULTS				
19. PERMEABILITY	METHOD	ASTM E 96, METHOD A	ASTM E 96, METHOD A	ASTM E 96, METHOD A	ASTM E 96, METHOD A
	RESULTS	0.22 US PERMS	0.22 US PERMS	0.22 US PERMS	0.22 US PERMS
20. DIMENSIONAL CHANGE AFTER STRESS RELAXATION	METHOD	ASTM D 1204	ASTM D 1204	ASTM D 1204	ASTM D 1204
	RESULTS	<0.5%	<0.5%	<0.5%	<0.5%
21. CONE PENETRATION	METHOD				
	RESULTS				
22. SEE MEMBRANE APPENDIX IF CHECKED		X	X	X	

Other Prefabricated Sheet-applied Membranes Part 2: Test Results

BONDCOTE ROOFING SYSTEMS	BONDCOTE ROOFING SYSTEMS	BONDCOTE ROOFING SYSTEMS	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED
BONDCOTE 600 SERIES	BONDCOTE 800 SERIES	BONDCOTE FLEECEBOND 1000	SURE-WELD REINFORCED .045	POLYEPICHLORHYDRIN ECO/CO
ACRYLONITRILE BUTADIENE POLYMER BLEND (NBP)	ACRYLONITRILE BUTADIENE POLYMER BLEND (NBP)	ACRYLONITRILE BUTADIENE POLYMER BLEND (NBP)	REINFORCED MOLECULAR BONDED POLYOLEFIN	NONREINFORCED POLYEPICHLOROHYDRIN
ASTM D 751	ASTM D 751	ASTM D 751	ASTM D 751	ASTM D412
60 MILS	80 MILS	100 MILS	0.045 IN.	60 MIL ±10%
ASTM D 751 GRAB METHOD ASTM D 882 465 X 350 LBS. 8000 PSI	ASTM D 751 GRAB METHOD ASTM D 882 490 X 400 LBS. 8500 PSI	ASTM D 751 GRAB METHOD ASTM D 882 390 X 300 LBS. 6000 PSI	ASTM D 751	ASTM D 412
EXCEED PRODUCT STRENGTH	EXCEED PRODUCT STRENGTH	EXCEED PRODUCT STRENGTH	HEAT WELD	1500 PSI (MIN)
ASTM D 751	ASTM D 751	ASTM D 751	RUPTURE OUTSIDE SEAM OVERLAP	
30 X 35%	30 X 35%	30 X 35%	ASTM D 751 (FABRIC RUPTURE)	ASTM D 412
			25%	200% (MIN)
ASTM D 2136	ASTM D 2136	ASTM D 2136	ASTM D 2137	ASTM D 746
-40 F, NO CRACKS	-40 F, NO CRACKS	-40 F, NO CRACKS	-50 F	-20F (MIN)
ASTM D 570	ASTM D 570	ASTM D 570	ASTM D 471 (7 DAYS @ 158 F)	
<3%	<3%	<3%	3.6%	
ASTM D 3045	ASTM D 3045	ASTM D 3045	ASTM D 573 (28 DAYS @ 240 F)	ASTM D 573,168 HRS @240F
> 95% OF BREAKING STRENGTH > 90% OF ELONGATION	> 95% OF BREAKING STRENGTH > 90% OF ELONGATION	> 95% OF BREAKING STRENGTH > 90% OF ELONGATION	TENSILE -300 LBF TEAR -70 LBF	1500PSI (MIN) TENSILE 150% (MIN) ELONGATION
ASTM D 1149, 100 PPHM, 104 F, 1/8" BENT LOOP NO CRACKS, 7X MAGN.	ASTM D 1149, 100 PPHM, 104 F, 1/8" BENT LOOP NO CRACKS, 7X MAGN.	ASTM D 1149, 100 PPHM, 104 F, 1/8" BENT LOOP NO CRACKS, 7X MAGN.	ASTM D 1149 (168 HOURS @ 100 mPa) NO CRACKS	ASTM D 1149, 100 PPHM @ 50% STRAIN 168 HRS @104 F NO CRACKS
FS191, METHOD 5804, CARBON ASTM G 90 EMMAGUA NO CRACKING, 10,000 HOURS 4,000,000 LANGLEYS	FS191, METHOD 5804, CARBON ASTM G 90 EMMAGUA NO CRACKING, 10,000 HOURS 4,000,000 LANGLEYS	FS191, METHOD 5804, CARBON ASTM G 90 EMMAGUA NO CRACKING, 10,000 HOURS 4,000,000 LANGLEYS	ASTM G 26 (4000 HOURS, 176 F)	
FS101B, METHOD 2031	FS101B, METHOD 2031	FS #1018 METHOD 2031	NO CRACKS	
350 LBS.	400 LBS.	290 LBS.		
				ASTM D 624 (DIE C)
ASTM D 751, 8" X 10" SAMPLE	ASTM D 751, 8" X 10" SAMPLE	ASTM D 751, 8" X 10" SAMPLE	ASTM D 751 (TONGUE TEAR)	150 LBF/IN (MIN)
140 X 130 LBS.	150 X 140 LBS.	125 X 115 LBS.	70 LBF	
ASTM E 96, METHOD A	ASTM E 96, METHOD A	ASTM E 96, METHOD A	ASTM E 96 (PROC. B OR BW)	ASTM E 96, PROC B OR BW
0.22 US PERMS	0.22 US PERMS	0.22 US PERMS	0.05 PERMS	2.5 PERM-MILS (MAX)
ASTM D 1204	ASTM D 1204	ASTM D 1204		
<0.5%	<0.5%	<0.5%		
		X		

Other Prefabricated Sheet-applied Membranes Part 2: Test Results

1. COMPANY NAME		CONSOLIDATED COATINGS CORP	CONSOLIDATED COATINGS CORP	CONSOLIDATED COATINGS CORP	CONSOLIDATED COATINGS CORP
2. PRODUCT NAME		E-Z ROOF PREMIUM WHITE	E-Z ROOF PREMIUM BLACK	E-Z ROOF WS WHITE	E-Z ROOF WS BLACK
3. PRODUCT DESCRIPTION					
4. THICKNESS	METHOD				
	RESULTS				
5. TENSILE STRENGTH	METHOD				
	RESULTS				
6. LAP JOINT METHOD	METHOD				
	RESULTS				
7. ELONGATION AT BREAK	METHOD				
	RESULTS				
8. TENSILE SET	METHOD				
	RESULTS				
9. LOW TEMPERATURE FLEXIBILITY	METHOD				
	RESULTS				
10. WATER ABSORPTION	METHOD				
	RESULTS				
11. DIMENSIONAL STABILITY AFTER WATER ABSORPTION	METHOD				
	RESULTS				
12. HEATING AGING	METHOD				
	RESULTS				
13. OZONE RESISTANCE	METHOD				
	RESULTS				
14. RESISTANCE TO ACCELERATED WEATHERING	METHOD				
	RESULTS				
15. DYNAMIC IMPACTING (PUNCTURING)	METHOD				
	RESULTS				
16. TEAR RESISTANCE	METHOD				
	RESULTS				
17. TEARING STRENGTH	METHOD				
	RESULTS				
18. LOW TEMPERATURE IMPACT	METHOD				
	RESULTS				
19. PERMEABILITY	METHOD				
	RESULTS				
20. DIMENSIONAL CHANGE AFTER STRESS RELAXATION	METHOD				
	RESULTS				
21. CONE PENETRATION	METHOD				
	RESULTS				
22. SEE MEMBRANE APPENDIX IF CHECKED					

Other Prefabricated Sheet-applied Membranes Part 2: Test Results

COOLEY ENGINEERED MEMBRANES	COOLEY ENGINEERED MEMBRANES	DURO-LAST INC.	DURO-LAST INC.	ERSYSTEMS
C3	RAM	DURO-LAST 40 MIL	DURO-LAST 45 MIL	PERMAWELD FLEECE-BACKED
TRI-POLYMER ALLOY ELVALOY KEE	TRI-POLYMER ALLOY ELVALOY KEE	PVC BLEND REINFORCED WITH POLYESTER FABRIC	PVC BLEND REINFORCED WITH POLYESTER FABRIC	CPA MEMBRANE REINFORCED W/ POLYESTER FLEECE FABRIC
ASTM D 751	ASTM D 751	ASTM D 751	ASTM D 751	ASTM D 751
40 MILS	45 MILS	40 MILS NOMINAL	45 MILS	40 MILS NOM.
ASTM D 751, GRAB	ASTM D 751, GRAB	ASTM D 751, GRAB METHOD	ASTM D 751, GRAB METHOD	ASTM D 882
300 X 300 LBS.	350 X 325 LBS.	ASTM D882 435 X 350 LBS. 7200 PSI	ASTM D882 450 X 380 LBS. 7200 PSI	ASTM D 751 300 X 325 LBS. 8,000 PSI
ASTM D 638	ASTM D 638	ASTM D 751	ASTM D 751	ASTM D 751
90%	90%	350 LBS. (MIN)	350 LBS. (MIN)	> 350 LBS.
ASTM D 751	ASTM D 751	ASTM D 751	ASTM D 751	ASTM D 751
17% X 19%	40% X 30%	27%	27%	35%
ASTM D 2136	ASTM D 2136	ASTM D 2136	ASTM D 2136	ASTM D 2136
-40 F, PASS	-40 F, PASS	-40 F, NO CRACKS	-40 F, NO CRACKS	-40 F, PASS
ASTM D 570	ASTM D 570	ASTM D 570	ASTM D 570	ASTM D 570 @ 70 F
7 DAYS @ 158 F	7 DAYS @ 158 F	< 2%	< 2%	@ 122 F 48 HOURS
1% MAX.	1% MAX.			1.4%
		ASTM D 1204	ASTM D 1204	ASTM D 570
		< 1% CHANGE	< 1% CHANGE	NO CHANGE
ASTM D 3045	ASTM D 3045	ASTM D 3045	ASTM D-3045	14 DAYS @ 175 F
80% X 80%	80% X 80%	7 DAYS 194 F 100% BREAKING STRENGTH > 95% ELONGATION	7 DAYS 194 F 100% BREAKING STRENGTH > 95% ELONGATION	4,500,000 LANGLEYS OF TENSILE STRENGTH
ASTM D 1149	ASTM D 1149	ASTM D 1149, 100 PPHM, 1/8", 104 F-7 DAYS NO CRACKS, 7X	ASTM D 1149, 100 PPHM, 1/8", 104 F-7 DAYS NO CRACKS, 7X	
PASS, NO CRACKS, 7X MAGNIFICATION	PASS, NO CRACKS, 7X MAGNIFICATION			
ASTM D 882, ASTM 838	ASTM D882, ASTM 838	A. FS 191, MET 5804, CARBON A B. ASTM E 838	A. FS 191, MET 5804, CARBON A B. ASTM E 838	ASTM D 2565
PASS (2 MILLION LANGLEYS)	PASS (2 MILLION LANGLEYS)	A. NO CRACKING 6000 HRS B. > 6.2 MILLION LANGLEYS	A. NO CRACKING 6000 HRS B. > 6.2 MILLION LANGLEYS	ASTM E 838
FS 1018 METHOD 2031	FS 1018 METHOD 2031	FS 1018, METHOD 2031	FS 1018, METHOD 2031	20,000 HOURS
280 LB.	280 LB.	250 LBS.	350 LBS.	4.5 MILLION LANGLEYS
ASTM D 751	ASTM D 751	ASTM D 751, TONGUE	ASTM D 751, TONGUE	FS 101B, METHOD 2031
100 LB. X 100 LB.	100 LB. X 100 LB.	8 X 8 SPECIMEN 130 X 110 LBS.	8 X 8 SPECIMEN 140 X 120 LBS.	225 LBS.
ASTM D 751	ASTM D 751	ASTM D 751, TONGUE	ASTM D 751, TONGUE	ASTM D 751
100 X 100 LBS.	100 X 100 LBS.	8 X 8 SPECIMEN 130 X 110 LBS.	8 X 8 SPECIMEN 140 X 120 LBS.	90 X 120 LBS.
CTM 028	CTM 028	ASTM D 2136, -40 F	ASTM D 2136, -40 F	ASTM D 751
-20 F, NO CRACKS	-20 F, NO CRACKS	NO CRACKING	NO CRACKING	120 LBS.
ASTM E 96	ASTM E96	A. ASTM E 96, PRO BW B. ASTM E 96, WVT, PROC B, M, A	A. ASTM E 96, PRO BW B. ASTM E 96, WVT, PROC B, M, A	ASTM D 2136, -30 F
0.003 PERMS	0.003 PERMS	A. 0.30 US PERMS B. 0.087 G/HR/MXM	A. 0.24 PERMS B. 0.07 G/HR/MXM	NO CRACK
ASTM D 1204, 6 HRS @ 176 F	ASTM D 1204, 6 HRS @ 176 F			ASTM E 96, PROC A
0.3%	0.3%			0.2 US PERMS
				ASTM D 1204
				0.2%
				X

Other Prefabricated Sheet-applied Membranes Part 2: Test Results

1. COMPANY NAME		ERSYSTEMS	FLEX MEMBRANE INT'L INC.	FLEX MEMBRANE INT'L INC.	GENFLEX ROOFING SYSTEMS
2. PRODUCT NAME		PERMAWELD	FLEX FB ELVALOY	FLEX MF/R ELVALOY	GENFLEX TPO .045
3. PRODUCT DESCRIPTION		POLYESTER-REINFORCED CPA	POLYESTER REINFORCED WITH FLEECE ELVALOY KEE	POLYESTER REINFORCED WITH FLEECE ELVALOY KEE	TPO THERMOPLASTIC OLEFIN
4. THICKNESS	METHOD	ASTM D 751	ASTM D 751	ASTM D 751, GRAB	ASTM D 751
	RESULTS	40 MIL NOM.	45 MIL NOM.	40 MIL NOM.	0.04 IN.
5. TENSILE STRENGTH	METHOD	ASTM D 751	ASTM D 751, GRAB	ASTM D 751	ASTM D 751
	RESULTS	ASTM D 882 315 X 325 LBS. 7,450 PSI	> 340 LBS.	235 LBS.	225 LB./F
6. LAP JOINT METHOD	METHOD	ASTM D 751	ASTM D 638	ASTM D 751	HEAT WELD
	RESULTS	> 350 LBS.	90 %	> 400 LBS.	
7. ELONGATION AT BREAK	METHOD	ASTM D 751	ASTM D 751	ASTM D 751	ASTM D 412 DIEC
	RESULTS	35% X 35%	> 28%	> 28%	500% ULTIMATE
8. TENSILE SET	METHOD				
	RESULTS				
9. LOW TEMPERATURE FLEXIBILITY	METHOD	ASTM D 2136 -30 F	ASTM D 2136	ASTM D 2136	
	RESULTS	NO CRACKS U	-40 F, PASS	-40 F, PASS	
10. WATER ABSORPTION	METHOD	ASTM D 570 @ 70 F @122 F 48 HOURS	ASTM D 570	ASTM D 570	ASTM D 471
	RESULTS	> 1%	1.5% MAX.	1.5% MAX.	±4%
11. DIMENSIONAL STABILITY AFTER WATER ABSORPTION	METHOD	ASTM D 570			
	RESULTS	NO CHANGE			
12. HEATING AGING	METHOD	14 DAYS @ 175 F	ASTM D 0573	ASTM D 3045	ASTM D 573
	RESULTS	100% STRENGTH RETENTION, NO CRACKING, CRAZING, BLISTERING	90% STRENGTH RETENTION OF ORIGINAL	90% STRENGTH RETENTION OF ORIGINAL	TENSILE STRENGTH 225 LB./F
13. OZONE RESISTANCE	METHOD		ASTM D 1149	3 DAYS @ 100 PPHM - 100 F AND 3 DAYS @ 300 PPHM - 100 F	ASTM D 1149
	RESULTS		PASS, NO CRACKS, 7X MAGNIFICATION	NO CRACKING	PASS
14. RESISTANCE TO ACCELERATED WEATHERING	METHOD	ASTM D 2565 ASTM E 838	ASTM D 2565 (XENON ARC)	ASTM D 2565 (XENON ARC)	ASTM D 26 ASTM G 23
	RESULTS	15,000 HOURS 4 MILLION LANGLEYS	10 M HRS. NO CHANGE	10 M HRS. NO CHANGE	PASS
15. DYNAMIC IMPACTING (PUNCTURING)	METHOD	FS 101B, METHOD 2031	FS 101B, METHOD 2031	FS 101B, METHOD 2031	
	RESULTS	250 LBS.	260 LBS.	260 LBS.	
16. TEAR RESISTANCE	METHOD	ASTM D 751, 8-IN. X 8-IN. SAMPLE	ASTM D 751	ASTM D 751	
	RESULTS	110 LBS.	100 X 100 LBS.	120 X 120 LBS.	
17. TEARING STRENGTH	METHOD	ASTM D 751, 8-IN. X 8-IN. SAMPLE	ASTM D 751	ASTM D 751	ASTM D 751, PROCEDURE B
	RESULTS	110 LBS.	100 X 100 LBS.	120 X 120 LBS.	55 LB./F
18. LOW TEMPERATURE IMPACT	METHOD	ASTM D 2136, -30 F	ASTM D 2136	ASTM D 2136	ASTM D 2137
	RESULTS	NO CRACK	-40 F, NO CRACKS	-40 F, NO CRACKS	-40 F
19. PERMEABILITY	METHOD	ASTM E 96, PROC A	ASTM E 96	ASTM E 96	
	RESULTS	1.39 G/MXM/24	WATER VAPOR TRANSMISSION 3.5/M ² /DAY	WATER VAPOR TRANSMISSION 3.5/M ² /DAY	
20. DIMENSIONAL CHANGE AFTER STRESS RELAXATION	METHOD		ASTM D 1204	ASTM D 1204	ASTM D 1204
	RESULTS		< 0.5%	< 0.5%	±2%
21. CONE PENETRATION	METHOD			37-GP-54	
	RESULTS			PASS	
22. SEE MEMBRANE APPENDIX IF CHECKED		X			

Other Prefabricated Sheet-applied Membranes Part 2: Test Results

GENFLEX ROOFING SYSTEMS	HYLOAD, INC.	HYLOAD, INC.	HYLOAD, INC.	HYLOAD, INC.
GENFLEX TPO .060	HYLOAD 250	HYLOAD SAM	ALPROOF	ALPROOF CP
TPO	POLYESTER REINFORCED KEE	POLYESTER REINFORCED KEE	POLYESTER REINFORCED KEE	POLYESTER REINFORCED KEE
THERMOPLASTIC OLEFIN				
ASTM D 751	ASTM D 2083	ASTM D 2083	ASTM D 2083	ASTM D 2083
0.060 IN.	60 MIL	60 MIL	60 MIL	60 MIL
ASTM D 751	ASTM D 412	ASTM D 412	ASTM D 412	ASTM D 412
225 LB./F	1600 LB/SQ.IN	1500 LB/SQ.IN	1600 LB/SQ.IN	1600 LB/SQ.IN
HEAT WELD	HEAT WELD	SELF-ADHERED	HEAT WELD	HEAT WELD
ASTM D 412 DIEC	ASTM D 412	ASTM D 412	ASTM D 412	ASTM D 412
500% ULTIMATE	170%	170%	170%	170%
	CGSB 37GP56M	CGSB 37GP56M	CGSB 37GP56M	CGSB 37-GP56M
	PASS	PASS	PASS	PASS
ASTM D 471				
±4%				
ASTM D 573				
TENSILE STRENGTH 225 LB./F				
ASTM D 1149				
PASS				
ASTM D 26	CGSB37-GP56M	CGSB37-GP56M	CGSB37-GP56M	CGSB 37-GP56M
ASTM G 23	PASS	PASS	PASS	PASS
PASS				
	CGSB37-GP56M	CGSB37-GP56M	CGSB37-GP56M	CGSB 37-GP56M
	PASS	PASS	PASS	PASS
	ASTM D 624	ASTM D 624	ASTM D 624	ASTM D 624
	330 LBS.	270 LBS.	330 LBS.	330 LBS.
ASTM D 751, PROCEDURE B				
55 LB./F				
ASTM D 2137				
-40 F				
	WATER VAPOR TRANSMISSION	WATER VAPOR TRANSMISSION	WATER VAPOR TRANSMISSION	WATER VAPOR TRANSMISSION
	ASTM E 96 PROC A	ASTM E 96 PROC A	ASTM E 96 PROC A	ASTM E 96 PROC A
	0.136/GRAINS/IN. HG. SQ. FT.	0.136/GRAINS/IN. HG. SQ. FT.	0.136/GRAINS/IN. HG. SQ. FT.	0.136/GRAINS/IN. HG. SQ. FT.
ASTM D 1204				
±2%				

Other Prefabricated Sheet-applied Membranes Part 2: Test Results

1. COMPANY NAME		HYLOAD, INC.	HYLOAD, INC.	HYLOAD, INC.	HYLOAD, INC.
2. PRODUCT NAME		HYLOAD 150E	ALPSAM WS	HYLOAD WS	ALPSAM
3. PRODUCT DESCRIPTION		POLYESTER REINFORCED KEE	POLYESTER REINFORCED KEE	POLYESTER REINFORCED KEE	POLYESTER REINFORCED KEE
4. THICKNESS	METHOD	ASTM D 2083	ASTM D 2083	ASTM D 2083	ASTM D 2083
	RESULTS	60 MIL	60 MIL	75 MIL	60 MIL
5. TENSILE STRENGTH	METHOD	ASTM D 412	ASTM D 412	ASTM D 412	ASTM D 412
	RESULTS	1600 LB/SQ.IN	1500 LB/SQ.IN	1500 LB/SQ.IN	1300 LB/SQ.IN
6. LAP JOINT METHOD	METHOD	HEAT WELD	HEAT WELD	HEAT WELD	SELF-ADHERED
	RESULTS				
7. ELONGATION AT BREAK	METHOD	ASTM D 412	ASTM D 412	ASTM D 412	ASTM D412
	RESULTS	170%	170%	170%	170%
8. TENSILE SET	METHOD				
	RESULTS				
9. LOW TEMPERATURE FLEXIBILITY	METHOD	CGSB 37-GP56M	CGSB 37-GP56M	CGSB 37-GP56M	CGSB 37-GP56M
	RESULTS	PASS	PASS	PASS	PASS
10. WATER ABSORPTION	METHOD				
	RESULTS				
11. DIMENSIONAL STABILITY AFTER WATER ABSORPTION	METHOD				
	RESULTS				
12. HEATING AGING	METHOD				
	RESULTS				
13. OZONE RESISTANCE	METHOD				
	RESULTS				
14. RESISTANCE TO ACCELERATED WEATHERING	METHOD	CGSB 37-GP56M	CGSB 37-GP56M	CGSB 37-GP56M	CGSB 37-GP56M
	RESULTS	PASS	PASS	PASS	PASS
15. DYNAMIC IMPACTING (PUNCTURING)	METHOD	CGSB 37-GP56M	CGSB 37-GP56M	CGSB 37-GP56M	CGSB 37-GP56M
	RESULTS	PASS	PASS	PASS	PASS
16. TEAR RESISTANCE	METHOD	ASTM D 624	ASTM D 624	ASTM D 624	ASTM D 624
	RESULTS	330 LBS.	165 LBS.	165 LBS.	165 LBS.
17. TEARING STRENGTH	METHOD				
	RESULTS				
18. LOW TEMPERATURE IMPACT	METHOD				
	RESULTS				
19. PERMEABILITY	METHOD	WATER VAPOR TRANSMISSION ASTM E 96 PROC A	WATER VAPOR TRANSMISSION ASTM E 96 PROC A	WATER VAPOR TRANSMISSION ASTM E 96 PROC A	WATER VAPOR TRANSMISSION ASTM E 96 PROC A
	RESULTS	0.136/GRAINS/IN. HG. SQ. FT.	0.136/GRAINS/IN. HG. SQ. FT.	0.136/GRAINS/IN. HG. SQ. FT.	0.136/GRAINS/IN. HG. SQ. FT.
20. DIMENSIONAL CHANGE AFTER STRESS RELAXATION	METHOD				
	RESULTS				
21. CONE PENETRATION	METHOD				
	RESULTS				
22. SEE MEMBRANE APPENDIX IF CHECKED					

Other Prefabricated Sheet-applied Membranes Part 2: Test Results

HYLOAD, INC.	SEAL-DRY/USA, INC.	SEAL-DRY/USA, INC.	SEAMAN CORP.	STEVENS ROOFING SYSTEMS
PMVB	SEAL-DRY SYSTEM 5000	SEAL-DRY SYSTEM 3000	FIBERTITE	HI-TUFF/EP .045
POLYESTER REINFORCED KEE	POLYESTER REINFORCED CPA	POLYESTER REINFORCED CPA	POLYESTER REINFORCED EIP	REINFORCED TPO
70 MIL	ASTM D 751 40 MIL NOM	ASTM D 751 40 MIL NOM	ASTM D 751 36 MILS NOM	ASTM D 751 0.045 IN.
ASTM D 412 1500 LB/SQ.IN	A. ASTM D 751, GRAB METHOD B. ASTM D 882 A. 315 X 325 LBS. B. 8000 PSI	A. ASTM D 751 B. ASTM D882 A. 315 X 325 LBS. B. 8000 PSI	A. ASTM D 882 B. ASTM D 751, GRAB METHOD A. 8500 PSI B. 450 LBS. X 450 LBS.	ASTM D 751 (BREAK STRENGTH) 310 LB./F
SELF-ADHERED	ASTM D 751 >350 LBS.	ASTM D 751 >350 LBS.	ASTM D 751 >400 LBS.	HEAT WELD RUPTURE OUTSIDE SEAM OVERLAP
ASTM D 412 170%	ASTM D 751 35% X 35%	ASTM D 751 35% X 35%	ASTM D 751 20% WARP, 30% FILL	ASTM D 412 700%
CGSB 37-GP56M	ASTM D 2136 -30 F	ASTM D 2136 -30 F	ASTM D 2136	ASTM D 2137
PASS	NO CRACKS	NO CRACKS	-30 F, NO CRACKS	-45 C
	ASTM D 570 @ 70 F, @ 122 F, 48 HRS. < 1.0%	ASTM D 570 @ 70 F, @ 122 F, 48 HRS. <1.0%	ASTM D 471 14 DAYS @ 70 C 1%	ASTM D 471 (7 DAYS @ 158 F) 2%
	ASTM D 570 NO CHANGE	ASTM D 570 NO CHANGE		
	14 DAYS @ 175 F, 100% STRENGTH RETAINED NO CRACKING, CRAZING, BLIST	14 DAYS @ 175 F, 100% STRENGTH RETAINED NO CRACKING, CRAZING, BLIST	160 F-7 DAYS >95% STRENGTH RETENTION	ASTM D 573 (28 DAYS @ 212 F) BREAK: 275 LB./F
			3 DAYS@100PPHM-100 F & 3 DAYS@300PPHM-100 F NO CRACKING	ASTM D 1149 PASS
CGSB37-GP56M	A. ASTM D 2565 WEATHER MTR B. ASTM E 838 (DSET) A. 15,000 HRS. B. 4,500,000 LANGLEYS	A. ASTM D 2565 WEATHER MTR B. ASTM E 838 (DSET) A. 15,000 HRS. B. 4,500,000 LANGLEYS	A. FS191, MTHD. 5804, CARBON ARC B. ASTM E 838 A. 5,000 HOURS, NO CRACKING B. 3 MILLION LANGLEYS	ASTM G-26 (4000 HRS. @ 176 F) PASS
CGSB 37-GP56M	FS 101B, METHOD 2031	FS 101B, METHOD 2031	FS 1018, METHOD 2031	FTM 101 B
PASS	250 LBS.	250 LBS.	250 LBS.	350 LB./F
ASTM D 624 165 LBS.	ASTM D 751, 8" X 8" SAMPLE 125 LBS.	ASTM D 751, 8" X 8" SAMPLE 125 LBS.	ASTM D 751, 8" X 10" SAMPLE 120 X 120	
	ASTM D 751, 8" X 8" SAMPLE 110 LBS.	ASTM D 751, 8" X 8" SAMPLE 110 LBS.	ASTM D 751, 8" X 10" SAMPLE 120 X 120	ASTM D 751 (PROCEDURE B) 100 LB./F
	ASTM D 2136 -30 F NO CRACK	ASTM D 2136 -30 F NO CRACK	ASTM D 2136,-30 F NO CRACKING	
WATER VAPOR TRANSMISSION ASTM E 96 PROC A 0.136/GRAINS/IN. HG. SQ. FT.	ASTM E 96, PROC A 1.39 G/MXM/24H	ASTM E 96, PROC A 1.39 G/MXM/24H	WATER VAPOR TRANSMISSION, ASTM E 96, PROC A 1.3 G/MXM/24H	ASTM E 96 (PROCEDURE B) 0.035 PERMS
			37-GP-54M SHALL NOT CHANGE MORE THAN 0.24	
			37-GP-54M PASS	
			X	

Other Prefabricated Sheet-applied Membranes Part 2: Test Results

1. COMPANY NAME		STEVENS ROOFING SYSTEMS	UNIROOF CORPORATION	UNIROOF CORPORATION	VERSICO INCORPORATED
2. PRODUCT NAME		HI-TUFF/EP .060	TRAFFIGARD	FORMFLEX	VERSIWELD
3. PRODUCT DESCRIPTION		REINFORCED TPO	FIBERGLASS REINFORCED ACRYLIC	ACRYLIC	TPO THERMOPLASTIC OLEFIN
4. THICKNESS	METHOD	ASTM D 751			ASTM D412
	RESULTS	0.060 IN.			1.0 MM MIN 0.039 IN. MIN
5. TENSILE STRENGTH	METHOD	ASTM D 751 (BREAK STRENGTH)	ASTM D 2370		ASTM D 412 DIE C
	RESULTS	310 LB./F	211 N		12.0 MPH MIN 1740 PSI MIN
6. LAP JOINT METHOD	METHOD	HEAT WELD			HEAT WELD
	RESULTS	RUPTURE OUTSIDE SEAM OVERLAP			
7. ELONGATION AT BREAK	METHOD	ASTM D 412	ASTM D 2370		ASTM D 412 DIE C
	RESULTS	700%	740% (NONREINFORCED)		500% MIN
8. TENSILE SET	METHOD				ASTM D 412 METHOD A DIE C
	RESULTS				10% max
9. LOW TEMPERATURE FLEXIBILITY	METHOD	ASTM D 2137			ASTM D 2137
	RESULTS	-45 C			-34° C -30° F
10. WATER ABSORPTION	METHOD	ASTM D 471 (7 DAYS @ 158 F)			ASTM D471 at 70 C FOR 166 HRS
	RESULTS	2%			+4, -4
11. DIMENSIONAL STABILITY AFTER WATER ABSORPTION	METHOD				
	RESULTS				
12. HEATING AGING	METHOD	ASTM D 573 (28 DAYS @ 212 F)			ASTM D 571 AGE TENSILE
	RESULTS	BREAK: 275 LB./F			1,740 PSI
13. OZONE RESISTANCE	METHOD	ASTM D 1149			ASTM D 1149
	RESULTS	PASS			PASS
14. RESISTANCE TO ACCELERATED WEATHERING	METHOD	ASTM G-26 (4000 HRS. @ 176 F)			ASTM G26
	RESULTS	PASS			PASS
15. DYNAMIC IMPACTING (PUNCTURING)	METHOD	FTM 101 B			FTM101C METHOD 2065
	RESULTS	350 LB./F			45 PSI MIN
16. TEAR RESISTANCE	METHOD				ASTM D 624 DIE C
	RESULTS				60 KN/ML 340 LBF/IN
17. TEARING STRENGTH	METHOD	ASTM D 751 (PROCEDURE B)			
	RESULTS	100 LB./F			
18. LOW TEMPERATURE IMPACT	METHOD				ASTM D 1822
	RESULTS				21 FT/LB/IN ² MIN
19. PERMEABILITY	METHOD	ASTM E 96 (PROCEDURE B)			BS3117:1959
	RESULTS	0.035 PERMS			0.02 GM/M ² /DAY
20. DIMENSIONAL CHANGE AFTER STRESS RELAXATION	METHOD				ASTM D1204 AT 212° F
	RESULTS				+2, -2
21. CONE PENETRATION	METHOD				
	RESULTS				
22. SEE MEMBRANE APPENDIX IF CHECKED					X

Other Prefabricated Sheet-applied Membranes Part 2: Test Results

VERSICO INCORPORATED	VERSICO INCORPORATED
VERSIWELD PREMIER	VERSIWELD II
TPO	
THERMOPLASTIC OLEFIN	
ASTM D412	
0.385 MM MIN	
0.015 IN. MIN	
ASTM 0751 GRAB METHOD	
1 KN	
225 LBF	
HEAT WELD	
ASTM D 412 DIE C	
15% MIN FOR REINFORCING	
FABRIC ONLY	
ASTM D471 at 70 C FOR 166 HRS	
+4, -4 ON EXPOSED SURFACE	
ASTM D 573 AGE BREAKING	
STRENGTH	
1-0 KN	
225 LBF	
ASTM D 1149	
PASS	
ASTM D751 PROCEDURE B	
55 N	
245 LBF	
ASTM D1204 AT 212° F	
+2, -2	

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

1. COMPANY NAME	ALDO PRODUCTS CO. INC.	ALDO PRODUCTS CO. INC.	ALDO PRODUCTS CO. INC.	ALDO PRODUCTS CO. INC.	ANDEK CORP.
2. PRODUCT NAME	ALDOCOAT 374 BASE	ALDOCOAT 374 TOP	ALDOCOAT 384 BASE/TOP	ALDOCOAT 384 BASE/TOP	R.A.C.
3.1 COATING DESCRIPTION					
A. ACRYLIC	X	X			
B. BUTYL					
C. HYPALON					
D. NEOPRENE					
E. SILICONE					
F. URETHANE			X	X	X
G. VINYL					
H. MODIFIED ASPHALT					
I. OTHER (type)					
3.2 VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	YES	YES	YES	YES	NO
3.3 COLORS AVAILABLE	GREY	WHITE		ALUMINUM	SILVER
4. NAME OF PRODUCT: BASE COATING	ALDOCOAT 374 GRAY		ALDOCOAT 384		R.A.C.
TOP COATING		ALDOCOAT 374 WHITE		ALDOCOAT 384	R.A.C.
5. NUMBER OF COATING APPLICATIONS REQUIRED					
BASE COATINGS	1		1		1
TOP COATINGS		1		1	1
GRANULES REQUIRED (yes, no, or optional)			OPTIONAL	OPTIONAL	NO
6. REQUIRED DRY FILM THICKNESS: (mils)					
BASE COATING	13 – 15		13 – 15		15
TOP COATING		13 – 15		13 – 15	15
7. FILM CURE TIME					
BASE COATING	8 HOURS		6 HOURS		8 HOURS
TOP COATING		12 HOURS		8 HOURS	8 HOURS
8. MINIMUM SLOPE REQUIRED (inches per foot)	1/8"	1/8"	1/8"	1/8"	NONE
9. REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required)					
A. CONCRETE DECKS	X	X	X	X	X
B. PLYWOOD DECKS	X	X	X	X	P
C. METAL DECKS	X	X	X	X	X
D. EXISTING SPUDDED BUILT-UP ROOFING	P	P	P	P	X
E. OTHER COATINGS	X	X	X	X	X
10. FLASHING MATERIAL (type or self-flashing)	SELF	SELF	SELF	SELF	SELF
11. APPLICATION CONDITIONS					
RECOMMENDED AMBIENT AIR TEMPERATURE RANGE (degrees F)	40 – 85	40 – 85	40 – 85	40 – 85	30 – 100
MAXIMUM PERMITTED WIND VELOCITY WITHOUT SCREEN (mph)	10	10	10	10	10
MAXIMUM PERMITTED WIND VELOCITY WITH WIND SCREEN (mph)	15	15	15	15	15
12. APPLICATION EQUIPMENT REQUIREMENTS					
SINGLE-COMPONENT AIRLESS SPRAY	X	X	X	X	X
MULTIPLE-COMPONENT AIRLESS SPRAY					
OTHER (roller, brush, etc.)	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH
13. RESTRICTED REGIONS (yes/none)	NONE	NONE	NONE	NONE	NONE
14. RESTRICTED BUILDING USES (yes/none)	YES	YES	NONE	NONE	NONE
15. RECOMMENDED RECOATING SCHEDULE (years or none)	5	5	5	5	10
16. PHYSICAL PROPERTIES OF THE COATING					
TENSILE STRENGTH PER ASTM D 412 OR OTHER (psi)	450	450	950	950	620
ELONGATION PER ASTM D 412 OR OTHER (%)	315	315	300	300	570
IMPACT RESISTANCE PER ASTM D 2794 OR OTHER (inch lbs)	160	160	160	160	210
ACCELERATED WEATHERING PER ASTM D 822 OR OTHER (color change)			NO CHANGE	NO CHANGE	NO CHANGE
HEAT AGING PER ASTM D 573 OR OTHER (%)					NONE
WATER ABSORPTION PER ASTM D 570 OR OTHER (%)	0.5 MAX	0.5 MAX	0.3 MAX	0.3 MAX	NONE
17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)	YES	YES	YES	YES	YES
18. FOAM INSULATION REQUIREMENTS					
MINIMUM THICKNESS (inches)	1	1	1	1	1
NOMINAL DENSITY PER ASTM D 1622 OR OTHER (lbs/ft³)	2.5 – 3.5	2.5 – 3.5	2.5 – 3.5	2.5 – 3.5	2.5 – 3.5
COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi)	40 MIN.	40 MIN.	40	40	40 MIN.
CLOSED CELL CONTENT PER ASTM D 2856 OR OTHER (%)	90 MIN.	90 MIN.	90	90	90 MIN.
19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)	NO	NO	NO	NO	NO
20. YEAR OF FIRST COMMERCIAL USE	1980	1980	1980	1980	1978
21. NUMBER OF SQUARES INSTALLED (100 ft²)	100,000	100,000	100,000	100,000	140,000
22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	YES	YES	YES	YES	YES
23. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT
24. NUMBER OF REGIONAL SERVICE LOCATIONS	5	5			5
25. FOR SALES INFORMATION, CONTACT:	R. MANN	R. MANN	R. MANN	R. MANN	HARVEY LISS
FOR TECHNICAL INFORMATION, CONTACT:	W. KRAMER	W. KRAMER	W. KRAMER	W. KRAMER	NEIL SHEARER
26. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

ANDEK CORP.	ANDEK CORP.	ANDEK CORP.	CONKLIN CO. INC.	CONKLIN CO. INC.	CONKLIN CO. INC.	CONKLIN CO. INC.	CONKLIN CO. INC.	CONKLIN CO. INC.
R.A.C. OZ	POLAROOF NW	POLAROOF AC	RAPID ROOF III BASE COAT	RAPID ROOF III TOP COAT	POLYTUFF II BASE COAT	POLYTUFF II TOP COAT	BENCHMARK BASE COAT	BENCHMARK TOP COAT
		X	X	X		X	X	X
X					X			
ETHYLENE ELASTOMER								
NO SILVER	YES ANY COLOR	NO ANY COLOR	NO TAN	NO WHITE	YES SILVER, GRAY	YES WHITE	YES BLUE	YES WHITE
R.A.C. OZ	POLAROOF NW	POLAROOF AC	RAPID ROOF III BASE COAT	RAPID ROOF III TOP COAT	POLYTUFF II BASE COAT	POLYTUFF II TOP COAT	BENCHMARK BASE COAT	BENCHMARK TOP COAT
R.A.C. OZ	POLAROOF NW	POLAROOF AC						
1 1 NO	1 1 NO	1 1 NO	1 OPTIONAL	1 OPTIONAL	1 NO	1 NO	1 OPTIONAL	1 OPTIONAL
15 15	12 12	15 15	13	12	16.0	4.0	13.5	13.5
8 HOURS	14	2	2 – 8 HOURS		2 – 4 HOURS		2 – 8 HOURS	
8 HOURS	16	1	2 – 8 HOURS		30 MINS		2 – 8 HOURS	
NONE	NONE	2	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
X	P	P	P	P	P	P	P	P
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF
20 – 100 10 15	0 – 90 10 15	45 – 90 10 15	50 – 100 15 25	50 – 100 15 25	40 – 100 15 25	40 – 100 15 25	50 – 100 15 25	50 – 100 15 25
X	X	X	X	X	X	X	X	X
ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER	ROLLER	ROLLER	ROLLER	ROLLER	ROLLER
NONE NONE 10	NONE YES 10	NONE YES 10	NONE YES 10+	NONE YES 10+	NONE NONE 10+	NONE NONE 10+	NONE NONE 10+	NONE NONE 10+
1400 570 630 NO CHANGE NONE NONE	864 550 280 NO CHANGE NONE NONE	250 500 120 NO CHANGE NONE 1.3%	67 377 160 NO CHANGE	201 262 160 NO CHANGE	1400 630 160 NO CHANGE	1400 630 160 NO CHANGE	325 375 160 NO CHANGE	476 118 160 NO CHANGE
YES	NO	YES	YES	YES	YES	YES	YES	YES
1 2.5 – 3.5 40 MIN. 90 MIN.	2 2.5 – 3.5 40 MIN. 90 MIN.	1 2.5 – 3.5 40 MIN. 90 MIN.	1 2.5 – 3.0 40 MIN. 90 MIN.	1 2.5 – 3.0 40 MIN. 90 MIN.	1 2.5 – 3.0 40 MIN. 90 MIN.	1 2.5 – 3.0 40 MIN. 90 MIN.	1 2.5 – 3.0 40 MIN. 90 MIN.	1 2.5 – 3.0 40 MIN. 90 MIN.
NO	NO	NO	NO	NO	NO	NO	NO	NO
1988 35,000	1985 44,000	1996 20	1994 > 250,000	1994 > 250,000	1982 > 150,000	1982 > 150,000	1991 > 450,000	1991 > 450,000
YES DISTRS, DIRECT 5	YES DISTRS, DIRECT 5	YES DISTRS, DIRECT 5	NO DISTRIBUTORS 5	NO DISTRIBUTORS 5	NO DISTRIBUTORS 5	NO DISTRIBUTORS 5	NO DISTRIBUTORS 5	NO DISTRIBUTORS 5
HARVEY LISS	HARVEY LISS	HARVEY LISS	BUILD. PRODS. 800/394-6076	BUILD. PRODS. 800/394-6076	BUILD. PRODS. 800/394-6076	BUILD. PRODS. 800/394-6076	BUILD. PRODS. 800/394-6076	BUILD. PRODS. 800/394-6076
NEIL SHEARER	NEIL SHEARER	NEIL SHEARER	BUILD. PRODS. 800/394-6076	BUILD. PRODS. 800/394-6076	BUILD. PRODS. 800/394-6076	BUILD. PRODS. 800/394-6076	BUILD. PRODS. 800/394-6076	BUILD. PRODS. 800/394-6076

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

1. COMPANY NAME	DOW CORNING CORPORATION	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS
2. PRODUCT NAME	DOW CORNING 3-5000 SILICONE ROOF COATING	ERATHANE 300 BASE	ERATHANE 300	ERAGUARD 4000	ERATHANE 300
3.1 COATING DESCRIPTION A. ACRYLIC B. BUTYL C. HYPALON D. NEOPRENE E. SILICONE F. URETHANE G. VINYL H. MODIFIED ASPHALT I. OTHER (type)	X	X	X	X	X
3.2 VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	NO	GRAY	GRAY	GRAY AND WHITE	GRAY
3.3 COLORS AVAILABLE	DARK GREY, GREY, BEIGE	GRAY	GRAY	GRAY AND WHITE	GRAY
4. NAME OF PRODUCT: BASE COATING TOP COATING	SAME SAME	ERATHANE 300 BASE	ERATHANE 300	ERAGUARD 4000 ERAGUARD 4000	ERATHANE 300 ERATHANE 300
5. NUMBER OF COATING APPLICATIONS REQUIRED BASE COATINGS TOP COATINGS GRANULES REQUIRED (yes, no, or optional)	1 OPTIONAL	1	1 OPTIONAL	1 OPTIONAL	1 OPTIONAL
6. REQUIRED DRY FILM THICKNESS: (mils) BASE COATING TOP COATING	8 – 10 7 – 10	25	10	11 11	16 16
7. FILM CURE TIME BASE COATING TOP COATING	2 – 6 HOURS 2 – 6 HOURS	24 HRS @ 75F 12 HRS @ 75F	4 HRS @ 70F 4 HRS @ 70F	4 HRS @ 70F	12 HRS @ 75F 12 HRS @ 75F
8. MINIMUM SLOPE REQUIRED (inches per foot)	NONE	1/8"	1/8"	1/8"	1/8"
9. REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required) A. CONCRETE DECKS B. PLYWOOD DECKS C. METAL DECKS D. EXISTING SPUDDED BUILT-UP ROOFING E. OTHER COATINGS	P X X X X X	X X X X X X	X X X X P X	X X X X P X	X X X X X X
10. FLASHING MATERIAL (type or self-flashing)	SELF	SELF	SELF	SELF	SELF
11. APPLICATION CONDITIONS RECOMMENDED AMBIENT AIR TEMPERATURE RANGE (degrees F) MAXIMUM PERMITTED WIND VELOCITY WITHOUT SCREEN (mph) MAXIMUM PERMITTED WIND VELOCITY WITH WIND SCREEN (mph)	>32 10 25	40+ 7 25	40+ 7 25	40+ 5 25	40+ 7 25
12. APPLICATION EQUIPMENT REQUIREMENTS SINGLE-COMPONENT AIRLESS SPRAY MULTIPLE-COMPONENT AIRLESS SPRAY OTHER (roller, brush, etc.)	X	X	X	X	X
13. RESTRICTED REGIONS (yes/none)	NONE	NONE	NONE	NONE	NONE
14. RESTRICTED BUILDING USES (yes/none)	YES	YES	YES	YES	YES
15. RECOMMENDED RECOATING SCHEDULE (years or none)	NONE	NONE	NONE	NONE	NONE
16. PHYSICAL PROPERTIES OF THE COATING TENSILE STRENGTH PER ASTM D 412 OR OTHER (psi) ELONGATION PER ASTM D 412 OR OTHER (%) IMPACT RESISTANCE PER ASTM D 2794 OR OTHER (inch lbs) ACCELERATED WEATHERING PER ASTM D 822 OR OTHER (color change) HEAT AGING PER ASTM D 573 OR OTHER (%) WATER ABSORPTION PER ASTM D 570 OR OTHER (%)	400 150 NONE NO CHANGE 0.31	950 825 NO CHANGE	660 200 NO CHANGE	300 350 NO CHANGE	660 370 NO CHANGE
17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM(yes/no)	YES	YES	YES	YES	YES
18. FOAM INSULATION REQUIREMENTS MINIMUM THICKNESS (inches) NOMINAL DENSITY PER ASTM D 1622 OR OTHER (lbs/ft³) COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi) CLOSED CELL CONTENT PER ASTM D 2856 OR OTHER (%)	1 2.5 40 90	1 3 40 98	1 3 40 98	1 3 40 98	40 MIN.
19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)	NO	YES	YES	YES	YES
20. YEAR OF FIRST COMMERCIAL USE	1974	1993	1979	1981	1979
21. NUMBER OF SQUARES INSTALLED (100 ft²)	MILLIONS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	YES	YES	YES	YES	YES
23. METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT
24. NUMBER OF REGIONAL SERVICE LOCATIONS	7	14	14	14	14
25. FOR SALES INFORMATION, CONTACT: FOR TECHNICAL INFORMATION, CONTACT:	PROD INFORM. 517/496-6000 B. SWISHER 770/751-7979	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747
26. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

[illegible]

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

1. COMPANY NAME	FUTURA COATINGS, INC.	FUTURA COATINGS, INC.	FUTURA COATINGS, INC.	FUTURA COATINGS, INC.																																								
2. PRODUCT NAME	FUTURA-THANE 5600	FUTURA-THANE 5625	FUTURA-THANE 516	ELASTO-BOND 801																																								
3.1 COATING DESCRIPTION A. ACRYLIC B. BUTYL C. HYPALON D. NEOPRENE E. SILICONE F. URETHANE G. VINYL H. MODIFIED ASPHALT I. OTHER (type)	<table border="1"> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td>X</td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td>X</td><td>X</td><td>X</td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> </table>											X									X	X	X																					
			X																																									
X	X	X																																										
3.2 VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	YES	YES	YES	YES																																								
3.3 COLORS AVAILABLE	BUFF	ALUMINUM	GREY	BLACK, GREY																																								
4. NAME OF PRODUCT: BASE COATING	SAME	FUTURA-THANE 5600	SAME	SAME																																								
TOP COATING	FUTURA-FLEX 5625	SAME	SAME	FUTURA-FLEX 550																																								
5. NUMBER OF COATING APPLICATIONS REQUIRED BASE COATINGS TOP COATINGS GRANULES REQUIRED (yes, no, or optional)	1 - 2 NO	1 NO	1 - 2 OPTIONAL	1 - 3 NO																																								
6. REQUIRED DRY FILM THICKNESS: (mils) BASE COATING TOP COATING	20 - 26	10 - 20	30 - 40	20 - 35																																								
7. FILM CURE TIME BASE COATING TOP COATING	1 - 3 HRS @ 75F 1 - 3 HRS @ 75F	6 - 12 HRS @ 75F	8 - 10 HRS @ 75F																																									
8. MINIMUM SLOPE REQUIRED (inches per foot)	1/8"	1/8"	1/8"	1/8"																																								
9. REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required) A. CONCRETE DECKS B. PLYWOOD DECKS C. METAL DECKS D. EXISTING SPUDDED BUILT-UP ROOFING E. OTHER COATINGS	<table border="1"> <tr><td>X</td><td>P</td><td>X</td><td>P</td><td>X</td><td>P</td><td>X</td><td>P</td></tr> <tr><td>X</td><td>P</td><td>X</td><td>P</td><td>X</td><td>P</td><td>X</td><td>P</td></tr> <tr><td>X</td><td>P</td><td>X</td><td>P</td><td>X</td><td>P</td><td>X</td><td>P</td></tr> <tr><td>X</td><td>P</td><td>X</td><td>P</td><td>X</td><td>P</td><td>X</td><td>P</td></tr> <tr><td></td><td>P</td><td></td><td>P</td><td></td><td>P</td><td></td><td>P</td></tr> </table>				X	P	X	P	X	P	X	P	X	P	X	P	X	P	X	P	X	P	X	P	X	P	X	P	X	P	X	P	X	P	X	P		P		P		P		P
X	P	X	P	X	P	X	P																																					
X	P	X	P	X	P	X	P																																					
X	P	X	P	X	P	X	P																																					
X	P	X	P	X	P	X	P																																					
	P		P		P		P																																					
10. FLASHING MATERIAL (type or self-flashing)	SELF	SELF	SELF	SELF																																								
11. APPLICATION CONDITIONS RECOMMENDED AMBIENT AIR TEMPERATURE RANGE (degrees F) MAXIMUM PERMITTED WIND VELOCITY WITHOUT SCREEN (mph) MAXIMUM PERMITTED WIND VELOCITY WITH WIND SCREEN (mph)	32 - 120 10 15	32 - 120 10 15	40 - 110 10 15	40 - 110 10 15																																								
12. APPLICATION EQUIPMENT REQUIREMENTS SINGLE-COMPONENT AIRLESS SPRAY MULTIPLE-COMPONENT AIRLESS SPRAY OTHER (roller, brush, etc.)	X ROLLER, BRUSH	X ROLLER, BRUSH	X ROLLER, BRUSH	X ROLLER, BRUSH																																								
13. RESTRICTED REGIONS (yes/none)	NONE	NONE	NONE	NONE																																								
14. RESTRICTED BUILDING USES (yes/none)	YES	YES	YES	NO																																								
15. RECOMMENDED RECOATING SCHEDULE (years or none)	5 - 10	5 - 10	5 - 10	5 - 10																																								
16. PHYSICAL PROPERTIES OF THE COATING TENSILE STRENGTH PER ASTM D 412 OR OTHER (psi) ELONGATION PER ASTM D 412 OR OTHER (%) IMPACT RESISTANCE PER ASTM D 2794 OR OTHER (inch lbs) ACCELERATED WEATHERING PER ASTM D 822 OR OTHER (color change) HEAT AGING PER ASTM D 573 OR OTHER (%) WATER ABSORPTION PER ASTM D 570 OR OTHER (%)	1225±50 310±25 160 NO CHANGE NO CHANGE 1.5 MAX	850±50 300±25 160 NO CHANGE NO CHANGE 1.5 MAX	500±100 200±30 160 NO CHANGE NO CHANGE 1 MAX	375±25 180±25 160 NO CHANGE NO CHANGE 0.5																																								
17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)	YES	YES	YES	YES																																								
18. FOAM INSULATION REQUIREMENTS MINIMUM THICKNESS (inches) NOMINAL DENSITY PER ASTM D 1622 OR OTHER (lbs/ft³) COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi) CLOSED CELL CONTENT PER ASTM D 2856 OR OTHER (%)	1 - 1 1/2 2.5 - 3 40 MIN. 90 MIN.	1 - 1 1/2 2.5 - 3 40 MIN. 90 MIN.	1 - 1 1/2 2.5 - 3 40 MIN. 90 MIN.	1 - 1 1/2 2.5 - 3 40 MIN. 90 MIN.																																								
19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)	NO	NO	NO	NO																																								
20. YEAR OF FIRST COMMERCIAL USE	1986	1986	1988	1980																																								
21. NUMBER OF SQUARES INSTALLED (100 ft²)	2 MILLION+	2.5 MILLION+	600,000+	1 MILLION+																																								
22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	YES	YES	YES	YES																																								
23. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT																																								
24. NUMBER OF REGIONAL SERVICE LOCATIONS	5	5	5	5																																								
25. FOR SALES INFORMATION, CONTACT: FOR TECHNICAL INFORMATION, CONTACT:	B. SCHENKE 314/521-4100 B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100 B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100 B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100 B. SCHENKE 314/521-4100																																								
26. SEE MEMBRANE APPENDIX IF CHECKED																																												

NA=not applicable

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

FUTURA COATINGS, INC.	FUTURA COATINGS, INC.	FUTURA COATINGS, INC.	FUTURA COATINGS, INC.	FUTURA COATINGS, INC.	FUTURA COATINGS, INC.	FUTURA COATINGS, INC.	GACO WESTERN INC.	GACO WESTERN INC.
FUTURA-FLEX 550	ELASTO-BOND 820	ACRO-BOND 440	ACRO-BOND 442	ACRO-BOND 448	FUTURA-THANE 17060	FUTURA-FLEX 510	URECAP	URESIELD
		X	X	X				
X	X				X	X	X	X
YES WHITE, OTHER COLORS	NO DARK GREY, LIGHT GREY	NO LIGHT BLUE	NO WHITE	NO WHITE, GRAY, OTHERS	YES ALUMINUM	YES BLACK	YES GRAYS, BLACK, ALUMINUM	YES ALUMINUM
ELASTO-BOND 801 (BASE) FUTURA-THANE 550 (TOP) OR SAME	ELASTO-BOND 820 ELASTO-BOND 820	SAME ACRO-BOND 442	ACRO-BOND 440 SAME	SAME SAME	FUTURA-FLEX 510 SAME	SAME FUTURA-THANE 17060	URECAP URECAP	URESIELD URESIELD
1 NO	1 OPTIONAL	1 NO	1 OPTIONAL	1 OPTIONAL	1 OPTIONAL	1 - 2 1 NO	2 1 NO	2 1 NO
10 - 15	10 - 12 1/2 10 - 12 1/2	15 - 18	15 - 18	15 - 18 15 - 18	10 - 20	20 - 60	22 14	22 14
6 - 8 HRS @ 75F	3 - 4 HRS @ 75F 3 - 4 HRS @ 75F	1 1/2 - 3 HOURS 1 1/2 - 3 HOURS	1 1/2 - 3 HOURS	1 1/2 - 3 HOURS 1 1/2 - 3 HOURS	4 - 6 HOURS 6 - 8 HOURS		12 HOURS 12 HOURS	12 HOURS 12 HOURS
1/8"	1/2"	1/2"	1/2"	1/2"	1/8"	1/8"	1/4"	1/4"
X X X X P	X X X X P	X X X X P	X X X X P	X X X X P	X X X X P	X X X X P	X X X X P	X X X X P
SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF
40 - 110 10 15	40 - 110 10 15	50+ 10 15	50+ 10 15	50+ 10 15	32 - 120 10 15	45 - 110 10 15	40 - 100 15 25	40 - 100 15 25
X ROLLER, BRUSH	X ROLLER, BRUSH	X ROLLER, BRUSH	X ROLLER, BRUSH	X ROLLER, BRUSH	X ROLLER, BRUSH	X ROLLER, BRUSH	X	X
NONE YES 5 - 10	NONE YES 5 - 10	NONE YES 5 - 10	NONE YES 5 - 10	NONE YES 5 - 10	NONE YES 8 - 10	NONE YES 5 - 10	NONE YES NONE	NONE YES NONE
2700±50 275±25 NO CHANGE NO CHANGE 1.5	450-550 140±10 NO CHANGE NO CHANGE 0.5±0.1	300 270 62 NO CHANGE NO CHANGE	300 270 62 NO CHANGE NO CHANGE	300 120 NO CHANGE NO CHANGE	700 120 NO CHANGE NO CHANGE 1.5% MAX.	300 300 NO CHANGE NO CHANGE .75 MAX.	2200 350	1600 400
YES	YES	YES	YES	YES	YES	YES	YES	YES
1 - 1 1/2 2.5 - 3 40 MIN. 90 MIN.	1 - 1 1/2 2.5 - 3 40 MIN. 90 MIN.	1 - 1 1/2 2.5 - 3 40 MIN. 90 MIN.	1 - 1 1/2 2.5 - 3 40 MIN. 90 MIN.	1 - 1 1/2 2.5 - 3 40 MIN. 90 MIN.	1 - 1 1/2 2.5 - 3 40 MIN. 90 MIN.	1 - 1 1/2 2.5 - 3 40 MIN. 90 MIN.	1 2.4 - 3.2 43 - 58 90 - 91	1 2.4 - 3.2 43 - 58 90 - 91
NO 1979 5 MILLION+	NO 1987 1.2 MILLION+	NO 1979 2 MILLION+	NO 1979 2 MILLION+	NO 1988 1 MILLION+	NO 1994 100,000+	NO 1990 200,000+	YES 1988	YES 1974
YES DISTRs, DIRECT 5	YES DISTRs, DIRECT 5	YES DISTRs, DIRECT 5	YES DISTRs, DIRECT 5	YES DISTRs, DIRECT 5	YES DISTRs, DIRECT 5	YES DISTRs, DIRECT 5	NO DISTRs, DIRECT 3	NO DISTRs, DIRECT 3
B. SCHENKE 314/521-4100 B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100 B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100 B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100 B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100 B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100 B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100 B. SCHENKE 314/521-4100	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226
							X	X

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

1. COMPANY NAME	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.
2. PRODUCT NAME	URECAP	URESHIELD	URECAP	URECAP
3.1 COATING DESCRIPTION A. ACRYLIC B. BUTYL C. HYPALON D. NEOPRENE E. SILICONE F. URETHANE G. VINYL H. MODIFIED ASPHALT I. OTHER (type)				
3.2 VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	YES	YES	YES	YES
3.3 COLORS AVAILABLE	BLACK	ALUMINUM	BLACK	GRAYS, BLACK, ALUMINUM
4. NAME OF PRODUCT: BASE COATING	SAME	URECAP II	SAME	URECAP II
TOP COATING	URESHIELD	SAME	URECAP	SAME
5. NUMBER OF COATING APPLICATIONS REQUIRED BASE COATINGS TOP COATINGS GRANULES REQUIRED (yes, no, or optional)	1 NO	1 NO	1 NO	1 NO
6. REQUIRED DRY FILM THICKNESS: (mils) BASE COATING TOP COATING	22	10	22	14
7. FILM CURE TIME BASE COATING TOP COATING	12 HOURS	12 HOURS	12 HOURS	12 HOURS
8. MINIMUM SLOPE REQUIRED (inches per foot)	1/4"	1/4"	1/4"	1/4"
9. REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required) A. CONCRETE DECKS B. PLYWOOD DECKS C. METAL DECKS D. EXISTING SPUDDED BUILT-UP ROOFING E. OTHER COATINGS	P P P X P	P P P X P	P P P X P	P P P X P
10. FLASHING MATERIAL (type or self-flashing)	SELF	SELF	SELF	SELF
11. APPLICATION CONDITIONS RECOMMENDED AMBIENT AIR TEMPERATURE RANGE (degrees F) MAXIMUM PERMITTED WIND VELOCITY WITHOUT SCREEN (mph) MAXIMUM PERMITTED WIND VELOCITY WITH WIND SCREEN (mph)	40 – 100 15 25	40 – 100 15 25	40 – 100 15 25	40 – 100 15 25
12. APPLICATION EQUIPMENT REQUIREMENTS SINGLE-COMPONENT AIRLESS SPRAY MULTIPLE-COMPONENT AIRLESS SPRAY OTHER (roller, brush, etc.)	X	X	X	X
13. RESTRICTED REGIONS (yes/none)	NONE	NONE	NONE	NONE
14. RESTRICTED BUILDING USES (yes/none)	YES	YES	YES	YES
15. RECOMMENDED RECOATING SCHEDULE (years or none)	NONE	NONE	NONE	NONE
16. PHYSICAL PROPERTIES OF THE COATING TENSILE STRENGTH PER ASTM D 412 OR OTHER (psi) ELONGATION PER ASTM D 412 OR OTHER (%) IMPACT RESISTANCE PER ASTM D 2794 OR OTHER (inch lbs) ACCELERATED WEATHERING PER ASTM D 822 OR OTHER (color change) HEAT AGING PER ASTM D 573 OR OTHER (%) WATER ABSORPTION PER ASTM D 570 OR OTHER (%)	1000 350	1600 400	1000 350	2200 350
17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM(yes/no)	YES	YES	YES	YES
18. FOAM INSULATION REQUIREMENTS MINIMUM THICKNESS (inches) NOMINAL DENSITY PER ASTM D 1622 OR OTHER (lbs/ft³) COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi) CLOSED CELL CONTENT PER ASTM D 2856 OR OTHER (%)	1 2.4 – 3.2 43 – 58 90 – 91	1 2.4 – 3.2 43 – 58 90 – 91	1 2.4 – 3.2 43 – 58 90 – 91	1 2.4 – 3.2 43 – 58 90 – 91
19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)	YES	YES	YES	YES
20. YEAR OF FIRST COMMERCIAL USE	1989	1974	1989	1988
21. NUMBER OF SQUARES INSTALLED (100 ft²)				
22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	NO	NO	NO	NO
23. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT
24. NUMBER OF REGIONAL SERVICE LOCATIONS	3	3	3	3
25. FOR SALES INFORMATION, CONTACT: FOR TECHNICAL INFORMATION, CONTACT:	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226
26. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X

NA=not applicable

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.
A-5511	A-5500	URECAP	A-5500	UB-64	UA-6500	UB-64	A-5500
X	X		X				X
		X		X	X	X	
NO GRAY	NO WHITE	YES BLACK	NO WHITE	YES GRAY	YES WHITE	YES GRAY	NO WHITE
SAME	A-5511	SAME	URECAP II	SAME	UB-64	SAME	UB-64
A-5500	SAME	A-5500	SAME	UA-6500	SAME	UA-5500	SAME
2	1	1	1	2	1	2	1
NO	NO	NO	NO	NO	NO	NO	NO
22	9.5	22	9.5	22	12	22	9.5
18 HOURS	18 HOURS	12 HOURS	18 HOURS	12 HOURS	24 HOURS	12 HOURS	18 HOURS
1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
P P P	P P P	P P P	P P P	P P P	P P P	P P P	P P P
X	X	X	X	X	X	X	X
P SELF	P SELF	P SELF	P SELF	P SELF	P SELF	P SELF	P SELF
50 – 100 15 25	50 – 100 15 25	40 – 100 15 25	50 – 100 15 25	40 – 100 15 25	40 – 100 15 25	40 – 100 15 25	50 – 100 15 25
X	X	X	X	X	X	X	X
NONE YES NONE	NONE YES NONE	NONE YES NONE	NONE YES NONE	NONE YES NONE	NONE YES NONE	NONE YES NONE	NONE YES NONE
225 200	225 200	1000 350	225 200	2500 450	2700 250	2500 450	225 200
				2.0	2.8	2.0	
YES	YES	YES	YES	YES	YES	YES	YES
1 2.4 – 3.2 43 – 58 90 – 91 YES 1978	1 2.4 – 3.2 43 – 58 90 – 91 YES 1978	1 2.4 – 3.2 43 – 58 90 – 91 YES 1989	1 2.4 – 3.2 43 – 58 90 – 91 YES 1978	1 2.4 – 3.2 43 – 58 90 – 91 YES 1984	1 2.4 – 3.2 43 – 58 90 – 91 YES 1977	1 2.4 – 3.2 43 – 58 90 – 91 YES 1984	1 2.4 – 3.2 43 – 58 90 – 91 YES 1978
NO DISTR, DIRECT 3	NO DISTR, DIRECT 3	NO DISTR, DIRECT 3	NO DISTR, DIRECT 3	NO DISTR, DIRECT 3	NO DISTR, DIRECT 3	NO DISTR, DIRECT 3	NO DISTR, DIRECT 3
J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226
X	X	X	X	X	X	X	X

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

1. COMPANY NAME	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.
2. PRODUCT NAME	URECAP	UA-6500	UB-7050	URESHIELD
3.1 COATING DESCRIPTION				
A. ACRYLIC				
B. BUTYL				
C. HYPALON				
D. NEOPRENE				
E. SILICONE				
F. URETHANE	X	X	X	X
G. VINYL				
H. MODIFIED ASPHALT				
I. OTHER (type)				
3.2 VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	YES	YES	YES	YES
3.3 COLORS AVAILABLE	BLACK	WHITE	OLIVE	ALUMINUM
4. NAME OF PRODUCT: BASE COATING	SAME	URECAP II	SAME	UB-7050
TOP COATING	UA-6500	SAME	URESHIELD	SAME
5. NUMBER OF COATING APPLICATIONS REQUIRED				
BASE COATINGS	1		1	
TOP COATINGS		1		1
GRANULES REQUIRED (yes, no, or optional)	NO	NO	NO	NO
6. REQUIRED DRY FILM THICKNESS: (mils)				
BASE COATING	22		22	
TOP COATING		12		10
7. FILM CURE TIME				
BASE COATING	12 HOURS		0.50 HR	
TOP COATING		24 HOURS		12 HOURS
8. MINIMUM SLOPE REQUIRED (inches per foot)	1/4"	1/4"	1/4"	1/4"
9. REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required)				
A. CONCRETE DECKS	P	P	P	P
B. PLYWOOD DECKS	P	P	P	P
C. METAL DECKS	P	P	P	P
D. EXISTING SPUDDED BUILT-UP ROOFING	X	X	X	X
E. OTHER COATINGS	P	P	P	P
10. FLASHING MATERIAL (type or self-flashing)	SELF	SELF	SELF	SELF
11. APPLICATION CONDITIONS				
RECOMMENDED AMBIENT AIR TEMPERATURE RANGE (degrees F)	40 – 100	40 – 100	50 – 100	40 – 100
MAXIMUM PERMITTED WIND VELOCITY WITHOUT SCREEN (mph)	15	15	15	15
MAXIMUM PERMITTED WIND VELOCITY WITH WIND SCREEN (mph)	25	25	25	25
12. APPLICATION EQUIPMENT REQUIREMENTS				
SINGLE-COMPONENT AIRLESS SPRAY	X	X		X
MULTIPLE-COMPONENT AIRLESS SPRAY		X	X	
OTHER (roller, brush, etc.)				
13. RESTRICTED REGIONS (yes/none)	NONE	NONE	NONE	NONE
14. RESTRICTED BUILDING USES (yes/none)	YES	YES	YES	YES
15. RECOMMENDED RECOATING SCHEDULE (years or none)	NONE	NONE	NONE	NONE
16. PHYSICAL PROPERTIES OF THE COATING				
TENSILE STRENGTH PER ASTM D 412 OR OTHER (psi)	1000	2700	2900	1600
ELONGATION PER ASTM D 412 OR OTHER (%)	350	250	190	400
IMPACT RESISTANCE PER ASTM D 2794 OR OTHER (inch lbs)				
ACCELERATED WEATHERING PER ASTM D 822 OR OTHER (color change)				
HEAT AGING PER ASTM D 573 OR OTHER (%)				
WATER ABSORPTION PER ASTM D 570 OR OTHER (%)		2.8	2.5	
17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM(yes/no)	YES	YES	YES	YES
18. FOAM INSULATION REQUIREMENTS				
MINIMUM THICKNESS (inches)	1	1	1	1
NOMINAL DENSITY PER ASTM D 1622 OR OTHER (lbs/ft³)	2.4 – 3.2	2.4 – 3.2	2.4 – 3.2	2.4 – 3.2
COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi)	43 – 58	43 – 58	43 – 58	43 – 58
CLOSED CELL CONTENT PER ASTM D 2856 OR OTHER (%)	90 – 91	90 – 91	90 – 91	90 – 91
19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)	YES	YES	YES	YES
20. YEAR OF FIRST COMMERCIAL USE	1989	1977	1990	1974
21. NUMBER OF SQUARES INSTALLED (100 ft²)				
22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	NO	NO	YES	NO
23. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT
24. NUMBER OF REGIONAL SERVICE LOCATIONS	3	3	3	3
25. FOR SALES INFORMATION, CONTACT:	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958
FOR TECHNICAL INFORMATION, CONTACT:	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226
26. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X

NA=not applicable

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	GARDNER ASPHALT CORP./ APOC DIVISION	GARDNER ASPHALT CORP./ APOC DIVISION	GARDNER ASPHALT CORP./ APOC DIVISION
UB-7050	UA-6500	UB-7050	A-5500	UB-64	U-66	APOC #252 SUN-WHITE ELASTOMERIC RF COATING	GARDNER ELASTOMERIC ROOF COATING	APOC #337
						X	X	
X	X	X	X	X	X			X
YES OLIVE	YES WHITE	YES OLIVE	NO WHITE	YES GRAY	YES SIX STANDARD	YES WHITE, TAN, RED, GRAY	YES WHITE	YES BLACK
SAME UA-6500	UB-7050 SAME	SAME A-5500	UB-7050 SAME	SAME U-66	UB-64 SAME	APOC #252 ROOF COATING APOC #252 ROOF COATING	GARDNER WHITE ROOF PATCH SAME	APOC #337 APOC #252
1 NO	1 NO	1 NO	1 NO	2 NO	1 NO	1 NO	1 NO	1 NO
22	10	22	9.5	22	10	8 – 10 8 – 10	10 – 12 10 – 12	10 – 12 8 – 10
0.50 HR	24 HOURS	0.50 HR	18 HOURS	12 HOURS	18 HOURS	4 – 6 HOURS 4 – 6 HOURS	4 – 6 HOURS 4 – 6 HOURS	4 – 6 HOURS 4 – 6 HOURS
1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
P P P X	P P P X	P P P X	P P P X	P P P X	P P P X	P T P X	P T P X	P T P X
SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF
50 – 100 15 25	40 – 100 15 25	50 – 100 15 25	50 – 100 15 25	40 – 100 15 25	40 – 100 15 25	50 – 100 10 15	50 – 90 10 15	60 – 100 15 15
X	X	X	X	X	X	X	X	X
NONE YES NONE	NONE YES NONE	NONE YES NONE	NONE YES NONE	NONE YES NONE	NONE YES NONE	NONE NONE 5	NONE NONE 5	NONE NONE 5
2900 190	2700 250	2900 190	225 200	2600 300	1400 450	250 – 300 250 – 300 NO CHANGE	250 – 300 250 – 300 NO CHANGE	150 150 – 200 NO CHANGE
2.5	2.8	2.5		2.0	2.0	<20	<20	<20
YES	YES	YES	YES	YES	YES	YES	NO	YES
1 2.4 – 3.2 43 – 58 90 – 91 YES 1990	1 2.4 – 3.2 43 – 58 90 – 91 YES 1977	1 2.4 – 3.2 43 – 58 90 – 91 YES 1990	1 2.4 – 3.2 43 – 58 90 – 91 YES 1978	1 2.4 – 3.2 43 – 58 90 – 91 YES 1984	1 2.4 – 3.2 43 – 58 90 – 91 YES 1972			
YES DISTR, DIRECT 3	NO DISTR, DIRECT 3	YES DISTR, DIRECT 3	NO DISTR, DIRECT 3	NO DISTR, DIRECT 3	NO DISTR, DIRECT 3	NO DISTRIBUTORS 13	NO DISTRIBUTORS 13	NO DISTRIBUTORS 13
J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226 X	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226 X	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226 X	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226 X	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226 X	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226 X	T. HYER 800/237-1155 J. HUNTER 800/237-1155	T. HYER 800/237-1155 J. HUNTER 800/237-1155	T. HYER 800/237-1155 J. HUNTER 800/237-1155

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

1. COMPANY NAME	G.C.S. COATINGS	G.C.S. COATINGS	G.C.S. COATINGS	G.C.S. COATINGS	G.C.S. COATINGS
2. PRODUCT NAME	VAP-O-LOC	TRI-COAT	GEO-COAT	GEO-THERM	SILICONE 70-W
3.1 COATING DESCRIPTION A. ACRYLIC B. BUTYL C. HYPALON D. NEOPRENE E. SILICONE F. URETHANE G. VINYL H. MODIFIED ASPHALT I. OTHER (type)			X	X	X
3.2 VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	YES	NO	NO	NO	
3.3 COLORS AVAILABLE	VARIOUS	VARIOUS	VARIOUS	VARIOUS	
4. NAME OF PRODUCT: BASE COATING	VAP-O-LOC	TRI-COAT	GEO-COAT	GEO-THERM	SILICONE 70-W
TOP COATING	VAP-O-LOC	TRI-COAT	GEO-COAT	GEO-THERM	SILICONE 70-W
5. NUMBER OF COATING APPLICATIONS REQUIRED BASE COATINGS TOP COATINGS GRANULES REQUIRED (yes, no, or optional)	1 1 NO	1 1 NO	1 1 OPTIONAL	1 1 OPTIONAL	1 1 OPTIONAL
6. REQUIRED DRY FILM THICKNESS: (mils) BASE COATING TOP COATING		12 – 15 12 – 15	12 – 15 12 – 15	12 – 15 12 – 15	15 15
7. FILM CURE TIME BASE COATING TOP COATING	2 HOURS 2 HOURS	2 – 4 HOURS 2 – 4 HOURS	2 – 4 HOURS 2 – 4 HOURS	2 – 4 HOURS 2 – 4 HOURS	2 – 4 HOURS 2 – 4 HOURS
8. MINIMUM SLOPE REQUIRED (inches per foot)	NONE	1/8"	1/8"	NONE	NONE
9. REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required) A. CONCRETE DECKS B. PLYWOOD DECKS C. METAL DECKS D. EXISTING SPUDDED BUILT-UP ROOFING E. OTHER COATINGS	P P P P	P P P P	P P P P	P P P P	P P P P
10. FLASHING MATERIAL (type or self-flashing)	SELF	SELF	SELF	SELF	SELF
11. APPLICATION CONDITIONS RECOMMENDED AMBIENT AIR TEMPERATURE RANGE (degrees F) MAXIMUM PERMITTED WIND VELOCITY WITHOUT SCREEN (mph) MAXIMUM PERMITTED WIND VELOCITY WITH WIND SCREEN (mph)	0 – 120 15 15	40 – 110 20 20	40 – 110 20 20	40 – 110 20 20	40 – 110 20 20
12. APPLICATION EQUIPMENT REQUIREMENTS SINGLE-COMPONENT AIRLESS SPRAY MULTIPLE-COMPONENT AIRLESS SPRAY OTHER (roller, brush, etc.)	X	X	X	X	X
13. RESTRICTED REGIONS (yes/none)	NONE	NONE	NONE	NONE	NONE
14. RESTRICTED BUILDING USES (yes/none)	NONE	YES	YES	YES	YES
15. RECOMMENDED RECOATING SCHEDULE (years or none)		10	5	10	10
16. PHYSICAL PROPERTIES OF THE COATING TENSILE STRENGTH PER ASTM D 412 OR OTHER (psi) ELONGATION PER ASTM D 412 OR OTHER (%) IMPACT RESISTANCE PER ASTM D 2794 OR OTHER (inch lbs) ACCELERATED WEATHERING PER ASTM D 822 OR OTHER (color change) HEAT AGING PER ASTM D 573 OR OTHER (%) WATER ABSORPTION PER ASTM D 570 OR OTHER (%)	1500 600 NO CHANGE 0.2	500 300 28 NO CHANGE 0.4	400 200 25 NO CHANGE 0.8 MAX.	308 620 28 NO CHANGE 0.8 MAX.	1500 600 28 NO CHANGE 0.8 MAX.
17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)	NO	YES	NO	YES	NO
18. FOAM INSULATION REQUIREMENTS MINIMUM THICKNESS (inches) NOMINAL DENSITY PER ASTM D 1622 OR OTHER (lbs/ft³) COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi) CLOSED CELL CONTENT PER ASTM D 2856 OR OTHER (%)	2.5 – 3.5 45 MIN. 90 MIN.	1 2.5 – 3.5 45 MIN. 90 MIN.	1 2.5 – 3.5 45 MIN. 90 MIN.	1 2.5 – 3.5 45 MIN. 90 MIN.	1 2.5 – 3.5 45 MIN. 90 MIN.
19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)	NO	NO	NO	NO	NO
20. YEAR OF FIRST COMMERCIAL USE	1986	1989	1987	1982	1987
21. NUMBER OF SQUARES INSTALLED (100 ft²)		25,000	80,000	140,000	
22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	NO	NO	NO	NO	NO
23. METHODS OF DISTRIBUTION (distributors and/or direct)					
24. NUMBER OF REGIONAL SERVICE LOCATIONS	10	10	10	10	10
25. FOR SALES INFORMATION, CONTACT:					
FOR TECHNICAL INFORMATION, CONTACT:					
26. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

GENERAL ELECTRIC	GENERAL ELECTRIC	GENERAL ELECTRIC	GENERAL ELECTRIC	NATIONAL COATINGS CORPORATION	NEOGARD, A DIVISION OF JONES-BLAIR CO.	NEOGARD, A DIVISION OF JONES-BLAIR CO.	NEOGARD, A DIVISION OF JONES-BLAIR CO.
SCM3308 BASE COAT	SCM3304 TOP COAT	SCM3408 BASE COAT	SCM 3404 TOP COAT	ACRYSHIELD	PERMATHANE II FR	PERMATHANE FR	
				X			
X	X	X	X		X	X	X
NO DARK GRAY	NO MED. GRAY	NO DARK GRAY	NO MED. GRAY	NO GREY, OFF-WHITE, WHITE, CUSTOM	NO GRAY, WHITE, TAN	NO GRAY, WHITE, TAN	NO GRAY, WHITE, TAN
SCM3304 TOP COAT	SCM3308 BASE COAT	SCM3404 TOP COAT	SCM3408 BASECOAT	ACRYSHIELD ACRYSHIELD	PERMATHANE II FR PERMATHANE II	PERMAGARD FR	URETHANE R
1 YES	1 YES			1 1 OPTIONAL	1-2 1 OPTIONAL	2 OPTIONAL	2 OPTIONAL
10-12	10-12	10 – 12	10 – 12	12 12	38 AVG	26 AVG	12 AVG
20 MINS.	1 HR	.5 – 2 HOURS	.5 – 2 HOURS	2 – 8 HOURS 2 – 8 HOURS	24 HOURS	24 HOURS	24 HOURS
1/8"	1/8"	1/8"	1/8"	1/8"	NONE	NONE	NONE
				P P P			
X	X	X	X	X			
				SELF	SELF	SELF	SELF
40 MIN. 10 15	40 MIN. 10 15	40 MIN. 10 15	40 MIN. 10 15	50 – 110 15 25	40 – 110 15 25	40 – 110 15 25	40 – 110 15 25
X	X	X	X	X ROLLER	X X	X	X
NONE YES NONE	NONE YES NONE	NONE YES NONE	NONE YES NONE	NONE YES 10	NONE NONE 5 – 10	NONE NONE 5 – 10	NONE NONE 5 – 10
500 – 600 100 – 150	500 – 600 100 – 150	200 400	200 400	410 390 NO CHANGE	1250 400 160 SLIGHT	400 500 160	2500 450 160 SLIGHT
NONE NONE 0.5 MAX	NONE NONE 0.5 MAX				3	4	4
YES	YES	YES	YES	YES	YES	YES	YES
1 3.0 40 MIN. 90 MIN.	1 3.0 40 MIN. 90 MIN.	1 3.0 40 MIN. 90 MIN.	1 3.0 40 MIN. 90 MIN.	1 2.5 – 3.0 40 91	1 2.7 – 3.2 50 90	1 2.7 – 3.2 50 90	1 2.7 – 3.2 50 90
NO	NO	NO	NO	YES	NO	NO	NO
1973 1,000,000+	1973 1,000,000+	1995 25,000	1995 25,000	1981 750,000	1984 > 100,000	1979 > 100,000	1979 > 100,000
YES DISTR. DIRECT	YES DISTR. DIRECT	YES DISTR. DIRECT	YES DISTR. DIRECT	YES DISTR. DIRECT	YES DIRECT	YES DIRECT	YES DIRECT
7	7	10	10	5	8	8	8
P. DICAPRIO 518/233-3771 J. LINDYBERG 518/233-2313	P. DICAPRIO 518/233-3771 J. LINDYBERG 518/233-2313	P. DICAPRIO 518/233-3771 J. LINDYBERG 518/233-2313	P. DICAPRIO 518/233-3771 J. LINDYBERG 518/233-2313	B SEXAUER 805/388-7112 TECHNICAL DEPT 805/388-7112	ROOFING SALES 800/321-6588 TECHNICAL DEPT. 800/321-6588	ROOFING SALES 800/321-6588 TECHNICAL DEPT. 800/321-6588	ROOFING SALES 800/321-6588 TECHNICAL DEPT. 800/321-6588
X	X	X	X				

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

1. COMPANY NAME	NEOGARD, A DIVISION OF JONES-BLAIR CO.	NEOGARD, A DIVISION OF JONES-BLAIR CO.	NEOGARD, A DIVISION OF JONES-BLAIR CO.	NEOGARD, A DIVISION OF JONES-BLAIR CO.	PLASTIC COATINGS CORPORATION
2. PRODUCT NAME	ELASTACRYL FR	SILICONE FR	PERMA-SIL TC FR		JAXSAN 600
3.1 COATING DESCRIPTION					
A. ACRYLIC	X				X
B. BUTYL					
C. HYPALON					
D. NEOPRENE					
E. SILICONE		X		X	
F. URETHANE			X		
G. VINYL					
H. MODIFIED ASPHALT					
I. OTHER (type)					
3.2 VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	NO	NO	NO	NO	NO
3.3 COLORS AVAILABLE	GRAY, WHITE, TAN	GRAY, WHITE, TAN	GRAY, WHITE, TAN	GRAY, WHITE, TAN	
4. NAME OF PRODUCT: BASE COATING	ELASTACRYL FR	SILICONE FR	PERMAGARD TC FR		JAXSAN 600
TOP COATING	ELASTACRYL FR	SILICONE FR	SILICONE FR		JAXSAN 600
5. NUMBER OF COATING APPLICATIONS REQUIRED					
BASE COATINGS	2 – 3	1 OR 2	1 – 2		1 OR 2
TOP COATINGS		1 OR 2		1 – 2	
GRANULES REQUIRED (yes, no, or optional)	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
6. REQUIRED DRY FILM THICKNESS: (mils)					
BASE COATING			20 AVG		15 – 20
TOP COATING	27 AVG	20 MIN		18 AVG	15 – 20
7. FILM CURE TIME					
BASE COATING	24 HOURS		24 HOURS		1 – 3 HOURS
TOP COATING	24 HOURS	6 – 8 HOURS		24 HOURS	1 – 3 HOURS
8. MINIMUM SLOPE REQUIRED (inches per foot)	1/2"	1/2"	1/4"	1/4"	NONPONDING
9. REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required)					
A. CONCRETE DECKS					X
B. PLYWOOD DECKS					P
C. METAL DECKS					P
D. EXISTING SPUDDED BUILT-UP ROOFING					X
E. OTHER COATINGS					X
10. FLASHING MATERIAL (type or self-flashing)	SELF	SELF	SELF	SELF	SELF
11. APPLICATION CONDITIONS					
RECOMMENDED AMBIENT AIR TEMPERATURE RANGE (degrees F)	60 – 110	40 – 110	40 – 110	40 – 110	40+
MAXIMUM PERMITTED WIND VELOCITY WITHOUT SCREEN (mph)	15	15	15	15	15
MAXIMUM PERMITTED WIND VELOCITY WITH WIND SCREEN (mph)	25	25	25	25	25
12. APPLICATION EQUIPMENT REQUIREMENTS					
SINGLE-COMPONENT AIRLESS SPRAY	X	X	X	X	X
MULTIPLE-COMPONENT AIRLESS SPRAY					
OTHER (roller, brush, etc.)					
13. RESTRICTED REGIONS (yes/none)	NONE	NONE	NONE	NONE	NONE
14. RESTRICTED BUILDING USES (yes/none)	NONE	NONE	NONE	NONE	YES
15. RECOMMENDED RECOATING SCHEDULE (years or none)	5 – 10	5 – 10	5 – 10	5 – 10	10 +
16. PHYSICAL PROPERTIES OF THE COATING					
TENSILE STRENGTH PER ASTM D 412 OR OTHER (psi)	125	450	275	450	375
ELONGATION PER ASTM D 412 OR OTHER (%)	300	200	500	200	200 +
IMPACT RESISTANCE PER ASTM D 2794 OR OTHER (inch lbs)	160	160	160	160	98
ACCELERATED WEATHERING PER ASTM D 822 OR OTHER (color change)	SLIGHT	SLIGHT		SLIGHT	NO CHANGE
HEAT AGING PER ASTM D 573 OR OTHER (%)					
WATER ABSORPTION PER ASTM D 570 OR OTHER (%)	20 MAX	1	3	1	9 MAX
17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)	YES	YES	YES	YES	YES
18. FOAM INSULATION REQUIREMENTS					
MINIMUM THICKNESS (inches)	1	1	1	1	1
NOMINAL DENSITY PER ASTM D 1622 OR OTHER (lbs/ft ³)	2.7 – 3.2	2.7 – 3.2	2.7 – 3.2	2.7 – 3.2	
COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi)	50	50	50	50	
CLOSED CELL CONTENT PER ASTM D 2856 OR OTHER (%)	90	90	90	90	95
19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)	NO	NO	NO	NO	NO
20. YEAR OF FIRST COMMERCIAL USE	1976	1984	1985	1984	1967
21. NUMBER OF SQUARES INSTALLED (100 ft ²)	> 100,000	> 50,000	8,000	8,000	> 6 MILLION
22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	YES	YES	YES	YES	NO
23. METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DIRECT	DIRECT	DIRECT	DISTRS, DIRECT
24. NUMBER OF REGIONAL SERVICE LOCATIONS	8	8	8	8	10
25. FOR SALES INFORMATION, CONTACT:	ROOFING SALES 800/321-6588	ROOFING SALES 800/321-6588	ROOFING SALES 800/321-6588	ROOFING SALES 800/321-6588	WIDDECOMBE III
FOR TECHNICAL INFORMATION, CONTACT:	TECHNICAL DEPT. 800/321-6588	TECHNICAL DEPT. 800/321-6588	TECHNICAL DEPT. 800/321-6588	TECHNICAL DEPT. 800/321-6588	G. WIDDECOMBE
26. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

PLASTIC COATINGS CORPORATION	POLYDYNE	POLYDYNE	POLYDYNE	POLYDYNE	POLYDYNE	POLYDYNE	POLYDYNE
JAXSAN 601	AQUADYNE 50-0771	UREDYNE 30-8000	UREDYNE 30-0102	UREDYNE 30-8000	UREDYNE 30-0750	ACRYDYNE 40-0226	AQUADYNE 50-0771
X					X		X
	X		X	X	X		
	MOISTURE CURE						
BRITE WHITE	GREY	YES AMBER	YES STRAW, GREY	YES AMBER	BURGUNDY	WHITE	NO GREY
JAXSAN 601	SAME	AQUADYNE 50-0771	SAME	UREDYNE 30-0102	SAME	UREDYNE 30-0750	AQUADYNE 50-0771
JAXSAN 601	UREDYNE 30-8000	SAME	UREDYNE 30-8000	UREDYNE 30-8000	ACRYDYNE 40-0216	SAME	AQUADYNE 50-0771
1 OR 2	2	1	1	1	1	1	1
OPTIONAL							2
15 – 20	18-24		18 – 24		18 – 24		18 – 24
15 – 20		10-12		10 – 12		10 – 14	18 – 24
2 – 4 HOURS	6 HOURS		4 HOURS		2 – 4 MIN.		2 – 4 MIN.
2 – 4 HOURS		4 HOURS		4 HOURS		4 1/2 HOURS	6 HOURS
NONPONDING	1/4"	1/4"	1/4"	1/4"	0	1"	1/4"
X	P	P	P	P	P	P	P
P	P	P	P	P	P	P	P
X	P	P	P	P	P	P	P
X	P	P	P	P	P	P	P
SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF
40+	75	75	75	75	70	70	70
15							
25							
X	X	X	X	X	X	X	X
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
YES	NONE	NONE	NONE	NONE	NONE	NONE	NONE
10 +							
375	450 – 600	2500	1700	2500	3200±200	200	450 – 600
200 +	300 – 400	500	300 – 350	500	125		300 – 400
98					300 – 400	280	
NO CHANGE							
9 MAX	D-471: 1.5	D-471: 1.5	1.5	1.5			D-471: 1.5
	YES	YES	YES	YES	YES	YES	YES
1	1	1	1	1	1	1	1
	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	38	38	38	38	50	50	40
95	90	90	90	90	90	90	40
NO	NO	NO	NO	NO	NO	NO	NO
1968	1986	1986	1986	1986	1986	1986	1986
> 6 MILLION							
NO	NO	NO	NO	NO	NO	NO	NO
DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT
10	7	7	7	7	7	7	7
L. WIDDECOMBE II	R. EWALD	R. EWALD	R. EWALD	R. EWALD	R. EWALD	R. EWALD	R. EWALD
G. WIDDECOMBE	T. MEYER	T. MEYER	T. MEYER	T. MEYER	T. MEYER	T. MEYER	T. MEYER
	R. EWALD	R. EWALD	R. EWALD	R. EWALD	R. EWALD	R. EWALD	R. EWALD

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

1. COMPANY NAME	POLYDYNE	POLYDYNE	POLYTHANE SYSTEMS, INC.	POLYTHANE SYSTEMS, INC.
2. PRODUCT NAME	POLY SIL 20-0200	POLY PERM 60-0003	GE SILICONES	EVEREST ACRYLIC
3.1 COATING DESCRIPTION A. ACRYLIC B. BUTYL C. HYPALON D. NEOPRENE E. SILICONE F. URETHANE G. VINYL H. MODIFIED ASPHALT I. OTHER (type)	X	X	X	X
3.2 VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	NO	YES	NO	NO
3.3 COLORS AVAILABLE	WHITE, LIGHT/DARK GREY	GREY	ANY COLOR	ANY COLOR
4. NAME OF PRODUCT: BASE COATING TOP COATING	POLY SIL 0208 POLY SIL 0207	POLY PERM 60-0003 POLY PERM 60-0003	SCM3408 SCM3404	EVERCOAT 510 EVERCOAT 500
5. NUMBER OF COATING APPLICATIONS REQUIRED BASE COATINGS TOP COATINGS GRANULES REQUIRED (yes, no, or optional)	1 1 OPTIONAL	1 - 2 NA	1 1 YES	1 1 OPTIONAL
6. REQUIRED DRY FILM THICKNESS: (mils) BASE COATING TOP COATING	15 10	20+	20	30
7. FILM CURE TIME BASE COATING TOP COATING	1 HR 1 HR	24 HOURS	1 HR 1 HR	1 HR 1 HR
8. MINIMUM SLOPE REQUIRED (inches per foot)	0	1" - 12"	NO PONDING	NO PONDING
9. REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required) A. CONCRETE DECKS B. PLYWOOD DECKS C. METAL DECKS D. EXISTING SPUDDED BUILT-UP ROOFING E. OTHER COATINGS	P P P P P	X X X X X	X X X X X	X X X X X
10. FLASHING MATERIAL (type or self-flashing)	SELF		SELF	SELF
11. APPLICATION CONDITIONS RECOMMENDED AMBIENT AIR TEMPERATURE RANGE (degrees F) MAXIMUM PERMITTED WIND VELOCITY WITHOUT SCREEN (mph) MAXIMUM PERMITTED WIND VELOCITY WITH WIND SCREEN (mph)	75 15 30	70 15 30	40 - 100 20 25	40 - 100 20 25
12. APPLICATION EQUIPMENT REQUIREMENTS SINGLE-COMPONENT AIRLESS SPRAY MULTIPLE-COMPONENT AIRLESS SPRAY OTHER (roller, brush, etc.)	X X X	X X ROLLER, BRUSH	X X X	X X X
13. RESTRICTED REGIONS (yes/none)	NONE	NONE	NONE	NONE
14. RESTRICTED BUILDING USES (yes/none)	NONE	NONE	NONE	NONE
15. RECOMMENDED RECOATING SCHEDULE (years or none)			10 - 20	10 - 20
16. PHYSICAL PROPERTIES OF THE COATING TENSILE STRENGTH PER ASTM D 412 OR OTHER (psi) ELONGATION PER ASTM D 412 OR OTHER (%) IMPACT RESISTANCE PER ASTM D 2794 OR OTHER (inch lbs) ACCELERATED WEATHERING PER ASTM D 822 OR OTHER (color change) HEAT AGING PER ASTM D 573 OR OTHER (%) WATER ABSORPTION PER ASTM D 570 OR OTHER (%)	700 150 NA NA D-411:1.5	200 180 NA NA 0.5%	550 150 NONE 0.5 MAX	279 502
17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)	YES	NO		YES
18. FOAM INSULATION REQUIREMENTS MINIMUM THICKNESS (inches) NOMINAL DENSITY PER ASTM D 1622 OR OTHER (lbs/ft³) COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi) CLOSED CELL CONTENT PER ASTM D 2856 OR OTHER (%)	1 2.5 40 90	1 2.5 40 90	1 2.7 40 90	1 2.7 40 90
19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)	NO	NO	YES	YES
20. YEAR OF FIRST COMMERCIAL USE	1992	1992	1972	1981
21. NUMBER OF SQUARES INSTALLED (100 ft²)				
22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	YES	YES	YES	YES
23. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTR, DIRECT	DISTR, DIRECT	DIRECT	DIRECT
24. NUMBER OF REGIONAL SERVICE LOCATIONS	7	7	9	9
25. FOR SALES INFORMATION, CONTACT: FOR TECHNICAL INFORMATION, CONTACT:	R. EWALD T. MEYER R. EWALD	R. EWALD T. MEYER R. EWALD	R. STOCKDALE R. STOCKDALE	M. CULLINS M. CULLINS
26. SEE MEMBRANE APPENDIX IF CHECKED				

NA=not applicable

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

POLYTHANE SYSTEMS, INC.	PREMIUM POLYMERS	PREMIUM POLYMERS	PREMIUM POLYMERS	PREMIUM POLYMERS	PREMIUM POLYMERS	PREMIUM POLYMERS	PREMIUM POLYMERS	PREMIUM POLYMERS
EVEREST HIGH PERFORMANCE ACRYLIC	URETHANE 2820	SILICONE 1620	BUTYL 5511	ACRYLIC 4270	ACRYLIC 4200 SERIES	ACRYLIC 4300 SERIES	URETHANE 2857	ACRYLIC 4270
X			X	X	X	X		X
	X	X					X	
NO ANY COLOR	NO GRAY	NO GRAY, LIGHT GRAY	YES BLACK	NO WHITE	NO GRAY, WHITE	NO GRAY, WHITE	NO PURPLE	NO WHITE
EVERCOAT 5410 EVERCOAT 5400	2820 ALIPHATIC 2820 ALIPHATIC	1620 1620	5511	4270	4200 SERIES	4300 SERIES	2857 100% SOLIDS	4270
1 1 OPTIONAL	1 1 NO	1 1 OPTIONAL	2 1 OPTIONAL	1 1 OPTIONAL	1 1 OPTIONAL	1 1 OPTIONAL	1 NO	1 OPTIONAL
30	12 – 18 12 – 18	8 – 10 7 – 10	25 – 30	12 – 15	12 – 15 12 – 15	12 – 15 12 – 15	30 – 45	12 – 15
1 HR 1 HR	1 – 3 HOURS 1 – 3 HOURS	2 – 6 HOURS 2 – 6 HOURS	4 – 6 HOURS 4.5 HOURS	4.5 HOURS 4.5 HOURS	4.5 HOURS 4.5 HOURS	4.5 HOURS 4.5 HOURS	5 MINS. 4.5 HOURS	4.5 HOURS
NO PONDING	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"
X X X X X	P P P P P	P P P P P	P P P P	P P P P	P P P P P	P P P P P	P P P P P	P P P P P
SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF
40 – 100 20 25	35 – 120 10 15	50 – 100 10 15	50 – 110 10 15	50 – 110 10 15	50 – 110 10 15	50 – 110 10 15	35 – 120 10 15	50 – 110 10 15
X X	X X	X X	X X	X X	X X	X X	X X	X X
NONE NONE 10 – 20	NONE NONE 10	NONE NONE 10	NONE YES	NONE 8	NONE NONE 8	NONE NONE 8	NONE NONE	NONE NONE 8
430 912	2300 125	500 170	200 180	250 280	250 280	250 280	2800 225	250 280
D 471, 8.62%	NO CHANGE	NO CHANGE NO CHANGE		NO CHANGE	NO CHANGE	NO CHANGE		NO CHANGE
YES	YES	YES	NO	NO	NO	YES	YES	YES
1 2.7 40 90	1.0 3.0 40 90	1.0 3.0 40 90	1.0 3.0 48 90	1.0 3.0 40 90	1.0 3.0 40 90	1.0 3.0 40 90	1.0 3.0 40 90	1.0 3.0 40 90
YES 1989	YES 1984	YES 1992	YES 1987	YES 1986	YES 1986	YES 1986	YES 1984	YES 1986
YES DIRECT 9	YES DISTR, DIRECT 6	YES DISTR, DIRECT 6	YES DISTR, DIRECT 6	NO DISTR, DIRECT 6	NO DISTR, DIRECT 6	NO DISTR, DIRECT 6	YES DISTR, DIRECT 6	NO DISTR, DIRECT 6
M. CULLINS M. CULLINS	ROOFING 800/756-3626 ROOFING 800/756-3626	ROOFING 800/756-3626 ROOFING 800/756-3626	ROOFING 800/756-3626 ROOFING 800/756-3626	ROOFING 800/756-3626 ROOFING 800/756-3626	ROOFING 800/756-3626 ROOFING 800/756-3626	ROOFING 800/756-3626 ROOFING 800/756-3626	ROOFING 800/756-3626 ROOFING 800/756-3626	ROOFING 800/756-3626 ROOFING 800/756-3626

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

1. COMPANY NAME	SWD URETHANE COMPANY	SWD URETHANE COMPANY	SWD URETHANE COMPANY	UNITED COATINGS	UNITED COATINGS
2. PRODUCT NAME	SWD 1929	SWD 1929 F	1929 H	DIATHON	DIATHON QUICK SET
3.1 COATING DESCRIPTION A. ACRYLIC B. BUTYL C. HYPALON D. NEOPRENE E. SILICONE F. URETHANE G. VINYL H. MODIFIED ASPHALT I. OTHER (type)	X	X	X	X	X
3.2 VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	NO	NO	NO	NO	NO
3.3 COLORS AVAILABLE	WHITE, GRAY, BUFF	WHITE, GRAY, BUFF	WHITE, GRAY, BUFF	PEARL WHT, MED. GRAY, CUSTOM	PEARL WHT, MED. GRAY, CUSTOM
4. NAME OF PRODUCT: BASE COATING	SWD 1929	SWD 1929 F	1929 H	DIATHON	DIATHON QS
TOP COATING	SAME	SAME	SAME	DIATHON	DIATHON QS
5. NUMBER OF COATING APPLICATIONS REQUIRED BASE COATINGS TOP COATINGS GRANULES REQUIRED (yes, no, or optional)	1 1 OPTIONAL	1 1 OPTIONAL	1 1 OPTIONAL	1 1 OPTIONAL	1 1 OPTIONAL
6. REQUIRED DRY FILM THICKNESS: (mils) BASE COATING TOP COATING	15 8	36 12	36 12	11 MIN. 11	11 MIN. 11 MIN.
7. FILM CURE TIME BASE COATING TOP COATING	24 HOURS 24 HOURS	24 HOURS 24 HOURS	24 HOURS 24 HOURS	3 HRS (MED GRAY) 4 1/2 HRS (WHITE)	3 HRS (MED GRAY) 4 1/2 HRS (WHITE)
8. MINIMUM SLOPE REQUIRED (inches per foot)	1/4"	1/4"	1/4"	1/2"	1/2"
9. REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required) A. CONCRETE DECKS B. PLYWOOD DECKS C. METAL DECKS D. EXISTING SPUDDED BUILT-UP ROOFING E. OTHER COATINGS	P P P P P	P P P P P	P P P P P	X X X X X	X X X X X
10. FLASHING MATERIAL (type or self-flashing)	SELF	SELF	SELF	SELF	SELF
11. APPLICATION CONDITIONS RECOMMENDED AMBIENT AIR TEMPERATURE RANGE (degrees F) MAXIMUM PERMITTED WIND VELOCITY WITHOUT SCREEN (mph) MAXIMUM PERMITTED WIND VELOCITY WITH WIND SCREEN (mph)	< 50 15 25	< 50 15 25	<50 15 25	50 – 110 12 20	50 – 110 12 20
12. APPLICATION EQUIPMENT REQUIREMENTS SINGLE-COMPONENT AIRLESS SPRAY MULTIPLE-COMPONENT AIRLESS SPRAY OTHER (roller, brush, etc.)	X X X	X X X	X X X	X X X	X X X
13. RESTRICTED REGIONS (yes/none)	NONE	NONE	NONE	NONE	NONE
14. RESTRICTED BUILDING USES (yes/none)	YES	YES	YES	YES	YES
15. RECOMMENDED RECOATING SCHEDULE (years or none)	5	5	5	5	5
16. PHYSICAL PROPERTIES OF THE COATING TENSILE STRENGTH PER ASTM D 412 OR OTHER (psi) ELONGATION PER ASTM D 412 OR OTHER (%) IMPACT RESISTANCE PER ASTM D 2794 OR OTHER (inch lbs) ACCELERATED WEATHERING PER ASTM D 822 OR OTHER (color change) HEAT AGING PER ASTM D 573 OR OTHER (%) WATER ABSORPTION PER ASTM D 570 OR OTHER (%)	250 489 NO CHANGE 5	280 355 NO CHANGE 5	 	250 – 440 280 – 320 NO CHANGE	250 – 440 280 – 320 NO CHANGE 8%
17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM(yes/no)	YES	YES	YES	YES	YES
18. FOAM INSULATION REQUIREMENTS MINIMUM THICKNESS (inches) NOMINAL DENSITY PER ASTM D 1622 OR OTHER (lbs/ft³) COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi) CLOSED CELL CONTENT PER ASTM D 2856 OR OTHER (%)	1 2.5 40 <90	1 2.5 40 <90	1 2.5 40 <90	1 2.5 – 3.0 40 MIN. 90 MIN.	1 2.5 – 3.0 40 MIN. 90 MIN.
19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)	YES	YES	YES	NO	NO
20. YEAR OF FIRST COMMERCIAL USE	1972	1972	1972	1971	1995
21. NUMBER OF SQUARES INSTALLED (100 ft²)	MILLIONS	MILLIONS	MILLIONS	5 MILLION	
22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	YES	YES	YES	NO	NO
23. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT
24. NUMBER OF REGIONAL SERVICE LOCATIONS	1	1	1	8	8
25. FOR SALES INFORMATION, CONTACT: FOR TECHNICAL INFORMATION, CONTACT:	D. RUDD 800/828-1394 D. RUDD 800/828-1394	D. RUDD 800/828-1394 D. RUDD 800/828-1394	D. RUDD 800/828-1394 D. RUDD 800/828-1394	B. MANN 800/541-4383 B. MANN 800/541-4383	B. MANN 800/541-4383 B. MANN 800/541-4383
26. SEE MEMBRANE APPENDIX IF CHECKED					

NA=not applicable

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS
DIATHON HIGH TENSILE	DIATHON SOLAR CURE	DIATHON 4500	ACRON 60	UNISIL 600	UNISIL 700	ELASTRON 858	ELASTUFF 101
X	X	X	X			X	
				X	X		X
NO PEARL WHT, MED. GRAY, CUSTOM	NO WHITE	NO PEARL WHT, MED. GRAY, CUSTOM	NO	NO GRAY, LT. GRAY, WHITE	NO LT. GRAY, WHITE, CUSTOM	YES GRAY, TAN	NO MEDIUM GRAY
DIATHON HT	DIATHON SC	DIATHON 4500	ACRON 60	UNISIL 600	UNISIL 700	SAME	SAME
DIATHON HT	DIATHON SC	DIATHON 4500	ACRON 60	UNISIL 600	UNISIL 700	DIATHON, ELASTUFF 101	ELASTUFF 102
1 1 OPTIONAL	1 1 OPTIONAL	1 1 OPTIONAL	1 1 OPTIONAL	1 1 OPTIONAL	1 1 OPTIONAL	1 1 OPTIONAL	1 NO
11 MIN. 11 MIN.	11 MIN. 11 MIN.	11 MIN. 11 MIN.	11 MIN. 11 MIN.	6 – 11 MIN. 11 MIN.	6 – 11 MIN. 11 MIN.	15 – 18 7 – 9	17
3 HRS (MED GRAY) 4 1/2 HRS (WHITE)	3 HRS (MED GRAY) 4 1/2 HRS (WHITE)	3 HRS (MED GRAY) 4 1/2 HRS (WHITE)	3 HRS (MED GRAY) 4 1/2 HRS (WHITE)	2 – 3 HOURS 2 – 3 HOURS	2 – 3 HOURS 2 – 3 HOURS	4 – 6 HOURS	6 – 8 HOURS
1/2"	1/2"	1/2"	1/2"	1/2 "	1/2 "	1/2"	1/2"
X	X	X	X X X X X	P P P P P	P P P P P	X X X X X	P P P P X
SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF
12 20	12 20	12 20	50 – 110 12 20	40 – 110 12 20	40 – 110 12 20	50 – 110 12 20	40 – 110 12 20
X X	X X	X X	X X	X X	X X	X X	X X
YES	YES	YES	NONE YES 5	NONE YES	NONE YES 5	NONE YES 5	NONE YES 5
425 475	250 300	240 145	200 180	650 150	650 150	300 75	1000 500
NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	0.1 MAX	1.0 MAX
YES	YES	YES	YES	YES	YES	YES	YES
2.5 – 3.0	2.5 – 3.0	2.5 – 3.0	1 2.5 – 3.0 40 MIN. 90 MIN.	1 2.5 – 3.0 40 MIN. 90 MIN.	1 2.5 – 3.0 40 MIN. 90 MIN.	1 2.5 – 3.0 40 90	1 2.5 – 3.0 40 90
NO 1993	NO 1995	NO 1986 20 MILLION	NO 1989 50 MILLION	NO 1994 3 MILLION	YES 1987 20,000	NO 1965 500,000	NO 1989 3,000
DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	NO DISTRS, DIRECT 8	NO DISTRS, DIRECT 8	NO DISTRS, DIRECT 4	NO DISTRS, DIRECT 4	NO DISTRS, DIRECT 4
B. MANN 800/541-4383 B. MANN 800/541-4383	B. MANN 800/541-4383 B. MANN 800/541-4383	B. MANN 800/541-4383 B. MANN 800/541-4383	B. MANN 800/541-4383 B. MANN 800/541-4383	B. MANN 800/541-4383 B. MANN 800/541-4383	B. MANN 800/541-4383 B. MANN 800/541-4383	B. MANN 800/541-4383 B. MANN 800/541-4383	B. MANN 800/541-4383 B. MANN 800/541-4383

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

1. COMPANY NAME	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS
2. PRODUCT NAME	ELASTUFF 102	BERM 600	UNISEAL EPOXY SEALER	UNI-TILE EPOXY SEALER
3.1 COATING DESCRIPTION A. ACRYLIC B. BUTYL C. HYPALON D. NEOPRENE E. SILICONE F. URETHANE G. VINYL H. MODIFIED ASPHALT I. OTHER (type)	X	X	EPOXY	EPOXY
3.2 VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	NO	NO	NO	NO
3.3 COLORS AVAILABLE	IVORY WHITE, LIMITED CUSTOM	LT. GRAY, TAN, CUSTOM	CLEAR, BLACK	CLEAR, BLACK
4. NAME OF PRODUCT: BASE COATING TOP COATING	ELASTUFF 101 SAME	BERM 500 DIATHON BERM 600		
5. NUMBER OF COATING APPLICATIONS REQUIRED BASE COATINGS TOP COATINGS GRANULES REQUIRED (yes, no, or optional)	1 OPTIONAL	1 OPTIONAL		
6. REQUIRED DRY FILM THICKNESS: (mils) BASE COATING TOP COATING	7	11 MIN. 11 MIN.	1/2 – 2 MIN.	1/2 – 2 MIN.
7. FILM CURE TIME BASE COATING TOP COATING	8 – 12 HOURS	1 1/2 – 2 HOURS 1 1/2 – 2 HOURS	8 HOURS	3 HOURS
8. MINIMUM SLOPE REQUIRED (inches per foot)	1/2"	1/2"		
9. REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required) A. CONCRETE DECKS B. PLYWOOD DECKS C. METAL DECKS D. EXISTING SPUDDED BUILT-UP ROOFING E. OTHER COATINGS	X P P P X	X X P X X		
10. FLASHING MATERIAL (type or self-flashing)	SELF	SELF	SELF	
11. APPLICATION CONDITIONS RECOMMENDED AMBIENT AIR TEMPERATURE RANGE (degrees F) MAXIMUM PERMITTED WIND VELOCITY WITHOUT SCREEN (mph) MAXIMUM PERMITTED WIND VELOCITY WITH WIND SCREEN (mph)	40 – 110 12 20	50 – 110 12 20	50 – 110 12 20	50 – 110 12 20
12. APPLICATION EQUIPMENT REQUIREMENTS SINGLE-COMPONENT AIRLESS SPRAY MULTIPLE-COMPONENT AIRLESS SPRAY OTHER (roller, brush, etc.)	X X	X X	X X	X X
13. RESTRICTED REGIONS (yes/no)	NONE	NONE	NONE	NONE
14. RESTRICTED BUILDING USES (yes/no)	YES	YES	YES	YES
15. RECOMMENDED RECOATING SCHEDULE (years or none)	5	5		
16. PHYSICAL PROPERTIES OF THE COATING TENSILE STRENGTH PER ASTM D 412 OR OTHER (psi) ELONGATION PER ASTM D 412 OR OTHER (%) IMPACT RESISTANCE PER ASTM D 2794 OR OTHER (inch lbs) ACCELERATED WEATHERING PER ASTM D 822 OR OTHER (color change) HEAT AGING PER ASTM D 573 OR OTHER (%) WATER ABSORPTION PER ASTM D 570 OR OTHER (%)	2500 400 NO CHANGE 2.5 MAX	250 240 NO CHANGE		
17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)	YES	YES		
18. FOAM INSULATION REQUIREMENTS MINIMUM THICKNESS (inches) NOMINAL DENSITY PER ASTM D 1622 OR OTHER (lbs/ft³) COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi) CLOSED CELL CONTENT PER ASTM D 2856 OR OTHER (%)	1 2.5 – 3.0 40 90	1 2.5 – 3.0 40 MIN. 90 MIN.		
19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)	NO	NO		
20. YEAR OF FIRST COMMERCIAL USE	1989	1990	1995	1970
21. NUMBER OF SQUARES INSTALLED (100 ft²)	5,000			
22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	NO	NO	NO	NO
23. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT
24. NUMBER OF REGIONAL SERVICE LOCATIONS	4	8	8	8
25. FOR SALES INFORMATION, CONTACT: FOR TECHNICAL INFORMATION, CONTACT:	B. MANN 800/541-4383 B. MANN 800/541-4383	B. MANN 800/541-4383 B. MANN 800/541-4383	B. MANN 800/541-4383 B. MANN 800/541-4383	B. MANN 800/541-4383 B. MANN 800/541-4383
26. SEE MEMBRANE APPENDIX IF CHECKED				

NA=not applicable

Spray-applied Polyurethane Foam Systems Part 1: Protective Coatings

UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UCSC	UCSC	UCSC
ACRILEX 300 ACRYLIC PRIMER	UNIBASE ACRYLIC ADHES/PRIMER	ADHERE-IT EPDM PRIMER	DURASIL	DURASHIELD	DURATHANE
X	X			X	
			X		X
NO LT. GRAY	NO TRANSPARENT GREEN	NO CLEAR	NO GRAY, WHITE	YES WHITE, TAN, CUSTOM	NO DARK GRAY
			DURASIL BASE	DURASHIELD	DURATHANE
			DURASIL TOP	DURASHIELD	DURATHANE, DURASHIELD
			1 - 2 1 - 2 OPTIONAL	2 1 - 2 OPTIONAL	2 1 OPTIONAL
1/2 - 2 MIN.			10 - 15 10 - 15	25 10	24 16
1 - 24	1 - 2	1/2 - 1	4 HOURS 24 HOURS	4 - 8 HOURS 12 HOURS	12 - 16 HOURS 72 HOURS
			1/8"	1/8"	1/8"
			P P	P P	P P
			X X	X X	X X
			P SELF	P SELF	P SELF
50 - 110 12 20	50 - 110 12 20	50 - 110 12 20	50 - 100 15 25	50 - 100 15 25	50 - 100 15 25
X X NONE YES	X X NONE YES	X X NONE YES	X NONE NONE 5 - 10	X NONE NONE 5 - 10	X NONE NONE 5 - 10
	1000 650		600±50 150±25 NONE	425 315 >160 10,000 HOURS	425±25 300±50
			>0.1 YES	YES	2.4 YES
			1 - 2 2.5 29 >90 YES	1 - 2 2.5 29 > 90 YES	1 - 2 2.5 29 > 90 YES
1993	1996	1995	1981	1981	1981
NO DISTRs, DIRECT 8	NO DISTRs, DIRECT 8	NO DISTRs, DIRECT 8	YES DIRECT 9	YES DIRECT 9	YES DIRECT 9
B. MANN 800/541-4383 B. MANN 800/541-4383	B. MANN 800/541-4383 B. MANN 800/541-4383	B. MANN 800/541-4383 B. MANN 800/541-4383	L. WRIGHT 800/289-8272 J. WHITAKER 800/289-8272	L. WRIGHT 800/289-8272 J. WHITAKER 800/289-8272	L. WRIGHT 800/289-8272 J. WHITAKER 800/289-8272

Metal Roof Panels

1. COMPANY NAME	AEP-SPAN		AEP-SPAN	
2. PRODUCT NAME	SPAN-LOK (SL)		SNAP-SEAM (SN)	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION				
A. PANEL DESCRIPTION			STANDING SEAM	
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)				
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	22, 24	KYNAR, UNFINISHED	22, 24	KYNAR
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)	0.032, 0.040	KYNAR	0.032	KYNAR
COPPER (oz.)			16, 20	
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	45		45	
D. PANEL WIDTHS (in.)	16, 18		10, 12, 18, 24	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	1/4:12		2:12	
B. SOLID DECKING (required, optional, or not used)	OPTIONAL		OPTIONAL	
C. UNDERLAYMENT (type or NA)	NA		30-LB. FELT	
6. PANEL PROFILE				
VERTICAL LEG	X			
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED	2, 3	F		
CRIMPED (45 degrees)	2, 3	F		
ROLL FORMED (180 degrees)	2, 3	F		
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP			1 3/4	F
SNAP TOGETHER				
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED	X		X	
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP			X	
MOVEABLE CLIP (designed allowable movement, inches)	1			
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED			X	
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1993		1985	
B. NUMBER OF SQUARES INSTALLED	50,000+		50,000+	
C. LICENSED APPLICATOR AGREEMENT (yes/no)	YES		YES	
D. METHOD OF DISTRIBUTION (distributors, direct)	DIRECT		DIRECT	
E. NUMBER OF REGIONAL SERVICE LOCATIONS	40		40	
FOR SALES INFORMATION, CONTACT	J. SMITH		J. SMITH	
FOR TECHNICAL INFORMATION, CONTACT	T. SHINGLER		T. SHINGLER	
11. ASTM E331 WATER INFILTRATION	0/6.24 PSF		0 @ 6.24 PSF	
TEST RESULTS (results or none)				
12. ASTM E283 AIR INFILTRATION TEST RESULTS	0.013/6.24 PSF		0.059 @ 6.24 PSF	
(results or none)				
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

AEP-SPAN		AEP-SPAN		AEP-SPAN	
STRUCTURAL BATTEN SEAM SN (SBS)		HIGH-SEAM (HS)		CAP-SEAM (CS)	
YES		YES		YES	
YES		YES		YES	
STRUCTURAL BATTEN		STANDING SEAM		STANDING SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
22, 24	KYNAR	22, 24	KYNAR	22, 24	KYNAR
0.032	KYNAR	0.032, 0.040	KYNAR	0.032	KYNAR
16, 20		16, 20		16, 20	
45		45		45	
10, 12, 18, 24		12, 20		12, 20	
2:12 OPTIONAL 30-LB. FELT		3:12 REQUIRED 30-LB. FELT		3:12 REQUIRED 30-LB. FELT	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
2	F	1 1/2	F	1	F
X		X		X	
X		X		X	
X		X		X	
1985					
YES DIRECT 40		YES DIRECT 40		YES DIRECT 40	
J. SMITH T. SHINGLER		J. SMITH T. SHINGLER		J. SMITH T. SHINGLER	
0 @ 6.24 PSF		NONE		0 @ 6.24 PSF	
0.059 @ 6.24 PSF		NONE		0.059 @ 6.24 PSF	
UL-90		UL-90		UL-90	

Metal Roof Panels

1. COMPANY NAME	AEP-SPAN		AEP-SPAN	
2. PRODUCT NAME	BATTEN SEAM (BS)		BERMUDA	
3. ARCHITECTURAL APPLICATIONS (yes/no) STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION	BATTEN SEAM		BERMUDA	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES GALVANIZED STEEL (ga.)	THICKNESSES	FINISHES	THICKNESSES	FINISHES
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	22, 24	KYNAR	22, 24	KYNAR
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)	0.032, 0.040	KYNAR	0.032, 0.040	KYNAR
COPPER (oz.)	16, 20			
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	45		30	
D. PANEL WIDTHS (in.)	16, 24		9.5	
5. SYSTEMS REQUIREMENTS	4:12		4:12	
A. MINIMUM SLOPE (in. per ft.)	REQUIRED		REQUIRED	
B. SOLID DECKING (required, optional, or not used)	30-LB. FELT		40-LB. FELT	
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE	X		HORIZONTAL	
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK			1	
SNAP-ON CAP				
SNAP TOGETHER	2	F		
8. FASTENING METHOD	X		X	
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP	X		X	
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA	1978		1975	
A. YEAR OF FIRST COMMERCIAL USE				
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	YES		YES	
D. METHOD OF DISTRIBUTION (distributors, direct)	DIRECT		DIRECT	
E. NUMBER OF REGIONAL SERVICE LOCATIONS	40		40	
FOR SALES INFORMATION, CONTACT	J. SMITH		J. SMITH	
FOR TECHNICAL INFORMATION, CONTACT	T. SHINGLER		T. SHINGLER	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NONE		NONE	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE		NONE	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	NONE		NONE	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

AEP-SPAN		AEP-SPAN		AMERICAN BUILDINGS ROOFING AND ARCH. PRODUCTS	
SQUARE BATTEN (SB)		STANDING SEAM (SS)		STANDING SEAM II PANELS	
YES				YES YES	
STANDING SEAM		STANDING SEAM		FIELD-LOCKED STANDING SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
24	KYNAR	24	KYNAR	24, 22	UNFINISHED, KYNAR 500
12		12		60	
1		1		24	
4:12 REQUIRED 30-LB. FELT		4:12 REQUIRED 30-LB. FELT		1/4:12 OPTIONAL	
				X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1	N	1	N	3	F
				X X 1 1/4, 2 1/2	
1975 YES DIRECT 40		1975 YES DIRECT 40		1977 YES	
J. SMITH T. SHINGLER		J. SMITH T. SHINGLER		W. BURROWS J. SAVAGE	NONE
					NONE
					UL-90
					X

Metal Roof Panels

1. COMPANY NAME	AMERICAN BUILDINGS ROOFING AND ARCH. PRODUCTS		AMERICAN BUILDINGS ROOFING AND ARCH. PRODUCTS	
2. PRODUCT NAME	STANDING SEAM 360		LONG SPAN PANELS	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION	FIELD FORMED STANDING SEAM		LAPPED SEAMS	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)				
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	24, 22	UNFINISHED, KYNAR 500	24, 26	UNFINISHED, KYNAR 500
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)				
COPPER (oz.)				
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	60		45	
D. PANEL WIDTHS (in.)	24		36	
5. SYSTEMS REQUIREMENTS	1/4:12		1/2:12	
A. MINIMUM SLOPE (in. per ft.)	OPTIONAL		OPTIONAL	
B. SOLID DECKING (required, optional, or not used)				
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE	VERTICAL LEG		VERTICAL LEG	
TRAPEZOIDAL	X		X	
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)			1 1/4	E
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)	3	F		
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER				
8. FASTENING METHOD			X	
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP	X			
MOVEABLE CLIP (designed allowable movement, inches)	2			
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1996		1973	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	YES		YES	
D. METHOD OF DISTRIBUTION (distributors, direct)				
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT	W. BURROWS		W. BURROWS	
FOR TECHNICAL INFORMATION, CONTACT	J. SAVAGE		J. SAVAGE	
11. ASTM E331 WATER INFILTRATION	NONE		NONE	
TEST RESULTS (results or none)				
12. ASTM E283 AIR INFILTRATION TEST RESULTS	NONE		NONE	
(results or none)				
13. FM/UL WIND UPLIFT RATINGS FOR	UL-90		UL-90	
ANY SPECIFICATION				
14. SEE APPENDIX IF CHECKED	X		X	

NA=not applicable

Metal Roof Panels

AMERICAN BUILDINGS ROOFING AND ARCH. PRODUCTS		AMERICAN BUILDINGS ROOFING AND ARCH. PRODUCTS		AMERICAN BUILDINGS ROOFING AND ARCH. PRODUCTS	
MANSARD FASCIA		LOC-SEAM PANEL		MULTI-RIB PANEL	
YES		YES		YES	
NO		YES		YES	
FLAT PANEL		FIELD-FORMED STANDING SEAM		LAPPED SEAMS	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
24	UNFINISHED, KYNAR 500	22, 24	UNFINISHED, KYNAR 500	26, 24	UNFINISHED, KYNAR 500
30		64		45	
10,18		12,16		36	
3:12		1/4:12		1/2:12	
REQUIRED		OPTIONAL			
30-LB. FELT					
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
		2, 3	F	3/4	E
1	F				
				X	
X		X			
		X			
1989		1989		1985	
YES		YES		YES	
W. BURROWS J. SAVAGE		W. BURROWS J. SAVAGE		W. BURROWS J. SAVAGE	
NONE		NO LEAKAGE @ 20 PSF		NONE	
NONE		0.009 SCFM/SF @ 20 PSF		NONE	
NONE		UL-90		UL-90	
X		X		X	

Metal Roof Panels

1. COMPANY NAME	AMERICAN STEEL BUILDING CO., INC.		ARS INDUSTRIES	
2. PRODUCT NAME	EXPANDEK STANDING SEAM		SSB	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION	HINGE LOCKED STANDING SEAM		LOCK FORM BATTEN SEAM	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)	22, 24, 26	DEXSTAR 850, UNFINISHED	22, 24, 26	KYNAR 500, SILICON POLYESTER, UNFINISHED
STAINLESS STEEL (ga.)			22, 24	
GALVALUME (ga.)	22, 24, 26	DEXSTAR 850, UNFINISHED	22, 24, 26	KYNAR 500, SILICON POLYESTER, UNFINISHED
ALUMINIZED STEEL (ga.)			22, 24	
ALUMINUM (in.)			0.032, 0.040	KYNAR 500, SILICON POLYESTER, ANODIZED
COPPER (oz.)			16, 20	
TERNE METAL (ga.)			24	
ZINC (ga.)			24	
C. MAXIMUM LENGTH (lf.)	60		60	
D. PANEL WIDTHS (in.)	18, 20, 24		8, 12, 16, 18, 20, 24	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	1/4:12		1/4:12	
B. SOLID DECKING (required, optional, or not used)	NOT USED		OPTIONAL	
C. UNDERLAYMENT (type or NA)	NA		30-LB. FELT OR EQUIVALENT	
6. PANEL PROFILE				
VERTICAL LEG	X		X	
TRAPEZOIDAL				
BATTEN			X	
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)			1 1/2	F, E
ROLL FORMED (180 degrees)			1 1/2	F, E
DOUBLE ROLL FORMED (two 180 degrees)			1 1/2	F, E
ROLL AND LOCK			2 1/2	F, E
SNAP-ON CAP			1 1/2	N
SNAP TOGETHER	3	E	1 3/4	F, E
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED			X	
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED			X	
FIXED CLIP	X		X	
SLIP CLIP	X		X	
MOVEABLE CLIP (designed allowable movement, inches)	1		1 1/2	
9. SPECIALTY APPLICATIONS			X	
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA	WALLS AND FACADES			
A. YEAR OF FIRST COMMERCIAL USE	1984		1984	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		YES	
D. METHOD OF DISTRIBUTION (distributors, direct)			YES	
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT	G. VEILLEUX		205/836-6777	
FOR TECHNICAL INFORMATION, CONTACT	S. HALVORSON		205/836-6777	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NONE		NO PENETRATION AT 20 PSF FOR 15 MINUTES	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE		LEAKAGE AT SEAM NOT TO EXCEED 0.005 CFM PSF OF PANEL AT 10 PSF DIFFERENTIAL PRESSURE	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

ARS INDUSTRIES		ARS INDUSTRIES		ARS INDUSTRIES	
SSC		SS LB		SS 1.5	
YES		YES		YES	
NO		NO		YES	
SNAP-ON BATTEN		BATTEN SEAM		LOCK FORM STANDING SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
22, 24	KYNAR 500, SILICON POLYESTER, UNFINISHED	24, 26	KYNAR 500, SILICON POLYESTER, UNFINISHED	22, 24, 26	KYNAR 500, SILICON POLYESTER, UNFINISHED
26		24, 26		22, 24	
24, 26	KYNAR 500, SILICON POLYESTER, MILL	24, 26	KYNAR 500, SILICON POLYESTER, MILL	22, 24, 26	KYNAR 500, SILICON POLYESTER, MILL
24, 26		24, 26		22, 24	
0.032	KYNAR 500, SILICON POLYESTER, ANODIZED	0.032, 0.040	KYNAR 500, SILICON POLYESTER, ANODIZED	0.032, 0.040	KYNAR 500, SILICON POLYESTER, ANODIZED
16, 20		16, 20		16, 20	
24, 26		24		24	
24, 26		24		24	
60		60		60	
12, 16, 18, 20, 24		8, 12, 16, 18, 20, 24		8, 12, 16, 18, 20, 24	
3:12 REQUIRED		3:12 REQUIRED		1/4:12 OPTIONAL	
30-LB. FELT OR EQUIVALENT		30-LB. FELT OR EQUIVALENT		30-LB. FELT OR EQUIVALENT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1	F	1 1/2	N	1 1/2	F, E
				1 1/2	F, E
X		X		X	
X		X		1 1/2	
1984		1984		1984	
YES		YES		YES	
205/836-6777		205/591-5105		205/591-5105	
205/836-6777		205/591-1010		205/591-1010	
NONE		NONE		NO PENETRATION AT 20 PSF FOR 15 MINUTES	
NONE		NONE		LEAKAGE AT SEAM NOT TO EXCEED 0.005 CFM PSF OF PANEL AT 10 PSF DIFFERENTIAL PRESSURE	
NONE		NONE		UL-90	

Metal Roof Panels

1. COMPANY NAME	ARS INDUSTRIES		ATAS INTERNATIONAL, INC.	
2. PRODUCT NAME	SS 2.5		MONARCH ROOF PANEL	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION	SNAP-ON BATTEN		INTEGRAL STANDING AND BATTEN SEAM	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)	24, 26	KYNAR 500, SILICON POLYESTER, UNFINISHED	22, 24	KYNAR 500, UNFINISHED
STAINLESS STEEL (ga.)	24, 26			
GALVALUME (ga.)	24, 26	KYNAR 500, SILICON POLYESTER, MILL	22, 24	KYNAR 500, UNFINISHED
ALUMINIZED STEEL (ga.)	24, 26			
ALUMINUM (in.)	0.032, 0.040	KYNAR 500, SILICON POLYESTER, ANODIZED	0.032, 0.040, 0.050	KYNAR 500
COPPER (oz.)	16, 20		16, 20	
TERNE METAL (ga.)	24			
ZINC (ga.)	24			
C. MAXIMUM LENGTH (lf.)	60		70	
D. PANEL WIDTHS (in.)	12, 16, 18		12, 16	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	1/4:12		2:12	
B. SOLID DECKING (required, optional, or not used)	OPTIONAL		OPTIONAL	
C. UNDERLAYMENT (type or NA)	30-LB. FELT OR EQUIVALENT		30-LB. FELT	
6. PANEL PROFILE				
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)	X		X	
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK	2 1/2	F, E		
SNAP-ON CAP	2 1/2		2, 2 1/2	F
SNAP TOGETHER				
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP	X		X	
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)	2 1/2			
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED	X			
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1984		1981	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	YES		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)			DISTRIBUTORS	
E. NUMBER OF REGIONAL SERVICE LOCATIONS			2	
FOR SALES INFORMATION, CONTACT	205/591-5105		J. BUSH (610/395-8445)	
FOR TECHNICAL INFORMATION, CONTACT	205/591-1010		J. BUSH (610/395-8445)	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NO PENETRATION AT 20 PSF FOR 15 MINUTES		NO LEAKAGE AT 10 PSF	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	LEAKAGE AT SEAM NOT TO EXCEED 0.005 CFM PSF OF PANEL AT 10 PSF DIFFERENTIAL PRESSURE		0.13 CFM PER SQ. FT. AT 4.00 PSF	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90		UL-90	
14. SEE APPENDIX IF CHECKED			X	

NA=not applicable

Metal Roof Panels

ATAS INTERNATIONAL, INC.		ATAS INTERNATIONAL, INC.		ATAS INTERNATIONAL, INC.	
MULTI-PURPOSE PANEL		PC SNAP-ON SYSTEM		PC SNAP-ON SYSTEM	
YES		YES		YES	
YES		NO		NO	
STRUCTURAL STANDING AND BATTEN SEAM		SNAP-ON SEAM		SNAP-ON BATTEN	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
24	KYNAR 500, UNFINISHED	24	KYNAR 500, UNFINISHED	24	KYNAR 500, UNFINISHED
24	KYNAR 500, UNFINISHED	24	KYNAR 500, UNFINISHED	24	KYNAR 500, UNFINISHED
0.032, 0.040	KYNAR 500, ANODIZED	0.032, 0.040	KYNAR 500, ANODIZED	0.032, 0.040	KYNAR 500, ANODIZED
16, 20		16, 20		16, 20	
40		65		65	
12, 16		12 5/8, 15 1/4		12 1/2, 16 1/2	
3:12		3:12		3:12	
OPTIONAL		OPTIONAL		OPTIONAL	
30-LB. FELT		30-LB. FELT		30-LB. FELT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1 1/4	N	1 1/4	N	1 1/2	N
X		X		X	
X		X		X	
X		X		X	
X		X		X	
1977		1984		1984	
NO		NO		NO	
DISTRIBUTORS		DISTRIBUTORS		DISTRIBUTORS	
2		2		2	
J. BUSH (610/395-8445)		J. BUSH (610/395-8445)		J. BUSH (610/395-8445)	
J. BUSH (610/395-8445)		J. BUSH (610/395-8445)		J. BUSH (610/395-8445)	
NO LEAKAGE AT 9.75 PSF		NONE		NONE	
0.11 CFM PER SQ. FT. AT 4.00 PSF		NONE		NONE	
UL-90		UL-90			
X		X		X	

Metal Roof Panels

1. COMPANY NAME	ATAS INTERNATIONAL, INC.		ATAS INTERNATIONAL, INC.	
2. PRODUCT NAME	METAFOR		DUTCH SEAM	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION	CORRUGATED		STRUCTURAL STANDING SEAM	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)			22, 24	KYNAR 500, UNFINISHED
STAINLESS STEEL (ga.)				
GALVALUME (ga.)			22, 24	KYNAR 500, UNFINISHED
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)	0.032, 0.040	KYNAR 500	0.032, 0.040	KYNAR 500, ANODIZED
COPPER (oz.)			16, 20	
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	40		65	
D. PANEL WIDTHS (in.)	12		11, 15, 1- 1/4	
5. SYSTEMS REQUIREMENTS	3:12		2:12	
A. MINIMUM SLOPE (in. per ft.)	OPTIONAL		OPTIONAL	
B. SOLID DECKING (required, optional, or not used)	30-LB. FELT		30-LB. FELT	
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE	SQUARE CORRUGATIONS		X	
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER	5/8	N	1 5/8	F
8. FASTENING METHOD	X			
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP			X	
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS	X		X	
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA	1981		1981	
A. YEAR OF FIRST COMMERCIAL USE				
B. NUMBER OF SQUARES INSTALLED	NO		NO	
C. LICENSED APPLICATOR AGREEMENT (yes/no)	DISTRIBUTORS		DISTRIBUTORS	
D. METHOD OF DISTRIBUTION (distributors, direct)	2		2	
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT	J. BUSH (610/395-8445)		J. BUSH (610/395-8445)	
FOR TECHNICAL INFORMATION, CONTACT	J. BUSH (610/395-8445)		J. BUSH (610/395-8445)	
11. ASTM E331 WATER INFILTRATION	NONE		NO LEAKAGE @12.0 PSF(69 MPH)	
TEST RESULTS (results or none)				
12. ASTM E283 AIR INFILTRATION TEST RESULTS	NONE		0.08 CFM/FE 2 @1.57 PSF(25 MPH)	
(results or none)				
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	NONE		UL-90	
14. SEE APPENDIX IF CHECKED	X		X	

NA=not applicable

Metal Roof Panels

BERRIDGE MANUFACTURING CO.		BERRIDGE MANUFACTURING CO.		BERRIDGE MANUFACTURING CO.	
TEE-PANEL		HIGH SEAM TEE-PANEL		BATTEN SEAM PANEL	
YES		YES		YES	
NO		YES		YES	
SNAP-ON STANDING SEAM		SNAP-ON CAP STANDING SEAM		BATTEN STANDING SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
24	KYNAR 500, HYLAR 5000	24	KYNAR 500, HYLAR 5000	24	KYNAR 500, HYLAR 5000
24	KYNAR 500, HYLAR 5000	24	KYNAR 500, HYLAR 5000	24	KYNAR 500, HYLAR 5000
16		16		16	
12 3/4		18 1/4		16	
1:12 REQUIRED 30-LB. FELT OR EQUIVALENT		1:12 REQUIRED 30-LB. FELT OR EQUIVALENT		1:12 OPTIONAL 30-LB. FELT OR EQUIVALENT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1	F	1, 1 1/2	F	1 3/4	F
X		X		X	
X		X		X	
FREE-FORM COMPOUND CURVED					
1969		1970		1970	
NO		NO		NO	
D. DOYLE (800/231-8127) R. MARKS		D. DOYLE (800/231-8127) R. MARKS		D. DOYLE (800/231-8127) R. MARKS	
NO MEASURABLE INFILTRATION AT 5 GALLONS PSF AT STATIC PRESSURE OF 2.86 PSF DIFFERENTIAL		NO MEASURABLE INFILTRATION AT 5 GALLONS PSF AT STATIC PRESSURE OF 2.86 PSF DIFFERENTIAL		NONE	
NO MEASURABLE INFILTRATION AT STATIC PRESSURE DIFFERENTIAL OF 1.57 PSF		NO MEASURABLE INFILTRATION AT STATIC PRESSURE DIFFERENTIAL OF 1.57 PSF		NONE	
UL-90		UL-90		UL-90	
X		X		X	

Metal Roof Panels

1. COMPANY NAME	BERRIDGE MANUFACTURING CO.		BERRIDGE MANUFACTURING CO.	
2. PRODUCT NAME	ZEE-LOCK		DOUBLE-LOCK DL-1, DL-1.5	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION	LOCK-FORMED STANDING SEAM		LOCK-FORMED STANDING SEAM	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)	24	KYNAR 500, HYLAR 5000	24	KYNAR 500, HYLAR 5000
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	24	KYNAR 500, HYLAR 5000	24	KYNAR 500, HYLAR 5000
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)				
COPPER (oz.)	16		16	
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)				
D. PANEL WIDTHS (in.)	16		17, 18	
5. SYSTEMS REQUIREMENTS	1/2:12		1/2:12	
A. MINIMUM SLOPE (in. per ft.)	OPTIONAL		OPTIONAL	
B. SOLID DECKING (required, optional, or not used)				
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE	X		X	
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)	2	F	1, 1 1/2	N
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER				
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP	X		X	
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1989		1987	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)				
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT	D. DOYLE (800/231-8127)		D. DOYLE (800/231-8127)	
FOR TECHNICAL INFORMATION, CONTACT	R. MARKS		R. MARKS	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NO MEASURABLE INFILTRATION AT 5 GALLONS PSF AT STATIC PRESSURE OF 20.00 PSF		NONE	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NO MEASURABLE INFILTRATION AT STATIC PRESSURE DIFFERENTIAL OF 6.24 PSF		NONE	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90, FM I-60, FM I-120		NONE	
14. SEE APPENDIX IF CHECKED	X		X	

NA=not applicable

Metal Roof Panels

BERRIDGE MANUFACTURING CO.		BERRIDGE MANUFACTURING CO.		BERRIDGE MANUFACTURING CO.	
CEE-LOCK PANEL		"R" PANEL		"M" PANEL	
YES		YES		YES	
YES		YES		YES	
SNAP-ON STANDING SEAM		CORRUGATED ROOF PANEL		CORRUGATED ROOF PANEL	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
24	KYNAR 500, HYLAR 5000	24	KYNAR 500, HYLAR 5000	24	KYNAR 500, HYLAR 5000
24	KYNAR 500, HYLAR 5000	24	KYNAR 500, HYLAR 5000	24	KYNAR 500, HYLAR 5000
16					
40		40		40	
16 1/2		36		36	
1:12 OPTIONAL 30-LB. FELT OR EQUIVALENT		1:12 NOT USED NA		1:12 NOT USED NA	
X		X			
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1 1/2	F	1 1/4	E	3/4	E
		X		X	
X		X		X	
1989 NO		1989 NO		1988 NO	
D. DOYLE (800/231-8127) R. MARKS		D. DOYLE (800/231-8127) R. MARKS		D. DOYLE (800/231-8127) R. MARKS	
NO MEASURABLE INFILTRATION AT 5 GALLONS PSF AT STATIC PRESSURE OF 20.00 PSF		NONE		NONE	
NO MEASURABLE INFILTRATION AT STATIC PRESSURE DIFFERENTIAL OF 6.24 PSF		NONE		NONE	
UL-90		UL-90		NONE	
X					

Metal Roof Panels

1. COMPANY NAME	BERRIDGE MANUFACTURING CO.		BHP STEEL BUILDING PRODUCTS USA INC.	
2. PRODUCT NAME	BERMUDA ROOF		DESIGN SPAN BATTEN	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	NO		NO	
4. PANEL CONFIGURATION				
A. PANEL DESCRIPTION	HORIZONTAL PLANK ROOF SYSTEM		ARCHITECTURAL BATTEN	
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)	24	KYNAR 500, HYLAR 5000	22, 24	PVF, UNFINISHED
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	24	KYNAR 500, HYLAR 5000	22, 24	PVF, UNFINISHED
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)				
COPPER (oz.)	16		16, 20	
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	40		45	
D. PANEL WIDTHS (in.)			17 1/2, 22 1/2	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	3:12		3:12	
B. SOLID DECKING (required, optional, or not used)	OPTIONAL		REQUIRED	
C. UNDERLAYMENT (type or NA)	30-LB. FELT OR EQUIVALENT		30-LB. FELT OR EQUIVALENT	
6. PANEL PROFILE				
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)	HORIZONTAL PLANK		X	
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER	1	F	1 7/8	N
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP	X		X	
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS				
CURVED			X	
TAPERED				
OTHER			MANSARD, FASCIA	
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1991		1972	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)				
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT	D. DOYLE (800/231-8127)		800/726-2727	
FOR TECHNICAL INFORMATION, CONTACT	R. MARKS		800/726-2727	
11. ASTM E331 WATER INFILTRATION	NONE		NONE	
TEST RESULTS (results or none)				
12. ASTM E283 AIR INFILTRATION TEST RESULTS	NONE		NONE	
(results or none)				
13. FM/UL WIND UPLIFT RATINGS FOR	UL-90		UL-90	
ANY SPECIFICATION				
14. SEE APPENDIX IF CHECKED	X			

NA=not applicable

Metal Roof Panels

BHP STEEL BUILDING PRODUCTS USA INC.		BHP STEEL BUILDING PRODUCTS USA INC.		BHP STEEL BUILDING PRODUCTS USA INC.	
SKYLINE ROOFING		KLIP RIB		WEATHER SEAM-24	
YES		YES		YES	
NO		YES		YES	
ARCHITECTURAL STANDING SEAM		CONCEALED FASTENER TRAPEZOIDAL RIB		FLOATING-CLIP STRUCTURAL STANDING SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
24, 22	PVF, UNFINISHED	22, 24, 26	PVF, SMP, UNFINISHED	22, 24	Poly, SMP, PVF, UNFINISHED
22, 24	PVF, UNFINISHED	22, 24, 26	PVF, SMP, UNFINISHED	22, 24	Poly, SMP, PVF, UNFINISHED
16, 20					
45		100		55	
16 1/4, 21 1/4				24	
3:12 REQUIRED		1:12 OPTIONAL		1/4:12 OPTIONAL	
30-LB. FELT OR EQUIVALENT		30-LB. FELT OR EQUIVALENT		NA	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1	E	1 5/8	F	3	F
X		X		2 1/8	
X X MANSARD, FASCIA		MANSARD, FASCIA			
1993		1965		1985	
NO		NO		NO	
800/726-2727 800/726-2727		800/726-2727 800/726-2727		800/726-2727 800/726-2727	
NO LEAKAGE @ 25 PSF		NO LEAKAGE @ 20 PSF		NO LEAKAGE ON 24 HR. 6" STANDING WATER TEST	
LESS THAN 0.02 CFM/LF SEAM		0.009 CFM/SQ. FT. @ 20 PSF			
UL-90		UL-90		UL-90	

Metal Roof Panels

1. COMPANY NAME	BHP STEEL BUILDING PRODUCTS USA INC.		BHP STEEL BUILDING PRODUCTS USA INC.	
2. PRODUCT NAME	DESIGN SPAN		SKYLINE ROOFING	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		NO	
4. PANEL CONFIGURATION	KNIFE-EDGE STANDING SEAM		ARCHITECTURAL STANDING SEAM	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)	22, 24	PVF, SMP, UNFINISHED	24, 26	PVF, SMP
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	22, 24	PVF, SMP, UNFINISHED	24, 26	PVF, SMP
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)				
COPPER (oz.)	16,20			
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	55		45	
D. PANEL WIDTHS (in.)	12, 17, 18, 24		12, 16, 18	
5. SYSTEMS REQUIREMENTS	3:12		3:12	
A. MINIMUM SLOPE (in. per ft.)	OPTIONAL		REQUIRED	
B. SOLID DECKING (required, optional, or not used)	30-LB. FELT OR EQUIVALENT		30-LB. FELT OR EQUIVALENT	
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE	X		X	
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER	1 3/4	F	1	E
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED			X	
C. CLIP, CONCEALED				
FIXED CLIP	X			
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS			MANARD, FASCIA	
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA	1991		1992	
A. YEAR OF FIRST COMMERCIAL USE				
B. NUMBER OF SQUARES INSTALLED	NO		NO	
C. LICENSED APPLICATOR AGREEMENT (yes/no)				
D. METHOD OF DISTRIBUTION (distributors, direct)				
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT	800/726-2727		800/726-2727	
FOR TECHNICAL INFORMATION, CONTACT	800/726-2727		800/400-3867	
11. ASTM E331 WATER INFILTRATION	NO LEAKAGE @ 20 PSF		NO LEAKAGE @ 20 PSF (24 GAUGE ONLY)	
TEST RESULTS (results or none)				
12. ASTM E283 AIR INFILTRATION TEST RESULTS	0.14 CFM/LF @ 20 PSF		LESS THAN 0.02 CFM/LF @ 20 PSF (24 GAUGE ONLY)	
(results or none)				
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90		UL-60 (24 GAUGE ONLY)	
14. SEE APPENDIX IF CHECKED	X			

NA=not applicable

Metal Roof Panels

BUTLER ROOF DIVISION		BUTLER ROOF DIVISION		BUTLER ROOF DIVISION	
MR-24		VSR		CMR-24	
YES		YES		YES	
YES		YES		YES	
DOUBLE LOCK STANDING SEAM		CRIMPED STANDING SEAM		DOUBLE LOCK STANDING SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
22, 24	KYNAR 500/HYLAR 5000	22, 24	KYNAR 500/HYLAR 5000	22, 24, 26	KYNAR 500/HYLAR 5000
22, 24	UNFINISHED	22, 24	UNFINISHED	22, 24, 26	UNFINISHED
60		45		60	
24		16		24	
1/4:12		1/2:12		1/4:12	
NOT USED		OPTIONAL		REQUIRED	
NA					
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
2 3/4	F	2	F	2 3/4	F
		X			
2 1/2		2		2 1/2	
1969		1988		1974	
> 1 BILLION		YES		YES	
YES					
6		6		6	
816/968–2370		816/968–2370		816/968–2370	
816/968–2396		816/968–2377		816/968–2396	
NONE		NONE		NONE	
NONE		NONE		NONE	
UL-90, FM I-90		UL-90		UL-90, FM I-90	
X				X	

Metal Roof Panels

1. COMPANY NAME	BUTLER ROOF DIVISION		CARLISLE ENGINEERED METALS	
2. PRODUCT NAME	BUTLERIB II		STANDING SEAM ROOFING WITH VERSALOK	
3. ARCHITECTURAL APPLICATIONS (yes/no)	NO		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION	ROLL FORMED MULTI-RIB		ROLL FORMED INTEGRAL RIB STANDING SEAM	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)	24, 26, 28	KYNAR 500/HYLAR 5000	22, 24, 26	KYNAR 500, SILICON POLYESTER
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	24, 26, 28	UNFINISHED	22, 24, 26	KYNAR 500, SILICON POLYESTER UNFINISHED
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)				
COPPER (oz.)				
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	40		50	
D. PANEL WIDTHS (in.)	36		24	
5. SYSTEMS REQUIREMENTS	1/2:12		1/4:12	
A. MINIMUM SLOPE (in. per ft.)	NOT USED		OPTIONAL	
B. SOLID DECKING (required, optional, or not used)	NA		30-LB. FELT	
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE	X		X	
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED	1 1/2	E		
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)			2 7/8	F
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP			2 7/8	F
SNAP TOGETHER				
8. FASTENING METHOD	X			
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)			2	
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA	1969		1986	
A. YEAR OF FIRST COMMERCIAL USE				
B. NUMBER OF SQUARES INSTALLED	YES		NO	
C. LICENSED APPLICATOR AGREEMENT (yes/no)	6			
D. METHOD OF DISTRIBUTION (distributors, direct)				
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT	816/968-2370		V.P. SALES	
FOR TECHNICAL INFORMATION, CONTACT	816/968-2377		R. GAMBLE	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NONE		NO LEAKAGE AT 0.55 WATER DIFFERENTIAL PRESSURE	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE		NO LEAKAGE AT 0.030 WATER DIFFERENTIAL PRESSURE	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90, FM I-90		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

CARLISLE ENGINEERED METALS		CARLISLE ENGINEERED METALS		CARLISLE ENGINEERED METALS	
R-PANEL ROOFING		IR-PANEL ROOFING		RWP ROOFING PANEL	
YES YES		YES YES		YES YES	
ROLL FORMED MULTI-RIB		ROLL FORMED MULTI-RIB		PREINSULATED ROLLFORMED MULTI-RIE	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
22, 24, 26	KYNAR 500, SILICON POLYESTER	18, 20, 22, 24, 26	KYNAR 500, SILICON POLYESTER, PLASTISOL	22, 24, 26	KYNAR 500, SILICON POLYESTER
22, 24, 26	KYNAR 500, SILICON POLYESTER UNFINISHED	18, 20, 22, 24, 26	KYNAR 500, SILICON POLYESTER, PLASTISOL, UNFINISHED	22, 24, 26	KYNAR 500, SILICON POLYESTER, UNFINISHED
0.032	KYNAR 500, SILICON POLYESTER UNFINISHED				
40		40		48	
36		36		36	
1:12		1:12		1:12	
OPTIONAL 30-LB. FELT		OPTIONAL 30-LB. FELT		NOT USED NA	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1 1/4	E	1 1/2	E	1 1/4	
X		X			
				1/2	
				X	
1969		1983		1981	
NO		NO		NO	
V.P. SALES R. GAMBLE		V.P. SALES R. GAMBLE		V.P. SALES R. WILMER	
NONE		NO LEAKAGE AT 13.24 PSF DIFFERENTIAL PRESSURE		NO LEAKAGE AT 20 PSF DIFFERENTIAL PRESSURE	
NONE		NO LEAKAGE AT 6.24 PSF DIFFERENTIAL PRESSURE		NO LEAKAGE AT 20 PSF DIFFERENTIAL PRESSURE	
UL-30, UL-60, UL-90		UL-90			

Metal Roof Panels

1. COMPANY NAME	CARLISLE ENGINEERED METALS		CARLISLE ENGINEERED METALS	
2. PRODUCT NAME	SSP ROOFING PANEL		R-SERIES ROOFING PANELS	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		NO	
4. PANEL CONFIGURATION	PREINSULATED ROLLFORMED STANDING SEAM		ROLL FORMED INTEGRAL SLIM RIB STANDING SEAM	
A. PANEL DESCRIPTION	THICKNESSES		THICKNESSES	
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	FINISHES		FINISHES	
GALVANIZED STEEL (ga.)	22, 24, 26	KYNAR 500, SILICON POLYESTER	24, 26	KYNAR 500, SILICON POLYESTER
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	22, 24, 26	KYNAR 500, SILICON POLYESTER, UNFINISHED	24, 26	KYNAR 500, SILICON POLYESTER, UNFINISHED
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)			0.032	KYNAR 500, SILICON POLYESTER, UNFINISHED
COPPER (oz.)			16	
TERNE METAL (ga.)			26	TERNE-COATED STAINLESS STEEL
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	48		40	
D. PANEL WIDTHS (in.)	36		12,15,18	
5. SYSTEMS REQUIREMENTS	1/4:12		3:12	
A. MINIMUM SLOPE (in. per ft.)	NOT USED		REQUIRED	
B. SOLID DECKING (required, optional, or not used)	NA		30-LB. FELT	
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE	X		X	
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)	2 7/8	E	1 3/4	N
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER	2 7/8	E		
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)	1/2		X	
9. SPECIALTY APPLICATIONS	X			
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA	1986		1981	
A. YEAR OF FIRST COMMERCIAL USE				
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)				
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT	V.P. SALES		V.P. SALES	
FOR TECHNICAL INFORMATION, CONTACT	R. WILMER		R. GAMBLE	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NO LEAKAGE AT 20 PSF DIFFERENTIAL PRESSURE		NONE	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NO LEAKAGE AT 20 PSF DIFFERENTIAL PRESSURE		NONE	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

CARLISLE ENGINEERED METALS		CARLISLE ENGINEERED METALS		CARLISLE ENGINEERED METALS	
R-SERIES ROOFING PANELS		R-SERIES ROOFING PANELS		TR-SERIES ROOFING PANELS	
YES		YES		YES	
NO		NO		NO	
ROLL FORMED INTEGRAL TAPERED RIB STANDING SEAM		ROLL FORMED INTEGRAL BOX RIB STANDING SEAM		ROLL FORMED SNAP-ON BATTEN STANDING SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
24, 26	KYNAR 500, SILICON POLYESTER	24, 26	KYNAR 500, SILICON POLYESTER	24, 26	KYNAR 500, SILICON POLYESTER
24, 26	KYNAR 500, SILICON POLYESTER, UNFINISHED	24, 26	KYNAR 500, SILICON POLYESTER, UNFINISHED	24, 26	KYNAR 500, SILICON POLYESTER, UNFINISHED
0.032	KYNAR 500, SILICON POLYESTER, UNFINISHED	0.032	KYNAR 500, SILICON POLYESTER, UNFINISHED	0.032	KYNAR 500, SILICON POLYESTER, UNFINISHED
16		16		16	
26	TERNE-COATED STAINLESS STEEL	26	TERNE-COATED STAINLESS STEEL	26	TERNE-COATED STAINLESS STEEL
40		40		40	
12 3/4, 15 3/4, 18 3/4		12, 15, 18		12	
3:12		3:12		3:12	
REQUIRED		REQUIRED		REQUIRED	
30-LB. FELT		30-LB. FELT		30-LB. FELT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=factory applied; E=field applied; APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=factory applied; E=field applied; APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1 3/4	N	1 3/4	N	1	F
X		X		X	
1981		1981		1982	
NO		NO		NO	
V.P. SALES R. GAMBLE		V.P. SALES R. GAMBLE		V.P. SALES R. GAMBLE	
NONE		NONE		NONE	
NONE		NONE		NONE	
UL-90		UL-90		UL-90	

Metal Roof Panels

1. COMPANY NAME	CARLISLE ENGINEERED METALS		CARLISLE ENGINEERED METALS	
2. PRODUCT NAME	TRB-SERIES ROOFING PANELS		STRUCTURAL/ARCHITECTURAL PANEL SA-SERIES	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	NO		YES	
4. PANEL CONFIGURATION	ROLL FORMED SNAP-ON BATTEN STANDING SEAM		ROLL FORMED STANDING SEAM	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)	24, 26	KYNAR 500, SILICON POLYESTER	22, 24	KYNAR 500, SILICON POLYESTER
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	24, 26	KYNAR 500, SILICON POLYESTER, UNFINISHED	22, 24	KYNAR 500, SILICON POLYESTER, UNFINISHED
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)	0.032	KYNAR 500, SILICON POLYESTER, UNFINISHED		
COPPER (oz.)	18			
TERNE METAL (ga.)	26	TERNE-COATED STAINLESS STEEL		
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	40		40	
D. PANEL WIDTHS (in.)	13 1/4, 20, 24		12, 16, 18, 24	
5. SYSTEMS REQUIREMENTS	3:12		1:12	
A. MINIMUM SLOPE (in. per ft.)	REQUIRED		OPTIONAL	
B. SOLID DECKING (required, optional, or not used)	30-LB. FELT		30-LB. FELT	
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE	X		X	
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)			1 1/4, 2, 2 3/4	F
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP	1 7/8	N		
SNAP TOGETHER				
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP			X	
SLIP CLIP	X		2	
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED	X			
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1983		1991	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)				
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT	V.P. SALES		V.P. SALES	
FOR TECHNICAL INFORMATION, CONTACT	R. GAMBLE		R. GAMBLE	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NONE		NO LEAKAGE AT 13.24 PSF DIFFERENTIAL PRESSURE	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE		NO LEAKAGE AT 6.24 PSF DIFFERENTIAL PRESSURE	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

CARLISLE ENGINEERED METALS					
ARCHITECTURAL PANEL WITH VERSALOK AP SERIES			TECSEAM ROOFING		
YES YES			YES YES		
ROLL FORMED INTEGRAL RIB STANDING SEAM			ROLL FORMED INTEGRAL RIB STANDING SEAM		
THICKNESSES		FINISHES	THICKNESSES		FINISHES
22, 24	KYNAR 500, SILICON POLYESTER	20, 22, 24	KYNAR 500, SILICON POLYESTER	22, 24, 26	KYNAR 500, SILICON POLYESTER
22, 24	KYNAR 500, SILICON POLYESTER, UNFINISHED	22, 24	KYNAR 500, SILICON POLYESTER, UNFINISHED	22, 24, 26	KYNAR 500, SILICON POLYESTER
0.032	KYNAR 500, SILICON POLYESTER, UNFINISHED				
40		50		48	
10, 12, 16, 18		16, 18, 20		36	
3:12 OPTIONAL 30-LB. FELT		1/2:12 OPTIONAL 30-LB. FELT		1/2:12 NOT USED NA	
X X X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
		3	E	2	E
1 3/4	F				
X		X		X	
				X	
1991 NO		1997 NO		1997 NO	
V.P. SALES R. GAMBLE		V.P. SALES R. GAMBLE		V.P. SALES R. GAMBLE	
NO LEAKAGE AT 13.24 PSF DIFFERENTIAL PRESSURE		NO LEAKAGE AT 40 PSF DIFFERENTIAL PRESSURE		NO LEAKAGE AT 40 PSF DIFFERENTIAL PRESSURE	
NO LEAKAGE AT 15 PSF DIFFERENTIAL PRESSURE		NO LEAKAGE AT 40 PSF DIFFERENTIAL PRESSURE		NO LEAKAGE AT 40 PSF DIFFERENTIAL PRESSURE	
UL-90		UL-90			

Metal Roof Panels

1. COMPANY NAME	CURVELINE INC.		ENGLERT INC.	
2. PRODUCT NAME	CURVELINE		SERIES 2500	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION				
A. PANEL DESCRIPTION	CURVED TRAPEZOIDAL PANELS		MECHANICAL SEAM	
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)	18, 26	SILICON POLYESTER, CORRESTAN, DEXSTAR 850, KYNAR 500, UNFIN.	22, 24	KYNAR 500/HYLAR 5000, MILL
STAINLESS STEEL (ga.)	22, 26			
GALVALUME (ga.)	18, 26	UNFINISHED	22, 24	KYNAR 500/HYLAR 5000, MILL
ALUMINIZED STEEL (ga.)	18, 26	UNFINISHED		
ALUMINUM (in.)	0.032, 0.040	UNFINISHED, ANODIZED	0.032, 0.040	KYNAR 500/HYLAR 5000
COPPER (oz.)			16, 20	
TERNE METAL (ga.)			26	
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	30		TO 200	
D. PANEL WIDTHS (in.)	18, 24, 36, 40		12, 16, 18	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	1:12		1/4:12	
B. SOLID DECKING (required, optional, or not used)	NOT USED		OPTIONAL	
C. UNDERLAYMENT (type or NA)	NA		30-LB. FELT	
6. PANEL PROFILE				
VERTICAL LEG			X	
TRAPEZOIDAL	X			
BATTEN				
OTHER (specify)	SNAP LOCK			
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)	3/4, 1 1/2, 3, 4	E	2	F
DOUBLE ROLL FORMED (two 180 degrees)	3/4, 1 1/2, 3, 4	E		
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER	1 1/2, 3	E		
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED	X			
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP	X		X	
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)			X	
9. SPECIALTY APPLICATIONS				
CURVED	X			
TAPERED				
OTHER	MITERED			
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1985		1993	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		YES	
D. METHOD OF DISTRIBUTION (distributors, direct)			DIRECT	
E. NUMBER OF REGIONAL SERVICE LOCATIONS			10	
FOR SALES INFORMATION, CONTACT	T. HOLMAN, D. KLOCEK		K. CORCORAN	
FOR TECHNICAL INFORMATION, CONTACT	D. KLOCEK		J. TRIPOD	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	13.24 PSF/15 MIN.=0			
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	20 PSF = MAX. 0.003 CFM/SQ. FT.			
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	NO		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

ENGLERT INC.		ENGLERT INC.		FABRAL	
SERIES 1000		SERIES 2000		COT-R-CAP	
YES		YES		YES	
NO		YES		YES	
SNAP-LOCK		SNAP-LOCK		STRUCTURAL SNAP-ON BATTEN SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
22, 24	KYNAR 500/HYLAR 5000, MILL	22, 24	KYNAR 500/HYLAR 5000, MILL	22, 24	KYNAR 500
22, 24	KYNAR 500/HYLAR 5000, MILL	22, 24	KYNAR 500/HYLAR 5000, MILL	22	KYNAR 500, UNPAINTED
0.032	KYNAR 500/HYLAR 5000	0.032, 0.040	KYNAR 500/HYLAR 5000	0.032, 0.040	KYNAR 500
16		16, 20		16, 20	
		26			
TO 200		TO 200		150	
12, 16, 20		12, 16, 18		16	
3:12 REQUIRED		3:12 OPTIONAL		1/2:12 OPTIONAL	
30-LB. FELT		30-LB. FELT		30-LB. FELT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1 1/2	N	1 3/4	F	2 1/2	
X		X		X	
1993		1991		1979	
NO DIRECT		YES DIRECT		NO	
10		10			
K. CORCORAN J. TRIPOD		K. CORCORAN J. TRIPOD		L. REESE M. CROUCHER, JR.	
				NO PENETRATION UNDER 5 GAL.-PER-HOUR SPRAY AT 6.4 PSF PRESSURE DIFFERENTIAL	
				MAXIMUM OF 0.01 CU. FT. PER MINUTE PER SQ. FT. AT 6.4 PSF	
UL-90		UL-90		UL-90	
				X	

Metal Roof Panels

1. COMPANY NAME	FABRAL		FABRAL	
2. PRODUCT NAME	SLIM SEAM		DECOR-RIB	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		NO	
4. PANEL CONFIGURATION				
A. PANEL DESCRIPTION	INTEGRAL STANDING SEAM		INTEGRAL BATTEN SEAM	
B. PANEL MATERIALS, THICKNESSES, AND FINISHES				
GALVANIZED STEEL (ga.)	THICKNESSES	FINISHES	THICKNESSES	FINISHES
24		KYNAR 500	22, 24	KYNAR 500
STAINLESS STEEL (ga.)				
24		KYNAR 500, UNPAINTED	22, 24	KYNAR 500, UNPAINTED
GALVALUME (ga.)				
0.032, 0.040		KYNAR 500	0.032, 0.040	KYNAR 500
ALUMINIZED STEEL (ga.)				
18, 20				
ALUMINUM (in.)				
COPPER (oz.)				
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	40		40	
D. PANEL WIDTHS (in.)	12, 16		12, 16	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	1:12		3:12	
B. SOLID DECKING (required, optional, or not used)	OPTIONAL		REQUIRED	
C. UNDERLAYMENT (type or NA)	30-LB. FELT		30-LB. FELT	
6. PANEL PROFILE				
VERTICAL LEG	X			
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK			1 1/2	N
SNAP-ON CAP				
SNAP TOGETHER	1 1/2	F		
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP	X		X	
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED	X			
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1987		1982	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)				
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT	L. REESE		L. REESE	
FOR TECHNICAL INFORMATION, CONTACT	M. CROUCHER, JR.		M. CROUCHER, JR.	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NO PENETRATION UNDER 5 GAL.-PER-HOUR SPRAY AT 25 PSF PRESSURE DIFFERENTIAL		NO PENETRATION UNDER 5 GAL.-PER-HOUR SPRAY AT 4 PSF PRESSURE DIFFERENTIAL	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	MAXIMUM OF 0.09 CU. FT. PER MINUTE PER SQ. FT. AT 1.57 PSF		MAXIMUM OF 0.01 CU. FT. PER MINUTE PER SQ. FT. AT 4 PSF	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90		UL-60	
14. SEE APPENDIX IF CHECKED	X		X	

NA=not applicable

Metal Roof Panels

FABRAL		FABRAL		FABRAL	
2 1/2" SSR		1 1/2" SSR		STAND'N SEAM	
YES		YES		YES	
YES		YES		YES	
STANDING SEAM ROOF PANEL		STANDING SEAM		STRUCTURAL DOUBLE-LOCK STANDING SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
18, 20, 22, 24, 26	UNFINISHED, S.P., KYNAR, VP	24	SUPER ALURITE	22, 24	KYNAR 500
18, 20, 22, 24, 26	MILL				
18, 20, 22, 24, 26	MILL, SP, KYNAR			22	KYNAR 500, UNPAINTED
18, 20, 22, 24, 26	UNFINISHED, S.P., KYNAR, VP				
0.032, 0.04, 0.05	PLAIN WITH STUCCO EMBOSING, SP, KYNAR W/WO STUCCO EMBOSS.			0.032, 0.040	KYNAR 500
16				16; 20	
42		40		150	
18		16		12, 16	
1/2:12		1/2: 12		1/2: 12	
OPTIONAL		OPTIONAL		OPTIONAL	
				30-LB. FELT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
2 1/2	F	1 1/2	F	2 1/2	F
X		X		X	
1980		1987		1987	
NO		NO		NO	
L. REESE M. CROUCHER, JR.		L. REESE M. CROUCHER, JR.		L. REESE M. CROUCHER, JR.	
5 GAL./HR. PER SQ. FT. PRESSURE DIFFERENTIAL 20 PSF, 15 MIN WATER PENETRATION, NONE		NO PENETRATION AT 25 PSF		NO PENETRATION UNDER 5 GAL-PER-HOUR SPRAY AT 20 PSF DIFFERENTIAL	
0.0 CU. FT./MIN PER SQ. FT. W/ 20 PSF PRES.		0.09 AT 1.57 PSF		MAXIMUM OF 0.008 CU. FT. PER MINUTE PER SQ. FT. AT 20 PSF	
UL-90		UL-90		UL-90	
X		X		X	

Metal Roof Panels

1. COMPANY NAME	FABRAL		FOLLANSBEE STEEL	
2. PRODUCT NAME	3" SNAP-RIB SSR		VIROTIN	
3. ARCHITECTURAL APPLICATIONS (yes/no)	NO		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		NO	
4. PANEL CONFIGURATION	STANDING SEAM			
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)	24, 26	SILICONIZED POLYESTER, KYNAR		
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	24, 26	SILICONIZED POLYESTER, KYNAR, PLAIN		
ALUMINIZED STEEL (ga.)	24, 26	PLAIN, S.P., KYNAR		
ALUMINUM (in.)				
COPPER (oz.)				
TERNE METAL (ga.)				
ZINC (ga.)			28, 30	GILSINITE
C. MAXIMUM LENGTH (lf.)	42		20	
D. PANEL WIDTHS (in.)	24		17, 21	
5. SYSTEMS REQUIREMENTS	1/2:12		3:12	
A. MINIMUM SLOPE (in. per ft.)	NOT USED		REQUIRED	
B. SOLID DECKING (required, optional, or not used)	NA		ROSIN SIZED PAPER	
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE	X		X	
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER	3	F		
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP			X	
SLIP CLIP			X	
MOVEABLE CLIP (designed allowable movement, inches)	2			
9. SPECIALTY APPLICATIONS			X	
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1989		1997	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)			DISTRIBUTORS	
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT	P. O'CONNOR		J. BONAR	
FOR TECHNICAL INFORMATION, CONTACT	M. CROUCHER, JR.		E. THOMAS	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NONE		NONE	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE		NONE	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-60, UL-90		NONE	
14. SEE APPENDIX IF CHECKED	X			

NA=not applicable

Metal Roof Panels

FOLLANSBEE STEEL		FOLLANSBEE STEEL		FOLLANSBEE STEEL	
VIROMET		TERNE METAL		TERNE METAL	
YES		YES		YES	
NO		NO		NO	
		DOUBLE LOCK STANDING SEAM		DOUBLE LOCK STANDING SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
26, 28	PREWEATHER WASH COAT OR UNFINISHED	28, 30	GILSINITE OR UNFINISHED	28, 30	GILSINITE OR UNFINISHED
20		20		20	
17, 21		17, 21		17, 21	
3:12		3:12		3:12	
REQUIRED		REQUIRED		REQUIRED	
ROSIN SIZED PAPER		ROSIN SIZED PAPER		ROSIN SIZED PAPER	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1	N	1	N	1	N
X		X		X	
X		X		X	
X		X		X	
1997		1894		1894	
NO		NO		NO	
DISTRIBUTORS					
J. BONAR E. THOMAS		J. BONAR E. THOMAS		J. BONAR E. THOMAS	
NONE		NONE		NONE	
NONE		NONE		NONE	
NONE		NONE		NONE	

Metal Roof Panels

1. COMPANY NAME	FOLLANSBEE STEEL		GALVAMET, S.A. DE C.V.	
2. PRODUCT NAME	TERNE COATED STAINLESS		GALVALOK I	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	NO		YES	
4. PANEL CONFIGURATION	DOUBLE LOCK STANDING SEAM		STANDING SEAM	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)			22, 24, 26	BARE, MODIFIED POLYESTER AND KYNAR 500
STAINLESS STEEL (ga.)	26, 28	PREWEATHER WASH COAT OR UNFINISHED		
GALVALUME (ga.)				
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)				
COPPER (oz.)				
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	20		45	
D. PANEL WIDTHS (in.)	17, 21		12, 18, 24	
5. SYSTEMS REQUIREMENTS	3:12 REQUIRED		1/4:12 OPTIONAL	
A. MINIMUM SLOPE (in. per ft.)				
B. SOLID DECKING (required, optional, or not used)	ROBIN SIZED PAPER		RIGID BOARD, ISO, FLEXIBLE FIBERGLASS	
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE	X		X	
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)	1	N		
ROLL AND LOCK				
SNAP-ON CAP			3	F
SNAP TOGETHER				
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP	X		X	
SLIP CLIP			X	
MOVEABLE CLIP (designed allowable movement, inches)	X		2 1/2	
9. SPECIALTY APPLICATIONS	X			
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1967		1995	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO			
D. METHOD OF DISTRIBUTION (distributors, direct)			DIRECT	
E. NUMBER OF REGIONAL SERVICE LOCATIONS			22	
FOR SALES INFORMATION, CONTACT: J. BONAR			A. BONSON	
FOR TECHNICAL INFORMATION, CONTACT: E. THOMAS			F. DIAZ	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NONE		NO LEAKAGE AT 4 PSF	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE		0.043 CFM; 0.029 CFM; 0.022 CFM AT 4 PSF	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	NONE		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

GALVAMET, S.A. DE C.V.		THE GARLAND CO., INC.		H.H. ROBERTSON	
GALVALOK II		R-MER LITE		VERSAPANEL ROOF	
YES		YES		YES	
YES		NO		YES	
STANDING SEAM				FACTORY FOAMED SANDWICH ROOF PANEL	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
22, 24, 26	BARE, MODIFIED POLYESTER AND KYNAR 500	30	SILICONE MODIFIED POLYESTER, FLUOROCARBON, PLASTISOL	20, 22, 24, 26	VERSACOR HF2 & PF, PUDF
45		100		48	
12, 18, 24		144		36	
1/4:12 OPTIONAL RIGID BOARD, ISO, FLEXIBLE FIBERGLASS		1/4:12 REQUIRED		1/2:12 NOT USED NA	
X		FLAT SEAM		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
3	F	E		1 3/4	F
2 1/2		X		X	
1995		X X X		WALL PANEL	
DIRECT 22		1980 > 80,000 YES DIRECT		1985 80,000 NO DIRECT 16	
A. BONSON F. DIAZ		D. SOKOL (800/321-9336) M. HUBER (800/321-9336)		J. BROMAN (412/928-7500) J. BROMAN (412/928-7500)	
NO LEAKAGE AT 4 PSF		NONE			
0.043 CFM; 0.029 CFM; 0.022 CFM AT 4 PSF		NONE			
UL-90		FM, UL I-60, I-90		UL-90, FM I-90	

Metal Roof Panels

1. COMPANY NAME	H.H. ROBERTSON		H.H. ROBERTSON	
2. PRODUCT NAME	SR-3 TOTAL PERFORMANCE ROOF SYSTEM		ROBERTSON STANDING SEAM	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION				
A. PANEL DESCRIPTION	FACTORY FORMED ROOF PANEL			
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)	22, 24	VERSACOR HF2 & PF, PUDF	22, 24	VERSACOR HF2 & PF, PUDF
STAINLESS STEEL (ga.)	22, 24	304-2D	22, 24	MILL, 3004-2B
GALVALUME (ga.)	22, 24	UNFINISHED	22, 24	MILL, PAINTED
ALUMINIZED STEEL (ga.)	22, 24	UNFINISHED		
ALUMINUM (in.)			0.032, 0.040	MILL, PAINTED
COPPER (oz.)				
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	50		50	
D. PANEL WIDTHS (in.)	36		10, 12, 18, 24	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	1/2:12		3:12	
B. SOLID DECKING (required, optional, or not used)	OPTIONAL		OPTIONAL	
C. UNDERLAYMENT (type or NA)	NA		NA	
6. PANEL PROFILE				
VERTICAL LEG			X	
TRAPEZOIDAL	X			
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER	1.7	E	1 3/4	F
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)	1/2		1/2	
9. SPECIALTY APPLICATIONS				
CURVED	X		X	
TAPERED			X	
OTHER	WALL PANEL, SOFFIT			
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1979		1984	
B. NUMBER OF SQUARES INSTALLED	150,000		150,000	
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)	DIRECT		DIRECT	
E. NUMBER OF REGIONAL SERVICE LOCATIONS	16		16	
FOR SALES INFORMATION, CONTACT:	J. BROMAN (412/928-7500)		J. BROMAN (412/928-7500)	
FOR TECHNICAL INFORMATION, CONTACT:	J. BROMAN (412/928-7500)		J. BROMAN (412/928-7500)	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)				
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)				
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	FM I-90, UL-90		FM I-90, UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

H.H. ROBERTSON		INNOVATIVE METALS COMPANY, INC.		INNOVATIVE METALS COMPANY, INC.	
ROBERTSON LOW SLOPE		SERIES 300 PANELS		SNAP-LOK STANDING SEAM	
YES		YES		YES	
YES		YES		YES	
		STRUCTURAL STANDING SEAM		ARCHITECTURAL STANDING SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
22, 24	VERSACOR HF2 & PF, PUDF				
22, 24	3004-2D				
22, 24	MILL, PAINTED	22, 24	KYNAR, UNFINISHED	22, 24	KYNAR, UNFINISHED
0.032, 0.040	MILL, PAINTED	.032, .040	KYNAR	.032, .040	KYNAR
		16, 20	UNFINISHED	16, 20	UNFINISHED
65		45		45	
16, 18		12, 16, 18		10, 12, 16, 18	
1/4:12 OPTIONAL		1/4:12 OPTIONAL NA		1 1/2:12 OPTIONAL 30-LB. FELT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
2, 3	F	2 3/8 2 3/8	F F	1 3/4	F
		X		X	
1/2		X		X	
		X X FIELD ROLL		X	
1993 500 NO DIRECT 16		1985 50,000+ YES DIRECT 30		1991 50,000+ YES DIRECT 30	
J. BROMAN (412/928-7500) J. BROMAN (412/928-7500)		H.C. HOLLISTER G.R. JONES		H.C. HOLLISTER G.R. JONES	
		0/20 PSF		0/20 PSF	
		.0036 SCFM/20 PSF		.0022 SCFM/20 PSF	
FM I-90, UL-90		UL-90, FM 1-120		UL-90	

Metal Roof Panels

1. COMPANY NAME	INNOVATIVE METALS COMPANY, INC.		INNOVATIVE METALS COMPANY, INC.	
2. PRODUCT NAME	PERM-LOC STANDING SEAM		55 PANEL SYSTEM	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	NO		NO	
4. PANEL CONFIGURATION	ARCHITECTURAL STANDING SEAM		ARCHITECTURAL STANDING SEAM	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)				
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	24	KYNAR, UNFINISHED	24	KYNAR, UNFINISHED
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)	0.032	KYNAR	0.032	KYNAR
COPPER (oz.)	16, 20	UNFINISHED		
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	45		45	
D. PANEL WIDTHS (in.)	13, 21		14 1/2, 22 1/2	
5. SYSTEMS REQUIREMENTS	3:12		3:12	
A. MINIMUM SLOPE (in. per ft.)	REQUIRED		REQUIRED	
B. SOLID DECKING (required, optional, or not used)	30-LB. FELT		30-LB. FELT	
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE	X		X	
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER	7/8	F	1	F
8. FASTENING METHOD	X		X	
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP	X		X	
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS	X		X	
CURVED	X		X	
TAPERED	X		X	
OTHER				
10. MANUFACTURER/PRODUCT DATA	1986		1981	
A. YEAR OF FIRST COMMERCIAL USE	50,000+		50,000+	
B. NUMBER OF SQUARES INSTALLED	YES		YES	
C. LICENSED APPLICATOR AGREEMENT (yes/no)	DIRECT		DIRECT	
D. METHOD OF DISTRIBUTION (distributors, direct)	30		30	
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT:	H.C. HOLLISTER		H.C. HOLLISTER	
FOR TECHNICAL INFORMATION, CONTACT:	G.R. JONES		G.R. JONES	
11. ASTM E331 WATER INFILTRATION				
TEST RESULTS (results or none)				
12. ASTM E283 AIR INFILTRATION TEST RESULTS				
(results or none)				
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

MBCI		MBCI		MBCI	
ULTRA-DEK 124		DOUBLE-LOK 124		TRADITIONAL SERIES-ROUND PROFILE	
YES		YES		YES	
YES		YES		NO	
STANDING SEAM		STANDING SEAM		INTEGRAL BATTEN	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
22, 24, 26	BARE, COLOR BOND, SIGNATURE 200, 300 (KYNAR), 400 (KYNAR), HYLAR	22, 24, 26	BARE, COLOR BOND, SIGNATURE 200, 300 (KYNAR), 400 (KYNAR), HYLAR	22, 24, 26	BARE, COLOR BOND, SIGNATURE 200, 300 (KYNAR), 400 (KYNAR), HYLAR
50		50		50	
12, 18, 24		12, 18, 24		12, 15, 18	
1/4:12 OPTIONAL		1/4:12 OPTIONAL		3:12 REQUIRED 30-LB. FELT OR EQUIVALENT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
3	F	3	F	1 7/8	F
X		2 1/2		X	
TRANSITION, ROOF TO FASCIA, MANSARD TO SOFFIT					
1983		1983		1983	
NO DIRECT 16		NO DIRECT 16		NO DIRECT 16	
W. DICKINSON T. WOLFE		W. DICKINSON T. WOLFE		W. DICKINSON T. WOLFE	
NONE		NONE		NONE	
NONE		NONE		NONE	
UL-90		UL-90		UL-90	

Metal Roof Panels

1. COMPANY NAME	MBCI		MBCI	
2. PRODUCT NAME	TRADITIONAL SERIES-SQUARE PROFILE		TRADITIONAL SERIES-BEVELED PROFILE	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	NO		NO	
4. PANEL CONFIGURATION	INTEGRAL BATTEN		INTEGRAL BATTEN	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)				
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	22, 24, 26	BARE, COLOR BOND, SIGNATURE 200, 300 (KYNAR), 400 (KYNAR), HYLAR	22, 24, 26	BARE, COLOR BOND, SIGNATURE 200, 300 (KYNAR), 400 (KYNAR), HYLAR
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)				
COPPER (oz.)				
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	50		50	
D. PANEL WIDTHS (in.)	12, 15, 18		12, 15, 18	
5. SYSTEMS REQUIREMENTS	3:12 REQUIRED		3:12 REQUIRED	
A. MINIMUM SLOPE (in. per ft.)				
B. SOLID DECKING (required, optional, or not used)	30-LB. FELT OR EQUIVALENT		30-LB. FELT OR EQUIVALENT	
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE	X		SQUARE	
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK	2	E	1 5/8	E
SNAP-ON CAP				
SNAP TOGETHER				
8. FASTENING METHOD	X		X	
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS	TRANSITION, ROOF TO FASCIA, MANSARD TO SOFFIT		TRANSITION, ROOF TO FASCIA, MANSARD TO SOFFIT	
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA	1983		1983	
A. YEAR OF FIRST COMMERCIAL USE				
B. NUMBER OF SQUARES INSTALLED	NO		NO	
C. LICENSED APPLICATOR AGREEMENT (yes/no)	DIRECT		DIRECT	
D. METHOD OF DISTRIBUTION (distributors, direct)	16		16	
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT: W. DICKINSON			W. DICKINSON	
FOR TECHNICAL INFORMATION, CONTACT: T. WOLFE			T. WOLFE	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NONE		NONE	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE		NONE	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

MBCI		MBCI		MBCI	
CRAFTSMAN SERIES HIGH BATTEN		CRAFTSMAN SERIES LARGE BATTEN		CRAFTSMAN SERIES SMALL BATTEN	
YES		YES		YES	
NO		NO		NO	
LOCK FORM SEPARATE BATTEN		LOCK FORM SEPARATE BATTEN		LOCK FORM SEPARATE BATTEN	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
22, 24, 26	BARE, COLOR BOND, SIGNATURE 200, 300 (KYNAR), 400 (KYNAR), HYLAR	22, 24, 26	BARE, COLOR BOND, SIGNATURE 200, 300 (KYNAR), 400 (KYNAR), HYLAR	22, 24, 26	BARE, COLOR BOND, SIGNATURE 200, 300 (KYNAR), 400 (KYNAR), HYLAR
50		50		50	
12, 16 1/2		12, 16 1/2		12, 16 1/2	
3:12 REQUIRED		3:12 REQUIRED		3:12 REQUIRED	
30-LB. FELT OR EQUIVALENT		30-LB. FELT OR EQUIVALENT		30-LB. FELT OR EQUIVALENT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
2	F	2	F	1	F
X		X		X	
TRANSITION, ROOF TO FASCIA, MANSARD TO SOFFIT		TRANSITION, ROOF TO FASCIA, MANSARD TO SOFFIT		TRANSITION, ROOF TO FASCIA, MANSARD TO SOFFIT	
1983		1983		1983	
NO		NO		NO	
DIRECT		DIRECT		DIRECT	
16		16		16	
W. DICKINSON T. WOLFE		W. DICKINSON T. WOLFE		W. DICKINSON T. WOLFE	
NO LEAKAGE AT 4 PSF		NONE		NONE	
0.048 CFM/ SQ. FT. AT 4 PSF; 0.045 CFM/SQ. FT.		NONE		NONE	
UL-90		UL-90		UL-90	

Metal Roof Panels

1. COMPANY NAME	MBCI		MBCI	
2. PRODUCT NAME	LOKSEAM		BATTENLOK	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION				
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES				
GALVANIZED STEEL (ga.)				
STAINLESS STEEL (ga.)				
GALVALUME (ga.)				
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)				
COPPER (oz.)				
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	50		50	
D. PANEL WIDTHS (in.)	10, 12, 18		12, 16	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	3:12		1/4:12	
B. SOLID DECKING (required, optional, or not used)	OPTIONAL		OPTIONAL	
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE				
VERTICAL LEG	X		X	
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT				
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE		HEIGHT(S) (inches)	
SEAM PROCESSING			SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER	1 3/4		2	
	F		F	
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP	X		X	
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1991		1991	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)	DIRECT		DIRECT	
E. NUMBER OF REGIONAL SERVICE LOCATIONS	16		16	
FOR SALES INFORMATION, CONTACT: W. DICKINSON			W. DICKINSON	
FOR TECHNICAL INFORMATION, CONTACT: T. WOLFE			T. WOLFE	
11. ASTM E331 WATER INFILTRATION	NONE		NONE	
TEST RESULTS (results or none)				
12. ASTM E283 AIR INFILTRATION TEST RESULTS	NONE		NONE	
(results or none)				
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

MBCI		MBCI		MBCI	
SL-16		S-36		P-36	
YES		YES		YES	
NO		YES		YES	
1 x 16 INTERLOCKING ARCH. STANDING SEAM ROOF		1 1/2 X 12 X 36 EXPOSED FASTENER PANEL		5/8 X 9 X 36 EXPOSED FASTENER PANEL	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
26, 24	SMP, KYNAR, SIGNATURE 200, 300	26, 24	SMP, KYNAR, SIGNATURE 200, 300	26, 29, 30	SMP, UNFINISHED
50		55		45	
16		36		36	
3:12 REQUIRED 15-LB. FELT		1/2:12 OPTIONAL 15-LB. FELT		3:12 OPTIONAL 15-LB. FELT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
		1 1/2	F	5/8	F
1	N				
X		X		X	
		X			
1989		1982		1987	
NO		NO		NO	
16		16		16	
W. DICKINSON T. WOLFE		W. DICKINSON T. WOLFE		W. DICKINSON T. WOLFE	
NONE		NONE		NONE	
NONE		NONE		NONE	
NONE		UL-90		NONE	

Metal Roof Panels

1. COMPANY NAME	MBCI		MBCI	
2. PRODUCT NAME	PBR-36		MASTERLINE	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION				
A. PANEL DESCRIPTION	1 1/4 X 12 X 36 EXPOSED FASTENER PANEL		1 3/4 X 18-12-10 STRUT SSR	
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)	26, 29, 30	SMP, UNFINISHED	24	SIGNATURE 200, 300, 400
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	26	UNFINISHED	24, 26	
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)				
COPPER (oz.)			16	
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	56		55	
D. PANEL WIDTHS (in.)	36		10, 12, 18	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	1/2:12		3:12	
B. SOLID DECKING (required, optional, or not used)	OPTIONAL		OPTIONAL	
C. UNDERLAYMENT (type or NA)	15-LB. FELT		NA	
6. PANEL PROFILE				
VERTICAL LEG			X	
TRAPEZOIDAL	X			
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)	1 1/2	F		
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP			1 3/4	F
SNAP TOGETHER				
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED	X			
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1977		1991	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)				
E. NUMBER OF REGIONAL SERVICE LOCATIONS	16		16	
FOR SALES INFORMATION, CONTACT: W. DICKINSON			W. DICKINSON	
FOR TECHNICAL INFORMATION, CONTACT: T. WOLFE			T. WOLFE	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NONE		NO PENETRATION AT 6.24 PSF WITH 5 GAL/HR/SF 8-IN./HR	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE		10-IN.=0.0143 CFM/SF @ 6.24 PSF; 12-IN.=0.0215 CFM/SF @ 6.24 PSF; 18-IN.=0.0257 CFM/SF @ 6.24 PSF	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

MBCI		MCELROY METAL INC.		MCELROY METAL INC.	
SUPRA-RIB		MASTERLOK-90		MEDALLION I & II	
YES		YES		YES	
YES		YES		NO	
1 1/2 X 7.2 X 36		SNAP-ON STANDING SEAM		BATTEN CAP	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
24, 26	SIGNATURE 200, 300, 400	22, 24, 26	KYNAR, UNFINISHED	22, 24, 26	KYNAR, UNFINISHED
0.034	SIGNATURE 200, 300, 400				
55		50		40	
36		12, 18, 24		12	
1/4:12 OPTIONAL		1/4:12 OPTIONAL 30-LB. FELT		3:12 REQUIRED 30-LB. FELT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
		3	F	1, 1 1/2	N
X		X		X	
		X		X	
1991		1986		1990	
NO		NO		NO	
16					
W. DICKINSON T. WOLFE		J. DARRAH E. OSTEN		J. DARRAH E. OSTEN	
NO PENETRATION AT 12 PSF WITH 5 GALLONS/HOUR (8"/HOUR)		NO LEAKAGE		NO LEAKAGE	
YES		0.02 @ 1.57 PSF		0.005 @ 1.57 PSF	
UL-90		UL-90		NONE	

Metal Roof Panels

1. COMPANY NAME	MCELROY METAL INC.		MCELROY METAL INC.	
2. PRODUCT NAME	MEGA-RIB		MULTI-RIB	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION				
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES				
GALVANIZED STEEL (ga.)	18, 20, 22	KYNAR, DEXSTAR 850, UNFINISHED		
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	22, 24, 26	KYNAR, UNFINISHED	22, 24, 26, 29	KYNAR, SILICONIZE POLYESTER, UNFINISHED
ALUMINIZED STEEL (ga.)			0.024, 0.032	MILL, STUCCO EMBOSSED
ALUMINUM (in.)				
COPPER (oz.)				
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	40		40	
D. PANEL WIDTHS (in.)	36		36	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	1:12		1:12	
B. SOLID DECKING (required, optional, or not used)	OPTIONAL		OPTIONAL	
C. UNDERLAYMENT (type or NA)	30-LB. FELT		30-LB. FELT	
6. PANEL PROFILE				
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN	X		X	
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED	1 1/2	E	1 1/4	E
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER				
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED	X		X	
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1990		1965	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)				
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT: J. DARRAH			J. DARRAH	
FOR TECHNICAL INFORMATION, CONTACT: E. OSTEN			E. OSTEN	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NONE		NONE	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE		NONE	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	NONE		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

MCELROY METAL INC.		MCELROY METAL INC.		MCELROY METAL INC.	
MAX-RIB		MULTI-COR		M-COR	
YES		NO		NO	
YES		YES		YES	
OVERLAPPING		OVERLAPPING		OVERLAPPING	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
29	KYNAR, DEXSTAR 850, UNFINISHED	24, 26	KYNAR, SILICONIZE POLYESTER, UNFINISHED		
22, 24, 26, 29	KYNAR, SILICONIZE POLYESTER, UNFINISHED	24, 26	KYNAR, DEXSTAR 850, UNFINISHED	22, 24, 26, 29	KYNAR, DEXSTAR 850, UNFINISHED
0.024, 0.032	MILL, STUCCO EMBOSSED	0.024, 0.032	MILL, STUCCO EMBOSSED	0.024, 0.032	MILL, STUCCO EMBOSSED
40		40		40	
36		29 1/4, 32		24, 32, 34 1/4, 37 3/8	
1:12 OPTIONAL 30-LB. FELT		1:12 OPTIONAL 30-LB. FELT		1:12 OPTIONAL 30-LB. FELT	
X					
		CORRUGATED		CORRUGATED	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
3/4	E	7/8	E	7/8	E
X		X		X	
1976		1983		1983	
NO		NO		NO	
J. DARRAH E. OSTEN		J. DARRAH E. OSTEN		J. DARRAH E. OSTEN	
NONE		NONE		NONE	
NONE		NONE		NONE	
NONE		NONE		NONE	

Metal Roof Panels

1. COMPANY NAME	MCELROY METAL INC.		MERCHANT & EVANS, INC.	
2. PRODUCT NAME	MEDALLION-LOK		INTERLOCK-18	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION			INTERLOCKING	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)			22, 24	KYNAR 500
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	22, 24	KYNAR 500, BARE	22, 24	KYNAR 500, MILL
ALUMINIZED STEEL (ga.)			22, 24	KYNAR 500, MILL
ALUMINUM (in.)			0.032, 0.040	KYNAR 500, MILL, ANODIZED
COPPER (oz.)			16,20	MILL
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	40		60	
D. PANEL WIDTHS (in.)	16, 18		10, 18	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	3:12		1:12	
B. SOLID DECKING (required, optional, or not used)	OPTIONAL		OPTIONAL	
C. UNDERLAYMENT (type or NA)	30-LB. FELT		NA	
6. PANEL PROFILE				
VERTICAL LEG			X	
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK			2	F
SNAP-ON CAP				
SNAP TOGETHER	1 3/4	F		
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP	X		X	
SLIP CLIP			X	
MOVEABLE CLIP (designed allowable movement, inches)			UNLIMITED	
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED			X	
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1993		1991	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)	9			
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT: J. DARRAH			D. BROWN	
FOR TECHNICAL INFORMATION, CONTACT: E. OSTEN			T. THOMPSON	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NO LEAKAGE		NO PENETRATION AT 15 PSF FOR 15 MINUTES	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)			0.005 CFM PER SQ. FT. AT 6.24 PSF DIFFERENTIAL	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION			UL-90	
14. SEE APPENDIX IF CHECKED			X	

NA=not applicable

Metal Roof Panels

MERCHANT & EVANS, INC.		MERCHANT & EVANS, INC.		MERCHANT & EVANS, INC.	
ZIP RIB		B 1515 R		# 114 R	
YES		YES		YES	
YES		NO		NO	
INTERLOCKING, MECHANICALLY SEAMED		BATTEN SEAM		INTEGRAL BATTEN SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
18, 20, 22, 24	KYNAR 500	22, 24	KYNAR 500	22, 24	KYNAR 500
24	MILL				
18, 20, 22, 24	KYNAR 500, MILL	22, 24	KYNAR 500	22, 24	KYNAR 500
18, 20, 22, 24	KYNAR 500, MILL	22, 24	KYNAR 500	22, 24	KYNAR 500
0.032, 0.040, 0.050	KYNAR 500, MILL, ANODIZED	0.032, 0.040	KYNAR 500, MILL, ANODIZED	0.032, 0.040	KYNAR 500, MILL, ANODIZED
16,20	MILL	16,20	MILL	16,20	MILL
24	MILL (TCSS)				
0.027	MILL	0.027	MILL	0.027	MILL
105		60		60	
12, 16		11, 15, 18, 22		9 3/4, 13, 17	
1/4:12 OPTIONAL NA		2:12 REQUIRED 30-LB. FELT OR EQUIVALENT		2:12 REQUIRED 30-LB. FELT OR EQUIVALENT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
2 1/2	F	1 1/2	N	1 1/4	N
X		X		X	
X		X		X	
2 5/8					
X		X			
X		X			
1964		1971		1968	
YES		NO		NO	
D. BROWN T. THOMPSON		D. BROWN T. THOMPSON		D. BROWN T. THOMPSON	
NO PENETRATION AT 15 PSF FOR 15 MINUTES		NONE		NONE	
0.005 CFM PER SQ. FT. AT 6.24 PSF DIFFERENTIAL		NONE		NONE	
UL-90		NONE		NONE	
X					

Metal Roof Panels

1. COMPANY NAME	MERCHANT & EVANS, INC.		MERCHANT & EVANS, INC.	
2. PRODUCT NAME	# 305		# 306	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	NO		NO	
4. PANEL CONFIGURATION				
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES				
GALVANIZED STEEL (ga.)	22, 24	KYNAR 500	22, 24	KYNAR 500
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	22, 24	KYNAR 500	22, 24	KYNAR 500, MILL
ALUMINIZED STEEL (ga.)	22, 24	KYNAR 500	22, 24	KYNAR 500
ALUMINUM (in.)	0.032, 0.040	KYNAR 500, MILL, ANODIZED	0.032, 0.040	KYNAR 500, MILL, ANODIZED
COPPER (oz.)	16,20	MILL	16,20	MILL
TERNE METAL (ga.)				
ZINC (ga.)	0.027	MILL	0.027	MILL
C. MAXIMUM LENGTH (lf.)	60		45	
D. PANEL WIDTHS (in.)	12, 15 1/4, 19 1/4		10 1/8, 14, 17 1/2, 21 1/2, 22	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	2:12		2:12	
B. SOLID DECKING (required, optional, or not used)	REQUIRED		REQUIRED	
C. UNDERLAYMENT (type or NA)	30-LB. FELT OR EQUIVALENT		30-LB. FELT OR EQUIVALENT	
6. PANEL PROFILE				
VERTICAL LEG	X			
TRAPEZOIDAL				
BATTEN			X	
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP			1, 1 1/4, 1 1/2, 2	F
SNAP TOGETHER	1 3/8	F		
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP	X		X	
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS				
CURVED			X	
TAPERED			X	
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1984		1989	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)				
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT: D. BROWN			D. BROWN	
FOR TECHNICAL INFORMATION, CONTACT: T. THOMPSON			T. THOMPSON	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NO PENETRATION AT 15 PSF FOR 15 MINUTES		NO PENETRATION AT 15 PSF FOR 15 MINUTES	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	0 CFM @ 6.24 PSF		0 CFM @ 6.24 PSF	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

MERCHANT & EVANS, INC.		METAL SALES MANUFACTURING CORP.		METAL SALES MANUFACTURING CORP.	
DOME ROOF SYSTEM (BD 1520)		MASTER-SPAN		SEAM-LOC 24	
YES		YES		YES	
NO		YES		YES	
BATTEN SEAM		STANDING SEAM		STANDING SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
0.032, 0.040	KYNAR 500, MILL, ANODIZED	22, 24	KYNAR 500 (PVF2), BARE	22, 24	KYNAR 500 (PVF2), BARE
16,20	MILL				
24	MILL (TCSS)				
0.027	MILL				
45		45		45	
UP TO 46 1/2		16		24	
1/4:12 REQUIRED 30-LB. FELT OR EQUIVALENT		1/4:12 OPTIONAL		1/4:12 OPTIONAL	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
2	N	2	F	2 11/16	F
X		2		2	
X X DOME					
1990 NO		1993 YES DIRECT 12		1979 YES DIRECT 12	
D. BROWN T. THOMPSON		D. CUNNINGHAM J. GIANACAKES		D. CUNNINGHAM J. GIANACAKES	
NO PENETRATION AT 15 PSF FOR 15 MINUTES		NO LEAKAGE		NO LEAKAGE	
NONE		0.060 CFM/SQ. FT.		0.060 CFM/SQ.FT.	
UL-90		UL-90		UL-90	

Metal Roof Panels

1. COMPANY NAME	PETERSEN ALUMINUM CORP		PETERSEN ALUMINUM CORP	
2. PRODUCT NAME	INTEGRAL BATTEN		REDI-ROOF STANDING SEAM	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	NO		NO	
4. PANEL CONFIGURATION	BATTEN STANDING SEAM		STANDING SEAM	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)			24	KYNAR 500
STAINLESS STEEL (ga.)				
GALVALUME (ga.)				
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)			0.032	KYNAR 500
COPPER (oz.)				
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	45		45	
D. PANEL WIDTHS (in.)	11, 18, 19		12, 18	
5. SYSTEMS REQUIREMENTS	3:12		3:12	
A. MINIMUM SLOPE (in. per ft.)	REQUIRED		REQUIRED	
B. SOLID DECKING (required, optional, or not used)	30-LB FELT		30-LB FELT	
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE				
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK	1 1/2	N	1 1/2	N
SNAP-ON CAP				
SNAP TOGETHER				
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP	X			
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS			X	
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1979		1990	
B. NUMBER OF SQUARES INSTALLED	> 100,000		> 100,000	
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)	DIRECT, DISTRIBUTORS		DIRECT, DISTRIBUTORS	
E. NUMBER OF REGIONAL SERVICE LOCATIONS	4		4	
FOR SALES INFORMATION, CONTACT:	800/323-1960		800/323-1960	
FOR TECHNICAL INFORMATION, CONTACT:	800/323-1960		800/323-1960	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NO LEAKAGE @12 PSF		NO LEAKAGE @12 PSF	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	0.008 CFM/SQ. FT @1.57 PSF		0.004 CFM/SQ. FT @1.57 PSF	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

PETERSEN ALUMINUM CORP SNAP-ON STANDING SEAM		PETERSEN ALUMINUM CORP HIGH SNAP-ON STANDING SEAM		PETERSEN ALUMINUM CORP INTEGRAL STANDING SEAM	
YES		YES		YES	
NO		NO		NO	
STANDING SEAM		STANDING SEAM		STANDING SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
24	KYNAR 500	24	KYNAR 500	24	KYNAR 500
0.032	KYNAR 500	0.032	KYNAR 500	0.032	KYNAR 500
		45		45	
		11, 18, 19		11, 18, 19	
3:12 REQUIRED 30-LB FELT		3:12 REQUIRED 30-LB FELT		3:12 REQUIRED 30-LB FELT	
		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1	N	1 1/2	N	1 1/2	N
X		X		X	
X		X		X	
X		X		X	
1979 > 100,000 NO DIRECT, DISTRIBUTORS 4		1979 > 100,000 NO DIRECT, DISTRIBUTORS 4		1979 > 100,000 NO DIRECT, DISTRIBUTORS 4	
800/323-1960		800/323-1960		800/323-1960	
800/323-1960		800/323-1960		800/323-1960	
NO LEAKAGE @12 PSF		NO LEAKAGE @12 PSF		NO LEAKAGE @12 PSF	
0.006 CFM/SQ. FT @1.57 PSF		0.005 CFM/SQ. FT @1.57 PSF		0.02 CFM/SQ. FT @1.57 PSF	
UL-90		UL-90		UL-90	

Metal Roof Panels

1. COMPANY NAME	PETERSEN ALUMINUM CORP		PETERSEN ALUMINUM CORP	
2. PRODUCT NAME	SNAP-ON BATTEN		REDI-ROOF BATTEN	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	NO		NO	
4. PANEL CONFIGURATION				
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES				
GALVANIZED STEEL (ga.)	24	KYNAR 500	24	KYNAR 500
STAINLESS STEEL (ga.)				
GALVALUME (ga.)				
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)	0.032	KYNAR 500	0.032	KYNAR 500
COPPER (oz.)				
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	45		45	
D. PANEL WIDTHS (in.)	11, 12, 18		12	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	3:12		3:12	
B. SOLID DECKING (required, optional, or not used)	REQUIRED		REQUIRED	
C. UNDERLAYMENT (type or NA)	30-LB FELT		30-LB FELT	
6. PANEL PROFILE				
VERTICAL LEG			X	
TRAPEZOIDAL				
BATTEN	X			
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP	1 1/2	N	1 1/2	N
SNAP TOGETHER				
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP	X		X	
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS				
CURVED			X	
TAPERED	X			
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1979		1989	
B. NUMBER OF SQUARES INSTALLED	> 100,000		> 100,000	
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)	DIRECT, DISTRIBUTORS		DIRECT, DISTRIBUTORS	
E. NUMBER OF REGIONAL SERVICE LOCATIONS	4			
FOR SALES INFORMATION, CONTACT:	800/323-1960		800/323-1960	
FOR TECHNICAL INFORMATION, CONTACT:	800/323-1960		800/323-1960	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NO LEAKAGE @12 PSF		NO LEAKAGE @12 PSF	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	0.02 CFM/SQ. FT @1.57 PSF		0.03 CFM/SQ. FT @1.57 PSF	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	NONE		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

PETERSEN ALUMINUM CORP		ROYAL ALUMINUM, INC.		ROYAL ALUMINUM, INC.	
SNAP-CLAD		ROYAL "SUPER PAN"		W-PAN	
YES		YES		YES	
YES		YES		YES	
STANDING SEAM					
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
22, 24	KYNAR 500				
0.032	KYNAR 500	0.022, 0.028, 0.030, 0.036	KYNAR/NUBELAR, POLYESTER	0.030, 0.034	KYNAR/NUBELAR, POLYESTER
45		65		45	
10, 12, 16, 18		12		12.5	
2:12 OPTIONAL 30-LB FELT		1/2:12 OPTIONAL NA		1/2:12 NOT USED NA	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1 3/4	F				
X		X		X	
X		X			
1993 > 100,000 NO DIRECT, DISTRIBUTORS		1989 NO DIRECT 2		1985 NO DIRECT 2	
800/323-1960 800/323-1960		A. APPLEBEE (800/874-9065) A. APPLEBEE (800/874-9065)		A. APPLEBEE (800/874-9065) A. APPLEBEE (800/874-9065)	
NO LEAKAGE @ 12 PSF		NONE		NONE	
0.04 CFM/SQ. FT @ 1.57 PSF		NONE		NONE	
UL-90		UL-90		UL-90	
		X		X	

Metal Roof Panels

1. COMPANY NAME	SMITH STEELITE		SOUTHEASTERN METALS MANUFACTURING CO., INC.	
2. PRODUCT NAME	SRS STANDING SEAM ROOF		5V-CRIMP	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		NO	
4. PANEL CONFIGURATION				
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES				
GALVANIZED STEEL (ga.)	20, 22, 24	KYNAR 500, CORRSTAN, MILL, DURAGARD, DURAGARD XL	24, 26, 29	UNFINISHED, PAINTED
STAINLESS STEEL (ga.)				
GALVALUME (ga.)	20, 22, 24	SPM, KYNAR 500, UNFINISHED, RIGIDIZED, PLAIN	24, 26	UNFINISHED
ALUMINIZED STEEL (ga.)	20, 22, 24	MILL		
ALUMINUM (in.)	0.032, 0.040, 0.050	KYNAR 500, CORRSTAN, MILL, DURAGARD, DURAGARD XL		
COPPER (oz.)				
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	225		16	
D. PANEL WIDTHS (in.)	12, 14, 16, 18, 20		24	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	1/2:12		3:12	
B. SOLID DECKING (required, optional, or not used)	OPTIONAL		OPTIONAL	
C. UNDERLAYMENT (type or NA)	NA		30-LB. FELT	
6. PANEL PROFILE				
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN	X			
OTHER (specify)			TRIANGLE	
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)	3	F	1/2	E
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER				
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED			X	
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP	X			
MOVEABLE CLIP (designed allowable movement, inches)	3			
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED	X			
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1960			
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	YES		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)	DISTRIBUTORS, DIRECT		DISTRIBUTORS	
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT: J. URSO			METAL ROOFING	
FOR TECHNICAL INFORMATION, CONTACT: K. BOYER			ENGINEERING	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NO PENETRATION AT 20 PSF FOR 15 MINUTES			
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NO MORE THAN 0.0156 CFM PER SQ. FT. AT 20 PSF		NONE	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90		NONE	
14. SEE APPENDIX IF CHECKED	X			

NA=not applicable

Metal Roof Panels

SOUTHEASTERN METALS MANUFACTURING CO., INC.		SOUTHEASTERN METALS MANUFACTURING CO., INC.		SOUTHEASTERN METALS MANUFACTURING CO., INC.	
SM-RIB		PBR & R PANEL		CORRUGATED	
YES		YES		YES	
NO		YES		NO	
3/4-IN. RIBS ON 9-IN. CENTERS		1 1/8-IN. RIBS ON 12-IN. CENTERS		2 1/2 IN. X 1 1/2 IN X 1 1.4 X 1/4 IN	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
29	UNFINISHED, PAINTED	26, 29	UNFINISHED, PAINTED	26, 29	UNFINISHED, PAINTED
29	UNFINISHED	26	UNFINISHED		
40		40		16	
36		36		24	
3:12 OPTIONAL NA		1 1/2:12 NOT USED NA		3:12 OPTIONAL NA	
X		X			
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
3/4	E	1 1/8	E	1/4, 1/2	E
X		X		X	
NO DISTRIBUTORS		NO DISTRIBUTORS		NO DISTRIBUTORS	
METAL ROOFING ENGINEERING		METAL ROOFING ENGINEERING		METAL ROOFING ENGINEERING	
NONE		NONE		NONE	
NONE		NONE		NONE	

Metal Roof Panels

1. COMPANY NAME	STEELOX SYSTEMS INC.		ULTRA SEAM	
2. PRODUCT NAME	STEELOX ROOF SYSTEM		US-150A	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		NO	
4. PANEL CONFIGURATION				
A. PANEL DESCRIPTION	VERTICAL RIB STANDING SEAM		DOUBLE INTERLOCK STANDING SEAM	
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)			24, 26, 28, 29	KYNAR 500, POLYESTER, SPECIALTY
STAINLESS STEEL (ga.)			26, 28	UNFINISHED
GALVALUME (ga.)	22, 24	70% KYNAR, UNPAINTED	24, 26, 28, 29	KYNAR 500, UNFINISHED
ALUMINIZED STEEL (ga.)			24, 26, 28	KYNAR 500, UNFINISHED
ALUMINUM (in.)			0.027, 0.032	KYNAR 500, UNFINISHED
COPPER (oz.)			12, 16, 20	UNFINISHED
TERNE METAL (ga.)			26, 28, 30	UNFINISHED
ZINC (ga.)			0.020, 0.027	UNFINISHED
C. MAXIMUM LENGTH (lf.)	65		150	
D. PANEL WIDTHS (in.)	16		8, 12, 16, 20, 24	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	1/4:12		1/2:12	
B. SOLID DECKING (required, optional, or not used)	OPTIONAL		REQUIRED	
C. UNDERLAYMENT (type or NA)	30-LB. FELT		30-LB. FELT OR EQUIVALENT	
6. PANEL PROFILE				
VERTICAL LEG	X		X	
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)	2	F		
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK			1 1/2	E
SNAP-ON CAP				
SNAP TOGETHER				
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED	X			
B. THROUGH-FASTENED, CONCEALED	X			
C. CLIP, CONCEALED				
FIXED CLIP	X		X	
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)	2		1 1/2	
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED	X			
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1934		1960	
B. NUMBER OF SQUARES INSTALLED	10 MILLION			
C. LICENSED APPLICATOR AGREEMENT (yes/no)	YES		YES	
D. METHOD OF DISTRIBUTION (distributors, direct)			DISTRIBUTORS	
E. NUMBER OF REGIONAL SERVICE LOCATIONS			10	
FOR SALES INFORMATION, CONTACT:	513/573-5200		L. PRIDE	
FOR TECHNICAL INFORMATION, CONTACT:	513/573-5200		L. PRIDE	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NO INFILTRATION		NO LEAKAGE, 15 MINUTES AT 9 PSF	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	0.012 CFM/FT ² @ 6.24PSF		0.004 CFM PER SQ. FT.	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL CLASS 90		UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

ULTRA SEAM		ULTRA SEAM		ULTRA SEAM	
US-150S		US-200A		US-200S	
YES		YES		YES	
YES		YES		YES	
SINGLE INTERLOCK STANDING SEAM		DOUBLE LOCK STANDING SEAM		SINGLE LOCK STANDING SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
24, 26, 28, 29	KYNAR 500, POLYESTER, SPECIALTY	24, 26, 28, 29	KYNAR 500, POLYESTER, SPECIALTY	24, 26, 28, 29	KYNAR 500, POLYESTER, SPECIALTY
26, 28	UNFINISHED	24, 26, 28	UNFINISHED	24, 26, 28	UNFINISHED
24, 26, 28, 29	KYNAR 500, UNFINISHED	24, 26, 28, 29	KYNAR 500, UNFINISHED	20, 22, 24, 26, 29	KYNAR 500, UNFINISHED
22, 24	KYNAR 500, UNFINISHED	22, 24	KYNAR 500, UNFINISHED	22, 24, 26, 28	KYNAR 500, UNFINISHED
0.027, 0.032, 0.040	KYNAR 500, UNFINISHED	0.032, 0.040	KYNAR 500, UNFINISHED	0.032, 0.040	KYNAR 500, UNFINISHED
12, 16, 20	UNFINISHED	12, 16, 20	UNFINISHED	12, 16, 20	UNFINISHED
26, 28, 30	UNFINISHED	26, 28, 30	UNFINISHED	26, 28, 30	UNFINISHED
0.020, 0.027	UNFINISHED	0.020, 0.027	UNFINISHED	0.020, 0.027	UNFINISHED
150		150		150	
8, 12, 16, 20, 24		35423		35423	
1/2:12 OPTIONAL 30-LB. FELT OR EQUIVALENT		1/4:12 REQUIRED 30-LB. FELT OR EQUIVALENT		1/4:12 OPTIONAL 30-LB. FELT OR EQUIVALENT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1 1/2	E	2	E	2	E
X		X		X	
1 1/2		1 1/2		1 1/2	
X		X		X	
1982 YES DISTRIBUTORS 10		1988 YES DISTRIBUTORS 10		1988 YES DISTRIBUTORS 10	
L. PRIDE L. PRIDE		L. PRIDE L. PRIDE		L. PRIDE L. PRIDE	
NO LEAKAGE, 15 MINUTES AT 9 PSF		NO LEAKAGE, 15 MINUTES AT 9 PSF		NO LEAKAGE, 15 MINUTES AT 9 PSF	
0.004 CFM PER SQ. FT.		0.004 CFM PER SQ. FT.		0.004 CFM PER SQ. FT.	
UL-90		UL-90		UL-90	

Metal Roof Panels

1. COMPANY NAME	ULTRA SEAM		ULTRA SEAM	
2. PRODUCT NAME	US-200B		US-100SS SNAP SEAM	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		NO	
4. PANEL CONFIGURATION				
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES				
GALVANIZED STEEL (ga.)				
STAINLESS STEEL (ga.)				
GALVALUME (ga.)				
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)				
COPPER (oz.)				
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	150		50	
D. PANEL WIDTHS (in.)	8, 12, 16, 20, 24		12, 16	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	1/4:12		4:12	
B. SOLID DECKING (required, optional, or not used)	OPTIONAL		REQUIRED	
C. UNDERLAYMENT (type or NA)	30-LB. FELT OR EQUIVALENT		30-LB. FELT OR EQUIVALENT	
6. PANEL PROFILE				
VERTICAL LEG			X	
TRAPEZOIDAL				
BATTEN	X			
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)	2	N		
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP			1	E
SNAP TOGETHER				
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP	X			
SLIP CLIP			X	
MOVEABLE CLIP (designed allowable movement, inches)	1 1/2			
9. SPECIALTY APPLICATIONS				
CURVED			X	
TAPERED			X	
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1985		1986	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	YES		YES	
D. METHOD OF DISTRIBUTION (distributors, direct)	DISTRIBUTORS		DISTRIBUTORS	
E. NUMBER OF REGIONAL SERVICE LOCATIONS	10		10	
FOR SALES INFORMATION, CONTACT:	L. PRIDE		L. PRIDE	
FOR TECHNICAL INFORMATION, CONTACT:	L. PRIDE		L. PRIDE	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)	NO LEAKAGE, 15 MINUTES AT 9 PSF			
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	0.004 CFM PER SQ. FT.			
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	UL-90			
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

ULTRA SEAM		ULTRA SEAM		ULTRA SEAM	
US-200SS SNAP SEAM		US-150SL LOCK SEAM		US-175SL LOCK SEAM	
YES		YES		YES	
NO		NO		YES	
SNAP ON CAP STANDING SEAM		SNAP LOCK STANDING SEAM		SNAP LOCK STANDING SEAM	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
24, 26, 28, 29	KYNAR 500, POLYESTER, SPECIALTY	22, 24, 26, 28, 29	KYNAR 500, POLYESTER, SPECIALTY	22, 24, 26, 28, 29	KYNAR 500, POLYESTER, SPECIALTY
26, 28	UNFINISHED	26, 28	UNFINISHED	26, 28	UNFINISHED
22, 24, 26, 28, 29	KYNAR 500, UNFINISHED	22, 24, 26, 28, 29	KYNAR 500, UNFINISHED	22, 24, 26, 28, 29	KYNAR 500, UNFINISHED
24, 26, 28	KYNAR 500, UNFINISHED	24, 26, 28	KYNAR 500, UNFINISHED	24, 26, 28	KYNAR 500, UNFINISHED
0.027, 0.032	KYNAR 500, UNFINISHED	0.027, 0.032	KYNAR 500, UNFINISHED	0.027, 0.032	KYNAR 500, UNFINISHED
12, 16, 20	UNFINISHED	12, 16, 20	UNFINISHED	12, 16, 20	UNFINISHED
26, 28, 30	UNFINISHED	26, 28, 30	UNFINISHED	26, 28, 30	UNFINISHED
0.020, 0.027	UNFINISHED	0.020, 0.027	UNFINISHED	0.020, 0.027	UNFINISHED
50		150		150	
12, 16		12.75, 14.75, 18.75		12.75, 14.75, 18.75	
4:12 REQUIRED 30-LB. FELT OR EQUIVALENT		3:12 OPTIONAL 30-LB. FELT OR EQUIVALENT		3:12 OPTIONAL 30-LB. FELT OR EQUIVALENT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
2	E	1 1/2	E	1 3/4	E
X		X		X	
X					
1991 YES DISTRIBUTORS 10		1991 YES DISTRIBUTORS 10		1991 YES DISTRIBUTORS 10	
L. PRIDE L. PRIDE		L. PRIDE L. PRIDE		L. PRIDE L. PRIDE	
				UL-90	

Metal Roof Panels

1. COMPANY NAME	ULTRA SEAM		UNITED STEEL DECK, INC.	
2. PRODUCT NAME	US-150WB CLASSIC BATTEN		UNI-LOK	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	NO		YES	
4. PANEL CONFIGURATION	BATTEN SEAM W/ WOOD BATTENS		SNAP-TOGETHER STANDING SEAM	
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)	24, 26, 28	KYNAR 500, POLYESTER, SPECIALTY	22, 24, 26	SILICONIZED POLYESTER, FLUOROCARBON, PLASTISOL
STAINLESS STEEL (ga.)	26, 28	UNFINISHED		
GALVALUME (ga.)	24, 26	KYNAR 500	22, 24, 26	UNFINISHED
ALUMINIZED STEEL (ga.)	24, 26	KYNAR 500	22, 24, 26	UNFINISHED
ALUMINUM (in.)	0.027, 0.032	KYNAR 500, UNFINISHED		
COPPER (oz.)	12, 16, 20	UNFINISHED		
TERNE METAL (ga.)	26, 28, 30	UNFINISHED		
ZINC (ga.)	0.020, 0.027	UNFINISHED		
C. MAXIMUM LENGTH (lf.)			60	
D. PANEL WIDTHS (in.)			24	
5. SYSTEMS REQUIREMENTS	1:12 OPTIONAL 30-LB. FELT OR EQUIVALENT		1/4:12 OPTIONAL 30-LB. FELT OR EQUIVALENT	
A. MINIMUM SLOPE (in. per ft.)				
B. SOLID DECKING (required, optional, or not used)				
C. UNDERLAYMENT (type or NA)				
6. PANEL PROFILE	X		X	
VERTICAL LEG				
TRAPEZOIDAL				
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)	1 1/2	E		
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER			3	F
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED				
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP	X		X	
SLIP CLIP			X	
MOVEABLE CLIP (designed allowable movement, inches)	1 1/2		2	
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1982		1984	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	YES		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)	DISTRIBUTORS			
E. NUMBER OF REGIONAL SERVICE LOCATIONS	10			
FOR SALES INFORMATION, CONTACT: R. STEYER			908/277-1617	
FOR TECHNICAL INFORMATION, CONTACT: R. STEYER			J. MATTINGLY	
11. ASTM E331 WATER INFILTRATION TEST RESULTS (results or none)			NONE	
12. ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)			NONE	
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION			UL-90	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

UNITED STEEL DECK, INC.		UNITED STEEL DECK, INC.		UNITED STEEL DECK, INC.	
UNILINE RP		UNIRIB C36		SS18 STANDING SEAM	
YES		YES		YES	
YES		YES		YES	
EXTERIOR EXPOSED FASTENER		EXTERIOR EXPOSED FASTENER		EXTERIOR EXPOSED FASTENER	
THICKNESSES	FINISHES	THICKNESSES	FINISHES	THICKNESSES	FINISHES
22, 24, 26	SILICONIZED POLYESTER, FLUOROCARBON, PLASTISOL	18, 20, 22, 24	SILICONIZED POLYESTER, FLUOROCARBON, PLASTISOL	18, 20, 22, 24	SILICONIZED POLYESTER, FLUOROCARBON, PLASTISOL
22, 24, 26	UNFINISHED	22, 24	UNFINISHED	22, 24	UNFINISHED
22, 24, 26	UNFINISHED				
0.032, 0.04, 0.05	UNFINISHED	0.032, 0.04, 0.05	UNFINISHED	0.032, 0.04, 0.05	UNFINISHED
40		40		40	
36		36		18	
1:12 OPTIONAL 30-LB. FELT OR EQUIVALENT		1:12 OPTIONAL 30-LB. FELT OR EQUIVALENT		1/2:12 OPTIONAL 30-LB. FELT OR EQUIVALENT	
X		X		X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1 1/4	E	1 1/2	E	2 5/16	E
X		X		X	
1978		1978		1987	
NO		NO		NO	
908/277-1617 J. MATTINGLY		908/277-1617 J. MATTINGLY		908/277-1617 J. MATTINGLY	
NONE		NO LEAKAGE AT 6.24 PSF		NONE	
NONE		0.012 CFM PER SQ. FT. AT 1.57 PSF		NONE	
UL-90		NONE		NONE	

Metal Roof Panels

1. COMPANY NAME	UNITED STEEL DECK, INC.		UNITED STEEL DECK, INC.	
2. PRODUCT NAME	UTILITY RIB		U230	
3. ARCHITECTURAL APPLICATIONS (yes/no)	YES		YES	
STRUCTURAL APPLICATIONS (yes/no)	YES		YES	
4. PANEL CONFIGURATION				
A. PANEL DESCRIPTION				
B. PANEL MATERIALS, THICKNESSES, AND FINISHES				
	THICKNESSES	FINISHES	THICKNESSES	FINISHES
GALVANIZED STEEL (ga.)	24, 26	SILICONIZED POLYESTER, FLUOROCARBON, PLASTISOL	18, 20, 22, 24	SILICONIZED POLYESTER, FLUOROCARBON, PLASTISOL
STAINLESS STEEL (ga.)				
GALVALUME (ga.)			22, 24	UNFINISHED
ALUMINIZED STEEL (ga.)				
ALUMINUM (in.)			0.032, 0.04, 0.05	UNFINISHED
COPPER (oz.)				
TERNE METAL (ga.)				
ZINC (ga.)				
C. MAXIMUM LENGTH (lf.)	40		40	
D. PANEL WIDTHS (in.)	30		30	
5. SYSTEMS REQUIREMENTS				
A. MINIMUM SLOPE (in. per ft.)	3:12		1:12	
B. SOLID DECKING (required, optional, or not used)	OPTIONAL		OPTIONAL	
C. UNDERLAYMENT (type or NA)	30-LB. FELT OR EQUIVALENT		30-LB. FELT OR EQUIVALENT	
6. PANEL PROFILE				
VERTICAL LEG				
TRAPEZOIDAL	X		X	
BATTEN				
OTHER (specify)				
7. SEAM PROCESSING, HEIGHT, AND SEALANT	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE	HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
SEAM PROCESSING				
OVERLAPPED				
CRIMPED (45 degrees)				
ROLL FORMED (180 degrees)				
DOUBLE ROLL FORMED (two 180 degrees)				
ROLL AND LOCK				
SNAP-ON CAP				
SNAP TOGETHER				
8. FASTENING METHOD				
A. THROUGH-FASTENED, EXPOSED	X		X	
B. THROUGH-FASTENED, CONCEALED				
C. CLIP, CONCEALED				
FIXED CLIP				
SLIP CLIP				
MOVEABLE CLIP (designed allowable movement, inches)				
9. SPECIALTY APPLICATIONS				
CURVED				
TAPERED				
OTHER				
10. MANUFACTURER/PRODUCT DATA				
A. YEAR OF FIRST COMMERCIAL USE	1978		1989	
B. NUMBER OF SQUARES INSTALLED				
C. LICENSED APPLICATOR AGREEMENT (yes/no)	NO		NO	
D. METHOD OF DISTRIBUTION (distributors, direct)				
E. NUMBER OF REGIONAL SERVICE LOCATIONS				
FOR SALES INFORMATION, CONTACT:	908/277-1617		908/277-1617	
FOR TECHNICAL INFORMATION, CONTACT:	J. MATTINGLY		J. MATTINGLY	
11. ASTM E331 WATER INFILTRATION	NONE		NONE	
TEST RESULTS (results or none)				
12. ASTM E283 AIR INFILTRATION TEST RESULTS	NONE		NONE	
(results or none)				
13. FM/UL WIND UPLIFT RATINGS FOR ANY SPECIFICATION	NONE		NONE	
14. SEE APPENDIX IF CHECKED				

NA=not applicable

Metal Roof Panels

VINCENT METAL GOODS	
COLORKLAD SYSTEM 1	
YES	
NO	
SNAP SEAM STANDING SEAM	
THICKNESSES	FINISHES
24	KYNAR 500, UNFINISHED
24	UNFINISHED
0.032	KYNAR 500
16	
40	
12, 16, 18, 22	
3:12	
REQUIRED	
30-LB. FELT OR EQUIVALENT	
X	
HEIGHT(S) (inches)	SEAM SEALANT F=FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1, 1 1/2	E
X	
X	
1970	
NO	
R. OEHME	
R. OEHME	
NONE	
NONE	
NONE	

Appendix, Roof Membranes

ALLIEDSIGNAL

All AlliedSignal roof membrane specifications are available with a protected roof membrane assembly thermal overlay incorporating extruded polystyrene insulation board with aggregate surfacing.

AMERICAN BUILDINGS ROOFING AND ARCHITECTURAL PRODUCTS

All American Buildings Company's roof systems are available in a proprietary Premium 70 paint finish, which has a Kynar 500 resin. It has a proprietary high-build primer and special long-life ceramic pigments. It has a chalk rating no lower than 9 and a fade no higher than 4 NBS over 20 years. It is warranted for 25 years based on actual field testing. It is maintenance-free and graffiti-proof.

ATAS ALUMINUM CORP.

Atas Aluminum Corporation offers metal roofing systems in a wide variety of panel profiles, from standing seam and batten seam to tile configuration. Presently it has over twenty standard colors available in a fluoropolymer Kynar 500 coating, in 24-gauge galvanized steel, and 0.032, 0.040, and 0.050 aluminum. Contact Atas Aluminum Corp. at 610-395-8445 for further information on its products and applicable warranties.

BARRETT COMPANY

The Barrett Ram-Tough Elastomeric Built-up Roofing System uniquely combines the elastomeric properties of single-ply with the application techniques of built-up roofing. The modified asphalt bitumens are engineered from a select blend of highly refined asphalt and Shell Kraton block copolymer rubber. Conventional asphalt bitumens and cold process mastics are available options. The "felts," or fabric reinforcement, are either polyester, fiberglass, modified bitumen, or a combination thereof depending upon specification used. Unlike other rubberized asphalts, the Ram-Tough KLB-100 and K-312 bitumens can be melted in conventional direct-fired roofing kettles without degradation, they are pumpable, and can be applied with conventional hot dispensers and mops. Flashing details are standard built-up roofing details generally in conformance with NRCA standard detail specification plates. A base sheet is required on uninsulated nailable decks.

Utilizing the Ram-Tough Elastomeric Built-up Roofing Systems, the approved roofing contractor, in effect, "manufacturers" in the field his own monolithic, modified-bitumen sheet without the laps and seams traditionally associated with preformed modified bitumen sheets. The completed polyester-reinforced systems afford high elongation, exceptional usable stress/strain properties, high puncture resistance, "self-curing" cold flow, crack bridging capabilities, exceptional low-temperature flexibility, and other performance features normally associated with elastoplastic single plies.

Because of the uniqueness of each individual reroofing project, Barrett should be consulted before writing specifications for actual use in a reroofing application. Unusual roof situations are also encountered from time to time in new construction. Design and specification assistance is available to the contractor, architect, engineer, or owner upon request for freezer and cold-storage warehouses, high interior humidity conditions, temporary roofing, and most other roofing problems.

Barrett does not endorse BSS #55 and encourages adoption of "strain energy" load-elongation test criteria (in conformance with NBS-IR 86-3418, Rossiter & Bentz; NBS-IR 86-3347, Busching, Rossiter & Mathey) as being more relevant to actual in-situ field conditions.

BERRIDGE MANUFACTURING CO.

Berridge Tee-Panel, High Seam Tee-Lock, Batten Seam, Zee-Lock, Double-Lock, Cee-Lock, and Bermuda Roof may be roll-formed on site in continuous lengths with a Berridge portable roll former.

BITUFA BV

Bitufa BV of the Netherlands, manufacturer of modified bituminous roofing, was founded in 1978 and exports to many countries. Their roofing systems have been installed in Saudi Arabia, Scandinavia, and several parts of the United States.

Flexoper is a high-elastic 22 percent SBS modified nonreinforced membrane with a substrate of mineral-coated glass mat for venting underneath. As the roll is torched, the SBS modified bitumen occupying square holes melts and sticks to the surface. Total bonding is approximately 15 percent, leaving 85 percent loose and permanently vented. Flexoper is designed for flat areas and roofs with a pitch up to 45 degrees. Flexoper is designed for smooth surface BUR, smooth APP, or primed concrete decks.

Flexoper MF is a 22 percent SBS nonreinforced membrane with venting woven fiberglass mat underneath. The membrane is mechanically fastened and the seams and flashings are welded together with hot air welding equipment or with a torch. Flexoper MF is designed for metal and wood decks.

Most Flexoper MF and Flexoper systems can be used without tearing off the old roof. These systems are not affected by ponding water.

Flexobit is a companion to Flexoper, but without the venting substrate underneath. It is an SBS specially designed for flashings, details, and roofs with a pitch over 45 degrees.

Flexowall has the same bitumen mixture as the preceding products, but it has polyester/glass reinforcement. It was developed for all kinds of flashings, walls, and roofs with a pitch over 45 degrees.

BONDCOTE ROOFING SYSTEMS

The newest additions to BondCote's product line are the 500, 600, and 800 Series membranes, which combine the time-proven thermoplastic NBP formulation with the same weft-inserted high-tenacity polyester base fabric. They are designed for the most demanding roofing environment.

BondCote FleeceBond 1000 membrane combines the proven 400 Series membrane with a high-strength polyester fleece fabric in the factory. FleeceBond 1000 is designed to be installed directly over roof insulation or smooth rigid substrates, such as BUR or plywood when mechanically attached. FleeceBond may also be fully adhered with contact adhesive or hot asphalt to a variety of BondCote-approved substrates.

All BondCote membranes are available in a variety of custom colors under the BondCote Spectrum product category. Underwriters Laboratories Class A and B fire ratings are available with a number of standard colors.

BUTLER MANUFACTURING COMPANY

MR-24 is factory prepunched and is applied only to prepunched- or field-drilled structurals. A layer of faced blanket insulation is placed between the purlins and MR-24 for energy conservation and to eliminate condensation.

CMR-24 utilizes a continuous corrugated metal liner panel (decking) with rigid insulation board and the double lock standing seam roof system (MR-24). CMR-24 is factory prepunched and is applied only to prepunched or field-drilled structures. A vapor retarder is placed between the corrugated liner and the rigid board insulation.

VSR can be used structurally (over bar joists or purlins 5 feet on center) or directly over decking (steel or wood) with clip spacing at 30 inches on center. Blanket insulation should be used when VSR is used without decking over structural members. Rigid board insulation (Thermax by Celotex) is preferred over decking.

THE CELOTEX CORP.

Built-up roofing specs: All Celotex built-up roofing specs are published with prefix letters AGS (e.g., AGS-4-C-G) indicating use of Celo-Glass AGS Ply Sheet, a premium glass ply sheet with properties exceeding ASTM D-2178 Type VI and NBS-BSS #55 recommendations. Use of Celotex Celo-Glass AGS Ply Sheet is required to qualify for Celotex "Specification" Warranty. Celotex APP and Celotex SBS modified bitumen products exceed the tensile strength

recommendations of NBS-BSS #55. Other built-up roofing specs are prefixed with the letters G/A and qualify for warranties other than the specification warranty.

Celotex base sheets are interchangeable when used in modified bitumen mopped systems, depending upon the substrate.

Celotex also has available cold process modified bitumen systems using Celotex SBS mineral surface cap sheet with SBS modified bitumen adhesive.

Celotex Hydro Stop Vapor Barrier/Venting Base Sheet is designed for use over lightweight insulating concrete decks (see specs indicated by "H+..."). Refer to Celotex literature for details.

COOLEY ROOFING SYSTEMS, INC.

Fiberboard may be used for certain applications. Contact CRSI for further information.

DERMABIT, WATERPROOFING INDUSTRIES, INC.

Dermabit roofing and waterproofing modified bitumen membranes are manufactured using state-of-the-art technology. Dermabit membranes consist of two plies of APP or SBS modified asphalt reinforced with a one-ply polyester mat. All APP products are sold under the Dermabit name. SBS products are sold under the Elaspalt name. The product number designates the thickness of the membrane and weight of the reinforcing mat. Thus 4170 indicates a 4mm membrane with a 170 gram polyester mat.

Dermabit also manufactures and sells on a special-order basis self-adhering modified bitumen peel and stick as well as membranes with different thicknesses, ranging from 1mm to 5mm, different types of reinforcements, such as fiberglass, fleece, or polyester film or any combination of the above, depending upon the application requirement.

Dermabit membranes can be torched, hot mopped, cold applied, or self-adhered to all roof decks, including metal, wood, or concrete. All Dermabit membranes need to be applied over an asphalt-saturated base sheet or asphalt base primer. Specification manuals can be ordered free of charge by calling George Jermstad at 703/739-2801, FAX 703/739-2802.

All Dermabit and Elaspalt 4170 series modified bitumen membranes have successfully passed material tests conducted by Underwriters Laboratories (UL) and Factory Mutual (FM). Please refer to the appropriate UL and FM guide manuals for specific designs and ratings.

DIBITEN

Dibiten modified bitumen roofing membranes are APP modified bitumen bonded to a tough, resilient nonwoven polyester core material. They are available in both smooth-surfaced (Dibiten Poly/4 and Dibiten Poly/5) and slate flake-finished (Dibiten Poly/4.5 Granular) varieties. Surface color for Dibiten Poly/4 and Dibiten Poly/5 is black; Dibiten Poly/4.5 Granular is available in a wide range of colors. Also available is Dibiten Black Granite, surfaced with fine black slag particles, and Dibiten Mineral, just like Poly/4.5 Granular except surfaced with mineral granules instead of slate flakes. All the Dibiten APP products are torch applied. Dibiten modified bitumen membranes are well suited for most types of roofing applications, and the smooth surfaced membrane is used in a variety of waterproofing applications as well. Dibiten recommends their specifications manual be consulted for application requirements and details prior to application of product. Specifications are available for single- or double-layer applications. Some specifications require application of roof coatings. UL-listed specifications may be obtained by consulting the most current edition of the Dibiten specifications manual, and, because these specifications are subject to continuous change, the technical department should be consulted for verification of current status. Dibiten membranes have been used successfully in Europe since the late '60s, and in the U.S. since 1978. Dibiten encourages technical inquiries at their toll free number 800/DIBITEN or by calling 213-564-7220 from outside these areas.

ERSYSTEMS

ERSystems produces elastomeric single-ply membrane systems of EPDM and CPA and elastomeric coatings for a wide variety of restoration, preservation, maintenance, and reroof purposes.

Single Ply: Poly-Bond EPDM has a non-woven polyester fleece backing making it ideal for cushioning irregular surfaces. Low-rise polyurethane foam

(ER Foam 2.0) is a rapid means of fully adhering the membrane to the substrate. Permaweld-CPA is also available with a fleece backing making it ideal for cushioning irregular surfaces. Low-rise polyurethane foam (ER Foam 2.0) is a rapid means of fully adhering the membrane to the substrate. PermaVac is a vacuum adhesion method of fastening Permaweld to an air tight substrate utilizing vacuum air vents and air distribution strips.

Coatings and Spray-Applied Polyurethane Foam: Eraguard 1000 gray and white are identical products except for color. Gray is most often used as a base coat for the white but equally UV resistant as the other colors and may be used as a finish coat. Rougher foam surfaces will require multiple coats to achieve minimum dry thickness requirements. This is especially true for the moisture-cure polyurethane coatings. Eraguard 4000 silicone coatings are identical except for color and may be used interchangeable for base or finish coat.

FABRAL

FABRAL's metal roofing panels are offered in a wide array of standard Kynar 500 colors, siliconized polyester, and vinyl plastisol. A limited 20-year nonprorated finish warranty is available, covering material and labor on replacement. Contact FABRAL at Lancaster, Pa. (717)397-2741, Jackson, Ga. (770)775-4484, Gridley, Ill. (309)747-2937, Idabel, Okla. (405)286-7521, or Cedar City, Utah (801)586-1215.

FIRESTONE BUILDING PRODUCTS CO.

For information concerning acceptable substrates for Rubbergard .090 EPDM, contact Firestone for specifications.

FOAM ENTERPRISES, INC.

FE 303-2.5, 2.7, 3.0; FE 302-2.5, 2.7, 3.0; and FE 304-3.0. Spray application techniques and conditions can reflect upon the physical properties of sprayed-in-place foams. These listings show ranges that are obtained from spraying the compounds per our application instructions. Please consult our instructions for further application details.

FE 314.3.0 This system uses new "blowing agents" and long-term insulation figures are not available at this time. Initial R-values show 6.25.

GACO WESTERN, INC.

For products A-5511, Urecap, Ureshield, UB-64, U-66, UA-6500, and UB-7500, the number of coating applications, along with required dry film thickness, can be increased or decreased to achieve desired mil thickness and guarantee requirements.

Products UB-64, U-66, UA-6500, and UB-7050 can be applied by single (batch mix) or multiple-component airless spray; water absorption per ASTM D-471 24 hours R.T.

GENERAL ELECTRIC

Answers to questions 9 and 10 are not applicable to the coating requirement because our coating is applied to the urethane foam. Our specifications do require that concrete and plywood be primed prior to the application of the urethane foam. Thermal barriers are required to satisfy UL and FM ratings. Priming is optional when spraying urethane to metal or to an existing BUR. The base coat and top coat are identical except for color, and they may be used in reverse if a darker top coat is requested.

GS ROOFING PRODUCTS COMPANY, INC.

Privately owned by its management, GS Roofing is a full-line roofing manufacturer. It has nine roofing plants, four granule plants, and its own state-of-the-art fiberglass mat plant.

HENRY COMPANY

Henry Company has been a manufacturer of roofing products for the western states since 1933 specializing in cold-applied and smooth-surface BUR.

The three-ply membrane, with cold-applied cement or hot asphalt, under Type G2 fiberglass sheets or asphalt emulsions under polyester ply sheets, is

generally surfaced with nine gallons of emulsion and three pounds of chopped glass fiber per square, and reflective coating. Called the Henry Monolithic System, this basic membrane concept has been time-tested for over 30 years in the U.V.-intense western states. It is a UL Class A system. Customized specifications are available; call Jim Hay or Ken Jacobs at (213) 583-5000 ext 263 for further information.

IMPER ITALIA S.P.A.

New roofing and reroofing: Imper Italia membranes are well suited to all new roofing and most reroofing applications. In every circumstance the specifier or the roofing contractor must take into consideration the following requirements: type and condition of the surfacing, insulation and, most important, ensuring proper drainage. To ensure a good bonding, use a proper primer, such as Impertene Primer or one approved by Imper Italia S.P.A.

Protection: When the black membranes Paralon NT4 or Triplene are applied over an insulation, a lightweight protection with Elastomul G or Parwenol 4822 Alluminio is recommended. Elastomul G is an acrylic modified paint with a water base available in different colors, white Parwenol 4822 Alluminio is a solvent-based aluminum paint. Other membranes are already self-protected.

Special instructions: The rolls should be stored in covered warehouses and in a vertical position, and, if possible, not stacked. It is recommended that they be stored at a temperature of not less than 41 F. They should be unloaded at the worksite or in the warehouse with care.

Note: All membranes are treated with Termotene. Termotene is a patented treatment in which a thin film of thermoplastic resins is applied to the undersurface during the manufacturing process. Under normal circumstances, the Termotene treatment performs as a separating layer between the different turns of the roll, but when heated by flame, it becomes a high-power adhesive. The advantages one obtains with Termotene include a reduced gas consumption and a greater speed of application. It is preferable that the flame of the torch be directed to the substrate as well as to the membrane being applied.

INTERSTATE COATINGS, INC.

Therm-o-Seal is a multiple-component plasticized hydrocarbon (modified asphalt) coating for use over polyurethane foam. Therm-o-Seal is air or airless spray applied on a one-pass-one coat process. Mineral granules or aluminum chips are immediately applied after spray application. Minimum wet mil thickness is 80; dry mil thickness is 64. Application rate is 5 gallons per 100 square feet.

KOPPERS

BUR: Other: Felts for Spec #410 and #420 incorporate coal-tar-impregnated glass fiber felts (Tar-Glas), ASTM D4490, which is similar to ASTM D2178 Type IV, except that the felts are coal-tar impregnated. Felts for spec #490 and #495 incorporate coal-tar-impregnated glass fiber felts (Premium Tar-Glas), ASTM D4490, which is similar to ASTM D2178 Type VI, except that the felts are coal-tar-impregnated.

Koppers IR Series represents a joint agreement between and Dow Chemical Co. for an insulated roof membrane assembly incorporating Koppers coal-tar built-up roofing membrane and Dow Chemical Co. Styrofoam.

Modified Bitumen: Koppers modified bitumen specifications require a base ply. Multiple plies of Type IV or Type VI asphalt glass reinforced in asphalt is also acceptable under SBS membranes in lieu of a base sheet.

Contact Koppers Sales and Service Center at 1-800-558-2706 for additional information.

MERCHANT & EVANS INC.

Zip Rib structural standing seam roofing has been in use for over 30 years, with installations from Adak, Alaska to the coast of the Caribbean. It is available in steel and aluminum in both 12-and 16-inch widths. The system utilizes allowable load spans in accordance with ASTM E-1592 test procedures, which conservatively depict field service capabilities, not calculated values that may yield nonconservative allowable load ranges. We offer design and engineering assistance for all of our products. In addition to our standard offerings listed, we can offer custom profiles and custom cornices to meet specific aesthetic requirements. All of our products are offered in multiple gauges and in various

materials, including aluminum, copper, stainless steel, and zinc, as well as steel. For further information, call 1-800-257-6215.

MONSEY BAKOR

Application: Modified Plus modified bitumen systems consist of two plies of SBS modified bitumen or one ply of coated base sheet and one ply of modified bitumen. Modified Plus is flexible at temperatures of -30F and lower. Membranes may be applied on any slope from diad level to vertical. Good roofing practice calls for a minimum of 1/4 inch in slope. The substrate includes most common decks, concrete, steel and wood as well as all commercial insulation. Assemblies include both conventional and protected membrane applications. Modified Plus systems offer many choices in method of application including hot-roofing asphalt, torch-welding, cold adhesives and self-adhesion. Membranes are lapped 3 inches on the side and 6 inches on the end. The cap sheet is surfaced with granules to provide a finished surface on application.

Contact Walt Mullen at 610/933-8888 or 800/523-0268, or Don Taylor at 905/890-4800, Fax 905/890-4866 or 800/387-9598. Distribution/rep network in most states.

NORTH CAROLINA FOAM INDUSTRIES

Figures for nominal density per ASTM D 1622 are in-place values; core values are: System 591-2.5, 2.5; System 591-2.8, 2.8; and System 692-2.5, 2.5. Systems 591 and 692 are formulated with HCFC 141B as the blowing agent.

North Carolina Foam Industries offers ten-year warranties for the NCFI Graveledfoam Roofing System (aggregate-covered polyurethane foam) when installed according to specifications by NCFI qualified applicators. The maximum ambient relative humidity varies with the ambient temperature. NCFI offers a chart indicating maximum wet bulb temperatures and maximum relative humidity for ambient temperatures between 50 and 100 F. The maximum allowable wind velocity with screen depends on the type of wind screen and degree of enclosure. Thermal resistance (R) value varies with the age and condition of all insulating materials.

PERFORMANCE ROOF SYSTEMS, INC.

Complete information on the Performance line of Derbigum APP and Permax SBS polymer modified bitumen roofing products and their application is provided in the Performance specifications and detail book. A video is available to roofing professionals describing the application of Derbigum and Permax membranes with Permastic cold adhesive, a system with a 20-year track record.

PROSPEX ROOFING PRODUCTS INC.

Prospex is a supplier of reinforced soft PVC membranes for roofing, waterproofing, and air barrier systems called ProSeal, offering complete technical support and materials supply services. UL Class A, FM, CGSB. For further information, call 800/561-7307 (U.S.: 800/361-8706).

ROOFING PRODUCTS INTERNATIONAL, INC.

E-Z rolls are EPDM membranes pre-coated with non-solvent based adhesives, protected by release paper. They can only be used in a fully adhered system.

ROYAL ALUMINUM, INC.

Royal Aluminum began selling and installing aluminum building products in the mid-1960s. In the mid-1980s, Royal entered the commercial and light industrial metal roofing industry with a complete line of standing seam roof systems, W and flat aluminum panels. In the 1990s, Royal introduced its patented aluminum Super Panel (UL-90 rated) for walkway systems and commercial roofing.

Royal products are specified for renovating gravel, shingle, or galvanized roofs (flat or gabled), new roof construction for steel buildings, warehouses, commercial buildings or barns, multifamily commercial carport roofs, architectural mansard or fascia treatments, commercial and school walkway system, patios, and marina roofs. Plant locations are in Leesburg, Fla. and Columbia, S.C.

SARNAFIL INC.

G 410: Only Sarnafil G 410 membrane should be used in fully adhered applications. Reinforced with nonwoven fiberglass mat, the 410 membrane has excellent dimensional stability, and a very low coefficient of thermal expansion, making total adhesion possible without shear stresses causing loss of adhesion. The 410 membrane is available in a variety of stable colors in addition to the standard white and gray. Adhesives are: Sarnacol 2170, a solvent-based adhesive; Sarnacol V949, an adhesive specifically designed to meet V.O.C. regulations for southern California, the EPA, and AQMD; and Sarnacol 2121, a water-based adhesive that is restricted for use during temperatures above 40 F and over horizontal water-absorbent substrate only. Compatibility of the membrane with the substrate must be assured; only approved insulations and substrates provide the code approvals required. All seams shall be hot-air welded. Sarnafil membranes require no fire coatings.

G 476: Sarnafil G 476 membrane should be used in inverted roof membrane assemblies and plaza deck waterproofing applications. It is reinforced with a nonwoven fiberglass mat that provides excellent dimensional stability. The membrane is formulated with excellent alkaline resistance. Its integral reinforcement and hot-air-welded seam provide the protection against wicking and seam degradation needed in inverted applications, where moisture is constantly present on the membrane surface.

G 442: Sarnafil G 442 membranes should be used in loosely laid and ballasted systems. Coverage rate of ballast is a minimum ten pounds per square foot; weight-bearing capacity of the deck should be verified by a professional engineer prior to system design. The ballasted system is not the system of choice on high rise structures or in areas of high wind.

S 327: Sarnafil S 327 membranes should be used for mechanically fastened applications. Reinforced with polyester fabric, the S 327 membrane is specifically designed to provide the necessary characteristics of elongation and tensile strength to control the stressing of the membrane that occurs as a result of dynamic wind loading. The fastening technique is determined for each individual job, and is calculated based on building height, ground roughness, and wind zone. The fastening method is special 20-gauge corrosive-resistant plates or 14-gauge perforated U-shaped galvanized steel bar secured to deck with corrosion-resistant screws or concrete anchors. Depending on wind uplift conditions, plates are installed in membrane overlaps and overlaps are hot-air welded, or the U-shaped bar is placed on top of membrane at calculated spacings and sealed with membrane cover strip hot-air welded. Sarnafil membranes require no fire coating.

SEAMAN CORPORATION

FiberTite is made with a proprietary formulation based on DuPont Elvaloy KEE chemically bonded to a dense weft inserted fabric, made of DuPont Dacron polyester fibers. The membrane is manufactured in standard 26.5-in., 29-in., 53-in., and 58-in. conventional rolls, along with a variety of prefabricated, standard, and custom rolls up to 20-ft. X 102-ft. (2,040 square feet). The FiberTite system is installed by authorized applicators, either mechanically fastening the membrane through an unexposed tab in the prefabricated system, attaching the membrane in a conventional roll goods type application or by fully adhering to approved substrates, or by applying ballast. All membrane seams are hot-air welded.

The FiberTite technical customer service department provides specification and design assistance to contractors, architects, consultants, and owners. Training, project start-ups, and inspections are provided free to charge to authorized applicators by regional technical service representatives. For additional information, contact Seaman Corporation at 800/927-8578.

SIPLAST

For over thirty years, Siplast has developed and manufactured advanced roofing and waterproofing materials and has pioneered major developments in modified asphalt and foil-faced roofing systems through a continuing research and development program. Siplast developed SBS (Styrene-Butadiene-Styrene) modified bitumens in 1968, which has exceptional elongation/recovery properties over a wide range of temperatures. Many Siplast roofs applied in the early years of the SBS blend are still in service today.

Siplast is part of the Icopal Group, a multi-national industrial corporation. The Siplast product line includes systems developed specifically for the varied design and field requirements of modern construction. These systems have been

applied over all types of deck constructions in the widely varying climates of over forty countries, from Canada to Saudi Arabia. Domestically, all Siplast roofing products are manufactured at its plant in Arkadelphia, Arkansas and are stocked at nine warehouse locations across the country.

Siplast assists owners, architects, and engineers in the selection and proper use of Siplast materials, which are applied by qualified, approved roofing contractors. Siplast's field staff monitors the projects.

SMITH STEELITE

Complete design and installation procedures manuals are available from Smith Steelite.

The SRS System is tested per ASTM E-1592 (modified) to determine negative pressure structural performance. This testing is required per the AISI "Cold-Formed Steel Design Manual" and is used to develop load span tables.

The Smith Steelite SRS Roof System features a one-piece concealed clip that allows unimpeded thermal panel movement. The system was tested to simulate 100,000 cycles of thermal movement, which resulted in no effect on the structural or weathertight performance.

The symmetrical SRS panels provide installation flexibility because they may be installed in either direction. Panels may be removed or replaced without affecting adjacent panels. The panel design allows them to extend continuously from ridge to fascia to soffit. This continuity eliminates filler plugs, closures, flashings, and elastomeric rib caps at the transitions. The battens are fabricated to the same length as the panels.

Continuous long-length sheets are available field formed in lengths to 225 feet.

TAMKO ROOFING PRODUCTS INC.

Awaplan Premium was the first SBS modified asphalt polyester base roll roofing produced in America. Since 1977 Awaplan Premium has been applied on different types of roofs all over the country. Awaplan Premium is manufactured in Joplin, MO using the latest in statistical quality-control methods to insure the roofing contractor a consistent product. Introduced in June of 1986, Awaplan 170 is a variation of Awaplan Premium produced on a 180 gram-per-square-meter polyester mat. Tamko produces a complete specification manual and technical literature for your use. If you need further details, contact the Technical Services Division in Joplin, MO at (417) 624-6644.

TRI-PLY

TP-4, Karifalt 308, 307, 306: Coal-tar pitch roofs: When reroofing over an existing coal-tar pitch roof, the old roof must be isolated from the new roof. This can be accomplished by mechanically fastening an approved base sheet over a minimum 1-in. rigid insulation board. Be sure to install one-way moisture vents.

Cold weather application: Modified bitumen may be installed in practically any temperature, although there are several precautions that should be observed. Tri-Ply's recommendations for cold weather applications are as follows: (1) Rolls may be installed without any precautions to approximately 40 degrees F; (2) Below 40 degrees F; (a) rolls should be kept in heated area; (b) rolls should be lifted onto the roof and installed quickly without allowing them to become brittle from freezing temperatures; (c) rolls should never be handled when frozen—always thaw membrane before handling; (3) If cracking does occur: (a) stop installing the membrane immediately (please notify manufacturer); (b) the rolls should continue to be heated and installed again when warmer weather permits.

Cold weather precautions notice: The following guidelines and precautions should be taken for installing an APP modified bitumen membrane in cold weather: Rolls must be stored in an enclosed warehouse. Warm rolls should be lifted onto the roof and installed quickly without allowing membrane to freeze and become brittle. Rolls should never be handled when frozen, or allowed to be dropped. Always thaw membrane before handling. Cold weather application may lead to surface cracking if not installed and/or prepared properly. If this cracking occurs, stop installation immediately.

Tri-Ply membrane protection: Note: Prior to applying any type of surfacing to the Tri-Ply membrane, the membrane must weather a minimum of 30 days. After a minimum of 30 days, apply roof surfacing when weather permits, as per manufacturer's recommendations.

Section 2

Roofing Cements and Coatings

Information on Roofing Cements and Coatings

General Information

This section provides a comprehensive listing of cements and coatings used in low-slope commercial roofing. At the same time, it provides information on cold-applied roof systems that employ coatings or cements as the primary waterproofing medium, and, in many instances, that have stabilizing components as well. Some of the systems components will be listed elsewhere in the *Guide*, for example in the Built-up Roofing or Modified Bitumen sections. Coating and/or cements used primarily for polyurethane foam roof systems are not included; these may be found in Part 1 Protective Coatings of the Spray-applied Polyurethane Foam Roof Systems section.

All listed cements and coatings are categorized, as follows: (1) asphalt primer, (2) asphalt/coal tar coating, (3) asphalt/coal tar cement, (4) asphalt emulsion, (5) modified bitumen coating or cement, or (6) elastomeric coating or cement, with type specified. No other categories were permitted, and duplication of categories was also not allowed. In some instances, manufacturers were not satisfied that these categories were sufficiently comprehensive to encompass their particular cements or coatings. Their observations will be taken into account for the next issue of the *Guide*.

Many cements and coatings are made in both asbestos-containing and asbestos-free forms. Data concerning asbestos was not specifically requested in Part 1 of the section; where it is not evident from the product name, the information can generally be ascertained in Part 2 by noting the nature of the ASTM standard with which the cement or coating complies.

Notes on the Roofing Cements and Coatings Section

Part 1: General Information

Item 3.1 Product Description, General Category Item 3.1 is where the general category of the product is indicated. Only one category is permitted for a product. Where manufacturers selected more than one category (e.g., asphalt emulsion and asphalt coating), the category that appeared more informative was used. For item 3.1G, an X can be placed in the space provided or additional information, such as *urethane* or *acrylic*.

Item 3.2 Product Description, General Features Item 3.2A provides information concerning whether the product is fibrated or unfibrated. Item 3.2B requests the specific colors in which the product is available. Items

3.2C and D provide for information concerning the solid content of the coating or cement and also its weight per gallon. In 3.2E should be indicated the drying time in hours, or fractions thereof, at 70 F and 50 percent relative humidity. Item 3.2F provides data concerning coverage normally obtained per square from a gallon of the product.

Item 4 Uses This part provides information concerning the intended uses that a product has in the roofing operation and the kind of systems that it is generally used with. Only X's may be placed next to the selections.

Item 6 Roof System Description Item 6 provides information concerning the roof system or systems offered by a manufacturer in which a particular coating or cement is used and, if appropriate, what the components of the system are. After 6A and 6B is space for the manufacturer to indicate whether the system or any of its components are listed in the *Guide* in either the Built-up Roofing or Modified Bitumen sections. Item 6C is for indicating the components of systems that are exclusively liquid applied—that is, where no reinforcement is employed, such as polyester felts.

Part 2: Technical Data

Item 4 Complies with: In this portion of Part 2 are listed the ASTM standards that are applicable to cement and coating products. The full name of each of the standards follows, as well as the complete description of each type, class, or grade referenced in the standard.

- A. ASTM D 41-94 *Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing*
- B. ASTM D 43-94 *Standard Specification for Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing*
- C. ASTM D 1227-95 *Standard Specification for Emulsified Asphalt Used as a Protective Coating For Roofing*
 - Type I Emulsified Asphalt Prepared with Mineral Colloid Emulsifying Agents and Containing Asbestos Fibers
 - Type II Emulsified Asphalt Prepared with Chemical Emulsifying Agents and Containing Mineral Fillers
 - Type III Emulsified Asphalt Prepared with Mineral Colloid Emulsifying Agents, Without Fibrous Reinforcement
 - Type IV Emulsified Asphalt Prepared with Mineral

Colloid Emulsifying Agents and Containing Fibers Other Than Asbestos

- D. *ASTM D 2823-90 Standard Specification for Asphalt Roof Coatings*
 Type I Made from Asphalts Characterized as Self-Healing, Adhesive, and Ductile, and Conforming to the Requirements of Specification D 312, Type I; Specification D 449, Types I or II; or Specification D 946
 Type II Made from Asphalts Characterized by High Softening Point and Relatively Low Ductility, and Conforming to the Requirements of Specification D 312, Type II or III; or Specification D 449, Type III
- E. *ASTM D 4479-93 Standard Specification for Asphalt Roof Coatings--Asbestos-Free*
 Type I Made from Asphalts Characterized as Self-Healing, Adhesive, and Ductile, and Conforming to the Requirements of Specification D 312, Type I; Specification D 449, Types I or II; or Specification D 946
 Type II Made from Asphalts Characterized by High Softening Points and Relatively Low Ductility, and Conforming to the Requirements of Specification D 312, Type II or III; or Specification D 449, Type III
- F. *ASTM D 2824-85 Standard Specification for Aluminum-pigmented Asphalt Roof Coatings, Non-Fibred, Asbestos Fibred, and Fibred without Asbestos*
 Type I Nonfibred, Containing No Asbestos Fiber
 Type II Fibred, Containing Asbestos Fiber
 Type III Fibred, Containing No Asbestos Fiber
- G. *ASTM D 2822-91 Standard Specification for Asphalt Roof Cement*
 Type I Made from Asphalts Characterized as Self-Healing, Adhesive, and Ductile, and Conforming to the Requirements of Specification D 312, Type I; Specification D 449, Types I or II; or Specification D 946
 Class I Used for Application to Essentially Dry Surfaces
 Class II Used for Application to Damp, Wet, or Underwater Surfaces
 Type II Made from Asphalts Characterized by High Softening Points and Relatively Low Ductility, and Conforming to the Requirements of Specification D 312, Type II or III; or Specification D 449, Type III
 Class I Used for Application to Essentially Dry Surfaces
 Class II Used for Application to Damp, Wet, or Underwater Surfaces
- H. *ASTM D 4586-93 Standard Specification for Asphalt Roof Cement, Asbestos Free*
 Type I Made from Asphalts Characterized as Self-healing, Adhesive, and Ductile, and Conforming to the Requirements of Specification D 312, Type I; Specification D 449, Types I or II; or Specification D 946
 Type II Made from Asphalts Characterized by High Softening Points and Relatively Low Ductility, and Conforming to the Requirements of Specification D 312, Type II or III; or Specification D 449, Type III
- I. *ASTM D 3019-94 Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibred, Asbestos Fibred, and Non-Asbestos Fibred*
 Type I Brushing Consistency Lap Cement Intended for Use in the Exposed-Method of Roll Roofing Application; Contains No Mineral or Other Stabilizers
 Grade 1 Made with Air-Blown Asphalt
 Grade 2 Made with a Vacuum-Reduced or Steam-Refined Asphalt
 Type II Heavy Brushing or Light Troweling Consistency Lap Cement Intended for Use in the Concealed-Nailing Method of Roll Roofing Application
 Type III Heavy Brushing or Light Troweling Consistency Lap Cement Intended for Use in the Concealed-Nailing Method of Roll Roofing Application; Contains a Quantity of Mineral or other Stabilizers, or Both, but Contains No Asbestos
- J. *ASTM D 3409-93 Standard Test Method for Adhesion of Asphalt Roof Cement to Damp, Wet, or Underwater Surfaces*
- K. *ASTM D 4022-94 Standard Specification for Coal Tar Roof Cement, Asbestos Containing*
- L. *ASTM D 3747-79 (1995) Standard Specification for Emulsified Asphalt Adhesive for Adhering Roof Insulation*
 Type I Suitable for Use at Temperatures above 40°F
 Type II Suitable for Use at Temperatures above 20°F
- M. *ASTM D 1187-95 Standard Specification for Asphalt-Base Emulsion Used as Protective Coatings for Metal*
 Type I Quick-Setting Emulsified Asphalt Suitable Continuous Exposure to Water Within a Few Days after Application and Drying
 Type II Quick-Setting Emulsified Asphalt Suitable Continuous Exposure to the Weather Only after Application and Drying
- N. *ASTM D 3468-90 Standard Specification for Liquid-applied Neoprene and Chlorosulfonated Polyethylene Used in Roofing and Waterproofing*
 Type I Neoprene Synthetic Rubber Solutions for Use Alone or in Combination with Chlorosulfonated Polyethylene Used in Roofing and Waterproofing
 Grade 1 Neoprene Rubber Solution
 Grade 2 Fiber-Modified Neoprene Rubber Solution
 Type II Chlorosulfonated Polyethylene Synthetic Rubber Solutions

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	ACRYMAX TECHNOLOGIES INC.	ACRYMAX TECHNOLOGIES INC.	ACRYMAX TECHNOLOGIES INC.	ACRYMAX TECHNOLOGIES INC.	ACRYMAX TECHNOLOGIES INC.	ALCO-NVC, INC.	ALCO-NVC, INC.
2. PRODUCT NAME	ACRYMAX AF-130	ACRYMAX AF-130 FR	ACRYMAX ACM 9000	ACRYMAX AF-130 XT	ACRYMAX AF-130 BC	#216 AF FLASHING CEMENT	#269T AF SBS TROWEL GR
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING							
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT			X			X	
G. ELASTOMERIC COATING OR CEMENT (specify type)	ACRYLIC	ACRYLIC		ACRYLIC	ACRYLIC		X
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	NONFIBRATED UNLIMITED	NONFIBRATED WHT, GRAY, TAN	NONFIBRATED BLACK	NONFIBRATED UNLIMITED	NONFIBRATED GRAY	FIBRATED BLACK	FIBRATED BLACK
B. COLOR(S) AVAILABLE							
C. SOLIDS CONTENT (% by volume)	51.0	51.0	50.0	51	51	68 ±2	68
D. WEIGHT PER GALLON (lbs.)	12.1	12.1	8.5	11.4	12.1	9.5	9
E. DRYING TIME (hours, 50% R.H. at 70° F, touch dry)	1-2	1-2	1-2	1-2	1-2	48-72	
F. COVERAGE (gals./square)	2-5	2-5	2-6	2-5	2-3	8	8
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X	X	X	X	X	X
2. COMPOSITE ROOFING	X	X	X	X	X	X	X
3. MODIFIED BITUMEN ROOFING	X	X	X	X	X	X	X
4. SINGLE-PLY ROOFING				X	X		
5. OTHER ROOFING						X	X
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING	X	X	X	X	X	X	X
2. COMPOSITE ROOFING	X	X	X	X	X	X	X
3. METAL ROOFING	X	X	X	X	X	X	X
4. OTHER ROOFING	X	X	X	X	X	X	X
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING	X	X	X	X	X	X	X
2. COMPOSITE ROOFING	X	X	X	X	X	X	X
3. METAL ROOFING	X	X	X	X	X	X	X
4. OTHER ROOFING				X	X	X	X
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING	X	X	X	X	X		
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING	X	X	X	X	X		
4. OTHER ROOFING				X	X		
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING							
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS						X	
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING	X	X		X	X	X	X
2. REROOFING/MAINTENANCE	X	X	X	X	X	X	X
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	TROWEL	TROWEL
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA			NA	NA		
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA			NA	NA		
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	ACRYMAX + POLY-1 REIN-FORCEMENT	ACRYMAX + POLY-1 REIN-FORCEMENT	ACRYMAX + POLY-1 REIN-FORCEMENT	ACRYMAX + POLY-1 REIN-FORCEMENT	ACRYMAX + POLY-1 REIN-FORCEMENT		
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1979	1985	1989	1991	1979	1984	1986
8.1 FOR SALES INFORMATION, CONTACT:	S. BENNING 800/553-0523	S. BENNING 800/553-0523	S. BENNING 800/553-0523	S. BENNING 800/553-0523	S. BENNING 800/553-0523	SALES 800/323-0029	SALES 800/323-0029
8.2 FOR TECHNICAL INFORMATION, CONTACT:	S. BENNING 800/553-0523	S. BENNING 800/553-0523	S. BENNING 800/553-0523	S. BENNING 800/553-0523	S. BENNING 800/553-0523	TECH. DEPT.	TECH. DEPT.
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

ALCO-NVC, INC	ALCO-NVC, INC	ALCO-NVC, INC	ALCO-NVC, INC	ALCO-NVC, INC	ALCO-NVC, INC	ALCO-NVC, INC	ALUMINUM COATING MANU-FACTURERS	ALUMINUM COATING MANU-FACTURERS	ALUMINUM COATING MANU-FACTURERS
#269 AF SBS PLUS ADHESIVE	#214 AF ALUMAGARD NONFIBRATED COATING	#215 AF ALUMAGARD FIBRATED COATING	#207 ASPHALT ROOF PRIMER	#270 AF ROOF CAP MASTIC	#218 WHITE LATEX COATING	#218E AF WHITE ELASTOMERIC	FIBRATED LIQUID ROOF COATING	RUBBERIZED DAMP SUR-FACE ROOF COATING	ASPHALT ROOF AND METAL COATING, NO FIBER
			X				X	X	X
X				X	ACRYLIC	COATING			
NONFIBRATED BLACK 8 30-40 1.5	NONFIBRATED ALUMINUM 8.5 8-24 1	FIBRATED ALUMINUM 8.8 8-24 1-1.5	NONFIBRATED BLACK 40 + 7.2 4 1-1.5	FIBRATED BLACK 58 + 8 6 2-2.5	NONFIBRATED WHITE 50 + 10 1-3 2	WHITE 52 ±2 11.7 1 1.5-2.5	FIBRATED BLACK 70 7.9 24 2-3	FIBRATED BLACK 65 8 24 2-3	NONFIBRATED BLACK 63 7.7 24 1-2
X	X X X X	X X X X			X X X		X	X	X
X									
			X X X						
			X	X			X	X	X
	X	X		X X X			X X	X	X
X				X X X					
						X			
BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, ROLLER, SQUEEGEE	BRUSH, SPRAY, ROLLER, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE
							NA	NA	NA
							NA	NA	NA
							NA	NA	NA
USA 1986 SALES 800/323-0029 TECH. DEPT.	USA 1965 SALES 800/323-0029 TECH. DEPT.	USA 1965 SALES 800/323-0029 TECH. DEPT.	USA 1912 SALES 800/323-0029 TECH. DEPT.	USA 1990 SALES 800/323-0029 TECH. DEPT.	USA 1985 SALES 800/323-0029 TECH. DEPT.	USA 1987 SALES 800/323-0029 TECH. DEPT.	USA 1967 R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	USA 1967 R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	USA 1967 R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS
2. PRODUCT NAME	BUTYL LASTIC	ROOF EMULSION FIBERED	NO FIBER ROOF ROOF EMULSION	ASPHALT RESATURANT	ASPHALT PRIMER	COLD- PROCESS ADHESIVE	PLASTIC CEMENT
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER					X		
B. ASPHALT/COAL TAR COATING				X			
C. ASPHALT/COAL TAR CEMENT						X	
D. ASPHALT EMULSION		X	X				X
F. MODIFIED BITUMEN COATING OR CEMENT	X						
G. ELASTOMERIC COATING OR CEMENT (specify type)							
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	FIBRATED BLACK	FIBRATED BLACK	NONFIBRATED BLACK	FIBRATED BLACK	NONFIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK
B. COLOR(S) AVAILABLE	70	46	45	70	48	64	70
C. SOLIDS CONTENT (% by volume)	8.2	8.2	8.6	7.8	7.4	8.0	9.5
D. WEIGHT PER GALLON (lbs.)	24	12	12	24	4	24	24
E. DRYING TIME (hours, 50% R.H. at 70° F, touch dry)	3-7	2-3	2-3	5-7	0.5-1	1.5-3	4-8
F. COVERAGE (gals./square)							
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X	X	X		X	
2. COMPOSITE ROOFING	X						
3. MODIFIED BITUMEN ROOFING							
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING							
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING							X
2. COMPOSITE ROOFING							X
3. METAL ROOFING							
4. OTHER ROOFING							
C. PRIMING							
1. BUILT-UP ROOFING					X		
2. CONCRETE/WOOD DECKS					X		
3. METAL					X		
D. FLASHING							
1. BUILT-UP ROOFING							X
2. COMPOSITE ROOFING							X
3. METAL ROOFING							
4. OTHER ROOFING							
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING	X	X	X	X			
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING	X	X	X				
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING						X	
2. COLD-PROCESS MODIFIED BITUMEN ROOFING						X	
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY	BRUSH, SPRAY, SQUEEGEE	TROWEL
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	BUTYL LASTIC + POLYESTER MAT	NA	NA	NA	NA	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1972	1967	1967	1967	1967	1967	1967
8.1 FOR SALES INFORMATION, CONTACT:	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030
8.2 FOR TECHNICAL INFORMATION, CONTACT:							
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS
WET/DRY CEMENT	FLASHTITE	GLAS-MASTIC	NEOPRENE RUBBER ROOF CEMENT	RUBBERIZED CEMENT	ASPHALT MASTIC TROWEL GRADE	ASPHALT MASTIC BRUSH GRADE	M.B.A. ADHESIVE	SEAL-A-SAVE ALUMINUM FIBERED	1.3# ALUMINUM FIBERED
X	X	X		X	X	X		X	X
			CEMENT				X		
FIBRATED BLACK 70 9.5 24 4-8	FIBRATED BLACK 70 9.5 24 4-8	FIBRATED BLACK 68 9.3 24 4-8	FIBRATED BLACK 66 9.1 24 4-8	FIBRATED BLACK 66 9.3 24 4-8	FIBRATED BLACK 68 7.7 24 4-8	FIBRATED BLACK 75 7.7 24 2-3	FIBRATED BLACK 60 8.0 24 2	FIBRATED BLACK 65 9.8 24 1.5-3	FIBRATED ALUMINUM 63 9.5 24 1.5-3
						X		X	X
							X		X
X	X	X	X	X	X				
X	X	X	X	X	X		X		
X	X	X	X	X	X				
X	X	X	X	X	X				
						X		X	X
						X		X	X
TROWEL, CAULK	TROWEL	TROWEL	TROWEL	TROWEL	TROWEL	BRUSH, SPRAY, SQUEEGEE	BRUSH, TROWEL	BRUSH, SPRAY	BRUSH, SPRAY
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USA 1967	USA 1967	USA 1991	USA 1994	USA 1991	USA 1967	USA 1967	USA 1985	USA 1967	USA 1967
R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030	R. KAPLAN 800/556-8030 C. FRATIANNE 800/556-8030

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	AMERICAN TAR COMPANY
2. PRODUCT NAME	2.0# ALUMINUM FIBERED	3.0# ALUMINUM FIBERED	1.2# ALUMINUM NO FIBER	2.0# ALUMINUM NO FIBER	SNOW-BRITE WHITE ELASTOMERIC	CHROME ALUMINUM PAINT	# 1712 LIQUID FIBER SEAL
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING	X	X	X	X			X
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)					COATING		
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	FIBRATED ALUMINUM	FIBRATED ALUMINUM	NONFIBRATED ALUMINUM	NONFIBRATED ALUMINUM	NONFIBRATED WHITE	NONFIBRATED ALUMINUM	FIBRATED BLACK
B. COLOR(S) AVAILABLE	61	60	42	44	46	23	
C. SOLIDS CONTENT (% by volume)	8.8	9.0	7.6	7.9	8.9	7.9	9
D. WEIGHT PER GALLON (lbs.)	24	24	24	24	4	4	72
E. DRYING TIME (hours, 50% R.H. at 70° F, touch dry)	1.5-3	1.5-3	0.5-1	0.5-1	1.5-2.5	0.5-0.75	1.5-12
F. COVERAGE (gals./square)							
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X	X	X	X		
2. COMPOSITE ROOFING							
3. MODIFIED BITUMEN ROOFING	X	X					
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING						X	X
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. METAL ROOFING							X
4. OTHER ROOFING							
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING		X	X	X	X		
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING		X	X	X	X	X	
4. OTHER ROOFING							X
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING							
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY, SQUEEGEE
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1967	1967	1967		1984	1967	1926
8.1 FOR SALES INFORMATION, CONTACT:	R. KAPLAN 800/556-8030	R. KAPLAN 800/556-8030	R. KAPLAN 800/556-8030	R. KAPLAN 800/556-8030	R. KAPLAN 800/556-8030	R. KAPLAN 800/556-8030	M. GRIFFIN 800/627-4098
8.2 FOR TECHNICAL INFORMATION, CONTACT:	C. FRATIANNE 800/556-8030	C. FRATIANNE 800/556-8030	C. FRATIANNE 800/556-8030	C. FRATIANNE 800/556-8030	C. FRATIANNE 800/556-8030	C. FRATIANNE 800/556-8030	B. COLLINS 800/627-4098
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY
# 1818 FIBERED ROOF COATING	# 1825 ALL PURPOSE LAP ADHESIVE	# 1826 NONFIBERED ROOF COATING	# 1827 MODHESIVE	# 1840 NONFIBERED ROOF EMULSION	# 1845 REFLECTIVE EMULSION	# 1850 FIBERED ROOF EMULSION	# 1857 FIBERED COOL-FLEX	# 1858 LIQUID SUN SHIELD	# 1859 FIBERED SUN SHIELD
X	X	X					X	X	X
			X	X	X	X			
FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	NONFIBRATED GRAY	NONFIBRATED BLACK	FIBRATED ALUMINUM	NONFIBRATED ALUMINUM	FIBRATED ALUMINUM
7.8 24-144 2-6	8 24-144 2-6	7.2 24-144 2-6	8.6 24-144 2-6	8.4 12-104 3-12	10.2 12-104 3-12	8.4 12-104 3-12	7.8 8-24 0.75-1.5	8.1 8-24 0.75-1.5	8.2 8-24 0.75-1.5
X	X	X	X	X	X	X	X	X	X
			X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
X	X	X	X						
X	X	X	X						
X	X	X	X						
X		X	X	X	X	X	X	X	X
X			X				X	X	X
X	X		X						
X	X		X						
X	X		X						
BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY
ADHESIVE FIELDS GLASS ATCO POLYESTER	ADHESIVE FIELDS GLASS ATCO POLYESTER	NA	ADHESIVE FIELDS GLASS ATCO POLYESTER	ADHESIVE FIELDS GLASS ATCO POLYESTER	ADHESIVE FIELDS GLASS ATCO POLYESTER	SURFACING FIELDS GLASS ATCO POLYESTER	SURFACING FIELDS GLASS ATCO POLYESTER	SURFACING FIELDS GLASS ATCO POLYESTER	SURFACING FIELDS GLASS ATCO POLYESTER
ADHESIVE FIELDS GLASS (SBS) ATCO POLYESTER	ADHESIVE FIELDS GLASS (SBS) ATCO POLYESTER	NA	ADHESIVE FIELDS GLASS (SBS) ATCO POLYESTER	ADHESIVE FIELDS GLASS (SBS) ATCO POLYESTER	ADHESIVE FIELDS GLASS (SBS) ATCO POLYESTER	SURFACING FIELDS GLASS (SBS) ATCO POLYESTER	SURFACING FIELDS GLASS (SBS) ATCO POLYESTER	SURFACING FIELDS GLASS (SBS) ATCO POLYESTER	SURFACING FIELDS GLASS (SBS) ATCO POLYESTER
NA		NA		NA	NA	NA	NA	NA	NA
USA 1926	USA 1926	USA 1926	USA 1926	USA 1926	USA 1926	USA 1926	USA 1926	USA 1926	USA 1926
M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY
2. PRODUCT NAME	# 1860 ALUMINUM ASPHALT COATING	# 1864 FIBERED ALUMINUM ASPHALT COATING	# 1866 PREM. FIBERED ALUMINUM COATING	# 1868 PREMIUM ALUMINUM COATING	# 1870 SILVER SEAL	# 1931 ROOF PRIMER	# 4200 ELASTIC WHITE
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING	X	X	X	X		X	
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)					ALKYD RESIN		ACRYLIC LATEX
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	NONFIBRATED ALUMINUM	FIBRATED ALUMINUM	FIBRATED ALUMINUM	NONFIBRATED ALUMINUM	ALUMINUM	NONFIBRATED BLACK	
B. COLOR(S) AVAILABLE							
C. SOLIDS CONTENT (% by volume)	8.5	8.5	8.9	8.9		7	11.6
D. WEIGHT PER GALLON (lbs.)	8-24	8-24	8-24	8-24	8-24	4-8	8-24
E. DRYING TIME (hours, 50% R.H. at 70° F, touch dry)	0.75-1.5	0.75-1.5	0.75-1.5	0.75-1.5		0.5-1	1.5-2
F. COVERAGE (gals./square)							
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X	X	X			X
2. COMPOSITE ROOFING	X	X	X	X			X
3. MODIFIED BITUMEN ROOFING	X	X	X	X			X
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING	X	X	X	X	X		X
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. METAL ROOFING					X		
4. OTHER ROOFING							
C. PRIMING							
1. BUILT-UP ROOFING						X	
2. CONCRETE/WOOD DECKS						X	
3. METAL						X	
D. FLASHING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING	X	X	X	X	X	X	X
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING	X	X	X	X	X		X
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING							
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	SURFACING FIELDS GLASS ATCO POLYESTER	SURFACING FIELDS GLASS ATCO POLYESTER	SURFACING FIELDS GLASS ATCO POLYESTER	SURFACING FIELDS GLASS ATCO POLYESTER	NA	NA	SURFACING FIELDS GLASS ATCO POLYESTER
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	SURFACING FIELDS GLASS (SBS) ATCO POLYESTER	SURFACING FIELDS GLASS (SBS) ATCO POLYESTER	SURFACING FIELDS GLASS (SBS) ATCO POLYESTER	SURFACING FIELDS GLASS (SBS) ATCO POLYESTER	NA	NA	SURFACING FIELDS GLASS (SBS) ATCO POLYESTER
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1926	1926	1926	1926	1926	1926	1926
8.1 FOR SALES INFORMATION, CONTACT:	M. GRIFFIN 800/627-4098	M. GRIFFIN 800/627-4098	M. GRIFFIN 800/627-4098	M. GRIFFIN 800/627-4098	M. GRIFFIN 800/627-4098	M. GRIFFIN 800/627-4098	M. GRIFFIN 800/627-4098
8.2 FOR TECHNICAL INFORMATION, CONTACT:	B. COLLINS 800/627-4098	B. COLLINS 800/627-4098	B. COLLINS 800/627-4098	B. COLLINS 800/627-4098	B. COLLINS 800/627-4098	B. COLLINS 800/627-4098	B. COLLINS 800/627-4098
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY
# 4231 ELASTIC PRIMER	# 4240 ELASTIC BLACK	# 5000 SUNBLOC	# 1714 PLASTIC FIBER SEAL	# 1821 RAINSEAL NOZZLE	# 1822 ROOF PATCH	# 1823 WET SURFACE ROOF PATCH	# 4202 ELASTIC PATCH	#1897 "FLAMBLOC" FIB. ASPHALT ALUM. COATING	#1898 "FLAMBLOC" ASPHALT ALUM. COATING
			X					X	X
PHENOL. RESIN	X	ACRYLIC LATEX							
			FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED ALUMINUM	FIBRATED ALUMINUM
7 4-6 0.75-1.5	8.5 8-24 1.5-2	12 8-24 1.5-2	10.5					8.5 8-24 0.75-1.5	8.2 8-24 0.75-1.5
	X	X						X	X
	X	X						X	X
	X	X						X	X
			X	X	X	X	X		
			X	X	X	X	X		
X									
X									
X									
				X	X	X	X		
				X	X	X	X		
X	X	X						X	X
X	X	X						X	X
ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	TROWEL	CAULK	TROWEL	TROWEL	TROWEL	ROLLER, SPRAY	ROLLER, SPRAY
NA	SURFACING FIELDS GLASS ATCO POLYESTER	SURFACING FIELDS GLASS ATCO POLYESTER	NA	NA	NA	NA	NA	SURFACING FIELD GLASS ATCO POLYESTER	SURFACING FIELD GLASS ATCO POLYESTER
PRIMING ATCO POLYESTER	SURFACING FIELDS GLASS (SBS) ATCO POLYESTER	SURFACING FIELDS GLASS (SBS) ATCO POLYESTER	NA	NA	NA	NA	NA	SURFACING FIELD GLASS (SBS) ATCO POLYESTER	SURFACING FIELD GLASS (SBS) ATCO POLYESTER
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USA 1926	USA 1926	USA 1926	USA 1926	USA 1926	USA 1926	USA 1926	USA 1926	USA 1926	USA 1926
M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	ARMOR PLUS INTER- NATIONAL	ARMOR PLUS INTER- NATIONAL	ARMOR PLUS INTER- NATIONAL	ARMOR PLUS INTER- NATIONAL	AVARD PRODUCTS CO.	THE BREWER COMPANY	THE BREWER COMPANY
2. PRODUCT NAME	TG4000	OC7000	OC5000	HS600	SNO-HIDE ROOF SHIELD	FORTRESS FLASHING CEMENT	FORTRESS WET SURFACE ROOF CEMENT
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING							
C. ASPHALT/COAL TAR CEMENT						X	X
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)	X	X	X	X			
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED					NONFIBRATED	FIBRATED	FIBRATED
B. COLOR(S) AVAILABLE	BLACK	WHT, TAN, GRAY	ALL	TRANSPARENT	WHITE	BLACK	BLACK
C. SOLIDS CONTENT (% by volume)	85	75	56	48		71	75
D. WEIGHT PER GALLON (lbs.)	9.0	10.0	10.7	8.7	8.5	8.5	8.2
E. DRYING TIME (hours, 50% R.H. at 70° F, touch dry)	30	45	15	20	8	4	4
F. COVERAGE (gals./square)	4-5	4-5	4-5		4.5	8	8
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X	X		X		
2. COMPOSITE ROOFING	X	X	X				
3. MODIFIED BITUMEN ROOFING	X	X	X		X		
4. SINGLE-PLY ROOFING	X	X	X				
5. OTHER ROOFING	X	X	X				
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING	X	X	X			X	X
2. COMPOSITE ROOFING	X	X	X			X	X
3. METAL ROOFING	X	X	X	X		X	X
4. OTHER ROOFING	X	X	X	X		X	X
C. PRIMING							
1. BUILT-UP ROOFING	X			X			
2. CONCRETE/WOOD DECKS	X			X			
3. METAL	X			X			
D. FLASHING							
1. BUILT-UP ROOFING	X	X	X	X		X	X
2. COMPOSITE ROOFING	X	X	X	X		X	X
3. METAL ROOFING	X	X	X	X		X	X
4. OTHER ROOFING	X	X	X	X		X	X
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING	X	X	X	X			
2. COAL TAR BUILT-UP ROOFING	X	X	X	X			
3. METAL ROOFING	X	X	X	X			
4. OTHER ROOFING	X	X	X	X			
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING	X	X	X	X			
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING	X	X	X	X			
2. REROOFING/MAINTENANCE	X	X	X	X			
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, ROLLER, SPRAY	BRUSH, ROLLER, SPRAY	BRUSH, ROLLER, SPRAY	BRUSH, ROLLER, SPRAY	SPRAY	TROWEL	TROWEL
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS					NA	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS					NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	POURED IN PLACE WITH POLY LINER	POURED IN PLACE WITH POLY LINER	POURED IN PLACE WITH POLY LINER	POURED IN PLACE WITH POLY LINER	NA	NA	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1967	1984	1991	1983	1938	1992	1992
8.1 FOR SALES INFORMATION, CONTACT:	G. SCHUBEL	G. SCHUBEL	G. SCHUBEL	G. SCHUBEL	R. AVARD 714/839-4494 R. AVARD 714/839-4494	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086
8.2 FOR TECHNICAL INFORMATION, CONTACT:	R. BENCRISCUITO	R. BENCRISCUITO	R. BENCRISCUITO	R. BENCRISCUITO			
9. SEE MEMBRANE APPENDIX IF CHECKED					X		

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY
FORTRESS PLASTIC ROOF CEMENT	FORTRESS TAR ROOF CEMENT	FORTRESS MODIFIED BITUMINOUS ADHESIVE	FORTRESS MODIFIED BITUMINOUS CEMENT	FORTRESS FIBERED ASPHALT ROOF COATING	FORTRESS COLD PROCESS ADHESIVE	FORTRESS ASPHALT PRIMER	FORTRESS TAR COATING RESATURANT	FORTRESS ASPHALT RESATURANT	FORTRESS ACRYLIC PRIMER
X	X	X	X	X	X	X		X	
FIBRATED BLACK 75 8.2 4 8	FIBRATED BLACK 85 10.0 8 8	FIBRATED BLACK 63 8.2 8 1-4	FIBRATED BLACK 67 8.2 4 8	FIBRATED BLACK 67 8.1 4 1-6	FIBRATED BLACK 77 8.4 6 1-4	FIBRATED BLACK 52 7.4 2 0.5-1	FIBRATED BLACK 80 9.1 8 1-8	FIBRATED BLACK 75 8.7 24 4-8	NONFIBRATED BLACK 48 8.5 1 0.5-1
		X		X	X		X		
		X		X	X		X		
		X		X	X		X		
X X X X	X X		X X X X						
						X X X			X X
X X X X	X		X X X X						
		X		X	X		X	X	
		X		X	X		X	X	
		X		X	X				
		X X X			X X X				
TROWEL	TROWEL	BRUSH, SPRAY, SQUEEGEE	TROWEL	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE
NA	NA	NA	NA	NA		NA	NA	NA	NA
NA	NA	NA		NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USA 1992	USA 1992	USA 1992	USA 1992	USA 1992	USA 1992	USA 1992	USA 1992	USA 1992	USA 1992
M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY
2. PRODUCT NAME	FORTRESS HEAVY DUTY NONFIBERED ASPH. EMULSION	FORTRESS HEAVY DUTY FIBERED ASPH. EMULSION	FORTRESS ACRYLIC MOD. ASPHALT EMULSION	FORTRESS TROWEL- GRADE ASPH. EMULSION	FORTRESS WHITE ACRYLIC CEMENT	FORTRESS HEAVY DUTY FIBERED ALUM. ROOF COATING	FORTRESS HEAVY DUTY NONFIB. ALUM. ROOF COATING
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING							
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION	X	X	X	X			
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)					ACRYLIC		
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	NONFIBRATED BLACK	NONFIBRATED BLACK	NONFIBRATED BLACK	FIBRATED BLACK	NONFIBRATED WHITE	FIBRATED ALUMINUM	NONFIBRATED ALUMINUM
B. COLOR(S) AVAILABLE	50	50	50	52	49	70	59
C. SOLIDS CONTENT (% by volume)	8.5	8.5	8.5	8.5	11.4	9.1	8.4
D. WEIGHT PER GALLON (lbs.)	6	6	6	6	6	4	4
E. DRYING TIME (hours, 50% R.H. at 70° F, touch dry)	2-4	2-4	2-4	8	8	1-2	0.5-1
F. COVERAGE (gals./square)							
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X	X			X	X
2. COMPOSITE ROOFING	X	X	X			X	X
3. MODIFIED BITUMEN ROOFING			X			X	X
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING	X	X	X			X	X
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING				X			
2. COMPOSITE ROOFING				X	X		
3. METAL ROOFING				X	X		
4. OTHER ROOFING				X	X		
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING				X			
2. COMPOSITE ROOFING				X	X		
3. METAL ROOFING				X	X		
4. OTHER ROOFING				X	X		
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING	X	X	X			X	
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING	X	X	X			X	
4. OTHER ROOFING	X	X	X			X	
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING							
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	TROWEL	TROWEL	BRUSH, SPRAY	BRUSH, SPRAY, ROLLER
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS							
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1992	1992	1992	1992	1992	1992	1992
8.1 FOR SALES INFORMATION, CONTACT:	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086
8.2 FOR TECHNICAL INFORMATION, CONTACT:							
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY
FORTRESS FIBERED ALUMINUM ROOF COATING	FORTRESS NONFIBERED ALUM. ROOF COATING	FORTRESS WHITE ELASTOMERIC COATING	ROOFERS PRIDE PLASTIC CEMENT 1000	ROOFERS PRIDE ALL WEATHER ROOF CEMENT 2000	ROOFERS PRIDE NEOPRENE FLASHING CEMENT 1500	ROOFERS PRIDE FIBERED ROOF & FOUNDATION COATING 3000	ROOFERS PRIDE NONFIBR. ROOF & FOUNDATION COATING 6000	ROOFERS PRIDE ALL ASPHALT PRIMER 7000	ROOFERS PRIDE COLD PROCESS ADHESIVE 8000
X	X		X	X	X	X	X	X	X
		ACRYLIC							
FIBRATED ALUMINUM 70 8.9 4 1-2	NONFIBRATED ALUMINUM 54 8.0 4 0.5-1	FIBRATED WHITE 50 11.9 6 1-2	FIBRATED BLACK 75 8.2 4 8	FIBRATED BLACK 75 8.2 4 8	FIBRATED BLACK 65 9.1 4 8	FIBRATED BLACK 67 8.1 4 8	NONFIBRATED BLACK 62 7.8 4 0.5-1.5	NONFIBRATED BLACK 52 7.4 2 0.5-1	FIBRATED BLACK 77 8.4 6 1-4
X	X	X				X	X		X
X	X	X				X	X		X
X	X	X				X	X		X
			X	X	X				
			X	X	X				
			X	X	X				
								X	
								X	
								X	
			X	X	X				
			X	X	X				
			X	X	X				
X						X	X		X
X						X	X		X
X						X	X		X
									X
									X
									X
BRUSH, SPRAY	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	TROWEL	TROWEL	CAULK	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, SQUEEGEE
NA	NA	NA	NA	NA		NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USA 1992	USA 1992	USA 1992	USA 1992	USA 1992	USA 1995	USA 1992	USA 1992	USA 1992	USA 1992
M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION
2. PRODUCT NAME	ROOFERS PRIDE NONFIBERED EMULSION 4000	ROOFERS PRIDE FIBERED ALUMINUM ROOF COATING 5000	FORTRESS TAR PRIMER	ELASTIGUM ROOFER'S CEMENT	NOAH'S PITCH PLASTIC COMPOUND	S.I.S. ADHESIVE	AWP ALL WEATHER PLASTIC CEMENT
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING		X					
C. ASPHALT/COAL TAR CEMENT				X	X	X	X
D. ASPHALT EMULSION	X						
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)							
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	NONFIBRATED	FIBRATED	NONFIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED
B. COLOR(S) AVAILABLE	BLACK	ALUMINUM	BLACK	BLACK	BLACK	BLACK	BLACK
C. SOLIDS CONTENT (% by volume)	50	60	70				
D. WEIGHT PER GALLON (lbs.)	8.5	8.6	9.0				
E. DRYING TIME (hours, 50% R.H. at 70° F, touch dry)	6	4	2				
F. COVERAGE (gals./square)	2-4	1-2	0.5-1			1.5	
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X					
2. COMPOSITE ROOFING	X	X					
3. MODIFIED BITUMEN ROOFING		X					
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING	X	X					
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING				X	X		X
2. COMPOSITE ROOFING				X	X		X
3. METAL ROOFING							
4. OTHER ROOFING				X	X		X
C. PRIMING							
1. BUILT-UP ROOFING			X				
2. CONCRETE/WOOD DECKS			X				
3. METAL			X				
D. FLASHING							
1. BUILT-UP ROOFING				X	X		X
2. COMPOSITE ROOFING				X	X		X
3. METAL ROOFING							
4. OTHER ROOFING				X	X		X
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING							
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING	X	X				X	X
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)	X	X		X		X	X
4. SHINGLES, TILE, OTHER STEEP PRODUCTS	X	X		X		X	X
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY	BRUSH, SPRAY, ROLLER	TROWEL	TROWEL	BRUSH, SQUEEGEE	TROWEL
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS				NA	NA	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1992	1992	1992				
8.1 FOR SALES INFORMATION, CONTACT:	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	M. MCCARTY 800/394-0086 F. FENSEL 800/394-0086	CELOTEX REGIONAL SALES OFFICE	CELOTEX REGIONAL SALES OFFICE	CELOTEX REGIONAL SALES OFFICE	CELOTEX REGIONAL SALES OFFICE
8.2 FOR TECHNICAL INFORMATION, CONTACT:							
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

THE CELOTEX CORPORATION	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION	CONKLIN CO. INC.	CONKLIN CO. INC.
SBS MODIFIED BITUMEN ADHESIVE	SBS MODIFIED BITUMEN FLASHING CEMENT	ALUMINUM ROOF COATING (FIBRATED)	ALUMINUM ROOF COATING (NONFIBRATED)	ELASTIGUM ROOF COATING	ASPHALT PRIMER	FLAT TOP EMULSION	SNO-TOP ELASTOMERIC ROOF COATING	RAPID ROOF HV	RAPID ROOF III
		X	X	X	X	X			
X	X						ACRYLIC	ACRYLIC	ACRYLIC
FIBRATED BLACK	FIBRATED BLACK	FIBRATED ALUMINUM	NONFIBRATED ALUMINUM	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	NONFIBRATED WHITE	NONFIBRATED WHITE 50.0-53.1 12.0-11.4	NONFIBRATED WHITE 51.3-54.5 11.3
1.5		1.5	1.5	1.5	1.5	3	1.5	2-8 3-4	2-8 3-4
		X	X	X		X	X	X	X
		X	X	X		X	X		
		X	X	X		X	X	X	X
						X		X	X
						X		X	X
						X		X	X
					X				
					X				
	X		X						
	X		X						
	X		X						
		X	X	X		X			
		X	X	X		X			
X	X					X			
						X			
								X	X
BRUSH, SQUEEGEE	TROWEL	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	ROLLER, SPRAY	ROLLER, SPRAY
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USA	USA	USA	USA	USA	USA	USA	USA	USA 1990	USA 1994
CELOTEX REGIONAL SALES OFFICE	CELOTEX REGIONAL SALES OFFICE	CELOTEX REGIONAL SALES OFFICE	CELOTEX REGIONAL SALES OFFICE	CELOTEX REGIONAL SALES OFFICE	CELOTEX REGIONAL SALES OFFICE	CELOTEX REGIONAL SALES OFFICE	CELOTEX REGIONAL SALES OFFICE	BLDG PROD DIV 800/394-6067	BLDG PROD DIV 800/394-6067
								BLDG PROD DIV 800/394-6067	BLDG PROD DIV 800/394-6067

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	CONKLIN CO. INC.	CONSOLIDATED COATINGS CORP.	CONSOLIDATED COATINGS CORP.	CONSOLIDATED COATINGS CORP.	CONSOLIDATED COATINGS CORP.	CONSOLIDATED COATINGS CORP.	CONSOLIDATED COATINGS CORP.
2. PRODUCT NAME	BENCHMARK	GOODYEAR CONSO-LASTIC RUBBERIZED COATING	GOODYEAR ALUMA-TEK	GOODYEAR D.L.A.	GOODYEAR CONSO-LASTIC CEMENT	GOODYEAR PLASTI-GLAS CEMENT	GOODYEAR RUBBER-KOTE GRAY
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING			X	X			
C. ASPHALT/COAL TAR CEMENT						X	
D. ASPHALT EMULSION		X			X		
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)	ACRYLIC						URETHANE
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	NONFIBRATED	FIBRATED	FIBRATED		FIBRATED		NONFIBRATED
B. COLOR(S) AVAILABLE	WHITE	BLACK	ALUMINUM	BLACK	BLACK	BLACK	GRAY
C. SOLIDS CONTENT (% by volume)	54.0-55.0	65	47		30	64	65
D. WEIGHT PER GALLON (lbs.)	10.4-10.8	8.7	8.8	9.5	8.9	8.3	11
E. DRYING TIME (hours, 50% R.H. at 70° F, touch dry)	2-8	24	24	4-7 DAYS	4	2 DAYS	24
F. COVERAGE (gals./square)	3-4	2-4	3-4	6-8		5	3-4
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X	X	X			X
2. COMPOSITE ROOFING			X	X			X
3. MODIFIED BITUMEN ROOFING			X				X
4. SINGLE-PLY ROOFING			X				X
5. OTHER ROOFING	X						
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING	X				X	X	
2. COMPOSITE ROOFING	X				X	X	
3. METAL ROOFING	X				X	X	
4. OTHER ROOFING	X				X	X	
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING						X	
2. COMPOSITE ROOFING						X	
3. METAL ROOFING					X	X	
4. OTHER ROOFING					X	X	
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING							
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING							
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING	X						
2. REROOFING/MAINTENANCE	X	X	X	X			X
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	ROLLER, SPRAY	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	SPRAY	TROWEL	TROWEL	BRUSH, SPRAY, ROLLER, SQUEEGEE
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA						
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA						
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA						
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1991	1984	1984				1983
8.1 FOR SALES INFORMATION, CONTACT:	BLDG PROD DIV 800/394-6067	J. KAVOURAS 800/321-7886	J. KAVOURAS 800/321-7886	J. KAVOURAS 800/321-7886	J. KAVOURAS 800/321-7886	J. KAVOURAS 800/321-7886	J. KAVOURAS 800/321-7886
8.2 FOR TECHNICAL INFORMATION, CONTACT:	BLDG PROD DIV 800/394-6067	J. KAVOURAS 800/321-7886	J. KAVOURAS 800/321-7886	J. KAVOURAS 800/321-7886	J. KAVOURAS 800/321-7886	J. KAVOURAS 800/321-7886	J. KAVOURAS 800/321-7886
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

CONSOLIDATED COATINGS CORP.	CONSOLIDATED COATINGS CORP.	CONSOLIDATED COATINGS CORP.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.
GOODYEAR RUBBER-KOTE WHITE	GOODYEAR BARRON-KOTE PLUS	GOODYEAR CONSO-FLEX ALUMINUM COATING	PRO FLASH FLASHING CEMENT	PRO WET/ STICK FLASH- ING CEMENT WET/DRY	PRO COAT FIBER ROOF COATING	PRO PRIMER ASPHALT	PRO RESATURANT ASPHALT	PRO ASPHALT EMULSION (FIBRE)	PRO ASPHALT EMULSION (NO FIBRE)
	X		X	X	X	X	X	X	X
URETHANE		POLYURETHANE							
NONFIBRATED WHITE	FIBRATED BLACK	NONFIBRATED ALUMINUM	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	NONFIBRATED BLACK
51	53	80	72.9	74.4	70.9	72.1	76.3	48.5	47.4
8.8	7.9	10	9.0	9.0	8.2	7.7	8.3	9.0	9.0
16	24	24	48-72	48-72	8	4	8	5	5
1	3-7	2-3	0.7-1	0.7-1	5	10	2-3	2.5	2.5
X	X	X	X	X	X	X	X	X	X
X		X	X	X	X	X	X	X	X
X									
X	X		X	X	X			X	X
			X	X	X	X			
			X	X	X	X			
			X	X					
						X			
						X			
						X			
			X	X					
			X	X					
			X	X					
			X	X					
					X		X		
					X		X		
			X	X					
					X	X		X	X
X	X	X			X	X		X	X
BRUSH, SPRAY, ROLLER, SQUEEGEE	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER, SQUEEGEE	TROWEL	TROWEL	SPRAY, SQUEEGEE, BRUSH	SPRAY, SQUEEGEE, ROLLER	SPRAY, SQUEEGEE, BRUSH	SPRAY, SQUEEGEE, ROLLER	SPRAY, SQUEEGEE, ROLLER
						NA	NA	NA	NA
							NA	NA	NA
							NA	NA	NA
USA 1983	USA 1983	USA	USA 1931	USA 1951	USA 1931	USA 1931	USA 1992	USA 1991	USA 1991
J. KAVOURAS 800/321-7886	J. KAVOURAS 800/321-7886	J. KAVOURAS 800/321-7886	D. MCCLELLAN 800/962-8599	D. MCCLELLAN 800/962-8599	D. MCCLELLAN 800/962-8599	D. MCCLELLAN 800/962-8599	D. MCCLELLAN 800/962-8599	D. MCCLELLAN 800/962-8599	D. MCCLELLAN 800/962-8599
J. KAVOURAS 800/321-7886	J. KAVOURAS 800/321-7886	J. KAVOURAS 800/321-7886	J. MCCLELLAN 800/962-8599	J. MCCLELLAN 800/962-8599	J. MCCLELLAN 800/962-8599	J. MCCLELLAN 800/962-8599	J. MCCLELLAN 800/962-8599	J. MCCLELLAN 800/962-8599	J. MCCLELLAN 800/962-8599

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.
2. PRODUCT NAME	PRO LAP CEMENT	PRO SBS ADHESIVE	PRO SBS FLASHING CEMENT	PRO NEO-SEAL NEOPRENE ROOF CEMENT	PRO ROOFLOX 300 ALUMINUM FIBRE COATING	PRO BRITE 200 ALUMINUM FIBRE COATING	PRO SILVER SHIELD 300 ALUMINUM COATING NO FIBRE
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING	X				X	X	X
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT		X	X				
G. ELASTOMERIC COATING OR CEMENT (specify type)				ELASTO CEMENT			
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED ALUMINUM	FIBRATED ALUMINUM	NONFIBRATED ALUMINUM
B. COLOR(S) AVAILABLE	71.3	69.6	70.9	60.2	54.5	54.8	30.5
C. SOLIDS CONTENT (% by volume)	81.5	7.9	9.0	9.56	9.5	8.7	8.2
D. WEIGHT PER GALLON (lbs.)							
E. DRYING TIME (hours, 50% R.H. at 70° F, touch dry)	5	5	48-72	8	8	8	8
F. COVERAGE (gals./square)			07-1	5	5	5	15
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X	X	X	X	X	X
2. COMPOSITE ROOFING	X	X	X	X	X	X	X
3. MODIFIED BITUMEN ROOFING		X	X				X
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING	X	X	X	X	X	X	X
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING			X				
2. COMPOSITE ROOFING			X				
3. METAL ROOFING			X				
4. OTHER ROOFING			X				
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING			X				
2. COMPOSITE ROOFING			X				
3. METAL ROOFING							
4. OTHER ROOFING			X				
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING							
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING	X					X	
2. COLD-PROCESS MODIFIED BITUMEN ROOFING		X					X
3. ROLL ROOFING (COATED SHEETS)	X					X	
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING				X	X		
2. REROOFING/MAINTENANCE				X	X		
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	SPRAY, SQUEEGEE	SPRAY, SQUEEGEE	TROWEL	SPRAY, SQUEEGEE, ROLLER	SPRAY, SQUEEGEE, ROLLER	SPRAY, SQUEEGEE	SPRAY, SQUEEGEE
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA					
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1991	1987	1987	1991	1991	1931	1987
8.1 FOR SALES INFORMATION, CONTACT:	D. MCCLELLAN 800/962-8599	D. MCCLELLAN 800/962-8599	D. MCCLELLAN 800/962-8599	D. MCCLELLAN 800/962-8599	D. MCCLELLAN 800/962-8599	D. MCCLELLAN 800/962-8599	D. MCCLELLAN 800/962-8599
8.2 FOR TECHNICAL INFORMATION, CONTACT:	J. MCCLELLAN 800/962-8599	J. MCCLELLAN 800/962-8599	J. MCCLELLAN 800/962-8599	J. MCCLELLAN 800/962-8599	J. MCCLELLAN 800/962-8599	J. MCCLELLAN 800/962-8599	J. MCCLELLAN 800/962-8599
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS
PRO SILVER SHIELD 200 AL- UMINUM COAT- ING NO FIBRE	SNOW WHITE ELASTO-COAT	PRIMER/ SURFACER	HER 202 FG	ERATHANE 300	ERAKOTE	ERATHANE 300 BASE COAT	ERAGUARD 2000	ERAGUARD 1000	ERAGUARD 1100
X									
	COATING	URETHANE	URETHANE	URETHANE	URETHANE	URETHANE	MOD. ACRYLIC	ACRYLIC	ACRYLIC
NONFIBRATED ALUMINUM 30.5 8.2 8 15	FIBRATED WHITE 70 9 4 8	NONFIBRATED ALUM. GRAY 50 8.8 2 0.5	NONFIBRATED ALUM. GRAY 89 10.0 24 0.5	NONFIBRATED ALUM. GRAY 65 9.0 24 1.0	NONFIBRATED GRAY, WHITE 65 9.5 24 1.0-1.5	NONFIBRATED GRAY 83 9.3 24 1.0-2.0	NONFIBRATED GRAY 42 9.1 2 0.5	NONFIBRATED GRAY, WHITE 52 12.0 8 1.0-4.0	FIBRATED GRAY, WHITE 55 11.8 16 1.0-4.0
X X X X	X X X X			X X X X	X X X X	X X X X		X X X X	X X X X
X X X X		X	X	X	X	X	X	X	X
X X X X									
X X X									
X X									
TROWEL	SPRAY, SQUEEGEE, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH	SPRAY, ROLLER	SPRAY, ROLLER	SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	NA	NA	NA	NA	NA	NA	NA	NA	NA
	NA	PRIMER/ SURFACER, HER 202, ERATHANE 300	PRIMER/ SURFACER, HER 202, ERATHANE 300	PRIMER/ SURFACER, HER 202, ERATHANE 300	PRIMER/ SURFACER, HER 202, ERAKOTE	ERATHANE 300 BASECOAT, ERATHANE 300	ERAGUARD 2000, HER 202, ERAGUARD 1000	ERAGUARD 2000, HER 202, ERAGUARD 1000	
USA 1987	USA 1990	USA 1979	USA 1977	USA 1977	USA 1985	USA 1992	USA 1992	USA 1990	USA 1995
D. MCCLELLAN 800/962-8599 J. MCCLELLAN 800/962-8599	D. MCCLELLAN 800/962-8599 J. MCCLELLAN 800/962-8599	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747
		X	X	X	X	X	X	X	X

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	FIELDS CORPORATION
2. PRODUCT NAME	ERAGUARD 1001	ERAGUARD 4000	ERAGUARD 6000	ERAGUARD 500	ERATHANE 300 BASECOAT BRUSHABLE	HER 202EX	F100 FIBERED ROOF COATING
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING							
C. ASPHALT/COAL TAR CEMENT							X
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)	ACRYLIC	SILICONE	HYPALON	ACRYLIC	POLYURETHANE	URETHANE	
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	NONFIBRATED UNLIMITED	NONFIBRATED GRAY, WHITE	NONFIBRATED WHITE	NONFIBERED GRAY, WHITE	NONFIBRATED GRAY	NONFIBRATED ALUM GRAY	FIBRATED BLACK
B. COLOR(S) AVAILABLE	40	65	30	50	83	89	
C. SOLIDS CONTENT (% by volume)	9.0	11	9.5	12	9.4	10	7.8
D. WEIGHT PER GALLON (lbs.)	4	1-5	24	8	24	24	24-144
E. DRYING TIME (hours, 50% R.H. at 70° F, touch dry)	0.75-1.0	3.0	1.0-3.0	1.0-4.0	1.0-2.0	0.5	2-6
F. COVERAGE (gals./square)							
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING				X	X		X
2. COMPOSITE ROOFING				X	X		
3. MODIFIED BITUMEN ROOFING				X	X		
4. SINGLE-PLY ROOFING			X	X	X		
5. OTHER ROOFING	X	X	X	X	X	X	X
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING				X	X		X
2. COMPOSITE ROOFING				X	X		
3. METAL ROOFING				X		X	X
4. OTHER ROOFING				X	X	X	X
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING					X	X	
2. COMPOSITE ROOFING						X	
3. METAL ROOFING						X	
4. OTHER ROOFING					X	X	
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING				X	X		X
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING	X		X	X			X
4. OTHER ROOFING		X	X	X	X		X
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING							X
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							X
3. ROLL ROOFING (COATED SHEETS)							X
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING		X					
2. REROOFING/MAINTENANCE	X	X	X	X	X	X	
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, ROLLER	EXTRUDED BRUSH	BRUSH, SPRAY, SQUEEGEE
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA	ADHESIVE, FIELDS GLASS & POLYESTER
SEE BUILT-UP ROOFING SECTION IF CHECKED							X
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	ADHESIVE, FIELDS GLASS (SBS) & POLYESTER
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS						PRIMER/SURFACER, HER 202, ERTANE 300	NA
7.1 COUNTRY OF MANUFACTURE	USA 1995	USA 1990	USA 1990	USA 1995	USA 1996	USA 1996	USA 1975
7.2 YEAR OF FIRST COMMERCIAL USE							
8.1 FOR SALES INFORMATION, CONTACT:	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	R. BAKER 800/403-7747 J. LEONARD 800/403-7747	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098
8.2 FOR TECHNICAL INFORMATION, CONTACT:							
9. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X	X	X	

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION
F100 FIBERED ROOF COATING	M100 RUBRCOATING	F125 NONFIBERED ROOF COATING	F350 COLD PLY ADHESIVE	F400 ROOF PRIMER	F500, F525, F550 ALUMINUM COATING	F530 HEAT SHIELD ALUMINUM COATING	F600, F625, F650 FIBERED ALUMINUM COATING	F630 HEAT SHIELD FIBER- ED ALUMINUM COATING	F675 MOBILE HOME ALUMINUM COATING
X	X	X	X	X	X	X	X	X	X
FIBRATED BLACK	FIBRATED BLACK	NONFIBRATED BLACK	NONFIBRATED BLACK	NONFIBRATED BLACK	NONFIBRATED ALUMINUM	NONFIBRATED ALUMINUM	FIBRATED ALUMINUM	FIBRATED ALUMINUM	FIBRATED ALUMINUM
7.8 24-144 2-6	8.6 24-144 2-6	7.8 24-144 2-6	8.0 24-144 2-6	7.0 4-8 0.33-1	8.2 8-24 0.75-1.50	8.2 8-24 0.75-1.50	8.5 8-24 0.75-1.50	8.5 8-24 0.75-1.50	8.5 8-24 0.75-1.50
X	X	X	X		X	X	X	X	X
					X	X	X	X	X
X	X	X	X		X	X	X	X	X
X	X	X	X						
X	X	X	X						
				X					
				X					
				X					
X	X	X			X	X	X	X	X
X	X				X	X	X	X	X
X	X		X						
X	X		X						
X	X		X						
BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY
ADHESIVE, FIELDS GLASS & POLYESTER	ADHESIVE, FIELDS GLASS & POLYESTER	NA	ADHESIVE, FIELDS GLASS & POLYESTER	NA	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER
X	X	NA	X	NA	X	X	X	X	X
ADHESIVE, FIELDS GLASS (SBS) & POLYESTER	ADHESIVE, FIELDS GLASS (SBS) & POLYESTER	NA	ADHESIVE, FIELDS GLASS (SBS) & POLYESTER	NA	SURFACING, FIELDS GLASS (SBS) & POLYESTER	SURFACING, FIELDS GLASS (SBS) & POLYESTER	SURFACING, FIELDS GLASS (SBS) & POLYESTER	SURFACING, FIELDS GLASS (SBS) & POLYESTER	SURFACING, FIELDS GLASS (SBS) & POLYESTER
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USA 1975	USA 1994	USA 1975	USA 1975	USA 1975	USA 1975	USA 1975	USA 1975	USA 1975	USA 1975
M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION
2. PRODUCT NAME	F830 SUNSCREEN	F835 SNOWHITE	F900 ASPHALT EMULSION	M900 RUBR-EMULSION	F950 FIBERED ASPHALT EMULSION	F960 REFLECTIVE EMULSION	M960 RUBRGRAY
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING							
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION			X	X	X	X	X
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)	ACRYLIC LATEX	ACRYLIC LATEX					
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED			NONFIBRATED	NONFIBRATED	FIBRATED	NONFIBRATED	NONFIBRATED
B. COLOR(S) AVAILABLE	WHITE	WHITE	BLACK	BLACK	BLACK	GRAY	GRAY
C. SOLIDS CONTENT (% by volume)							
D. WEIGHT PER GALLON (lbs.)	12	11.5	8.4	8.8	8.4	10.2	11
E. DRYING TIME (hours, 50% R.H. at 70° F, touch dry)	8-24	8-24	12-104	12-104	12-104	12-104	12-104
F. COVERAGE (gals./square)	1.50-2.0	1.50-2.0	3-12	3-4	3-12	2-3	2-3
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X	X	X	X	X	X
2. COMPOSITE ROOFING	X	X					
3. MODIFIED BITUMEN ROOFING	X	X	X	X	X	X	X
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING	X	X	X	X	X	X	X
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING				X			
2. COMPOSITE ROOFING							
3. METAL ROOFING				X			
4. OTHER ROOFING							
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING	X	X	X	X	X	X	X
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING	X	X					X
4. OTHER ROOFING	X	X					X
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING				X			
2. COLD-PROCESS MODIFIED BITUMEN ROOFING				X			
3. ROLL ROOFING (COATED SHEETS)				X			
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER	ADHESIVE, FIELDS POLYESTER	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER
SEE BUILT-UP ROOFING SECTION IF CHECKED	X	X	X				
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	SURFACING, FIELDS GLASS (SBS) & POLYESTER	SURFACING, FIELDS GLASS (SBS) & POLYESTER	SURFACING, FIELDS GLASS (SBS) & POLYESTER	ADHESIVE, FIELDS SBS POLYESTER	SURFACING, FIELDS GLASS (SBS) & POLYESTER	SURFACING, FIELDS GLASS (SBS) & POLYESTER	SURFACING, FIELDS GLASS (SBS) & POLYESTER
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1975	1975	1975	1975	1975	1975	1975
8.1 FOR SALES INFORMATION, CONTACT:	M. GRIFFIN 800/627-4098	M. GRIFFIN 800/627-4098	M. GRIFFIN 800/627-4098	M. GRIFFIN 800/627-4098	M. GRIFFIN 800/627-4098	M. GRIFFIN 800/627-4098	M. GRIFFIN 800/627-4098
8.2 FOR TECHNICAL INFORMATION, CONTACT:	B. COLLINS 800/627-4098	B. COLLINS 800/627-4098	B. COLLINS 800/627-4098	B. COLLINS 800/627-4098	B. COLLINS 800/627-4098	B. COLLINS 800/627-4098	B. COLLINS 800/627-4098
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	GAF MATERIALS CORPORATION
F975 ALUMINUM EMULSION	F200 PLASTIC ROOF CEMENT	F200 PLASTIC ROOF CEMENT	F250 FLASHING CEMENT	F250 FLASHING CEMENT	F300 ALL WEATHER MASTIC	M300 RUBRMASTIC	F325 ROOF TILE CEMENT	F680 ALUMINUM CEMENT	GAF PREMIUM FIBERED ALUMINUM ROOF COATING
X									X
	X	X	X	X	X	X	X	X	
NONFIBRATED ALUMINUM	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED ALUMINUM	FIBRATED ALUMINUM
8.8 12-104 2-3	8-9 4-5	8 4-5	8.5 4-5	8.2 4-5	8.9 4-5	8.9 4-5	8.6 4-5	9.53 4-5	52-56 8.1-8.5 8 1.5-2.0
X									X
X									X
X									X
X									X
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	
X									
BRUSH, SPRAY	TROWEL	TROWEL	TROWEL	TROWEL	TROWEL	TROWEL, CAULK	TROWEL	TROWEL	BRUSH, SPRAY, ROLLER
SURFACING, FIELDS GLASS & POLYESTER	NA	NA	NA	NA	NA	NA	NA	NA	NA
SURFACING, FIELDS GLASS (SBS) & POLYESTER	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USA 1975	USA 1975	USA 1975	USA 1975	USA 1975	USA 1975	USA 1975	USA 1975	USA 1975	USA
M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	M. GRIFFIN 800/627-4098 B. COLLINS 800/627-4098	REGIONAL SALES OFFICE 800/ROOF-411

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION
2. PRODUCT NAME	GAF ALUMINUM ROOF PAINT	GAF ASPHALT/ CONCRETE PRIMER	GAF ALUMINUM EMULSION	GAF WEATHERCOAT EMULSION	RUBEROID MODIFIED BITUMEN ADHESIVE	RUBEROID MODIFIED BIT- UMEN FLASH- ING CEMENT	GAF JETBLAK PREMIUM FLASHING CEMENT
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER		X					
B. ASPHALT/COAL TAR COATING	X						
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION			X	X			X
F. MODIFIED BITUMEN COATING OR CEMENT					X	X	
G. ELASTOMERIC COATING OR CEMENT (specify type)							
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	NONFIBRATED ALUMINUM	NONFIBRATED BLACK	NONFIBRATED ALUMINUM	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK
B. COLOR(S) AVAILABLE	48-52	61	45	49	58	76-80	75-78
C. SOLIDS CONTENT (% by volume)	7.8-8.2	7.4	9.0	9.0	8-8.4	10.1-10.5	8.6-9.0
D. WEIGHT PER GALLON (lbs.)	4	4	24	5	24	6	6-8
E. DRYING TIME (hours, 50% R.H. at 70° F, touch dry)	0.5	0.5	1-1.5	3-5	1.5	8.0	8.0
F. COVERAGE (gals./square)							
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X		X	X			
2. COMPOSITE ROOFING	X		X	X			
3. MODIFIED BITUMEN ROOFING	X			X			
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING	X						
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING						X	X
2. COMPOSITE ROOFING						X	X
3. METAL ROOFING						X	X
4. OTHER ROOFING						X	X
C. PRIMING							
1. BUILT-UP ROOFING		X					
2. CONCRETE/WOOD DECKS		X					
3. METAL		X					
D. FLASHING							
1. BUILT-UP ROOFING						X	X
2. COMPOSITE ROOFING						X	X
3. METAL ROOFING						X	X
4. OTHER ROOFING						X	X
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING							
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING					X		
2. COLD-PROCESS MODIFIED BITUMEN ROOFING					X		
3. ROLL ROOFING (COATED SHEETS)					X		
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, NOTCH, SQUEEGEE	TROWEL, CAULK	TROWEL, CAULK
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA	
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE							
8.1 FOR SALES INFORMATION, CONTACT:	REGIONAL SALES OFFICE 800/ROOF-411	REGIONAL SALES OFFICE 800/ROOF-411	REGIONAL SALES OFFICE 800/ROOF-411	REGIONAL SALES OFFICE 800/ROOF-411	REGIONAL SALES OFFICE 800/ROOF-411	REGIONAL SALES OFFICE 800/ROOF-411	REGIONAL SALES OFFICE 800/ROOF-411
8.2 FOR TECHNICAL INFORMATION, CONTACT:							
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY
VITAPLY	GRAVITOP	GARLA-SHIELD	SUPERCOTE RUBERIZED	WEATHER-KING FR TOPCOAT	WEATHER KING	GARLA BOND	FLASHING BOND	EMERGENCY MASTIC	GARLA FLEX
X	X	X	X	X	X	X	X	X	X
NONFIBERED BLACK 63 + 8.2-8.5 7-9	NONFIBERED BLACK 70 + 8.6 7-9	FIBERED BLACK 52 + 8.6 1-2 3-5	FIBERED BLACK 62 + 8.0 36 3	FIBERED BLACK 75 + 9.1 36 3-5	NONFIBERED BLACK 70 + 7.9 2-4	FIBERED BLACK 73 + 10 48	FIBERED BLACK 80 + 8.3 36	FIBERED BLACK 75 + 11 36	NONFIBERED BLACK 63 + 8.0 36
X	X	X	X	X	X				
X	X				X				
		X		X	X	X	X	X	X
		X		X		X	X		X
		X				X	X		X
		X							X
X	X	X	X	X					
X									
					X				
					X				
					X				
BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	TROWEL	TROWEL	TROWEL	TROWEL, CAULK
USA 1986	USA 1974	USA 1974	USA 1968	USA 1994	USA 1986	USA 1975	USA 1990	USA 1974	USA 1976
D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL
S. KIERNAN	S. KIERNAN	S. KIERNAN	S. KIERNAN	S. KIERNAN	S. KIERNAN	S. KIERNAN	S. KIERNAN	S. KIERNAN	S. KIERNAN

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY
2. PRODUCT NAME	GARLAPRIME	GARLABRITE	SILVER SHIELD	RUST GO	PYRAMIC	GRIPMASTIC	GRIP WHITE
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER	X						
B. ASPHALT/COAL TAR COATING		X	X	X			
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION						X	
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)					X		X
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	NONFIBERED	NONFIBERED	FIBERED	NONFIBERED	NONFIBERED	NONFIBERED	NONFIBERED
B. COLOR(S) AVAILABLE	BLACK	ALUMINUM	ALUMINUM	ALUMINUM	WHITE	BLACK	WHITE
C. SOLIDS CONTENT (% by volume)	50 +	40 +	60 +	55 +	55 +	55 +	55 +
D. WEIGHT PER GALLON (lbs.)	7.8	8.9	8.2	8.5	8.5	9.2	8.5
E. DRYING TIME (hours, 50% R.H. at 70° F, touch dry)	2	12	12	5	4	4	4
F. COVERAGE (gals./square)	0.5-1.0	.50	2	0.25	2	2.5-3.0	2
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING		X	X		X	X	X
2. COMPOSITE ROOFING		X	X		X	X	X
3. MODIFIED BITUMEN ROOFING		X	X		X		X
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING				X	X	X	X
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING						X	
2. COMPOSITE ROOFING						X	
3. METAL ROOFING						X	
4. OTHER ROOFING							
C. PRIMING							
1. BUILT-UP ROOFING	X						
2. CONCRETE/WOOD DECKS	X						
3. METAL	X						
D. FLASHING							
1. BUILT-UP ROOFING						X	
2. COMPOSITE ROOFING						X	
3. METAL ROOFING						X	
4. OTHER ROOFING							
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING							
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING							
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, ROLLER, SPRAY	BRUSH, ROLLER	BRUSH, SPRAY	BRUSH, ROLLER	BRUSH, ROLLER, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS							
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS							
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS							
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1974	1974	1976	1968	1984	1989	1989
8.1 FOR SALES INFORMATION, CONTACT:	D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL	D. SOKOL
8.2 FOR TECHNICAL INFORMATION, CONTACT:	S. KIERNAN	S. KIERNAN	S. KIERNAN	S. KIERNAN	S. KIERNAN	S. KIERNAN	S. KIERNAN
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY	GMX, INC.	GMX, INC.	GMX, INC.	GMX, INC.	GMX, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.
ENERGIZER FR	ENERGIZER PLUS FR	WEATHER-KING PLUS	ULTRA-SHIELD METAL RUST-PROOFING	ULTRA-SHIELD BUILT-UP MASTIC	ULTRA-SHIELD WHITE ROOF COATING	ULTRA-SHIELD NONFIBERED ALUMINUM	ULTRA-SHIELD FIBERED ALUMINUM	GRUNDY PLASTIC CEMENT	GRUNDY PLASTIC CEMENT (AF)
		X	X	X		X	X	X	X
X	X				X				
NONFIBERED BLACK 75 + 75 + 9.4 4 3	NONFIBERED BLACK 75 + 9.4 4 3	NONFIBERED BLACK 70 + 7.9 2-4	48 8.2 24-36 3-6	48 8.2 24-36 2-3	58 9.2 2-3 2	40 7.8 1-2 1	52 8.4 2	FIBRATED BLACK 70 ± 2 9.5 6 8	FIBRATED BLACK 78 ± 2 9.5 6 8
X	X	X		X		X	X		
X	X	X		X		X	X		
X	X				X				
		X		X				X	X
			X		X			X	X
								X	X
								X	X
								X	X
				X		X	X		
			X		X				
		X		X					
		X		X					
		X		X					
X	X		X	X	X	X	X		
BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, ROLLER, SPRAY	BRUSH, ROLLER, SPRAY	BRUSH, ROLLER, SPRAY	BRUSH, ROLLER, SPRAY	BRUSH, ROLLER, SPRAY	TROWEL	TROWEL
				WITH POLYMAT				NA	NA
				WITH POLYMAT				NA	NA
								NA	NA
USA 1994	USA 1996	USA 1995	USA 1989	USA 1989	USA 1989	USA 1989	USA 1989	USA 1967	USA 1967
D. SOKOL	D. SOKOL	D. SOKOL	T. CARNEY 800/321-9336	T. CARNEY 800/321-9336	T. CARNEY 800/321-9336	T. CARNEY 800/321-9336	T. CARNEY 800/321-9336	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210
S. KIERNAN	S. KIERNAN	S. KIERNAN	T. CARNEY 800/321-9336	T. CARNEY 800/321-9336	T. CARNEY 800/321-9336	T. CARNEY 800/321-9336	T. CARNEY 800/321-9336	C MIDDLEBROOKS 800/435-1210	C MIDDLEBROOKS 800/435-1210

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.
2. PRODUCT NAME	GRUNDY PLASTIC CE- MENT WET SURFACE	GRUNDY PLASTIC CE- MENT WET SURFACE (AF)	GRUNDY FLASHING CEMENT	GRUNDY NO. 22 FLASHING CEMENT (AF)	GRUNDY NO. 22 ELASTOMERIC CEMENT (AF)	GRUNDY COLD- APPLICATION CEMENT	GRUNDY COLD- APPLICATION CEMENT (AF)
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING							
C. ASPHALT/COAL TAR CEMENT	X	X	X		X	X	X
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT				X			
G. ELASTOMERIC COATING OR CEMENT (specify type)							
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED
B. COLOR(S) AVAILABLE	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
C. SOLIDS CONTENT (% by volume)	70 ± 2	78 ± 2	68 ± 2	76 ± 2	78 ± 2	67 ± 2	73 ± 2
D. WEIGHT PER GALLON (lbs.)	9.5	9.5	9.5	8.5	9.0	8.5	8.5
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	6	6	6	6	6	6	6
F. COVERAGE (gals./square)	8	8	8	8	8	2	2
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. MODIFIED BITUMEN ROOFING							
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING							
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING	X	X	X	X	X		
2. COMPOSITE ROOFING	X	X	X	X	X		
3. METAL ROOFING	X	X	X	X	X		
4. OTHER ROOFING	X	X	X	X	X		
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING	X	X	X	X	X		
2. COMPOSITE ROOFING	X	X	X	X	X		
3. METAL ROOFING	X	X	X	X	X		
4. OTHER ROOFING	X	X	X	X	X		
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING							
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING						X	X
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)						X	X
4. SHINGLES, TILE, OTHER STEEP PRODUCTS	X	X	X	X	X		
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	TROWEL	TROWEL	TROWEL	TROWEL	TROWEL	BRUSH, SQUEEGEE	BRUSH, SQUEEGEE
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1967	1967	1967	1990	1990	1967	1985
8.1 FOR SALES INFORMATION, CONTACT:	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210
8.2 FOR TECHNICAL INFORMATION, CONTACT:							
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.
GRUNDY FIBRE ROOF COATING	GRUNDY FIBRE ROOF COATING (AF)	GRUNDY NONFIBRE ROOF COATING	GRUNDY ASPHALT CONCRETE PRIMER	GRUNDY ASPHALT BU 68 RESATURANT	GRUNDY ASPHALT BU 68 RESATURANT (AF)	GRUNDY FIBRE ROOF MASTIC TYPE II	GRUNDY FIBRE ROOF MASTIC TYPE II (AF)	GRUNDY PLYGRIP M.B. ADHESIVE	GRUNDY a1MB-AF ALUMINUM COATING
X	X	X	X	X	X				
						X	X	X	X
FIBRATED BLACK 72 ± 2 8.0 2 1.5	FIBRATED BLACK 77 ± 2 8.0 2 1.5	NONFIBRATED BLACK 68 ± 2 7.5 2 1	NONFIBRATED BLACK 60 ± 2 7.0 1 1	FIBRATED BLACK 68 ± 2 8.0 6 1.5-3.0	FIBRATED BLACK 71 ± 2 8.0 6 1.5-3.0	FIBRATED BLACK 54 ± 2 8.0 6 1.5	FIBRATED BLACK 60 ± 2 8.0 6 1.5	FIBRATED BLACK 59 ± 2 8.0 2 1.5	FIBRATED SILVER 65 ± 2 9.4 2 1.5
X X	X X	X X							X X X
X	X	X							X
			X X X						
X X	X X	X X		X X	X X	X X	X X		
						X X X	X X X	X	
BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USA 1967	USA 1985	USA 1967	USA 1967	USA 1967	USA 1985	USA 1967	USA 1985	USA 1990	USA 1988
J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210
								X	X

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.	GRUNDY INDUSTRIES, INC.
2. PRODUCT NAME	GRUNDY #200 FIBRE ALUMINUM ROOF COATING	GRUNDY #220 NONFIBERED ALUMINUM ROOF COATING	GRUNDY NO. 20 F AF EMULSION	GRUNDY NO. 20 NF EMULSION	GRUNDY NO. 120 ALUMINUM ROOF EMULSION	GRUNDY NO. 2415 WHITE ROOF COATING	BOARDLOCK #222
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING							
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION			X	X	X		X
F. MODIFIED BITUMEN COATING OR CEMENT	X	X					X
G. ELASTOMERIC COATING OR CEMENT (specify type)						X	X
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	FIBRATED	NONFIBRATED	FIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED
B. COLOR(S) AVAILABLE	SILVER	SILVER	BLACK	BLACK	SILVER	WHITE	BROWN
C. SOLIDS CONTENT (% by volume)	65 ± 2	64 ± 2	48 ± 2	48 ± 2	30 ± 2	65 ± 2	60 ± 2
D. WEIGHT PER GALLON (lbs.)	9.2	9.0	9.0	9.0	9.0	12.0	9.5
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	2	2	2	2	2	1	2
F. COVERAGE (gals./square)	1.5	1	3 NOM.	3 NOM.	1.5	1.5	3 NOM.
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X	X	X	X	X	
2. COMPOSITE ROOFING	X	X	X	X	X	X	
3. MODIFIED BITUMEN ROOFING	X	X	X	X	X	X	
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING	X	X	X	X	X	X	
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING							
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING						X	
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING							X
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY	BRUSH, SQUEEGEE, SPRAY
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1967	1967	1967	1967	1992	1993	1996
8.1 FOR SALES INFORMATION, CONTACT:	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210	J. VAN PELT 800/435-1210 C MIDDLEBROOKS 800/435-1210
8.2 FOR TECHNICAL INFORMATION, CONTACT:							
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

[illegible]

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.
2. PRODUCT NAME	#201 FIBERED ASPHALT COATING	#220 FIBERED ALUMINUM COATING	#229 ALUMINUM EMULSION	#520 FIBERED ALUMINUM COATING	#280 PREMIUM WHITE ELASTOMERIC	#287 SOLARFLEX	#104 ASPHALT PRIMER
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							X
B. ASPHALT/COAL TAR COATING	X	X					
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION			X	X			
F. MODIFIED BITUMEN COATING OR CEMENT					X		
G. ELASTOMERIC COATING OR CEMENT (specify type)						X	
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	FIBRATED	FIBRATED	NONFIBRATED	FIBRATED	NONFIBRATED	FIBRATED	NONFIBRATED
B. COLOR(S) AVAILABLE	BLACK	SILVER	SILVER	SILVER	WHT/TAN/GRAY	WHITE/TAN	BLACK
C. SOLIDS CONTENT (% by volume)	30	50	50	50	50	60	60
D. WEIGHT PER GALLON (lbs.)	8.5	9.5	9.5	11	11	11	7.5
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	12	4	4	4	2	1	0.5
F. COVERAGE (gals./square)	1.3	1.5	1.5	1.5	1	2	0.5
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING		X	X	X	X	X	
2. COMPOSITE ROOFING	X	X	X	X	X	X	
3. MODIFIED BITUMEN ROOFING		X	X	X	X	X	
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING		X	X	X	X	X	
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
C. PRIMING							
1. BUILT-UP ROOFING							X
2. CONCRETE/WOOD DECKS							X
3. METAL							X
D. FLASHING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING	X	X	X	X	X	X	
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING	X	X	X	X			
4. OTHER ROOFING	X	X	X	X		X	
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING	X						
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)	X						
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, RAG
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	3-PLY COLD-AP ROOF SYSTEM	3-PLY COLD-AP ROOF SYSTEM	3-PLY COLD-AP ROOF SYSTEM	3-PLY COLD-AP ROOF SYSTEM	3-PLY COLD-AP ROOF SYSTEM		
SEE BUILT-UP ROOFING SECTION IF CHECKED	X		X		X		
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS							
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS							
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1944	1965	1987	1989	1983	1988	1970
8.1 FOR SALES INFORMATION, CONTACT:	SALES DEPT 800/598-7663 J. HAY	SALES DEPT 800/598-7663 J. HAY	SALES DEPT 800/598-7663 J. HAY	SALES DEPT 800/598-7663 J. HAY	SALES DEPT 800/598-7663 J. HAY	SALES DEPT 800/598-7663 J. HAY	SALES DEPT 800/598-7663 J. HAY
8.2 FOR TECHNICAL INFORMATION, CONTACT:	800/598-7663	800/598-7663	800/598-7663	800/598-7663	800/598-7663	800/598-7663	800/598-7663
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

[illegible]

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION
2. PRODUCT NAME	# 170AF TAR CEMENT	# 220AF FIBERED BRUSH EMULSION	# 229AF AR ELASTOMERIC	# 297AF AQUA-LUM EMULSION ALUMINUM	# 330AF DEAD LEVEL EMULSION	#501AF ELASTO-BRITE	# 505AF ELASTO- BRITE-M
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING							
C. ASPHALT/COAL TAR CEMENT	X						
D. ASPHALT EMULSION		X			X		
F. MODIFIED BITUMEN COATING OR CEMENT				X			
G. ELASTOMERIC COATING OR CEMENT (specify type)			CEMENT/COATING			COATING	COATING
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	FIBERED	FIBERED	FIBERED	FIBERED	FIBERED	NONFIBERED	NONFIBERED
B. COLOR(S) AVAILABLE	BLACK	BLACK	BLACK	ALUMINUM	BLACK	VARIOUS	VARIOUS
C. SOLIDS CONTENT (% by volume)	66		65				50
D. WEIGHT PER GALLON (lbs.)	9.59		8.6				12.5
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)				24-48		24-48	48
F. COVERAGE (gals./square)	4	4	4-15	1-1.5	4	2	2
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X		X	X	X	
2. COMPOSITE ROOFING	X	X		X	X		
3. MODIFIED BITUMEN ROOFING		X	X	X	X		
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING				X	X	X	X
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING	X		X				
2. COMPOSITE ROOFING	X		X				
3. METAL ROOFING			X				
4. OTHER ROOFING			X				
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL		X					
D. FLASHING							
1. BUILT-UP ROOFING			X				
2. COMPOSITE ROOFING			X				
3. METAL ROOFING			X				
4. OTHER ROOFING			X				
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING		X				X	
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING		X	X	X			X
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING		X					
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING		X	X			X	X
2. REROOFING/MAINTENANCE		X	X			X	X
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	TROWEL	BRUSH, SPRAY	BRUSH,ROLLER, TROWEL, SPRAY	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	COLD- PROCESS SYSTEM	NA	NA	COLD-PRO- SYSTEM + POLY-MAT + ALUMINUM		NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA		NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	COLD- PROCESS SYSTEM	COLD- PROCESS SYSTEM		COLD- PROCESS SYSTEM	ARCHITEC- TURAL COATING SYSTEM	METAL ROOFING MAINTENANCE SYSTEM
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1958	1954	1973	1982	1966	1978	1978
8.1 FOR SALES INFORMATION, CONTACT:	SALES DEPT 800/526-4236	SALES DEPT 800/526-4236	SALES DEPT 800/526-4236	SALES DEPT 800/526-4236	SALES DEPT 800/526-4236	SALES DEPT 800/526-4236	SALES DEPT 800/526-4236
8.2 FOR TECHNICAL INFORMATION, CONTACT:	TECH DEPT 800/526-4236	TECH DEPT 800/526-4236	TECH DEPT 800/526-4236	TECH DEPT 800/526-4236	TECH DEPT 800/526-4236	TECH DEPT 800/526-4236	TECH DEPT 800/526-4236
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KEMPER SYSTEMS, INC
# 96 AF ELASTOMERIC PRIMER	# 298AF ALUMIN-R ELASTOMERIC ALUMINUM	#2 AF RENU-TOP EMULSION	# 73 AF PROTECTIVE COATING	# 81AF MODIFIED BITUMEN ADHESIVE	# 97 FIBERED ALUMINUM	# 97AF NONFIBERED ALUMINUM	# 100AF NONFIBRATED EMULSION	#107AF VELVET ROOF COATING	KEMPEROL
X			X					X	
	COATING	X		X	X	X	X		COATING
NONFIBERED CLEAR	NONFIBERED SILVER	FIBERED BLACK	FIBERED BLACK	FIBERED BLACK	FIBERED ALUMINUM	FIBERED ALUMINUM	NONFIBERED BLACK	NONFIBERED BLACK	NONFIBRATED VARIETY
3-4 0.5-1	8.5 1.5-2.0	3-5 5	3-4	8.65 24-48 1-2	1-1.5	1-1.5	58 8.5 4-6 4-6	1-2	99 9.5 3 6.3
	X X X X	X	X	X	X	X	X		X X
				X					X
			X X	X					
X							X X	X X	
				X					X
	X X X		X X		X X	X X	X	X	X
				X					
					X X	X X			X X
BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY, TROWEL, SQUEEGEE	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY	BRUSH, TROWEL, SPRAY	BRUSH, ROLLER, SPRAY
NA	NA	NA	NA						
NA	NA	NA	NA						
METAL ROOFING MAINTENANCE SYSTEM	ELASTOMERIC SYSTEM	COLD-PROCESS SYSTEM							POLYESTER RESIN, POLYESTER REINFORCMNT
USA 1978	USA 1979	USA 1951	USA 1965	USA 1981	USA 1948	USA 1984	USA 1954	USA 1947	GERMANY 1960
SALES DEPT 800/526-4236 TECH DEPT 800/526-4236	SALES DEPT 800/526-4236 TECH DEPT 800/526-4236	SALES DEPT 800/526-4236 TECH DEPT 800/526-4236	SALES DEPT 800/526-4236 TECH DEPT 800/526-4236	SALES DEPT 800/526-4236 TECH DEPT 800/526-4236	SALES DEPT 800/526-4236 TECH DEPT 800/526-4236	SALES DEPT 800/526-4236 TECH DEPT 800/526-4236	SALES DEPT 800/526-4236 TECH DEPT 800/526-4236	SALES DEPT 800/526-4236 TECH DEPT 800/526-4236	R. BRATTON 800/541-5455 R. BRATTON 800/541-5455

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	KOKEM PRODUCTS, INC.	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS
2. PRODUCT NAME	SUNGUARD	PRIMER	GEL	BASE	ACRYLIC WHITE	ACRYLIC GRAY	ACRYLIC STORM CLOUD
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING							
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)	ELAS. ACRY. LTX.	ADHESIVE	ACRYLIC MASTIC		COATING	COATING	COATING
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED		NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED
B. COLOR(S) AVAILABLE		BLACK, CLEAR	WHITE	GRAY	WHITE	GRAY	STORM CLOUD
C. SOLIDS CONTENT (% by volume)	60 ± 2	26	67	65	67	67	67
D. WEIGHT PER GALLON (lbs.)	11.8	8.5	12	12	12	12	12
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	6-10	1-24	24	24-48	24-48	24-48	24-48
F. COVERAGE (gals./square)	0.75-1	0.33-1.5	9	5-7	1-4	1-4	1-4
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X	X	X	X	X	X
2. COMPOSITE ROOFING	X	X	X	X	X	X	X
3. MODIFIED BITUMEN ROOFING	X	X	X	X	X	X	X
4. SINGLE-PLY ROOFING	X	X	X	X	X	X	X
5. OTHER ROOFING	X	X	X	X	X	X	X
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING		X	X	X	X	X	
2. COMPOSITE ROOFING		X	X	X	X	X	
3. METAL ROOFING		X	X	X	X	X	
4. OTHER ROOFING		X	X	X	X	X	
C. PRIMING							
1. BUILT-UP ROOFING		X					
2. CONCRETE/WOOD DECKS		X					
3. METAL		X					
D. FLASHING							
1. BUILT-UP ROOFING		X	X	X	X	X	
2. COMPOSITE ROOFING		X	X	X	X	X	
3. METAL ROOFING		X	X	X	X	X	
4. OTHER ROOFING		X	X	X	X	X	
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING		X	X	X	X	X	X
2. COAL TAR BUILT-UP ROOFING		X	X	X	X	X	X
3. METAL ROOFING		X	X	X	X	X	X
4. OTHER ROOFING		X	X	X	X	X	X
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING		X	X	X	X	X	X
2. COLD-PROCESS MODIFIED BITUMEN ROOFING		X					
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING		X	X	X	X	X	X
2. REROOFING/MAINTENANCE		X	X	X	X	X	X
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, ROLLER, TROWEL, SQUEEGEE	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS							
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS							
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS		PRIMER+BASE + TOPCOAT + FABRIC		PRIMER+BASE + TOPCOAT + FABRIC	PRIMER+BASE + TOPCOAT + FABRIC	PRIMER+BASE + TOPCOAT + FABRIC	PRIMER+BASE + TOPCOAT + FABRIC
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1979	1972	1981	1981	1981	1981	1981
8.1 FOR SALES INFORMATION, CONTACT:	R. KO 503/235-9206	M. ANTHENIEN 403/280-7733	M. ANTHENIEN 403/280-7733	M. ANTHENIEN 403/280-7733	M. ANTHENIEN 403/280-7733	M. ANTHENIEN 403/280-7733	M. ANTHENIEN 403/280-7733
8.2 FOR TECHNICAL INFORMATION, CONTACT:	R. KO 503/235-9206	L. ANTHENIEN 403/280-7733	L. ANTHENIEN 403/280-7733	L. ANTHENIEN 403/280-7733	L. ANTHENIEN 403/280-7733	L. ANTHENIEN 403/280-7733	L. ANTHENIEN 403/280-7733
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

[illegible]

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	MONSEY/ BAKOR	MONSEY/ BAKOR	MONSEY/ BAKOR	MONSEY/ BAKOR	MONSEY/ BAKOR	MONSEY/ BAKOR	MONSEY/ BAKOR
2. PRODUCT NAME	METALSHIELD ELASTOMERIC ROOF COATING WHITE	METALSHIELD FLASHING COMPOUND	PREMIUM UNFIBERED ROOF COATING	PREMIUM FIBERED ROOF COATING	BLIND NAILING/ COLD METHOD CEMENT/ROOF ADHESIVE	ELASTIC ROOF SEALER	#227 PRO GRADE ASBESTOS FREE FLASH- ING CEMENT
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER			X				
B. ASPHALT/COAL TAR COATING				X	X		
C. ASPHALT/COAL TAR CEMENT						X	X
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)	COATING	COATING					
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED
B. COLOR(S) AVAILABLE	WHITE	WHITE	BLACK	BLACK	BLACK	BLACK	BLACK
C. SOLIDS CONTENT (% by volume)	44.7	53.0	56	62	66	63	71
D. WEIGHT PER GALLON (lbs.)	11.6	11.3	7.6-7.9	8.3	8.0	8.6	8.9
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	2.5	2.5	4	6		6	6
F. COVERAGE (gals./square)	1.5	7-8	1.4-2.0	2.0	2.0	8	8
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X		X	X			
2. COMPOSITE ROOFING			X	X			
3. MODIFIED BITUMEN ROOFING	X		X				
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING	X						
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING						X	X
2. COMPOSITE ROOFING						X	X
3. METAL ROOFING						X	X
4. OTHER ROOFING						X	X
C. PRIMING							
1. BUILT-UP ROOFING			X				
2. CONCRETE/WOOD DECKS			X				
3. METAL			X				
D. FLASHING							
1. BUILT-UP ROOFING						X	X
2. COMPOSITE ROOFING						X	X
3. METAL ROOFING						X	X
4. OTHER ROOFING						X	X
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING			X	X			
2. COAL TAR BUILT-UP ROOFING				X			
3. METAL ROOFING							
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING					X		
2. COLD-PROCESS MODIFIED BITUMEN ROOFING					X		
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY, ROLLER	BRUSH, TROWEL	BRUSH, TROWEL	BRUSH, SPRAY	BRUSH, SPRAY	TROWEL, CAULK	TROWEL, CAULK
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE							
8.1 FOR SALES INFORMATION, CONTACT:	W. MULLEN 800/523-0268 J. HUDSON 800/387-9598	W. MULLEN 800/523-0268 J. HUDSON 800/387-9598	W. MULLEN 800/523-0268 J. HUDSON 800/387-9598	W. MULLEN 800/523-0268 J. HUDSON 800/387-9598	W. MULLEN 800/523-0268 J. HUDSON 800/387-9598	W. MULLEN 800/523-0268 J. HUDSON 800/387-9598	W. MULLEN 800/523-0268 J. HUDSON 800/387-9598
8.2 FOR TECHNICAL INFORMATION, CONTACT:							
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

[illegible]

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	MONSEY/ BAKOR	MONSEY/ BAKOR	MONSEY/ BAKOR	MONSEY/ BAKOR	MONSEY/ BAKOR	MONSEY/ BAKOR	MONSEY/ BAKOR
2. PRODUCT NAME	MBA GOLD MOD. BITUMEN MEMBRANE ASHESIVE	SPRAY MASTIC COATING ASBESTOS- FREE	LONG-LIFE PREMIUM FIBERED ROOF COATING	#27 PRO GRADE FLASHING CEMENT	LONG-LIFE ASBESTOS- FREE ALL WEA- THER CEMENT	MB GOLD ELASTOMERIC FLASHING CEMENT	#911 PRO GRADE WET SEAL ROOF REPAIR
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING		X	X				
C. ASPHALT/COAL TAR CEMENT				X	X		X
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT	X					X	
G. ELASTOMERIC COATING OR CEMENT (specify type)							
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED
B. COLOR(S) AVAILABLE	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
C. SOLIDS CONTENT (% by volume)	62	66	66	68	71	72	65
D. WEIGHT PER GALLON (lbs.)	8.2 ±2	7.8	8.2	8.6	10.0	9.5	9.6
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)		6		6	6	6	6
F. COVERAGE (gals./square)	1.5	1.5-2.0	2.0	8.0	8.0	8.0	8.0
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING		X					
2. COMPOSITE ROOFING		X					
3. MODIFIED BITUMEN ROOFING							
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING							
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING				X	X	X	X
2. COMPOSITE ROOFING				X	X	X	X
3. METAL ROOFING				X	X	X	X
4. OTHER ROOFING				X	X	X	X
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING				X	X	X	X
2. COMPOSITE ROOFING				X	X	X	X
3. METAL ROOFING				X	X	X	X
4. OTHER ROOFING				X	X	X	X
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING		X					
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING	X		X				
2. COLD-PROCESS MODIFIED BITUMEN ROOFING	X						
3. ROLL ROOFING (COATED SHEETS)	X		X				
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY,NOTCH, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY	TROWEL, CAULK	TROWEL, CAULK	TROWEL, CAULK	TROWEL, CAULK
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE							
8.1 FOR SALES INFORMATION, CONTACT:	W. MULLEN 800/523-0268 J. HUDSON 800/387-9598	W. MULLEN 800/523-0268 J. HUDSON 800/387-9598	W. MULLEN 800/523-0268 J. HUDSON 800/387-9598	W. MULLEN 800/523-0268 J. HUDSON 800/387-9598	W. MULLEN 800/523-0268 J. HUDSON 800/387-9598	W. MULLEN 800/523-0268 J. HUDSON 800/387-9598	W. MULLEN 800/523-0268 J. HUDSON 800/387-9598
8.2 FOR TECHNICAL INFORMATION, CONTACT:							
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

MONSEY/ BAKOR	NATIONAL COATINGS CORPORATION	NATIONAL COATINGS CORPORATION	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY
#225 PRO GRADE ASBESTOS-FREE ALL WEATHER CEMENT	ACRYSHIELD	ACRYFLEX	BULLDOG HEAVY DUTY FLASHING CEMENT	BULLDOG HEA- VY DUTY FLASH- ING CEMENT ASBESTOS FREE	BULLDOG PLASTIC ROOF CEMENT	BULLDOG CAP SHEET COMPOUND	BULLDOG CAP SHEET COMPOUND ASBESTOS FREE	BULLDOG WET SURFACE ROOF CEMENT	BULLDOG WET SURFACE ROOF CEMENT ASBESTOS FREE
X			X	X	X	X	X	X	X
	COATING	CEMENT							
FIBRATED BLACK 70.2 8.8 6-8 8.0	NONFIBRATED WHT, SPECIAL 60 12.1 2-8 2-3	NONFIBRATED WHITE, GRAY 80 12 4-12	FIBRATED BLACK > 70 8.5 < 24 8	FIBRATED BLACK > 70 8.5 < 24 8	FIBRATED BLACK > 65 8.5 < 24 8	FIBRATED BLACK > 65 8.3 < 24 5	FIBRATED BLACK > 65 8.3 < 24 5	FIBRATED BLACK > 70 8.5 < 24 8	FIBRATED BLACK > 70 8.1 < 24 8
X X X	X X X X X								
X X X X		X X X X	X X X X	X X X X	X X X X		X X X X	X X X X	
	X X X								
X X X X			X X X X	X X X X	X X X X				
	X X X								
X X X X			X X X X	X X X X	X X X X				
	X X X		X	X	X	X	X		
	X					X	X		
	X X								
TROWEL, CAULK	SPRAY, ROLLER	TROWEL, BRUSH, CAULK	TROWEL, CAULK	TROWEL, CAULK	TROWEL, CAULK	SQUEEGEE, TROWEL, BRUSH	SQUEEGEE, TROWEL, BRUSH	TROWEL, CAULK	TROWEL, CAULK
	NA								
NA	NA								
NA	CLEARSEAL POLYESTER FA- BRIC ACRYSHIELD ACRYFLEX	CLEARSEAL POLYESTER FA- BRIC ACRYSHIELD ACRYFLEX							
USA	USA 1981	USA 1989	USA 1933	USA 1984	USA 1933	USA 1933	USA 1984	USA 1955	USA 1984
W. MULLEN 800/523-0268 J. HUDSON 800/387-9598	B. SEXAUER 805/388-7112 B. SEXAUER 805/388-7112	B. SEXAUER 805/388-7112 B. SEXAUER 805/388-7112	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898
			X	X	X	X	X	X	X

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY
2. PRODUCT NAME	BULLDOG DOUBLE COVERAGE	BULLDOG DOUBLE COV- ERAGE CEMENT ASBESTOS FREE	BULLDOG FIBER ROOF COATING	BULLDOG COATING ASBESTOS FREE	BULLDOG ROOF RESATURANT	BULLDOG NONFIBERED ROOF COATING (ROOF PAINT)	BULLDOG ALUMINUM COATING
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING	X	X	X	X	X	X	X
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)							
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	NONFIBRATED	FIBRATED
B. COLOR(S) AVAILABLE	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	ALUMINUM
C. SOLIDS CONTENT (% by volume)	> 55	> 55	> 65	> 65	> 55	> 65	> 40
D. WEIGHT PER GALLON (lbs.)	8.1	8.1	8.1	8.1	8.1	7.8	8.8
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	< 24	< 24	< 24	< 24	< 24	< 24	< 24
F. COVERAGE (gals./square)	2	2	3	3	4-7	1	1-1.5
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING			X	X		X	X
2. COMPOSITE ROOFING			X	X		X	X
3. MODIFIED BITUMEN ROOFING							X
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING			X	X		X	X
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING	X	X	X	X	X	X	X
2. COAL TAR BUILT-UP ROOFING			X				
3. METAL ROOFING				X		X	X
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING	X	X					
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)	X	X					
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE			X	X	X	X	X
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	SQUEEGEE, BRUSH, SPRAY	SQUEEGEE, BRUSH, SPRAY	SQUEEGEE, BRUSH, SPRAY ROLLER	SQUEEGEE, BRUSH, SPRAY ROLLER	SQUEEGEE, BRUSH, SPRAY ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	BULLDOG COLD PROCESS RESURFACING SYSTEM	BULLDOG COLD PROCESS RESURFACING SYSTEMS					BULLDOG COLD PROCESS ROOF SYSTEMS
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS							
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS							
7.1 COUNTRY OF MANUFACTURE	USA 1940	USA 1984	USA 1932	USA 1984	USA 1940	USA 1933	USA 1956
7.2 YEAR OF FIRST COMMERCIAL USE							
8.1 FOR SALES INFORMATION, CONTACT:	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898
8.2 FOR TECHNICAL INFORMATION, CONTACT:							
9. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X	X	X	X

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY
BULLDOG FIBERED ALUMI- NUM COATING ASBESTOS FREE	BULLDOG NONFIBERED ALUMINUM COATING	BULLDOG ALUMINUM PLASTIC CEMENT	BULLDOG ASPHALT PRIMER	BULLDOG Q.D. PRIMER	BULLDOG BLACK ASPHALTUM PRIMER & PAINT	BULLDOG FIBERED EMULSION COATING	BULLDOG NONFIBERED EMULSION COATING	BULLDOG MODIFIED BITUMEN ADHESIVE-734	BULLDOG MODIFIED BITUMEN ADHESIVE-196
X	X	X	X	X	X	X	X	X	X
FIBRATED ALUMINUM > 40 8.8 < 24 1-1.5	NONFIBRATED ALUMINUM > 30 8.3 < 24 0.5	FIBRATED ALUMINUM > 40 9 < 24 8	NONFIBRATED BLACK > 45 7.6 < 24 1	NONFIBRATED BLACK > 45 7.6 < 24 1	NONFIBRATED BLACK > 55 7.7 < 24 1	FIBRATED BLACK > 40 8.6 < 24 3	NONFIBRATED BLACK > 40 8.6 < 24 3	FIBRATED BLACK > 55 8 < 24 2	FIBRATED BLACK > 55 8.5 < 24 8
X	X					X	X		
X	X					X	X		
X	X							X	X
X	X				X				
		X							
		X							
		X							
		X							
			X	X			X		
			X	X			X		
			X	X	X		X		
X				X		X	X		
X				X	X	X	X		
						X	X		
								X	X
X	X					X	X	X	X
BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	TROWEL, CAULK	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SQUEEGEE	TROWEL
BULLDOG COLD PROCESS ROOF SYSTEMS	BULLDOG COLD PROCESS ROOF SYSTEMS		BULLDOG COLD PROCESS ROOF SYSTEMS	BULLDOG COLD PROCESS ROOF SYSTEMS		BULLDOG COLD PROCESS ROOF SYSTEMS	BULLDOG COLD PROCESS ROOF SYSTEMS		
USA 1984	USA 1956	USA 1962	USA 1963	USA 1989	USA 1933	USA 1985	USA 1985	USA 1985	USA 1985
V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898	V. RIPPS 800/352-9898 L. RIPPS 800/352-9898
X	X	X	X	X	X	X	X	X	X

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY
2. PRODUCT NAME	BULLDOG ELASTOMERIC MASTIC	BULLDOG BITU-SEALER	BULLDOG XX COMPOUND	BULLDOG LIQUID BINDER	BULLDOG RED CEMENT	BULLDOG COAL TAR ROOF RESATURANT	BULLDOG COAL TAR ROOF CEMENT
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING		X		X		X	
C. ASPHALT/COAL TAR CEMENT			X		X		X
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)	X						
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	NONFIBRATED	FIBRATED	FIBRATED	NONFIBRATED	FIBRATED	FIBRATED	FIBRATED
B. COLOR(S) AVAILABLE	BLACK	BLACK OR RED	BLACK	BLACK	RED	BLACK	BLACK
C. SOLIDS CONTENT (% by volume)		> 50	> 60	> 45	> 55	> 45	> 65
D. WEIGHT PER GALLON (lbs.)	7.8	8	8.5	7.5	9	9.5	9.5
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	< 24	< 24	< 24	< 24	< 24	< 24	< 24
F. COVERAGE (gals./square)	8	2.5	4-6	1-2	5-7	8	8
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING		X		X			
2. COMPOSITE ROOFING		X					
3. MODIFIED BITUMEN ROOFING							
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING							
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING	X		X	X	X		X
2. COMPOSITE ROOFING	X			X			
3. METAL ROOFING	X				X		
4. OTHER ROOFING					X		X
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING					X		X
2. COMPOSITE ROOFING					X		
3. METAL ROOFING					X		
4. OTHER ROOFING							
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING		X		X			
2. COAL TAR BUILT-UP ROOFING						X	X
3. METAL ROOFING							
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING	X						
2. COLD-PROCESS MODIFIED BITUMEN ROOFING	X						
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS			X		X		
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE						X	X
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	TROWEL	BRUSH	TROWEL	BRUSH, SPRAY, SQUEEGEE	TROWEL, CAULK	BRUSH, SPRAY	TROWEL
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS							
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS							
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS							
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1985	1989	1989	1989	1989	1982	1982
8.1 FOR SALES INFORMATION, CONTACT:	V. RIPPS 800/352-9898 L. RIPPS	V. RIPPS 800/352-9898 L. RIPPS	V. RIPPS 800/352-9898 L. RIPPS	V. RIPPS 800/352-9898 L. RIPPS	V. RIPPS 800/352-9898 L. RIPPS	V. RIPPS 800/352-9898 L. RIPPS	V. RIPPS 800/352-9898 L. RIPPS
8.2 FOR TECHNICAL INFORMATION, CONTACT:	800/352-9898	800/352-9898	800/352-9898	800/352-9898	800/352-9898	800/352-9898	800/352-9898
9. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X	X	X	X

NA=not applicable

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PALMER ASPHALT COMPANY	POLAR SEAL	POLAR SEAL	REPUBLIC POWDERED METALS INC.	REPUBLIC POWDERED METALS INC.	REPUBLIC POWDERED METALS INC.	REPUBLIC POWDERED METALS INC.	REPUBLIC POWDERED METALS INC.	REPUBLIC POWDERED METALS INC.	REPUBLIC POWDERED METALS INC.
BULLDOG COLD PROCESS COATING	POLAR SEAL PRIME SECURITY	POLAR SEAL TOP SECURITY	SOLAR GARD	PERMAROOF	PERMAFLEX	ALUMAMATION 301	GEOGARD BASE	GEOGARD WHITE	GEOGARD ALUMINUM
X				X		X			
	X	X	ACRYLIC		X		URETHANE	URETHANE	URETHANE
FIBRATED BLACK > 50 8 < 24 3-4	NONFIBRATED CLEAR, GREEN 62 8.9 0.5 1-4	NONFIBRATED WHITE 73.1 12.4 0.75 0.5-2.0	NONFIBRATED VARIOUS 51 11.5 4-6 2	FIBRATED BLACK 53 7.9 24 3-7	FIBRATED BLACK 60 8.7 24 2-4	FIBRATED ALUMINUM 47 8.8 24 3-4	NONFIBRATED GRAY 65 11.0 24 3-4	NONFIBRATED WHITE 51 8.8 16 1	NONFIBRATED ALUMINUM 80 10 24 2-3
	X	X	X	X	X	X	X	X	X
	X	X	X			X	X	X	X
	X	X	X	X		X	X	X	
	X	X					X		
	X	X							
	X	X							
	X	X							
	X	X							
	X	X							
	X	X							
	X	X							
	X	X							
X	X	X							
	X	X							
X									
	X	X	X	X	X	X	X	X	X
BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER, SQUEEGEE	BRUSH, SPRAY, ROLLER, SQUEEGEE	BRUSH, SPRAY, ROLLER, SQUEEGEE
BULLDOG COLD PROCESS RESURFACING SYSTEM	NA	NA	NA	NA	NA	NA	NA	NA	NA
	NA	NA	NA	NA	NA	NA	NA	NA	NA
	POLAR SEAL PRIME SECURITY	POLAR SEAL TOP SECURITY	NA	NA	NA	NA	NA	NA	NA
USA 1972	USA 1978	USA 1978	USA 1975	USA 1953	USA 1984	USA 1947	USA 1983	USA 1983	USA 1983
V. RIPPS 800/352-9898 L. RIPPS 800/352-9898 X	L. HURLBURT 800/343-7663 W. SCHOCKLEY 800/343-ROOF	L. HURLBURT 800/343-7663 W. SCHOCKLEY 800/343-ROOF	J. MILLIKEN 800/255-1136 J. SAMA 800/255-1136	J. MILLIKEN 800/255-1136 J. SAMA 800/255-1136	J. MILLIKEN 800/255-1136 J. SAMA 800/255-1136	J. MILLIKEN 800/255-1136 J. SAMA 800/255-1136	J. MILLIKEN 800/255-1136 J. SAMA 800/255-1136	J. MILLIKEN 800/255-1136 J. SAMA 800/255-1136	J. MILLIKEN 800/255-1136 J. SAMA 800/255-1136

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO
2. PRODUCT NAME	NO. 301 FIBRATED LIQUID ROOF COATING	NO. 714 FIBRATED LIQUID ROOF COATING AF	NO. 302 ASPHALT LIQUID ROOF COATING	NO. 313 ASPHALT BITUMEN RESATURANT	NO. 315 ASPHALT ROOF PRIMER	NO. 721 ASPHALT EMUL- SION ROOF COATING AF	NO. 351 Kwik-SET CEMENT
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER					X		
B. ASPHALT/COAL TAR COATING	X	X	X	X		X	
C. ASPHALT/COAL TAR CEMENT							X
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)							
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	FIBRATED	FIBRATED	NONFIBRATED	FIBRATED	NONFIBRATED	FIBRATED	FIBRATED
B. COLOR(S) AVAILABLE	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
C. SOLIDS CONTENT (% by volume)	57	67	56	67	36	45	63
D. WEIGHT PER GALLON (lbs.)	7.7	8.0	7.7	8.0	7.3	8.6	8.2
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	3	3	2	8	0.75	4	3
F. COVERAGE (gals./square)							
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X		X		X	
2. COMPOSITE ROOFING							
3. MODIFIED BITUMEN ROOFING							
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING							
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING	X	X	X	X		X	X
2. COMPOSITE ROOFING							
3. METAL ROOFING	X	X	X			X	X
4. OTHER ROOFING							
C. PRIMING							
1. BUILT-UP ROOFING					X		
2. CONCRETE/WOOD DECKS					X		
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING						X	X
2. COMPOSITE ROOFING							X
3. METAL ROOFING						X	X
4. OTHER ROOFING							
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING	X	X	X	X		X	
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING						X	
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING							X
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)							X
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	UNKNOWN	1989	1912	1977	1959	1959	1954
8.1 FOR SALES INFORMATION, CONTACT:	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545
8.2 FOR TECHNICAL INFORMATION, CONTACT:							
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO
NO. 353 POLYESTER MASTIC	NO. 751 KVIK-SET CEMENT AF	NO. 758 ALUMINUM ROOF COATING AF (FIBRATED)	NO. 608 ALUMINUM ROOF COATING (NONFIBRATED)	NO. 718 3-LB ALUMINUM ROOF COATING AF (FIBRATED)	NO. 618 3-LB ALUMINUM ROOF COATING (NONFIBRATED)	NO. 371 ASPHALT PLASTIC ROOF CEMENT	NO. 771 ASPHALT PLASTIC ROOF CEMENT AF	NO. 379 ASPHALT PLASTIC WET SURFACE	NO. 010 TAR-BASE RESATURANT
X	X	X	X	X	X	X	X	X	X
FIBRATED BLACK 58 7.7 7	FIBRATED BLACK 67 8.1 2-3	FIBRATED ALUMINUM 60 8.4 1.5	NONFIBRATED ALUMINUM 44 7.9 0.75	FIBRATED ALUMINUM 65 8.8 1.5	NONFIBRATED ALUMINUM 48 8.4 1	FIBRATED BLACK 65 7.7 8	FIBRATED BLACK 8.4 8	FIBRATED BLACK 8.0 8	FIBRATED BLACK 9.0 7
X	X	X	X	X	X				
	X	X	X	X	X				
		X	X	X	X				
X	X					X	X	X	
	X					X	X	X	
						X	X	X	
X	X					X	X	X	
X	X					X	X	X	
						X	X	X	
X		X	X	X	X				X
X		X	X	X	X				
X	X								
	X								
	X								
X									
BRUSH, SPRAY	BRUSH	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	TROWEL	TROWEL	TROWEL	BRUSH, SPRAY
POLYESTER FABRIC	NA	NA	NA	NA	NA	NA	NA	NA	NA
	NA	NA	NA	NA	NA	NA	NA	NA	NA
	NA	NA	NA	NA	NA	NA	NA	NA	NA
USA 1982	USA 1990	USA 1990	USA 1954	USA 1990	USA 1975	USA UNKNOWN	USA 1989	USA 1959	USA 1937
J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO	R.M. LUCAS CO	SOMAY PRODUCTS, INC.	SOMAY PRODUCTS, INC.	SOMAY PRODUCTS, INC.
2. PRODUCT NAME	NO. 071 TAR-BASE PLASTIC ROOF CEMENT	NO. 079 TAR-BASE PLASTIC WET SURFACE	NO. 736 ELASTOMERIC MOD. BIT. ADHES BRUSH	NO. 766 ELAS- TOMERIC MOD. BIT. ADHESIVE TROWEL	#842-01 ROOF MASTIC	#7751 PRIME & SEAL	#992 PATCH & SEAL
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING							
C. ASPHALT/COAL TAR CEMENT	X	X					
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT			X	X			
G. ELASTOMERIC COATING OR CEMENT (specify type)					COATING	ACRYLIC	SEALANT
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	NONFIBRATED WHITE, RED	NONFIBRATED CLEAR	NONFIBRATED WHITE
B. COLOR(S) AVAILABLE					53.1	11.02	69.95
C. SOLIDS CONTENT (% by volume)	9.6	9.6	8.0	7.9	11.21	6.9	9.1
D. WEIGHT PER GALLON (lbs.)			24-48	24-48	1	1	1
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	8	8	1-2	2-4	2	3	
F. COVERAGE (gals./square)							
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. MODIFIED BITUMEN ROOFING							
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING					X	X	X
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING	X	X					
2. COMPOSITE ROOFING							
3. METAL ROOFING					X	X	X
4. OTHER ROOFING							
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS					X	X	X
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING	X						
2. COMPOSITE ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING					X	X	X
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING							
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING					X	X	X
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING			X	X			
2. COLD-PROCESS MODIFIED BITUMEN ROOFING			X	X			
3. ROLL ROOFING (COATED SHEETS)			X	X	X	X	X
4. SHINGLES, TILE, OTHER STEEP PRODUCTS				X	X	X	X
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING					X	X	X
2. REROOFING/MAINTENANCE					X	X	X
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	TROWEL	TROWEL	BRUSH, SPRAY	TROWEL	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA			
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1956	1956	1995	1995	1966	1986	1985
8.1 FOR SALES INFORMATION, CONTACT:	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	J. BARRY 312/523-4300 D. COX 312/523-0545	G. PARKER 305/633-6333 W. HARPER 305/633-6333	G. PARKER 305/633-6333 W. HARPER 305/633-6333	G. PARKER 305/633-6333 W. HARPER 305/633-6333
8.2 FOR TECHNICAL INFORMATION, CONTACT:							
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.
HEAVY DUTY ROOF COATING	HEAVY DUTY PRIMER	HEAVY DUTY PATCHING COMPOUND	HEAVY DUTY GRAVEL ROOF PRESERVATIVE (ASPHALT)	HEAVY DUTY GRAVEL ROOF PRESERVATIVE (COAL TAR)	FLEX-SHIELD ROOF COATING	FLEX-SHIELD PRIMER	FLEX-SHIELD PATCHING COMPOUND	FLEX-SHIELD "EM" ROOF COATING	FLEX-SHIELD "EM" PATCHING COMPOUND
X	X	X	X	X	X	X	X	X	X
FIBRATED BLACK	NON-FIBRATED BLACK	FIBRATED BLACK	NONFIBRATED BLACK	NONFIBRATED BLACK	FIBRATED BLACK	NONFIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK
8.3 1-2 2.0-5.0	7.2 1-2 0.5-2.0	9.24 1-2 10	8.09 7	9.75 7	8.5 2-4 1.75-9.0	8.41 2-4 0.25-1.5	9.57 2-4 10	8.7 2-4 2.5-6.0	8.8 2-4 10
X					X			X	
X					X			X	
X					X			X	
		X					X		X
		X					X		X
		X					X		X
		X					X		X
	X					X			
	X					X			
	X					X			
		X					X		X
		X					X		X
		X					X		X
		X					X		X
X			X	X	X			X	
X					X			X	
X					X			X	
BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	TROWEL, CAULK	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER, SQUEEGEE	TROWEL	BRUSH, SPRAY, ROLLER	TROWEL
X	X	X			X	X	X	X	X
X	X	X			X	X	X	X	X
USA 1933	USA 1933	USA 1933	USA 1980	USA 1980	USA 1970	USA 1970	USA 1970	USA 1994	USA 1994
SALES DEPT. 800/877-9372 TECH. DEPT.	SALES DEPT. 800/877-9372 TECH. DEPT.	SALES DEPT. 800/877-9372 TECH. DEPT.	SALES DEPT. 800/877-9372 TECH. DEPT.	SALES DEPT. 800/877-9372 TECH. DEPT.	SALES DEPT. 800/877-9372 TECH. DEPT.	SALES DEPT. 800/877-9372 TECH. DEPT.	SALES DEPT. 800/877-9372 TECH. DEPT.	SALES DEPT. 800/877-9372 TECH. DEPT.	SALES DEPT. 800/877-9372 TECH. DEPT.

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SPM THERMO- SHIELD INC.	SUNGUARD MARKETING CORP.
2. PRODUCT NAME	ALUMINUM ROOF COATING	ADHESIVE #9	ALUMINUM ROOF SHIELD	WHITE ACRYLIC COATING	ANTI-RUST COATING	TOPCOAT	PROTECTO- SEAL
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							
B. ASPHALT/COAL TAR COATING	X		X		X		
C. ASPHALT/COAL TAR CEMENT		X					
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT				X		X	X
G. ELASTOMERIC COATING OR CEMENT (specify type)							
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	FIBRATED		NONFIBRATED	NONFIBRATED	NONFIBRATED		
B. COLOR(S) AVAILABLE	SILVER-GREEN	BLACK	SILVER	WHITE	RED, GREY, GRN	SEVERAL	
C. SOLIDS CONTENT (% by volume)							
D. WEIGHT PER GALLON (lbs.)	9.69	8.4	8.6	10.6	11.6	10	
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	1-2	1-2	1-2	2	2		
F. COVERAGE (gals./square)	1.0-1.5	1.5-4.0	0.3-0.67	1.0-2.0	0.25-0.4		0.25
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X		X	X		X	X
2. COMPOSITE ROOFING	X		X	X		X	X
3. MODIFIED BITUMEN ROOFING	X		X	X		X	X
4. SINGLE-PLY ROOFING	X		X	X		X	X
5. OTHER ROOFING	X		X	X		X	X
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING		X				X	
2. COMPOSITE ROOFING						X	
3. METAL ROOFING						X	
4. OTHER ROOFING						X	
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS						X	
3. METAL					X	X	
D. FLASHING							
1. BUILT-UP ROOFING						X	
2. COMPOSITE ROOFING						X	
3. METAL ROOFING						X	
4. OTHER ROOFING						X	
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING	X		X	X		X	
2. COAL TAR BUILT-UP ROOFING						X	
3. METAL ROOFING	X		X	X	X	X	
4. OTHER ROOFING	X		X	X		X	
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING		X				X	
2. COLD-PROCESS MODIFIED BITUMEN ROOFING		X				X	
3. ROLL ROOFING (COATED SHEETS)		X				X	
4. SHINGLES, TILE, OTHER STEEP PRODUCTS						X	
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING						X	
2. REROOFING/MAINTENANCE						X	
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER, SQUEEGEE	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS							NA
SEE BUILT-UP ROOFING SECTION IF CHECKED	X	X	X	X			
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS							NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED	X	X	X	X			
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS						ACRYLIC UNDER- COAT, POLY- FORCE CLOTH, TOPCOAT	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1933	1933	1933	1975	1950		
8.1 FOR SALES INFORMATION, CONTACT:	SALES DEPT. 800/877-9372	SALES DEPT. 800/877-9372	SALES DEPT. 800/877-9372	SALES DEPT. 800/877-9372	SALES DEPT. 800/877-9372	SALES DEPT. 605/679-3201	R. KO 503/235-9206
8.2 FOR TECHNICAL INFORMATION, CONTACT:	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT. 605/679-3201	R. KO 503/235-9206
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC
TAM-PRO FIBERED EMULSION COATING	TAM-PRO Q-15 ELASTOMERIC FLASHING CEMENT	TAM-PRO PLASTIC ROOFING CEMENT	TAM-PRO FIBERED ROOF COATING	TAM-PRO COLD-APPLICATION CEMENT	TAM-PRO WET OR DRY SURFACE PLASTIC ROOF CEMENT	TAM-PRO HEAVY-BODIED FLASHING CEMENT	TAM-PRO FIBERED ALUMINUM ROOF COATING	TAM-PRO NONFIBERED ALUMINUM ROOF COATING	TAM-PRO FIRE-RATED (FR) FIBERED ALUM. ROOF COATING
X	X	X	X	X	X	X	X	X	X
	CEMENT								
FIBRATED BLACK 50 ±5 8.5 8-24 3	FIBRATED BLACK 70 9 8 8	FIBRATED BLACK 80 ±5 9.5 8 8	FIBRATED BLACK 50 84 8-12 1-4	FIBRATED BLACK 60 ±5 8.4 12-24 2	FIBRATED BLACK 80 ±5 9.5 8 8	FIBRATED BLACK 75 ±5 9.0 8 8	FIBRATED SILVER 40 8.4 2-4 1.5	NONFIBRATED SILVER 40 7.6 2-4 1	FIBRATED SILVER 42 8.6 2-4 1.5
X			X				X	X	X
X			X				X	X	X
X			X				X	X	X
X			X				X	X	X
	X	X		X	X	X			
	X	X		X	X	X			
	X	X		X	X	X			
	X	X		X	X	X	X	X	X
	X	X		X	X	X	X	X	X
	X	X		X	X	X	X	X	X
	X	X		X	X	X			
	X	X		X	X	X			
	X	X		X	X	X			
BRUSH, SPRAY, SQUEEGEE	TROWEL	TROWEL	BRUSH, SPRAY, ROLLER, SQUEEGEE	BRUSH	TROWEL, CAULK	TROWEL	BRUSH, SPRAY	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY
USA 1990	USA 1990	USA 1990	USA 1990	USA 1990	USA 1990	USA 1990	USA 1990	USA 1990	USA 1990
DISTRICT OFF.	DISTRICT OFF.	DISTRICT OFF.	DISTRICT OFF.	DISTRICT OFF.	DISTRICT OFF.	DISTRICT OFF.	DISTRICT OFF.	DISTRICT OFF.	DISTRICT OFF.
TECH SERVICE 800/641-4691	TECH SERVICE 800/641-4691	TECH SERVICE 800/641-4691	TECH SERVICE 800/641-4691	TECH SERVICE 800/641-4691	TECH SERVICE 800/641-4691	TECH SERVICE 800/641-4691	TECH SERVICE 800/641-4691	TECH SERVICE 800/641-4691	TECH SERVICE 800/641-4691

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC	TEXAS REFINERY CORP.	TEXAS REFINERY CORP.	TEXAS REFINERY CORP.	TEXAS REFINERY CORP.
2. PRODUCT NAME	TAM-PRO CPA SBS ADHESIVE	TAM-PRO CPA SBS FLASHING CEMENT	TAM-PRO ASPHALT PRIMER	ALUMINUM ROOF COATING	TEXOTROPIC	QUICK-DRY ANTIOXIDENE	ALUMINUM METAL SEAL CEMENT
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER			X				
B. ASPHALT/COAL TAR COATING				X	X	X	
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT	X	X					
G. ELASTOMERIC COATING OR CEMENT (specify type)							X
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	FIBRATED	FIBRATED	NONFIBRATED	NONFIBRATED	FIBRATED	NONFIBRATED	FIBRATED
B. COLOR(S) AVAILABLE	BLACK	BLACK	BLACK	ALUMINUM	ALUMINUM	BLACK	ALUMINUM
C. SOLIDS CONTENT (% by volume)	58 ±2	68 ±2	50 ±5	46	64		39 ±2
D. WEIGHT PER GALLON (lbs.)	8.5	9.0	7.6	8.17	8.16	7.15	7.2-7.6
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	1-4	8	1-2			0.33	24
F. COVERAGE (gals./square)	1.5	8	1				
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING				X	X		
2. COMPOSITE ROOFING				X	X		
3. MODIFIED BITUMEN ROOFING							
4. SINGLE-PLY ROOFING							X
5. OTHER ROOFING							
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING	X	X					
2. COMPOSITE ROOFING	X	X					
3. METAL ROOFING							X
4. OTHER ROOFING	X	X					
C. PRIMING							
1. BUILT-UP ROOFING			X				
2. CONCRETE/WOOD DECKS			X				
3. METAL			X			X	
D. FLASHING							
1. BUILT-UP ROOFING		X					
2. COMPOSITE ROOFING		X					
3. METAL ROOFING							X
4. OTHER ROOFING		X					
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING							
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING				X	X	X	X
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING	X						
2. COLD-PROCESS MODIFIED BITUMEN ROOFING	X						
3. ROLL ROOFING (COATED SHEETS)	X						
4. SHINGLES, TILE, OTHER STEEP PRODUCTS	X						
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY, SQUEEGEE	TROWEL, CAULK	BRUSH, SPRAY, ROLLER	SPRAY, ROLLER	SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	TROWEL
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS				MIGHTYPLY TYPE III GLAS-BASE POLY-MAT	MIGHTYPLY TYPE III GLAS-BASE POLY-MAT	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS				MIGHTYPLATE SINGLE-PLY	MIGHTYPLATE SINGLE-PLY	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS				NA	NA	NA	NA
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1990	1990	1990				
8.1 FOR SALES INFORMATION, CONTACT:	DISTRICT OFF.	DISTRICT OFF.	DISTRICT OFF.	J. MCGEE 800/827-0711 D. MACKENZIE 800/827-0711	J. MCGEE 800/827-0711 D. MACKENZIE 800/827-0711	J. MCGEE 800/827-0711 D. MACKENZIE 800/827-0711	J. MCGEE 800/827-0711 D. MACKENZIE 800/827-0711
8.2 FOR TECHNICAL INFORMATION, CONTACT:	TECH SERVICE 800/641-4691	TECH SERVICE 800/641-4691	TECH SERVICE 800/641-4691				
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

TEXAS REFINERY CORP.	TEXAS REFINERY CORP.	TEXAS REFINERY CORP.	TEXAS REFINERY CORP.	TEXAS REFINERY CORP.	TEXAS REFINERY CORP.	TEXAS REFINERY CORP.	TEXAS REFINERY CORP.	THE 3E GROUP, INC.	THE 3E GROUP, INC.
ALUMINUM METAL SEAL COATING	MIGHTYPLATE ROOF COATING	MIGHTYPLATE II	MIGHTYPLATE PRIMER	MIGHTYPLATE PLASTIC CEMENT	MIGHTYPLATE WINTER PATCH	BEIGE METAL SEAL COATING	WHITE METAL SEAL COATING	ANDEK RUBBERCOAT BASE	ANDEK RUBBERCOAT TOP
	X	X	X	X	X			X	X
X						X	X		
NONFIBRATED ALUMINUM 34 ±2 7.2-7.6 24 1	FIBRATED BLACK 71.5 7.83	FIBRATED BLACK 73.5 8.33	NONFIBRATED BLACK 70 7.79	FIBRATED BLACK 79 9.6	FIBRATED BLACK 74.7 8.92	NONFIBRATED BEIGE 40.2 7.8-8.4 4 1	NONFIBRATED WHITE 40.2 7.8-8.4 4 1	NONFIBRATED BLACK 55 8.2 12 1.5-2.5	FIBRATED BLACK 58 8.2 12 1.5-2.5
	X	X	X					X X X	X X X
X						X	X		
	X	X		X X X	X X X	X	X		
X									
	X	X	X X X					X	
				X X X	X X X				
	X	X	X					X X	X X
X						X	X		
	X	X		X X X	X X X				
								X	X
ROLLER, BRUSH	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	TROWEL	TROWEL	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, ROLLER	BRUSH, ROLLER
NA	MIGHTYPLY TYPE II GLAS-BASE POLY-MAT	MIGHTYPLY TYPE II GLAS-BASE POLY-MAT	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
USA	USA	USA	USA	USA	USA	USA	USA	USA 1989	USA 1989
J. MCGEE 800/827-0711 D. MACKENZIE 800/827-0711	J. MCGEE 800/827-0711 D. MACKENZIE 800/827-0711	J. MCGEE 800/827-0711 D. MACKENZIE 800/827-0711	J. MCGEE 800/827-0711 D. MACKENZIE 800/827-0711	J. MCGEE 800/827-0711 D. MACKENZIE 800/827-0711	J. MCGEE 800/827-0711 D. MACKENZIE 800/827-0711	J. MCGEE 800/827-0711 D. MACKENZIE 800/827-0711	J. MCGEE 800/827-0711 D. MACKENZIE 800/827-0711	M. DIAMOND 800/800-2844 N. SHEARER 800/800-2844	M. DIAMOND 800/800-2844 N. SHEARER 800/800-2844

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	THE 3E GROUP, INC.	THE 3E GROUP, INC.	THE 3E GROUP, INC.	TOPCOAT, DIVISION OF MAJOR GROUP, INC.	TOPCOAT, DIVISION OF MAJOR GROUP, INC.	TOPCOAT, DIVISION OF MAJOR GROUP, INC.	TOPCOAT, DIVISION OF MAJOR GROUP, INC.
2. PRODUCT NAME	ANDEK RUBBERCOAT 1047	ANDEK BUILDCOTE	ANDEK SILVER FILM	TOPCOAT MEMBRANE	FLASHING GRADE	MP-300	MB-PRIMING SYSTEM
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER							X
B. ASPHALT/COAL TAR COATING							X
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT		X					X
G. ELASTOMERIC COATING OR CEMENT (specify type)	RESIN		RESIN	SYN. RUBBER	SYN. RUBBER		
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	FIBRATED GRAY	NONFIBRATED BLACK	NONFIBRATED SILVER	NONFIBRATED UNLIMITED	NONFIBRATED LT. GRAY, WHITE	NONFIBRATED LT. BLUE	NONFIBRATED WHITE
B. COLOR(S) AVAILABLE	62	65	75	58	56	42	51
C. SOLIDS CONTENT (% by volume)	9.1	8.3	8.7	12	12	10	11.5
D. WEIGHT PER GALLON (lbs.)	24	24	24	2	2	1	1
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	1.5-2.5	3-4	0.25-0.33	1.5-3		1	2
F. COVERAGE (gals./square)							
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING	X	X	X				
2. COMPOSITE ROOFING	X	X	X				
3. MODIFIED BITUMEN ROOFING	X	X	X				X
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING				X			
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING	X	X	X				
2. COMPOSITE ROOFING	X	X	X				
3. METAL ROOFING	X	X	X	X	X		X
4. OTHER ROOFING	X	X	X		X		
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL						X	
D. FLASHING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. METAL ROOFING					X		
4. OTHER ROOFING					X		
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING							
2. COAL TAR BUILT-UP ROOFING							
3. METAL ROOFING				X			
4. OTHER ROOFING				X			
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING							
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING	X		X	X			
2. REROOFING/MAINTENANCE	X	X	X	X			
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY, ROLLER	BRUSH, ROLLER	BRUSH, SPRAY, ROLLER	SPRAY	BRUSH, CAULK	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	MEMBRANE COMPONENT OF ROOF SYSTEM	FLASHING COMPONENT OF ROOF SYSTEM	RUST INHIBITOR COMPONENT OF ROOF SYSTEM	ASPHALT PATCH SEALANT COMPONENT OF ROOF SYSTEM
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1993	1985	1984	1979	1979	1980	1983
8.1 FOR SALES INFORMATION, CONTACT:	M. DIAMOND 800/800-2844 N. SHEARER	M. DIAMOND 800/800-2844 N. SHEARER	M. DIAMOND 800/800-2844 N. SHEARER	K. OSHA 800/323-0009 B. BANGERSKIS	K. OSHA 800/323-0009 B. BANGERSKIS	K. OSHA 800/323-0009 B. BANGERSKIS	K. OSHA 800/323-0009 B. BANGERSKIS
8.2 FOR TECHNICAL INFORMATION, CONTACT:	800/800-2844	800/800-2844	800/800-2844	800/323-0009	800/323-0009	800/323-0009	800/323-0009
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

TOPCOAT, DIVISION OF MAJOR GROUP, INC.	TOPCOAT, DIVISION OF MAJOR GROUP, INC.	TOPCOAT, DIVISION OF MAJOR GROUP, INC.	TOPCOAT, DIVISION OF MAJOR GROUP, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.
FLEXSEAL	SB-900 FLASHING	SKYLITE	ONESTEP PRIMECOAT	ELS	POLYROOF L.V.	TREMFIX	FIBERMAT	SHEETING BOND	SHEETING BOND
X				X		X	X		
SYN RUBBER	SYN. RUBBER	SYN RUBBER			CEMENT			CEMENT	CEMENT
NONFIBRATED OFF-WHITE 67 10 1	NONFIBRATED LT. GRAY, WHITE 72 10.5 1	NONFIBRATED CLEAR 40 7.5 0.5 1	NONFIBRATED UNLIMITED 40 11 0.5 1-1.5	FIBRATED BLACK 9.3 8	NONFIBRATED BLACK 8.1 8	FIBRATED BLACK 9.1 8	FIBRATED BLACK 10.1 8	NONFIBRATED BLACK 8.7 4	NONFIBRATED WHITE 8.7 4
			X						
X	X X	X		X	X	X	X		X
			X						
X	X X			X	X	X	X	X	
		X	X						
	X X								
BRUSH, TROWEL	BRUSH,CAULK, TROWEL	BRUSH, ROLLER	SPRAY, ROLLER	TROWEL	TROWEL	TROWEL	TROWEL	TROWEL	TROWEL
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INTERNAL GUTTER LINER COMPONENT OF ROOF SYSTEM	SOLVENT- BASE FLASHING COMPONENT	FIBERGLASS SKYLIGHT SEALER	RUST- INHIBITING MAINTENANCE PAINT	NA	NA	NA	NA	NA	NA
USA 1993	USA 1984	USA 1989	USA 1994	USA	CANADA	CANADA	USA	CANADA	CANADA
K. OSHA 800/323-0009 B. BANGERSKIS 800/323-0009	K. OSHA 800/323-0009 B. BANGERSKIS 800/323-0009	K. OSHA 800/323-0009 B. BANGERSKIS 800/323-0009	K. OSHA 800/323-0009 B. BANGERSKIS 800/323-0009	V. SOPKO J. ZDENEK	V. SOPKO J. ZDENEK	V. SOPKO J. ZDENEK	V. SOPKO J. ZDENEK	V. SOPKO J. ZDENEK	V. SOPKO J. ZDENEK

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.
2. PRODUCT NAME	TREMPRIME W.B.	DOUBLE DUTY ALUMINUM L.V.	POLARCOTE	TREMLASTIC	ECOLASTIC	TREMLAR LRM-H	TREMLAR LRM-V
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER	X						
B. ASPHALT/COAL TAR COATING		X					
C. ASPHALT/COAL TAR CEMENT							
D. ASPHALT EMULSION							
F. MODIFIED BITUMEN COATING OR CEMENT				X	X	X	X
G. ELASTOMERIC COATING OR CEMENT (specify type)			ACRYLIC				
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	NONFIBRATED BLACK	NONFIBRATED SILVER	NONFIBRATED WHITE	FIBRATED BLACK	FIBRATED BLACK	NONFIBRATED BLACK	NONFIBRATED BLACK
B. COLOR(S) AVAILABLE							
C. SOLIDS CONTENT (% by volume)	8.8	9.1	11.2	8.4	8.6	8.8	9.1
D. WEIGHT PER GALLON (lbs.)							
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	0.5	0.5	0.6	4	7	4	4
F. COVERAGE (gals./square)							
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING		X	X	X			
2. COMPOSITE ROOFING							
3. MODIFIED BITUMEN ROOFING		X	X	X			
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING							
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
C. PRIMING							
1. BUILT-UP ROOFING							
2. CONCRETE/WOOD DECKS							
3. METAL							
D. FLASHING							
1. BUILT-UP ROOFING							
2. COMPOSITE ROOFING							
3. METAL ROOFING							
4. OTHER ROOFING							
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING				X	X		
2. COAL TAR BUILT-UP ROOFING					X		
3. METAL ROOFING							
4. OTHER ROOFING				X			
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING				X			
2. COLD-PROCESS MODIFIED BITUMEN ROOFING							
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE							
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY, ROLLER	ROLLER, BRUSH	BRUSH, SPRAY, ROLLER	ROLLER, BRUSH	ROLLER, BRUSH	SQUEEGEE	TROWEL
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA		
7.1 COUNTRY OF MANUFACTURE	CANADA	USA	USA	USA	USA	CANADA	CANADA
7.2 YEAR OF FIRST COMMERCIAL USE							
8.1 FOR SALES INFORMATION, CONTACT:	V. SOPKO	V. SOPKO	V. SOPKO	V. SOPKO	V. SOPKO	V. SOPKO	V. SOPKO
8.2 FOR TECHNICAL INFORMATION, CONTACT:	J. ZDENEK	J. ZDENEK	J. ZDENEK	J. ZDENEK	J. ZDENEK	J. ZDENEK	J. ZDENEK
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

[illegible]

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	UNIFLEX	UNIFLEX	UNIFLEX	UNIFLEX	UNIFLEX	UNIFLEX	UNIFLEX
2. PRODUCT NAME	ACRYLIC PATCH CEMENT	ALUMINUM PATCH CEMENT	SUPERBRITE ALUMINUM PAINT	RED ZINC PRIMER	WATER BASED METAL PRIMER	BLACK ASPHALT PRIMER	ASPHALT EMULSION
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY							
A. ASPHALT PRIMER						X	
B. ASPHALT/COAL TAR COATING			X				
C. ASPHALT/COAL TAR CEMENT		X					
D. ASPHALT EMULSION							X
F. MODIFIED BITUMEN COATING OR CEMENT							
G. ELASTOMERIC COATING OR CEMENT (specify type)	CEMENT						
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES							
A. FIBRATED/NONFIBRATED	NONFIBRATED	FIBRATED	NONFIBRATED				FIBRATED
B. COLOR(S) AVAILABLE	WHITE, GRAY					BLACK	BLACK
C. SOLIDS CONTENT (% by volume)	50 ± 2		34 ± 2	45 ± 2	39		44
D. WEIGHT PER GALLON (lbs.)	10.5	8.4	7.6	11	10.1	7.3	8.6
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	1-2	4-6	1	2-4	1-2	4-6	4-6
F. COVERAGE (qals./square)	0.5	0.25	2.5	2.5	2.5	1-2	2-3
4. USES							
A. SURFACING							
1. BUILT-UP ROOFING			X				
2. COMPOSITE ROOFING			X				
3. MODIFIED BITUMEN ROOFING			X				
4. SINGLE-PLY ROOFING							
5. OTHER ROOFING	X		X				
B. PATCHING/REPAIRING							
1. BUILT-UP ROOFING		X					
2. COMPOSITE ROOFING		X					
3. METAL ROOFING	X	X					
4. OTHER ROOFING	X	X					
C. PRIMING							
1. BUILT-UP ROOFING						X	
2. CONCRETE/WOOD DECKS							
3. METAL				X	X		
D. FLASHING							
1. BUILT-UP ROOFING	X						
2. COMPOSITE ROOFING	X						
3. METAL ROOFING	X						
4. OTHER ROOFING	X						
E. RESATURATION/RESURFACING							
1. ASPHALT BUILT-UP ROOFING			X				X
2. COAL TAR BUILT-UP ROOFING			X				X
3. METAL ROOFING			X				X
4. OTHER ROOFING							
F. COLD-PROCESS ADHESIVE/LAP CEMENT							
1. COLD-PROCESS BUILT-UP ROOFING		X					
2. COLD-PROCESS MODIFIED BITUMEN ROOFING		X					
3. ROLL ROOFING (COATED SHEETS)							
4. SHINGLES, TILE, OTHER STEEP PRODUCTS							
G. LIQUID-APPLIED MEMBRANE							
1. NEW ROOFING							
2. REROOFING/MAINTENANCE			X				
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	TROWEL, BRUSH	TROWEL, BRUSH	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER		BRUSH, SPRAY, ROLLER
6. ROOF SYSTEM DESCRIPTION (or NA)							
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA	
SEE BUILT-UP ROOFING SECTION IF CHECKED							
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED							
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA	
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1984	1984	1984	1984	1984	1980	1970
8.1 FOR SALES INFORMATION, CONTACT:	SALES 800/321-0572	SALES 800/321-0572	SALES 800/321-0572	SALES 800/321-0572	SALES 800/321-0572	SALES 800/321-0572	SALES 800/321-0572
8.2 FOR TECHNICAL INFORMATION, CONTACT:							
9. SEE MEMBRANE APPENDIX IF CHECKED							

NA=not applicable

Roofing Cements and Coatings Part 1: General Information

UNIFLEX	UNIFLEX	UNIROOF CORPORATION	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS
ASPHALT EMULSION	BLACK PLASTIC	FORMFLEX	ROOFMATE	UNISEAL	ACRYLEX 300	ROOF SHIELD 60	BERM 500	BERM 600/UNITED 600	ELASTRON 858
X	X						X		
		ACRYLIC	ACRYLIC	EPOXY	ACRYLIC	ACRYLIC		ACRYLIC	BUTYL
NONFIBRATED BLACK 48 8.6 4-6 2-3	FIBRATED BLACK 30 10 1-2 0.25	NONFIBRATED MANY 4 1.5	60 11.8 2 2-4	20 8.4 0.50 0.33	38 10.2 0.50 0.40	60 11.5 2 2-3	60 12 4 3-5	55 11.5 2 1.5-2	TAN 60 4-6 3
			X X X X X			X X X X X		X X X	
		X							X
	X X X X	X					X X X		X X
				X X					
		X			X				
	X X X X	X X X X					X X X		
X							X X X X		
X									X X
	X X								
		X	X X				X X	X X	
BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
NA	NA		NA	NA	NA	NA	NA	NA	NA
NA	NA		NA	NA	NA	NA	NA	NA	NA
NA	NA		ROOF MATE BASE COAT, TOP COAT, & POLY-ESTER FABRIC	NA	NA	ROOF MATE BASE COAT, TOP COAT, & POLY-ESTER FABRIC	BERM 500, BERM 600, & POLYESTER FABRIC	BERM 500, BERM 600, & POLYESTER FABRIC	ELASTRON 858
USA 1970 SALES 800/321-0572	USA 1970 SALES 800/321-0572	USA 1985 D. KONSTAN 407/869-5110 D. KONSTAN 407/869-5110	USA 1973 B. MANN 800/541-4383 B. MANN 800/541-4383	USA 1993 B. MANN 800/541-4383 B. MANN 800/541-4383	USA 1993 B. MANN 800/541-4383 B. MANN 800/541-4383	USA 1988 B. MANN 800/541-4383 B. MANN 800/541-4383	USA 1990 B. MANN 800/541-4383 B. MANN 800/541-4383	USA 1990 B. MANN 800/541-4383 B. MANN 800/541-4383	USA 1965 B. MANN 800/541-4383 B. MANN 800/541-4383

Roofing Cements and Coatings Part 1: General Information

1. COMPANY NAME	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS
2. PRODUCT NAME	UNI-TILE SEALER	ALUMISEAL PRIMER	ADHERE-IT EPDM PRIMER	UNIBASE PRIMER
3.1 PRODUCT DESCRIPTION, GENERAL CATEGORY				
A. ASPHALT PRIMER				
B. ASPHALT/COAL TAR COATING				
C. ASPHALT/COAL TAR CEMENT				
D. ASPHALT EMULSION				
F. MODIFIED BITUMEN COATING OR CEMENT				
G. ELASTOMERIC COATING OR CEMENT (specify type)	EPOXY	URETHANE		ACRYLIC
3.2 PRODUCT DESCRIPTION, GENERAL FEATURES				
A. FIBRATED/NONFIBRATED				TRANS. GREEN
B. COLOR(S) AVAILABLE	15	55	5	
C. SOLIDS CONTENT (% by volume)		8.6-9.2	7	
D. WEIGHT PER GALLON (lbs.)	30 MIN.	1-2	20-30 MIN.	1
E. DRYING TIME (hours, 50% R.H. at 70° F. touch dry)	0.25-0.5	0.33	0.33-0.5	0.5-1
F. COVERAGE (gals./square)				
4. USES				
A. SURFACING				
1. BUILT-UP ROOFING				
2. COMPOSITE ROOFING				
3. MODIFIED BITUMEN ROOFING				
4. SINGLE-PLY ROOFING				
5. OTHER ROOFING	X			
B. PATCHING/REPAIRING				
1. BUILT-UP ROOFING				
2. COMPOSITE ROOFING				
3. METAL ROOFING	X			
4. OTHER ROOFING	X			
C. PRIMING				
1. BUILT-UP ROOFING				X
2. CONCRETE/WOOD DECKS	X			X
3. METAL	X	X		X
D. FLASHING				
1. BUILT-UP ROOFING				
2. COMPOSITE ROOFING				
3. METAL ROOFING				
4. OTHER ROOFING				
E. RESATURATION/RESURFACING				
1. ASPHALT BUILT-UP ROOFING				X
2. COAL TAR BUILT-UP ROOFING				X
3. METAL ROOFING	X	X		X
4. OTHER ROOFING	X	X	X	X
F. COLD-PROCESS ADHESIVE/LAP CEMENT				
1. COLD-PROCESS BUILT-UP ROOFING				
2. COLD-PROCESS MODIFIED BITUMEN ROOFING				
3. ROLL ROOFING (COATED SHEETS)				
4. SHINGLES, TILE, OTHER STEEP PRODUCTS				
G. LIQUID-APPLIED MEMBRANE				
1. NEW ROOFING				
2. REROOFING/MAINTENANCE				
5. APPLICATION METHOD(S) (BRUSH, CAULK, ROLLER, SPRAY, SQUEEGEE, TROWEL)	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
6. ROOF SYSTEM DESCRIPTION (or NA)				
A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA
SEE BUILT-UP ROOFING SECTION IF CHECKED				
B. MODIFIED BITUMEN MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA
SEE MODIFIED BITUMEN ROOFING SECTION IF CHECKED				
C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	UNI-TILE SEALER	ALUMISEAL	ADHERE-IT	UNIBASE
7.1 COUNTRY OF MANUFACTURE	USA	USA	USA	USA
7.2 YEAR OF FIRST COMMERCIAL USE	1970		1995	1996
8.1 FOR SALES INFORMATION, CONTACT:	B. MANN 800/541-4383	B. MANN 800/541-4383	B. MANN 800/541-4383	B. MANN 800/541-4383
8.2 FOR TECHNICAL INFORMATION, CONTACT:	B. MANN 800/541-4383	B. MANN 800/541-4383	B. MANN 800/541-4383	B. MANN 800/541-4383
9. SEE MEMBRANE APPENDIX IF CHECKED				

NA=not applicable

Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	ACRYMAX TECHNOLOGIES INC.	ACRYMAX TECHNOLOGIES INC.	ACRYMAX TECHNOLOGIES INC.	ACRYMAX TECHNOLOGIES INC.
2. PRODUCT NAME	ACRYMAX AF-130	ACRYMAX AF-130 FR	ACRYMAX ACM 9000	ACRYMAX AF-130 XT
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)	NO	YES	NO	
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)			TYPE III	
5. SEE MEMBRANE APPENDIX IF CHECKED				

1. COMPANY NAME	ACRYMAX TECHNOLOGIES INC.	ALCO-NVC, INC.	ALCO-NVC, INC.	ALCO-NVC, INC.
2. PRODUCT NAME	ACRYMAX AF-130 BC	#216 AF FLASHING CEMENT	#269T AF SBS TROWEL GR	#269 AF SBS PLUS ADHESIVE
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				CLASS A
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)		TYPE I	TYPE I	
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS
2. PRODUCT NAME	WET/DRY CEMENT, ASBESTOS FREE	FLASHTITE	FLASHTITE, ASBESTOS FREE	GLAS-MASTIC
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)		TYPE I, CLASS II		
5. SEE MEMBRANE APPENDIX IF CHECKED	TYPE I		TYPE I	TYPE I

1. COMPANY NAME	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS	ALUMINUM COATING MANU- FACTURERS
2. PRODUCT NAME	NEOPRENE RUBBER ROOF CEMENT	RUBBERIZED CEMENT	ASPHALT MASTIC TROWEL GRADE	ASPHALT MASTIC BRUSH GRADE
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)	TYPE II, CLASS II			
5. SEE MEMBRANE APPENDIX IF CHECKED		TYPE I		

Roofing Cements and Coatings Part 2: Technical Data

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY
2. PRODUCT NAME	# 1860 ALUMINUM ASPHALT COATING	# 1864 FIBERED ALUMI- NUM ASPHALT COATING	# 1866 PREMIUM FIBERED ALUMINUM	# 1868 PREMIUM ALUMINUM
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)	CLASS A, B CLASS A, B NO	CLASS A, B CLASS A, B NO	CLASS A, B CLASS A, B NO	CLASS A, B CLASS A, B NO
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				
5. SEE MEMBRANE APPENDIX IF CHECKED				

1. COMPANY NAME	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY
2. PRODUCT NAME	# 1870 SILVER SEAL	# 1931 ROOF PRIMER	# 4200 ELASTIC WHITE	# 4231 ELASTIC PRIMER
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY
2. PRODUCT NAME	FORTRESS FIBERED ASPHALT ROOF COATING	FORTRESS COLD PROCESS ADHESIVE	FORTRESS ASPHALT PRIMER	FORTRESS TAR COATING RESATURANT
3. FIRE RATINGS				
A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C)				
B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C)				
C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH:				
A. ASTM D 41–94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response)			YES	
B. ASTM D 43–94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING, DAMPROOFING, AND WATERPROOFING (yes or no response)				
C. ASTM D 1227–95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response)				
D. ASTM D 2823–90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response)				
E. ASTM D 4479–93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS–ASBESTOS-FREE (Type I, II, or no response)	TYPE I			
F. ASTM D 2824–85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response)				
G. ASTM D 2822–91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response)				
H. ASTM D 4586–93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response)				
I. ASTM D 3019–94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response)		TYPE III		
J. ASTM D 3409–93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response)				
K. ASTM D 4022–94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response)				
L. ASTM D 3747–95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response)				
M. ASTM D 1187–95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response)				
N. ASTM D 3468–90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				
5. SEE MEMBRANE APPENDIX IF CHECKED				

1. COMPANY NAME	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY	THE BREWER COMPANY
2. PRODUCT NAME	FORTRESS ASPHALT RESATURANT	FORTRESS ACRYLIC PRIMER	FORTRESS HEAVY DUTY NONFIBERED ASPH. EMULSION	FORTRESS HEAVY DUTY FIBERED ASPH. EMULSION
3. FIRE RATINGS				
A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C)				
B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C)				
C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH:				
A. ASTM D 41–94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response)				
B. ASTM D 43–94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response)				
C. ASTM D 1227–95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response)			TYPE III	TYPE IV
D. ASTM D 2823–90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response)				
E. ASTM D 4479–93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response)				
F. ASTM D 2824–85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response)				
G. ASTM D 2822–91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response)				
H. ASTM D 4586–93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response)				
I. ASTM D 3019–94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response)				
J. ASTM D 3409–93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response)				
K. ASTM D 4022–94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response)				
L. ASTM D 3747–95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response)				
M. ASTM D 1187–95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response)			TYPE I	TYPE I
N. ASTM D 3468–90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION
2. PRODUCT NAME	S.I.S. ADHESIVE	AWP ALL WEATHER PLASTIC CEMENT	SBS MODIFIED BITUMEN ADHESIVE	SBS MODIFIED BITUMEN FLASHING CEMENT
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)	CLASS A, B, C CLASS A, B, C YES	CLASS A, B, C CLASS A, B, C YES	CLASS A, B, C CLASS A, B, C YES	CLASS A, B, C CLASS A, B, C YES
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				
5. SEE MEMBRANE APPENDIX IF CHECKED				

1. COMPANY NAME	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION	THE CELOTEX CORPORATION
2. PRODUCT NAME	ALUMINUM ROOF COATING (FIBRATED)	ALUMINUM ROOF COATING (NONFIBRATED)	ELASTIGUM ROOF COATING	ASPHALT PRIMER
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)	CLASS A, B, C CLASS A, B, C YES		CLASS A, B, C CLASS A, B, C YES	CLASS A, B, C CLASS A, B, C YES
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)			YES	
5. SEE MEMBRANE APPENDIX IF CHECKED			TYPE I, II	

Roofing Cements and Coatings Part 2: Technical Data

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.
2. PRODUCT NAME	PRO ASPHALT EMULSION (NO FIBRE)	PRO LAP CEMENT	PRO SBS ADHESIVE	PRO SBS FLASHING CEMENT
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)	TYPE IV			
5. SEE MEMBRANE APPENDIX IF CHECKED		TYPE II, III	TYPE II, III	TYPE II, III

1. COMPANY NAME	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.
2. PRODUCT NAME	PRO NEO-SEAL NEOPRENE ROOF CEMENT	PRO ROOFLOX 300 ALUMINUM FIBRE COATING	PRO BRITE 200 ALUMINUM FIBRE COATING	PRO SILVER SHIELD 300 AL- UMINUM COAT- ING NO FIBRE
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)		TYPE III	TYPE III	TYPE I
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION
2. PRODUCT NAME	F400 ROOF PRIMER	F500, F525, F550 ALUMINUM COATING	F530 HEAT SHIELD ALUMINUM COATING	F600, F625, F650 FIBERED ALUMINUM COATING
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)	NO	CLASS A, B CLASS A, B NO	CLASS A, B CLASS A, B NO	CLASS A, B CLASS A, B NO
4. COMPLIES WITH: A. ASTM D 41–94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43–94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227–95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823–90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479–93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS—ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824–85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822–91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586–93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019–94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409–93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022–94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747–95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187–95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468–90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)	YES			
5. SEE MEMBRANE APPENDIX IF CHECKED				

1. COMPANY NAME	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION	FIELDS CORPORATION
2. PRODUCT NAME	F630 HEAT SHIELD FIBER-ED ALUMINUM COATING	F675 MOBILE HOME ALUMINUM COATING	F830 SUNSCREEN	F835 SNOWWHITE
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)	CLASS A, B CLASS A, B NO	CLASS A, B CLASS A, B	CLASS A, B CLASS A, B	CLASS A, B CLASS A, B NO
4. COMPLIES WITH: A. ASTM D 41–94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43–94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227–95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823–90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479–93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS—ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824–85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822–91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586–93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019–94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409–93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022–94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747–95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187–95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468–90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)	TYPE III	TYPE III		
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY
2. PRODUCT NAME	VITAPLY	GRAVITOP	GARLA-SHIELD	SUPERCOTE RUBERIZED
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				
5. SEE MEMBRANE APPENDIX IF CHECKED				

1. COMPANY NAME	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY	THE GARLAND COMPANY
2. PRODUCT NAME	WEATHER-KING FR TOPCOAT	WEATHER KING	GARLA BOND	FLASHING BOND
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.
2. PRODUCT NAME	GRUNDY PLASTIC CEMENT WET SURFACE (AF)	GRUNDY FLASHING CEMENT	GRUNDY NO. 22 FLASHING CEMENT (AF)	GRUNDY NO. 22 ELASTOMERIC CEMENT (AF)
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)		TYPE I, CLASS I		
	TYPE I		TYPE I	TYPE I
	YES		YES	YES
5. SEE MEMBRANE APPENDIX IF CHECKED				

1. COMPANY NAME	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.
2. PRODUCT NAME	GRUNDY COLD-APPLIED CEMENT	GRUNDY COLD-APPLIED CEMENT (AF)	GRUNDY FIBRE ROOF COATING	GRUNDY FIBRE ROOF COATING (AF)
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				
	TYPE I		TYPE I	
		TYPE I		TYPE I
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.
GRUNDY NONFIBRE ROOF COATING	GRUNDY ASPHALT CONCRETE PRIMER	GRUNDY ASPHALT BU 68 RESATURANT	GRUNDY ASPHALT BU 68 RESATURANT (AF)	GRUNDY FIBRE ROOF MASTIC TYPE II	GRUNDY FIBRE ROOF (AF) MASTIC TYPE II	GRUNDY PLYGRIP M.B. ADHESIVE	GRUNDY a1MB-AF ALUMINUM COATING	GRUNDY #200 FIBRE ALUMINUM ROOF COATING	GRUNDY #220 NONFIBERED ALUMINUM ROOF COATING
						CLASS A	CLASS A CLASS B		
	YES								
		TYPE I		TYPE II					
			TYPE I		TYPE II	TYPE II			
							TYPE III	TYPE III	TYPE I
TYPE I, GRADE 2									
						X	X		

GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	GRUNDY INDUSTRIES INC.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.
GRUNDY NO. 20 F AF EMULSION	GRUNDY NO. 20 NF EMULSION	GRUNDY NO. 120 ALUMINUM ROOF EMULSION	GRUNDY NO. 2415 WHITE ROOF COATING	BOARDLOCK #222	#204 PLASTIC ROOF CEMENT	#209 ELASTOMASTIC	#289 ELASTOCAULK	#200 COLD-PRO	#203 COLD-AP
CLASS A	CLASS A	CLASS A						CLASS A	CLASS A
	TYPE III								
TYPE IV									
					TYPE I, CLASS I				
									TYPE III
				TYPE I					
X									

Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.
2. PRODUCT NAME	#403 SPRAY-GRADE COLD-AP	#100 ELASTO- MULSION	#107 ASPHALT EMULSION	#307 FIBRATED ASPHALT EMULSION
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATINGS(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)	CLASS A		CLASS A	CLASS A
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND <i>CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING</i> (Grade 1 or 2, Type I; Type II; or no response)			TYPE III	TYPE IV
5. SEE MEMBRANE APPENDIX IF CHECKED				

1. COMPANY NAME	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.
2. PRODUCT NAME	#120 PREMIUM ALUMINUM	#201 FIBERED ASPHALT COATING	#220 FIBERED ALUMINUM COATING	#229 ALUMINUM EMULSION
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATINGS(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)			CLASS A	CLASS A
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND <i>CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING</i> (Grade 1 or 2, Type I; Type II; or no response)	TYPE I	TYPE I	TYPE II	
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	INSULATING COATING CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION
#520 FIBERED ALUMINUM COATING	#280 PREMIUM WHITE ELASTOMERIC	#287 SOLARFLEX	#104 ASPHALT PRIMER	#111 INSULBOND	ASTEC	# 19 FLASHING CEMENT	# 19AF FLASHING CEMENT	#66AF MODIFIED BITUMEN ADHESIVE	# 71AF ROOF COATING
CLASS A	CLASS A	CLASS A			CLASS A CLASS A YES				
				X					

[illegible]

Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION
2. PRODUCT NAME	# 505AF ELASTO-BRITE-M	# 96 AF ELASTOMERIC PRIMER	# 298AF ALUMIN-R ELASTOMERIC ALUMINUM	#2 AF RENU-TOP EMULSION
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				TYPE IV
5. SEE MEMBRANE APPENDIX IF CHECKED				

1. COMPANY NAME	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION	KARNAK CORPORATION
2. PRODUCT NAME	# 73 AF PROTECTIVE COATING	# 81AF MODIFIED BITUMEN ADHESIVE	# 97 FIBERED ALUMINUM	# 97AF FIBERED ALUMINUM
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)			TYPE III	TYPE III
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

KARNAK CORPORATION	KARNAK CORPORATION	KEMPER SYSTEMS, INC.	KOKEM PRODUCTS INC.	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS
# 100AF NONFIBERED EMULSION	#107AF VELVET ROOF COATING	KEMPEROL	SUNGUARD	PRIMER	GEL	BASE	ACRYLIC WHITE	ACRYLIC GRAY	ACRYLIC STORM CLOUD
		CLASS A	CLASS A, B	CLASS A CLASS A	CLASS A CLASS A	CLASS A CLASS A	CLASS A CLASS A	CLASS A CLASS A	CLASS A CLASS A
				YES	NO	NO	NO		
TYPE III									
TYPE II									
		X							

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	MONSEY/ BAKOR	MONSEY/ BAKOR	MONSEY/ BAKOR	MONSEY/ BAKOR
2. PRODUCT NAME	METALSHIELD ELASTOMERIC ROOF COATING WHITE	METALSHIELD FLASHING COMPOUND	PREMIUM UNFIBERED ROOF COATING	PREMIUM FIBERED ROOF COATING
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)	CLASS A YES			
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				TYPE I
5. SEE MEMBRANE APPENDIX IF CHECKED				

1. COMPANY NAME	MONSEY/ BAKOR	MONSEY/ BAKOR	MONSEY/ BAKOR	MONSEY/ BAKOR
2. PRODUCT NAME	BLIND NAILING/ COLD METHOD CEMENT/ROOF ADHESIVE	ELASTIC ROOF SEALER	#227 PRO GRADE ASBESTOS- FREE FLASH- ING CEMENT	#226 PRO GRADE ASBESTOS- FREE PLASTIC ROOF CEMENT
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)		TYPE 1, CLASS 1, 2	TYPE I	TYPE I
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY
2. PRODUCT NAME	BULLDOG HEAVY DUTY FLASHING CEMENT ASBESTOS FREE	BULLDOG PLASTIC ROOF CEMENT	BULLDOG CAP SHEET COMPOUND	BULLDOG CAP SHEET COMPOUND ASBESTOS FREE
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)		TYPE I, CLASS I		
5. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X

1. COMPANY NAME	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY
2. PRODUCT NAME	BULLDOG WET SURFACE ROOF CEMENT	BULLDOG WET SURFACE ROOF CEMENT ASBESTOS FREE	BULLDOG DOUBLE COVERAGE	BULLDOG DOUBLE COVERAGE CEMENT ASBESTOS FREE
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING, DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)	TYPE I, CLASS II	TYPE I	TYPE II	TYPE III
5. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	X

Roofing Cements and Coatings Part 2: Technical Data

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	PALMER ASPHALT COMPANY	POLAR SEAL
2. PRODUCT NAME	BULLDOG COAL TAR ROOF RESATURANT	BULLDOG COAL TAR ROOF CEMENT	BULLDOG COLD PROCESS COATING	POLAR SEAL PRIME SECURITY
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				
5. SEE MEMBRANE APPENDIX IF CHECKED	X	X	X	

1. COMPANY NAME	POLAR SEAL	REPUBLIC POWDERED METALS INC.	REPUBLIC POWDERED METALS INC.	REPUBLIC POWDERED METALS INC.
2. PRODUCT NAME	POLAR SEAL TOP SECURITY	SOLAR GARD	PERMAROOF	PERMAFLEX
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				TYPE II
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	R.M. LUCAS CO.	R.M. LUCAS CO.	R.M. LUCAS CO.	R.M. LUCAS CO.
2. PRODUCT NAME	NO. 010 TAR-BASE RESATURANT	NO. 071 TAR-BASE PLASTIC ROOF CEMENT	NO. 079 TAR-BASE PLASTIC WET SURFACE	NO. 736 ELAS- TOMERIC MOD. BIT. ADHESIVE BRUSH
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				TYPE I, GRADE 2
5. SEE MEMBRANE APPENDIX IF CHECKED				

1. COMPANY NAME	R.M. LUCAS CO.	SOMAY PRODUCTS, INC.	SOMAY PRODUCTS, INC.	SOMAY PRODUCTS, INC.
2. PRODUCT NAME	NO. 766 ELAS- TOMERIC MOD. BIT. ADHESIVE TROWEL	#842-01 ROOF MASTIC	#7751 PRIME & SEAL	#992 PATCH & SEAL
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				TYPE I TYPE III, GRADE 2
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC
2. PRODUCT NAME	TAM-PRO FIBERED ROOF COATING	TAM-PRO COLD- APPLICATION CEMENT	TAM-PRO WET OR DRY SUR- FACE PLASTIC ROOF CEMENT	TAM-PRO HEAVY-BODIED FLASHING CEMENT
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)	TYPE I		TYPE I	TYPE I
		TYPE III	YES	YES
5. SEE MEMBRANE APPENDIX IF CHECKED				

1. COMPANY NAME	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC	TAMKO ROOFING PRODUCTS INC
2. PRODUCT NAME	TAM-PRO FIBERED ALUMINUM ROOF COATING	TAM-PRO NONFIBERED ALUMINUM ROOF COATING	TAM-PRO FIRE- RATED (FR) FI- BERED ALUM. ROOF COATING	TAM-PRO CPA SBS ADHESIVE
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)			CLASS A	CLASS A
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATER-PROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)	TYPE III	TYPE I	TYPE III	TYPE II
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	TOPCOAT, DIVISION OF MAJOR GROUP, INC.	TOPCOAT, DIVISION OF MAJOR GROUP, INC.	TOPCOAT, DIVISION OF MAJOR GROUP, INC.	TOPCOAT, DIVISION OF MAJOR GROUP, INC.
2. PRODUCT NAME	FLASHING GRADE	MP-300	MB-PRIMING SYSTEM	FLEXSEAL
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)	CLASS A CLASS A YES	CLASS A CLASS A YES	CLASS A CLASS A YES	CLASS A CLASS A NO
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATERPROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATERPROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND <i>CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING</i> (Grade 1 or 2, Type I; Type II; or no response)				
5. SEE MEMBRANE APPENDIX IF CHECKED				

1. COMPANY NAME	TOPCOAT, DIVISION OF MAJOR GROUP, INC.	TOPCOAT, DIVISION OF MAJOR GROUP, INC.	TOPCOAT, DIVISION OF MAJOR GROUP, INC.	TREMCO, INC.
2. PRODUCT NAME	SB-900 FLASHING	SKYLITE	ONESTEP PRIMECOAT	ELS
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)	CLASS A CLASS A NO	CLASS A CLASS A NO		
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATERPROOFING</i> (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. <i>DAMP-PROOFING, AND WATERPROOFING</i> (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS- <i>FREE</i> (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT <i>TO DAMP, WET, OR UNDERWATER SURFACES</i> (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR <i>ADHERING ROOF INSULATION</i> (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND <i>CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING</i> (Grade 1 or 2, Type I; Type II; or no response)				
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

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Roofing Cements and Coatings Part 2: Technical Data

1. COMPANY NAME	UNIFLEX	UNIFLEX	UNIFLEX	UNIFLEX
2. PRODUCT NAME	UNIFLEX 100 ALUMINUM	LO-VOC ALUMINUM (10 YEAR)	ACRYLIC PATCH CEMENT	ALUMINUM PATCH CEMENT
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				
5. SEE MEMBRANE APPENDIX IF CHECKED				

1. COMPANY NAME	UNIFLEX	UNIFLEX	UNIFLEX	UNIFLEX
2. PRODUCT NAME	SUPERBRITE ALUMINUM PAINT	RED ZINC PRIMER	WATER BASED MATAL PRIMER	BLACK ASPHALT PRIMER
3. FIRE RATINGS A. UL CLASSIFICATION(S) AS A PART OF ANY ROOFING SYSTEM PER ANSI/UL 790 (Class A, B, and/or C) B. FIRE RATING(S) AS A PART OF ANY ROOF SYSTEM PER ASTM E 108 (Class A, B, and/or C) C. FM CLASS 1 FIRE RATING AS A PART OF ANY ROOF SYSTEM (yes/no)				
4. COMPLIES WITH: A. ASTM D 41-94 STANDARD SPECIFICATION FOR ASPHALT PRIMER USED IN ROOFING. DAMPPROOFING, AND WATERPROOFING (yes or no response) B. ASTM D 43-94 STANDARD SPECIFICATION FOR COAL TAR PRIMER USED IN ROOFING. DAMPPROOFING, AND WATERPROOFING (yes or no response) C. ASTM D 1227-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT USED AS A PROTECTIVE COATING FOR BUILT-UP ROOFING (Type I, II, III, IV, or no response) D. ASTM D 2823-90 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS (Type I, II, or no response) E. ASTM D 4479-93 STANDARD SPECIFICATION FOR ASPHALT ROOF COATINGS-ASBESTOS-FREE (Type I, II, or no response) F. ASTM D 2824-85 STANDARD SPECIFICATION FOR ALUMINUM-PIGMENTED ASPHALT ROOF COATINGS, NON-FIBERED, ASBESTOS FIBERED, AND FIBERED WITHOUT ASBESTOS (Type I, II, III, or no response) G. ASTM D 2822-91 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT (Type I and Class I or Class II, or Type II and Class I OR II, or no response) H. ASTM D 4586-93 STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS FREE (Type I, II, or no response) I. ASTM D 3019-94 STANDARD SPECIFICATION FOR LAP CEMENT USED WITH ASPHALT ROLL ROOFING ROOFING, NON-FIBERED, ASBESTOS FIBERED, AND NON-ASBESTOS FIBERED (Grade 1 or 2, Type I; Type II; Type III; or no response) J. ASTM D 3409-93 STANDARD TEST METHOD FOR ADHESION OF ASPHALT-ROOF CEMENT TO DAMP, WET, OR UNDERWATER SURFACES (yes or no response) K. ASTM D 4022-94 STANDARD SPECIFICATION FOR COAL TAR ROOF CEMENT (yes or no response) L. ASTM D 3747-95 STANDARD SPECIFICATION FOR EMULSIFIED ASPHALT ADHESIVE FOR ADHERING ROOF INSULATION (Type I, II, or no response) M. ASTM D 1187-95 STANDARD SPECIFICATION FOR ASPHALT-BASE EMULSIONS USED AS PROTECTIVE COATINGS FOR METAL (Type I, II, or no response) N. ASTM D 3468-90 STANDARD SPECIFICATION FOR LIQUID-APPLIED NEOPRENE AND CHLOROSULFONATED POLYETHYLENE USED IN ROOFING AND WATERPROOFING (Grade 1 or 2, Type I; Type II; or no response)				
5. SEE MEMBRANE APPENDIX IF CHECKED				

Roofing Cements and Coatings Part 2: Technical Data

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Appendix, Roofing Cements and Coatings

ACRYMAX TECHNOLOGIES, INC.

AcryMax AF-130 series coatings are formulated for specific purposes and are differentiated by the suffix at the end of the AF-130 designations. For example, AF-130 BC designates a base coat formulation and AF-130 FR designates a fire-retardant version. All AF-130 series coatings are based on 100 percent acrylic technology.

THE BREWER COMPANY

Fortress Tar Roof Cement conforms to ASTM D 5643-94 *Standard Specification for Coal Tar Roof Cement, Asbestos Free*.

ERSYSTEMS

HER 202: For sealing metal roof systems, fasteners and penetrations is available as a brushable flashing grade (FG) version and the extrudable (EX) version for rapidly pumping and placement of the product along seams. The products differ only in viscosity and thixotropy.

HER 202 is used as the metal roof sealer in both the polyurethane system (polyurethane metal primer and finish coat) and the acrylic system (acrylic metal primer and finish coat).

Eraguard 1100: is a 100% acrylic based coating, identical to Eraguard 1000, and filled with fibers to allow thicker placement on vertical or other steep surfaces without sag and with uniform drying capability.

GRUNDY INDUSTRIES, INC.

PlyGrip Modified Bitumen Adhesive achieves a UL Class A rating as an alternative to hot mopping asphalt for adherence of base/ply and/or SBS modified bitumen membranes for many roofing systems classifications. When using PlyGrip with SBS modified bitumen products, obtain the membrane manufacturer's approval before proceeding.

a1MB-AF applied at a rate of 1 to 2 gallons per square provides a UL Class A rating over BUR and numerous modified bitumen membranes. Contact Grundy Industries for a complete listing of approved manufacturers (800/435-1210).

HENRY COMPANY

#111 InsulBond Roof Insulation Adhesive is a solvent-free rubberized asphalt emulsion formulated for laminating solvent-sensitive polystyrene foam board and adhering it to a variety of overlay boards and substrates. It is ideal for tapered insulation systems. InsulBond exceeded FM I-90 wind uplift requirements in tests at an independent laboratory.

KEMPER SYSTEMS, INC.

Kemperol is an extremely durable fluid-applied polyester resin and polyester fabric-reinforced monolithic membrane. The unsaturated polyester resin offers resistance to ultraviolet and to most chemicals and bonds to most substrate materials, including concrete, metals, wood, glass, plastics, and existing roofing. The fully adhered, seamless, and inert system is rot- and rootproof. Twenty-year warranties are available when Kemperol is applied by trained and certified contractors.

PALMER ASPHALT COMPANY

All Palmer Asphalt Company Bulldog fibrated asphalt products, including those for which there is no applicable standard, are available in both asbestos-containing and asbestos-free formulations.

Generally, all trowel-grade materials dry to touch in the indicated time but remain soft and pliable underneath the dry outside film for a longer period.

Information provided with respect to solids content, weight per gallon,

drying time, and coverage for all products are typical rather than specific.

Some products listed in Part 2 Technical Data conform to ASTM standards even though the form may not so indicate.

Section 3

***Roof Membrane
Warranties***

Introduction

The warranty section of the *Commercial Low-Slope Roofing Materials Guide* provides information on warranties offered by materials manufacturers applicable to their built-up, modified bitumen, and single-ply membrane products listed in the *Guide*. The information is derived from two sources: an examination of the warranty or guarantee document itself and the manufacturer's responses to a questionnaire sent by NRCA.

All manufacturers with the referenced categories of membrane products appearing in the *Guide* are invited to submit their warranties for examination and listing. Those without warranty listings have elected not to participate.

For each warranty, there are 27 categories, or items, of information listed. The information provided in the following categories was obtained by an examination of the document itself:

No. Item of Information

- 1 Identity of issuing entity
- 4 Scope of coverage
- 6 Nature of remedy
- 8 Notification requirements
- 9 Exclusive or additional remedy
- 10 Inclusion of consequential damages
- 11 Determination of warranty applicability
- 12 Specific exclusions from coverage
- 14 Specific conditions to make warranty ineffective or null and void
- 25 Assignability
- 26 Special features/conditions
- 27 Executed by owner

In addition, information in the following categories was provided by the manufacturer in response to a questionnaire accompanying the warranty document:

No. Item of Information

- 2 Title, original publication date, and identifying symbol (if any)
- 3 Product specification or system covered
- 5 Length of coverage
- 13 Wind coverage/exclusion
- 15 Cost to obtain
- 16 Minimum charge
- 17 Ineligible structures or building uses
- 18 Pre-construction notice and approval requirements
- 19 Approved, authorized, or licensed contractor
- 20 Job inspection policy
- 21 Contractor's post-installation obligation

- 22 Backed by named insured or surety company
- 23 Issuing entity manufacturers and/or sells products
- 24 Conditions for renewal or extension

In response to this information, NRCA endeavors to prepare an accurate, comprehensive, and objective listing for each warranty submitted by a manufacturer. Generally, a separate listing is generated for each document; sometimes, however, a manufacturer uses the same warranty document to cover different roofing systems, specifications, or products, and, in addition, the lengths of coverage, the cost to obtain it, the minimum charge, or the monetary limitations vary. In such cases, there may be more than one listing for a particular warranty reflecting these differences.

A blank space appears for a category of information if the relevant data is not provided by a manufacturer. Brackets ([]) are used in listings to indicate information that a manufacturer feels is pertinent but that may not be contained in the document or at least was not apparent to NRCA in its review. In effect, the use of bracketed statements provides a means for manufacturers to disagree with the analysis made of the document by NRCA; in some instances, these statements may even contradict NRCA's conclusions concerning the import of language in a warranty.

It should be noted that the name of the manufacturer as it appears in Item 1 Identity of Issuing Entity may not necessarily be identical to or even the same as the one listed in the membrane index or elsewhere in the membrane section. This is because the name appearing in the warranty section is the name of the entity *appearing in the warranty document itself*. For example, if a manufacturer changes its corporate name but does not change a warranty document that bore its original name, the original will appear in the warranty section. Or if one company purchases the assets of another, upon request NRCA simply moves the products of the acquired company under the name of the company that acquired it. In the warranty section, on the other hand, this may not be possible: until warranty documents bearing the new corporate name are provided NRCA, the name of the entity must remain as it appears in the documents. An explanation of such situations is sometimes provided in a footnote in the warranty section in order to clarify an apparent discrepancy in corporate names.

By necessity, the warranty listings in the *Guide* present rather succinctly a great deal of information contained in the manufacturers' warranties, as well as the policies surrounding them. For this reason, the reader should obtain and examine the warranty document itself, discuss additional questions with a representative of the party issuing the warranty, and obtain professional advice

from counsel when desired. A warranty has significant legal consequences: therefore, all parties should understand the document at the outset of a construction project to preclude subsequent misunderstandings.

The warranty section of the *Commercial Low-Slope Roofing Materials Guide* is prepared by the firm of Hendrick, Phillips, Schemm & Salzman, Atlanta, Ga., in coordination with NRCA staff.

Understanding the Warranty Listing

Following are descriptions of the kind of data that is contained in the 27 categories of information included in each warranty listing.

1. Identity of issuing entity This is the name of the legal entity that issues and is obligated to honor the warranty document. In most instances, this entity is the manufacturer of the product covered by the warranty (but see the explanation of Item 23 for more information in this regard).

2. Title, original publication date, and identifying symbol (if any) The title listed is the title printed on the warranty document. The original publication date is the date that the manufacturer first promulgated the warranty form; the document may subsequently be reprinted in the exact same form. Some manufacturer's warranties contain an identifying symbol, or code, that is frequently a combination of numbers and letters, usually in the bottom right-hand or left-hand corner of the document. This identifying symbol indicates the precise document that was reviewed by NRCA. (For the reader to be certain that the warranty document he has in his possession is the same one listed in the *Guide*, the title of the document and the identifying symbol, if any, should match exactly.)

3. Product, specification, or system covered This is an enumeration of the manufacturer's products, roof specifications, or roofing systems that are covered by the warranty. If properly updated by the manufacturer, the reader should be able to identify these products or specifications in the various product listings in the membrane section.

4. Scope of coverage In most instances, the initial portion of this entry will be either *material and workmanship* or *material only*.* (*Material and workmanship* indicates that the warranty covers both a defect in the materials supplied by the manufacturer and a deficiency in the workmanship of the applicator. The term *workmanship* refers to the workmanship of the contractor and is meant to indicate whether improper or defective workmanship on the part of the roofing contractor/appli-

cator is encompassed under the manufacturer's warranty.) After this entry is made, ensuing information supplied in this category usually corresponds to the language used in the warranty document. Virtually all roof membrane warranties provide only for repairs to leaks, regardless of whether they cover materials only or materials and workmanship.

***Note:** *If the manufacturer's warranty covers defective material and the remedy includes replacement of the defective material plus labor necessary to replace that defective material with the new material, but the warranty does not state that a leak caused by improper application of the roofing applicator is covered, the initial entry under scope of coverage will not state material and workmanship. The fact that the manufacturer will provide the labor necessary to replace defective material is covered under Item 6 Nature of Remedy.*

5. Length of coverage This is the number of years for which the manufacturer will issue the warranty. In most instance, this period commences upon the completion of the roof installation or final inspection and approval by the manufacturer. In a few instances, particularly in the cases of material-only warranties, the coverage period may begin at the time of sale or invoice date.

6. Nature of remedy This heading states what action the manufacturer will take in the event that there is a problem with the roof covered under the warranty. The language used in this category generally parallels that appearing in the warranty document. For most roof membrane warranties, the remedy provided is the repair of leaks.

7. Monetary limitations The information provided for this category indicates whether the warranty contains a monetary limitation of the manufacturer's obligation under its warranty. The phrase *none stated* indicates that there is no monetary limitation stated in the document, meaning that the manufacturer is obligated to spend whatever sum is necessary in order to honor its warranty. Although most commercial roofing warranties in use today do not contain specific penal sum limitation (as historically was included in roofing bonds offered by roofing materials manufacturers and their sureties), many warranties limit the manufacturer's liability over the life of the warranty to the owner's original cost of the installed roof system. Some warranties, particularly material-only ones, are limited to the original purchase price of the materials; others are limited to a particular per-square amount based on the size of the roof. The existence of or the amount of a monetary limitation may be dependent upon the specific manufacturer's specification or product used. If the manufacturer prorates the maximum amount available over the life of the warranty, prorating information is

included as well. The prorating is usually expressed in terms of a percentage available in the later years of a roof warranty.

8. Notification requirements In this category is information concerning the action that an owner or other claimant is to take in order to make a warranty claim; of particular importance is the prescribed time period in which a leak or defect is to be reported to the manufacturer. If the warranty contains specific notification requirements, they are set forth here. Most warranties require that claimants provide the manufacturer with written notice of a warranty claim within 30 days of the discovery of a leak or purported defect. Some warranties require notice within 10 days and/or that written notice be sent by registered or certified mail.

9. Exclusive or additional remedy Under general legal principles, unless the warranty document specifically excludes other warranties and remedies that may be available to the owner and the owner agrees to be bound by the warranty terms, the rights and remedies set forth in the warranty document are in addition to those warranties, rights, and remedies that may be available to the owner or other claimant under state statutory or common law. In addition to providing an owner with specific rights, warranty documents are frequently used as a liability-limiting device so that the liability of the party issuing the warranty is limited to what is prescribed in the warranty document. If the warranty states that it is an exclusive warranty and is issued in lieu of all other warranties, the claimant may not be entitled to seek recovery from the manufacturer based on the breach of any other warranties, express or implied.

The manufacturer's warranty may exclude or seek to exclude the implied and express warranties established by the Uniform Commercial Code (UCC). The UCC, as adopted in most states, provides that a warranty is implied in a contract for the sale of goods that the goods shall be merchantable if the seller is a merchant of goods of that kind. To be merchantable goods must be fit at least for the ordinary purposes for which such goods are used, must conform to the promises or affirmations made on the container or label, and must pass without objection in the trade under the contract description. An implied warranty of fitness for particular purpose is created under the UCC when the seller at the time of contracting has reason to know any particular purpose for which the goods are required and that the buyer is relying on the seller's skill or judgment to select or furnish suitable goods.

In addition to those implied warranties, the UCC provides that express warranties are created when the seller (1) makes an affirmation of fact or promise to the buyer that relates to the goods and becomes a part of the basis of the bargain; (2) gives a description of the goods

that is made part of the basis of the bargain; (3) provides a sample or model of the goods that is made a part of the basis of the bargain.

UCC implied warranties may be excluded in accordance with the requirements set forth in the Uniform Commercial Code.

In addition to seeking to make the warranty an exclusive warranty, a manufacturer's warranty may seek to limit the other remedies that the law would otherwise make available to a claimant. A warranty that states that it is the owner's exclusive remedy might limit the claimant's rights to the terms of the warranty and preclude a claim based on another legal theory of liability. Some warranty documents state that remedy provided in the warranty is the owner's "sole and exclusive remedy" and is the manufacturer's sole liability and obligation in the event of a roof problem regardless of whether the owner might otherwise be entitled to pursue a legal claim for breach of contract, negligence, or another legal theory of recovery.

The purpose of the category Exclusive or Additional Remedy is to give the reader an indication as to how the manufacturer's warranty may impact other warranties and remedies that may be available to an owner. The phrase *excludes UCC warranties* in this category means that it appears that the warranty document complies with the UCC requirement to exclude warranties established under the Uniform Commercial Code.

10. Inclusion of consequential damages The word *no* in this category indicates that the warranty does not have cover consequential damages that may result from a roof leak, such as damage to the interior of the building. The majority of roof warranties expressly exclude consequential damages.

11. Determination of warranty applicability Some warranties state explicitly that the manufacturer has the right to determine whether a leak is covered or excluded from warranty coverage. The entry *manufacturer's determination* indicates that manufacturer reserves to itself the right to determine whether a leak is covered or excluded from warranty coverage. Under these circumstances, the manufacturer's determination may be binding, even if it is erroneous and regardless of whether other parties disagree, provided that the manufacturer's determination was made in good faith.

If the entry in this category states *neutral (no provision)*, the manufacturer's warranty does not contain an explicit provision giving it the right to determine whether the warranty is or is not applicable to a problem. In the event of a dispute concerning the warranty's applicability, a neutral party would ultimately decide whether the warranty is applicable in this case.

12. Specific exclusions from coverage Most roofing warranties state that leaks resulting from certain enumerated causes (e.g., natural disasters tornadoes, abuse or misuse) will not be covered. A numeric code is used in this category to reference specific exclusions from coverage, a key for which is provided below. The list of specific exclusions is a compilation of those appearing in warranty documents submitted to NRCA; the language appearing in the index is not necessarily the exact language appearing in a specific warranty document, but it reflects the same exclusion.

The absence of a specific exclusion from coverage does not necessarily mean that a warranty will be applicable to a condition or occurrence not specifically excluded. The applicability of the warranty will generally be determined from the information contained under the category Scope of Coverage.

Index of Specifically Enumerated Exclusions from Coverage

1. Natural disasters and acts of God (lightning, tornadoes, earthquakes)
2. Hail
3. Acts of negligence, abuse or misuse, accidents, vandalism, civil disobedience, war
4. Damage by structural failure, settlement, movement, distortion, warpage, displacement of structure
5. Failure of the material and/or metal work not supplied by the manufacturer issuing the warranty; movement of metal work
6. Repairs or alterations of roof or installation of structures, fixtures, or utilities on or through roof without prior approval of manufacturer
7. Defects in, failure or improper application of, roof insulation, roof deck, or any other underlying surface of material used as a base over which the roof is applied
8. Change in usage of building without prior written approval of manufacturer
9. Traffic or storage of materials on roof
10. Moisture entering roof system through walls, copings, or any part of the building structure, including from adjacent building
11. Damage resulting from lack of positive, proper, or adequate drainage; ponding on roof
12. Negligence or failure of owner to use reasonable care in maintenance of roof or failure to follow manufacturer's maintenance specifications

13. Environmental fallout, chemical attack or use within building of commercial or industrial solvents, acids, caustic fluids, oils, waxes, greases, absorbent clays, or plasticizers
14. Discoloration or change in usual appearance due to acceleration or streaking of dirt or other airborne material
15. Repairs performed or materials furnished by others in correcting leaks unless specifically authorized and approved by manufacturer; unauthorized repairs; roof maintenance for corrections other than leaks
16. Fire
17. Faulty construction or design of building, including parapet walls, copings, chimneys, skylights, vents, or of roof deck
18. Contaminants that have not been approved first or accepted by manufacturer; exposure to or contact with damaging substances on deteriorating substances or agents
19. Defects or failure caused by misapplication of materials or by application not in strict adherence with roofing specification, application instructions, and approved practices
20. Installation of roofing membrane
21. Abnormal climatic conditions
22. Infiltration or condensation of moisture in or through underlying area; vapor condensation beneath the roof
23. Damages caused by falling objects
24. Acts of parties other than manufacturer or authorized roofing contractor
25. Penetration of the roof membrane by vegetation

13. Wind coverage/exclusion The purpose of this category is to convey the manufacturer's policy in regard to whether damage to the roof caused by wind is covered under the warranty. The information presented is based upon an examination of the warranty document to determine if it addresses the issue of leaks, damages, or conditions resulting from wind and the manufacturer's response to a questions concerning this issue.

Many manufacturers' warranties list either gales, strong gales, wind storms, and/or hurricanes and tornadoes as examples of natural disasters or acts of God that are specifically excluded from warranty coverage. This information is covered in the first sentence under the Wind Coverage/exclusion category. In order to provide more specific, affirmative information regarding the

manufacturer's policy concerning wind coverage, NRCA asks manufacturers to identify the wind speed that is covered by each of their warranties or to state that the warranty does not cover damage to the roof caused by wind regardless of speed—meaning that any damage resulting from wind, even at extremely low speeds, is excluded from warranty coverage.

NRCA references the Beaufort Scale in its questions to manufacturers concerning wind speed. The Beaufort Scale rates winds on a scale of 1 to 12 and utilizes widely accepted definitions, as shown below.

The second sentence under the Wind Coverage/exclusion category, based on NRCA's questions, indicates what speeds, if any, the manufacturer covers. If NRCA believes that the manufacturer's response is potentially inconsistent with the wind exclusions stated in the warranty or creates an ambiguity, the manufacturer's response is included in brackets. If the warranty document does not address the subject of wind, the informa-

tion is based exclusively upon the manufacturer's response to the NRCA wind questions. If the manufacturer does not respond to the wind questions but the warranty addresses the subject of wind, the information is based exclusively on an examination of the warranty document. If the category remains blank, the warranty does not address the wind issue and the manufacturer did not respond to the wind questions.

14. Specific conditions to make warranty ineffective or null and void In addition to excluding warranty coverage for leaks resulting from specifically enumerated exclusions, manufacturers' warranties may provide that the entire warranty is ineffective or null and void under certain conditions. Unlike the category Specific Exclusions from Coverage, Category 14 refers to those conditions stated in the warranty document that will make the warranty null and void or ineffective in its entirety, as opposed to simply not being responsive to a particular leak.

Beaufort Scale			
Beaufort Number	International Description	Miles per Hour	Specification
0	calm	less than 1	calm; smoke rises vertically
1	light air	1-3	direction of wind shown by smoke but not by wind vanes
2	light breeze	4-7	wind felt on face; leaves rustle; ordinary vane moved by wind
3	gentle breeze	8-12	leaves and small twigs in constant motion; wind extends light flag
4	moderate breeze	13-18	raises dust and loose paper; small branches are moved
5	fresh breeze	19-24	small trees in leaf begin to sway; crested wavelets form on inlet islands
6	strong breeze	25-31	large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty
7	moderate (or near) gale	32-38	whole trees in motion; inconvenience in walking
8	gale (or fresh gale)	39-46	breaks twigs off trees; generally impedes progress
9	strong gale	47-54	slight structural damage occurs
10	storm (or whole gale)	55-63	trees uprooted; considerable damage occurs
11	violent storm	64-72	accompanied by widespread damage
12	hurricane	73*-136	devastation occurs

* The U.S. uses 74 statute mph as the speed criterion for hurricanes.

For example, a warranty may indicate that repairs, alterations, or additions without the prior approval of the manufacturer make the warranty null and void; this differs from the statement that a leak resulting from a repair or alteration not previously approved by the manufacturer is excluded, or not covered, under the warranty. An alphabetic code is used in this category to reference speci-

fic conditions to make warranty ineffective or null or void, a key for which is provided below. The list of specific conditions is a compilation of conditions that appear in roof warranties submitted to NRCA; the language appearing in the various conditions is not necessarily the exact language appearing in a specific warranty document.

Index of Specific Conditions to Make Warranty Ineffective or Null and Void

- A. Lack of inspection at time of application or owner's refusal to allow inspection
- B. Repairs, alterations, and additions without prior approval of manufacturer
- C. Failure of the owner to pay all bills for roof installation and materials
- D. Failure to notify within specified number of days of transfer of ownership
- E. Failure to submit accurate, completed inspection report or checklist, within prescribed time period
- F. Failure to use reasonable care in maintenance; failure to follow manufacturer's maintenance instructions
- G. Failure to comply with terms and conditions of warranty
- H. Failure to notify manufacturer within prescribed time of discovery of leak
- I. Owner's unwillingness to accept manufacturer's warranty in lieu of all other remedies and to return signed copy to manufacturer; owner's failure to execute the warranty
- J. Change in building usage or a significant change in use of building affecting roof membrane
- K. Assignment of warranty without written approval of manufacturer
- L. Lack of validation by manufacturer
- M. Failure of owner to make repairs to leaks not covered by manufacturer's warranty
- N. Repair work by any contractor other than approved contractor or use of unapproved contractor
- O. Building is used in any manner or for any purpose other than the purpose for which it was intended
- P. Roof is used as a promenade or work deck
- Q. Roof is flooded
- R. Membrane or materials supplied by manufacturer are not applied according to manufacturer's specifications or instructions
- S. Failure to repair damaged roof within specified time period, by approved applicator

15. Cost to obtain This is the amount, if any, that the manufacturer charges to obtain the warranty. The word *None* entered in this category means that there is no separate charge, apart from the cost of purchasing the

materials, for the warranty. When there is a separate charge, it will generally be stated on a per-square (100 square feet) basis.

16. Minimum charge If the manufacturer has a minimum charge policy for obtaining the warranty, the amount will be entered in this category.

17. Ineligible structures or building use If the manufacturer does not offer its warranties for roofs on certain types of buildings or for buildings used for certain purposes, the types of structures or uses ineligible for warranty coverage will be listed here. Private residences may not be eligible for warranty coverage even though a specific exclusion is not listed. Generally manufacturers with a warranty that excludes residential properties intend to exclude single-family homes and similar structures, but they may still offer the warranty for apartment buildings, cooperatives, or condominium properties.

18. Pre-construction notice and approval requirements This category is where it is noted whether the manufacturer requires that it give notice and approval prior to construction if the warranty is to be obtained at the completion of the roofing installation. The pre-construction notice and approval requirements, where applicable, generally pertain to the procedure to be employed by the roofing contractor prior to commencing application.

19. Approved, authorized, or licensed applicators Most manufacturers require that the roof be installed by a roofing contractor who is "approved," "authorized," or "licensed" by the manufacturer in order for the warranty to be obtained. The entry of *Yes* here means that the contractor must be so approved, authorized, or licensed. (The nature of the relationship between the manufacturer and the contractor is frequently defined in a separate contract.) The entry of *No* indicates that the manufacturer does not require the use of a contractor approved, authorized or licensed by the manufacturer in order for the warranty to be obtained.

20. Job-inspection policy This category encompasses in a summary manner the job-inspection policy, if any, of the manufacturer and is where it will be indicated if the manufacturer's representative makes an on-site inspection prior, during, or upon completion of application, as well as some time after application. In this category it will also be indicated whether there is an inspection charge or fee for any on-site job inspections.

21. Contractor's post-installation obligation In this category will be covered briefly the manufacturer's policy

regarding an obligation by the contractor to make repairs after issuance of the warranty. While the manufacturer's warranty itself rarely makes reference to an obligation by the contractor to make repairs, there may be a separate agreement between the manufacturer and the contractor concerning such an obligation.

22. Backed by named insurance or surety company

In this category it will be indicated whether an insurance company or surety is listed on the face of the warranty document and whether the manufacturer has insurance applicable to its warranty obligations. The entry of *No* indicates that no surety or insurance company is named on the face of the warranty document, meaning that the owner or other claimant would not be entitled to assert a claim against an insurance company or surety in the event that the manufacturer were unable to satisfy its warranty commitments.

NRCA also asks manufacturers if they carry insurance covering their warranty obligations and, if so, the type and amount of coverage. The manufacturer's response is included as the second part of the information provided in this category.

23. Issuing entity manufactures and/or sells products

In this category is indicated whether the entity issuing the warranty is both the manufacturer and seller of the roofing materials covered under the warranty or whether the party issuing the warranty is only the seller of these materials. The information is supplied NRCA in response to a question concerning this issue.

24. Conditions for renewal or extension In this category is indicated whether a manufacturer's warranty can be extended or renewed and, if so, the procedures to be employed as well as additional costs incurred in doing so.

25. Assignability Like other legal documents, warranties can generally be "assigned" or "transferred" by one party to another, unless there is a specific prohibition against such assignment. Some roofing warranties contain such prohibitions, and some state specifically that no assignment or transfer will be allowed without the prior written permission of the manufacturer. The phrase *No restrictions stated* indicates that the warranty contains no provision barring, limiting, or conditioning the owner's right to assign the warranty to a subsequent building owner, tenant, or other party.

26. Special features/conditions In this category are relatively unique or unusual features, conditions, or limitations. This category is generally based on the warranty document itself, but sometimes may be based on information supplied by the manufacturer.

27. Executed by owner In this category is indicated whether the manufacturer's warranty form states on its face that it is to be signed by the owner. Requiring the roofing warranty to be executed by the owner makes it more likely he will be bound to the terms and conditions set forth in the document in the event that a question subsequently arises as to whether the owner agreed to the terms and conditions in the warranty.

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	AlliedSignal, Inc.	AlliedSignal, Inc.	AlliedSignal, Inc.
2. Title, original publication date, and identifying symbol, if any	"Black Armor NDL Roofing System Warranty"; April 1990; 004890	"PRMA NDL Roofing System Warranty"; February 1991	"Roof Materials 10-Year Limited Warranty"; 1987; GOES 681
3. Product, specification, or system covered	Built-up roofing specifications: RP-40, RP-41, RP-50, RP-50TC, RP-51, RP51-TC, RP-40-5, RP-41-5, RP-60, RP-61, RP-60-5, RP-61-5 (See Special Features/Conditions.)	Built-up roofing specifications: RP-40, RP-41, RP-50, RP-50TC, RP-51, RP51-TC, RP-40-5, RP-41-5, RP-60, RP-61, RP-60-5, and RP-61-5.	Built-up roofing specifications: RP-40, RP-41, RP-50, RP-50TC, RP-51, RP51-TC, RP-40-5, RP-41-5, RP-60, RP-61, RP-60-5, RP-61-5
4. Scope of coverage	Material and workmanship: Allied-Signal warrants that it will at its expense repair or cause to be repaired the roofing system to the extent necessary to return the roof system to a watertight condition only when leaks result from (1) defects in workmanship or ordinary wear and tear of the Black Armor Roof Membrane and the approved base-flashing; (2) blisters, bare spots, fishmouth, wrinkles, ridges, and splits in the built-up roofing membrane or movement of any material underlying the roof membrane or base flashing system; and (3) slippage of the membrane caused by standing water alone is not excluded from this warranty. Deterioration of the membrane caused by standing water alone is not excluded from this warranty. [AlliedSignal indicates that when the specification requires a "protected roof membrane assembly," an addendum is added to the warranty stating that warranty includes removal and replacement of the thermal overlay system as required to repair a membrane leak.]	Material and workmanship: AlliedSignal warrants that it will, at its expense, repair or cause to be repaired the roofing system to the extent necessary to return it to a watertight condition and/or the PRMA insulation overlay system to its original installed configuration with no more than a 10 percent variation from its original published thermal resistance value only when leaks result from (1) defects in workmanship or ordinary wear and tear of the Black Armor Membrane and the approved base flashing; (2) blisters, bare spots, fishmouth, wrinkles, ridges, and splits in the built-up roofing membrane not caused by structural movement or failure or movement of any material underlying the roof membrane or base flashing system; and (3) slippage of the built-up roofing membrane or base flashing. Deterioration of the membrane caused by standing water alone is not excluded from this warranty.	Material only; Allied Corporation warrants that its coal tar pitch and coal tar saturated felt, when used together in a roof membrane system, meet or exceed all of its published specifications in effect on the date of sale and will not vary beyond the specified values, except for normal exposure and wear and tear.
5. Length of coverage	5, 10, 15, 20, or 25 years: BUR Specs: RP-40, RP-41, RP-50, RP-50TC, RP-51, RP51-TC, RP-40-5, RP-41-5, RP-60, RP-61, RP-60-5, RP-61-5 with Flashing Spec BS-250; 5-and 10-year coverage available for all BUR specifications with Flashing Spec BS 210. A "protected roof membrane assembly" can be warranted up to 20 years	5 or 10 years: All BUR specs with flashing spec BS-210; 5, 10, 15, or 20 years: all BUR specs with flashing spec BS-250	10 years
6. Nature of remedy	AlliedSignal will at its expense, take appropriate action, as necessary, to return the roofing system to a watertight condition.	AlliedSignal will, at its expense, take appropriate action, as necessary, to return the roofing system to a watertight condition.	If tests confirm that Allied products do not meet published specifications, adjusted for normal exposure and wear and tear, the costs of such tests shall be paid by Allied and Allied shall reimburse owner the original purchase price of the defective products, prorated by year over the ten-year period of the warranty.
7. Monetary limitations	None stated.	None stated.	Prorated of purchase price of defective materials
8. Notification requirements	Written notification upon discovery of a leak to AlliedSignal Inc., Commercial Roofing Systems, P.O. Box 1053, Morristown, NJ 07962. (See Special Features/Conditions.)	Written notification upon discovery of a leak to AlliedSignal, Inc., Black Armor Coal Tar Roofing Systems, P. O. Box 1053, Morristown, NJ 07962-1053. (See Special Features/Conditions.)	Written notification within 30 days to Allied if the owner believes that Allied products no longer meet published specifications, adjusted for normal exposure and wear and tear. Warranty registration form must be completed, executed on behalf of owner, and mailed to Allied.
9. Exclusive or additional remedy	AlliedSignal shall not be liable for any damages based upon negligence, breach of warranty, strict liability, or any other theory of liability other than exclusive liability set forth in warranty.	AlliedSignal shall not be liable for any damages based upon negligence, breach of warranty, strict liability, or any other theory of liability other than exclusive liability set forth in warranty; excludes UCC warranties.	If warranty fails of its essential purpose, the owner's exclusive remedy shall be refund of purchase price of defective products. Warranty provides that buyer agrees that Allied has no liability for any consequential, incidental, special, or punitive damages arising from breach of warranty, breach of contract, negligence, strict liability, or otherwise; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	AlliedSignal's determination	AlliedSignal's determination	Owner takes samples, at his expense, of products in presence of Allied representative and submits samples to independent testing laboratory approved by Allied. Laboratory conducts tests according to appropriate ASTM procedures. Its findings are final and binding on all parties.
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 6, 7, 9, 10, 22. Warranty also excludes failure of owner to make repairs not covered under warranty.	1, 2, 3, 4, 6, 7, 9, 10, 15, 22. Warranty also excludes failure of owner to make repairs not covered under warranty.	None listed; material-only warranty
13. Wind coverage/exclusions	Warranty covers damage caused by winds up to gale force.	Warranty covers roof damage caused by winds up to gale force.	No coverage for damage caused by wind.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	M, R (See Special Features/Conditions.)	M, R (See Special Features/Conditions.)	I, R

15. Cost to obtain	5 years: \$8.00/square; 10 years: \$10.00/square; 15 years: \$12.00/square; 20 years: \$15.00/square	5 years: \$8.00/square; 10 years: \$10.00/square; 15 years: \$12.00/square; 20 years: \$15.00/square	None
16. Minimum charge	5 years: \$700; 10 years: \$800; 15 years: \$900; 20 years: \$1,000	5 years: \$700; 10 years: \$800; 15 years: \$900; 20 years: \$1,000	None
17. Ineligible structure or building use	Cold-storage and freezer roofs; private residences	Cold-storage and freezer roofs; private residences	None
18. Pre-construction notice and approval requirements	Contractor required to submit request for warranty not less than 14 days prior to date of project start to regional or home office for approval, along with minimum warranty charge.	Contractor required to submit request for warranty not less than 14 days prior to date of project start to regional or home office for approval, along with minimum warranty charge.	Contractor to provide notice prior to commencement of installation; no approval required.
19. Approved, authorized, or licensed applicator	Yes	Yes	No
20. Job inspection policy	Independent field auditor makes on-site inspections prior to, during (depending on length of coverage), and after application, as well as two years after issuance of warranty; no charge.	Independent field auditor makes on-site inspections prior to (depending on length of coverage), and after application, as well as two years after issuance of warranty; no charge.	No on-site inspections
21. Contractor's post-installation obligation	Contractor obligated to repair workmanship deficiencies for two years.	Contractor obligated to repair workmanship deficiencies for two years.	None; material-only warranty
22. Backed by named insurance or surety	No; AlliedSignal indicates that it is self-insured and that AlliedSignal is a \$13 billion corporation.	No; AlliedSignal indicates that it is self-insured.	No; AlliedSignal indicates that it is self-insured and that AlliedSignal is a \$12 billion corporation.
23. Issuing entity manufactures and/or sells products	AlliedSignal Inc. manufactures and sells product	AlliedSignal Inc. manufactures and sells product.	AlliedSignal Inc. manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Warranty may be transferred to a subsequent owner only if: (1) building owner provides written notification of any transfer of ownership to AlliedSignal Inc., Tar Products, P.O. Box 1053R, Morristown, NJ 07962 within 30 days of such transfer; (2) any repairs required by AlliedSignal Inc. after an inspection of the roof are made; and (3) owner pays to AlliedSignal Inc. the then-current published warranty transfer fee.	No restrictions stated.	Warranty is not transferable to any other party, including any subsequent building owners.
26. Special features/conditions	If roofing system utilizes insulation, insulation must be supplied or approved by AlliedSignal. If emergency conditions exist and immediate temporary repairs are required to avoid building damage, AlliedSignal Inc. will reimburse the owner for reasonable repair expenses that but for the emergency condition. If the roofing system experiences recurring leaks (more than two in a given roof area) during a twelve-month period, the owner may request AlliedSignal to inspect the affected roof area, and AlliedSignal technical services representative will make an inspection. AlliedSignal will follow the recommendations of its technical services department as to the appropriate remedy for the problem or, if the leaks are not the responsibility of AlliedSignal under the terms of the warranty, AlliedSignal will advise owner of repairs required to make roof membrane watertight and the cost of such repairs will be the responsibility of the owner. Warranty shall be governed by the laws of the state of New Jersey.	If emergency conditions exist and immediate temporary repairs are required to avoid building damage, AlliedSignal Inc. will reimburse the owner for reasonable repair expenses that but for the emergency condition. If the roofing system experiences recurring leaks (more than two in a given roof area) during a twelve-month period, the owner may request AlliedSignal to inspect the affected roof area, and AlliedSignal technical services representative will make an inspection. AlliedSignal will follow the recommendations of its technical services department as to the appropriate remedy for the problem or, if the leaks are not the responsibility of AlliedSignal under the terms of the warranty, AlliedSignal will advise owner of repairs required to make roof membrane watertight and the cost of such repairs will be the responsibility of the owner. In the event of a reported diminution in the thermal resistance (R-value) of the overlayer insulation, samples shall be taken under the direction of AlliedSignal Inc. and tested by a qualified laboratory in accordance with ASTM Test Method C518-85. If it is determined that the thermal resistance (R-value) is more than 10 percent below its original published value, AlliedSignal Inc. shall pay all sampling and testing costs; otherwise, said costs shall be paid by the building owner. Warranty shall be governed by the laws of the state of New Jersey.	Any action for breach of warranty shall be commenced within one year after the cause of action has accrued.
27. Executed by owner	No	No	Yes; warranty registration form must be signed on behalf of owner and mailed to Allied.

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	AlliedSignal, Inc.	AlliedSignal, Inc.	Allied-Trent Roofing Systems, Inc.
2. Title, original publication date, and identifying symbol, if any	"Black Armor Premier Series Warranty"; March 1989; CS	"Black Armor Premier Series Warranty"; March 1989; MFS	* Year Membrane Material Warranty"; October 1990
3. Product, specification, or system covered	Built-up Roofing Specifications: RP-41, RP-51, RP-51-TC, RP-61. If roofing system utilizes insulation, insulation must be supplied by AlliedSignal. Warranty requires use of Black Armor Pitch, Black Armor Felt, Black Armor Base Flashings, and AlliedSignal roof Insulations.	Built-up Roofing Specifications: RP-40, RP-41, RP-50, RP-50TC, RP-51, RP-51-TC, RP-60, RP-61. Warranty requires use of Black Armor Pitch, Black Armor Felt, and Black Armor Base Flashing; no insulation requirement. Built-up roofing specifications RP-40, RP-41, RP-50, RP-51	CSM (CSPE), EPT (EPDM), PIB
4. Scope of coverage	Material and workmanship; AlliedSignal warrants that it will pay for all appropriate repairs to return the roofing system to a watertight condition only when leaks result from (1) defects in workmanship or ordinary wear and tear of the Black Armor Roofing Membrane and the approved base flashing; (2) blisters, bare spots, fishmouths, wrinkles, ridges, and splits in the built-up roofing membrane not caused by structural movement or failure or movement of any material underlying the roof membrane or base flashing system; and (3) slippage of the built-up roofing membrane or base flashing.	Material and workmanship; AlliedSignal warrants that it will pay for all appropriate repairs to return the roofing system to a watertight condition only when leaks result from (1) defects in workmanship or ordinary wear and tear of the Black Armor Roofing Membrane and the approved base flashing; (2) blisters, bare spots, fishmouths, wrinkles, ridges, and splits in the built-up roofing membrane not caused by structural movement or failure or movement of any material underlying the roof membrane or base flashing system; and (3) slippage of the built-up roofing membrane or base flashing.	Material only; Allied-Trent warrants that the rubber membrane sold as "First Grade" will be free from manufacturing defects at the time of its delivery to the job site and will not prematurely deteriorate to the point of failure because of weathering, if properly installed, maintained, and used for the purpose Allied-Trent intended.
5. Length of coverage	5 or 10 years: all BUR specs with flashing spec BS-210; 5, 10, 15 or 20 years: all BUR specs with flashing spec BS-250; 25 years: BUR specs RP-41, RP-51, RP-51-TC, and RP-61 with flashing spec BS-250	5 or 10 years: All BUR specs with flashing spec BS-210; 5, 10, 15 or 20 years: All BUR specs with flashing spec BS-250; 25 years: BUR specs RP-41, RP-51, RP-51-TC, and RP-61 with flashing spec BS-250	5, 10, 15, or 20 years
6. Nature of remedy	AlliedSignal will take appropriate action to make the roofing system watertight.	AlliedSignal will take appropriate action to make the roofing system watertight.	If membrane evidences manufacturing defects, Allied-Trent's liability is limited, at its option, to the repair or replacement of the defective membrane at the FOB point in the original contract of sale. If membrane shows premature deterioration because of weathering, Allied-Trent's liability limited, at its option, to providing repair material for the original membrane or credit to be applied towards the purchase of a new membrane, the value of these remedies being determined by Allied-Trent based upon the number of remaining months of the unexpired warranty used to prorate at the current prices for the membrane.
7. Monetary limitations	Warranty states that there is no aggregate dollar limit to the cost of any "appropriate repairs" over the term of this warranty. However, if a repair otherwise covered by warranty is not an "appropriate repair," owner's sole remedy and AlliedSignal's total remaining liability shall be payment to owner of "remaining roof value," which is prorated, based on years roof has been in service, and total installed cost.	Warranty states that there is no aggregate dollar limit to the cost of any "appropriate repairs" over the term of this warranty. However, if a repair otherwise covered by warranty is not an "appropriate repair," owner's sole remedy and AlliedSignal's total remaining liability shall be payment to owner of "remaining roof value," which is prorated based on years roof has been in service and total installed cost.	Allied-Trent's maximum prorated value allowed for repair or credit shall not exceed the original membrane purchase price.
8. Notification requirements	Written notification within 30 days after discovery of all leaks to AlliedSignal Commercial Roofing Systems, P.O. Box 1053, Morristown, NJ 07960.	Written notification within 30 days after discovery of all leaks to AlliedSignal Commercial Roofing Systems, P.O. Box 1053, Morristown, NJ 07960.	Buyer must give notice of breach of warranty to Allied-Trent within 30 days of discovery of premature deterioration of the membrane.
9. Exclusive or additional remedy	AlliedSignal not liable for any damages based upon negligence, breach of warranty, strict liability, or any other theory of liability other than exclusive liability set forth in warranty.	AlliedSignal not liable for any damages based upon negligence, breach of warranty, strict liability, or any other theory of liability other than exclusive liability set forth in warranty.	No other warranties; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision)	Neutral (no provision)	Allied-Trent's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 6, 7, 9, 10, 15, 22. Warranty also excludes failure of owner to make repairs not covered under warranty.	1, 2, 3, 4, 6, 7, 9, 10, 15, 22. Warranty also excludes failure of owner to make repairs not covered under warranty.	None listed; material-only warranty
13. Wind coverage/exclusions	Warranty excludes gales.	Warranty excludes gales.	Allied-Trent indicates that there is no coverage for damage caused by wind.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	R	R	None listed; material-only warranty

15. Cost to obtain	5 year: \$8.00/square; 10 year: \$10.00/square; 15 year: \$12.00/square; 20 year: \$15.00/square; 25 year: \$20.00/square	5 year: \$6.00/square; 10 year: \$7.00/square; 15 year: \$8.00/square; 20 year: \$12.00/square; 25 year: \$15.00/square	None
16. Minimum charge	5 year: \$700; 10 year: \$800; 15 year: \$900; 20 year: \$1,000; 25 year: \$1,500	5 year: \$700; 10 year: \$800; 15 year: \$900; 20 year: \$1,000; 25 year: \$1,500	None
17. Ineligible structure or building use	Cold-storage or freezer roofs; private residences	Cold-storage or freezer roofs; private residences	None
18. Pre-construction notice and approval requirements	Contractor required to submit request for warranty not less than 14 days prior to date of project start to regional or home office for approval, along with minimum warranty charge.	Contractor required to submit request for warranty not less than 14 days prior to date of project start to regional or home office for approval, along with minimum warranty charge.	None required.
19. Approved, authorized, or licensed applicator	Yes	Yes	No
20. Job inspection policy	Independent field auditor makes on-site inspections prior to, during, and/or after application, as well as two years after issuance of warranty; no charge.	Independent field auditor makes on-site inspections prior to, during, and after application, as well as two years after issuance of warranty; 5-, 10-, and 15-year warranties, two inspections; 20-, 25-year warranties, three inspections; no charge.	No on-site inspections
21. Contractor's post-installation obligation	Contractor obligated to repair workmanship deficiencies for two years and for longer than two years if it is found that roof was misapplied beyond what could be reasonably considered a minor infraction of standard practice, per terms of AlliedSignal authorized contractor's agreement.	Contractor obligated to repair workmanship deficiencies for two years.	None; material-only warranty
22. Backed by named insurance or surety	No; AlliedSignal indicates that it is self-insured.	No; AlliedSignal indicates that it is self-insured and that AlliedSignal is a \$13 billion corporation.	No; Allied-Trent indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	AlliedSignal, Inc. manufactures and sells product.	AlliedSignal, Inc. manufactures and sells product.	Allied-Trent manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Warranty may be transferred to a subsequent owner only if: (1) owner provides written notification of any transfer of ownership to AlliedSignal Tar Products, P.O. Box 1053R, Morristown, NJ 07960, within 30 days of such transfer; (2) any repairs required by AlliedSignal Inc. after an inspection of the roof are made; and (3) owner pays to AlliedSignal Inc. the then-current published warranty transfer fee.	Warranty may be transferred to a subsequent owner only if: (1) building owner provides written notification of any transfer of ownership to AlliedSignal, Inc. Black Armor Coal Tar Roofing Systems, P.O. Box 1053R, Morristown, NJ 07962, within 30 days of such transfer; (2) any repairs required by AlliedSignal, Inc. after an inspection of the roof are made; and (3) owner pays to AlliedSignal, Inc. the then-current published warranty transfer fee.	No restrictions stated
26. Special features/conditions	5- and 10-year Premier Series warranties are available for retrofit applications over an existing roof with prior approval by AlliedSignal. Warranty shall be governed by the laws of the state of New Jersey.	5- and 10-year Premier Series warranties are available for retrofit applications over an existing roof with prior approval by AlliedSignal. Warranty shall be governed by the laws of the state of New Jersey.	No representative of Allied-Trent has authority to make any representations or promises except as stated in warranty.
27. Executed by owner	No	No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Allied-Trent Roofing Systems Inc.	American Lubricants Company	The Barrett Company, Inc.
2. Title, original publication date, and identifying symbol, if any	"Allied-Trent Warranty Materials Warranty"; 1990	"Tiffany Division Limited Material Warranty"; November 1, 1989; 10/89	Barrett Company "Ram-Tough Platinum System Warranty"; 1986; DT 1246
3. Product, specification, or system covered	CSM (CSPE), EPT (EPDM), PIB	Tiffany Modified Bitumen	KLB-100-3FG-PMR, K-312-3P-PMR, KLB-100-4PG-PMRK-312-4P-PMR, KLB-100-3P-PMRK-312-4F-P-MR, KLB-100-4P-PMR, KLB-100-4F-PMR
4. Scope of coverage	Material only; Allied-Trent warrants that the Allied-Trent-manufactured roofing membrane is free from defects and that Allied-Trent will repair leaks caused by failures of the membrane if installed by an Allied-Trent-authorized applicator.	Material only; Tiffany Division warrants its products against leaks when properly applied to all structures subject to normal usage. Tiffany does not warrant the application of the product. Application is solely the responsibility of the purchaser.	Material and workmanship; Barrett warrants that the Barrett Ram-Tough Membrane Components will remain in a watertight condition and that the Foamular extruded polystyrene insulation material will retain at least 80 percent of its thermal resistance and that the ballast will remain on the roof.
5. Length of coverage	10 or 20 years	5 years: uncoated; 10 years: if coated at original installation with Silver-Bright Liquid-Aluminum Roof Coating, Tiff-A-Lume, granules or gravel and re-coated after five years; 15 years: see conditions for renewal or extension.	10, 15, 20, or 25 years, depending upon specification used
6. Nature of remedy	Allied-Trent will repair leaks caused by failures of the membrane.	If leak occurs within the warranty coverage, American Lubricants will furnish, freight collect, sufficient additional materials of Tiffany's manufacture to make necessary repairs for the duration of the warranty.	In the event of failure of the product to function as warranted, Barrett will make or cause to be made such repairs and maintenance necessary to enable the product to perform as warranted, except for the removal and replacement of any materials covering the system.
7. Monetary limitations	Warranty is limited to the original purchase price of the Allied-Trent Roofing Systems Inc. roofing.	Amount of adjustment material provided by American Lubricants will in no case exceed the amount on the original purchase.	Barrett's repair obligations over the life of this warranty are limited to the owner's original cost of the product.
8. Notification requirements	Owner must provide Allied-Trent with written notice of membrane failure within 30 days of discovery of the condition.	None stated.	Written notification within 30 days following any failure of the product covered by the warranty.
9. Exclusive or additional remedy	No other warranties; excludes UCC warranties.	Excludes UCC warranties	Owner's sole and exclusive remedy; Barrett not liable or obligated for any loss or damage based on breach of warranty or negligence; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision)	Neutral (no provision)	Barrett shall have the sole and exclusive right of good faith determination of warranty applicability.
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7, 11, 12, 13, 16, 17, 18	1, 2, 3, 4, 6, 11, 13, 17, 18, 19, 20	1, 2, 3, 4, 6, 7, 8, 12, 16, 18
13. Wind coverage/exclusions	Warranty excludes winds of peak gust speeds of 55 mph or higher measured at roof level or 10 meters above the ground, hurricanes, and tornadoes. Allied-Trent indicates that warranty covers roof damage	No coverage for damage caused by wind	Warranty excludes gales, windstorms with gust wind speeds in excess of 70 mph, hurricanes, and tornadoes. [Barrett indicates that warranty covers roof damage resulting from wind speeds up to 70 miles per hour.]
14. Specific conditions to make warranty ineffective or null and void. (See item no. 14 in Introduction.)	C, F (see Special Features/Conditions), G, H, K, M, R	C, R	B, C, H, I, R
15. Cost to obtain	\$5.00/square	None	\$10.00/square
16. Minimum charge	\$500	None	\$500

17. Ineligible structure or building use	None		Cold-storage buildings, heated tanks, roofs without positive drainage, Double T or prestressed T prefabricated concrete; private residences.	Unusual or unique applications may require specification modifications or other special considerations.
18. Pre-construction notice and approval requirements	Contractor must submit pre-installation notice form.		Contractor required to submit roof record and signed warranty form.	Contractor must file Barrett pre-construction form and intent to warrant application with Barrett prior to commencement of installation.
19. Approved, authorized, or licensed applicator	Yes		Yes	Yes
20. Job inspection policy	Allied-Trent technical department or contractor makes on-site inspection after completion as well as two years after issuance of warranty; \$500 charge.		No manufacturer inspections; contractor makes pre-job inspection at his discretion.	Barrett makes on-site job inspections prior to, during, and after completion, as well as two years after issuance of warranty, as required or deemed necessary; no charge.
21. Contractor's post-installation obligation	None; material-only warranty		None; material-only warranty	Contractor obligated to make repairs to all workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Allied-Trent indicates that it does not carry insurance covering its warranty obligations.		No; American Lubricants Company indicates that it does not carry insurance covering its warranty obligations.	No; Barrett indicates that it carries \$1-million-per-occurrence products liability insurance.
23. Issuing entity manufactures and/or sells products	Allied-Trent manufactures and sells product.		American Lubricants Company manufactures and sells product.	Barrett manufactures some, but not all, components and sells the products as a complete system.
24. Conditions for renewal or extension	Warranty can be extended 10 years. Owner contacts Allied-Trent's technical department and requests technical department to make roof inspection. Allied-Trent will advise owner of any repairs necessary to qualify for additional 10 years. Owner must make repairs at his sole expense. Each case is reviewed individually.		15-year warranty is in effect providing Silver Bright Aluminum Roof Coating is applied 30 days after installation and at 5-year intervals thereafter.	No renewal provision
25. Assignability	Warranty does not accrue to the benefit of purchaser of the building and is not transferable or assignable without the written approval of Allied-Trent.		No restrictions stated.	Not assignable
26. Special features/conditions	No representative of Allied-Trent has authority to make any representations or promises except as stated in warranty. If condition is found not to be covered by the warranty, the owner shall be responsible for all costs to establish cause of the condition and cost of repair. Owner must have in place a regular inspection maintenance agreement accepted to Allied-Trent and practice normal maintenance procedures, including replacement of deteriorated caulking, and removal of debris from drain.			No representative of Barrett has authority to make any representation or promises except as stated on warranty. Should the owner fail to properly execute and return a signed copy of warranty within 90 days of issuance date, the warranty shall be null and void in its entirety and any products sold shall become a materials-only sale without warranty or guarantee as expressly provided for on Barrett invoices and Terms of Sale.
27. Executed by owner	No		Yes	Yes

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	The Barrett Company, Inc.	The Barrett Company, Inc.	The Barrett Company, Inc.
2. Title, original publication date, and identifying symbol, if any	Barrett Company "Ram-Tough Elastomeric Built Up Roof Five Year Material Limited Warranty"; 1986; DT 1249	Barrett Company "Ram-Tough Elastomeric Built-up Roof Limited Warranty"; 1986; DT 1247	Barrett Company "Ram-Tough Elastomeric Built-Up Roof Material Components Ten Year Limited Warranty"; 1986; DT 1248
3. Product, specification, or system covered	KLB-100-2F KLB-100-1MBKLB-100-2M, KLB-100-3F, KLB-100-2MBKLB-100-3M, KLB-100-4FKLB-100-4M, K-312-2 FK-312-3, FK-312-4 F	KLB-100-1PG, KLB-100-2FKLB-100-2MB, KLB-100-2PGKLB-100-3FK-312-2F, KLB-100-3PGKLB-100-4F K-312-3F, KLB-100-4PGKLB-100-2MK-312-4F, KLB-100-2PKLB-100-3MK-312-2P, KLB-100-3PKLB-100-4MK-312-3P, KLB-100-4PKLB-100-1MBK-31-2-4P	KLB-100-1 PG, KLB-100-2 PG, KLB-100-3 PG, KLB-100-4 PG, KLB-100-2P, KLB-100-3 P, KLB-100-4 P, K-312-2 P, K-312-3 P, K-312-4 P
4. Scope of coverage	Material only; Barrett warrants that the Ram Tough KLB elastomeric built-up roofing components sold by Barrett will be free from manufacturing defects at the time of delivery to the original purchaser and that the KLB component materials will not prematurely deteriorate to the point of failure because of weathering, if properly installed, maintained and used for the purpose Barrett intended, in accordance with Barrett published specifications in effect at the time of sale.	Material and workmanship; Barrett warrants that the Barrett Ram-Tough Membrane Components will remain in a watertight condition.	Material only; Barrett warrants that the Ram-Tough KLB elastomeric built-up roofing components sold by Barrett will be free from manufacturing defects at the time of delivery to the original purchaser and that the KLB component materials will not prematurely deteriorate to the point of failure because of weathering, if properly installed, maintained, and used for the purpose Barrett intended, in accordance with Barrett published specifications in effect at the time of sale.
5. Length of coverage	5 years	5, 8, 10, 12, 15, 20, or 25 years, depending on specification used	10 years
6. Nature of remedy	If the Barrett-supplied membrane components or bitumen evidences manufacturing defects, Barrett will, at its option, repair or replace defective material at original FOB point. If the Barrett membrane components show premature deterioration, Barrett will, at its option, provide repair material for original membrane or will provide credit to be applied towards the purchase of new membrane components at the then current prices for the membrane.	In the event of failure of the product to function as warranted, whether caused by workmanship or defective product, Barrett will make or cause to be made such repairs and maintenance necessary to enable the product to perform as warranted, except for the removal and replacement of any materials covering the system.	If the Barrett-supplied membrane components or bitumen evidences manufacturing defects, Barrett will, at its option, repair or replace defective material at original F.O.B. point. If the Barrett membrane components show premature deterioration, Barrett will, at its option, provide repair material for original membrane or will provide credit to be applied towards the purchase of new membrane components at the then current prices for the membrane.
7. Monetary limitations	Barrett's maximum liability shall be for the full value of the original Barrett supplied material components—only purchase price. In case of premature deterioration, maximum value allowed as credit shall not exceed the original Barrett supplied components purchase price.	Barrett's repair obligations over the life of the warranty are limited to the owner's original cost of product.	For the first five years from date of completion, Barrett's maximum liability shall be for the full value of the original Barrett-supplied material components—only purchase price. Thereafter, Barrett's liability shall be reduced by 20 percent of the original warranty value each successive year until warranty expiration. In the case of premature deterioration, the maximum value allowed for credit shall not exceed the original purchase price.
8. Notification requirements	None	Prompt notification and confirmation, in writing, sent by registered or certified mail of any failure of the product within 30 days following such failure.	None
9. Exclusive or additional remedy	Barrett makes no other warranty or guarantee and is in lieu of all other obligations or liability; excludes UCC warranties.	Owner's sole and exclusive remedy; Barrett not liable or obligated for any loss or damage based on breach of warranty or negligence; excludes UCC warranties.	Barrett makes no other warranty or guarantee and is in lieu of all other obligations or liability; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Barrett shall have sole and exclusive right of determination of warranty applicability.	Barrett shall have the sole and exclusive right of good faith determination of warranty applicability.	Barrett shall have sole and exclusive right of determination of warranty applicability.

12. Specific exclusions from coverage (See item no. 12 in Introduction.)	19	1, 2, 3, 4, 6, 7, 8, 12, 16, 18	19
13. Wind coverage/exclusions	No coverage for damage caused by wind.	Warranty excludes high winds, gales, hurricanes, and tornadoes. [Barrett indicates that coverage of wind speeds is up to 72 miles per hour.]	Warranty covers roof damage caused by wind speeds up to 72 miles per hour.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	I, O (See Special Features/Conditions.)	B, C, H, I, R	I, O (See Special Features/Conditions.)
15. Cost to obtain	None	\$5.00/square	\$2.00/square
16. Minimum charge	None	\$500	\$250
17. Ineligible structure or building use	Unusual or unique applications may require specification modifications or other special considerations.	Unusual or unique applications may require specification modifications or other special considerations.	Unusual or unique applications may require specification modifications or other special considerations.
18. Pre-construction notice and approval requirements	Contractor must file Barrett pre-construction form and intent to warrant application with Barrett prior to commencement of installation.	Contractor must file Barrett pre-construction form and intent to warrant application with Barrett prior to commencement of installation.	Contractor must file Barrett pre-construction form and intent to warrant application with Barrett prior to commencement of installation.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	Barrett makes on-site inspections prior to, during, and after completion, as well as two years after issuance of warranty, as required or deemed necessary; no charge.	Barrett makes on-site job inspections prior to, during and after completion, as well as two years after issuance of warranty as required or deemed necessary; no charge.	Barrett makes on-site inspections prior to, during and after completion, as well as two years after issuance of warranty as required or deemed necessary; no charge.
21. Contractor's post-installation obligation	Although this is a material only warranty, contractor is obligated to make repairs to all workman ship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.	Although this is a material only warranty, contractor is obligated to make repairs to all workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Barrett indicates that it carries \$1-million-per-occurrence products liability insurance.	No; Barrett indicates that it carries \$1-million-per-occurrence products liability insurance.	No; Barrett indicates it carries \$1-million-per-occurrence products liability insurance.
23. Issuing entity manufactures and/or sells products	Barrett manufactures some, but not all, components and sells the products as a complete system.	Barrett manufactures some, but not all, components and sells the products as a complete system.	Barrett manufactures some, but not all, components and sells the products as a complete system.
24. Conditions for renewal or extension	No renewal provision	No renewable provision	No renewal provision
25. Assignability	No restrictions stated.	Not assignable	No restrictions stated
26. Special features/conditions	If purchaser does not accept delivery of the products supplied by Barrett for the purpose of work indicated, the products are to be returned forth with, unopened. Should the owner fail to properly execute and return a signed copy of warranty within 90 days of issuance, warranty shall be null and void in its entirety and any products sold shall become a materials-only sale without any warranty or guarantee as expressly provided for on Barrett invoices and terms of sale.	No representative of Barrett has authority to make any representation or promises except as stated on warranty. Should the owner fail to properly execute and return a signed copy of warranty within 90 days of issuance, warranty shall be null and void in its entirety and any products sold shall become a materials-only sale without warranty or guarantee as expressly provided for on Barrett invoices and terms of sale.	If purchaser does not accept delivery of the products supplied by Barrett for the purpose of work indicated, the products are to be returned forth with, unopened. Should the owner fail to properly execute and return a signed copy of warranty within 90 days of issuance, warranty shall be null and void in its entirety and any products sold shall become a materials-only sale without any warranty or guarantee as expressly provided for on Barrett invoices and terms of sale.
27. Executed by owner	Yes	Yes	Yes

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of Issuing entity	The Barrett Company, Inc.	Bitec, Inc.	Bitec, Inc.
2. Title, original publication date, and identifying symbol, if any	Barrett "Protected Membrane Roof Limited Warranty"; 1984; 1984	Limited "Insured" Roofing Warranty; June 1987	"Limited Ten-Year Material Warranty"; June 1986; (F-203-1/89)
3. Product, specification, or system covered	Ram-Tough TM-500; Ram-Tough KLB Specifications KLB 3-F; KLB 3P; KLB 3-M; KLB 4PG; KLB 4F; KLB 4P; KLB 4M; KLB 4HS	All Bitec modified bitumen membranes	All Bitec modified bitumen membranes
4. Scope of coverage	Material and workmanship; Barrett warrants that its Barrett Ram-Tough Roof Membrane will remain in a watertight condition and will not fail to function due to workmanship or defective product.	Material only, first two years; material and workmanship for balance of warranty. Bitec warrants that the roofing installation will be free of defects in material and workmanship that cause it to leak. During the first two years, Bitec will be responsible only for defects in material only. During remaining years, Bitec will pay cost to repair leaks caused by ordinary wear and tear. (See Special Features/Conditions.)	Material only; Bitec, Inc. warrants that the manufactured modified bitumen waterproofing roofing product, at the time of installation, conforms to Bitec's published specifications, provided that the membrane has been stored, handled, and that the installation meets or exceeds the published use, and is installed in accordance with governing industry standards, the Bitec product will be free of manufacturing defects and will remain free.
5. Length of coverage	10 years	10 years: APS4T.1, APS4T.2, APM4T.1, APM4T.2, SPM4.5T.1, SPM4.5T.2, SPM3.5H.1, SPM3.5H.2, SPM4H.1, SPM4H.2, SPS3H.1, SPS3H.2, SPM3.5H.1, SPM3.5H.2, SPM3.5HFR.1, SPM3.5HFR.2 15 years: APS4T.1.15, APS4T.2.15, APM4T.1.15, APM4T.2.15, SPM4.5T.1.15, SPM4.5T.2.15, SPM3.5H.1.15, SPM3.5H.2.15, SPM3.5HFR.1.15, SPM3.5HFR.2.15 20 years: APS4T.1.20, APS4T.2.20, APM4T.1.20, APM4T.2.20, SPM4.5T.1.20, SPM4.5T.2.20, SPM3.5H.1.20, SPM3.5H.2.20, SPM3.5HFR.1.20, SPM3.5HFR.2.20	10 years
6. Nature of remedy	Barrett will make or cause to be made such repairs and maintenance necessary to enable the Ram-Tough Roof Membrane to perform as warranted, except for the removal and replacement of any materials covering the waterproof membrane.	After the first two years, Bitec will pay the cost of repairs to correct roof water leaks that are caused by ordinary wear and tear.	If manufacturing defects cause the membrane to lose its watertight integrity, Bitec, at its sole option, will refund to the owner a portion of the original purchase cost of the membrane or replace a portion of the membrane.
7. Monetary limitations	Barrett's repair obligations over the life of the warranty are limited to the owner's original cost of the Barrett Ram-Tough Roof Membrane.	Bitec's obligations limited to the amount of the original cost of labor and material for installation of the defective membrane.	Bitec's liability limited to refunding to owner a portion of the membrane's original cost, or replacing a portion of the membrane according to a pro-rated schedule, reduced 10 percent per year, ranging from 100 per-cent in years 1 and 2 to 10 percent in year 10.
8. Notification requirements	Written notification within 30 days of any failure covered by the warranty.	Claims must be directed to Bitec, Inc., P.O. Box 497, Morriton, AR 72110, must be received within 72 hours of the original occurrence, and must be confirmed in writing and received by Bitec within ten days of the occurrence.	Notification of any manufacturing defect must be submitted to Bitec's general offices within five days after discovery of any such defect and include certificate number. (See Special Features/Conditions.)
9. Exclusive or additional remedy	Excludes UCC warranties.	Owner's sole and exclusive right and remedy and Bitec, Inc.'s sole obligation for any failure of the roofing installation or material; excludes UCC warranties.	Owner's sole and exclusive remedy. Owner shall not be entitled to additional remedies; owner expressly waives any and all other claims for damages, being direct or indirect, consequential or incidental, including but not expressly limited to the following: property damage, personal injury, damage to the owner or third parties, and/or loss of business or profit; excludes UCC warranties.

10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision)	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 4, 6, 7, 8, 12, 16	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 (including ionized radiation or contamination), 15, 16, 23. Warranty also specifically excludes damage caused by food, birds, vermin, rodents, insects, or any other animal or pest.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 (including ionized radiation or contamination from any hazardous substance or waste), 15, 16, 23. Warranty also specifically excludes damage caused by food.
13. Wind coverage/exclusions	Warranty excludes high winds, gales, hurricanes, and tornadoes. [Barrett indicates that warranty covers roof damage from wind speeds up to 70 miles per hour.]	No coverage for damage caused by wind	No coverage for damage caused by wind
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C, H, R	B, C	I, L
15. Cost to obtain	\$5.00/square	10 years: no charge for coated membrane; \$3.00/square for uncoated membranes; 15 years: \$3.00/square; 20 years: \$4.00/square	None
16. Minimum charge	\$500	10 years: \$300; 15 years: \$400; 20 years: \$500	None
17. Ineligible structure or building use	Unusual installations are subject to technical review and approval.	Cold storage, freezer compartments, residences, apartment buildings, and condominiums	Roofs installed over cold storage or freezer compartments.
18. Pre-construction notice and approval requirements	Contractor must submit request form with pertinent information prior to job start.	Contractor required to give notice and obtain approval at least 14 days before project is started.	None required
19. Approved, authorized, or licensed applicator	Yes	Yes	No
20. Job inspection policy	Barrett technical representative makes on-site inspections prior, during, and after application, as well as two years after completion depending on job conditions; no charge.	Bitec field technical representative makes on-site job inspections prior to, during, and after completion prior to issuance of warranty; no charge. Per diam cost for extra inspection.	No on-site inspections
21. Contractor's post-installation obligation	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.	None
22. Backed by named insurance or surety	Surety not named on warranty; Barrett indicates it has insurance coverage of \$1 million per occurrence.	No; Bitec indicates that it does not carry insurance covering its warranty obligations.	No; Bitec indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Barrett manufactures and sells some products and only sells some products.	Bitec, Inc. manufactures and sells product.	Bitec, Inc. manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Not assignable	Not assignable	Warranty is transferable or assignable only with the prior written approval of Bitec's manager of technical services, and payment of applicable transfer fee, which includes inspection fee and travel expenses.
26. Special features/conditions		Owner agrees that the Bitec authorized roofing contractor shall be solely responsible for any and all costs to repair or correct any and all water leaks caused by defective workmanship or installation for two years, and Bitec shall be held harmless against any and all claims arising from workmanship or installation during the first two years.	For warranty to be validated, registration form must be completed and mailed to Bitec's offices, P.O. Box 497, Morriton, AR 72110, within 90 days after job completion.
27. Executed by owner	No	No	Owner signs Bitec registration form.

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Bondcote Corp.	Burke Rubber Company, a division of Burke Industries	Burke Rubber Company, a division of Burke Industries
2. Title, original publication date, and identifying symbol, if any	BondCote Roofing Systems "Standard Warranty"; Feb. 1, 1993	"Burkeline Gold Total Roofing System Warranty for Commercial Building"; April 1988; BRO0355	"Burkeline Standard Limited Material Warranty"; February 1988; BR 00352
3. Product, specification, or system covered	BondCote Single Ply Roofing Systems	CSPE Hypalon	CSPE Hypalon
4. Scope of coverage	Material and workmanship; BondCote Roofing Systems will repair leaks caused by defects in the roofing system manufactured or supplied by it and installed by an authorized BondCote dealer/installer.	Material and workmanship; Burke warrants that Burke will cause to be repaired leaks in Burkeline Roofing System caused by defects in roofing system's material or workmanship of the Burke approved roofing applicator.	Material only; Burke warrants that Burkeline roofing products manufactured by or for it will be free from defects in materials. Products may not always conform exactly to illustrations or samples.
5. Length of coverage	10 years; 15 years, only for new construction or tear-off applications using certain insulations	15 years (See Conditions For Renewal or Extension.)	2 years (See Conditions for Renewal or Extension.)
6. Nature of remedy	BondCote Roofing Systems will provide owner with repair to correct any leaks caused by defects in the manufacture or installation of roofing materials supplied by BondCote Roofing Systems.	Burke's sole obligation is the repair or replacement of Burkeline roofing products that prove defective within the limited warranty.	Burke's sole obligation is the repair or replacement of Burkeline roofing products that prove defective within the limited warranty.
7. Monetary limitations	BondCote's cost not to exceed the owner's original installed cost of materials supplied by BondCote Roofing Systems.	Burke's liability not to exceed owner's original cost of the installed roof over the life of warranty.	Burke's liability shall not exceed the price paid for the defective product, and Burke may, at its option, discharge such liability, if any, by supplying free of charge an equal quantity of roofing products to replace those found to be defective or by issuing credit to the customer in the amount of a net billing price after cash and other discounts allowed.
8. Notification requirements	Written notification to BondCote Roofing Systems, 106 Lukken Industrial Drive West, LaGrange, GA 30240, within 30 days after leaks are discovered or should have been discovered	Written notice within 30 days of discovery of any leaks	Written notice describing any claimed defect must be given to Burke immediately upon discovery and in no case later than 30 days from discovery.
9. Exclusive or additional remedy	Warranty is expressly agreed to be an exclusive warranty; warranty is in lieu of any other remedy and all other warranties whether arising under contract, tort, negligence, product liability, or any other action; excludes UCC warranties.	Warranty excludes all other warranties; Burke not liable for any other damages resulting from the use of the roofing system or caused by any defect, failure, or malfunction of the roofing system, whether a claim is based upon warranty, contract, negligence, or otherwise; excludes UCC warranties.	Excludes all other warranties; Burke is not liable for any other damages resulting from the use of the product or caused by any defect, failure, or malfunction of the product, whether a claim is based upon warranty, contract, negligence or otherwise; excludes
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	BondCote's good-faith determination	Burke's determination; Burke's sole judgment whether exclusions apply	Burke's determination; Burke's sole judgment whether exclusions apply
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 6, 8, 12, 16	1, 3, 4, 5, 7, 18	1, 3, 4, 5, 7, 18, 20
13. Wind coverage/exclusions	Warranty excludes wind equal to or exceeding strong gale, hurricanes, and tornadoes. Warranty covers roof damage resulting from wind speeds up to 46 miles per hour.	Warranty excludes coverage for roof damage for winds of peak gust speed of __ mph measured 35 feet above the ground, hurricanes, and tornadoes. Manufacturer indicates that the warranty covers roof damage from wind speeds up to 70 miles per hour. If higher wind speeds are required, Burke will design and approve increased fastener patterns and attachments to accommodate the request.	Warranty excludes damage to the product caused by gales, hurricanes, and tornadoes. [Burke indicates that there is no coverage for damage caused by wind.

14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C, I	B, C, F, G	B, F, G
15. Cost to obtain		\$11.00/square	None
16. Minimum charge		\$1,100	None
17. Ineligible structure or building use		Private residences, condominiums, townhomes	None
18. Pre-construction notice and approval requirements	Contractor must complete project approval form and forward to BondCote Roofing Systems for approval prior to job start.	Contractor must submit completed Burke Form BROO-339 to Burke; approval number and changes/requirements then forwarded by Burke to applicator; must have approval number to apply for final warranty inspection.	None
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	BondCote technical field representative makes inspections after completion prior to issuing warranty; BondCote will inspect prior to and during application for "new contractors" and on large or difficult installations; no charge.	Burke field service employees make on-site inspections prior to, during (depending on job) and after application prior to issuance of warranty, as well as two years later; \$350/day plus expenses for re-inspections only.	No on-site inspections
21. Contractor's post-installation obligation	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to all leaks, any defects and materials and workmanship for two years.	Although this is a material-only warranty, contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; BondCote indicates that it does not carry insurance covering its warranty obligations.	No; Burke indicates that it carries insurance that covers its warranty obligations.	No; Burke indicates that it carries general liability and blanket umbrella insurance that covers its warranty obligations.
23. Issuing entity manufactures and/or sells products	BondCote Roofing Systems manufactures and sells the product.	Burke manufactures and sells product.	Burke manufactures and sells product.
24. Conditions for renewal or extension	None	Warranty may be extended for five years. If owner notifies Burke at time of issuance of original warranty of intent to seek an extension, there is no charge for inspection. If owner seeks extension later, owner pays \$350/day plus expenses for inspection.	Warranty may be extended for up to 15 years by payment of fee. Fee varies depending on length of warranty and system used.
25. Assignability	Not assignable without written permission from BondCote Roofing Systems.	No restrictions stated.	No restrictions stated.
26. Special features/conditions	BondCote Roofing Systems has no obligation under the warranty without owner's signature accepting the warranty in lieu of all other remedies and the return of signed copy to BondCote Roofing Systems; the extended warranty has the same limitations as the original ten-year warranty. Owner shall be responsible for the cost of investigation if any leaks are determined not to be covered under warranty.	No representative of Burke has authority to make any representation or promises except as stated in warranty	Warranty states that it is expressly understood that (1) the products may not always conform exactly to illustrations or samples and (2) Burke has no control over the customer's use of the products or the advisability of using such products for any particular installation. Warranty also states that if any warranty provisions are held or determined to be invalid or unenforceable, the remaining provisions of the warranty shall remain in full force and effect.
27. Executed by owner	Yes (See Special Features/Conditions.)	No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Burke Rubber Company, a division of Burke Industries	Carlisle SynTec Systems, Division of Carlisle Corp.	Carlisle SynTec Systems, Division of Carlisle Corporation
2. Title, original publication date, and identifying symbol, if any	"Burkeline Roofing Systems Warranty for Commercial Building"; April 1988; BR00322	"Twenty year Membrane Material Warranty"; April 1986; (85-5-503SM (Rev. 4.86) appears on sample.)	"Golden Seal Total Roofing System Warranty"; May 1990; (85-5-939SM (Rev. 5/90) appears on sample)
3. Product, specification, or system covered	CSPE Hypalon	Carlisle Sure-Seal EPDM membrane	Carlisle Sure-Seal EPDM Roofing Systems
4. Scope of coverage	Material and workmanship; Burke warrants that Burke will cause to be repaired leaks in Burkeline Roofing System caused by defects in roofing system's material or workmanship of the Burke authorized roofing applicator.	Material only; Carlisle warrants to the buyer that the Sure-Seal Rubber Membrane will be free from manufacturing defects at the time of delivery to job site and the membrane material will not prematurely deteriorate to the point of failure because of weathering if properly installed, maintained, and used for purpose Carlisle intended. Flashings, adhesives and other accessories contained in a membrane system are not covered by this warranty.	Material and workmanship; Carlisle warrants to repair leaks in the Golden Seal Total Roofing System caused by a defect in Carlisle's Total Roofing System's materials or workmanship of Carlisle-authorized roofing applicator in installing the Total Roofing System. Carlisle's Total Roofing System is defined as Carlisle-brand materials: membrane, flashings, counter-flashings, adhesives and sealants, insulation, recovery board, fasteners, fastener plates, fastener strips, hard rubber or metal edging, metal termination bars, and any other Carlisle-brand products utilized in installation.
5. Length of coverage	5 or 10 years (See Conditions for Renewal or Extension.)	20 years (from date of sale)	15 years from date of Carlisle's acceptance, but not to exceed 15.5 years subsequent to date of substantial completion of roof
6. Nature of remedy	Burke will cause to be repaired leaks in the Burkeline Roofing System.	If membrane evidences manufacturing defects, Carlisle will, at its option, repair or replace defective material at F.O.B. point. If membrane shows premature deterioration, Carlisle will, at its option, provide repair material for original membrane or provide credit to be applied towards the purchase of a new membrane, the value of either of these remedies being determined by Carlisle based upon the number of remaining months of the unexpired warranty used to prorate at the current prices for the membrane.	Carlisle will repair leaks in the Carlisle Golden Seal Total Roofing System.
7. Monetary limitations	Burke's liability not to exceed owner's original cost of the installed roof over the life of warranty.	Carlisle's liability shall not exceed the original membrane material purchase price prorated by the number of remaining months of the unexpired warranty.	None stated.
8. Notification requirements	Written notice within 30 days of discovery of any leaks	Buyer must give notice within 30 days of discovery of premature deterioration of membrane.	Written notice within 30 days of discovery of any leak in the Carlisle Total Roofing System to Carlisle's supporting services department, P. O. Box 7000, Carlisle, PA 17013.
9. Exclusive or additional remedy	Warranty excludes all other warranties; Burke not liable for any other damages resulting from the use of the roofing system or caused by any defect, failure, or malfunction of the roofing system whether a claim is based upon warranty, contract, negligence, or otherwise; excludes UCC warranties.	No other warranties beyond warranties contained in document; excludes UCC warranties.	Owner's remedies and Carlisle's liability limited to Carlisle's repair of leaks in membrane system; remedy stated in warranty is owner's sole and exclusive remedy for failure of the Carlisle Total Roofing System or its components; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Burke's determination; Burke's sole judgment whether exclusions apply	Unclear; warranty states: "If upon inspection by the Seller, the Membrane evidences manufacturing defects (or) shows premature deterioration because of weathering..." [Carlisle indicates that Carlisle makes the determination.]	Carlisle's determination (See Special Features/Conditions.)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 3, 4, 5, 7, 18	None listed; material-only warranty.	1, 2, 3, 5, 7, 13, 16, 17. Warranty also specifically excludes insect infestation.

13. Wind coverage/exclusions	Warranty excludes winds of peak gust speeds of ___ mph measured 35 feet above the ground, hurricanes, and tornadoes. Burke indicates that warranty covers roof damage resulting from wind speeds up to 60 miles per hour.	None listed; material-only warranty.	Warranty excludes winds of peak gust of ___ mph or higher measured at 10 meters above ground, hurricanes, and tornadoes. Carlisle indicates that warranty will be issued excluding winds of peak gust speeds of 72 mph or higher and that warranty covers roof damage resulting from wind speeds up to 72 miles per hour if roof design submitted qualifies; if roof design does not qualify and owner chooses not to make Carlisle's recommended design changes, warranty will be issued to cover winds of peak gust speeds up to 55 mph.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C, F, G	None listed; material-only warranty.	B, C, F (including failure to comply with Carlisle's care and maintenance information sheet)
15. Cost to obtain	5 years: \$6.00/square; 10 years: \$8.00/square		\$12.00/square; \$14.00/square for Design C
16. Minimum charge	5 years: \$800; 10 years: \$600		
17. Ineligible structure or building use	Residential buildings; there may be other buildings with special requirements.	Residential structures; however, warranty is available for apartment houses, co-ops, condominiums, and the like.	Residential structures; however, warranty is available for apartment houses, co-ops, condominiums, and the like.
18. Pre-construction notice and approval requirements	Contractor must provide roof layout plan and all details to Burke prior to job start; Burke approval required.	None required.	Pre-installation wind design review, roof plan, and specifications must be submitted to and approved by Carlisle; Carlisle sends letter giving approval or indicating necessary modifications.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	Burke field service employees make inspection prior to, during, and after application prior to issuance of warranty as well as two years later; \$350/day charge plus expenses for re-inspections only.	No on-site inspection	If requested by owner or applicator, Carlisle technical representative makes on-site inspections prior and during application; Carlisle makes on-site inspection after completion prior to issuance of warranty; two inspections at no charge. Each additional inspection will cost \$500.
21. Contractor's post-installation obligation	Contractor obligated to make repairs to all leaks and materials and workmanship for two years.	None; material-only warranty	Contractor obligated to repair all leaks caused by faulty handling or installation of system for two years.
22. Backed by named insurance or surety	No; Burke indicates it does carry insurance that covers its warranty obligations.	No; Carlisle indicates that it does not carry insurance covering its warranty obligations.	No; Carlisle indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Burke manufactures and sells product.	Carlisle manufactures and sells product.	Carlisle manufactures and sells system components.
24. Conditions for renewal or extension	Warranty may be extended for five years. If owner notifies Burke at the time of issuance of original warranty of intent to seek an extension, there is no fee for inspection. If owner seeks extension later, owner pays \$350/day plus expenses for inspection. Burke makes inspection; owner pays for work necessary to bring roof to condition acceptable to Burke and pays fee for extension.	No renewal provision	No renewal provision
25. Assignability	No restrictions stated.	No restrictions stated	No restrictions stated.
26. Special features/conditions	No representative of Burke has authority to make any representation or promises except as stated in warranty document.	This warranty is only issued in conjunction with a "Sure-Seal Membrane Systems Warranty" or "Golden Seal Total Roofing System Warranty."	Carlisle does not warrant products utilized in the installation that it has not furnished and specifically disclaims liability under any theory of law, arising out of the installation and performance of, or damages sustained by or caused by, products not furnished by Carlisle. If Carlisle's investigation after receipt of notice from owner of leak reveals that cause of leak is outside scope of warranty, investigation and repair costs are to be paid by owner.
27. Executed by owner	No	No	No

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Carlisle SynTec Systems, Division of Carlisle Corporation	Carlisle SynTec Systems, Division of Carlisle Corporation	Carlisle SynTec Systems, Division of Carlisle Corporation
2. Title, original publication date, and identifying symbol, if any	"Carlisle Ten Year Total Roofing System Warranty"; 85-5-938 SM	"Ten Year Brite-Ply Membrane Material Warranty"; (85-5-951 SM appears on sample)	"Fifteen Year Polyepichlorohydrin Membrane Material Warranty"; 1986; (85-5-505SM (Rev. 4/86) appears on sample.)
3. Product, specification, or system covered	Carlisle Sure-Seal EPDM, Carlisle Brite-Ply EPDM, and Carlisle Sure-Weld Molecular Bonded Polyolefin Roofing Systems	Carlisle Brite-Ply EPDM Membrane	Sure-Seal Polyepichlorohydrin Rubber Membrane
4. Scope of coverage	Material and workmanship; Carlisle warrants to repair leaks in the Carlisle Ten Year Total Roofing System caused by a defect in the Carlisle total roofing system's materials or workmanship of the Carlisle authorized roofing applicator in installing the total roofing system. Carlisle total roofing system is defined as Carlisle membrane, flashings, counterflashings, adhesives and sealants, insulation, recovery board, fasteners, fastener plates, fastener strips, hard rubber or metal edging, metal termination bars, and any other Carlisle-brand products utilized in installation.	Material only; Carlisle warrants that the Brite-Ply rubber membrane material will be free from manufacturing defects at the time of its delivery to the job site and will not prematurely deteriorate to the point of failure because of weathering, if properly installed, maintained, and used for the purpose Carlisle intended. Flashings, adhesives, and other accessories contained in membrane system are not covered by this warranty.	Material only; Carlisle warrants to the buyer that the Sure-Seal Rubber Membrane will be free from manufacturing defects at the time of delivery to job site and the membrane material will not prematurely deteriorate to the point of failure because of weathering if properly installed, maintained, and used for purpose Carlisle intended. Flashings, adhesives, and other accessories contained in a membrane system are not covered by this warranty.
5. Length of coverage	10 years	10 years	15 years (from date of sale)
6. Nature of remedy	Carlisle will repair leaks in the total roofing system.	If membrane evidences manufacturing defects, Carlisle's liability limited, at its option, to the repair or replacement of the defective membrane at the F.O.B. point in the original contract of sale. If membrane shows premature deterioration because of weathering, Carlisle's liability limited, at its option, to providing repair material for the original membrane or credit to be applied towards the purchase of a new membrane, the value of these remedies being determined by Carlisle based upon the number of remaining months of the unexpired warranty used to prorate at the current prices for the membrane.	If membrane evidences manufacturing defects, Carlisle will, at its option, repair or replace defective material at F.O.B. point. If membrane shows premature deterioration, Carlisle will, at its option, provide repair material for original membrane or provide credit to be applied towards the purchase of a new membrane, the value of either of these remedies being determined by Carlisle based upon the number of remaining months of the unexpired warranty used to prorate at the current prices for the membrane.
7. Monetary limitations	None stated.	Carlisle's liability shall not exceed the original membrane purchase price prorated by the number of remaining months of the unexpired warranty.	Carlisle's liability shall not exceed the original membrane material purchase price prorated by the number of remaining months of unexpired warranty.
8. Notification requirements	Written notice within 30 days of discovery of any leak in the total roofing system to Carlisle's Warranty Services, P.O. Box 7000, Carlisle, PA 17013	Buyer must give notice to Carlisle within 30 days of discovery of premature deterioration of the membrane.	Buyer must give notice within 30 days of discovery of premature deterioration of membrane.
9. Exclusive or additional remedy	Owner's remedies and Carlisle's liability limited to repair of leaks in the total roofing system; remedy stated in warranty is owner's sole and exclusive remedy for failure of the Carlisle total roofing system or its components; excludes UCC warranties.	No other warranties beyond warranties contained in document; excludes UCC warranties.	No other warranties beyond warranties contained in document; excludes UCC warranties.
10. Inclusion of consequential damages	No	No (See Special Features/Conditions.)	No
11. Determination of warranty applicability	Carlisle's determination. (See Special Features/Conditions.)	Unclear; warranty states, "If upon inspection by the seller, the membrane evidences manufacturing defects (or) premature deterioration because of weathering..." [Carlisle indicates that Carlisle makes the determination.]	Unclear; warranty states "If upon inspection by the seller the membrane shows deterioration because of weathering..." [Carlisle indicates that Carlisle makes the determination.]
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 5, 7, 13, 16, 17. Warranty also specifically excludes insect infestation.	None listed; material-only warranty	None listed; material-only warranty.

13. Wind coverage/exclusions	Warranty form states that it excludes "winds of peak gust speeds _____ mph or higher measured at 10 meters above ground, hurricanes, and tornadoes." Carlisle indicates that 55 mph is inserted when warranty is issued so that warranty covers roof damage resulting from wind speeds up to 55 mph. Carlisle indicates that, when a request is made, warranty can be obtained to cover higher speeds after a project specification and detail review.		
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C, F (including failure of owner to comply with Carlisle's care and maintenance information sheet)	None listed; material-only warranty	None listed; material-only warranty.
15. Cost to obtain			
16. Minimum charge			
17. Ineligible structure or building use	Single-family residential structures; however, warranty is available for apartment houses, co-ops, condominiums, and the like.	Residential structures; however, warranty is available for apartment houses, co-ops, condominiums, and the like.	Residential structures; however, warranty is available for apartment houses, co-ops, condominiums, and the like.
18. Pre-construction notice and approval requirements	Carlisle must be contracted for a project specification and detail review.	None required.	None required.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	If requested by owner or applicator, Carlisle technical representative makes on-site inspections prior to and during application and after completion prior to issuance of warranty; two inspections at no charge. Each additional inspection will cost \$500.	No on-site inspections	No on-site inspections for this warranty.
21. Contractor's post-installation obligation	Contractor obligated to make repairs to workmanship deficiencies for two years.	None; material-only warranty	None; material-only warranty
22. Backed by named insurance or surety	No; Carlisle indicates that it does not carry insurance covering its warranty obligation.	No; Carlisle indicates that it does not carry insurance covering its warranty obligations.	No; Carlisle indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Carlisle manufactures and sells system components.	Carlisle manufactures and sells product.	Carlisle manufactures and sells product.
24. Conditions for renewal or extension	Warranty can be extended for 5 years for Sure-Seal Design A, B and mechanically fastened roofing systems. Owner must request in writing a Carlisle inspection within 30 days after the end of the initial 10 years, pay any expense that may be required to bring the installed roof membrane system into warrantable conditions, and pay \$500 per occurrence for the inspection.	No renewal provision	No renewal provision
25. Assignability	No restrictions stated.	No restrictions stated.	No restrictions stated
26. Special features/conditions	Carlisle shall not be responsible for the cleanliness or discoloration of the membrane system caused by environmental conditions, including, but not limited to, dirt, pollutants, or biological agents. Carlisle does not warrant products utilized in installation that it has not furnished and specifically disclaims liability, under any theory of law, arising out of the installation and performance of, or damages sustained by or caused by, products not furnished by Carlisle. If Carlisle's investigation after receipt of notice of leak from owner reveals that cause of leak is outside scope of warranty, investigation and repair costs are to be paid by owner. Warranty runs from substantial completion of roof regardless of date warranty is issued.	Carlisle shall not be responsible for the cleanliness or discoloration of the membrane material caused by environmental conditions, including, but not limited to, dirt, pollutants or biological agents. Warranty states that Carlisle shall not be liable for any incidental, consequential, or other damages under any theory of law whatsoever. This warranty is only issued in conjunction with a Brite-Ply Membrane System Warranty.	This warranty is only issued in conjunction with a Carlisle Membrane System Warranty.
27. Executed by owner	No	No	No

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Carlisle SynTec Systems, Division of Carlisle Corporation	The Celotex Corporation	The Celotex Corporation
2. Title, original publication date, and identifying symbol, if any	"Carlisle Membrane System Warranty"; 85-5-936 (Rev. 3/95)	"Celotex Modified Bitumen Limited Warranty on Material"; January 1985; Form 1166-0385	"Celotex Celotex-1 One Ply Roofing System Service Warranty"; July 1981; Form #1428-0682
3. Product, specification, or system covered	Carlisle Sure-Seal EPDM, Carlisle Brite-Ply EPDM, and Carlisle Sure-Weld Molecular Bonded Polyolefin Roofing Systems	Modified Bitumen Systems: SBS-4-F-M, SBS-3-F-M, SBS-DP-H+3-W-M, SBS-DP-H+2-W-M, SBS-DP-4-W-M, SBS-DP-3-W-M, SBS-DP-2-F-M, SBS-2-F-M, SBS-DP-4-F-M, SBS-DP-3-F-M, SBS-DP-2-C-M, SBS-2-C-M, SBS-DP-4-F-M, SBS-DP-3-F-M, SBS-DP-2-F-M, SBS-2-F-M, SBS-3-W-M, SBS-2-W-M, SBS-H+3-W-M, SBS-2-W-M, SBS-2-C-M, SBS-3-C-M, SBS-2-F-M, SBS-H+2-W-M, SBS-H+2-IV-W-M, APP-H+3-W-M, APP-H+2-W-M, APP-H+2-IV-W-M, APP-2-W-S, APP-H+2-W-S, APP-H+2-IV-W-S	Celotex-1 E.P.D.M. Systems: Type I Loose-Laid and Ballasted; Type II Fully Adhered; Type III Mechanically Attached; Type III (R) Mechanically Attached, Reinforced Sheet; Type HA felt back membrane hot-applied in asphalt.
4. Scope of coverage	Material and workmanship: Carlisle warrants to repair leaks in the Carlisle membrane system caused by a defect in the Carlisle membrane system's materials or workmanship of Carlisle authorized applicator in installing the membrane system. Carlisle membrane system is defined as Carlisle membrane, flashings, adhesives and sealants, and any other Carlisle-brand products utilized in installation. (See Special Features/Conditions.)	Material only: Celotex warrants that the roofing membrane and base flashing materials will withstand ordinary wear and tear of the elements and will be free of manufacturing defects that affect the ability of the products to maintain the roof in a watertight condition.	Material and workmanship: Celotex will repair leaks in the Celotex Celotex-1 Roofing System that are caused by defects in the Celotex roofing material or by defective workmanship of the Celotex Celotex-1 Approved Roofing Contractor.
5. Length of coverage	5 or 10 years	6 or 12 years (6-year warranty issued for CX-APP without top coating on surface of membrane.)	5 or 10 years; an additional "material only" warranty may be obtained for a longer duration on special request, and at Celotex's discretion; 15 years subject to prior Celotex approval.
6. Nature of remedy	Carlisle will repair leaks in the Carlisle membrane system.	Celotex will repair or replace the Celotex roofing membrane and/or Celotex base flashing materials and Celotex roof insulation, including labor and materials.	Celotex will have repairs made and pay for repairs covered under service warranty.
7. Monetary limitations	None stated.	Maximum liability over term of warranty is \$80/square of Celotex roofing membrane or \$100/square if insulated with Celotex insulation, both reduced by 20 percent of the original maximum liability during each year after the original five years of warranty.	Celotex's liability up to, but not to exceed, owner's original cost of installed Celotex-1 Roofing System
8. Notification requirements	Written notice within 30 days of discovery of any leak in the Carlisle membrane system to Carlisle's Warranty Services, P.O. Box 7000, Carlisle, PA 17013	Written notification to Commercial Roofing Division within 30 days after discovery of leak; all claims must be accompanied by proof of purchase. (See Special Features/Conditions.)	If leaks occur from any cause, owner shall notify Celotex promptly, confirming such notice in writing; owner to provide Celotex with written notification within 30 days of discovery of leaks
9. Exclusive or additional remedy	The owner's remedies and Carlisle's liability are limited to repair of leaks in membrane system; remedy stated in warranty is owner's sole and exclusive remedy for failure of the Carlisle membrane system or its components; excludes UCC warranties.	Warranty contains all of the provisions of owner's remedies for Celotex; Celotex's liability limited to provisions of warranty regardless of legal claim.	Excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Carlisle's determination (See Special Features/Conditions.)	Neutral (no provision)	Celotex's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 5, 7, 13, 16, 17. Warranty also specifically excludes insect infestation.	1, 2, 4, 5, 7, 9, 10, 13, 16, 17, 19, 20 [Celotex indicates that 6 is also applicable.]	1, 2, 3, 5, 6, 7, 8, 12, 13 [See Special Features/Conditions.]
13. Wind coverage/exclusions	Warranty form states that it excludes "winds of peak gust speeds _____ mph or higher measured at 10 meters above ground," hurricanes, and tornadoes. Carlisle indicates that 55 is inserted when warranty is issued so that warranty covers roof damage resulting from wind speeds up to 55 mph.	No coverage for damage caused by wind.	Warranty excludes gales, windstorms, hurricanes, and tornadoes. [Celotex indicates that warranty covers roof damage resulting from wind speeds up to 55 miles per hour up to but not including Beaufort Scale No. 10.]
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C, F (including failure of owner to comply with Carlisle's care and maintenance information sheet)	None enumerated in warranty [Celotex indicates that G is applicable.]	C [Celotex indicates that G is also applicable.]

15. Cost to obtain		None	\$2.50/square for 5 years; \$5.00/square for 10 years; \$1.00/square for additional 5 year "material-only" warranty; \$2.00/square for additional 10 year "material-only" warranty, \$10.00/square for 15 years, if approved.
16. Minimum charge		None	\$250 for 5 years; \$500 for 10 years; \$100 for additional 5 year "material-only" warranty; \$200 for additional 10-year "material-only" warranty; \$1,000 for 15 years.
17. Ineligible structure or building use	Single-family residential structures; however, warranty is available for apartment homes, co-ops, condominiums, and the like.	See Celotex Built-up and Modified Bitumen Roofing Systems Manual.	See Celotex Built-up and Modified Bitumen Roofing Systems Manual.
18. Pre-construction notice and approval requirements	Carlisle must be contacted for a project specification and detail review on projects where the building height exceeds 75 feet for Design B, 150 feet for mechanically fastened systems, and 250 feet for adhered systems.	None	Notice of award and approval from Celotex required; contractor submits Celotex notice of award form.
19. Approved, authorized, or licensed applicator	Yes	No	Yes
20. Job inspection policy	If requested by owner or applicator, Carlisle technical representative makes on-site inspections prior and during application; after completion prior to issuance of warranty; two inspections at no charge. Each additional inspection will cost \$500.	No on-site inspections	Celotex representative makes inspection after completion, as well as two years after issuance of warranty; no charge.
21. Contractor's post-installation obligation	Contractor obligated to make repairs to workmanship deficiencies for two years.	None; material-only warranty	Contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Carlisle indicates that it does not carry insurance covering its warranty obligation.	No	No
23. Issuing entity manufactures and/or sells products	Carlisle manufactures and sells system components.	Celotex manufactures and sells some sheet products; Celotex purchases some sheet products and other components for resale.	Celotex sells the products only.
24. Conditions for renewal or extension	Warranty may be extended for 5 years for Sure-Seal Design A, B and mechanically fastened roofing systems. The owner must request in writing a Carlisle inspection within 30 days after the end of the initial 10 years, pay any expense that may be required to bring the installed roof membrane system into warrantable conditions, and pay \$500 per occurrence for the inspection.	No renewal provision	No renewal provision
25. Assignability	No restrictions stated.	No restrictions stated	No restrictions stated.
26. Special features/conditions	Carlisle shall not be responsible for the cleanliness or discoloration of the Carlisle membrane system caused by environmental conditions including, but not limited to, dirt, pollutants, or biological agents. Carlisle does not warrant products utilized in installation that it has not furnished and specifically disclaims liability, under any theory of law, arising out of the installation and performance of, or damages sustained by or caused by, products not furnished by Carlisle. If Carlisle's investigation after receipt of notice of a leak from owner reveals that cause of leak is outside scope of warranty, investigation and repair costs are to be paid by the owner. Warranty runs from substantial completion of roof regardless of date warranty is issued.	Owner must send warranty registration form with proof of purchase to local Celotex regional office within 60 days of completion of roof.	Leaks caused by discharge of vegetable, mineral, animal oils, greases, solvents, or chemicals, such as industrial wastes upon the roof surface are not covered.
27. Executed by owner	No	No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of Issuing entity	The Celotex Corporation	The Celotex Corporation	The Celotex Corporation
2. Title, original publication date, and identifying symbol, if any	"Celotex Modified Bitumen Roofing System Limited Warranty"; January 1985; Form 1163-0185, Rev. A	"Celotex 'Specification' Warranty"; May 1987; Form No. 1033-0487	"Celotex Limited Service Warranty"; January 1981; Form #1141-0881
3. Product, specification, or system covered	Modified Bitumen Systems: SBS-4-F-M, SBS-3-F-M, SBS-DP-H+3-W-M, SBS-DP-H+2-W-M, SBS-DP-4-W-M, SBS-DP-3-W-M, SBS-DP-2-W-M, SBS-2-F-M, SBS-2-F-M, SBS-DP-4-F-M, SBS-DP-3-F-M, SBS-DP-2-C-M, SBS-2-F-M, SBS-DP-4-F-M, SBS-DP-3-F-M, SBS-DP-2-F-M, SBS-4-W-M, SBS-3-W-M, SBS-2-W-M, SBS-H+3-W-M, SBS-2-W-M, SBS-2-C-M, SBS-4-C-M, SBS-3-C-M, SBS-2-F-M, SBS-H+2-W-M, SBS-H+2-IV-W-M, APP-H+3-W-M, APP-H+2-W-M, APP-H+2-IV-W-M, APP-2-W-S, APP-H+2-W-S, APP-H+2-IV-W-S	Built-up Roofing Specifications: AGS-5-F-M; AGS-5-C-M; AGS-5-W-M; AGS-H+4-W-M; AGS-VO+4-W-M; AGS-VO+3-W-M; AGS-VO+3-W-S; AGS-H+3-W-M; AGS-VO+3-W-M; AGS-3-C-G; AGS-4-W-G; AGS-4-C-G; AGS-4-F-S; AGS-4-W-S; AGS-4-F-G; AGS-4-W-M; AGS-4-C-M; AGS-4-F-M; AGS-H+3-W-G; AGS-H+3-W-S; All specifications require use of Celco-glass AGS ply sheet; all are M.I.A. (Membrane Insulation Assembly) specifications. Modified Bitumen Insulation Specifications: APP-4-W-M; APP-4-W-S; APP-4-C-M; APP-4-C-S; APP-4-F-M; APP-4-F-S; APP-H+3-W-M; APP-H+3-W-S; APP-3-W-M; APP-3-W-S; APP-3-C-M; APP-3-C-S; APP-3-F-M; APP-3-F-S; APP-H+2-W-M; APP-H+2-W-S; APP-H+2-IV-W-M; APP-H+2-IV-W-S; APP-2-W-S; APP-2-W-M; APP-2-C-M; APP-2-C-S; APP-2-F-M; APP-2-F-S; SBS-4-W-M; SBS-4-C-M; SBS-4-F-M; SBS-4-F-S; SBS-3-W-M; SBS-3-C-M; SBS-3-F-M; SBS-H+2-W-M; SBS-H+2-IV-W-M; SBS-VO+2-W-M; SBS-2-W-M; SBS-2-C-M; SBS-2-F-M; SBS-2-R-M; SBS-2-C-M	Built-up Roofing Specifications: G/A-5-F-M; G/A-5-C-M; G/A-5-W-M; G/A-H+4-W-M; G/A-VO+4-W-M; G/A-4-F-G; G/A-VO+3-W-G; G/A-VO+3-W-S; G/A-4-W-G; G/A-3-C-G; G/A-4-W-S; G/A-4-C-S; G/A-3-W-M; G/A-3-W-S; G/A-4-W-M; G/A-4-C-M; G/A-4-F-S; G/A-4-F-M; G/A-H+3-W-G; G/A-H+3-W-S; G/A-4-C-G; Also applies to all B.U.R. Membrane Insulation Assembly (M.I.A.) specifications.
4. Scope of coverage	Material and workmanship: Celotex represents to the owner that Celotex will repair any leaks in the Celotex Modified Bitumen Roofing System caused by defects in the Celotex roofing material or errors in workmanship.	Material and workmanship: Celotex represents to the owner that Celotex will repair any leaks in the Celotex roof membrane and flashing caused by defects in the Celotex roofing products or errors in workmanship.	Material only: Celotex will pay costs for repairs necessary to correct roof leaks that develop in the warranted roof membrane, flashing, and expansion joint shield, caused by ordinary wear and tear from the elements. Celotex roof Insulations are warranted when incorporated into an M.I.A. System.
5. Length of coverage	Up to 20 years depending on specification selected	Up to 20 years [Celotex indicates that length of coverage may vary on special request at discretion of Celotex.]	10 years maximum
6. Nature of remedy	Celotex will have repairs made and will pay for repairs. If Membrane Limited Warranty, repairs caused by conditions covered under the warranty will be made to roofing membrane and expansion joint shield supplied by Celotex; if Membrane and Insulation (M.I.A.) Limited Warranty, repairs covered under the warranty will be made to roofing membrane, expansion joint shields, and roof insulation supplied by Celotex.	Celotex will have repairs made and will pay for such repairs.	Celotex will arrange for and pay cost for repairs necessary to correct roof leaks.
7. Monetary limitations	Total payable sum \$100 per 100 square feet for repairs to roofing membrane and expansion joint shield supplied by Celotex. For M.I.A. Limited Warranty, total payable sum \$130 per 100 square feet for repairs to roofing membrane, expansion joint shields, and roof insulation supplied by Celotex.	None stated.	Total payable sum \$80 per 100 sq. ft. for repairs to roofing membrane and expansion joint shield supplied by Celotex. For Membrane Insulation Assembly (M.I.A.) Limited Service Warranty, \$100 per 100 sq. ft. for repairs to membrane, expansion joint shields, and roof insulation supplied by Celotex. Maximum dollar amount available after fifth year is pro-rated at 20 percent per year in years six through ten.
8. Notification requirements	If leaks occur from any cause, owner shall notify Celotex promptly, confirming such notice in writing; owner to provide Celotex with written notification within 30 days after discovery of any leak.	Written notification to Celotex within 30 days of discovery of any leaks	Original owner shall notify Celotex promptly and confirm such notification in writing in the event leaks from any cause should occur.
9. Exclusive or additional remedy	Excludes all warranties or guarantees of any kind; excludes UCC warranties.	Owner's remedy and Celotex's liability limited to Celotex's repair of roofing system; excludes other warranties or guarantees; excludes UCC warranties. (See Special Features/Conditions.)	Excludes other guarantees or warranties; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Celotex's determination	Celotex's determination	Unclear [Celotex indicates Celotex's determination.]
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 4, 5, 6, 7, 8, 9, 11, 12	1, 2, 4, 5, 6, 7 (including specifically failure to dry or cracking of roof decks), 8, 11	1, 2, 4, 5, 6, 7, 8, 9, 11, 12, 19, 20

13. Wind coverage/exclusions	Warranty excludes gales, windstorms, hurricanes, and tornadoes. [Celotex indicates that warranty covers roof damage from wind speeds up to 55 miles per hour up to but not including Beaufort Scale No. 10.]	Warranty excludes gales, windstorms, hurricanes, and tornadoes. [Celotex indicates that warranty covers roof damage resulting from wind speeds up to 55 miles per hour.]	Warranty excludes gales, hurricanes, and tornadoes. [Celotex indicates that there is no coverage for damage caused by wind over 55 mph.]
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C (See Special Features/Conditions.)	C	B (See Special Features/Conditions.)
15. Cost to obtain	\$10.00/square (regardless of length of warranty)	\$7.50/square	\$10.00/square
16. Minimum charge	\$1,000	\$1,000	\$1,000
17. Ineligible structure or building use	See Celotex Built-up and Modified Bitumen Roofing Systems Manual.	See Celotex Built-up and Modified Bitumen Roofing Systems Manual.	See Celotex Built-up and Modified Bitumen Roofing Systems Manual.
18. Pre-construction notice and approval requirements	Celotex requires contractor to submit "Notice of Award" 14 days before starting job for approval or rejection by Celotex regional manager.	Contractor required to submit "Notice of Award" to regional office 14 days prior to job start for regional manager's approval or rejection.	Prior notice and approval from Celotex required; Contractor submits "Notice of Award" 14 days before starting job; Celotex regional manager will approve or reject.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	Celotex representative makes on-site inspection after completion prior to issuance of warranty and two years after completion; no charge.	Celotex representative makes on-site job inspection after application prior to issuance of warranty, as well as two years after issuing warranty; no charge.	No on-site inspections before, during, or after application; Celotex makes an inspection two years after issuance of warranty.
21. Contractor's post-installation obligation	Contractor obligated to make repairs to all workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor is obligated to make repairs to all leaks due to workmanship deficiencies for two years; material only warranty.
22. Backed by named insurance or surety	No	No; Celotex does not indicate whether it carries insurance covering its warranty obligations.	No
23. Issuing entity manufactures and/or sells products	Celotex purchases for resale some sheet products and other components used in these systems.	Celotex manufactures and sells most products; Celotex purchases some products for resale.	Celotex manufactures and sells products used in these systems except asphalt and some accessories that are bought for resale.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Not assignable; Celotex Limited Warranty accrues to the original owner named in the warranty and does not accrue to the benefit of any tenant, purchaser, successor, or assign of the original owner.	Assignment or transfer to subsequent owner is possible only after inspection and acceptance of roof by Celotex and payment of \$500 transfer fee by owner; warranty shall not accrue to the benefit of any tenant, purchaser, successor, or assign of original owner without special approval.	Not assignable and does not accrue to any tenant, purchaser, or successor of original owner.
26. Special features/conditions	Policy of Celotex not to cancel warranties after they have been issued except where the roof has been damaged due to causes not covered by the warranty.	Policy of Celotex not to cancel warranties after they have been issued except where the roof has been damaged due to causes not covered by the warranty. If repairs are required that are not covered by Celotex Limited Service Warranty, including repairs resulting from owner's alteration, extensions, or additions to roof, Celotex will advise owner of repairs needed, at owner's expense, to enable warranty to remain in effect. Failure of owner to follow Celotex's recommendations automatically terminates warranty with respect to the affected areas. "Alterations" include, without limitation, installations of aerials, signs, water towers, fan housings, air-conditioning equipment, T.V. antennae, and building expansion or additions.	Policy of Celotex not to cancel warranties after they have been issued except where the roof has been damaged due to causes not covered by the warranty. If repairs are required that are not covered by Celotex Limited Service Warranty, including repairs resulting from owner's alteration, extensions, or additions to roof, Celotex will advise owner of repairs needed, at owner's expense, to enable warranty to remain in effect. Failure of owner to follow Celotex's recommendations automatically terminates warranty with respect to the affected areas. "Alterations" include, without limitation, installations of aerials, signs, water towers, fan housings, air-conditioning equipment, T.V. antennae, and building expansion or additions.
27. Executed by owner	No	No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	The Celotex Corporation	Conklin Company, inc.	Conklin Company, Inc.
2. Title, original publication date and identifying symbol, if any	"United Warranty Celotex Celotex Single Ply Warranty Roofing Sheet Only"; September 1987; Form 1038-0587	"Conklin Limited Materials Warranty"; November 1990; 1-000-141A (Code #078270A 9/92 appears on packet accompanying warranty documents.)	"Conklin Company, Inc. Total Roof System Limited Joint Warranty"; Form E; November 1990; 1-000139; (Code #078-268 1/90 appears on packet accompanying warranty documents.)
3. Product, specification, or system covered	Celo-1 E.P.D.M. Systems: Type I Loose-Laid and Ballasted; Type II Fully Adhered; Type III Mechanically Attached; Type III (R) Mechanically Attached, Reinforced Membrane; Type HA, felt back membrane applied in hot asphalt.	Hy-Crown	Hy-Crown. Warranty is limited exclusively to the use of approved substrate materials overlaid with an approved Conklin roof membrane. The Conklin Total Roof System consists of Conklin roof membrane, Conklin fasteners, plates and approved boardstock insulation, polyurethane foam, and/or Hy-Crown slip sheet.
4. Scope of coverage	Material only; Celotex represents that its cured EPDM nonreinforced rubber roofing sheet is free from manufacturing defects and will not deteriorate due to the action of moisture, oxygen, ozone, and ultraviolet light modified by time and temperature to the extent that it becomes incapable of remaining watertight.	Material only; Conklin warrants that the roof will not leak in ordinary weather conditions due to any defect in product materials manufactured or sold by Conklin.	Material and workmanship. Conklin and contractor jointly warrant that the Conklin system will be free from water leaks resulting from ordinary wear and tear from the elements or from improper application.
5. Length of coverage	5 or 10 years. This is an extended warranty, issued only with purchase of Celotex Celotex One ply Roofing System Service Warranty and covers roofing sheet only after expiration of standard warranty.	1 to 15 years	1 to 15 years
6. Nature of remedy	Celotex will, at its option, provide product, F.O.B., original place of manufacture, to effect repair or provide credit to be applied towards the purchase of replacement product. Celotex not responsible for any labor and service charges pertaining to either original or replacement product.	Conklin's obligation is limited to the replacement of Conklin roofing product(s) to repair leaks.	Conklin and contractor, at their own expense, will supply the necessary product and labor to correct leakage caused by ordinary wear and tear or improper application.
7. Monetary limitations	Original purchase price of EPDM sheet is reduced for each month of service provided by the product.	None stated.	Conklin's and contractor's obligation shall in no event exceed either that portion of the original amount of the roofing contract that relates to the Conklin system and the labor required to apply the Conklin system or \$250,000, whichever is lesser.
8. Notification requirements	Written notice by certified mail to Celotex Roofing Products Division, P.O. Box 22602, Tampa, FL 33622 within 10 days of discovery of any leaks from the purported defect or deterioration.	Notification within 30 days following the discovery of circumstances giving rise to a claim to contractor and Conklin at 551 Valley Park Drive, P. O. Box 155, Shakopee, MN 55379.	Written notification within 30 days following discovery of leak to contractor and Conklin at P. O. Box 155, Shakopee, MN 55379.
9. Exclusive or additional remedy	Excludes UCC warranties.	Warranty is given in lieu of any other warranty; excludes UCC warranties; warrantors shall not be liable for any direct, indirect, incidental, consequential, special, or general damages resulting from failure of the Conklin system.	Owner's sole and exclusive remedy shall be the replacement of the defective membrane; warranty is given in lieu of any other warranty; excludes UCC warranties; warrantors shall not be liable for any direct, indirect, incidental, consequential, special, or general damages resulting from failure of the Conklin system.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Celotex's determination	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 5, 6, 7, 8, 13, 16, 19	1, 2, 3, 4, 6, 7, 14, 15, 16, 19, 20, 24, 25	1, 2, 3, 4, 6, 7, 14, 15, 16, 24, 25
13. Wind coverage/exclusions	Warranty excludes gales, hurricanes, and tornadoes. [Celotex indicates that there is no coverage for damage caused by wind over 55 mph.]	Warranty excludes gales, windstorms, hurricanes, and tornadoes. Conklin indicates that warranty covers roof damage resulting from wind speeds up to 43 miles per hour.	Warranty excludes winds of peak gust speed of _____ mph measured 35 feet above the ground, hurricanes, and tornadoes. Conklin indicates that warranty will be issued excluding winds over 43 miles per hour. Conklin indicates higher wind speed exclusions can be obtained by submitting a wind speed application.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C	H (including notice to contractor), R	A, B, C, D, E, F, H, J, S. Failure of owner to file an accurate, completed maintenance/inspection report annually within 30 days prior to anniversary of warranty effective date and failure to complete repairs deemed necessary within 60 days of annual inspection shall void the warranty. (See Special Features/Conditions.)
15. Cost to obtain	5 years: \$1.00/square; 10 years: \$2.00/square	1 to 10 years: no charge; 11 to 15 years: less than 10,000 square feet, \$200; greater than 10,000 square feet, \$300	\$8.00/square
16. Minimum charge	5 years: \$100; 10 years: \$200	None for 1 to 10 years; \$200 for 11 to 15 years	\$800

17. Ineligible structure or building use	See Celotex Celco-1 Roofing Systems Manual.	None	None
18. Pre-construction notice and approval requirements	Requirements applicable to Celotex Celco-1 One Ply Roofing System Service Warranty must be satisfied, as this warranty is available only with purchase of Celco-1 One Ply Roofing System Service Warranty.	Application must be submitted within 30 days of completion of project	Contractor must complete preapplication forms and submit them to Conklin prior to starting job; mandatory preinspection approval.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	Celotex representative makes inspection after completion as well as two years after issuance of warranty; no charge.	No on-site inspections.	Conklin warranty inspector makes on-site inspection prior to and after application prior to issuance of warranty; \$300 charge per day for preapplication inspection and \$300 charge per day for post-application inspection; \$100 charge for each additional day. If roof passes first post-application inspection, \$300 is applied toward cost of warranty. If roof fails the first post-application inspection, \$300 is retained and an additional \$300 is due upon scheduling of second post-application inspection.
21. Contractor's post-installation obligation	Contractor is obligated to make repairs to all leaks for two years; material-only warranty.	None; material-only warranty	Contractor obligated to make repairs to all leaks, any defects, and material and workmanship deficiencies for three years
22. Backed by named insurance or surety	No [Celotex does not indicate whether it carries insurance covering its warranty obligations.]	No; Conklin indicates that it does not carry insurance covering its warranty obligations.	No; Conklin indicates that it does not carry insurance covering its warranty obligations
23. Issuing entity manufactures and/or sells products	Celotex sells product only.	Conklin sells product only.	Conklin sells product only
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	No restrictions stated	No restrictions stated.	Warranty may be transferred upon giving notification to Conklin and contractor in writing within 60 days of transfer and ownership of structure of the name of new building owner and the intended use of the building. Conklin may inspect roof for a fee and require any modification it deems necessary to protect the roof system. Failure to notify Conklin in timely manner renders warranty null and void.
26. Special features/conditions	No representative of Celotex has authority to make any representation or promise except as stated in warranty document. Any inspection conducted by Celotex may include the securing of adequate samples of EPDM material for testing to evaluate any claim of purported defect or deterioration. Failure to permit such inspection constitutes waiver of claim.	Warranty interpreted and governed by the laws of the state of Minnesota.	The Conklin Company, Inc. Total Roof System Limited Joint Warranty is a joint warranty obligating Conklin Company, Inc. and the contractor. Building owner must submit to Conklin a maintenance/inspection report completed either by original contractor or another contractor approved by Conklin on forms provided by Conklin. The required maintenance inspection report must be filed annually not less than 30 days prior to the anniversary of the effective date of the warranty. Failure to submit accurate, complete report voids the warranty. If corrections are needed, roofing repairs not covered by the warranty must be completed within 60 days of the annual inspection, or warranty will be void. Conklin may require an inspection of repairs with inspection costs to be charged to building owner at current inspection fee rates. Owner must give written notice to Conklin and contractor within 30 days following discovery of damage to roof not covered by warranty, allow Conklin to inspect for a fee, and make repairs in order for warranty to remain in effect. Warranty interpreted and governed by laws of Minnesota.
27. Executed by owner	No	Yes	Yes; warranty also executed by contractor.

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Conklin Company, Inc.	Consolidated Coatings Corporation	Consolidated Coatings Corporation
2. Title, original publication date, and identifying symbol, if any	"Conklin Company Limited Joint Warranty"; Form E; November 1990; 1-00139A; (Code #078268A 11/91 appears on packet accompanying warranty documents.)	"Ten Year Limited Warranty Goodyear EZ Roof Premium"; 1980	"Limited Material Warranty"; 1980
3. Product, specification, or system covered	Hy-Crown. Warranty is limited exclusively to the use of approved Conklin Joint Warranty roofing membrane system.	EZ Roof Premium White, Black	Conso-Gard II
4. Scope of coverage	Material and workmanship. Conklin and contractor jointly warrant that the Conklin membrane/coating will be free from water leaks resulting from ordinary wear and tear from the elements or from improper application.	Material only: Consolidated guarantees Goodyear EZ Roof Premium Grade and Premium Grade-White against any defect that can be shown to Consolidated's satisfaction to have been caused by faulty workmanship in the manufacture of the goods or deterioration of the goods under normal service conditions.	Material only: Consolidated warrants that if, after complete coverage with Consolidated's Goodyear Roofing materials according to directions, customer's roof develops leaks CPCC agrees to furnish without charge sufficient Consolidated Roofing Materials to stop any leaks.
5. Length of coverage	1 to 10 years	10 years (from date of delivery)	10 years (from invoice date)
6. Nature of remedy	Conklin and contractor, at their own expense, will supply the necessary product and labor to correct leakage caused by ordinary wear and tear or improper application.	Consolidated will procure the making good of any water leaks in defective goods by such methods as it determines fit. Consolidated's obligation is limited to the rectification of defects in the goods causing water leaks, including the costs of labor and materials necessary to repair or replace the defective goods.	Consolidated agrees to furnish without charge, F.O.B. closest U.S.A. or Canada warehouse, or F.O.B. U.S.A. export port of embarkation, sufficient Consolidated Roofing Materials to stop leaks. Warranty does not include any labor or transportation charge.
7. Monetary limitations	Conklin's and contractor's obligation shall in no event exceed either that portion of the original amount of the roofing contract that relates to the roofing membrane/coating and the labor required to apply the roofing membrane/coating or \$250,000, whichever is lesser.	Consolidated's entire liability under warranty shall not exceed the total of the invoices covering the shipment of EZ Roof to the purchaser.	Consolidated's total obligation over the life of the warranty shall not exceed the owner's original cost of the Consolidated-supplied materials.
8. Notification requirements	Written notification within 30 days following discovery of leak to contractor and Conklin at P. O. Box 155, Shakopee, MN 55379.	The purchaser shall give notice of defects to Consolidated in writing within 28 days of the date on which the purchaser became aware of defect.	No notification requirements stated in warranty.
9. Exclusive or additional remedy	Owner's sole and exclusive remedy shall be the replacement of the defective membrane; warranty is given in lieu of any other warranty; excludes UCC warranties; warrantors shall not be liable for any direct, indirect, incidental, consequential, special, or general damages resulting from failure of the Conklin system.	Guarantee shall be in lieu of any other warranty or guarantee, express or implied. Purchaser's remedy, as stated in warranty, shall be exclusive, and Consolidated shall not be liable for any damages, either direct or consequential.	Warranty is in lieu of all warranties, express, implied, or statutory, and Consolidated neither assures nor authorizes any person to assume for it any other obligation or liability whatsoever.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision)	Consolidated's determination	Consolidated determines if leak is due to an excluded condition.
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 6, 7, 14, 15, 16, 24, 25	1, 2, 3, 4, 5, 9, 15, 19, 22	1, 3, 4, 6, 7, 24. (Consolidated indicates that 9, 10, 16, 17 and 19 are also applicable).
13. Wind coverage/exclusions	Warranty excludes gales, windstorms, hurricanes, and tornadoes. Conklin indicates that warranty covers roof damage resulting from wind speeds up to 43 miles per hour.	Warranty excludes windstorms, hurricanes, and tornadoes. Consolidated indicates that there is no coverage for damage caused by wind.	Consolidated indicates that damage as a result of wind is not covered by warranty.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	A, B, C, D, E, F, H, J, S. Failure of owner to file an accurate, complete maintenance/inspection report annually within 30 days prior to anniversary of warranty effective date and failure to complete repairs deemed necessary within 60 days of annual inspection shall void the warranty. (See Special Features/Conditions.)	B (other than emergency repairs properly carried out with compatible materials), C, H, R	B, C, L. (Consolidated indicates that P and R are also applicable.)
15. Cost to obtain	\$5.00/square	None	None
16. Minimum charge	\$500	None	None
17. Ineligible structure or building use	None	Residential structures	Residential structures
18. Pre-construction notice and approval requirements	Contractor must complete preapplication forms and submit to Conklin prior to starting job. Conklin's written approval to start the job is needed before work may begin. Conklin reserves the right to preinspect the job, for a fee, prior to granting approval.	Contractor required to give notice of the type of construction and number of squares and obtain approval from Consolidated prior to beginning installation.	Contractor required to give notice of the type of construction and number of squares and obtain approval from Consolidated prior to beginning installation.

19. Approved, authorized, or licensed applicator	Yes	No	No
20. Job inspection policy	Conklin warranty inspector makes on-site inspection prior to application sometimes and after application prior to issuance of warranty, \$300 charge per job per day, \$100 for each additional day. If roof passes first post-application inspection, \$300 is applied toward cost of warranty. If roof fails the first post-application inspection, \$300 is retained and an additional \$300 is due upon scheduling of second post-application inspection.	Consolidated authorized representative will make inspection during application and five years after completion; no charge.	Consolidated authorized representative will make inspection during application and five years after completion; no charge.
21. Contractor's post-installation obligation	Contractor obligated to make repairs to all leaks, any defects, and material and workmanship deficiencies for two years.	Although this is a material-only warranty, contractor is obligated to make repairs to workmanship deficiencies for two years.	Although this is a material-only warranty, contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Conklin indicates that it does not carry insurance covering its warranty obligations.	No	No
23. Issuing entity manufactures and/or sells products	Conklin sells product only.	Consolidated manufactures and sells product	Consolidated manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Warranty may be transferred upon giving notification to Conklin and contractor in writing within 60 days of transfer and ownership of structure of the name of new building owner and the intended use of building. Conklin may inspect roof for a fee and require any modification it deems necessary to protect the membrane. Failure to notify Conklin in timely manner renders warranty null and void.	No restrictions stated.	Not assignable
26. Special features/conditions	The Conklin Limited Joint Warranty is a joint warranty obligating Conklin Company, Inc. and the contractor. The building owner must submit to Conklin a maintenance/inspection report completed either by original contractor or another contractor approved by Conklin on forms provided by Conklin. The required maintenance inspection report must be filed annually not less than 30 days prior to the anniversary of the effective date of the warranty. Failure to submit accurate, complete report voids the warranty. If corrections are needed, roofing repairs not covered by the warranty must be completed within 60 days of the annual inspection, or warranty will be void. Conklin may require an inspection of repairs with inspection costs to be charged to building owner at current inspection fee rates. Owner must give written notice to Conklin and contractor within 30 days following discovery of damage to roof not covered by warranty, must allow Conklin to inspect for a fee, and must make repairs in order for warranty to remain in effect. Warranty interpreted and governed by laws of Minnesota.	This guarantee shall not apply in any case where water leaks arise from a defect in the goods or the relevant roofing works or from other circumstances that (a) should have been but were not seen by purchaser or its contractor during the course of or on completion of installation or (b) were so seen but not properly corrected at that time.	
27. Executed by owner	Yes; warranty also executed by contractor.	No	No

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Consolidated Coatings Corporation	Danosa Caribbean, Inc.	Dermabit
2. Title, original publication date, and identifying symbol, if any	"Roofing System Limited Warranty"; 1980	"Danosa Roofing Membrane System Limited Warranty"; 1979	Dermabit Waterproofing Industries "Guarantee Material and Labor"; April 1988
3. Product, specification, or system covered	Conso Gard III, IV	Esterdan RM; Glasdan AL-80, Glasdan R-36; Esterdan R-36	Dermabit APP 4170, 4170S; Elastphalt SBS 4170, 4170S
4. Scope of coverage	Material and workmanship; Consolidated warrants that the roofing membrane and flashing materials sold by Consolidated are free from defects in material and installation at the time of application and the roofing materials conform to Consolidated's specification. Warranty covers leaks resulting from deterioration of Consolidated roof membrane or Consolidated flashing caused by ordinary weathering; blisters, buckles, ridges, wrinkles and slips of the Consolidated roof membrane not caused by structural failure; damage to Consolidated roof membrane due to thermal shock; slippage of Consolidated roof membrane or flashing; breaks in approved flashing; deterioration of Consolidated roof membrane due to occasional ponding of water not caused by structural defect; and improper installation if the leak first occurs more than two years after completion. (See Special Features/Conditions.)	Material and workmanship; Danosa will pay all authorized costs of repair to Roofing Membrane System necessary to stop leaks resulting from deterioration of Danosa roofing membrane or flashing membrane system resulting from ordinary wear and tear by elements. Improper workmanship in application, blisters, buckles, ridges, wrinkles attributed to roofing membrane and its workmanship, and splits or cracks not caused by structural failure or slippage.	Material only; Dermabit guarantees that the membrane/ flashing will not lose its waterproof quality due to natural deterioration of the membrane, bare spots, ridges, or splits not caused by structural failure or movement of or cracks in substrate, roof base, or insulation.
5. Length of coverage	10 years (from invoice date)	5, 10, 15 years	10 years: Dermabit 4170 APP, 4170 SBS (must be coated); 12 years: Dermabit 4170, 4170S APP, SBS 4170, 4170S (all smooth surfaced specifications must be coated); 20 years: Dermabit 4170, 4170S APP, SBS 4170, 4170S (must be two layers and coated)
6. Nature of remedy	Consolidated will pay the cost of repair necessary to correct leaks in the roof membrane and flashing.	Danosa will pay all authorized costs of repair necessary to stop leaks.	Dermabit shall replace and/or repair any part of the Dermabit membrane/flashing as shall be necessary solely in order to stop water leaks.
7. Monetary limitations	None stated.	Danosa's total cumulative liability not to exceed a per-square limitation established by Danosa at time of completion of warranty form.	Dermabit's obligation over the life of guarantee is the aggregate amount equal to the amount that was paid by owner for supply and installation of the Dermabit membrane/flashing covered by the guarantee.
8. Notification requirements	All claims shall be made by writing to Consolidated at 1801 East Ninth Street, Cleveland, Ohio 44114 within 30 days after discovery of any defects or leaks.	Written notice within 30 days of discovery of leak	Written notification by certified mail to D.W.I., Incorporated, P.O. Box 1154, McLean, VA 22101, within 10 days after discovery of any leak
9. Exclusive or additional remedy	Warranty is exclusive and in lieu of all other warranties whether oral or written, express or implied; excludes UCC warranties.	Excludes other guarantees and warranties; excludes UCC warranties.	Excludes UCC warranties and any other obligations or liability on the part of Dermabit.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision)	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 9, 12, 16, 23	1, 2, 3, 4, 6, 7, 8, 9, 10, 12, 13, 17, 22. [Danosa indicates that 11, 15, 16, 18, 19, 23, 24, and 25 are also applicable.]	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 17, 18 (including exposure to any chemical or solution, radiation, or contamination by radioactivity from any nuclear fuel waste), 22, 23
13. Wind coverage/exclusions	Warranty excludes windstorms, hurricanes, and tornadoes. Consolidated indicates that there is no coverage for damage caused by wind.	Warranty excludes hurricanes. [Danosa indicates that there is no coverage for damage caused by wind.]	Warranty excludes windstorms, hurricanes, and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	A, B, C, F, H	B, C. [Danosa indicates that F, G, H, I, J, K, L, M, N, O, P, Q, and S are also applicable.]	B (see Special Features/Conditions). C, H, R. Cancellation of this guarantee will also result if building is damaged by any cause listed in Specific Exclusions from Coverage so as to affect the waterproof quality of the membrane or watertightness of structure.
15. Cost to obtain	None	\$6.00 square	None
16. Minimum charge	None	None	None
17. Ineligible structure or building use	Residential structures	None	Cold-storage buildings

18. Pre-construction notice and approval requirements	Contractor required to give notice of the type of construction and number of squares and obtain approval from Consolidated prior to beginning installation.		Danosa requires a letter from contractor indicating date and Danosa specification number before commencing work.	None
19. Approved, authorized, or licensed applicator	No		Yes	Yes
20. Job inspection policy	Consolidated authorized representative will make inspection during application and five years after completion; no charge.		Danosa Inspector will inspect prior, during, and after application; will also inspect every five years; no charge.	No on-site inspections. Owners signature on a 48-hour flood test required.
21. Contractor's post-installation obligation	Contractor obligated to make repairs to workmanship		Contractor obligated to make repairs to workmanship deficiencies for 10 years.	Contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No		No	No; Dermabit indicates that it carries \$1 million product-liability insurance coverage.
23. Issuing entity manufactures and/or sells products	Consolidated manufactures and sells product.		Danosa manufactures and sells the product.	Dermabit manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision		Five- or ten-year extension available if roof passes inspection and additional fee is paid.	No renewal provision
25. Assignability	Warranty is not transferable or assignable to subsequent owners without prior written consent of Consolidated.		Not assignable	Not assignable
26. Special features/conditions	Consolidated's obligation to make repairs resulting from improper installation is limited to the repair of leaks that first occur more than two years after the date of completion. Consolidated shall have no obligation to repair leaks resulting from improper installation that first occur within two years of the date of completion. Any products sold by Consolidated and not manufactured by Consolidated are sold "as is" and without any warranty, express or implied. The expense of removing and replacing the traffic surfaces or other structures building over the roof shall be borne by the owner. The warranty is conditioned upon the owner allowing Consolidated access to inspect the roofing system annually, and with an additional inspection during the final three months of the second year after completion. Warranty shall be construed according to the laws of the state of Ohio. No payment shall be made by Consolidated to the extent that any sums are paid by any corporation affiliated with Consolidated on account of a claim against such affiliated company arising out of the same facts.		All repairs must be authorized in writing in advance by Danosa and all repairs must be performed only by a Danosa approved roofing contractor.	No action, suit, claim, or other proceeding arising out of or relating to the Dermabit membrane or this guarantee may be filed or commenced later than one year after the expiration of the term of this guarantee. Owner shall give 30 days' prior written notice to Dermabit of owner's intention to repair or modify roof or other surface over which membrane is installed, including plans and specifications for the proposed repairs or modifications. No Dermabit representative, employee, or agent or any other person has the authority to assume any additional or other liability or responsibility in connection with the membrane installed.
27. Executed by owner	No		No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Dermabit	Dibiten USA	Dibiten USA
2. Title, original publication date, and identifying symbol, if any	Dermabit Waterproofing Industries "Material Guarantee"; April 1988	Dibiten USA "20 Years Limited Warranty"; August 1986	Dibiten USA "12 Years Limited Warranty"; October 1985 [Dibiten indicates that each warranty is issued individual certificate number by Dibiten USA.]
3. Product, specification, or system covered	Dermabit APP 4170; Elastphat 4170, 4170S, SBS	Dibiten Poly/4 Specifications 401-2, 402-2, 403-2, 404-2; Dibiten Poly 4.5 Specifications 451-2, 452-2, 453-2, R454-2	Dibiten Poly 4 Specifications 401, 402, 404, R405, R406, all with coating; Dibiten Poly 5 Specifications without roof coating
4. Scope of coverage	Material only; Dermabit guarantees that Dermabit membrane will not lose its waterproof quality due to natural deterioration of the membrane, bare spots, ridges, or splits not caused by structural failure or movement of or cracks in substrate or roof base or insulation.	Material only; Dibiten warrants its roofing membrane to be free of manufacturing defects.	Material only; Dibiten warrants its roofing membrane to be free of manufacturing defects. Warranty does not cover costs of removal and/or replacement of bonded or unbonded ballast or loosely laid stone on the roof structure.
5. Length of coverage	10 years	20 years	12 years
6. Nature of remedy	Dermabit, in its sole discretion, will either refund to owner a prorated portion of the original purchase price of the defective Dermabit membrane or provide, at no cost to owner, a portion of the Dermabit membrane required to replace defective membrane.	During the 20 years of this warranty, if the roofing membrane is proved to have manufacturing defects affecting the watertight integrity of the membrane, Dibiten will pay a share on a pro-rata basis, (5 percent per year from year 1 through 20) of all costs, including material and labor, for repair or replacement of the defective membrane.	During the first two years, if the roofing membrane is proved to have manufacturing defects, Dibiten will pay all costs, including materials and labor, for repair and/or replacement of the defective material as necessary to maintain the watertight integrity of the membrane. During the remaining ten years, if the roofing membrane is proved to have manufacturing defects affecting the watertight integrity of the membrane, Dibiten will pay a share, on a pro-rata basis, (10 percent per year from year 3 through 12) of all costs, including materials and labor, for repair or replacement of the defective material.
7. Monetary limitations	Original purchase price reduced in accordance with a prorated schedule ranging from 100 percent of original purchase price during the first two years of roof service to 10 percent in year 10.	No Dibiten liability beyond repair and/or replacement of the defective product.	No Dibiten liability beyond repair and/or replacement of the defective product
8. Notification requirements	Written notification by certified mail to D.W.I., Incorporated, P.O. Box 1154, McLean, VA 22101, within 10 days after discovery of any leak.	Written notice within 30 days of discovery of product failure to Dibiten's offices in South Gate, California. (See Special Features/Conditions.)	Written notice to Dibiten USA, 4301 East Firestone Boulevard, South Gate, California 90280 within 30 days of discovery of product failure
9. Exclusive or additional remedy	Dermabit's obligation to refund a portion of owner's original purchase price or to provide a portion of new membrane shall be the owner's sole and exclusive remedy; excludes UCC warranties and any other obligations or liability on the part of Dermabit.	The buyer's only recourse to Dibiten regarding manufacturing defects is this warranty; warranty seeks to exclude UCC warranties.	The buyer's only recourse to Dibiten regarding manufacturing defects is this warranty; warranty seeks to exclude UCC warranties (see Special Features/Conditions).
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision)	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 17, 18 (including exposure to any chemical or solution, radiation, or contamination by radioactivity from any nuclear fuel or waste), 22, 23. (Also excludes failure of underlying materials or structures to conform to manufacturer's specifications as to roof slopes or other requirements.)	1, 2, 19 and all other causes not directly related to manufacturing defects	1, 2, 19, and all other causes not directly related to manufacturing defects
13. Wind coverage/exclusions	Warranty excludes windstorms, hurricanes, and tornadoes.	Warranty excludes windstorms and hurricanes.	Warranty excludes windstorms and hurricanes.

14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B (see Special Features/Conditions), C, H, R. Cancellation of this guarantee will also result if building is damaged by any cause listed under Specific Exclusions from Coverage so as to affect waterproof quality of membrane or watertightness of structure.	B, C, D, F, H, J, R and Specific Exclusion Nos. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 17 and 19 make warranty ineffective	B, C, D, F, H, J, R and Specific Exclusion Nos. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 17, and 19 make warranty ineffective.
15. Cost to obtain	None	None	None
16. Minimum charge	None	None	None
17. Ineligible structure or building use	Cold-storage buildings	Structures used for cool or cold storage	Structures used for cool or cold storage
18. Pre-construction notice and approval requirements	None	None	None
19. Approved, authorized, or licensed applicator	No	No, but see Special Features/Conditions.	No, but see Special Features/Conditions.
20. Job inspection policy	No on-site inspections	No on-site inspections	No on-site inspections
21. Contractor's post-installation obligation	None	None	None
22. Backed by named insurance or surety	No; Dermabit indicates that it carries \$1 million product-liability insurance coverage.	No; Dibiten indicates that it carries insurance coverage for products and completed operations.	No; Dibiten USA indicates that it carries insurance coverage for products and completed operations.
23. Issuing entity manufactures and/or sells products	Dermabit manufactures and sells product.	Dibiten USA manufactures and sells product.	Dibiten USA manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Not assignable	No restrictions stated; Dibiten USA must be notified in writing within 30 days of any change of ownership of the structure.	No restrictions stated; Dibiten USA must be notified in writing at its South Gate, California address within 30 days of any change of ownership of the structure.
26. Special features/conditions	No action, suit, claim, or other proceeding arising out of or relating to the Dermabit membrane or this guarantee may be filed or commenced later than one year after the expiration of the term of this guarantee. Owner shall give 30 days' prior written notice to Dermabit of owner's intention to repair or modify roof or other surface over which membrane is installed, including plans and specifications for the proposed repairs or modifications. No Dermabit representative, employee, or agent or any other person has authority to assume any additional or other liability or responsibility in connection with the membrane installed.	Installing roofing contractor must be licensed by and in good standing with the licensing authority of the jurisdiction in which the structure is located. The installing contractor must make written request for the warranty using Dibiten Warranty Request Forms; completed warranty request forms must be received by Dibiten within 30 days of the installation completion date. Dibiten reserves the right to disapprove the qualifications of contractor selected to perform any repairs or replacement covered under the warranty. Dibiten provides general information about its products in its advertising, its descriptions, its demonstrations, and its samples, but nothing contained or stated in such activities is a warranty.	Installing roofing contractor must be licensed by and in good standing with the licensing authority of the jurisdiction in which the structure is located. The installing contractor must make written request for the warranty using Dibiten Warranty Request Forms; completed warranty request forms must be received by Dibiten within 30 days of the installation completion date. Dibiten reserves the right to disapprove the qualifications of contractor selected to perform any repairs or replacement covered under the warranty. Dibiten provides general information about its products in its advertising, its descriptions, its demonstrations, and its samples, but nothing contained or stated in such activities is a warranty.
27. Executed by owner	No	No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Dibiten USA	Dibiten USA	Dibiten USA
2. Title, original publication date, and identifying symbol, if any	Dibiten USA "15 Years Limited Warranty"; 1988 [Dibiten indicates that each warranty is issued individual certificate number by Dibiten USA.]	Dibiten USA "10 Years Limited Warranty"; October 1985	Dibiten USA 10 Year Limited Warranty"; October 1985
3. Product, specification, or system covered	Dibiten Poly 5 with roof coating; specification numbers 501, 502, 503, 504, R505, R506	Dibiten Poly 4 Uncoated Specifications 401, 402, 403, 404, R405, R406; Dibiten Poly 5 Uncoated Specifications 501, 502, 503, 504, R505, R506.	Dibiten Poly 4.5 Specifications 451, 452, 453, R455, R456 Granular
4. Scope of coverage	Material only; Dibiten warrants its roofing membrane to be free of manufacturing defects. Warranty does not cover costs of removal and/or replacement of bonded or unbonded ballast or loosely laid stone on the roof surface.	Material only; Dibiten warrants its roofing membrane to be free of manufacturing defects.	Material only; Dibiten warrants its roofing membrane to be free of manufacturing defects.
5. Length of coverage	15 years	10 years (See Special Features/Conditions.)	10 years
6. Nature of remedy	During the 15 years of this warranty, if the roofing membrane is proved to have manufacturing defects affecting the watertight integrity of the membrane, Dibiten will pay a share on a pro-rata basis, (7.14 percent per year from year 2 through 15) of all costs, including materials and labor, for repair or replacement of the defective membrane.	During the 10 years of this warranty, if the roofing membrane is proved to have manufacturing defects affecting the watertight integrity of the membrane, Dibiten will pay a share on a pro-rata basis, (10 percent per year from year 1 through 10) of all costs, including material and labor, for repair or replacement of the defective membrane.	During the 10 years of this warranty, if the roofing membrane is proved to have manufacturing defects affecting the watertight integrity of the membrane, Dibiten will pay a share on a pro-rata basis, (10 percent per year from year 1 through 10) of all costs, including material and labor, for repair or replacement of the defective membrane.
7. Monetary limitations	No Dibiten liability beyond repair and/or replacement of the defective product.	No Dibiten liability beyond repair and/or replacement of the defective product.	No Dibiten liability beyond repair and/or replacement of the defective product
8. Notification requirements	Written notice to Dibiten USA, 4301 E. Firestone Blvd., South Gate, CA 90280 within 30 days of discovery of product failure	Written notice within 30 days of discovery of product failure to Dibiten's offices in South Gate, California. (See Special Features/Conditions.)	Written notice within 30 days of discovery of product failure (See Special Features/Conditions.)
9. Exclusive or additional remedy	The buyer's only recourse to Dibiten regarding manufacturing defects is this warranty; warranty seeks to exclude UCC warranties. (See Special Features/Conditions.)	The buyer's only recourse to Dibiten regarding manufacturing defects is this warranty; warranty seeks to exclude UCC warranties.	The buyer's only recourse to Dibiten regarding manufacturing defects is this warranty; warranty seeks to exclude UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision)	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 19, and all other causes not directly related to manufacturing defects	1, 2, 19 and all other causes not directly related to manufacturing defects	1, 2, 19, and all other causes not directly related to manufacturing defects
13. Wind coverage/exclusions	Warranty excludes windstorms and hurricanes.	Warranty excludes windstorms and hurricanes.	Warranty excludes windstorms and hurricanes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C, D, F, H, J, R and Specific Exclusion Nos. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 17, and 19 make warranty ineffective.	B, C, D, F, H, J, R and Specific Exclusion Nos. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 17 and 19 make warranty ineffective.	B, C, D, F, H, J, R and Specific Exclusion Nos. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 17, and 19 make warranty ineffective.
15. Cost to obtain	None	None	None
16. Minimum charge	None	None	None
17. Ineligible structure or building use	Structures used for cool or cold storage	Structures used for cool or cold storage	Structures used for cool or cold storage
18. Pre-construction notice and approval requirements	None	None	None
19. Approved, authorized, or licensed applicator	No, but see Special Features/Conditions.	No, but see Special Features/Conditions.	No, but see Special Features/Conditions.
20. Job inspection policy	No on-site inspections	No on-site inspections	No on-site inspections

21. Contractor's post-installation obligation	None	None	None
22. Backed by named insurance or surety	No; Dibiten USA indicates that it carries insurance coverage for products and completed operations.	No; Dibiten indicates that it carries insurance coverage for products and completed operations.	No; Dibiten USA indicates that it carries insurance coverage for products and completed operations.
23. Issuing entity manufactures and/or sells products	Dibiten USA manufactures and sells product.	Dibiten USA manufactures and sells product.	Dibiten USA manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	No restrictions stated; Dibiten USA must be notified in writing at its South Gate, California address within 30 days of any change of ownership of the structure.	No restrictions stated; Dibiten USA must be notified in writing within 30 days of any change of ownership of the structure.	No restrictions stated; Dibiten USA must be notified in writing within 30 days of any change of ownership of the structure.
26. Special features/conditions	Installing roofing contractor must be licensed by and in good standing with the licensing authority of the jurisdiction in which the structure is located. The installing contractor must make written request for warranty using Dibiten Warranty Request Forms; completed warranty request forms must be received by Dibiten within 30 days of installation completion date. Dibiten reserves the right to disapprove the contractor selected to perform any repairs or replacement covered under the warranty. Dibiten provides general information about its products, its descriptions, its demonstrations, and its samples, but nothing contained or stated in such activities is a warranty.	Installing roofing contractor must be licensed by and in good standing with the licensing authority of the jurisdiction in which the structure is located. The installing contractor must make written request for the warranty using Dibiten Warranty Request Forms; completed warranty request forms must be received by Dibiten within 30 days of the installation completion date. Dibiten reserves the right to disapprove the qualifications of contractors selected to perform any repairs or replacement covered under the warranty. Dibiten provides general information about its products in its advertising, its descriptions, its demonstrations, and its samples, but nothing contained or stated in such activities is a warranty.	Installing roofing contractor must be licensed by and in good standing with the licensing authority of the jurisdiction in which the structure is located. The installing contractor must make written request for the warranty using Dibiten Warranty Request Forms; completed warranty request forms must be received by Dibiten within 30 days of the installation completion date. Dibiten reserves the right to disapprove the qualifications of contractor selected to perform any repairs or replacement covered under the warranty. Dibiten provides general information about its products in its advertising, its descriptions, its demonstrations, and its samples, but nothing contained or stated in such activities is a warranty.
27. Executed by owner	No	No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Dibiten USA	Duro-Last Roofing, Inc.	Duro-Last Roofing, Inc.
2. Title, original publication date, and identifying symbol, if any	"Dibiten USA 6 Year Limited Warranty"; October 1985	"15 Year Residential Material Warranty"; March 1993; DL 15-01 Rev. 3/93	"15 Year Warranty"; August 1, 1991; DL 15-00 Rev.
3. Product, specification, or system covered	Dibiten Poly 4 Specifications 401, 402, 404, R405, R406, all without coating	Duro-Last Roofing System	Duro-Last
4. Scope of coverage	Material only; Dibiten warrants its roofing membrane to be free of manufacturing defects.	Material only; Duro-Last grants a material-only warranty to the owner of a building with a roof on a porch, sun deck, garage, storage shed, or single-family residence and installed by an authorized dealer/contractor that the Duro-Last membrane material and accessories will be free from manufacturing defects at the time of delivery and the membrane material and accessories will not become defective within the term of the warranty. Warranty does not extend to color.	Material and workmanship; Duro-Last grants a limited warranty to the building owner that it will repair any leak in a Duro-Last roof caused by any defect in Duro-Last membrane materials or accessories or workmanship of the authorized dealer/contractor. Warranty does not extend to color.
5. Length of coverage	6 years	15 years	15 years
6. Nature of remedy	During the first two years, Dibiten will pay all costs, including materials and labor for repair or replacement of defective material. During the next four years, if the roofing membrane is proved to have manufacturing defects affecting the watertight integrity of the membrane, Dibiten will pay a share, on a pro rata basis, (25 percent per year from year three through six) of all costs, including materials and labor, for repair or replacement of the defective material.	Should a defect occur in the membrane material or accessories within the warranty, Duro-Last's liability limited solely to provide the materials necessary to make the repairs.	Provided that Duro-Last has authorized the repair and an authorized dealer/contractor makes the repair, Duro-Last's obligation is to repair any covered leak in the roof, including repair or replacement of membrane material and accessories and the cost of or furnishing labor to repair roof at the contractor list price in effect at the time of repair.
7. Monetary limitations	No Dibiten liability beyond repair and/or replacement of the defective product	None stated.	Duro-Last's liability for cost of labor to repair roof is at the contractor's list price in effect at time of repair; otherwise, no monetary limitations stated.
8. Notification requirements	Written notice within 30 days of discovery of product failure (See Special Features/Conditions.)	Written notification to Duro-Last's corporate headquarters, 525 Morley Drive, Saginaw, MI 48601, within 30 days after discovery of any defective material	Written notification to Duro-Last's corporate headquarters, 525 Morley Drive, Saginaw, MI 48601, within 30 days after discovery of any leak
9. Exclusive or additional remedy	The buyer's only recourse to Dibiten regarding manufacturing defects is this warranty; warranty seeks to exclude UCC warranties.	Warranty is owner's sole and exclusive remedies for failure of the roofing membrane material or accessories; excludes UCC warranties. (See Special Features/Conditions.)	No warranties, representations, promises, or oral statements have been made by any representative of Duro-Last, and owner is not to rely on same unless added to the warranty in writing. (See Special Features/Conditions.)
10. Inclusion of consequential damages	No	No	No express exclusion
11. Determination of warranty applicability	Neutral (no provision)	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 19, and all other causes not directly related to manufacturing defects	1, 3, 18. Warranty also excludes damages caused by chemicals not normally found in nature.	1, 2, 3, 4, 6, 10, 12, 14, 16, 18, 24. Warranty also excludes damages caused by chemicals not normally found in nature. [Duro-Last indicates warranty covers damage caused by oils, wax, grease, animal fats, and acids.]
13. Wind coverage/exclusions	Warranty excludes windstorms and hurricanes.		Warranty excludes gales, hurricanes, and tornadoes. [Duro-Last does not indicate wind speeds covered by warranty.]
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C, D, F, H, J, R and Specific Exclusion Nos. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 17, and 19 make warranty ineffective.	A, C, I	A, C, G, I
15. Cost to obtain	None	None	None

16. Minimum charge	None		None	None
17. Ineligible structure or building use	Structures used for cool or cold storage		None	Porch, sun deck, garage, storage shed, or single-family residence of less than 1,000 square feet.
18. Pre-construction notice and approval requirements	None		None required	None
19. Approved, authorized, or licensed applicator	No, but see Special Features/Conditions.		Yes	Yes
20. Job inspection policy	No on-site inspections		No on-site inspections	Duro-Last quality assurance specialist makes on-site inspection after application prior to issuance of warranty; no charge.
21. Contractor's post-installation obligation	None		Although this is a material-only warranty, contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Dibiten USA indicates that it carries insurance coverage for products and completed operations.		No; Duro-Last indicates that it does not carry insurance covering its warranty obligations.	No; Duro-Last indicates that it carries \$12 million liability insurance coverage.
23. Issuing entity manufactures and/or sells products	Dibiten USA manufactures and sells product.		Duro-Last manufactures and sells product.	Duro-Last fabricates and sells product.
24. Conditions for renewal or extension	No renewal provision		No renewal provision	No renewal provision
25. Assignability	No restrictions stated; Dibiten USA must be notified in writing within 30 days of any change of ownership of the structure.		No restrictions stated.	Assignable with written permission of Duro-Last, Inc.
26. Special features/conditions	Installing roofing contractor must be licensed by and in good standing with the licensing authority of the jurisdiction in which the structure is located. The installing contractor must make written request for the warranty using Dibiten Warranty Request Forms; completed warranty request forms must be received by Dibiten within 30 days of the installation completion date. Dibiten reserves the right to disapprove the qualifications of contractor selected to perform any repairs or replacement covered under the warranty. Dibiten provides general information about its products in its advertising, its descriptions, its demonstrations, and its samples, but nothing contained or stated in such activities is a warranty.		All interpretations of this warranty shall be considered that their form, execution, and validity thereof shall be controlled by the laws of the state of Michigan. Oral representations cannot be relied upon as correctly stating the representations of Duro-Last Roofing, Inc.	Owner's failure to comply with the terms and limitations in the limited warranty releases Duro-Last from any liability. All interpretations of this warranty shall be considered that their form, execution, and validity thereof shall be controlled by the laws of the state of Michigan. Duro-Last "does not waive any rights under this limited warranty if it does not enforce the limitations." Oral representations cannot be relied upon as correctly stating the representations of Duro-Last, Inc.
27. Executed by owner	No		Yes	Yes

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

Duro-Last Roofing, Inc.		Elastomeric Roofing Systems, Inc.		Elastomeric Roofing Systems, Inc.	
1. Identity of issuing entity	Duro-Last, Inc. "20 Year Limited Warranty"; August 1, 1991; DL 20-00 Rev. 8/91	Duro-Last Roof	"ERSystems ____ Year PermaVeld CPA Roof System Warranty"; October 1, 1996; 961001 PRSW	PermaVeld, PermaVeld Fleece Backed, PermaVac systems	"ERSystems ____ Year PermaVeld CPA Watertight Material Warranty"; October 1, 1996; 961001 PMWW
2. Title, original publication date, and identifying symbol, if any					
3. Product, specification, or system covered	Material and workmanship; Duro-Last grants a limited warranty to the building owner that it will repair any leak in the Duro-Last roof caused by any defect in Duro-Last membrane materials or accessories or by the workmanship of the authorized dealer/contractor.		Material and workmanship; ERSystems warrants to repair or cause to be repaired any leak in the membrane system caused by premature deterioration due to weathering or a defect in the ERSystems materials or in the workmanship of installing the system. The system is defined as the elastomeric membrane, adhesives, sealants, flashing membrane, fasteners, and insulation supplied by ERSystems. All materials not supplied by ERSystems must be approved in writing by ERSystems.	Material and workmanship; ERSystems warrants to repair defects in materials and workmanship required to maintain roof in a watertight condition or if product shows premature deterioration due to weathering. Regarding materials, warranty is limited to ERSystems membrane and material approved in writing by ERSystems.	
4. Scope of coverage					
5. Length of coverage	20 years. (During years 11 through 20, Duro-Last will not pay for any labor needed to effect repairs; see Nature of Remedy.)		5, 10, or 15 years	5, 10, or 15 years	
6. Nature of remedy	Provided that Duro-Last has authorized the repair and an authorized dealer/contractor makes the repair, during years 1 through 10, Duro-Last will repair any covered leaks, including the repair or replacement of membrane material and accessories and the cost of furnishing labor to repair the roof. During the 11th through 20th years, Duro-Last will pay a pro-portionate cost of material only and will not be responsible for the cost of the labor. During the 11th year, Duro-Last will pay 80 percent of the cost of material only to return roof to leak-proof status 12th year; 60 percent of the cost of the material only; 13th year, 40 percent of the cost of the material only; 14th through 20th years: 30 percent of the cost of material only. During years 11 through 20, the owner pays contractor for time and other materials.		The owner's remedies and ERSystems' liability is limited to the cost of repair of the leaks in the system.	ERSystems' liability is limited to providing the necessary materials and labor to repair the defective roof area and maintain a watertight condition.	
7. Monetary limitations	Duro-Last's liability for cost of labor for repairs during first 10 years is at the contractor list price in effect at time of repair. During years 11 through 20, Duro-Last to pay only a proportionate cost of material only, ranging from 80 percent to 30 percent.		None stated.		The maximum value allowed by ERSystems for the repair or credit shall not exceed the original product purchase price.
8. Notification requirements	Written notification to Duro-Last's corporate headquarters in Saginaw, Mich. within 30 days after discovery of any leak.		The buyer must notify ERSystems by registered mail, return receipt requested, at 2950 Niagara Lane North, Minneapolis, MN 55447-4854, within 30 days of discovery of the failure.		The buyer must notify ERSystems by registered mail, return receipt requested, at 2950 Niagara Lane North, Minneapolis, MN 55447-4854, within 30 days of discovery of the failure.
9. Exclusive or additional remedy	No other warranties, representations, promises or oral statements have been made by any representative of Duro-Last (See Special Features/Conditions.)		The warranty is exclusive and in lieu of any other warranties; ERSystems shall have no further obligation or liability of any kind. ERSystems' sales personnel are not authorized to make warranties; ERSystems' employees' oral statements do not constitute warranties and shall not be relied upon; excludes UCC warranties.		The warranty is exclusive and in lieu of any other warranties; ERSystems shall have no further obligation or liability of any kind. ERSystems' sales personnel are not authorized to make warranties; ERSystems' employees' oral statements do not constitute warranties and shall not be relied upon; excludes UCC warranties.
10. Inclusion of consequential damages	No express exclusion		No	No	No
11. Determination of warranty applicability	Neutral (no provision)		ERSystems' determination	ERSystems' determination	
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 6, 10, 12, 14, 16, 24. Warranty also excludes damages caused by chemicals not normally found in nature.		1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 16, 17, 18, 22, 23. Warranty also specifically excludes damages caused by atomic radiation, insects or animals, and Specific Condition P.	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 16, 17, 18, 22, 23. Warranty also specifically excludes damages caused by atomic radiation, insects or animals, and Specific Condition P.	
13. Wind coverage/exclusions	Warranty excludes gales, hurricanes, and tornadoes.		Warranty covers roof damage resulting from wind speeds up to 55 mph. Warranty excludes gales (exceeding 55 mph) and tornadoes.	Warranty covers roof damage resulting from wind speeds up to 55 mph. Warranty excludes gales (exceeding 55 mph) and tornadoes.	
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	A, C, I		C, M, S (See Special Features/Conditions.)	C, M, S (See Special Features/Conditions.)	
15. Cost to obtain	None		5 years: \$9.00/square; 10 years: \$12.00/square; 15 years: \$16.00/square	5 years: \$6.00/square; 10 years: \$8.00/square; 15 years: \$12.00/square	

16. Minimum charge	None	5 years: \$700; 10 years: \$900; 15 years: \$1,100	5 years: \$600; 10 years: \$700; 15 years: \$800
17. Ineligible structure or building use	Porch, sun deck, garage, storage shed, or single-family residence of less than 1,000 square feet	Cold-storage buildings, single-family residences, and special-purpose facilities	Cold-storage buildings, single-family residences, and special-purpose facilities
18. Pre-construction notice and approval requirements	None	ERSystems must receive a completed warranty pre-notification form prior to the start of the project. All warranty requests require approval in advance of starting the project. Any deviations from ERSystems' published specifications must be approved in writing prior to job start.	ERSystems must receive a completed warranty pre-notification form prior to the start of the project. All warranty requests require approval in advance of starting the project. Any deviations from ERSystems' published specifications must be approved in writing prior to job start.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	Duro-Last quality assurance specialist makes on-site inspection after application prior to issuance of warranty; no charge.	ERSystems technical support representative makes inspections during application depending on size and complexity of job and qualifications of contractor and after completion prior to issuance of warranty as well as two years after issuance of warranty; no charge for initial warranty; charge for subsequent inspection if job does not pass inspection. ERSystems reserves the right to require a pre-job inspection.	ERSystems technical support representative makes inspections during application depending on size and complexity of job and qualifications of contractor and after completion prior to issuance of warranty as well as two years after issuance of warranty; no charge for initial warranty; charge for subsequent inspection if job does not pass inspection. ERSystems reserves the right to require a pre-job inspection.
21. Contractor's post-installation obligation	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Duro-Last indicates that it carries \$12 million liability insurance coverage.	No; ERSystems indicates that it carries a \$2.5 million product liability insurance covering its warranty obligations.	No; ERSystems indicates that it carries a \$2.5 million product liability insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Duro-Last manufactures and sells product.	ERSystems sells product only.	ERSystems sells product only.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Assignable with the written permission of Duro-Last, Inc.	The warranty is transferable subject to ERSystems' inspection, written approval, and payment of the current transfer fee, solely at the discretion of ERSystems.	The warranty is transferable subject to ERSystems' inspection, written approval, and payment of the current transfer fee, solely at the discretion of ERSystems.
26. Special features/conditions	The owner's failure to comply with the terms and limitations in the limited warranty releases Duro-Last from any liability. All interpretations of this warranty shall be considered that their form, execution, and validity thereof shall be controlled by the laws of the state of Michigan. Duro-Last "does not waive any rights under this limited warranty if it does not enforce the limitations." Oral representations cannot be relied upon as corroboration of the representation of Duro-Last, Inc.	If ERSystems determines the cause of a reported leak to be outside the scope of the warranty, inspection and repair costs shall be paid by the owner; failure of owner to pay for non-warranted repairs within 30 days shall render the warranty null and void. The warranty shall be governed and construed in accordance with the laws of the state of Minnesota. The courts of Minnesota shall have exclusive jurisdiction over all disputes arising out of warranty. Any action for breach of the contract or warranty, except for nonpayment by buyer, must be commenced within one year after the cause of action occurs, and all actions shall be barred after such time. Warranty states that it is agreed and understood that the price for the system is consideration for the limitation of ERSystems liability stated in warranty.	If ERSystems determines the cause of a reported leak to be outside the scope of the warranty, inspection and repair costs shall be paid by the owner; failure of owner to pay for non-warranted repairs within 30 days shall render the warranty null and void. The warranty shall be governed and construed in accordance with the laws of the state of Minnesota. The courts of Minnesota shall have exclusive jurisdiction over all disputes arising out of warranty. Any action for breach of the contract or warranty, except for nonpayment by buyer, must be commenced within one year after the cause of action occurs, and all actions shall be barred after such time. Warranty states that it is agreed and understood that the price for the system is consideration for the limitation of ERSystems liability stated in warranty.
27. Executed by owner	Yes	Yes	Yes

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Elastomeric Roofing Systems, Inc.	Elastomeric Roofing Systems, Inc.	Elastomeric Roofing Systems, Inc.
2. Title, original publication date, and identifying symbol, if any	"ERSystems _____ Year PermaWeld CPA Material Warranty"; October 1, 1996; 961001 PMMW	"ERSystems _____ Year EPDM Roof System Warranty"; October 1, 1996; 961001 RSW	"ERSystems _____ Year EPDM Watertight Material Warranty"; October 1, 1996; 961001 MWW
3. Product, specification, or system covered	PermaWeld, PermaWeld Fleeca Backed, PermaVac systems	.045 and .060 black nonreinforced EPDM; .045 and .060 black FR EPDM; reinforced 90, Poly-Bond; plate bond, fully adhered, ballasted, batten, Poly-Bond systems	.045 and .060 black nonreinforced EPDM; .045 and .060 black FR EPDM; reinforced 90, Poly-Bond; plate bond, fully adhered, ballasted, batten, Poly-Bond systems
4. Scope of coverage	Material only; ERSystems warrants that the roofing membrane is free from manufacturing defects at the time the material is delivered and that the product will not prematurely deteriorate to the point of failure due to weathering if properly installed, maintained, and used for the purpose for which the membrane is intended. Warranty covers the membrane only and does not cover adhesives, sealants, flashings, seams, coatings, accessories, or workmanship.	Material and workmanship; ERSystems warrants to repair or cause to be repaired any leak in the membrane system caused by premature deterioration due to weathering or a defect in the ERSystems materials or in the workmanship of installing the system. The system is defined as the elastomeric membrane, adhesives, sealants, flashing membrane, fasteners and insulation supplied by ERSystems. All materials not supplied by ERSystems must be approved in writing by ERSystems.	Material and workmanship; ERSystems warrants to repair defects in materials and workmanship required to maintain roof in a watertight condition or if product shows premature deterioration due to weathering. Regarding materials, warranty is limited to ERSystems membrane and material approved in writing by ERSystems.
5. Length of coverage	5, 10, or 15 years	5 or 10 years: Poly-Bond; 5, 10, or 15 years: .045 and .060 black nonreinforced EPDM, .045 and .060 black FR EPDM, reinforced 90	5 or 10 years: Poly-Bond; 5, 10, or 15 years: .045 and .060 black nonreinforced EPDM, .045 and .060 black FR EPDM, reinforced 90
6. Nature of remedy	If the product shows premature deterioration due to weathering, ERSystems liability is limited, at ERSystems option, to provide the repair material for the original product or credit toward the purchase of new membrane to repair the leak.	The owner's remedies and ERSystems' liability is limited to the cost of repair of the leaks in the system.	ERSystems' liability is limited to providing the necessary materials and labor to repair the defective roof area and maintain a watertight condition.
7. Monetary limitations	The maximum value allowed by ERSystems for the repair or credit shall not exceed the original product purchase price.	None stated.	The maximum value allowed by ERSystems for the repair or credit shall not exceed the original product purchase price.
8. Notification requirements	The buyer must notify ERSystems by registered mail, return receipt requested, at 2950 Niagara Lane North, Minneapolis, MN 55447-4854, within 30 days of discovery of the failure.	The buyer must notify ERSystems by registered mail, return receipt requested, at 2950 Niagara Lane North, Minneapolis, MN 55447-4854, within 30 days of discovery of the failure.	The buyer must notify ERSystems by registered mail, return receipt requested, at 2950 Niagara Lane North, Minneapolis, MN 55447-4854, within 30 days of discovery of the failure.
9. Exclusive or additional remedy	The warranty is exclusive and in lieu of any other warranties; ERSystems shall have no further obligation or liability of any kind. ERSystems' sales personnel are not authorized to make warranties; ERSystems' employees' oral statements do not constitute warranties and shall not be relied upon; excludes UCC warranties.	The warranty is exclusive and in lieu of any other warranties; ERSystems shall have no further obligation or liability of any kind. ERSystems' sales personnel are not authorized to make warranties; ERSystems' employees' oral statements do not constitute warranties and shall not be relied upon; excludes UCC warranties.	The warranty is exclusive and in lieu of any other warranties; ERSystems shall have no further obligation or liability of any kind. ERSystems' sales personnel are not authorized to make warranties; ERSystems' employees' oral statements do not constitute warranties and shall not be relied upon; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	ERSystems' determination	ERSystems' determination	ERSystems' determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 16, 17, 18, 20, 22, 23. Warranty also specifically excludes damages caused by atomic radiation, insects or animals, and specific Condition P.	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 16, 17, 18, 20, 22, 23. Warranty also specifically excludes damages caused by atomic radiation, insects or animals, and specific Condition P.	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 16, 17, 18, 20, 22, 23. Warranty also specifically excludes damages caused by atomic radiation, insects or animals, and specific Condition P.
13. Wind coverage/exclusions	The warranty covers roof damage resulting from wind speeds up to 55 mph. Warranty excludes gales (exceeding 55 mph) and tornadoes.	The warranty covers roof damage resulting from wind speeds up to 55 mph. Warranty excludes gales (exceeding 55 mph) and tornadoes.	The warranty covers roof damage resulting from wind speeds up to 55 mph. Warranty excludes gales (exceeding 55 mph) and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C, M, S (See Special Features/Conditions.)	C, M, S (See Special Features/Conditions.)	C, M, S (See Special Features/Conditions.)
15. Cost to obtain	5 years: \$50; 10 years: \$75; 15 years: \$2.00/square	5 years: \$8.00/square; 10 years: \$11.00/square; 15 years: \$15.00/square	5 years: \$4.00/square; 10 years: \$7.00/square; 15 years: \$11.00/square

16. Minimum charge	5 years: \$50; 10 years: \$75; 15 years: \$100	
17. Ineligible structure or building use	Cold-storage buildings, single-family residences, and special purpose facilities	5 years: \$600; 10 years: \$800; 15 years: \$1,000
18. Pre-construction notice and approval requirements	ERSystems must receive a completed warranty pre-notification form prior to the start of the project. All warranty requests require approval in advance of starting the project. Any deviations from ER Systems' published specifications must be approved in writing prior to job start.	Cold-storage buildings, single-family residences, and special purpose facilities ERSystems must receive a completed warranty pre-notification form prior to the start of the project. All warranty requests require approval in advance of starting the project. Any deviations from ER Systems' published specifications must be approved in writing prior to job start.
19. Approved, authorized, or licensed applicator	Yes	Yes
20. Job inspection policy	ERSystems technical support representative makes inspections during application depending on size and complexity of job and qualifications of contractor, and after completion prior to issuance of warranty as well as two years after issuance of warranty; no charge for initial warranty; charge for subsequent inspection if job does not pass inspection. ERSystems reserves the right to require a pre-job inspection.	ERSystems technical support representative makes inspections during application depending on size and complexity of job and qualifications of contractor, and after completion prior to issuance of warranty as well as two years after issuance of warranty; no charge for initial warranty; charge for subsequent inspection if job does not pass inspection. ERSystems reserves the right to require a pre-job inspection.
21. Contractor's post-installation obligation	None; material-only warranty	The contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; ERSystems indicates that it carries a \$2.5 million product liability insurance covering its warranty obligations.	No; ERSystems indicates that it carries a \$2.5 million product liability insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	ERSystems sells product only.	ERSystems sells product only.
24. Conditions for renewal or extension	No renewal provision	No renewal provision
25. Assignability	The warranty is transferable subject to the terms of ERSystems' inspection, written approval, and payment of the current transfer fee, solely at the discretion of ERSystems.	The warranty is transferable subject to the terms of ERSystems' inspection, written approval, and payment of the current transfer fee, solely at the discretion of ERSystems.
26. Special features/conditions	If ERSystems determines the cause of a reported leak to be outside the scope of the warranty, inspection and repair costs shall be paid by the owner; failure of owner to pay for nonwarranted repairs within 30 days of notification shall render the warranty null and void. The warranty shall be governed and construed in accordance with the laws of the state of Minnesota. The courts of Minnesota shall have exclusive jurisdiction over all disputes arising out of warranty. Any action for breach of the contract or warranty, except for nonpayment by buyer, must be commenced within one year after the cause of action occurs, and all actions shall be barred after such time. Warranty states that it is agreed and understood that the price for the system is consideration for the limitation of ERSystems liability stated in warranty.	If ERSystems determines the cause of a reported leak to be outside the scope of the warranty, inspection and repair costs shall be paid by the owner; failure of owner to pay for nonwarranted repairs within 30 days of notification shall render the warranty null and void. The warranty shall be governed and construed in accordance with the laws of the state of Minnesota. The courts of Minnesota shall have exclusive jurisdiction over all disputes arising out of warranty. Any action for breach of the contract or warranty, except for nonpayment by buyer, must be commenced within one year after the cause of action occurs, and all actions shall be barred after such time. Warranty states that it is agreed and understood that the price for the system is consideration for the limitation of ERSystems liability stated in warranty.
27. Executed by owner	Yes	Yes

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Elastomeric Roofing Systems, Inc.	Firestone Building Products Company, Inc.	Firestone Building Products Company, Inc.
2. Title, original publication date, and identifying symbol, if any	"ERSystems _____ Year EPDM Membrane Material Warranty"; October 1, 1996; 961001 MMW	Red Shield "Roofing System Limited Warranty"; July 1994; 7/94—Item #815 (replaces 5/92)-01	Firestone "Modified Bitumen Membrane Limited Warranty"; July 1994; 7/94—Item #595(S)MB (replaces 12/93)-01
3. Product, specification, or system covered	.045 and .060 black nonreinforced EPDM, .045 and .060 black FR EPDM, reinforced 90, Poly-Bond; plate bond, fully adhered, ballasted, batten and Poly-Bond systems	Firestone RubberGuard EPDM Systems, Firestone UltraPly 78+ Systems, Firestone APP Systems, Firestone SBS Systems	Firestone APP, Firestone SBS
4. Scope of coverage	Material only; ERSystems warrants that the roofing membrane is free from manufacturing defects at the time the material is delivered and that the product will not prematurely deteriorate to the point of failure due to weathering if properly installed, maintained, and used for the purpose for which the membrane is intended. Warranty covers the membrane only and does not cover adhesives, sealants, flashings, seams, coatings, accessories, or workmanship.	Material and workmanship: Firestone warrants to repair any leak in the Firestone roofing system. The Firestone roof system is limited to Firestone-brand membranes, Firestone-brand insulation, and other Firestone-brand accessories when installed in accordance with Firestone technical specifications. Firestone indicates that roof coatings and sealants, specifically Firestone PC 100 AcrylTop Coating, Aluminum Roof Coating, S-10 Pourable Sealer and General Purpose Sealant, are not covered under this warranty.	Material only; Firestone warrants that it will repair any leak caused by weathering of the Firestone modified bitumen roofing membrane as a result of ordinary exposure to the elements or any manufacturing defect in the membrane. Warranty does not cover flashings, seams, adhesives, sealant, coatings, or workmanship.
5. Length of coverage	5 or 10 years: Poly-Bond; 5, 10, or 15 years: .045 and .060 black nonreinforced EPDM, .045 and .060 black FR EPDM, reinforced 90	5, 10, or 20 years: Firestone EPDM; 5, 10, or 15 years: UltraPly 78+; 5, 10, 12, 15, or 20 years: Firestone SBA; 5, 10, 12, or 15 years: Firestone APP	5, 10, or 12 years
6. Nature of remedy	If the product shows premature deterioration due to weathering, ERSystems liability is limited, at ERSystems option, to provide the repair material for the original product or credit toward the purchase of new membrane to repair the leak.	The owner's sole and exclusive remedy and Firestone's liability shall be limited to the repair of the leak.	The owner's sole and exclusive remedy and Firestone's liability shall be limited to the repair of the leak.
7. Monetary limitations	The maximum value allowed by ERSystems for the repair or credit shall not exceed the original product purchase price.	None stated.	Firestone's repair obligations over the life of the warranty are limited to the original cost of the membrane installation.
8. Notification requirements	The buyer must notify ERSystems by registered mail, return receipt requested, at 2950 Niagara Lane North, Minneapolis, MN 55447-4854, within 30 days of discovery of the failure.	Written notification within 30 days of any occurrence of a leak	Written notification within 30 days of any occurrence of a leak
9. Exclusive or additional remedy	The warranty is exclusive and in lieu of any other warranties; ERSystems shall have no further obligation or liability of any kind. ERSystems' sales personnel are not authorized to make warranties; ERSystems' employees' oral statements do not constitute warranties and shall not be relied upon; excludes UCC warranties.	Warranty is owner's sole and exclusive remedy against Firestone; warranty supersedes and is in lieu of all other warranties or guarantees; excludes UCC warranties.	Warranty is owner's sole and exclusive remedy against Firestone; warranty supersedes and is in lieu of all other warranties or guarantees; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	ERSystems' determination	Firestone's determination	Firestone's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 16, 17, 18, 20, 22, 23. Warranty also specifically excludes damages caused by atomic radiation, insects or animals, and Specific Condition P.	1, 2, 3, 6, 7, 8, 10, 12 (see Special Features/Conditions), 13, 17, 18, 22. Warranty also specifically excludes damages caused by atomic radiation, insects, or animals and Specific Condition H.	1, 2, 3, 6, 7, 8, 10, 11, 12 (see Special Features/Conditions), 13, 17, 18, 22. Warranty also specifically excludes damages caused by atomic radiation, insects, or animals and Specific Condition H.
13. Wind coverage/exclusions	The warranty covers roof damage resulting from wind speeds up to 55 mph. The warranty excludes gales (exceeding 55 mph) and tornadoes.	Warranty excludes winds in excess of 55 mph, hurricanes, and tornadoes. Firestone indicates that warranty covers roof damage resulting from wind speeds up to 55 mph.	Warranty excludes winds, hurricanes, and tornadoes. Firestone indicates that there is no coverage for damaged caused by wind.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C, M, S (See Special Features/Conditions.)	C, M, S (See Special Features Conditions.)	M, S (See Special Features/Conditions.)
15. Cost to obtain	5 years: \$50; 10 years: \$75; 15 years: \$2.00/square	Firestone EPDM (with adhesive seams): 5 years: \$3.00/square; 10 years: \$6.00/square; Firestone EPDM (with seam tape seams): 5 years: \$2.00/square; 10 years: \$5.00/square; 15 years: \$8.00/square; 20 years: \$10.00/square; UltraPly 78+: 5 years: \$3.00/square; 10 years: \$6.00/square; 15 years: \$9.00/square; Firestone APP (without roof monitoring): 5 years: \$2.00/square; 10 years: \$5.00/square; Firestone APP (with continuous roof monitoring): 5 years: \$2.00/square; 10 years: \$5.00/square; 15 years: \$9.00/square; Firestone SBS (without roof monitoring): 5 years: \$3.00/square; 10 years: \$7.00/square; 12 years: \$17.00/square; Firestone SBS (with continuous roof monitoring): 5 years: \$2.00/square; 10 years: \$5.00/square; 15 years: \$8.00/square; 20 years: \$10.00/square;	5 years: \$3.00/square; 10 years: \$5.00/square; 12 years: \$6.00/square

16. Minimum charge	5 years: \$50; 10 years: \$75; 15 years: \$100	Varies from \$250 to \$750 depending on length of coverage	300
17. Ineligible structure or building use	Cold-storage buildings, single-family residences, and special-purpose facilities.	Single-family residence, patio, plaza deck, roofs outside of U.S. and Canada	Single-family residence, patio, plaza deck, roofs outside of U.S. and Canada
18. Pre-construction notice and approval requirements	ERSystems must receive a completed warranty pre-notification form prior to the start of the project. All warranty requests require approval in advance of starting the project. Any deviations from ER Systems' published specifications must be approved in writing prior to job start.	Preinstallation notice must be submitted 14 days prior to job start and must be approved by Firestone technical service.	Contractor must submit "request for warranty" certifying that the membrane has been installed in accordance with Firestone technical specifications.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	ERSystems technical support representative makes inspections during application depending on size and complexity of job and qualifications of contractor and after completion prior to issuance of warranty as well as two years after issuance of warranty; no charge for initial warranty; charge for subsequent inspection if job does not pass inspection. ERSystems reserves the right to require a pre-job inspection.	Firestone field technical representative makes on-site inspection after completion and prior to issuance of warranty; no charge	No on-site inspections
21. Contractor's post-installation obligation	None; material-only warranty.	Contractor obligated to repair workmanship deficiencies for two years.	Although this is a material-only warranty, contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; ERSystems indicates that it carries a \$2.5 million product liability insurance covering its warranty obligations.	No; Firestone indicates that it is self-insured.	No; Firestone indicates that it is self-insured.
23. Issuing entity manufactures and/or sells products	ERSystems sells product only.	Firestone manufactures and sells the product.	Firestone manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Warranty is transferable subject to the terms of ERSystems' inspection, written approval, and payment of the current transfer fee, solely at the discretion of ERSystems.	Warranty is transferable subject to Firestone inspection, written approval, and payment of current transfer fee.	Warranty is transferable subject to Firestone inspection, written approval, and payment of current transfer fee.
26. Special features/conditions	<p>If ERSystems determines the cause of a reported leak to be outside the scope of the warranty, inspection and repair costs shall be paid by the owner; failure of owner to pay for non-warranted repairs within 30 days of notification shall render the warranty null and void.</p> <p>The warranty shall be governed and construed in accordance with the laws of the state of Minnesota. The courts of Minnesota shall have exclusive jurisdiction over all disputes arising out of warranty.</p> <p>Any action for breach of the contract or warranty, except for nonpayment by buyer, must be commenced within one year after the cause of action occurs, and all actions shall be barred after such time. The warranty states that it is agreed and understood that the price for the system is consideration for the limitation of ERSystems liability stated in warranty.</p>	<p>If Firestone's investigation reveals that the cause of a leak is excluded under the warranty, investigation costs shall be paid by owner; failure of owner to pay these costs shall render the warranty null and void. Any dispute, controversy, or claim between the owner and Firestone concerning warranty shall be settled by final and binding arbitration in accordance with the American Arbitration Association's rules for the construction industry. Warranty shall be governed and construed in accordance with the laws of the state of Indiana without regard to conflict of laws.</p> <p>Firestone does not undertake any analysis of the architecture or engineering required to evaluate what type of roof system is appropriate. Warranty cannot be amended, altered, or modified in any way except in writing signed by the president of Firestone or a person to whom his authority has been delegated in writing.</p> <p>Warranty requires owner compliance with Firestone roofing care and maintenance requirements stated on reverse side of warranty document, including at least twice yearly inspections; ponding water not be allowed; drain areas remain clear; no exposure to acids, solvents, greases, oil, fats, chemicals, and the like; protective walkways for roof traffic; maintenance of counter flashings, metal work, drains, skylights, equipment curbs and supports, other rooftop accessories, and roof coatings and sealants.</p> <p>In the event the roof access is limited due to security or other restrictions, the owner shall reimburse Firestone for all reasonable costs incurred during inspection and/or repair of the system that are due to delays associated with said restrictions. The owner shall be responsible for the removal and replacement of any overburdens, superstrata or overlays, either permanent or temporary, excluding accepted stone ballast or pavers, as necessary to expose the system for inspection and/or repair.</p>	<p>If Firestone's investigation reveals that the cause of a leak is outside the scope of the warranty, investigation costs shall be paid by owner; failure of owner to pay these costs shall render the warranty null and void. Any dispute, controversy, or claim between the owner and Firestone concerning warranty shall be settled by final and binding arbitration in accordance with the American Arbitration Association's rules for the construction industry. Warranty shall be governed and construed in accordance with the laws of the state of Indiana without regard to conflict of laws.</p> <p>Firestone does not undertake any analysis of the architecture or engineering required to evaluate what type of roof system is appropriate. Warranty cannot be amended, altered, or modified in any way except in writing signed by the president of Firestone or a person to whom his authority has been delegated in writing.</p> <p>Warranty requires owner compliance with Firestone roofing care and maintenance requirements stated on reverse side of warranty document, including at least twice yearly inspections; ponding water not be allowed; drain areas remain clear; no exposure to acids, solvents, greases, oil, fats, chemicals, and the like; protective walkways for roof traffic; maintenance of counter flashings, metal work, drains, skylights, equipment curbs and supports, other rooftop accessories, and roof coatings and sealants.</p> <p>In the event the roof access is limited due to security or other restrictions, the owner shall reimburse Firestone for all reasonable costs incurred during inspection and/or repair of the system which are due to delays associated with said restrictions. The owner shall be responsible for the removal and replacement of any overburdens, superstrata or overlays, either permanent or temporary, as necessary to expose the system for inspection and/or repair.</p>
27. Executed by owner	Yes	No	No

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Firestone Building Products Company, division of Bridgestone/Firestone, Inc.	Firestone Building Products Company, division of Bridgestone/Firestone, Inc.	Firestone Building Products Company, division of Bridgestone/Firestone, Inc.
2. Title, original publication date, and identifying symbol, if any	"Firestone 10-Year EPDM/Ultraply 78+ Membrane Limited Warranty"; August 1994; 8/94—Item #916R-01	"Firestone Protected Membrane Limited Warranty"; August 1994; 8/94—Item #915R-01	Firestone "Modified Bitumen Standard Roof System Limited Warranty"; July 1994; 7/94—Item #558(S)MB (Replaces 12/92)-01
3. Product, specification, or system covered	Firestone Rubbergard EPDM, Firestone Ultra Ply 78 +	Firestone Rubbergard EPDM, Firestone Protected Membrane System	Firestone APP Systems, Firestone SBS Systems
4. Scope of coverage	Material only: Firestone warrants that it will provide replacement membrane materials sufficient to replace any area of EPDM or Ultra Ply 78+ roofing membrane which leaks as a result of ordinary exposure to the elements or manufacturing defect in the membrane. Warranty does not cover flashings, seams, adhesives, sealants, coatings, or workmanship.	Material only: Firestone warrants that it will provide replacement membrane material sufficient to replace any area of Firestone EPDM membrane that leaks as a result of ordinary exposure to the elements or any manufacturing defect in the membrane. Warranty does not cover flashings, seams, adhesives, sealants, coatings, or workmanship.	Firestone warrants that it will repair any leak in the Firestone modified bitumen roofing system. The Firestone System is limited to mean Firestone-brand membranes, Firestone-brand insulation, and other Firestone-brand accessories when installed in accordance with Firestone technical specifications.
5. Length of coverage	10 years	10 years	10, 12, or 15 years
6. Nature of remedy	The owner's sole and exclusive remedy and Firestone's liability shall be limited to the repair of the leak.	The owner's sole and exclusive remedy and Firestone's liability shall be limited to the repair of the leak.	The owner's sole and exclusive remedy and Firestone's liability shall be limited to the repair of the leak.
7. Monetary limitations	Firestone's replacement obligations over the life of the warranty are limited to the original cost of the membrane.	Firestone's replacement obligations over the life of the warranty are limited to the original cost of the membrane.	Firestone's repair obligation over the life of the warranty is limited to the original cost of the system installation.
8. Notification requirements	Written notification within 30 days of any occurrence of a leak	Written notification within 30 days of any occurrence of a leak	Written notification within 30 days of any occurrence of a leak
9. Exclusive or additional remedy	Warranty is owner's sole and exclusive remedy against Firestone; warranty supersedes and is in lieu of all other warranties or guarantees; excludes UCC warranties.	Warranty is owner's sole and exclusive remedy against Firestone; warranty supersedes and is in lieu of all other warranties or guarantees; excludes UCC warranties.	Warranty is owner's sole and exclusive remedy against Firestone; warranty supersedes and is in lieu of all other warranties or guarantees; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Firestone's determination	Firestone's determination	Firestone's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 6, 7, 8, 10, 12 (see Special Features/Conditions), 13, 17, 18, 22. Warranty also specifically excludes damages caused by atomic radiation, insects, or animals, and Specific Condition H.	1, 2, 3, 6, 7, 8, 10, 12 (see Special Features/Conditions), 13, 17, 18, 22. Warranty also specifically excludes damages caused by atomic radiation, insects, or animals, and Specific Condition H.	1, 2, 3, 6, 7, 8, 10, 11, 12 (see Special Features/Conditions), 13, 17, 18, 22. Warranty also specifically excludes damages caused by atomic radiation, insects, or animals and Specific Condition H.
13. Wind coverage/exclusions	Warranty excludes winds, hurricanes, and tornadoes. Firestone indicates that there is no coverage for damage caused by wind.	Warranty excludes winds, hurricanes, and tornadoes. Firestone indicates that there is no coverage for damage caused by wind.	Warranty excludes winds, hurricanes, and tornadoes. Firestone indicates that there is no coverage for damage caused by wind.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	M, S (See Special Features/Conditions.)	C, M, S (See Special Features/Conditions.)	C, M, S (See Special Features/Conditions.)
15. Cost to obtain	\$50 project fee	\$200 project fee	10 years: \$3.00/square; 12 years: \$4.00/square; 15 years: \$6.00/square
16. Minimum charge	\$50 project fee	\$200 project fee	10 years: \$300; 12 years: \$400; 15 years: \$600
17. Ineligible structure or building use	Single-family residence, patio, plaza deck, roofs outside of U.S. and Canada	Single-family residence, patio, plaza deck, roofs outside of U.S. and Canada	Single-family residence, patio, plaza deck, roofs outside of U.S. and Canada
18. Pre-construction notice and approval requirements	Preinstallation notice must be submitted 14 days prior to job start.	Preinstallation notice must be submitted 14 days prior to job start.	Preinstallation notice must be submitted 14 days prior to job start and must be approved by Firestone technical service.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes

20. Job inspection policy	No on-site inspections	No on-site inspections	Firestone field technical representative makes on-site inspection after job completion prior to issuance of warranty; no charge.
21. Contractor's post-installation obligation	Although this is a material-only warranty, contractor is obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Firestone indicates that it is self-insured.	No; Firestone indicates that it is self-insured.	No; Firestone indicates that it is self-insured.
23. Issuing entity manufactures and/or sells products	Firestone manufactures and sells the product.	Firestone manufactures and sells the product.	Firestone manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Warranty is transferable subject to Firestone inspection, written approval, and payment of current transfer fee.	Warranty is transferable subject to Firestone inspection, written approval, and payment of current transfer fee.	Warranty is transferable subject to Firestone inspection, written approval, and payment of current transfer fee.
26. Special features/conditions	<p>If Firestone's investigation reveals that the cause of a leak is outside the scope of the warranty, investigation costs shall be paid by purchaser; failure of owner to pay these costs shall render the warranty null and void. Any dispute, controversy, or claim between the purchaser and Firestone concerning warranty shall be settled by final and binding arbitration in accordance with the American Arbitration Association's rules for the construction industry. Warranty shall be governed and construed in accordance with the laws of the state of Indiana without regard to conflict of laws.</p> <p>Firestone does not undertake any analysis of the architecture or engineering required to evaluate what type of roof system is appropriate. Warranty cannot be amended, altered, or modified in any way except in writing signed by the president of Firestone or a person to whom his authority has been delegated in writing.</p> <p>Warranty requires purchaser compliance with Firestone roofing care and maintenance requirements stated on reverse side of warranty document, including at least twice yearly inspections; ponding water not be allowed; drain areas remain clear; no exposure to acids, solvents, greases, oil, fats, chemicals, and the like; protective walkways for roof traffic; maintenance of counter flashings, metal work, drains, skylights, equipment curbs and supports, other rooftop accessories, and roof coatings and sealants.</p> <p>In the event the roof access is limited due to security or other restrictions, purchaser shall reimburse Firestone for all reasonable costs incurred during inspection and/or repair of the system which are due to delays associated with said restrictions. Purchaser shall be responsible for the removal and replacement of any overburdens, superstrata or overlays, either permanent or temporary, as necessary to expose the surface of the membrane for inspection and/or repair.</p>	<p>If Firestone's investigation reveals that the cause of a leak is outside the scope of the warranty, investigation costs shall be paid by owner; failure of owner to pay these costs shall render the warranty null and void. Any dispute, controversy, or claim between the owner and Firestone concerning warranty shall be settled by final and binding arbitration in accordance with the American Arbitration Association's rules for the construction industry. Warranty shall be governed and construed in accordance with the laws of the state of Indiana without regard to conflict of laws.</p> <p>Firestone does not undertake any analysis of the architecture or engineering required to evaluate what type of roof system is appropriate. Warranty cannot be amended, altered, or modified in any way except in writing signed by the president of Firestone or a person to whom his authority has been delegated in writing.</p> <p>Warranty requires owner compliance with Firestone roofing care and maintenance requirements stated on reverse side of warranty document, including at least twice yearly inspections; ponding water not be allowed; drain areas remain clear; no exposure to acids, solvents, greases, oil, fats, chemicals, and the like; protective walkways for roof traffic; maintenance of counter flashings, metal work, drains, skylights, equipment curbs and supports, other rooftop accessories, and roof coatings and sealants.</p> <p>In the event the roof access is limited due to security or other restrictions, the owner shall reimburse Firestone for all reasonable costs incurred during inspection and/or repair of the system which are due to delays associated with said restrictions. The owner shall be responsible for the removal and replacement of any overburdens, superstrata or overlays, either permanent or temporary, as necessary to expose the system for inspection and/or repair.</p>	<p>If Firestone's investigation reveals that the cause of a leak is excluded under the warranty, investigation costs shall be paid by owner; failure of owner to pay these costs shall render the warranty null and void. Any dispute, controversy or claim between the owner and Firestone concerning warranty shall be settled by final and binding arbitration in accordance with the American Arbitration Association's rules for the construction industry. Warranty shall be governed and construed in accordance with the laws of the state of Indiana without regard to conflict of laws.</p> <p>Firestone does not undertake any analysis of the architecture or engineering required to evaluate what type of roof system is appropriate. Warranty cannot be amended, altered, or modified in any way except in writing signed by the president of Firestone or a person to whom his authority has been delegated in writing.</p> <p>Warranty requires owners compliance with Firestone roofing care and maintenance requirements stated on reverse side of warranty document, including at least twice yearly inspections; ponding water not be allowed; drain areas remain clear; no exposure to acids, solvents, greases, oil, fats, chemicals, and the like; protective walkways for roof traffic; maintenance of counter flashings, metal work, drains, skylights, equipment curbs and supports, other rooftop accessories, and roof coatings and sealants.</p> <p>In the event the roof access is limited due to security or other restrictions, the owner shall reimburse Firestone for all reasonable costs incurred during inspection and/or repair of the system which are due to delays associated with said restrictions. The owner shall be responsible for the removal and replacement of any overburdens, superstrata or overlays, either permanent or temporary, as necessary to expose the system for inspection and/or repair.</p>
27. Executed by owner	No	No	No

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Firestone Building Products Company, division of Bridgestone/Firestone, Inc.	Firestone Building Products Company, division of Bridgestone/Firestone, Inc.	Firestone Building Products Company, division of Bridgestone/Firestone, Inc.
2. Title, original publication date, and identifying symbol, if any	Firestone "Modified Bitumen Product Limited Warranty"; July 1994; 7/94—Item #913MB-01	Firestone "Roofing Membrane Limited Warranty"; August 1994; 8/94—Item #812R (Replaces 5/92-01)	"Manufacturer's Insulation Warranty"; 4/96 - Item #953S-01
3. Product, specification, or system covered	Firestone APP 160, 170, 180, Firestone SBS	Firestone Rubbergard EPDM, Firestone Ultra Ply 78 +	Firestone ISO 95 + Insulation
4. Scope of coverage	Material only; Firestone warrants that it will provide replacement membrane material or a prorated credit (based upon the remaining months of the unexpired warranty) sufficient to replace any area of Firestone modified bitumen membrane that leaks as a result of ordinary exposure to the elements or any manufacturing defect in the result of ordinary exposure to the elements or any manufacturing defect in the membrane. Warranty does not cover flashings, seams, adhesives, sealants, coatings, or workmanship.	Material only; Firestone warrants that it will provide replacement membrane materials sufficient to replace any area of Firestone roofing membrane that leaks as a result of ordinary exposure to the elements or any manufacturing defect in the membrane. Warranty does not cover flashings, seams, adhesives, sealants, coatings, or workmanship.	Material only; Firestone warrants that when used under a Firestone-manufactured roofing membrane, the Firestone ISO 95 + will not warp, bow, or destabilize to the point of causing a roof leak as a result of any manufacturing defect in the ISO 95 +. This warranty is only effective when issued with a Firestone Standard or Red Shield System warranty.
5. Length of coverage	10 years: Firestone APP 160 or 170 (smooth surfaced), Firestone SBS (granule surfaced); 12 years: Firestone APP 160 or 170 (smooth surfaced) with approved field-applied roof coating, Firestone APP 180 (granule surfaced), Firestone SBS (granule surfaced) installed over a hot asphalt attached base sheet	15 years: Firestone Ultra Ply 78 +; 20 years: Firestone EPDM	10, 15, or 20 years
6. Nature of remedy	Purchaser's sole and exclusive remedy and Firestone's liability shall be limited either to the supply of replacement membrane material sufficient to cover or replace the deteriorated membrane area or a prorated credit (based on the number of remaining months of the unexpired warranty) to be applied towards the purchase of the new membrane material.	The owner's sole and exclusive remedy and Firestone's liability shall be limited to the repair of the leak.	Firestone shall provide the owner with free Firestone 95 + and Firestone roofing membrane materials and shall repair the affected roof area.
7. Monetary limitations	Firestone's replacement obligations over the life of the warranty are limited to the original cost of the membrane.	Firestone's repair obligations over the life of the warranty are limited to the original cost of the membrane installation.	None stated.
8. Notification requirements	Written notification within 30 days of any occurrence of a leak	Written notification within 30 days of any occurrence of a leak	Written notification within 30 days of the discovery of any event leading to a claim
9. Exclusive or additional remedy	The warranty is purchaser's sole and exclusive remedy against Firestone; warranty supersedes and is in lieu of all other warranties or guarantees; excludes UCC warranties.	The warranty is owner's sole and exclusive remedy against Firestone; warranty supersedes and is in lieu of all other warranties or guarantees; excludes UCC warranties.	The warranty is the owner's sole and exclusive remedy against Firestone; the warranty supersedes and is in lieu of all other warranties or guarantees; Firestone shall not be liable for any damages that are based on negligence, breach of warranty, strict liability, or any other theory, other than the limited liability set forth in the warranty; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Firestone's determination	Firestone's determination	Firestone's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 6, 7, 8, 10, 11, 12 (See Special Features/Conditions), 13, 17, 18, 22. The warranty also specifically excludes damages caused by atomic radiation, insects, or animals, and Specific Condition H.	1, 2, 3, 6, 7, 8, 10, 12, 17, 18, 22. The warranty also specifically excludes damages caused by atomic radiation, insects, or animals, and Specific Condition H.	1, 2, 3, 6, 7, 10, 12, 13, 18, 22. The warranty also specifically excludes damages caused by atomic radiation, insects, or animals.
13. Wind coverage/exclusions	The warranty excludes winds, hurricanes, and tornadoes. Firestone indicates that there is no coverage for damage caused by wind.	The warranty excludes winds, hurricanes, and tornadoes. Firestone indicates that there is no coverage for damage caused by wind.	The warranty excludes winds, hurricanes, and tornadoes. Firestone indicates that there is no coverage for damages caused by wind.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	M, S (See Special Features/Conditions.)	M, S (See Special Features/Conditions.)	J
15. Cost to obtain	None	\$200 project fee	None
16. Minimum charge	None	\$200 project fee	None
17. Ineligible structure or building use	Single-family residence, patio, plaza deck, roofs outside of U.S. and Canada.	Single-family residence, patio, plaza deck, roofs outside of U.S. and Canada	Single-family residence, patio, plaza deck, roofs outside of U.S. and Canada
18. Pre-construction notice and approval requirements	None required.	Preinstallation notice must be submitted 14 days prior to job start.	Preinstallation notice must be submitted 14 days prior to job start and must be approved by Firestone technical service.
19. Approved, authorized, or licensed applicator	No	No	Yes

20. Job inspection policy	No on-site inspections	No on-site inspections	Firestone field technical representative makes on-site inspection after job completion prior to issuance of warranty; no charge.
21. Contractor's post-installation obligation	None required.	Although this is a material-only warranty, the contractor is obligated to make repairs to workmanship deficiencies for two years.	Although this is a material-only warranty, the contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Firestone indicates that it is self-insured.	No; Firestone indicates that it is self-insured.	No; Firestone indicates that it is self-insured.
23. Issuing entity manufactures and/or sells products	Firestone manufactures and sells the product.	Firestone manufactures and sells the product.	Firestone manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Warranty is transferable subject to Firestone inspection, written approval, and payment of current transfer fee.	Warranty is transferable subject to Firestone inspection, written approval, and payment of current transfer fee.	No restrictions stated.
26. Special features/conditions	<p>If Firestone's investigation reveals that the cause of a leak is outside the scope of the warranty, investigation costs shall be paid by purchaser; failure of purchaser to pay these costs shall render the warranty null and void. Any dispute, controversy, or claim between the purchaser and Firestone concerning warranty shall be settled by final and binding arbitration in accordance with the American Arbitration Association's rules for the construction industry. Warranty shall be governed and construed in accordance with the laws of the state of Indiana without regard to conflict of laws.</p> <p>Firestone does not undertake any analysis of the architecture or engineering required to evaluate what type of roof system is appropriate. Warranty cannot be amended, altered, or modified in any way except in writing signed by the president of Firestone or a person to whom his authority has been delegated in writing.</p> <p>Warranty requires purchaser compliance with Firestone roofing care and maintenance requirements stated on reverse side of warranty document, including at least twice yearly inspections; ponding water not be allowed; drain areas remain clear; no exposure to acids, solvents, greases, oil, fats, chemicals, and the like; protective walkways for roof traffic; maintenance of counter flashings, metal work, drains, skylights, equipment curbs and supports, other rooftop accessories, and roof coatings and sealants.</p> <p>In the event the roof access is limited due to security or other restrictions, purchaser shall reimburse Firestone for all reasonable costs incurred during inspection and/or repair of the system which are due to delays associated with said restrictions. Purchaser shall be responsible for the removal and replacement of any overburdens, superstrate or overlays, either permanent or temporary, as necessary to expose the surface of the membrane for inspection and/or repair.</p>	<p>If Firestone's investigation reveals that the cause of a leak is outside the scope of the warranty, investigation costs shall be paid by purchaser; failure of purchaser to pay these costs shall render the warranty null and void. Any dispute, controversy, or claim between the purchaser and Firestone concerning warranty shall be settled by final and binding arbitration in accordance with the American Arbitration Association's rules for the construction industry. Warranty shall be governed and construed in accordance with the laws of the state of Indiana without regard to conflict of laws.</p> <p>Firestone does not undertake any analysis of the architecture or engineering required to evaluate what type of roof system is appropriate. Warranty cannot be amended, altered, or modified in any way except in writing signed by the president of Firestone or a person to whom his authority has been delegated in writing.</p> <p>Warranty requires purchaser compliance with Firestone roofing care and maintenance requirements stated on reverse side of warranty document, including at least twice yearly inspections; ponding water not be allowed; drain areas remain clear; no exposure to acids, solvents, greases, oil, fats, chemicals, and the like; protective walkways for roof traffic; maintenance of counter flashings, metal work, drains, skylights, equipment curbs and supports, other rooftop accessories, and roof coatings and sealants.</p> <p>In the event the roof access is limited due to security or other restrictions, purchaser shall reimburse Firestone for all reasonable costs incurred during inspection and/or repair of the system which are due to delays associated with said restrictions. Purchaser shall be responsible for the removal and replacement of any overburdens, superstrate or overlays, either permanent or temporary, as necessary to expose the surface of the membrane for inspection and/or repair.</p>	<p>Firestone does not undertake any analysis of the architecture or engineering required to evaluate what type of roof system is appropriate.</p> <p>Warranty requires compliance with Firestone roofing care and maintenance requirements stated on reverse side of warranty, including at least twice yearly inspections; ponding water not allowed; drain areas remain clear; no exposure to acids, solvents, greases, oils, fats, chemicals and the like.</p> <p>Contact Firestone immediately if the Firestone Roofing System comes into contact with any such materials.</p>
27. Executed by owner	No	No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Flex Membrane International	Flex Membrane International	GAF Materials Corporation (GAF)
2. Title, original publication date, and identifying symbol, if any	"Warranty"; July 1990	"Membrane Material Warranty"; July 1990	"Limited Warranty on Material GAFGLAS"; March 1994, Form 10450 3/94
3. Product, specification, or system covered	Flex FB Elvaloy, Flex MF/R Elvaloy, Flex MF/R 50, Flex MF/R 60, Flex MF/R 70, Flex MF/R 80	Flex membrane material in all Flex roof systems	GAFGLAS Ply 6, GAFGLAS Ply 4 and all GAF BUR specifications
4. Scope of coverage	Material and workmanship; Flex warrants against leakage caused by defects in Flex materials or workmanship of the application of Flex's material.	Material only; Flex warrants that the Flex membrane material will be free from defects.	Material only; GAF warrants that the GAFGLAS roof membrane and GAF base flashing materials will withstand ordinary wear and tear of the elements and will be free of manufacturing defects that affect their ability to maintain the roof in a watertight condition. Warranty applies only to GAFGLAS roofing membrane and GAF base flashings installed in accordance with current specifications.
5. Length of coverage	5, 10, or 15 years	5, 10, or 15 years	10 years
6. Nature of remedy	Flex's sole obligation shall be to repair any leaks in the roof caused by defects in Flex materials or workmanship of the roofing contractor in the application of Flex's material.	Flex's sole obligation shall be to repair or replace the defective membrane material.	at GAF's option, of that portion of GAF materials that contains manufacturing defects or deterioration caused by ordinary wear and tear by the elements that have resulted in a roof leak. Repair or replacement of the roof deck or of other materials not sold by GAF is not included.
7. Monetary limitations	None stated.	Flex's liability shall not exceed the original value of the membrane material.	GAF's maximum liability during first year after completion is the original cost of GAF materials. After the first year, GAF's maximum liability is the original cost of the GAF materials reduced by 10 percent of the maximum liability during each year after the first year, less any costs previously incurred by GAF for repair or replacement. In no event shall GAF be liable for a sum greater than the maximum GAF liability stated herein or more than five times the proportional cost paid to GAF for the GAF materials installed on the affected portion of the roof, whichever is less.
8. Notification requirements	Written notification to Flex Membrane International, Bethlehem Drive, Morgantown, PA 19543, by registered mail within 30 days of discovery of any defect in Flex material	Written notification to Flex Membrane International, Bethlehem Drive, Morgantown, PA 19543, by registered mail within 30 days of discovery of any defect in Flex material.	Written notification within 30 days to nearest GAF district office of leak resulting from manufacturing defect or ordinary wear and tear by the elements
9. Exclusive or additional remedy	Warranty supersedes and is in lieu of any and all other express warranties that conflict with the terms and conditions stated in the warranty.	Warranty supersedes and is in lieu of any and all other expressed warranties that are in conflict with the terms and conditions stated in warranty.	Warranty is expressly in lieu of any other guarantee and/or warranties and any other obligations or liability on the part of GAF, whether any claim is based upon strict liability, negligence, breach of warranty, or any other theory or cause of action; excludes UCC warranties
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Flex's judgement	Flex's judgment	Neutral (no provision).
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 16	1, 2, 3, 4, 5, 16	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 (including aliphatic or aromatic solvents, chlorinated hydrocarbons, turpentine, oils, organic or inorganic polar materials), 15, 17, 18, 19, 20, 22; also excludes any damage occurring more than 30 days after discovery of a leak, unless GAF is notified within 30 days of discovery.
13. Wind coverage/exclusions	Warranty excludes hurricanes and tornadoes. Flex indicates that warranty covers wind speeds up to 60 mph.	Warranty excludes hurricanes and tornadoes. Flex indicates that warranty covers wind speeds up to 60 mph.	Warranty excludes windstorms, hurricanes, and tornadoes. GAF indicates that there is no coverage for damage caused by wind.

	B, C, F, G, H	B, C, F, G, H	C, H, I. Also, warranty provides that cancellation of this warranty will result if the roof is damaged by any cause listed above as a specific exclusion that will affect the integrity or watertightness of the roof.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)			
15. Cost to obtain	5 years: None; 10 years: \$5.00/square; 15 years: \$8.00/square	5 years: None; 10 years: \$1.00/square; 15 years: \$2.00/square	None
16. Minimum charge	5 years: None; 10 years: \$375; 15 years: \$600	5 years: None; 10 years: \$50; 15 years: \$100	None
17. Ineligible structure or building use	None	None	Domed structures, heated tanks, storage silos, drying kilns, car wash buildings, swimming pools, and other structures with abnormally high-humidity conditions, cold-storage and cooler buildings when the freezer or cooler insulation is used as the base to receive the roof
18. Pre-construction notice and approval requirements	The contractor submits request for guarantee to Flex for approval with roof diagram.	The contractor submits request for guarantee to Flex for approval with roof diagram.	None
19. Approved, authorized, or licensed applicator	Yes	Yes	No
20. Job inspection policy	Flex technical representative makes on-site inspections prior to, during application (a minimum of one inspection), and after completion of installation prior to issuance of warranty; no charge.	Flex technical representative makes on-site inspection prior to, during application (a minimum of one inspection), and after completion of installation prior to issuance of warranty; no charge.	No on-site inspections
21. Contractor's post-installation obligation	The contractor is obligated to make repairs to all leaks and workmanship deficiencies for two years.	Although this is a material-only warranty, contractor is obligated to make repairs to workmanship deficiencies for two years.	None; material-only warranty
22. Backed by named insurance or surety	No; Flex indicates that it does not carry insurance covering its warranty obligations.	No	No; GAF indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Flex manufactures and sells the product.	Flex manufactures and sells the product.	GAF manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision in warranty. Flex indicates that it may issue extensions on an individual project basis.	No renewal provision in warranty. Flex indicates that it may issue extension on individual project basis.	No renewal provision
25. Assignability	Warranty may not be transferred without the written consent of Flex. Flex indicates it permits transfer with written consent from Flex and payment of transfer fee.	Warranty may not be transferred without Flex's written consent. Flex indicates that it permits transfer with written consent from Flex and payment of transfer fee.	Not transferable or assignable in any manner
26. Special features/conditions	No representative of Flex has authority to make any representations or promises except as stated in warranty.	No representative of Flex has authority to make any representations or promises except as stated in warranty.	Owner must sign and mail in GAF warranty registration form within 30 days of roof completion in order for warranty to be effective. No representative, employee, or agent of GAF, or any other person has authority to assume for GAF any additional or other liability or responsibility. GAF shall not be responsible for or liable for any change or amendment to the GAF roof specifications in regard to the construction of the roof, unless the change or amendment to the specifications are approved in writing by an authorized GAF technical service manager.
27. Executed by owner	No	No	

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	GAF Materials Corporation (GAF)	GAF Materials Corporation (GAF)	GAF Materials Corporation (GAF)
2. Title, original publication date, and identifying symbol, if any	"Liberty Guarantee"; August 1996; Form 10448 8/96	"Commercial Roof Guarantee"; August 1996, Form 10442 8/96	"Ruberoid Guarantee"; August 1996; Form 10300 8/96
3. Product, specification, or system covered	Ruberoid Torch FR, Ruberoid Torch Plus, Ruberoid Torch, Ruberoid Mop, Ruberoid Mop FR, Ruberoid Mop 170 FR, Ruberoid Mop Plus, Ruberoid 30 FR, Ruberoid 30, Ruberoid 20, GAFGLAS Ply 6, GAFGLAS Ply 4	All Ruberoid and GAFGLAS Specifications	All Ruberoid modified bitumen specifications
4. Scope of coverage	Material and workmanship: GAF guarantees to make repairs to GAF roofing membrane, GAF base flashing, GAF insulation, GAF expansion joint covers, and GAF pre-flashed accessories as are necessary solely to correct leaks resulting from natural deterioration of GAF materials; blisters; bare spots; fishmouths; ridges; splits not caused by structural failure or movement of or cracks in substrate roof base or non-GAF insulation over which GAF materials are applied; buckles and wrinkles; workmanship in applying the GAF materials; and slippage of membrane or base flashing.	Material and workmanship: GAF guarantees to make repairs to GAF roofing membrane, GAF base flashing, GAF insulation, GAF expansion joint covers, and GAF pre-flashed accessories as are necessary solely to correct leaks resulting from natural deterioration of GAF materials; blisters; bare spots; fishmouths; ridges; splits not caused by structural failure or movement of or cracks in substrate roof base or non-GAF insulation over which GAF materials are applied; buckles and wrinkles; workmanship in applying the GAF materials; and slippage of membrane or base flashing.	Material and workmanship: GAF guarantees to make repairs to GAF roofing membrane, GAF base flashing, GAF insulation, GAF expansion joint covers, and GAF pre-flashed accessories as are necessary solely to correct leaks resulting from natural deterioration of GAF roofing materials; blisters; bare spots; fishmouths; ridges; splits not caused by structural failure or movement of or cracks in substrate roof base or non-GAF insulation over which GAF roofing materials are applied; buckles and wrinkles; workmanship in applying the GAF roofing materials; and slippage of membrane or base flashing.
5. Length of coverage	5, 10 and 12 years: 3- or 4-ply GAFGLAS Ply 4 or Ply 6 Specifications, Ruberoid, or Plus specifications; 12 years: Ruberoid or Plus specifications; 15 or 20 years: 4-Ply GAFGLAS Ply 6 Specifications, Ruberoid Plus specifications. Approved coating or asphalt and gravel must be applied as top covering for smooth surface Ruberoid membrane to obtain 12-year Ruberoid Liberty Guarantee.	5 and 10 years: 3- or 4-ply GAFGLAS Ply 4 or Ply 6 Specifications, Ruberoid, or Plus specifications; 10 years: Ruberoid or Plus specifications; 12 years: Ruberoid or Plus specifications; 15 years: 4-ply GAFGLAS Ply 6 Specifications, Ruberoid Plus specifications; 20 years: 4-ply GAFGLAS Ply 6 Specifications, Ruberoid Plus specifications. Approved coating or asphalt and gravel must be applied as top covering for smooth surface Ruberoid membrane to obtain 10, 15, or 20-year guarantee.	10 years; 12 years with GAF weather-coated emulsion, fibered aluminum coating, or granule surfaced
6. Nature of remedy	GAF will make repairs to GAF membrane, base flashing, insulation, expansion joint covers, and pre-flashed accessories as shall be necessary solely in order to correct covered leaks at no cost to owner. Warranty excludes repair or replacement of materials not sold by GAF.	GAF will make repairs to GAF membrane, base flashing, insulation, expansion joint covers, and pre-flashed accessories as shall be necessary solely in order to correct covered leaks at no cost to the owner. Warranty excludes repair or replacement of materials not sold by GAF.	GAF will make repairs to GAF membrane, base flashing, roof insulation, expansion joint covers, and pre-flashed accessories as shall be necessary solely to correct leaks at no cost to the owner. The warranty excludes repair or replacement of materials not sold by GAF.
7. Monetary limitations	None stated.	GAF's maximum liability shall not exceed in the aggregate over the life of the guarantee more than \$100 per square.	GAF's maximum liability shall not exceed in the aggregate over the life of the guarantee more than the original cost of the GAF-supplied materials, and reasonable and customary cost of the labor used to install such materials.
8. Notification requirements	Written notification within 30 days of discovery of leak to GAF technical services department, 1361 Alps Road, Building 2-1, Wayne, NJ 07470	Written notice within 30 days of discovery of leak to GAF technical services department, 1361 Alps Road, Building 2-1, Wayne, NJ 07470	Written notice within 30 days of discovery of leak to GAF Technical Services Department, 1361 Alps Road, Building 2-1, Wayne, NJ 07470
9. Exclusive or additional remedy	The guarantee is expressly in lieu of any other guarantees and/or warranties and any other obligations or liability on the part of GAF, whether any claim is based upon strict liability, negligence, breach of warranty, or any other theory or cause of action; excludes UCC warranties.	The guarantee is expressly in lieu of any other guarantees and/or warranties and any other obligations or liability on the part of GAF, whether any claim is based upon strict liability, negligence, breach of warranty, or any other theory or cause of action; excludes UCC warranties.	The guarantee is expressly in lieu of any other guarantees and/or warranties and any other obligations or liability on the part of GAF whether any claim is based upon strict liability, negligence, breach of warranty, or any other theory or cause of action; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision)	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7 (not applicable to GAF insulation or GAF roof base), 8, 9, 10, 11, 12, 13, 15, 17, 22, 24. Also excludes any damage occurring more than 30 days after discovery of a leak unless GAF is notified within 30 days of discovery, and damage due to underlying materials or structures having failed or ceased to conform to GAF's or other applicable specifications as to roof slopes or other requirements.	1, 2, 3, 4, 5, 6, 7 (not applicable to GAF insulation or GAF roof base), 8, 9, 10, 11, 12, 13, 15, 17, 22, 24. Also excludes any damage occurring more than 30 days after discovery of a leak unless GAF is notified within 30 days of discovery and damage due to underlying materials or structures having failed or ceased to conform to GAF's or other applicable specifications as to roof slopes or other requirements.	1, 2, 3, 4, 5, 6, 7 (not applicable to GAF insulation or GAF roof base), 8, 9, 10, 11, 12, 13, 15, 17, 18, 22 and 24. Also excludes any damage occurring more than 30 days after discovery of a leak, unless GAF is notified within 30 days of discovery, and damage due to underlying materials or structures having failed or ceased to conform to GAF's or other applicable specifications as to roof slopes or other requirements.
13. Wind coverage/exclusions	GAF indicates that there is no coverage for damage caused by wind. The warranty excludes windstorms, hurricanes, and tornadoes.	GAF indicates that there is no coverage for damage caused by wind. The warranty excludes windstorms, hurricanes and tornadoes	GAF indicates that there is no coverage for damage caused by wind. The warranty excludes windstorms, hurricanes and tornadoes
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C, H, I, S. Also, the guarantee states that cancellation of this guarantee will result, if roof is damaged by any cause listed as an exclusion if the damage affects the integrity or watertightness of the roof and the owner does not promptly make repairs following notification by GAF.	C, H, I, S. Also, the guarantee states that cancellation of this guarantee will result, if the roof is damaged by any cause listed as an exclusion if the damage affects the integrity or watertightness of the roof and owner does not promptly make repairs following notification by GAF.	C, H, I, S. Also, the guarantee states that cancellation of this guarantee will result if the roof is damaged by any cause listed as an exclusion if the damage affects the integrity or watertightness of the roof and the owner does not promptly make repairs following notification by GAF.
15. Cost to obtain	5 years: \$5.00/square; 10 years: \$9.00/square; 12 years: \$10.00/square; 15 years: \$12.00/square; 20 years: \$17.00/square	5 years: \$4.00/square; 10 years: \$6.00/square; 12 years: \$7.00/square; 15 years: \$9.00/square; 20 years: \$12.00/square	If roof is over 75 squares, no charge

16. Minimum charge	5 years: \$350; 10 years: \$750; 12 years: 750; 15 years: \$800; 20 years: \$1,000	5 years: \$350; 10 years: \$500; 12 years: \$500; 15 years: \$500; 20 years: \$500	\$300 if roof is less than 75 squares
17. Ineligible structure or building use	High-humidity buildings (i.e., car washes, swimming pools, freezer or cooler buildings when the freezer or cooler insulation is also the roof insulation).	Domed structures, heated tanks, storage silos, drying kilns, car wash buildings, swimming pools and other structures with abnormally high humidity conditions, cold-storage and cooler buildings when the freezer or cooler insulation is used as the base to receive the roof.	Domed structures, heated tanks, storage silos, drying kilns, car wash buildings, swimming pools and other structures with abnormally high humidity conditions, cold-storage and cooler buildings when the freezer or cooler insulation is used as the base to receive the roof.
18. Pre-construction notice and approval requirements	The contractor must submit a notice of award of contract at least ten days prior to commencement, providing job details.	Contractor must submit a notice of award of contract prior to commencement, providing job details.	Contractor must submit a notice of award of contract at least ten days prior to commencement, providing job details.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	GAF territory manager makes on-site inspections prior to and during application. GAF field technical representative makes on-site inspections after completion prior to issuance of warranty, as well as two years after issuance of warranty; no charge.	GAF territory manager makes on-site inspections prior to and during application. GAF field technical representative makes on-site inspections after completion, prior to issuance of guarantee, as well as two years after issuance of guarantee; no charge.	GAF territory manager makes on-site inspections prior to and during application. GAF field technical representative makes on-site inspections after completion, prior to issuance of guarantee, as well as two years after issuance of guarantee; no charge.
21. Contractor's post-installation obligation	The contractor is obligated to make repairs to all leaks and workmanship deficiencies for two years.	The contractor is obligated to make repairs to all leaks or defects for two years.	The contractor is obligated to make repairs to all leaks or defects for two years.
22. Backed by named insurance or surety	No; GAF indicates that it does not carry insurance covering its guarantee obligations.	No; GAF indicates it does not carry insurance covering its guarantee obligations.	No; GAF indicates it does not carry insurance covering its guarantee obligations.
23. Issuing entity manufactures and/or sells products	GAF manufactures and sells product.	GAF manufactures and sells product.	GAF manufactures and sells product.
24. Conditions for renewal or extension	Warranty may be renewed for five years at a cost of \$500.	The owner requests during the last six months of the fifth year that GAF make roof inspection free of charge. GAF will advise the owner of any repairs necessary to qualify for additional five years. The owner must make repairs at his sole expense and notify GAF no later than 45 days after the expiration of the original five-year guarantee. GAF will then reinspect and, if acceptable, guarantee will be extended for five years. GAF reserves the right to refuse to renew the guarantee if GAF determines repairs are needed due to specific exclusions from guarantee coverage.	No renewal provision
25. Assignability	Assignable to another owner only if (1) request is made in writing 30 days after ownership transfer; (2) membrane is inspected and any required repairs are completed at owner's expense; (3) proposed assignment is approved in writing by an authorized GAF technical services manager; and (4) an assignment fee of \$500 is paid to GAF. Otherwise, guarantee is not assignable, directly or indirectly.	Assignable to another owner only if (1) request is made in writing within 30 days after ownership transfer, (2) membrane is inspected and any required repairs are completed at owner's expense, (3) proposed assignment is approved in writing by an authorized GAF technical services manager, and (4) an assignment fee of \$500 is paid. Otherwise, guarantee is not assignable, directly or indirectly.	Assignable to another owner only if (1) request is made in writing within 30 days after ownership transfer, (2) membrane is inspected and any required repairs are completed at owner's expense, (3) proposed assignment is approved in writing by an authorized GAF technical services manager, and (4) an assignment fee of \$500 is paid to GAF. Otherwise, guarantee is not assignable, directly or indirectly.
26. Special features/conditions	The owner shall, at its expense (a) perform regular inspections and maintenance, (b) keep records of all inspections and maintenance performed, and (c) perform repairs to the roof or other building components identified during inspections by GAF as being necessary to preserve the integrity of the GAF roofing materials. Failure of the owner to perform work promptly following written notification by GAF may result in cancellation of guarantee if the owner's failure results in damage to the GAF roofing materials. The owner shall, at its expense, remove (and, if desired, subsequently replace) any materials and equipment that impede inspection and repair of the GAF roofing materials, such as HVAC units and satellite dishes mounted so that there is no functional access to the roof system, and precast concrete or rubber pavers, wood decking, or steel grating that are installed over the GAF roofing materials. No representative, employee, or agent of GAF, or any other person, has any authority to assume for GAF any additional or other liability or responsibility. GAF shall not be responsible for or liable for any change or amendment to the GAF roof specifications, unless the change or amendment is approved in writing by an authorized GAF technical service manager. In an emergency, the owner may authorize or perform temporary repairs to minimize damage to the building or its contents. Such work will not result in the cancellation of the guarantee provided that the temporary repairs are reasonable and customary, and do not result in permanent damage to the GAF membrane or base flashing. The owner is responsible for all expenses associated with temporary repairs.	The owner shall, at his expense (a) perform regular inspections and maintenance, (b) keep records of all inspections and maintenance performed, and (c) perform repairs to the roof or other building components identified during inspections by GAF as being necessary to preserve the integrity of the GAF roofing materials. Failure of the owner to perform work promptly following written notification by GAF may result in cancellation of guarantee if the owner's failure results in damage to the GAF roofing materials. The owner shall, at his expense, remove (and, if desired, subsequently replace) any materials and equipment that impede inspection and repair of the GAF roofing materials, such as HVAC units and satellite dishes mounted so that there is no functional access to the roof system, and precast concrete or rubber pavers, wood decking, and steel grating that are installed over the GAF roofing materials. No representative, employee, or agent of GAF, or any other person, has any authority to assume for GAF any additional or other liability or responsibility. GAF shall not be responsible for or liable for any change or amendment to the GAF roof specifications, unless the change or amendment is approved in writing by an authorized GAF technical services manager. The roofing contractor is not an agent of GAF; notice to the roofing contractor is not notice to GAF. In an emergency, the owner may authorize or perform temporary repairs to minimize damage to the building or its contents. Such work will not result in the cancellation of its guarantee provided the temporary repairs are reasonable and customary and do not result in permanent damage to the GAF membrane or base flashing. The owner is responsible for all expenses associated with temporary repairs.	The owner shall, at his expense (a) perform regular inspections and maintenance, (b) keep records of all inspections and maintenance performed, and (c) perform repairs to the roof or other building components identified during inspections by GAF as being necessary to preserve the integrity of the GAF roofing materials. Failure of the owner to perform work promptly following written notification by GAF may result in cancellation of guarantee if the owner's failure results in damage to the GAF roofing materials. The owner shall, at his expense, remove (and, if desired, subsequently replace) any materials and equipment that impede inspection and repair of the GAF roofing materials, such as HVAC units and satellite dishes mounted so that there is no functional access to the roof system, and precast concrete or rubber pavers, wood decking, and steel grating that are installed over the GAF roofing materials. No representative, employee, or agent of GAF, or any other person, has any authority to assume for GAF any additional or other liability or responsibility. GAF shall not be responsible for or liable for any change or amendment to the GAF roof specifications, unless the change or amendment is approved in writing by an authorized GAF technical services manager. The roofing contractor is not an agent of GAF; notice to the roofing contractor is not notice to GAF. In an emergency, the owner may authorize or perform temporary repairs to minimize damage to the building or its contents. Such work will not result in the cancellation of its guarantee provided the temporary repairs are reasonable and customary and do not result in permanent damage to the GAF membrane or base flashing. The owner is responsible for all expenses associated with temporary repairs.
27. Executed by owner	No	No	No

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of Issuing entity	GAF Materials Corporation (GAF)	GenCorp Inc.	GenCorp Inc.
2. Title, original publication date, and identifying symbol, if any	"Limited Warranty on Material Rubberoid Ten"; March 1994; Form 10301 3/94	"RM Full Roofing System Warranty"; 1995; 6-95	"EPDM Full Roofing System Warranty"; 1995; 6-95
3. Product, specification, or system covered	All Rubberoid specifications	GenFlex RM and materials specifically required by GenCorp	GenFlex EPDM
4. Scope of coverage	Material only; GAF warrants that the Rubberoid roofing membrane and Rubberoid base flashing materials will withstand ordinary wear and tear by the elements and will be free of manufacturing defects that affect their ability to maintain the roof in a watertight condition. Warranty applies only to Rubberoid roofing membrane and Rubberoid base flashings installed in accordance with current Rubberoid specifications.	Material and workmanship; GenCorp warrants that it will repair leaks in the GenFlex RM roofing system installed by a GenFlex authorized contractor. The roofing system consists of GenFlex RM membrane, insulation, fasteners, adhesives, sealants, flashings, fastener plates, metal bars and related GenFlex RM brand accessory items when used in accordance with GenFlex Roofing Systems published written technical specifications.	Material and workmanship; GenCorp warrants that it will repair leaks in the GenFlex EPDM roofing system installed by a GenFlex authorized contractor. The roofing system consists of GenFlex EPDM brand membrane, insulation, fasteners, adhesives, sealants, flashings, roofing tapes, fastener plates, metal bars, and related GenFlex EPDM brand accessories items when used in accordance with GenFlex roof system's published written technical specifications.
5. Length of coverage	10 years; 12 years with GAF weather-coated emulsion or fibered aluminum coating, or granule surface	10 or 15 years	10 or 15 years
6. Nature of remedy	GAF's sole responsibility is the repair or replacement, at GAF's option, of that portion of Rubberoid materials that contains manufacturing defects or deterioration caused by ordinary wear and tear by the elements that have resulted in a roof leak.	If there is a leak caused by a defect in materials or workmanship, GenCorp will repair the leak.	If there is a leak caused by a defect in material or workmanship, GenCorp will repair the leak.
7. Monetary limitations	GAF's maximum liability during the first year after completion is the original cost of Rubberoid materials. After the first year, GAF's maximum liability is the original cost of the Rubberoid materials reduced by ten percent of the maximum liability during each year after the first year, less any costs previously incurred by GAF for repair or replacement. In no event shall GAF be liable for a sum greater than maximum liability of warranty or more than five times the proportional cost paid to GAF for the Rubberoid materials installed on the affected portion of the roof, whichever is less.	None stated.	None stated.
8. Notification requirements	Written notification within 30 days to nearest GAF district office of leak resulting from manufacturing defect or ordinary wear and tear by the elements.	Written notice within 30 days of discovery of any leak and any warranty claim by certified mail to GenFlex Roofing Systems, 1722 Indian Wood Circle, Maumee, Ohio 43537. Attention: Technical Department.	Written notice within 30 days of discovery of any leak and any warranty claim by certified mail to GenFlex Roofing Systems, 1722 Indian Wood Circle, Maumee, OH 43537. Attention: Technical Department.
9. Exclusive or additional remedy	Warranty is expressly in lieu of any other guarantee and/or warranties and any other obligations or liability on the part of GAF, whether any claim is based upon strict liability, negligence, breach of warranty, or any other theory or cause of action; excludes UCC warranties.	The owner's sole and exclusive remedy for failure of the system; excludes UCC warranties.	The owner's sole and exclusive remedy for failure of the system; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (No provision)	Neutral (See Special Features/Conditions.)	GenCorp's determination (See Special Features/Conditions.)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 (including aliphatic or aromatic solvents, chlorinated hydrocarbons, turpentine, oils, organic or inorganic polar materials). 15, 17, 18, 19, 20, 22. Also excludes any damage occurring more than 30 days after discovery of a leak, unless GAF is notified within 30 days of discovery.	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12 (See Special Features/Conditions). 13, 17, 24. (Warranty also specifically excludes damages caused by insects and animals.)	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12 (See Special Features/Conditions). 13, 17, 24. (Warranty also excludes damages caused by insects and animals.)
13. Wind coverage/exclusions	Warranty excludes windstorms, hurricanes, and tornadoes. GAF indicates that there is no coverage for damage caused by wind.	Warranty covers roof damage resulting from wind speeds up to 54 mph. GenCorp indicates that, when a request is made prior to bidding and after a specific roof system design criteria is met, GenCorp's "RM Full Roofing System High Wind Warranty" covering winds of peak gusts up to 100 mph may be obtained. GenFlex Technical Department must be contacted for approvals.	Warranty covers roof damage resulting from winds up to 54 mph. GenCorp indicates that, when a request is made prior to bidding and after a specific roof system design criteria is met, GenCorp's "EPDM Full Roofing System High Wind Warranty" covering winds of peak gusts up to 100 mph may be obtained. GenFlex Technical Department must be contacted for approvals.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C, H, I. Also, warranty provides that cancellation of this warranty will result if the roof is damaged by any cause listed above as a specific exclusion that will affect the integrity or watertightness of the roof.	B, C (Warranty may also be suspended if owner fails to reimburse GenCorp for investigation costs if GenCorp's investigation reveals that GenCorp is not responsible for owner's claim.), D, H, K	B, C (Warranty may also be suspended if owner fails to reimburse GenCorp for investigation costs if GenCorp's investigation reveals that GenCorp is not responsible for owner's claim.), D, H, K
15. Cost to obtain	None	10 years: \$10.00/square; 15 years: \$13.00/square	10 years: \$10.00/square; 15 years: \$12.00/square
16. Minimum charge	None	10 years: \$1,000; 15 years: \$1,300	10 years: \$550; 15 years: \$600
17. Ineligible structure or building use	Domed structures, heated tanks, storage silos, drying kilns, car wash buildings, swimming pools and other structures with abnormally high-humidity conditions, cold-storage and cooler buildings when the freezer or cooler insulation is used as the base to receive the roof	Private residences	Private residences

18. Pre-construction notice and approval requirements	None	The contractor must submit pre-job survey form to GenCorp technical department in Maumee, Ohio	The contractor must submit pre-job survey form to GenCorp technical department in Maumee, Ohio
19. Approved, authorized, or licensed applicator	None	Yes	Yes
20. Job inspection policy	No on-site inspections	Upon request or dependent on GenCorp's evaluation, Gen Corp technical representative makes on-site inspections prior to, during application, and after completion prior to issuance of warranty, as well as two years after issuing warranty, no charge.	Upon request, GenCorp field technical representative makes on-site inspection during application; GenCorp makes on-site inspection after completion prior to issuance of warranty, no charge.
21. Contractor's post-installation obligation	None	The contractor is obligated to make repairs to workmanship deficiencies for two years.	The contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; GAF indicates that it does not carry insurance covering its warranty obligations.	No; GenCorp indicates that it does not carry insurance covering its warranty obligations.	No; GenCorp indicates that it is self-insured.
23. Issuing entity manufactures and/or sells products	GAF manufactures and sells the product.	GenCorp manufactures and sells GenFlex RM.	GenCorp sells product only.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	10 year warranty may be extended for 5 years at a cost of \$5.00/square, plus inspection fee and roof brought up to warrantable condition.
25. Assignability	Not transferable or assignable in any manner	Warranty may not be transferred upon change of ownership unless the owner (a) notifies GenCorp in writing of proposed change at least 45 days prior to change, (b) pays GenCorp the warranty transfer fee in effect on the date the warranty was issued, and (c) completes all repairs required by GenCorp in order to comply with owner's obligations under this warranty.	Warranty may not be transferred upon change of ownership unless the owner (a) notifies GenCorp in writing of its proposed change at least 45 days prior to the change, (b) pays GenCorp the warranty transfer fee in effect on the date the warranty was issued, and (c) completes all repairs required by GenCorp in order to correct failures to comply with owner's obligations under the warranty.
26. Special features/conditions	The owner must sign and mail in GAF warranty registration form within 30 days of roof completion in order for warranty to be effective. No representative, employee, or agent of GAF, or any other person has any authority to assume for GAF any additional or other liability or responsibility. GAF shall not be responsible for or liable for any change or amendment to the GAF rdbf specifications in regard to the construction of the roof, unless the change or amendment to the specifications are approved in writing by an authorized GAF technical service manager.	While GenCorp reserves the right to suspend its obligations under the warranty if all bills for installation, supplies, and service and for warranty fee or claim investigation costs have not been paid in full, the sole and exclusive remedy provision for failure of the roof system and exclusion of other warranties, including UCC warranties, remains in full force and effect. If GenCorp's investigation of any claim under this warranty reveals that GenCorp is not responsible for owner's claim, owner shall promptly reimburse GenCorp for the investigation and repair costs incurred by GenCorp. Warranty requires compliance with GenFlex maintenance and care requirements stated on reverse side of warranty, including at least twice yearly inspections; ponded water will not be allowed; roof must have slope to drain and all drain areas must remain clear; regular cleaning in areas where contaminants (i.e., oil, grease, freon, acids, solvents) potentially harmful to the roof system may accumulate; protective walkways for roof traffic; maintenance of counterflashing, metal work, equipment curb and supports, pitch pockets, traps, secondary sheets and other roof top accessories. Any claim or dispute between owner and GenCorp arising out of the warranty or relating to any material supplied or specifically required by GenCorp shall be resolved by final and binding arbitration in accordance with the rules of the American Arbitration Association. No representative has authority to make any representations other than those stated in warranty.	While GenCorp reserves the right to suspend its obligation under the warranty if all bills for installation, supplies, and service and for warranty fee or claim investigation costs have not been paid in full, the sole and exclusive remedy provision for failure of the roof system and exclusion of other warranties, including UCC warranties, remains in full force and effect. If GenCorp's investigation of any claim reveals that GenCorp is not responsible for owner's claim, owner shall promptly reimburse GenCorp for the investigation and repair costs incurred by GenCorp. Warranty requires compliance with GenFlex maintenance and care requirements stated on reverse side of warranty, including at least twice yearly inspections; ponded water will not be allowed; roof must have slope to drain and all drain areas must remain clear; regular cleaning in areas where contaminants (i.e., oil, grease, freon, acids, solvents) potentially harmful to the roof system may accumulate; protective walkways for roof traffic; maintenance of counterflashing, metal work, equipment curb and supports, pitch pockets, caulking, grease guards, traps, secondary sheets and other roof top accessories. Any claim or dispute between owner and GenCorp arising out of warranty or relating to any material supplied or specifically required by GenCorp shall be resolved by final and binding arbitration in accordance with the rules of the American Arbitration Association. No representative has authority to make any representations other than those stated in the warranty.
27. Executed by owner	Yes (See Special Features/Conditions.)	No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of Issuing entity	GenCorp, Inc.	GenCorp, Inc.	GenCorp Inc.
2. Title, original publication date, and identifying symbol, if any	"EPDM Material and Workmanship Warranty"; 1995; 6-95	"Ten Year Membrane Only Warranty For Commercial Buildings"; 1995; 6-95	"RM Material & Workmanship Warranty"; 1995; 6-95
3. Product, specification, or system covered	GenFlex EPDM	GenFlex RM, GenFlex EPDM	GenFlex RM
4. Scope of coverage	Material and workmanship; GenCorp warrants that it will repair leaks in the GenFlex EPDM membrane system installed by a GenFlex authorized contractor. The membrane system consists of GenFlex EPDM brand membrane, adhesives, sealants, flashings, roofing tapes, and related GenFlex EPDM brand accessory items (excluding insulation, fasteners and fastener plates) when used in accordance with GenFlex roofing system's published written technical specifications.	Material only; GenCorp warrants that the roofing membrane will not deteriorate to the point of causing leaks through the membrane due to normal weathering. Warranty applies only to roofing membrane and does not apply to labor, materials, or construction details.	Material and workmanship; GenCorp warrants that it will repair leaks in the GenFlex RM Membrane System installed by a GenFlex authorized applicator. The membrane system consists of GenFlex RM brand membrane, adhesives, sealants, flashings, and related GenFlex RM brand accessory items (excluding insulation, fasteners, and fastener plates) when used in accordance with GenFlex roofing systems published written technical specifications.
5. Length of coverage	5, 10, or 15 years	10 years	5, 10, or 15 years
6. Nature of remedy	If there is a leak caused by a defect in materials or workmanship, GenCorp will repair the leak.	If there is a failure of the membrane within the scope of the warranty, GenCorp will, at its option, either repair the membrane or issue credit against the purchase of a new roofing membrane from GenCorp, prorated based on months of service.	If there is a leak caused by a defect in materials or workmanship, GenCorp will repair the leak.
7. Monetary limitations	None stated.	Credit issued by GenCorp shall be determined by multiplying the current price of replacement membrane by a fraction, the numerator of which is the remaining months of the warranty and the denominator of which is the total number of months the warranty is to be in effect.	None stated.
8. Notification requirements	Written notice within 30 days of discovery of any leak and warranty claim by certified mail to GenFlex Roofing Systems, 1722 Indian Wood Circle, Maumee, OH 43537, Attention: Technical Department	Written notice within 30 days of discovery of any leak and warranty claim by certified mail to GenFlex Roofing Systems, 1722 Indian Wood Circle, Maumee, OH 43537, Attention: Technical Department.	Written notice within 30 days of discovery of any leak and any warranty claim by certified mail to GenFlex Roofing Systems, 1722 Indian Wood Circle, Maumee, Ohio 43537, Attention: Technical Department.
9. Exclusive or additional remedy	The owner's sole and exclusive remedy for failure of the roofing membrane; excludes UCC warranties.	The owner's sole and exclusive remedy for failure of the roofing membrane; excludes UCC warranties.	The owner's sole and exclusive remedy for failure of the membrane system; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	GenCorp's determination (See Special Features/Conditions.)	Neutral (See Special Features/Conditions.)	Neutral (See Special Features/Conditions.)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12 (see Special Features/Conditions), 13, 17, 24. (Warranty also specifically excludes damages caused by insects and animals.)	1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 24. (Warranty also specifically excludes damages caused by insects and animals.)	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12 (see Special Features/Conditions), 13, 17, 24. (Warranty also specifically excludes damages caused by insects and animals.)
13. Wind coverage/exclusions	The warranty covers roof damage resulting from wind speeds up to 54 mph. GenCorp indicates that, when a request is made prior to bidding and after a specified roof system design criteria is met, GenCorp's "EPDM Material and Workmanship High Wind Warranty" covering winds of peak gusts up to 100 mph may be obtained. GenFlex Technical Department must be contacted for approvals.	The warranty covers roof damage resulting from wind speeds up to 54 mph.	Warranty covers roof damage resulting from wind speeds up to 54 mph. GenCorp indicates that, when a request is made prior to bidding and after a specific roof system design criteria is met, GenCorp's "RM Material and Workmanship High Wind Warranty" covering winds of peak gusts up to 100 mph may be obtained. GenFlex Technical Department must be contacted for approvals.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C (warranty may also be suspended if owner fails to reimburse GenCorp for investigation costs if GenCorp's investigation reveals that GenCorp is not responsible for owner's claim), D, H, K.	B, C, D, H, K	B, C (warranty may also be suspended if owner fails to reimburse GenCorp for investigation costs if GenCorp's investigation reveals that GenCorp is not responsible for owner's claim), D, H, K
15. Cost to obtain	5 years: \$3,000/square; 10 years: \$7,000/square; 15 years: \$10,000/square	None	5 years: \$4,000/square; 10 years: \$7,000/square; 15 years: \$10,000/square
16. Minimum charge	5 years: \$300; 10 years: \$450; 15 years: \$550	None	5 years: \$400; 10 years: \$700; 15 years: \$1,000
17. Ineligible structure or building use	Private residences	Private residences	Private residences
18. Pre-construction notice and approval requirements	Contractor must submit pre-job survey form to GenCorp Technical Department in Maumee, Ohio.	None	Contractor must submit pre-job survey form to GenCorp technical department in Maumee, Ohio.
19. Approved, authorized, or licensed applicator	Yes	No	Yes

20. Job inspection policy	Upon request, GenCorp field technical representative makes on-site inspections during application; GenCorp makes on-site inspections after completion prior to issuance of warranty; no charge.	No on-site inspections	Upon request or dependent on GenCorp's evaluation, GenCorp technical representative makes on-site inspections prior to, during application and after completion prior to issuance of warranty, as well as two years after issuing warranty; no charge.
21. Contractor's post-installation obligation	The contractor is obligated to make repairs to workmanship deficiencies for two years.	None; material-only warranty	Contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; GenCorp indicates that it is self-insured.	No; GenCorp indicates that it is self-insured.	No; GenCorp indicates that it does not carry insurance
23. Issuing entity manufactures and/or sells products	GenCorp sells product only.	GenCorp EPDM.	GenCorp manufactures and sells product.
24. Conditions for renewal or extension	5 and 10 year warranties may be extended for 5 years at a cost of \$5.00/square, plus inspection fee and roof brought up to warrantable condition.	No renewal provision	No renewal provision
25. Assignability	Warranty may not be transferred upon change of ownership unless the owner (a) notifies GenCorp in writing of proposed change at least 45 days prior to the change, (b) pays GenCorp the warranty transfer fee in effect on the date the warranty was issued, and (c) completes all repairs required by GenCorp in order to correct failures to comply with owner's obligations under the warranty.	Warranty may not be transferred upon change of ownership unless the owner (a) notifies GenCorp in writing of proposed change at least 45 days prior to the change, (b) pays GenCorp the warranty transfer fee in effect on the date the warranty was issued, and (c) completes all repairs required by GenCorp in order to comply with the owner's obligations under this warranty.	Warranty may not be transferred upon change of ownership unless the owner (a) notifies GenCorp in writing of proposed change at least 45 days prior to the change, (b) pays GenCorp the warranty transfer fee in effect on the date the warranty was issued, and (c) completes all repairs required by GenCorp in order to comply with the owner's obligations under this warranty.
26. Special features/conditions	<p>While GenCorp reserves the right to suspend its obligation under the warranty if all bills for installation, supplies, and service for warranty fee or claim investigation costs have not been paid in full, the sole and exclusive remedy provision for failure of the roof system and exclusion of other warranties, including UCC warranties, remains in full force and effect.</p> <p>If GenCorp's investigation of any claim reveals that GenCorp is not responsible for owner's claim, owner shall promptly reimburse GenCorp for the investigation and repair costs incurred by GenCorp.</p> <p>The warranty requires compliance with GenFlex maintenance and care requirements stated on reverse side of warranty, including at least twice yearly inspections; ponded water will not be allowed; roof must have slope to drain and all drain areas must remain clear; regular cleaning in areas where contaminants (i.e., oil, grease, freon, acids, solvents) potentially harmful to the roof system may accumulate; protective walkways for roof traffic; maintenance of counterflashing, metal work, equipment curb and supports, pitch pockets, caulking, secondary sheets and other roof top accessories.</p> <p>Any claim or dispute between owner and GenCorp arising out of warranty or relating to any material supplied or specifically required by GenCorp shall be resolved by final and binding arbitration in accordance with the rules of the American Arbitration Association.</p> <p>No representative has authority to make any representations other than those stated in the warranty.</p>	<p>While GenCorp reserves the right to suspend its obligations under the warranty if all bills for installation, supplies, and material suppliers, the sole and exclusive remedy provision for failure of the roofing membrane and exclusion of other warranties, including UCC warranties, remains in full force and effect.</p> <p>Any claim or dispute between owner and GenCorp arising out of the warranty or relating to any material supplied or specifically required by GenCorp shall be resolved by final and binding arbitration in accordance with the rules of the American Arbitration Association.</p> <p>No representative has authority to make any representations other than those stated in warranty.</p>	<p>While GenCorp reserves the right to suspend its obligation under the warranty if all bills for installation, supplies, and service and for warranty fee or claim investigation costs have not been paid in full, the sole and exclusive remedy provision for failure of the roof system and exclusion of other warranties, including UCC warranties, remains in full force and effect.</p> <p>If GenCorp's investigation of any claim reveals that GenCorp is not responsible for owner's claim, owner shall promptly reimburse GenCorp for the investigation and repair costs incurred by GenCorp.</p> <p>The warranty requires compliance with GenFlex maintenance and care requirements stated on reverse side of warranty, including at least twice yearly inspections; ponded water will not be allowed; roof must have slope to drain and all drain areas must remain clear; regular cleaning in areas where contaminants (i.e., oil, grease, freon, acids, solvents) potentially harmful to the roof system may accumulate; protective walkways for roof traffic; maintenance of counterflashing, metal work, equipment curb and supports, pitch pockets, caulking, grease guards, traps, secondary sheets and other roof top accessories.</p> <p>Any claim or dispute between owner and GenCorp arising out of warranty or relating to any material supplied or specifically required by GenCorp shall be resolved by final and binding arbitration in accordance with the rules of the American Arbitration Association.</p> <p>No representative has authority to make any representations other than those stated in the warranty.</p>
27. Executed by owner	No	Registration form is to be completed and submitted to GenFlex Roofing Systems in Maumee, Ohio.	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	W.R. Grace & Co. (See Special Features/Conditions)	W.R. Grace & Co. (See Special Features/Conditions)	W.R. Grace & Co. (See Special Features/Conditions)
2. Title, original publication date, and identifying symbol, if any	"Grace PRIMA System 10 Year System Warranty"; January 1989; PRIMA-010 3/89	"Grace PRIMA System 10 Year Ultra System Warranty"; January 1, 1991; PRIMA 012-SC	"Grace PRIMA System 10 Year Material Warranty"; March 1989; PRIMA-008-SC 3/89
3. Product, specification, or system covered	PRIMA 350 or PRIMA 450 System, which consists of all material supplied by Grace and installed according to Grace-PRIMA specification.	PRIMA 350 System, PRIMA 450 System, PRIMA Systems consist of all material supplied by Grace, insulation supplied by Westile, Inc. and the Roofcap Paver Ballast System supplied by Westile specifications.	PRIMA 350 Sheet, PRIMA 450 Sheet
4. Scope of coverage	Material and workmanship; Grace warrants to owner that the extruded polystyrene insulation will retain 80 percent of its thermal resistance and that the roof's top covering of extruded polystyrene, fabric, and ballast will remain in place. Grace agrees with owner to make or cause to be made at Grace's expense all repairs to the PRIMA System necessary to correct roof leaks resulting from roof membrane deterioration as a result of ordinary wear and tear and the effects thereof; improper workmanship by the roofing contractor in the installation of the roof membrane or the flashing membrane; blisters, buckles, wrinkles, or ridges in the roof membrane; splits in the roof membrane or the flashing membrane; temperature fluctuations or thermal shock; and roof membrane and flashing membrane slippage. Grace warrants to owner that the extruded polystyrene insulation will retain 80 percent of its thermal resistance and that the Roofcap Paver Ballast Blocks will maintain compliance with applicable absorption and flexural requirements as set forth by the National Concrete Masonry Association in effect at the time of issuance of warranty and that the PRIMA Roof System will remain in place at _____ miles per hour. [Grace indicates that 110 mph is inserted.]	Material and workmanship; Grace will make or cause to be made, at Grace's expense, all repairs to the PRIMA System necessary to correct roof leaks resulting from roof membrane and flashing membrane deterioration as a result of ordinary wear and tear and the effects thereof; improper workmanship by the roofing contractor in the installation of the roof membrane or the flashing membrane; blisters, buckles, wrinkles, or ridges in the roof membrane; splits in the roof membrane or the flashing membrane; temperature fluctuations or thermal shock; and roof membrane and flashing membrane slippage. Grace warrants to owner that the extruded polystyrene insulation will retain 80 percent of its thermal resistance and that the Roofcap Paver Ballast Blocks will maintain compliance with applicable absorption and flexural requirements as set forth by the National Concrete Masonry Association in effect at the time of issuance of warranty and that the PRIMA Roof System will remain in place at _____ miles per hour. [Grace indicates that 110 mph is inserted.]	Material only; Grace warrants that the PRIMA Membrane at the time of delivery by Grace conformed to Grace's material specifications and that water will not leak directly through any individual PRIMA sheet if installed and maintained in conformance with Grace's PRIMA Systems Instructions and specifications from time to time in effect.
5. Length of coverage	10 years	10 years	10 years
6. Nature of remedy	Grace agrees to provide inspection and repair services necessary to correct leaks resulting from covered causes.	Grace agrees to make or cause to be made all repairs necessary to correct roof leaks resulting from covered causes. If insulation does not perform as warranted, Grace will supply replacement insulation for the noncomplying insulation. Replacement of defective blocks will be limited to original cost of defective blocks prorated over years of service. If the PRIMA System fails to remain on the roof, Grace will replace all displaced components and make modifications to allow the PRIMA System to perform as warranted.	Grace will supply replacement PRIMA in exchange for and to the extent that PRIMA is found by Grace not to comply with the warranty.
7. Monetary limitations	Grace's obligations shall exclude cost of removal and replacement of concrete overlayment over the membrane, which shall be the responsibility of owner.	No monetary limitations on repairs to correct leaks. For insulation that does not retain 80 percent of its thermal insulation, total labor and material expense over the life of the warranty will be limited to the original insulation cost prorated over the years of service. Replacement of defective blocks shall be limited to the original cost of the defective blocks prorated over the years of service. Grace's obligations shall exclude cost of removal and replacement of concrete overlayment over the membrane, which shall be the responsibility of owner.	None stated.
8. Notification requirements	Written notice within 30 days from the date of discovery of the need for any repair (for the date such need should reasonably have been discovered) that may be a responsibility of Grace.	Written notice within 30 days from the date of discovery of the need for any repair (for the date such need should reasonably have been discovered) that may be a responsibility of Grace.	None stated.
9. Exclusive or additional remedy	Owner waives any and all other claims, actions, and demands relating to the use of the PRIMA System; excludes UCC warranties.	Owner waives any and all other claims, actions, and demands relating to the use of the PRIMA System; excludes UCC warranties.	Warranty is exclusive and is in lieu of any and all other warranties; excludes UCC warranties.
10. Inclusion of consequential damages	No (also excludes penal damages)	No (also excludes penal damages)	No (also excludes penal damages)
11. Determination of warranty applicability	Neutral (no provision)	Grace's determination	Grace's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1 (including windstorms with gust speeds in excess of 70 mph), 2, 3, 4, 6, 7, 8, 9, 10, 15	1, 2, 3, 4, 6, 8, 10	1, 3, 15, 17. Warranty also excludes cuts or damage to the PRIMA during installation.
13. Wind coverage/exclusions	Warranty excludes windstorms with gust speeds in excess of 70 mph and tornadoes. Warranty covers roof damage resulting from wind speeds up to 70 miles per hour.	Warranty excludes windstorms with gust speeds in excess of _____ mph and tornadoes. Grace indicates warranty covers roof damage resulting from wind speeds up to 110 miles per hour.	No coverage for damage caused by wind.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C, I	C, I	C

15. Cost to obtain	\$15.00/square	\$12.00/square	None
16. Minimum charge	\$1,500	\$1,200	None
17. Ineligible structure or building use	None	None	None
18. Pre-construction notice and approval requirements	Grace's approval for issuance of this warranty must be obtained prior to date of bidding by contractor; on-site inspection by Grace representative may be required prior to approval.	Grace's approval required prior to bid. Grace inspection shall determine warrantyability.	None
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	Grace technical representative makes on-site inspections prior to, during, and after application, as well as two years after issuance of warranty, as needed; no charge.	Grace technical specialist makes on-site inspections prior to, during, and after application, as well as two years after issuance of warranty, as needed; no charge.	Grace makes on-site inspections prior to and during application as needed; no charge.
21. Contractor's post-installation obligation	Contractor obligated to make repairs to all leaks for two years.	Contractor obligated to make repairs to all leaks for two years.	Although this is a material-only warranty, contractor obligated to make repairs to all leaks for two years
22. Backed by named insurance or surety	No; Grace indicates that it does not carry insurance covering its warranty obligations.	No; Grace indicates that it does not carry insurance covering its warranty obligations.	No; Grace indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Grace manufactures and sells product.	Grace manufactures and sells product.	Grace manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Assignable provided (1) Grace is given not less than 30 days written notice prior to transfer and the intended building use is stated and approved by Grace, (2) an inspection of the roof is made by Grace, (3) all repairs deemed necessary by Grace are made at owner's expense and such repairs are inspected and approved by Grace, (4) Grace's then-current inspection and processing fee is paid to Grace.	Assignable provided that (1) Grace is given not less than 30 days written notice prior to transfer and the intended building use is stated and approved by Grace; (2) an inspection of the roof is made by Grace or by Grace's representative; (3) all repairs deemed necessary by Grace are made at owner's expense and such repairs are inspected and approved by Grace or Grace's representative; (4) Grace's then-current inspection and processing fee is paid to Grace.	Not assignable without Grace's prior written consent
26. Special features/conditions	Grace indicates that it has changed its name to W. R. Grace & Co.—Conn. This agreement shall apply only to reroofing and new roofing applications with PRIMA System involving total coverage of a complete roof area, consisting of a complete single roof or a single roof or a roof area completely separated from other roofing by expansion joints or other means acceptable to Grace. PRIMA System must be maintained in accordance with such instructions of Grace as may be in effect from time to time.	Grace indicates that it has changed its name to W.R. Grace & Co.—Conn. This agreement shall apply only to reroofing and new roofing applications with PRIMA System involving total coverage of a complete roof area, consisting of a complete single roof or a roof area completely separated from other roofing by expansion joints or other means acceptable to Grace. PRIMA System must be maintained in accordance with such instructions of Grace as may be in effect from time to time. Warranty includes a contractor certification that the PRIMA System was installed in strict accordance and compliance with Grace's, Dow's, and Olympic Mfg. Co.'s standards, specifications, and instructions.	Grace indicates that it has changed its name to W. R. Grace & Co.—Conn.
27. Executed by owner	Yes		

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	W.R. Grace & Co. (See Special Features/Conditions)	GS Roofing Products Company, Inc.	GS Roofing Products Company, Inc.
2. Title, original publication date, and identifying symbol, if any	"Grace PRIMA System 10 Year Membrane Performance Warranty"; March 1989; PRMA-009-SC 3/89	"Roof Membrane Limited Warranty"; 3/93; 70-01-0003-52451-003	"Ten Year Roof Membrane Limited Warranty"; March 1998
3. Product, specification, or system covered	PRMA 350 or PRMA 450 System, which consists of all material supplied by Grace and installed according to Grace-PRMA specification.	BUR specifications AAA-1-3, AAA-2-3, AAA-3-3, AAA-4-3, AAA-5-3, AAA-7-3, AAA-8-3, AAA-9-3, AAA-11-3, AAP-1-2-3, A-1-M-3, A-2-M-3, A-3-M-3, A-4-M-3, A-5-M-3, A-6-M-3, MC-1-R-3, MW-2-R-3, EMS-1-C, EMS-2-W, EMS-3-C, RMS-4-W	BUR specifications: AAA-1-3, AAA-2-3, AAA-3-3, AAA-4-3, AAA-5-3, AAA-7-3, AAA-8-3, AAA-9-3, AAA-11-3, AAP-1-2-3, A-1-M-3, A-2-M-3, A-3-M-3, A-4-M-3, A-5-M-3, A-6-M-3, MC-1-R-3, MW-2-R-3, EMS-1-C, EMS-2-W, EMS-3-C, RMS-4-W
4. Scope of coverage	Material and workmanship; Grace agrees with owner to make or cause to be made, at Grace's expense, all repairs to the PRMA System necessary to correct roof leaks resulting from roof membrane and flashing membrane deterioration as a result of ordinary wear and tear and the effects thereof; improper workmanship by the roofing contractor in the installation of the roof membrane or the flashing membrane; blisters, buckles, wrinkles or ridges in the roof membrane; splits in the roof membrane or the flashing membrane; temperature fluctuations or thermal shock; and roof membrane and flashing membrane slippage.	Material and workmanship; GS warrants that, should there be any leaks in the roof membrane caused solely by reason of ordinary wear of the elements or workmanship on the part of the GS authorized roofing contractor and not caused completely or partially, by any of the causes excluded from coverage, GS or its authorized agent will repair such leaks as necessary to retain the roof membrane in a watertight condition at GS's expense. (See Special Features/Conditions.)	Material and workmanship; GS warrants that, should there be any leaks or manufacturing defects in the GS products used in the roof membrane caused solely by reason of ordinary wear and tear of the elements or workmanship on the part of the GS authorized roofing contractor and not caused completely or partially, by any of the causes excluded from coverage, GS or its authorized agent will repair such leaks (exclusive of metal work and non-GS approved flashings) as necessary to retain the roof membrane in a watertight condition at GS's expense. The roof membrane is composed of a base sheet, optional interplies, bituminous asphaltic material between layers when required, and a capsheet and/or surfacing layer applied per GS published specifications and conditions. (See Special Features/Conditions.)
5. Length of coverage	10 years	10 years	5 years
6. Nature of remedy	Grace agrees to provide inspection and repair services necessary to correct leaks.	GS or authorized agent will repair leaks as necessary to retain the roof membrane in a watertight condition at GS's expense.	GS or its authorized agent will repair leaks as necessary to retain the roof membrane in a watertight condition at GS's expense.
7. Monetary limitations	Grace's obligations shall exclude cost of removal and replacement of concrete overlayment over the membrane, which shall be the responsibility of owner.	\$50/square; GS shall be discharged of all further obligation whenever the value of all repairs furnished (based on the cost to GS of all repair labor and materials) together with any inspection cost incurred by GS, shall equal the amount of \$50 per square.	\$50/square; GS shall be discharged of all further obligation whenever the value of all repairs furnished (based on the cost to GS of all repair labor and materials) together with any inspection cost incurred by GS, shall equal the amount of \$50 per square.
8. Notification requirements	Written notice within 30 days from the date of discovery of the need for any repair for date such need should reasonably have been discovered that may be a responsibility of Grace.	Written notification to GS at applicable regional office within 30 days after discovery of any claim.	Written notification, together with proof of purchase, by certified mail to GS Roofing Products Company, Inc., 5525 MacArthur Blvd., Suite 900, Irving, TX 75038. Attn: Commercial Services Department within 30 days of discovery of alleged defect. Notice must include a general description of the alleged defect. (See Special Features/Conditions.)
9. Exclusive or additional remedy	Owner waives any and all other claims, actions, and demands relating to the use of the PRMA System; excludes UCC warranties.	Warranty is in lieu of all other guarantees or warranties and all other obligations and liabilities on the part of GS; excludes UCC warranties.	The warranty is in lieu of any other obligations, guarantees, and warranties and any other liability on the part of GS; excludes UCC warranties. Warranty states that GS does not warrant any review of construction or design plans or any inspection of the roof or the installation thereof.
10. Inclusion of consequential damages	No (also excludes penal damages)	No	No
11. Determination of warranty applicability	Neutral (no provision)	Neutral (no provision)	GS' determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1 (including windstorms with gust speeds in excess of 70 mph), 2, 3, 4, 6, 7, 8, 9, 10, 15	1, 2, 4, 5, 7, 9, 10, 11, 18 (including damages caused by solid or liquid deposits of any substance), 22, 23. Warranty also excludes sleet or icing.	1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 16, 17, 18 (including damages caused by solid or liquid deposits of any substance), 20, 22, 23.
13. Wind coverage/exclusions	Warranty excludes windstorms with gust speeds in excess of 70 mph and tornadoes. Warranty covers roof damage resulting from wind speeds up to 70 miles per hour.	GS indicates warranty covers roof damage resulting from wind speeds up to 54 mph. Warranty excludes winds or gusts exceeding Force 9 on the Beaufort Scale and tornadoes.	GS indicates that the warranty covers roof damage resulting from wind speeds up to 54 mph. The warranty excludes winds exceeding Force 9 on the Beaufort Scale and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C, I	B, C (service charge must be received by GS within six months after completion), H, I, J, L	A, B, C, J
15. Cost to obtain	\$12.00/square	\$4.00/square	\$4.00/square
16. Minimum charge	\$1,200	\$400	400
17. Ineligible structure or building use	None	Residential, apartments, condominiums, heated tanks, and cold-storage facilities	Residential, condos, heated tanks, cold storage facilities

18. Pre-construction notice and approval requirements	Grace's approval for issuance of this warranty must be obtained prior to date of bidding by contractor; on-site inspection by Grace representative may be required prior to approval.	Yes	The contractor must submit application for GS warranty prior to job start for review and approval. The contractor must also notify local GS personnel at least three working days prior to job start to arrange for deck inspection and pre-job conference.
19. Approved, authorized, or licensed applicator	Yes	Yes	
20. Job inspection policy	Grace technical representative makes on-site inspections prior, during, and after application, as well as two years after issuance of warranty; no charge.	Yes	GS personnel make on-site inspections prior, during, and after application, as well as two years after issuance of warranty; no charge. GS conducts a minimum of three inspections with additional inspections as necessary for quality assurance.
21. Contractor's post-installation obligation	Contractor obligated to make repairs to all leaks for two years.		The contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Grace indicates that it does not carry insurance covering its warranty obligations.	No; GS indicates that it does not carry insurance covering its warranty obligations.	No; GS indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Grace manufactures and sells product.	GS Roofing Products Company, Inc. manufactures and sells product.	GS Roofing Products Company, Inc. manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal policy	GS indicates that warranty can be renewed for life of warranty. GS references its published schedule of renewal fees.
25. Assignability	Assignability provided (1) Grace is given not less than 30 days written notice prior to transfer and the intended building use is stated and approved by Grace, (2) an inspection of the roof is made by Grace, (3) all repairs deemed necessary by Grace are made at owner's expense and such repairs are inspected and approved by Grace, (4) Grace's then-current inspection and processing fee is paid to Grace.	The owner may transfer to a third party provided the use to which said third party puts the structure is not one prohibited by GS in the 1990 edition of its commercial roofing systems specification manual. The owner shall notify GS's regional office prior to making any transfer.	Subject to payment of applicable transfer fee to GS and proper documentation being delivered to GS within thirty days after building ownership transfer, the owner may transfer this warranty to a subsequent owner, provided the use to which the subsequent owner puts the structure is not one prohibited by GS in its published material. The owner shall contact GS for applicable transfer fee and notification documentation.
26. Special features/conditions	Grace indicates it has changed its name to W. R. Grace & Co.-Conn. This agreement shall apply only to reroofing and new roofing applications with PRIMA System involving total coverage of a complete roof area, consisting of a complete single roof or a roof area completely separated from other roofing by expansion joints or other means acceptable to Grace. PRIMA System must be maintained in accordance with such instructions of Grace as may be in effect from time to time.	Roof deck, metal work, drains, expansion joints, skylights, vents, plastic-type flashings, and reflective color coating are not considered part of the warranty. Failure of flashings are not covered, except if covered by a GS Flashing Endorsement. Flashings are not covered unless a flashing endorsement is separately executed and attached; failure of flashings is excluded from warranty coverage, unless a flashing endorsement is obtained. GS will extend warranty coverage to roof insulation, vapor retarder, and insulation fasteners if they are GS-brand or approved by GS and covered by a separately executed and attached roof insulation endorsement. Neither issuance of warranty nor any review or inspection of plans by GS shall constitute waiver by GS of exclusions and limitations in warranty. No GS representative may waive any exclusion or limitation either orally or in writing. In calculating whether monetary limitation has been reached, inspection costs incurred by GS are included in addition to value of repair.	Roof deck, insulation, vapor retarders, fasteners, metal work, drains, expansion joints, skylights, vents, flashings or reflective coating are not considered part of the roof membrane and are not included within the protection of the warranty. Bituminous flashings are not considered part of the roof membrane. GS is not responsible for any costs related to the removal or abatement of any asbestos present in the existing roof system to which the GS roof system is applied. The owner must allow taking of samples that adequately demonstrate the alleged problem for testing by GS. GS will not be liable for any expenditure owner may incur in replacing or repairing the roof membrane which is incurred prior to written acknowledgement from GS that it is responsible. In the event an emergency condition exists which requires immediate repair to avoid damage to the building or its contents, the owner may make essential temporary repairs performed by a qualified roofing individual. GS will reimburse owner for only those essential repair expenses which would have been the responsibility of GS under the warranty. All repairs must have prior written approval of GS' claims service department. No representative, employee, agent of GS, or any other person has the authority to assume for GS any additional or other liability or responsibility in connection with the roof. GS shall not be responsible for or liable if there is any change or amendment to the warranty or to the GS specification(s) in regard to the construction of the Roof Membrane, unless said change and/or amendment has been signed by an officer of GS. No action for breach of this limited warranty shall be brought later than one year after any potential cause of action has accrued. All disputed claims or other disputes that may arise between the owner, contractor, architect and/or GS arising out of or relating to or in connection with warranty shall be submitted to and decided by arbitration in accordance with the Construction Industry Arbitration Rules. This agreement to arbitrate shall be specifically enforceable under the applicable state or federal arbitration laws. The award rendered by the arbitrator shall be final and judgment may be entered upon such award in accordance with applicable law in any court having jurisdiction thereof. GS does not practice engineering or architecture.
27. Executed by owner	Yes	Yes; the owner signs and returns warranty acknowledgement form to GS regional office.	

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

GS Roofing Products Company, Inc.		GS Roofing Products Company, Inc.		GS Roofing Products Company, Inc.	
1. Identity of issuing entity	Twelve Year Flintlastic Roof Membrane Product Warranty (A Limited Warranty)*; March 1996	Five Year Full Value Roof Membrane Warranty (A Limited Warranty)*; March 1996	Ten Year Full Value Roof Membrane Warranty (A Limited Warranty)*; March 1996	GS Roofing Products Company, Inc.	
2. Title, original publication date, and identifying symbol, if any	Flintlastic Modified Bitumen Specifications: STA-1-3, STA 2-3, GTA-1-3, GTA-2-3, GTS-1-3, GTS-2-3, GMS-1-3, GMS-2-3, FR-1-3, FR-2-3	Bur specifications: AAA-1-3, AAA-2-3, AAA-3-3, AAA-4-3, AAA-5-3, AAAP-11-3, AAAP-12-3, A-1-M-3, A-2-M-3, A-3-M-3, A-4-M-3, MC-1R-3, MW-2R-3, EMS-1-C, EMS-2-W	Bur specifications: AAA-1-3, AAA-2-3, AAA-3-3, AAA-4-3, AAA-5-3, AAAP-11-3, AAAP-12-3, A-1-M-3, A-2-M-3, A-3-M-3, A-4-M-3, MC-1R-3, MW-2R-3, EMS-1-C, EMS-2-W	Bur specifications: AAA-1-3, AAA-2-3, AAA-3-3, AAA-4-3, AAA-5-3, AAAP-11-3, AAAP-12-3, A-1-M-3, A-2-M-3, A-3-M-3, A-4-M-3, MC-1R-3, MW-2R-3, EMS-1-C, EMS-2-W	
3. Product, specification, or system covered	Material only; GS warrants that the GS Flintlastic products are free from manufacturing defects and will withstand ordinary wear of the elements, provided that the materials are installed in accordance with GS' current published specifications and conditions. The warranty applies to leaks caused solely by ordinary wear of the elements or manufacturing defect and not caused completely or partially by any excluded cause. The warranty does not cover roof insulation, roof deck, vapor retarder, flashings, drains, expansion joints, skylights, vents or optional reflective, decorative or fire-resistant coatings and surfacings.	Material and workmanship; GS warrants that, should there be any leaks or manufacturing defects in the GS products used in the roof membrane caused solely by reason of ordinary wear and tear of the elements or workmanship on the part of the GS authorized roofing contractor, and not caused, completely or partially, by any of the causes excluded from coverage, GS or its authorized agent will repair such leaks (exclusive of metal work and non-GS approved flashings) as necessary to retain the roof membrane in a watertight condition at GS's expense. The roof membrane is composed of a base sheet, optional interplies, bituminous asphaltic material between layers when required, and a capsheet and/or surfacing layer applied per GS published specifications and conditions. (See Special Features/Conditions.)	Material and workmanship; GS warrants that, should there be any leaks or manufacturing defects in the GS products used in the roof membrane caused solely by reason of ordinary wear and tear of the elements or workmanship on the part of the GS authorized roofing contractor, and not caused, completely or partially, by any of the causes excluded from coverage, GS or its authorized agent will repair such leaks (exclusive of metal work and non-GS approved flashings) as necessary to retain the roof membrane in a watertight condition at GS's expense. The roof membrane is composed of a base sheet, optional interplies, bituminous asphaltic material between layers when required, and a capsheet and/or surfacing layer applied per GS published specifications and conditions. (See Special Features/Conditions.)	Material and workmanship; GS warrants that, should there be any leaks or manufacturing defects in the GS products used in the roof membrane caused solely by reason of ordinary wear and tear of the elements or workmanship on the part of the GS authorized roofing contractor, and not caused, completely or partially, by any of the causes excluded from coverage, GS or its authorized agent will repair such leaks (exclusive of metal work and non-GS approved flashings) as necessary to retain the roof membrane in a watertight condition at GS's expense. The roof membrane is composed of a base sheet, optional interplies, bituminous asphaltic material between layers when required, and a capsheet and/or surfacing layer applied per GS published specifications and conditions. (See Special Features/Conditions.)	
4. Scope of coverage	12 years	5 years	10 years	10 years	
5. Length of coverage	GS or its authorized agent will repair or replace, at its option, including labor and materials, the Flintlastic roof membrane and/or Flintlastic base flashing.	GS or its authorized agent will repair leaks as necessary to retain the roof membrane in a watertight condition at GS' expense.	GS or its authorized agent will repair leaks as necessary to retain the roof membrane in a watertight condition at GS' expense.	GS or its authorized agent will repair leaks as necessary to retain the roof membrane in a watertight condition at GS' expense.	
6. Nature of remedy	GS' maximum liability over term of warranty is \$80/square for Flintlastic roofing membrane. GS' maximum liability is decreased by 14.29 percent of the original liability per year after the first five years from the date of completion.	None stated.	None stated.	None stated.	
7. Monetary limitations	Written notification, together with proof of purchase, by certified mail to GS Roofing Products Company, Inc., 5525 MacArthur Blvd., Suite 900, Irving, TX 75038, Attn: Commercial Services Department within 30 days of discovery of alleged defect. Notice must include a general description of the alleged defect. (See Special Features/Conditions.)	Written notification, together with proof of purchase, by certified mail to GS Roofing Products Company, Inc., 5525 MacArthur Blvd., Suite 900, Irving, TX 75038, Attn: Commercial Services Department within 30 days of discovery of alleged defect. Notice must include a general description of the alleged defect. (See Special Features/Conditions.)	Written notification, together with proof of purchase, by certified mail to GS Roofing Products Company, Inc., 5525 MacArthur Blvd., Suite 900, Irving, TX 75038, Attn: Commercial Services Department within 30 days of discovery of alleged defect. Notice must include a general description of the alleged defect. (See Special Features/Conditions.)	Written notification, together with proof of purchase, by certified mail to GS Roofing Products Company, Inc., 5525 MacArthur Blvd., Suite 900, Irving, TX 75038, Attn: Commercial Services Department within 30 days of discovery of alleged defect. Notice must include a general description of the alleged defect. (See Special Features/Conditions.)	
8. Notification requirements	The warranty is in lieu of any other obligations, guarantees, and warranties and any other liability on the part of GS; excludes UCC warranties.	The warranty is in lieu of any other obligations, guarantees, and warranties and any other liability on the part of GS; excludes UCC warranties. The warranty states that GS does not warrant any review of construction or design plans or any inspection of the roof or the installation thereof.	The warranty is in lieu of any other obligations, guarantees, and warranties and any other liability on the part of GS; excludes UCC warranties. The warranty states that GS does not warrant any review of construction or design plans or any inspection of the roof or the installation thereof.	The warranty is in lieu of any other obligations, guarantees, and warranties and any other liability on the part of GS; excludes UCC warranties. The warranty states that GS does not warrant any review of construction or design plans or any inspection of the roof or the installation thereof.	
9. Exclusive or additional remedy	No	No	No	No	
10. Inclusion of consequential damages	Neutral (no provision)	GS' determination	GS' determination	GS' determination	
11. Determination of warranty applicability	1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 16, 17, 18 (including damages caused by solid or liquid deposits of any substance), 19, 20, 22, 23	1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 16, 17, 18 (including damages caused by solid or liquid deposits of any substance), 20, 22, 23	1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 16, 17, 18 (including damages caused by solid or liquid deposits of any substance), 20, 22, 23	1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 16, 17, 18 (including damages caused by solid or liquid deposits of any substance), 20, 22, 23	
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	GS indicates that the warranty covers roof damage resulting from wind speeds up to 54 mph. Warranty excludes winds exceeding Force 9 on the Beaufort Scale, hurricanes, and tornadoes.	GS indicates that the warranty covers roof damage resulting from wind speeds up to 54 mph. The warranty excludes winds exceeding Force 9 on the Beaufort Scale and tornadoes.	GS indicates that the warranty covers roof damage resulting from wind speeds up to 54 mph. The warranty excludes winds exceeding Force 9 on the Beaufort Scale and tornadoes.	GS indicates that the warranty covers roof damage resulting from wind speeds up to 54 mph. The warranty excludes winds exceeding Force 9 on the Beaufort Scale and tornadoes.	
13. Wind coverage/exclusions	A, B, G, J (also void when total value of all repairs furnished equal GS' then remaining maximum liability). Warranty also states that GS will be discharged of all further obligations upon occurrence of any event set forth as an exclusion from coverage (see item No. 12 above).	A, B, C, J	A, B, C, J	A, B, C, J	
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	GS references its published fee schedule.	GS references its published fee schedule.	GS references its published fee schedule.	GS references its published fee schedule.	
15. Cost to obtain	GS references its published fee schedule.	GS references its published fee schedule.	GS references its published fee schedule.	GS references its published fee schedule.	
16. Minimum charge	GS references its published fee schedule.	GS references its published fee schedule.	GS references its published fee schedule.	GS references its published fee schedule.	
17. Ineligible structure or building use	Residential, cold-storage, storage silos, heated tanks, structures outside U.S., structures with conduit or piping installed above roof deck and under roof membrane, thermal insulation not approved by GS Roofing Products Company, Inc., lightweight insulating concrete unless venting is provided in accordance with GS Roofing Products Company specifications, reroofing over existing roof systems containing moisture and/or improperly prepared surfaces; plywood decks of less than 1/2 inch thickness without continuous solid end-blocking, structures with high interior-humidity conditions	Residential, condos, heated tanks, cold-storage facilities	Residential, condos, heated tanks, cold-storage facilities	Residential, condos, heated tanks, cold-storage facilities	

18.	Pre-construction notice and approval requirements	None required.		Contractor must submit application for GS warranty prior to job start for review and approval. Contractor must also notify local GS personnel at least three working days prior to job start to arrange for deck inspection and pre-job conference.	Yes	Contractor must submit application for GS warranty prior to job start for review and approval. Contractor must also notify local GS personnel at least three working days prior to job start to arrange for deck inspection and pre-job conference.
19.	Approved, authorized, or licensed applicator	No			Yes	
20.	Job inspection policy	No on-site inspections		GS personnel make on-site inspections prior, during, and after application, as well as two years after issuance of warranty; no charge. GS conducts a minimum of three inspections with additional inspections as necessary for quality assurance.		GS personnel make on-site inspections prior, during, and after application, as well as two years after issuance of warranty; no charge. GS conducts a minimum of three inspections with additional inspections as necessary for quality assurance.
21.	Contractor's post-installation obligation	None; material-only warranty		Contractor is obligated to make repairs to workmanship deficiencies for two years.		Contractor is obligated to make repairs to workmanship deficiencies for two years.
22.	Backed by named insurance or surety	No; GS indicates that it does not carry insurance covering its warranty obligations.		No; GS indicates that it does not carry insurance covering its warranty obligations.		No; GS indicates that it does not carry insurance covering its warranty obligations.
23.	Issuing entity manufactures and/or sells products	GS Roofing Products Company, Inc. manufactures and sells product.		GS Roofing Products Company, Inc. manufactures and sells product.		GS Roofing Products Company, Inc. manufactures and sells product.
24.	Conditions for renewal or extension	No renewal provision		GS indicates warranty can be renewed for life of warranty. GS references it published schedule of renewal fees.		GS indicates warranty can be renewed for life of warranty. GS references it published schedule of renewal fees.
25.	Assignability	Subject to payment of applicable transfer fee to GS and proper documentation being delivered to GS within thirty days after building ownership transfer, the owner may transfer this warranty to a subsequent owner, provided the use to which the subsequent owner puts the structure is not one prohibited by GS in its published material. The owner shall contact GS for applicable transfer fee and notification documentation.		Subject to payment of applicable transfer fee to GS and proper documentation being delivered to GS within thirty days after building ownership transfer, owner may transfer this warranty to a subsequent owner, provided the use to which the subsequent owner puts the structure is not one prohibited by GS in its published material. The owner shall contact GS for applicable transfer fee and notification documentation.		Subject to payment of applicable transfer fee to GS and proper documentation being delivered to GS within thirty days after building ownership transfer, owner may transfer this warranty to a subsequent owner, provided the use to which the subsequent owner puts the structure is not one prohibited by GS in its published material. The owner shall contact GS for applicable transfer fee and notification documentation.
26.	Special features/conditions	<p>The owner must allow taking of samples that adequately demonstrate the alleged problem for testing by GS. GS will not be liable for any expenditure that the owner may incur in replacing or repairing the roof membrane that is incurred prior to written acknowledgment from GS that it is responsible. In the event an emergency condition exists that requires immediate repair to avoid damage to the building or its contents, the owner may make essential temporary repairs performed by a qualified roofing individual. GS will reimburse owner for only those essential repair expenses that would have been the responsibility of GS under the warranty. All repairs must have prior written approval of GS' claims service department.</p> <p>No representative, employee, agent of GS, or any other person has the authority to assume for GS any additional or other liability or responsibility in connection with the roof. GS shall not be responsible for or liable if there is any change or amendment to the warranty or to the GS specification(s) in regard to the construction of the roof membrane, unless said change and/or amendment has been signed by an officer of GS.</p> <p>No action for breach of this limited warranty shall be brought later than one year after any potential cause of action has accrued.</p> <p>All disputed claims or other disputes that may arise between the owner, contractor, architect and/or GS arising out of or relating to or in connection with warranty shall be submitted to and decided by arbitration in accordance with the Construction Industry Arbitration Rules. This agreement to arbitrate shall be specifically enforceable under the applicable state or federal arbitration laws. The award rendered by the arbitrator shall be final and judgment may be entered upon such award in accordance with applicable law in any court having jurisdiction thereof.</p>		<p>Roof deck, insulation, vapor retarders, fasteners, metal work, drains, expansion joints, skylights, vents, flashings or reflective coating are not considered part of the roof membrane and are not included within the protection of the warranty. Bituminous flashings are not considered part of the roof membrane.</p> <p>GS is not responsible for any costs related to the removal or abatement of any asbestos present in the existing roof system to which the GS roof system is applied.</p> <p>The owner must allow taking of samples that adequately demonstrate the alleged problem for testing by GS. GS will not be liable for any expenditure owner may incur in replacing or repairing the roof membrane which is incurred prior to written acknowledgment from GS that it is responsible. In the event an emergency condition exists which requires immediate repair to avoid damage to the building or its contents, the owner may make essential temporary repairs performed by a qualified roofing individual. GS will reimburse owner for only those essential repair expenses which would have been the responsibility of GS under the warranty. All repairs must have prior written approval of GS' claims service department.</p> <p>No representative, employee, agent of GS, or any other person has the authority to assume for GS any additional or other liability or responsibility in connection with the roof. GS shall not be responsible for or liable if there is any change or amendment to the warranty or to the GS specification(s) in regard to the construction of the roof membrane, unless said change and/or amendment has been signed by an officer of GS.</p> <p>No action for breach of this limited warranty shall be brought later than one year after any potential cause of action has accrued.</p> <p>All disputed claims or other disputes that may arise between the owner, contractor, architect and/or GS arising out of or relating to or in connection with warranty shall be submitted to and decided by arbitration in accordance with the Construction Industry Arbitration Rules. This agreement to arbitrate shall be specifically enforceable under the applicable state or federal arbitration laws. The award rendered by the arbitrator shall be final and judgment may be entered upon such award in accordance with applicable law in any court having jurisdiction thereof.</p>		<p>Roof deck, insulation, vapor retarders, fasteners, metal work, drains, expansion joints, skylights, vents, flashings or reflective coating are not considered part of the roof membrane and are not included within the protection of the warranty. Bituminous flashings are not considered part of the roof membrane.</p> <p>GS is not responsible for any costs related to the removal or abatement of any asbestos present in the existing roof system to which the GS roof system is applied.</p> <p>The owner must allow taking of samples that adequately demonstrate the alleged problem for testing by GS. GS will not be liable for any expenditure owner may incur in replacing or repairing the roof membrane which is incurred prior to written acknowledgment from GS that it is responsible. In the event an emergency condition exists which requires immediate repair to avoid damage to the building or its contents, the owner may make essential temporary repairs performed by a qualified roofing individual. GS will reimburse owner for only those essential repair expenses which would have been the responsibility of GS under the warranty. All repairs must have prior written approval of GS' claims service department.</p> <p>No representative, employee, agent of GS, or any other person has the authority to assume for GS any additional or other liability or responsibility in connection with the roof. GS shall not be responsible for or liable if there is any change or amendment to the warranty or to the GS specification(s) in regard to the construction of the roof membrane, unless said change and/or amendment has been signed by an officer of GS.</p> <p>No action for breach of this limited warranty shall be brought later than one year after any potential cause of action has accrued.</p> <p>All disputed claims or other disputes that may arise between the owner, contractor, architect and/or GS arising out of or relating to or in connection with warranty shall be submitted to and decided by arbitration in accordance with the Construction Industry Arbitration Rules. This agreement to arbitrate shall be specifically enforceable under the applicable state or federal arbitration laws. The award rendered by the arbitrator shall be final and judgment may be entered upon such award in accordance with applicable law in any court having jurisdiction thereof.</p>
27.	Executed by owner	No; however, warranty states that by purchasing GS products, the owner accepts terms, conditions, limitations, and exclusions in GS warranty. The warranty also states that the owner acknowledges that the effectiveness of this warranty is part of the consideration for the purchase of roof materials from GS.		No; however, warranty states that by purchasing GS products, the owner accepts terms, conditions, limitations, and exclusions in GS warranty. The warranty also states that the owner acknowledges that the effectiveness of this warranty is part of the consideration for the purchase of roof materials from GS.		No; however, warranty states that by purchasing GS products, the owner accepts terms, conditions, limitations, and exclusions in GS warranty. The warranty also states that the owner acknowledges that the effectiveness of this warranty is part of the consideration for the purchase of roof materials from GS.

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	GS Roofing Products Company, Inc.	GS Roofing Products Company, Inc.	GS Roofing Products Company, Inc.
2. Title, original publication date, and identifying symbol, if any	"Twelve Year Full Value Roof Membrane Warranty (A Limited Warranty)"; March 1996	"Fifteen Year Full Value Roof Membrane Warranty (A Limited Warranty)"; March 1996	"Twenty Year Full Value Roof Membrane Warranty (A Limited Warranty)"; March 1996
3. Product, specification, or system covered	Bur specifications: AAA-1-3, AAA-2-3, AAA-3-3, AAA-4-3, AAA-5-3, AAAP-11-3, AAAP-12-3, A-1-M-3, A-2-M-3, A-3-M-3, A-4-M-3, MC-1R-3, MW-2R-3, EMS-1-C, EMS-2-W	Bur specifications: AAA-1-3, AAA-2-3, AAA-3-3, AAA-4-3, AAA-5-3, AAAP-11-3, AAAP-12-3, A-1-M-3, A-2-M-3, A-3-M-3, A-4-M-3, MC-1R-3, MW-2R-3, EMS-1-C, EMS-2-W	Bur specifications: AAA-1-3, AAA-2-3, AAA-3-3, AAA-4-3, AAA-5-3, AAAP-11-3, AAAP-12-3, A-1-M-3, A-2-M-3, A-3-M-3, A-4-M-3, MC-1R-3, MW-2R-3, EMS-1-C, EMS-2-W
4. Scope of coverage	Material and workmanship: GS warrants that, should there be any leaks or manufacturing defects in the GS products used in the roof membrane caused solely by reason of ordinary wear and tear of the elements or workmanship on the part of the GS authorized roofing contractor and not caused, completely or partially, by any of the causes excluded from coverage, GS or its authorized agent will repair such leaks (exclusive of metal work and non-GS approved flashings) as necessary to retain the roof membrane in a watertight condition at GS's expense. The roof membrane is composed of a base sheet, optional interplies, bituminous asphaltic material between layers when required, and a capsheet and/or surfacing layer applied per GS published specifications and conditions. (See Special Features/Conditions.)	Material and workmanship: GS warrants that, should there be any leaks or manufacturing defects in the GS products used in the roof membrane caused solely by reason of ordinary wear and tear of the elements or workmanship on the part of the GS authorized roofing contractor and not caused, completely or partially, by any of the causes excluded from coverage, GS or its authorized agent will repair such leaks (exclusive of metal work and non-GS approved flashings) as necessary to retain the roof membrane in a watertight condition at GS's expense. The roof membrane is composed of a base sheet, optional interplies, bituminous asphaltic material between layers when required, and a capsheet and/or surfacing layer applied per GS published specifications and conditions. (See Special Features/Conditions.)	Material and workmanship: GS warrants that, should there be any leaks or manufacturing defects in the GS products used in the roof membrane caused solely by reason of ordinary wear and tear of the elements or workmanship on the part of the GS authorized roofing contractor and not caused, completely or partially, by any of the causes excluded from coverage, GS or its authorized agent will repair such leaks (exclusive of metal work and non-GS approved flashings) as necessary to retain the roof membrane in a watertight condition at GS's expense. The roof membrane is composed of a base sheet, optional interplies, bituminous asphaltic material between layers when required, and a capsheet and/or surfacing layer applied per GS published specifications and conditions. (See Special Features/Conditions.)
5. Length of coverage	12 years	15 years	20 years
6. Nature of remedy	GS or its authorized agent will repair leaks as necessary to retain the roof membrane in a watertight condition at GS' expense.	GS or its authorized agent will repair leaks as necessary to retain the roof membrane in a watertight condition at GS' expense.	GS or its authorized agent will repair leaks as necessary to retain the roof membrane in a watertight condition at GS' expense.
7. Monetary limitations	None stated.	None stated.	None stated.
8. Notification requirements	Written notification, together with proof of purchase, by certified mail to GS Roofing Products Company, Inc., 5525 MacArthur Blvd., Suite 900, Irving, TX 75038. Attn: Commercial Services Department within 30 days of discovery of alleged defect. Notice must include a general description of the alleged defect. (See Special Features/Conditions.)	Written notification, together with proof of purchase, by certified mail to GS Roofing Products Company, Inc., 5525 MacArthur Blvd., Suite 900, Irving, TX 75038. Attn: Commercial Services Department within 30 days of discovery of alleged defect. Notice must include a general description of the alleged defect. (See Special Features/Conditions.)	Written notification, together with proof of purchase, by certified mail to GS Roofing Products Company, Inc., 5525 MacArthur Blvd., Suite 900, Irving, TX 75038. Attn: Commercial Services Department within 30 days of discovery of alleged defect. Notice must include a general description of the alleged defect. (See Special Features/Conditions.)
9. Exclusive or additional remedy	The warranty is in lieu of any other obligations, guarantees, and warranties and any other liability on the part of GS; excludes UCC warranties. The warranty states that GS does not warrant any review of construction or design plans or any inspection of the roof or the installation thereof.	The warranty is in lieu of any other obligations, guarantees, and warranties and any other liability on the part of GS; excludes UCC warranties. The warranty states that GS does not warrant any review of construction or design plans or any inspection of the roof or the installation thereof.	The warranty is in lieu of any other obligations, guarantees, and warranties and any other liability on the part of GS; excludes UCC warranties. The warranty states that GS does not warrant any review of construction or design plans or any inspection of the roof or the installation thereof.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	GS' determination	GS' determination	GS' determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 16, 17, 18 (including damages caused by solid or liquid deposits of any substance), 20, 22, 23.	1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 16, 17, 18 (including damages caused by solid or liquid deposits of any substance), 20, 22, 23.	1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 16, 17, 18 (including damages caused by solid or liquid deposits of any substance), 20, 22, 23.
13. Wind coverage/exclusions	GS indicates that the warranty covers roof damage resulting from wind speeds up to 54 mph. The warranty excludes winds exceeding Force 9 on the Beaufort Scale and tornadoes.	GS indicates that the warranty covers roof damage resulting from wind speeds up to 54 mph. The warranty excludes winds exceeding Force 9 on the Beaufort Scale and tornadoes.	GS indicates that the warranty covers roof damage resulting from wind speeds up to 54 mph. The warranty excludes winds exceeding Force 9 on the Beaufort Scale and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	A, B, C, J	A, B, C, J	A, B, C, J
15. Cost to obtain	GS references its published fee schedule	GS references its published fee schedule	GS references its published fee schedule
16. Minimum charge	GS references its published fee schedule	GS references its published fee schedule	GS references its published fee schedule
17. Ineligible structure or building use	Residential, condos, heated tanks, cold storage facilities	Residential, condos, heated tanks, cold storage facilities	Residential, condos, heated tanks, cold storage facilities
18. Pre-construction notice and approval requirements	The contractor must submit application for GS warranty prior to job start for review and approval. The contractor must also notify local GS personnel at least three working days prior to job start to arrange for deck inspection and pre-job conference.	The contractor must submit application for GS warranty prior to job start for review and approval. The contractor must also notify local GS personnel at least three working days prior to job start to arrange for deck inspection and pre-job conference.	The contractor must submit application for GS warranty prior to job start for review and approval. The contractor must also notify local GS personnel at least three working days prior to job start to arrange for deck inspection and pre-job conference.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes

20. Job inspection policy	GS personnel make on-site inspections prior, during, and after application, as well as two years after issuance of warranty; no charge. GS conducts a minimum of three inspections with additional inspections as necessary for quality assurance.	GS personnel make on-site inspections prior, during, and after application, as well as two years after issuance of warranty; no charge. GS conducts a minimum of three inspections with additional inspections as necessary for quality assurance.	GS personnel make on-site inspections prior, during, and after application, as well as two years after issuance of warranty; no charge. GS conducts a minimum of three inspections with additional inspections as necessary for quality assurance.
21. Contractor's post-installation obligation	The contractor is obligated to make repairs to workmanship deficiencies for two years.	The contractor is obligated to make repairs to workmanship deficiencies for two years.	The contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; GS indicates that it does not carry insurance covering its warranty obligations.	No; GS indicates that it does not carry insurance covering its warranty obligations.	No; GS indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	GS Roofing Products Company, Inc. manufactures and sells product.	GS Roofing Products Company, Inc. manufactures and sells product.	GS Roofing Products Company, Inc. manufactures and sells product.
24. Conditions for renewal or extension	GS indicates that warranty can be renewed for life of warranty. GS references it published schedule of renewal fees.	GS indicates that warranty can be renewed for life of warranty. GS references it published schedule of renewal fees.	GS indicates that warranty can be renewed for life of warranty. GS references it published schedule of renewal fees.
25. Assignability	Subject to payment of applicable transfer fee to GS and proper documentation being delivered to GS within thirty days after building ownership transfer, the owner may transfer this warranty to a subsequent owner, provided the use to which the subsequent owner puts the structure is not one prohibited by GS in its published material. The owner shall contact GS for applicable transfer fee and notification documentation.	Subject to payment of applicable transfer fee to GS and proper documentation being delivered to GS within thirty days after building ownership transfer, the owner may transfer this warranty to a subsequent owner, provided the use to which the subsequent owner puts the structure is not one prohibited by GS in its published material. The owner shall contact GS for applicable transfer fee and notification documentation.	Subject to payment of applicable transfer fee to GS and proper documentation being delivered to GS within thirty days after building ownership transfer, the owner may transfer this warranty to a subsequent owner, provided the use to which the subsequent owner puts the structure is not one prohibited by GS in its published material. The owner shall contact GS for applicable transfer fee and notification documentation.
26. Special features/conditions	<p>Roof deck, insulation, vapor retarders, fasteners, metal work, drains, expansion joints, skylights, vents, flashings or reflective coating are not considered part of the roof membrane and are not included within the protection of the warranty. Bituminous flashings are not considered part of the roof membrane.</p> <p>GS is not responsible for any costs related to the removal or abatement of any asbestos present in the existing roof system to which the GS roof system is applied.</p> <p>The owner must allow taking of samples that adequately demonstrate the alleged problem for testing by GS. GS will not be liable for any expenditure owner may incur in replacing or repairing the roof membrane which is incurred prior to written acknowledgment from GS that it is responsible. In the event an emergency condition exists which requires immediate repair to avoid damage to the building or its contents, the owner may make essential temporary repairs performed by a qualified roofing individual. GS will reimburse owner for only those essential repair expenses which would have been the responsibility of GS under the warranty. All repairs must have prior written approval of GS' claims service department.</p> <p>No representative, employee, agent of GS, or any other person has the authority to assume for GS any additional or other liability or responsibility in connection with the roof. GS shall not be responsible for or liable if there is any change or amendment to the warranty or to the GS specification(s) in regard to the construction of the Roof Membrane, unless said change and/or amendment has been signed by an officer of GS.</p> <p>No action for breach of this limited warranty shall be brought later than one year after any potential cause of action has accrued.</p> <p>All disputed claims or other disputes that may arise between the owner, contractor, architect and/or GS arising out of or relating to or in connection with warranty shall be submitted to and decided by arbitration in accordance with the Construction Industry Arbitration Rules. This agreement to arbitrate shall be specifically enforceable under the applicable state or federal arbitration laws. The award rendered by the arbitrator shall be final and judgment may be entered upon such award in accordance with applicable law in any court having jurisdiction thereof. GS does not practice engineering or architecture.</p>	<p>Roof deck, insulation, vapor retarders, fasteners, metal work, drains, expansion joints, skylights, vents, flashings or reflective coating are not considered part of the roof membrane and are not included within the protection of the warranty. Bituminous flashings are not considered part of the roof membrane.</p> <p>GS is not responsible for any costs related to the removal or abatement of any asbestos present in the existing roof system to which the GS roof system is applied.</p> <p>The owner must allow taking of samples that adequately demonstrate the alleged problem for testing by GS. GS will not be liable for any expenditure owner may incur in replacing or repairing the roof membrane which is incurred prior to written acknowledgment from GS that it is responsible. In the event an emergency condition exists which requires immediate repair to avoid damage to the building or its contents, the owner may make essential temporary repairs performed by a qualified roofing individual. GS will reimburse owner for only those essential repair expenses which would have been the responsibility of GS under the warranty. All repairs must have prior written approval of GS' claims service department.</p> <p>No representative, employee, agent of GS, or any other person has the authority to assume for GS any additional or other liability or responsibility in connection with the roof. GS shall not be responsible for or liable if there is any change or amendment to the warranty or to the GS specification(s) in regard to the construction of the Roof Membrane, unless said change and/or amendment has been signed by an officer of GS.</p> <p>No action for breach of this limited warranty shall be brought later than one year after any potential cause of action has accrued.</p> <p>All disputed claims or other disputes that may arise between the owner, contractor, architect and/or GS arising out of or relating to or in connection with warranty shall be submitted to and decided by arbitration in accordance with the Construction Industry Arbitration Rules. This agreement to arbitrate shall be specifically enforceable under the applicable state or federal arbitration laws. The award rendered by the arbitrator shall be final and judgment may be entered upon such award in accordance with applicable law in any court having jurisdiction thereof. GS does not practice engineering or architecture.</p>	<p>Roof deck, insulation, vapor retarders, fasteners, metal work, drains, expansion joints, skylights, vents, flashings or reflective coating are not considered part of the roof membrane and are not included within the protection of the warranty. Bituminous flashings are not considered part of the roof membrane.</p> <p>GS is not responsible for any costs related to the removal or abatement of any asbestos present in the existing roof system to which the GS roof system is applied.</p> <p>The owner must allow taking of samples that adequately demonstrate the alleged problem for testing by GS. GS will not be liable for any expenditure owner may incur in replacing or repairing the roof membrane which is incurred prior to written acknowledgment from GS that it is responsible. In the event an emergency condition exists which requires immediate repair to avoid damage to the building or its contents, the owner may make essential temporary repairs performed by a qualified roofing individual. GS will reimburse owner for only those essential repair expenses which would have been the responsibility of GS under the warranty. All repairs must have prior written approval of GS' claims service department.</p> <p>No representative, employee, agent of GS, or any other person has the authority to assume for GS any additional or other liability or responsibility in connection with the roof. GS shall not be responsible for or liable if there is any change or amendment to the warranty or to the GS specification(s) in regard to the construction of the Roof Membrane, unless said change and/or amendment has been signed by an officer of GS.</p> <p>No action for breach of this limited warranty shall be brought later than one year after any potential cause of action has accrued.</p> <p>All disputed claims or other disputes that may arise between the owner, contractor, architect and/or GS arising out of or relating to or in connection with warranty shall be submitted to and decided by arbitration in accordance with the Construction Industry Arbitration Rules. This agreement to arbitrate shall be specifically enforceable under the applicable state or federal arbitration laws. The award rendered by the arbitrator shall be final and judgment may be entered upon such award in accordance with applicable law in any court having jurisdiction thereof. GS does not practice engineering or architecture.</p>
27. Executed by owner	No; however, the warranty states that by purchasing GS products, owner accepts terms, conditions, limitations and exclusions in GS warranty. The warranty also states that the owner acknowledges that the effectiveness of this warranty is part of the consideration for the purchase of roof materials from GS.	No; however, the warranty states that by purchasing GS products, owner accepts terms, conditions, limitations and exclusions in GS warranty. The warranty also states that the owner acknowledges that the effectiveness of this warranty is part of the consideration for the purchase of roof materials from GS.	No; however, the warranty states that by purchasing GS products, owner accepts terms, conditions, limitations and exclusions in GS warranty. The warranty also states that the owner acknowledges that the effectiveness of this warranty is part of the consideration for the purchase of roof materials from GS.

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Haartz-Mason, Inc. (H-M)	Henry Company	Henry Company
2. Title, original publication date, and identifying symbol, if any	"Roofing Labor and Materials Guarantee"; HF-11 8/96	Henry Company "Ten and Ten Roof" Membrane Warranty A Twenty Year Full Value Warranty With Maintenance Treatment During Tenth Anniversary Year"; February 1985	Henry Company "Roof Membrane Limited Warranty"; February 1985
3. Product, specification, or system covered	HyShield Hypalon, HyShield EIP	Built-up roofing specifications HM107W, HM107C, HM107-W, HM107-IC, HM107-5, HM107LWC, HM106W, HM106-W	Built-up roofing specifications HM106W, HM106C, HCA80W HCG203W
4. Scope of coverage	Material and workmanship; H-M shall cause to be repaired leaks that are caused by defects in the materials manufactured or sold by H-M or defects in workmanship in the installation of the H-M Roofing System supplied by the independent roofing contractor.	Material and workmanship; Henry Company warrants the roof membrane against leaks and will cause to be repaired at no cost to the building owner in the event of ordinary wear of the elements. Roof membrane does not include and warranty excludes roof insulation, vapor retarder, roof deck, drains, expansion joints, metal or plastic fittings, vents, skylights, and reflective coating.	Material and workmanship; Henry Company will cause to be repaired at no cost to the building owner leaks occurring in the roof membrane that are due to ordinary wear of the elements. Roof membrane does not include and warranty excludes roof insulation, vapor retarder, roof deck, drains, expansion joints, metal or plastic fittings, vents, skylights, and reflective coating.
5. Length of coverage	10 years	20 years, provided owner pays for maintenance, repair, and coating determined by Henry after initial 10 years (See Conditions for Renewal or Extension.)	10 years
6. Nature of remedy	H-M will cause the defect to be repaired or replace the roof membrane. The decision to repair or replace shall be solely at H-M's good faith determination.	Henry will make or cause to be made repairs necessary to maintain the roof membrane in a watertight condition.	Henry will make or cause to be made any repairs necessary to maintain roof membrane in a watertight condition.
7. Monetary limitations	In no event shall H-M's obligation over the life of the guarantee exceed the amount of the owner's original cost of the installed H-M roofing system.	None stated	Henry Company shall be discharged of all further liability whenever the cost to Henry of all covered roof membrane repairs equals warranty amount.
8. Notification requirements	Written notice within 30 days of discovery of leak to Haartz-Mason, Inc., 270 Pleasant Street, P.O. Box 9128, Watertown, MA 02272-9128	Written notice within 30 days of discovery of leak to Henry Company, 2911 Slauson Ave., Huntington Park, CA 90255	Written notice within 30 days of discovery of leak to Henry Company, 2911 Slauson Ave., Huntington Park, CA 90255
9. Exclusive or additional remedy	Remedy in guarantee is the sole and exclusive remedy at law or equity for defects in materials manufactured or sold by H-M and the workmanship supplied by the independent contractor; excludes UCC warranties.	Warranty shall be the only obligation of Henry Company, with respect to the roof membrane; excludes all other warranties; seeks to exclude UCC warranties.	Warranty shall be the only obligation of Henry Company, with respect to the roof membrane; excludes all other warranties; seeks to exclude UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	H-M's determination	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (See item no. 12 in introduction.)	1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 16, 17, 18, 22, 23	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 16, 18, 20, 22, 23, 24. (Warranty also excludes construction inside the building, including the removal or addition of walls or ceiling structures, that affects the integrity of the roof membrane.)	1, 2, 3, 4, 5, 8, 9, 10, 11, 18, 22, 23. Warranty also excludes construction inside the building, including the removal or addition of walls, that influences the integrity of the roof membrane.
13. Wind coverage/exclusions	H-M indicates that there is no coverage for damage caused by wind. Warranty excludes gale force winds, hurricanes, and tornadoes. (Gale force winds are defined on the Beaufort Scale as winds between 39 and 46 mph.)	Warranty covers roof damage resulting from wind speeds up to 46 miles per hour.	Warranty covers roof damage resulting from wind speeds up to 46 miles per hour.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in introduction.)	B, C, M	B, D, F, H	B, H, S
15. Cost to obtain	\$5.00/square	\$10.00/square	\$10.00/square
16. Minimum charge	500	\$1,000	\$1,000

17. Ineligible structure or building use	Residential		Cold-storage facilities and most apartment buildings and condominiums. All structures and locations subject to approval by Henry Company.	Cold-storage and most apartment buildings and condominiums; all structures and locations subject to approval by Henry Company.
18. Pre-construction notice and approval requirements	Contractor must be a registered HyShield applicator and submit a notice of award, job survey, and details prior to shipment of material and scheduling technical service.	Yes	Prior approval issued by execution of warranty application form and preconstruction notice 72 hours in advance.	Prior approval issued by execution of warranty application form and preconstruction notice 72 hours in advance.
19. Approved, authorized, or licensed applicator	Yes	Yes		Yes
20. Job inspection policy	H-M technical service representatives make on-site inspections during application (typically three times), and after application, as well as two years after issuance of warranty; no charge.	Henry inspector makes on-site inspections prior to, during (daily to periodical), and after application, as well as two years after issuance of warranty; \$1.00/square charge.	Henry inspector makes on-site inspections prior to and during application (daily to periodical) and after application, as well as two years after issuance of warranty; \$1.00/square charge.	Henry inspector makes on-site inspections prior to and during application (daily to periodical) and after application, as well as two years after issuance of warranty; \$1.00/square charge.
21. Contractor's post-installation obligation	Contractor is obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; H-M indicates that it does not carry insurance covering its warranty obligations.	No; Henry Company indicates that it does not carry insurance covering its warranty obligations.	No; Henry Company indicates that it does not carry insurance covering its warranty obligations.	No; Henry Company indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	H-M manufactures and sells product.	H-M manufactures and sells product.	Henry Company manufactures and sells product.	Henry Company manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision		No renewal provision
25. Assignability	Not assignable		After 10 years, warranty can be extended for additional 10 years. During tenth year following installation, a Henry representative will inspect the roof and report any routine maintenance determined by Henry Company to be necessary to maintain integrity of the roof membrane and flashing for the remaining 10-year period of the warranty term. The cost of such repair and coating will be the responsibility of the building owner; no additional warranty fee.	Transferable to new building owner, provided the use to which the new owner puts the building is approved by Henry Company. Building owner shall notify Henry Company prior to making any transfer of ownership.
26. Special features/conditions	The owner agrees to reimburse H-M for expenses incurred for leak investigation for leaks not caused by defects in the roofing membrane, and H-M may terminate its guarantee obligations if it does not receive payment in full. No representative has authority to make any representations other than those stated in guarantee.		In the event an emergency condition exists requiring immediate repair to avoid significant damage to the building, the building owner may make such temporary repairs as may be necessary to repair such leaks and such action shall not void warranty. In the event the building owner fails to proceed with maintenance recommended by Henry Company after 10 years, Henry Company shall be discharged from all further obligation under warranty at the end of the 10th year of warranty.	In the event an emergency condition exists requiring immediate repair to avoid significant damage to owner, the owner may make temporary repairs as may be essential and such action shall not void warranty.
27. Executed by owner	No	No		No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Herbert Malarkey Roofing Company	W.P. Hickman Systems, Inc.	W.P. Hickman Systems, Inc.
2. Title, original publication date, and identifying symbol, if any	"Malarkey Roofing System Warranty"	Hickman Roofing Systems "Membrane Assemblies Guarantee"; 1986; GOES 447	"Roof Assemblies Guarantee"; January 1, 1980; GOES 447
3. Product, specification, or system covered	All eligible built-up roofing specifications with a #502 mineral cap sheet; modified bitumen specifications #601 SBS mineral cap sheet, #625 Paragon SBS mineral cap sheet, #650 Pano-ply SBS mineral cap sheet, #917 SBS mineral cap sheet, #919 SBS smooth cap sheet		Built-up Roofing Specifications; Modified Bitumen Specifications; Cold-Process BUR Specifications; Single-Ply Specifications
4. Scope of coverage	Material and workmanship: Malarkey warrants that the roof system will remain in a watertight condition or Malarkey will initiate repairs at its own expense if required as a result of deterioration of the Malarkey roofing membrane or base flashing system resulting from ordinary wear and tear of the elements; workmanship on the part of the Malarkey approved roofing contractor in application of the Malarkey roofing membrane or base flashing system; blisters, bare spots, fishmouths, wrinkles, or ridges in the roof system; splits in the Malarkey roofing membrane not caused by structural movement or failure or movement of any material underlying the roofing membrane or base flashing; or slippage of the roofing membrane or base flashing.	Material and workmanship: Hickman guarantees that it will, at its expense, repair or cause to be repaired the roofing system to an extent to return the system to a watertight condition.	Material and workmanship: Hickman guarantees that it will repair or cause to be repaired leaks in the Hickman roof assembly.
5. Length of coverage	10, 12, 15, or 20 years	10 years	10 years
6. Nature of remedy	Malarkey will be liable only for the cost of repair of the existing roof membrane or installation of a replacement roof membrane; Malarkey's sole liability resulting from any failure of the roof system shall be cost of repair or replacement.	Hickman will take appropriate action to repair leaks that may occur due to ordinary wear that may be required because of deficiencies resulting from workmanship during the membrane and flashing installation. Hickman's sole responsibility is the cost of repairs to the membrane assembly.	Hickman will inspect the roof and, if leak is covered under the guarantee, Hickman with at its own expense make or cause to be made all necessary repairs to the Hickman Roof Assembly to put it into watertight condition.
7. Monetary limitations	Warranty includes space for Malarkey's maximum liability to be inserted. (Malarkey indicates that 10-year warranty can be purchased with a \$35/square or \$50/square maximum liability limitation or can be purchased without a maximum Malarkey liability limitation and that 12, 15, and 20 year warranties can be obtained without a maximum Malarkey liability limitation.)	None stated	None stated.
8. Notification requirements	Written notification by registered or certified mail within 30 days after the leak is discovered or should, by reasonable diligence, have been discovered to Malarkey Roofing Company, P.O. Box 17217, Portland, OR 97217	Written notification within 10 days after discovery of a leak on the roofing system or flashing assembly	Written notice to Hickman within 10 days after discovery of a leak on the roofing system or flashing assembly
9. Exclusive or additional remedy	Warranty is in lieu of and excludes all other warranties, guarantees or obligations; warranty seeks to exclude UCC warranties.	Seeks to exclude and limit UCC implied warranties.	Seeks to exclude and limit UCC implied warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision)	Neutral (no provision)	Neutral: Hickman inspects roof.
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 15, 17, 23	1, 2, 3, 4, 5, 6, 8, 10, 13, 17, 18, 22	1, 2, 3, 4, 6, 8, 10, 13, 17, 18, 22
13. Wind coverage/exclusions	Warranty excludes windstorms, hurricanes, and tornadoes. Malarkey indicates that there is no coverage for damage caused by wind.	Warranty excludes hurricane-related winds. Warranty covers roof damage resulting from wind speeds up to 73 miles per hour.	Guarantee excludes hurricane-rated winds. Warranty covers roof damage resulting from wind speeds up to 73 miles per hour.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C	C	C

15. Cost to obtain	10 years (with \$35/square monetary limitation): \$4.00/square; 10 years (with \$50/square monetary limitation): \$4.50/square; 10 years (without monetary limitation): \$6.00/square; 12 years: \$8.00/square 15 years: \$10.00/square; 20 years: \$15.00/square	\$4.00/square	
16. Minimum charge	10 years (with \$35/square monetary limitation): \$400; 10 years (with \$50/square monetary limitation): \$450; 10 years (without monetary limitation): \$600; 12 years: \$800; 15 years: \$1,000; 20 years: \$1,500	\$500	\$500
17. Ineligible structure or building use	Cold storage, single family	Cold-storage, freezer, and dry kiln buildings; Hickman reviews all structures to determine eligibility.	Cold-storage, freezer, and dry-kiln buildings.
18. Pre-construction notice and approval requirements	Warranty application must be filed with and approved by Malarkey prior to job start.	Contractor required to give verbal or written notice to schedule pre-job conference.	Contractor required to give verbal or written notice to schedule pre-job conference.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	Malarkey representative makes inspections prior, during, and after application depending upon size; no charge.	Hickman field representative makes on-site inspections prior to, during, and after application as well as two years after completion and makes yearly inspections; no charge.	
21. Contractor's post-installation obligation	Contractor is obligated to make repairs to all leaks and any defects for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years	
22. Backed by named insurance or surety	No; Malarkey indicates that it does not carry insurance covering its warranty obligations.	No	
23. Issuing entity manufactures and/or sells products	Malarkey manufactures and sells product		W. P. Hickman Systems, Inc. manufactures and sells the product.
24. Conditions for renewal or extension	The owner has option to renew for ___ years by requesting inspection by Malarkey. Malarkey inspects and advises owner of necessary maintenance work to be performed by approved contractor at owner's expense. If work performed within 90 days of expiration and Malarkey, then accepts the roof, upon payment of charge not to exceed the current initial charge, the warranty will be renewed.		Guarantees applicable to reroofing, retrofit, and new construction projects can be renewed for 10 years; guarantees applicable to restoration projects can be renewed for five years. Owner must notify Hickman 60 days prior to guarantee expiration. Hickman representative makes inspection and notifies owner of all repairs required by Hickman. Owner pays for all repairs, which must be made with Hickman materials by an approved Hickman contractor. Upon completion and approval by Hickman of repairs and payment of guarantee charge, extended guarantee will be issued. Current cost for 5 or 10 year extension is \$5.00/square.
25. Assignability	The warranty is transferable provided that Malarkey is notified by the original owner at least seven days prior to transfer. Malarkey schedules a roof inspection. Any repairs covered under the warranty will be paid for by Malarkey; the owner pays for maintenance items and/or incidental repairs found to be required. Once maintenance and/or repairs have been completed by a Malarkey approved roofing contractor, warranty transfer will be completed after payment of a \$500 transfer fee.	Transferable by the building owner to a subsequent purchaser of the property by giving not less than 10 days written notice to Hickman of proposed transfer; Hickman will inspect roofing system and make write-up report to building owner and proposed purchaser of findings.	Guarantee may be transferred by the building owner to a subsequent purchaser of the property by giving not less than ten days written notice to Hickman of proposed transfer; Hickman will inspect roof and make written report to building owner and proposed purchaser of findings.
26. Special features/conditions	Warranty is only valid when Malarkey pre-approved asphalt, base flashing system, and roof insulation when the roof is insulated are used.		To the extent any repairs to any part of the building other than the Hickman Roof Assembly are required, or the removal or replacement of any traffic surfaces or other appurtenances built over the roof are required in order to put the Hickman Roof Assembly in a watertight condition, the liability for or expense of any such repair, removal, or replacement shall be assumed and paid by the owner.
27. Executed by owner	No	No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Hyload, Inc.	Hyload, Inc.	Hyload, Inc.
2. Title, original publication date, and identifying symbol, if any	"High Performance Roofing Systems 10 Year Commercial Warranty"; July 1, 1996; HW070196-10YM	"High Performance Roofing Systems 15 Year Commercial Warranty"; July 1, 1996; HW070196-15YM	"High Performance Roof Systems 10 Year Commercial Warranty Material and Workmanship"; July 1, 1996; HW070196-10LM
3. Product, specification, or system covered	Hyload H150E, Hyload 250E, Hyload WS, Hyload SAM, ALPROOF, ALPROOF CP, ALPSAM WS, ALPSAM; minimum of one ply of Type IV felt must be installed prior to Hyload membrane.	Hyload H150E, Hyload 250E, Hyload WS, ALPROOF, ALPROOF CP, ALPSAM WS; minimum of two plies of Type IV felt must be installed prior to Hyload membrane.	Hyload H150E, Hyload 250E, Hyload WS, Hyload SAM, ALPROOF, ALPROOF CP, ALPSAM WS, ALPSAM; minimum of one ply of Type IV felt must be installed prior to Hyload membrane.
4. Scope of coverage	Material only; Hyload warrants that the Hyload roofing membrane will not leak and cause water infiltration into the building as a result of any defect in the design and manufacture of the membrane.	Material only; Hyload warrants that the Hyload roofing membrane will not leak and cause water infiltration into the building as a result of any defect in the design and manufacture of the membrane.	Material and workmanship; Hyload warrants that the Hyload roofing membrane will not leak and cause water infiltration into the building as a result of any defect in the design or manufacture of the membrane, or as a result of defective workmanship in the application of the membrane.
5. Length of coverage	10 years	15 years	10 years
6. Nature of remedy	Hyload will, via such methods as Hyload determines fit, effect the repair of leaks at its expense.	Hyload will, via such methods as Hyload determines fit, effect the repair of leaks at its expense.	Hyload will, via such methods as Hyload determines fit, effect the repair of leaks at its expense.
7. Monetary limitations	Hyload's obligation over the lifetime of the warranty shall not exceed the retail price of the Hyload roofing materials used in the original installation of the roof.	Hyload's obligation over the lifetime of the warranty shall not exceed the retail price of the Hyload roofing materials used in the original installation of the roof.	Hyload's obligation over the lifetime of the warranty shall not exceed the retail price of the Hyload roofing materials used in the original installation of the roof.
8. Notification requirements	Immediate notification by telephone to Hyload upon the discovery of any leak in the membrane and written confirmation of the leak within 15 days thereafter	Immediate notification by telephone to Hyload upon the discovery of any leak in the membrane and written confirmation of the leak within 15 days thereafter	Immediate notification by telephone to Hyload upon the discovery of any leak in the membrane and written confirmation of the leak within 15 days thereafter
9. Exclusive or additional remedy	Remedy in warranty is owner's sole and exclusive remedy so that Hyload's repair of leaks constitutes fulfillment of all its obligations; excludes other guarantees and warranties; excludes UCC warranties.	Remedy in warranty is owner's sole and exclusive remedy so that Hyload's repair of leaks constitutes fulfillment of all its obligations; excludes other guarantees and warranties; excludes UCC warranties.	Remedy in warranty is owner's sole and exclusive remedy so that Hyload's repair of leaks constitutes fulfillment of all its obligations; excludes other guarantees and warranties; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Hyload's determination	Hyload's determination	Hyload's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 3, 4, 5, 7, 9, 10, 12, 18, 19, 20	1, 3, 4, 5, 7, 9, 10, 12, 18, 19, 20	1, 3, 4, 5, 7, 9, 10, 12, 18
13. Wind coverage/exclusions	Hyload indicates that the warranty covers roof damage resulting from wind speeds up to 39 mph. Warranty excludes hurricanes, gales, and tornadoes.	Hyload indicates that the warranty covers roof damage resulting from wind speeds up to 39 mph. Warranty excludes hurricanes, gales, and tornadoes.	Hyload indicates that the warranty covers roof damage resulting from wind speeds up to 39 mph. Warranty excludes hurricanes, gales, and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C, J, M, R, S. Warranty also becomes null and void if subsequent work is done at or through the Hyload membrane.	B, C, J, M, R, S. Warranty also becomes null and void if subsequent work is done at or through the Hyload membrane.	B, C, J, M, R, S. Warranty also becomes null and void if subsequent work is done at or through the Hyload membrane.
15. Cost to obtain	\$6.00/square	\$8.00/square	\$9.00/square
16. Minimum charge	\$600	\$800	\$900
17. Ineligible structure or building use	Residential	Residential	Residential
18. Pre-construction notice and approval requirements	Contractor is required to pay warranty fee, complete warranty request form outlining membrane installation, and obtain approval from Hyload prior to beginning installation.	Contractor is required to pay warranty fee, complete warranty request form outlining membrane installation, and obtain approval from Hyload prior to beginning installation.	Contractor is required to pay warranty fee, complete warranty request form outlining membrane installation, and obtain approval from Hyload prior to beginning installation.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	No on-site inspections	No on-site inspections	Hyload technical department representative makes on-site inspections after completion of installation prior to issuance of warranty and two years after issuance of warranty; no charge.

21. Contractor's post-installation obligation	Although this is a material-only warranty, contractor is obligated to make repairs to material and workmanship deficiencies for two years.	Although this is a material-only warranty, contractor is obligated to make repairs to material and workmanship deficiencies for two years.	The contractor is obligated to make repairs to material and workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Hyload indicates it does not carry insurance covering its warranty obligations.	No; Hyload indicates it does not carry insurance covering its warranty obligations.	No; Hyload indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Hyload manufactures and sells the product.	Hyload manufactures and sells the product.	Hyload manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	The warranty is not assignable	The warranty is not assignable	The warranty is not assignable.
26. Special features/conditions	The warranty shall be governed by the laws of the state of Ohio, excluding principles of conflicts of law. All actions arising under the warranty shall be brought in the court of common pleas for Medina County, Ohio. If the owner does not make repairs that are not covered by the warranty within 30 days of notice from Hyload, warranty shall automatically terminate.	The warranty shall be governed by the laws of the state of Ohio, excluding principles of conflicts of law. All actions arising under the warranty shall be brought in the court of common pleas for Medina County, Ohio. If the owner does not make repairs that are not covered by the warranty within 30 days of notice from Hyload, warranty shall automatically terminate.	The warranty shall be governed by the laws of the state of Ohio, excluding principles of conflicts of law. All actions arising under the warranty shall be brought in the court of common pleas for Medina County, Ohio. If the owner does not make repairs that are not covered by the warranty within 30 days of notice from Hyload, warranty shall automatically terminate.
27. Executed by owner	No	No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of Issuing entity		Imper Italia S.p.A.		Intec/Permegas, a division of U.S. Intec, Inc.	
2. Title, original publication date, and identifying symbol, if any		"Imper Italia Roofing Membrane Guaranteed"		"Roofing System Guarantee", September 1996	
3. Product, specification, or system covered		Paralon NT4, Arvenol ARD/S		Built-up roofing specifications: A. G-84UP-N M-54UP-N C. ERA-BATP-N G-85UP-N M-55UP-N ERA-BSTP-N G-4UP-R M-5UP-R ERA-ATP-R G-84TP-N M-54TP-N ERA-BATP-N G-85TP-N M-55TP-N ERA-BSTP-N G-4TP-R M-5TP-R ERA-ATP-R	
4. Scope of coverage		Material only. Imper Italia guarantee agrees to provide replacement material resulting from all manufacturing defects to restore roof to watertight condition.		Material and workmanship. Intec/Permegas guarantees to the original building owner that it will repair or replace, at its sole discretion, the Intec/Permegas roofing system or portion thereof as is necessary to correct leaks caused by (1) manufacturing defects, (2) deterioration as a result of ordinary wear and tear from exposure to the elements, (3) splits, fissures or tears not caused by structural or roof deck movement or failure, or (4) workmanship in installing the roofing membranes and base flashings. The components of Intec/Permegas roofing system covered by the guarantee are the membrane, flashing, insulation and accessories specifically identified in the guarantee; all other components of the building, including any roofing components, are excluded. (See Special Features/Conditions.)	
5. Length of coverage		10 years		5, 10, 15, or 20 years (length of coverage depends upon number and type of piles as well as climate zone)	
6. Nature of remedy		Imper Italia will provide replacement material at its own expense.		Intec/Permegas shall repair or replace the membrane and base flashings or any portion thereof to make the Intec/Permegas roofing system watertight, unless the roofing contractor is obligated to do so for a claim brought during the first two years. (See Special Features/Conditions.)	
7. Monetary limitations		Imper Italia's total liability shall not exceed the original cost of its membrane roofing material.		Intec/Permegas' maximum liability shall not exceed in the aggregate over the life of the guarantee more than the dollar amount inserted on an individual basis.	
8. Notification requirements		Written notification to the approved roofing contractor and Rol-Ply, Inc. (representatives of Imper Italia) within 30 days of discovery of any leaks in Imper Italia Roofing Membrane.		Written notice to Intec/Permegas within 15 days of discovery of the leak which is the basis of a claim, even if the discovery is within the first two years	
9. Exclusive or additional remedy		Owner's sole and exclusive remedy; excludes all other warranties; excludes UCC warranties.		Remedy in guarantee shall be the sole and exclusive remedy available to the owner. Guarantee is expressly in lieu of any other guarantees or warranties, and any other obligations or liability on the part of Intec, whether any claim is based upon strict liability, negligence, breach of warranty or any other theory or cause of action; excludes UCC warranties.	
10. Inclusion of consequential damages		No		No	
11. Determination of warranty applicability		Rol-Ply, Inc.'s determination		Intec/Permegas' determination (See Special Features/Conditions.)	
12. Specific exclusions from coverage (See item no. 12 in Introduction.)		1, 2, 3, 4, 5, 7, 9, 10, 11, 22		1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 15, 17, 20, 22. Warranty also excludes damages to the roof system more than 15 days after discovery of a leak unless Intec/Permegas was notified within 15 days	
13. Wind coverage/exclusions		Warranty does not mention wind conditions specifically.		Intec/Permegas indicates that there is no coverage for damage caused by wind. Guarantee excludes windstorms, hurricanes, and tornadoes.	
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)		B, C, J, N		B, C, E, G, H, I, L, M, R (See Special Features/Conditions.)	
15. Cost to obtain		None		5 years: \$6.00/square; 10 years: \$7.50/square; 12 years: \$8.00/square; 15 years: \$10.00/square; 20 years: \$15.00/square	
16. Minimum charge		None		5 years: \$600; 10 years: \$750; 12 years: \$800; 15 years: \$1,000; 20 years: \$1,500	
17. Ineligible structure or building use		Cold-storage buildings: roofs with polystyrene insulation, un-insulated steel decks; areas subjected to oil caustic chemicals or roofs that retain water more than 24 hours		Any building where harmful emissions or chemicals may damage the roof and parking area	
18. Pre-construction notice and approval requirements		Imper Italia indicates that the contractor is required to give notice and obtain approval prior to commencing installation.		The contractor shall submit notice to Intec/Permegas ten days prior to commencement of guaranteed job.	

	Approved, authorized, or licensed applicator	Yes	Yes	Yes
19.	Job inspection policy	Hyload technical department representative makes on-site inspections after completion of installation prior to issuance of warranty and two years after issuance of warranty; no charge.	Imper Italia inspects job site prior to and after application prior to issuance of guarantee; there may be an inspection charge.	Intec/Permugas technical roof inspectors make on-site inspections during application (every other week depending on job size) and after completion prior to issuance of guarantee (inspection done before surfacing), as well as two years after issuance of guarantee; no charge.
21.	Contractor's post-installation obligation	Contractor is obligated to make repairs to material and workmanship deficiencies for two years.		
22.	Backed by named insurance or surety	No; Hyload indicates that it does not carry insurance covering its warranty obligations.	No	The contractor is obligated to make all repairs due to workmanship for two years. The guarantee states that the owner and roofing contractor expressly agree that if the owner discovers a defect about three months after the first two years after guarantee expiration, the contractor shall be responsible for the cost of repairs. The contractor shall be responsible for the cost of repairs to the membrane and base flashings due to misapplication or the roof's failure to install the roofing system in accordance with the Intec/Permugas technical specifications manual in effect at the time of roof installation. If the roofing contractor's sole responsibility to repair those leaks and Intec/Permugas shall have no obligation to repair any such leaks.
23.	Issuing entity manufactures and/or sells products	Hyload manufactures and sells the product.	Imper Italia S.p.A. manufactures product; product sold in United States by its representative, Rol-Ply, Inc.	No; Intec/Permugas indicates that it does not carry insurance covering its guarantee obligations.
24.	Conditions for renewal or extension	No renewal provision	No renewal provision	Intec/Permugas manufactures and sells product.
25.	Assignability	The warranty is not assignable.	No restrictions stated.	The guarantee may be renewed for 5 or 10 years at a cost of \$1,000 or more depending upon fees at the time. Request for renewal must be made 180 days prior to expiration; owner pays for cost of repairs to be performed prior to reinspection by manufacturer.
26.	Special features/conditions	The warranty shall be governed by the laws of the state of Ohio, excluding principles of conflicts of law. All actions arising under the warranty shall be brought in the court of common pleas for Medina County, Ohio. If the owner does not make repairs which are not covered by the warranty within 30 days of notice from Hyload, warranty shall automatically terminate.	In the event of a leak, Rol-Ply, Inc. will make inspection and determine what repairs are necessary and will advise Imper Italia, the owner, and the contractor in writing. Owner shall be liable for expense of any repair, removal or replacement of traffic surfaces or other appurtenances built over the roof necessary to restore the roof to a watertight condition and any repair to parts of the building other than the roof.	The guarantee is assignable to another owner for the remaining term only if the following conditions are met: (1) the request is sent by certified mail to Intec/Permugas, Attn: Technical Services Department, P.O. Box 2845, Port Huron, Michigan 48060-0845, within 30 days after ownership transfer; (2) the guarantee is assigned within 30 days after ownership transfer; (3) the assignment is completed at the owner's expense; (4) the proposed assignment is in writing by an authorized Intec/Permugas Technical Services Manager; and (5) an assignment fee of \$750 is paid to Intec/Permugas. The guarantee is not otherwise transferable or assignable, directly or indirectly.
27.	Executed by owner	No	No	The guarantee excludes workmanship coverage from Intec/Permugas for first two years. (See item #21 above.)

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	International Diamond 105 Non-Penetrating Roofing Systems, Inc. (IDS)	International Diamond 105 Non-Penetrating Roofing Systems, Inc. (IDS)	JPS Elastomerics Corp.,
2. Title, original publication date, and identifying symbol, if any	"United Workmanship Warranty"; Revised 12/95	"Limited Ten Year Membrane Only Warranty (Prorated)"; Revised 12/95	"Limited Material Warranty for Commercial Building"; January 1995, RSD-FM-12
3. Product, specification, or system covered	Diamond 105, Seal-A-Plate, FM Bar, Ballasted, Bonded Plate, 135 Totally Adhered, Reinforced	Diamond 105, Seal-A-Plate, FM Bar, Ballasted, Bonded Plate, 135 Totally Adhered, Reinforced	Hi-Tuff Roofing membrane wearing surface
4. Scope of coverage	Material and workmanship; IDS warrants that it will repair improper workmanship of any installed IDS product in the original IDS roofing system. The IDS roofing system is limited to and includes only the IDS EPDM vulcanized roofing membrane, flashing, adhesives, and other IDS accessories purchased from IDS or its distributors, utilized in the installation and installed according to IDS installation instructions. (See Special Features/Conditions.)	Material only. IDS warrants that the IDS EPDM vulcanized roofing membrane will not deteriorate to the point of causing leaks through the membrane due to normal weathering. Warranty applies only to the IDS EPDM vulcanized roofing membrane utilized in the installation and installed according to IDS' installation instructions and does not apply to labor, materials, or any other item.	Material only. JPS warrants that the Hi-Tuff roofing membrane wearing surface will withstand the effects of the weather due to normal wear and tear of the elements when installed and used in strict compliance with JPS specifications. Warranty does not include the cost of installation of replacement material or removal of defective material.
5. Length of coverage	10 years workmanship, 15 years materials	10 or 15 years	5 or 10 years
6. Nature of remedy	IDS will repair improper workmanship of any installed product in the original IDS roof system. The owner's sole remedy is limited to replacement of the defective IDS product; the method of repair is sole determination of IDS. The owner's sole remedies and IDS' liabilities and obligations shall be limited to replacement of the defective IDS product by repair or substitution of new material.	IDS will, at its option, either repair the membrane or issue a prorated credit against the purchase of a new roofing membrane from IDS. The owner's sole remedies and IDS' liabilities and obligations shall be limited to the replacement of defective IDS EPDM vulcanized roofing membrane by repair or substitution of new material.	If the wearing surface fails due to the effects of weather and normal wear and tear of the elements and the material is installed and used in strict accordance with JPS specifications, JPS will be liable for the cost of the material at the time of claim, prorated for service to date of claim. JPS will furnish the owner Hi-Tuff roofing membrane to replace the affected area.
7. Monetary limitations	IDS' obligation to remedy defects shall not exceed the original cost of IDS materials as charged by IDS.	IDS' obligation to remedy defects shall not exceed the original cost of IDS materials as charged by IDS.	JPS' liability limited to the cost of the material at the time of claim, prorated for service to date of claim.
8. Notification requirements	Written notification within 30 days of discovery of any defect in the IDS roofing system by certified mail, return receipt requested, to IDS at 5110 Angola Road, Toledo, OH 43615	Written notification within 30 days of discovery of any defect in the IDS roofing system by certified mail, return receipt requested, to IDS at 5110 Angola Road, Toledo, OH 43615	Written notification to JPS Warranty Services Department, Holyoke, MA 01040-2800, within 30 days of the discovery of any wearing surface failure in the membrane
9. Exclusive or additional remedy	The warranty replaces and excludes all other warranties; remedy stated in warranty is the sole and exclusive remedy; excludes UCC warranties. The warranty states: "The building owners sole remedy is to file a claim against our product liability or completed operations for any underlying materials or any other damages whatsoever. The products must be proven defective scientifically by certified laboratories."	The warranty replaces and excludes all other warranties; remedy stated in warranty is the sole and exclusive remedy; excludes UCC warranties. The warranty states: "The building owners sole remedy is to file a claim against our product liability or completed operations for any underlying materials or any other damages whatsoever. The products must be proven defective scientifically by certified laboratories."	Warranty and remedies are exclusive and in lieu of any other remedy or warranty whether written, oral, implied, or statutory; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	IDS' determination	Neutral (no provision).	JPS' determination; JPS' judgment whether specific exclusions and conditions that make warranty null and void occur
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7, 10, 11, 12 (including those items contained in IDS Roofing Care and Maintenance Guide), 13, 16, 17, 18, 19, 24. (The warranty also excludes damage or loss caused by pests, insect infestation, ice storm or any windstorm or occurrence covered by fire and windstorm insurance, including subrogation claims.)	1, 2, 3, 4, 5, 6, 7, 10, 11, 12 (including those items contained in IDS Roofing Care and Maintenance Guide), 13, 16, 17, 18, 19, 24. (Warranty also excludes damage or loss caused by pests, insect infestation, ice storm, or any windstorm or occurrence covered by fire and windstorm insurance, including subrogation claims.)	1, 2, 3, 16, 23
13. Wind coverage/exclusions	The warranty excludes windstorms, wind gusts/gales, hurricanes, and tornadoes. IDS indicates that the warranty covers wind speeds up to Beaufort Scale 8, which starts at 39 mph. The plate bond system is not wind uplift rated. (See Special Features/Conditions.)	The warranty excludes windstorms, wind gusts/gales, hurricanes, and tornadoes. IDS indicates that warranty covers wind speeds up to Beaufort Scale 8, which starts at 39 mph. The plate bond system is not wind uplift rated.	Warranty excludes gale-force winds.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C, M, N, S	C, M, N, S	B, C, F, G, I
15. Cost to obtain	\$8.00/square	None	5 years: \$150; 10 years: \$300
16. Minimum charge	10 years: \$500, 15 years: \$600	None	5 years: \$150; 10 years: \$300
17. Ineligible structure or building use	The warranty states that IDS shall have no obligation if building is used for noncommercial purposes, such as residential, personal, family, or household purposes.	The warranty states that IDS shall have no obligation if building is used for noncommercial purposes, such as residential, personal, family, or household purposes.	Residential buildings

18. Pre-construction notice and approval requirements	Prior to the job commencing, the contractor submits an application to install IDS roofing systems. Upon completion, the contractor submits notice of completion and request for warranty.	Yes	Prior to the job commencing, the contractor submits an application to install IDS roofing systems. Upon completion, the contractor submits notice of completion and request for warranty.	None
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes	Yes
20. Job inspection policy	IDS field technical department will make on-site inspections prior to and during application upon request. IDS makes inspection after completion prior to issuance of warranty, as well as two years after issuance of warranty; no charge. If a second inspection is required, inspection charge is \$350/day plus \$0.26 per mile.	IDS field technical department will make on-site inspections prior to and during application upon request. IDS makes inspection after completion prior to issuance of warranty; no charge. If a second inspection is required, inspection charge is \$350/day plus \$0.26 per mile.	JPS technical representative makes on-site inspection prior to and during application (upon request), and after application prior to issuance of warranty; no charge.	JPS technical representative makes on-site inspection prior to and during application (upon request), and after application prior to issuance of warranty; no charge.
21. Contractor's post-installation obligation	The contractor is obligated to make repairs to workmanship deficiencies for two years.	The contractor is obligated to make repairs to workmanship deficiencies for two years.	The contractor is obligated to make repairs to workmanship deficiencies for two years.	Although this is a material-only warranty, the contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; IDS indicates that it does not carry insurance covering its warranty obligations.	No; IDS indicates that it does not carry insurance covering its warranty obligations.	No; IDS indicates that it does not carry insurance covering its warranty obligations.	No
23. Issuing entity manufactures and/or sells products	IDS manufactures and sells the product.	IDS manufactures and sells the product.	IDS manufactures and sells the product.	JPS manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision	No renewal provision
25. Assignability	The warranty is not transferable.	The warranty is not transferable.	The warranty is not transferable.	Warranty is transferable; consult JPS for conditions of transferability. Conditions are noted in JPS maintenance instructions.
26. Special features/conditions	Although the warranty states that it covers workmanship of any installed IDS product, the warranty also states: "The Owner's roofing applicator is responsible for workmanship for the first two (2) years of this warranty or any defective workmanship known or unknown for the life of this warranty. The buyer agrees to indemnify and save IDS harmless against any claims arising out of the sale or installation of defective workmanship." In the limitations section, the warranty states: "IDS is under no obligation to issue a warranty on any job until an affidavit is signed by the building owner and the roofing contractor stating that the job was done with IDS material, specifications, and details. IDS warranty is clearly limited to the repair of IDS material if defective and the repair of the workmanship if it is made defective by the defective material." Thus, the warranty is ambiguous as to whether it covers both material and workmanship of contractor. All legal actions against IDS must be noticed and venue in Toledo, Lucas County, Ohio and Ohio law shall apply. The warranty states: "The building owners sole remedies on the above conditions and limitation of recovery on any and all claims will be filed against IDS insurance carrier. Any dispute which cannot be settled within the terms and conditions of this warranty limits the building owners recovery to the realms of our insurance policy and/or our suppliers, and/or his agents." If the courts find the warranty legally binding or non-binding between IDS and the owner, then the UCC statute of limitations applies in lieu of the warranty in its entirety. The warranty states: "All parties must except [sic] industry standards, state of the art technology, FM (Factory Mutual), UL (Underwriters Laboratories), and ASTM testing (as published by them) as the standard that is excepted [sic] by the industry and all parties with no deviations as tested by IDS." The official weather report is the nearest airport or the national weather bureau. If there are damaging winds recorded at the airport and wind damage is found on the building, the owner's insurance will be responsible for the repair of the roofing system. If the owner's insurance denies coverage for the wind damage, the owner will hold IDS harmless, along with the other terms, conditions, and limitations of warranty. Note: Ground speed winds must be calculated and multiplied by three in order to determine the effect the wind has on a system. If a defect is not caused by workmanship, IDS will advise of the type and/or extent of repairs required to be made at owner's expense by a qualified applicator; all investigation and repair costs are the owner's responsibility.	The warranty states: "IDS is under no obligation to issue a warranty on any job until an affidavit is signed by the building owner and the roofing contractor stating that the job was done with IDS material, specifications, and details. IDS warranty is clearly limited to the repair of IDS material if defective and the repair of the workmanship if the defective material." Thus, the warranty is ambiguous as to whether it covers both material and workmanship of contractor. All legal actions against IDS must be noticed and venue in Toledo, Lucas County, Ohio and Ohio law shall apply. The warranty states: "The building owners sole remedies on the above conditions and limitation of recovery on any and all claims will be filed against IDS insurance carrier. Any dispute which cannot be settled within the terms and conditions of this warranty limits the building owners recovery to the realms of our insurance policy and/or our suppliers, and/or his agents." If the courts find the warranty legally binding or non-binding between IDS and the owner, then the UCC statute of limitations applies in lieu of the warranty in its entirety. The warranty states: "All parties must except [sic] industry standards, state of the art technology, FM (Factory Mutual), UL (Underwriters Laboratories), and ASTM testing (as published by them) as the standard that is excepted [sic] by the industry and all parties with no deviations as tested by IDS." The official weather report is the nearest airport or the national weather bureau. If there are damaging winds recorded at the airport and wind damage is found on the building, the owner's insurance will be responsible for the repair of the roofing system. If the owner's insurance denies coverage for the wind damage, the owner will hold IDS harmless, along with the other terms, conditions, and limitations of warranty. Note: Ground speed winds must be calculated and multiplied by three in order to determine the effect the wind has on a system. If a defect is not caused by workmanship, IDS will advise of the type and/or extent of repairs required to be made at owner's expense by a qualified applicator; all investigation and repair costs are the owner's responsibility.	Any controversy or claim arising out of or relating to warranty shall be settled by arbitration in accordance with the construction industry rules of the American Arbitration Association at the Boston, Mass. regional office, and judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof. No representative of JPS has authority to make any representations or promises, except as stated in warranty.	
27. Executed by owner	Yes; warranty must be signed, dated, and returned to IDS at its office in Toledo, Ohio not later than 30 days after receipt.	Yes	Yes	Yes

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	JPS Elastomerics Corp.,	JPS Elastomerics Corp.,	Koppers Industries, Inc.
2. Title, original publication date, and identifying symbol, if any	"Limited Warranty for Commercial Building - NDL"; January, 1995. RSD-FM-11	"Hi-Tuff Plus Total Systems Limited Warranty for Commercial Building - NDL"; January, 1995: RSD-FM-13A	"Koppers Built-Up Roofing Classic Warranty"; CRD-04/95 C
3. Product, specification, or system covered	Hi-Tuff Roofing System	Hi-Tuff Roofing System	Built-Up roofing specifications: 200 Series, 300 Series, 400 Series, 500 Series. All Classic Warranties require two layers of insulation supplied and/or approved by Koppers.
4. Scope of coverage	Material and workmanship; JPS warrants to repair leaks in the Hi-Tuff roofing system caused by defects in JPS roofing material or workmanship of the JPS authorized roofing applicator. Warranty does not include insulation.	Material and workmanship; JPS warrants to repair leaks in the Hi-Tuff roofing system caused by material or workmanship of the JPS authorized roofing applicator. JPS does not warrant the thermal resistance of roof insulation.	Material and workmanship; Koppers agrees to provide roofing repairs to correct all roof water leaks that may occur from ordinary wear and tear of the elements, defects in built-up roofing, flashing, or insulation supplied by Koppers, and workmanship of the original roofing contractor in installing Koppers built-up roofing, flashing, and insulation. A roof water leak is defined as water passing through the roofing or flashing membrane and into the interior of the building. Warranty does not cover correction of any condition other than roof water leaks, including blisters, clogged drains, ridging, bitumen drippage, or migration
5. Length of coverage	10 years	10 or 15 years	5 or 10 years for BUR specifications Series 200, 300, 400, and 500; 15 or 20 years for BUR Specification Series 200, 400, and 500
6. Nature of remedy	JPS will repair leaks in the roofing system using methods determined to be suitable at JPS' discretion.	JPS will repair leaks in the roofing system using methods determined to be suitable at JPS's discretion.	Koppers will undertake repairs so long as the repair is considered "prudent" (i.e., Koppers considers that the cost of the repair is less than the "remaining value" of the roof on the date the repair is required. "Remaining value" is the total cost of roof installation, reduced by 5 percent for each year or part of a year after the effective date, with no deduction for the cost of any previous warranty repair). If Koppers believes repair is not prudent, payment of remaining value will be owner's sole and exclusive remedy and shall relieve Koppers of all further liability under this warranty.
7. Monetary limitations	None stated.	None stated.	Koppers is not liable to pay for a repair that Koppers believes will cost more than the total cost of the roof installation (BUR membrane, flashing, and insulation) reduced by 5 percent for each year or part thereof.
8. Notification requirements	Written notification of leaks must be delivered to JPS Warranty Services Department, Holyoke, MA. 01040-2800, within 30 days of discovery.	Written notification of leaks must be delivered to JPS Warranty Services Department at Holyoke, MA 01040-2800, within 30 days of discovery	Call Koppers at 800/468-9628 within 72 hours of discovery of leak and provide written notice within 30 days to Koppers Industries, Inc. 436 Seventh Avenue, Pittsburgh, PA 15219, Attention: Roofing Warranty Department.
9. Exclusive or additional remedy	Warranty and remedies are exclusive and in lieu of any other remedy or warranty whether written, oral, implied or statutory; excludes UCC warranties.	Warranty and remedies are exclusive and in lieu of any other remedy or warranty whether written, oral, implied or statutory; excludes UCC warranties.	Remedy provided by warranty is sole and exclusive remedy at law or equity for defects in material supplied by Koppers and workmanship of the contractor. Koppers not liable for consequential, incidental, or other damages under any theory of law; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	JPS' determination; JPS' sole judgment whether specific exclusions and conditions that make warranty null and void occur.	JPS' determination; JPS' sole judgment whether specific exclusions and conditions that make warranty null and void occur.	Koppers' determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 3, 5, 7, 17. Warranty states that specific Condition M also makes the warranty inapplicable.	1, 3, 5, 7, 17. Warranty states that specific Condition M also makes the warranty inapplicable.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 22, 23
13. Wind coverage/exclusions	Warranty excludes winds of peak gust speed of ___ mph measured 10 meters above the ground, hurricanes, and tornadoes. JPS indicates that warranty covers wind speeds up to 60 mph.	Warranty excludes winds of peak gust speed of ___ mph measured 10 meters above the ground, hurricanes, and tornadoes. JPS indicates that warranty covers wind speeds up to 60 mph.	Warranty excludes wind damage, hurricanes, and tornadoes. Koppers indicates that there is no coverage for damage caused by wind.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C, F, G, H, I	B, C, F, G, H, I	H, M

15. Cost to obtain	10 years: \$6.00/square	10 years: \$8.00/square; 15 years: \$9.00/square	5 years: \$8.00/square; 10 years: \$10.00/square; 15 years: \$12.00/square; 20 years: \$15.00/square
16. Minimum charge	10 years: \$450	10 years: \$600; 15 years: \$675	5 years: \$700; 10 years: \$800; 15 years: \$900; 20 years: \$1,000
17. Ineligible structure or building use	Residential buildings	Residential buildings	Cooler/freezer buildings, private residences
18. Pre-construction notice and approval requirements	Contractor submits request to JPS for approval of warranty form, along with diagram and details.	Contractor submits request to JPS for approval of warranty form, along with diagram and details.	Contractor telephones application to Koppers 14 days prior to job start. If project is approved, contractor is sent application for warranty.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	JPS technical representative makes on-site inspections prior to and during application (upon request), and after application prior to issuance of warranty; no charge.	JPS technical representative makes on-site inspections prior to and during application (upon request), and after application prior to issuance of warranty; no charge.	Koppers technical service personnel or designated representative will make on-site inspections prior to and during application periodically or as requested. Koppers makes inspection after completion prior to issuance of warranty, as well as two years after issuance of warranty; no charge.
21. Contractor's post-installation obligation	The contractor is "normally" obligated to make repairs to all leaks, any defects, and workmanship deficiencies for two years.	The contractor is "normally" obligated to make repairs to all leaks, any defects, and workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years
22. Backed by named insurance or surety	No	No	No; Koppers indicates that it is self-insured.
23. Issuing entity manufactures and/or sells products	JPS manufactures and sells the product.	JPS manufactures and sells the product.	Koppers manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Warranty is transferable; consult JPS for conditions of transferability. Conditions are noted in JPS maintenance instructions.	Warranty is transferable; consult JPS for conditions of transferability. Conditions are noted in JPS maintenance instructions.	Warranty states that original named owner is covered and not any tenant, purchaser, or successor without prior written notice to and approval from Koppers.
26. Special features/conditions	Any controversy or claim arising out of or relating to warranty shall be settled by arbitration in accordance with the construction industry rules of the American Arbitration Association at the Boston, Mass. regional office, and judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof. No representative of JPS has authority to make any representations or promises, except as stated in warranty.	Any controversy or claim arising out of or relating to warranty shall be settled by arbitration in accordance with the construction industry rules of the American Arbitration Association at the Boston, Mass. regional office, and judgment upon the award rendered by the arbitrators may be entered in any court having jurisdiction thereof. No representative of JPS has authority to make any representations or promises, except as stated in warranty.	Workmanship coverage is contingent upon contractor's agreement to install Koppers' products in accordance with applicable specifications and details. Koppers does not certify that the work is actually free from defect. A roof sketch must be supplied to Koppers identifying the exact location of all additions, alterations, or repairs. This warranty will be governed by the laws of the Commonwealth of Pennsylvania. Any action for breach of warranty must be commenced within one year after such breach occurs or is discovered. If Koppers' investigation of a reported problem reveals the problem to be outside the scope of warranty, investigation and repair costs shall be paid by owner. Annual roof inspections are the responsibility of the building owner. When necessary, roof maintenance must be performed. A complete recoating of the flashing systems, using a Koppers aluminum roof coating, is required every five years on flashing specifications 168, 172, and 180, and as needed on 174 and 182.
27. Executed by owner	Yes	Yes	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

Koppers Industries, Inc.		Koppers Industries, Inc.		Koppers Industries, Inc.																			
1. Identity of issuing entity																							
2. Title, original publication date, and identifying symbol, if any	"Modified Bitumen Roof Membrane Warranty"; CRD-04/95 D	"Koppers IRMA Roof Warranty with Styrofoam Brand Insulation"; June 1991; CRD-05/91 [Specimen copy has designation CRD-05/91SP.]	"Koppers Built-Up Roofing Standard Warranty"; CRD-04/95 B Series, and 500 Series																				
3. Product, specification, or system covered	Modified bitumen specifications	IRMA Built-up Roofing specifications: 263, 264, 273, 274, 463, 464, 473, 474	Built-Up roofing specifications: 200 Series, 300 Series, 400 Series, and 500 Series																				
4. Scope of coverage	Material and workmanship: Koppers agrees to provide roofing repairs to correct all roof water leaks that may occur from defects in modified bitumen material supplied by Koppers and workmanship of the original Koppers eligible roofing contractor in installing Koppers' modified bitumen products after the first two years of warranty. Warranty does not cover correction of any condition other than roof water leaks, including ridging or slippage.	Material and workmanship: warranty covers roof water leaks resulting from ordinary wear and tear of the elements; defects in Koppers built-up roofing and flashing or Styrofoam Brand Roofing Material Insulation manufactured by Dow Chemical Company; retention of at least 90 percent of Styrofoam Brand Insulation's published thermal resistance; Styrofoam Brand Insulation blow-off in roof level wind gusts of up to 70 miles per hour; and workmanship of the original roofing contractor in installing Koppers built-up roofing, flashing, and Styrofoam Brand Insulation.	Material and workmanship: Koppers agrees to provide roofing repairs to correct all roof water leaks that may occur from ordinary wear and tear of the elements, defects in built-up roofing or flashing materials supplied by Koppers, and workmanship of the original roofing contractor in installing Koppers built-up roofing and flashing materials. A roof water leak is defined as water passing through the roofing or flashing membrane and into the interior of the building. Warranty does not cover correction of any condition other than roof water leaks, including blisters, clogged drains, ridging, bitumen drippage, or migration.																				
5. Length of coverage	5, 10, or 12 years. The only warranty available for a new roof over an existing roof is Koppers 5-year warranty; this requires prior inspection/approval and at least one layer of Koppers-approved insulation over the existing roof.	10 years: specifications 263 and 463 on lightweight insulating concrete or gypsum, 273 and 473 on precast concrete or steel; 15 years: specifications 263 and 463 on wood plank, 264 and 464 on lightweight insulating concrete or gypsum; 20 years: specifications 264 and 464 on wood plank, 274 and 474 on poured concrete or steel, 273 and 473 on poured concrete; 20-year specifications are eligible for 15- and 10-year warranties; 15-year specifications are eligible for 10-year warranties.	5 or 10 years for BUR specification Series 200, 300, 400; 15 or 20 years for BUR specification Series 200, 400, 500. The only warranty available for a new roof over an existing roof is Koppers 5-year standard warranty; this requires prior inspection/approval and at least one layer of Koppers approved insulation over the existing roof, and excludes certain specifications.																				
6. Nature of remedy	Koppers will schedule a roof inspection and arrange for any repairs that are covered by warranty.	Koppers will undertake repairs as long as the repair is "practicable," i.e., the cost of the repair is less than the "remaining value" of the roof on the date the repair is required. "Remaining value" is the total cost of roof installation reduced by 5 percent for each year or part of a year after the effective date with no deduction for the cost of any previous warranty repair. If Koppers believes repair is not practicable, payment of remaining value will be owner's sole and exclusive remedy.	Koppers will schedule a roof inspection and arrange for any repairs that are covered by warranty.																				
7. Monetary limitations	Koppers' liability is a minimum of \$1,000 and is limited based upon the length of the warranty, as follows: <table><tr><td>Length of Warranty</td><td>Liability Limit</td></tr><tr><td>5 years</td><td>\$100/square</td></tr><tr><td>10 years</td><td>\$50/square</td></tr><tr><td>12 years</td><td>\$100/square</td></tr></table>	Length of Warranty	Liability Limit	5 years	\$100/square	10 years	\$50/square	12 years	\$100/square	Koppers is not liable to pay for a repair that Koppers believes will cost more than the total cost of the roof installation (BUR membrane, flashing, and Styrofoam) reduced by 5 percent for each year or part thereof.	Koppers' liability is a minimum of \$1,000 and is limited based upon the length of the warranty: <table><tr><td>Length of Warranty</td><td>Liability Limit</td></tr><tr><td>5 years</td><td>\$100/square</td></tr><tr><td>10 years</td><td>\$50/square</td></tr><tr><td>15 years</td><td>\$75/square</td></tr><tr><td>20 years</td><td>\$100/square</td></tr></table>	Length of Warranty	Liability Limit	5 years	\$100/square	10 years	\$50/square	15 years	\$75/square	20 years	\$100/square		
Length of Warranty	Liability Limit																						
5 years	\$100/square																						
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Length of Warranty	Liability Limit																						
5 years	\$100/square																						
10 years	\$50/square																						
15 years	\$75/square																						
20 years	\$100/square																						
8. Notification requirements	Call Koppers at 800/468-9629 within 72 hours of discovery of leak and provide written notice within 30 days to Koppers Industries, Inc. 436 Seventh Avenue, Pittsburgh, PA 15219, Attention: Roofing Warranty Department.	Call Koppers at 1-800-468-9629 within 72 hours of discovery of leak or insulation failure and provide written notice by registered mail to Koppers Industries, Inc., 436 Seventh Avenue, Pittsburgh, PA 15219, Attention: Roofing Customer Service Department.	Call Koppers at 800/468-9629 within 72 hours of discovery of leak and provide written notice within 30 days to Koppers Industries, Inc. 436 Seventh Avenue, Pittsburgh, PA 15219, Attention: Roofing Warranty Department.																				
9. Exclusive or additional remedy	Remedy provided by warranty is sole and exclusive remedy at law or in equity for defects in material supplied by Koppers and workmanship of the contractor. Koppers is not liable for consequential, incidental, or other damages under any theory of law; excludes UCC warranties.	Remedy provided in warranty is sole and exclusive remedy at law or in equity for defects in material supplied by Koppers or Dow and workmanship of the contractor. Koppers not liable for consequential, incidental, or other damages under any theory of law; excludes UCC warranties.	Remedy provided by warranty is sole and exclusive remedy at law or in equity for defects in material supplied by Koppers and workmanship of the contractor. Koppers not liable for consequential, incidental, or other damages under any theory of law; excludes UCC warranties.																				
10. Inclusion of consequential damages	No	No	No																				
11. Determination of warranty applicability	Koppers' determination	Koppers determines whether repair is practical. Thermal resistance of insulation tested according to ASTM C518-85. (See Special Features/Conditions.)	Koppers' determination																				
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 22, 23	1, 2, 3, 4, 5, 7, 8, 9, 10, 12, 15, 16, 17, 18, 22, 23	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 18, 22, 23																				
13. Wind coverage/exclusions	The warranty excludes wind damage, hurricanes, and tornadoes. Koppers indicates that there is no coverage for damage caused by wind.	The warranty covers roof damage resulting from wind speeds up to 70 miles per hour.	The warranty excludes wind damage, hurricanes and tornadoes. Koppers indicates that there is no coverage for damage caused by wind.																				

14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	H, M	B (except emergency repairs), G	H, M
15. Cost to obtain	5 years: \$4.00/square; 10 years: \$5.00/square; 12 years: \$6.00/square	10 years: \$9.00/square; 15 years: \$10.50/square; 20 years: \$13.00/square	5 years: \$4.00/square; 10 years: \$6.00/square; 15 years: \$7.00/square; 20 years: \$8.00/square
16. Minimum charge	5 years: \$350; 10 years: \$550; 12 years: \$600	10 years: \$800; 15 years: \$900; 20 years: \$1,000	5 years: \$350; 10 years: \$550; 15 years: \$600; 20 years: \$650
17. Ineligible structure or building use	Cold-storage or freezer/cooler units	Cooler/freezer buildings, private residences	Cooler/freezer buildings, private residences
18. Pre-construction notice and approval requirements	The contractor telephones application to Koppers 14 days prior to job start. If project is approved, contractor is sent application for warranty.	The contractor telephones application to Koppers 14 days prior to job start. If project is approved, contractor is sent application for warranty.	The contractor telephones application to Koppers 14 days prior to job start. If project is approved, contractor is sent application for warranty.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	Koppers technical service personnel or designated representative makes inspections prior to, and during application. A final inspection, prior to warranty issuance, is required. A two-year inspection is required. No charge for inspections.	Koppers technical service personnel or designated representative may make on-site inspections prior to and during application. Inspection of insulation installation and a final inspection prior to warranty issuance and a two-year inspection are required; no charge.	Koppers technical service personnel or designated representative will make on-site inspections prior to and during application periodically or as requested. Koppers makes inspection after completion prior to issuance of warranty, as well as two years after issuance of warranty; no charge.
21. Contractor's post-installation obligation	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor is obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Koppers indicates that it is self-insured.	No; Koppers indicates that it does not carry insurance covering its warranty obligations.	No; Koppers indicates that it is self-insured.
23. Issuing entity manufactures and/or sells products	Koppers sells product only.	Koppers manufactures and sells product.	Koppers manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Warranty states that original named owner is covered and not any tenant, purchaser, or successor without prior written notice to and approval from Koppers.	Warranty states that original named owner is covered and not any tenant, purchaser, or successor without prior written notice to and approval from Koppers.	Warranty states that original named owner is covered and not any tenant, purchaser, or successor without prior written notice to and approval from Koppers.
26. Special features/conditions	<p>Workmanship coverage is contingent upon contractor's agreement to install Koppers' modified bitumen products in accordance with applicable specifications and details. Koppers does not certify that the work is actually free from defect. A roof sketch must be supplied to Koppers identifying exact location of all additions, alterations, or repairs.</p> <p>This warranty will be governed by the laws of the Commonwealth of Pennsylvania. Any action or breach of this agreement must be commenced within one year after such breach occurs or is discovered.</p> <p>If Koppers' investigation of a reported problem reveals the problem to be outside the scope of warranty, investigation and repair costs shall be paid by owner. Annual roof inspections are the responsibility of the building owner. When necessary, roof maintenance must be performed. A complete recoating of the flashing system, using a Koppers aluminum roof coating, is required every five years on flashing specifications 168, 172, and 180, and as needed on 174 and 182.</p>	<p>Koppers does not certify that the work is actually free from defect. If Koppers' investigation of a reported problem reveals the problem to be outside the scope of the warranty, investigation and repair costs shall be paid by the owner. "Thermal resistance" of Styrofoam Brand insulation shall be tested, at owner's expense, according to ASTM C518-85. Should testing prove insulation to have lost greater than 10 percent of thermal resistance, owner will be reimbursed for testing cost and insulation replacement.</p> <p>Warranty will be governed by the laws of Pennsylvania. Any action or breach of this agreement must be commenced within one year after such breach occurs or is discovered.</p>	<p>Workmanship coverage is contingent upon contractor's agreement to install Koppers' products in accordance with applicable specifications and details. Koppers does not certify that the work is actually free from defect. A roof sketch must be supplied to Koppers identifying exact location of all additions, alterations, or repairs.</p> <p>This warranty will be governed by the laws of the Commonwealth of Pennsylvania. Any action for breach of warranty must be commenced within one year after such breach occurs or is discovered.</p> <p>If Koppers' investigation of a reported problem reveals the problem to be outside the scope of warranty, investigation and repair costs shall be paid by owner. Annual roof inspections are the responsibility of the building owner. When necessary, roof maintenance must be performed. A complete recoating of the flashing system, using a Koppers aluminum roof coating, is required every five years on flashing specifications 168, 172, and 180, and as needed on 174 and 182.</p>
27. Executed by owner	No		No

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	MBTechnology Corporation	MBTechnology Corporation	MBTechnology Corporation
2. Title, original publication date, and identifying symbol, if any	MBTechnology "Roof Membrane Guarantee (Form MBT-108) — Year Limited"; April 1990; Form MBT-108A 4/90	"12-Year Limited Material Warranty"; 1990	"10-Year Limited Material Warranty"; 1990
3. Product, specification, or system covered	All published FG90GWH, FG160CWH, SC75GWH, FGFT160CWH, MF160WAL systems. Cap sheet substitutes allowed for non-fire-rated systems as outlined in current manual.	All published FG90GWH, FG160CWH, SC75GWH, FGFT160CWH, MF160WAL systems. Cap sheet substitutes allowed for non-fire-rated systems as outlined in current manual.	All published FG90GWH, FG160CWH, SC75GWH, FGFT160CWH, MF160WAL systems. Cap sheet substitutes allowed for non-fire-rated systems as outlined in current manual.
4. Scope of coverage	MBT guarantees that the roof membrane shall remain in a watertight condition or MBT shall repair roof membrane at its own expense.	Material only; MBT warrants that the MBT roofing membrane and base flashings will withstand ordinary wear and tear by the elements and will be free of manufacturing defects that affect the ability of the products to maintain the roof in a watertight condition when installed in accordance with current MBT specifications.	Material only; MBT warrants that the MBT roofing membrane and base flashings will withstand ordinary wear and tear by the elements and will be free of manufacturing defects that affect the ability of the products to maintain the roof in a watertight condition when installed in accordance with current MBT specifications.
5. Length of coverage	10, 12, 15, or 20 years (length and type of coverage depends upon specification used).	12 years	10 years
6. Nature of remedy	Warranty states, "[r]ooling contractors applying MBT materials guarantee all workmanship and assume all liability to repair or replace, at his sole cost and expense, any and all materials causing leaks wherein the materials were improperly installed from the date of warranty issue or until the repairs or replacement of the MBT materials are proven to provide for a reasonable two-year period or [sic] watertight conditions." Thereafter, MBT guarantees to repair or replace all defective materials to provide for a watertight condition of the roofing system. (See Special Features/Conditions.)	If manufacturing defects cause the membrane to lose its watertight integrity, MBT, at its sole discretion and option, will either refund to the owner a portion of the original purchase cost of the membrane or replace a portion of the membrane.	If manufacturing defects cause the membrane to lose its watertight integrity, MBT, at its sole discretion and option, will either refund to the owner a portion of the original purchase cost of the membrane or replace a portion of the membrane.
7. Monetary limitations	MBT's liability for repair and/or replacement of defective MBT membrane shall be restricted to the amount of the original cost of MBT material.	MBT's liability limited to refunding to owner a portion of the membrane's original purchase cost, or replacing a portion of the membrane, including all materials and labor, according to a prorated schedule, reduced 10 percent per year, ranging from 100 percent in years 1 and 2 to 10 percent in year 12.	MBT's liability limited to refunding to owner a portion of the membrane's original purchase cost, or replacing a portion of the membrane according to a pro-rated schedule, reduced 10 percent per year, ranging from 100 percent in years 1 and 2 to 10 percent in year 10.
8. Notification requirements	Written notification by certified mail to MBT's office at 188 S. Tellman, Fresno, CA 93706, within 10 days of the date owner discovers material defect.	All repairs must be authorized in writing in advance by manager, technical services, MBTechnology, 188 S. Tellman St., Fresno, CA 93706-9956.	All repairs must be authorized in writing in advance by manager, technical services, MBTechnology, 188 S. Tellman St., Fresno, CA 93706-9956.
9. Exclusive or additional remedy	Warranty and remedy provided are exclusive and in lieu of all other obligations, liabilities or express warranties, excludes UCC warranties. No warranties extending beyond warranty document, specifications, descriptive information, recommendations or test results provided by MBT do not constitute warranties. In no event shall MBT be liable to owner in tort, for negligence, strict liability, or otherwise for any loss or damage resulting from any material defect.	Warranty and remedy provided are exclusive and in lieu of all other obligations, liabilities, or express warranties, excludes UCC warranties. Specifications, descriptive information, recommendations, or test results provided by MBT do not constitute warranties. In no event shall MBT be liable to owner in tort, for negligence, strict liability, or otherwise for any loss or damage resulting from any material defect.	Warranty and remedy provided are exclusive and in lieu of all other obligations, liabilities, or express warranties, excludes UCC warranties. Specifications, descriptive information, recommendations, or test results provided by MBT do not constitute warranties. In no event shall MBT be liable to owner in tort, for negligence, strict liability, or otherwise for any loss or damage resulting from any material defect.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	MBT's sole and exclusive determination as to whether leaks in MBT material will be rectified by repair or replacement.	MBT's determination	MBT's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 6, 7, 9, 10, 11, 12, 13, 15, 16, 17, 19, 20, 22, 24, 25. Warranty also specifically excludes losses, damages, or leaks resulting from any animal or insect, willful misrepresentation or fraud by owner, and exposure to ionized radiation or contamination by radioactivity from nuclear fuel or nuclear waste.	1, 2, 3, 4, 6, 7, 9, 10, 12, 13, 15, 16, 19, 20, 22, 24, 25. Warranty also specifically excludes losses, damages, or leaks resulting from any animal or insect, willful misrepresentation or fraud by owner, and exposure to ionized radiation or contamination by radioactivity from nuclear fuel or nuclear waste.	1, 2, 3, 4, 6, 7, 9, 10, 12, 13, 15, 16, 19, 20, 22, 24, 25. Warranty also specifically excludes losses, damages, or leaks resulting from any animal or insect, willful misrepresentation or fraud by owner, and exposure to ionized radiation or contamination by radioactivity from nuclear fuel or nuclear waste.
13. Wind coverage/exclusions	Warranty excludes windstorms and hurricanes. [MBT indicates that there is no coverage for damage caused by wind.]	Warranty excludes windstorms and hurricanes. [MBT indicates that there is no coverage for damage caused by wind.]	Warranty excludes windstorms and hurricanes. [MBT indicates that there is no coverage for damage caused by wind.]
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	A, C, G, H, I, M, N, R. Warranty not applicable to losses, damages or leaks resulting from work performed by contractor or pursuant to contracts that were not approved in writing in advance from MBT. Warranty also shall be void if MBT materials are disposed in a manner that prevents MBT from prior inspection to establish causes of failure.	L	L
15. Cost to obtain	10 or 12 years: \$6.00/square; 15 years: \$8.50/square; 20 years: \$13.50/square	None	None
16. Minimum charge	10 or 12 years: \$600; 15 years: \$850; 20 years: \$13.50	None	None

17. Ineligible structure or building use	Cold-storage; coolers; freezer buildings; high-humidity structures, like swimming pools, laundry facilities; restaurants, storage silos, and heated tank structures must be reviewed before acceptability.	Coolers, cold-storage, or freezer buildings	Coolers, cold-storage, or freezer buildings
18. Pre-construction notice and approval requirements	Fourteen days prior to start of construction, the contractor must complete and submit Form MBT-103 Warranted System Proposal and Survey for technical review before acceptance of roof system application.	None required.	None required.
19. Approved, authorized, or licensed applicator	Yes	No	No
20. Job inspection policy	MBT field technical staff makes on-site inspections prior, at least two times during application, and after application, as well as two years after issuance of warranty; no charge	No on-site inspections	No on-site inspections
21. Contractor's post-installation obligation	Contractor obligated to make repairs to workmanship deficiencies and all leaks for two years.	None; material-only warranty	None; material-only warranty
22. Backed by named insurance or surety	No	No; MBT indicates that it carries \$100 million general liability insurance covering its warranty obligations.	No; MBT indicates that it carries \$100 million general liability insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	MBT manufactures and sells the product.	MBT manufactures and sells product.	MBT manufactures and sells product.
24. Conditions for renewal or extension	Renewal at MBT's discretion	No renewal provision	No renewal provision
25. Assignability	Not assignable; warranty accrues to original owner named in the warranty and shall not accrue to the benefit of, or be assignable to any tenant, successor, purchaser, or assignee of original owner.	Not assignable; warranty accrues to original owner named in warranty and shall not accrue to the benefit of or be assignable to any tenant, successor, purchaser, or assignee of original owner.	Not assignable; warranty accrues to original owner named in warranty and shall not accrue to the benefit of or be assignable to any tenant, successor, purchaser, or assignee of original owner.
26. Special features/conditions	Upon receipt of claim, MBT technical department will make on-site inspection. If leak condition is found to be from causes other than manufacturing defects or workmanship, MBT charges \$250/day plus expenses for inspection; otherwise, no charge. MBT shall be entitled to replace or repair at MBT's sole and exclusive discretion any component of MBT materials as deemed necessary, whether or not a claim has been made. The cost of such repair or replacement shall be borne by MBT unless repair or replacement results from causes excluded from warranty coverage. In which case the owner shall reimburse MBT for such costs. Refusal of owner to allow MBT to inspect repairs or replace materials or pay costs for repairs not covered by warranty terminates the warranty and relieves MBT from any further liability.	Roofing contractor must complete warranty registration and mail promptly along with proof of purchase to MBT offices to validate warranty.	Roofing contractor must complete warranty registration and mail promptly along with proof of purchase to MBT offices to validate warranty.
27. Executed by owner	Yes	No	No

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Monsey Bakor	Monsey Bakor	Monsey Bakor
2. Title, original publication date, and identifying symbol, if any	"Roofing Systems & Waterproofing Limited Warranty"; 09/96	"Limited Roofing & Waterproofing Product Warranty"; 09/96	"Gold Seal Roofing & Waterproofing Membrane Warranty"; 09/96
3. Product, specification, or system covered	Modified Plus Modified Bitumen roofing products and systems	Modified Plus Modified Bitumen roofing products and systems	Modified Plus Modified Bitumen roofing products and systems
4. Scope of coverage	Material only; Monsey Bakor warrants that it will, at its option, repair or replace free of charge any Monsey Bakor products that are found to be materially defective. The warranty covers only material defects in Monsey Bakor products that cause water leakage.	Material only; Monsey Bakor warrants that the Monsey Bakor product, when prepared and applied in accordance with specifications and directions and used under normal service conditions, will not break down or disintegrate.	Material and workmanship; Monsey Bakor warrants that the membrane system, including field and flashing membranes, will remain in a watertight condition. Only water leakage through the membrane shall be considered a defect covered under the warranty.
5. Length of coverage	12 years	12 years	12, 15, or 20 years (Monsey Bakor indicates that warranty coverage depends upon specification and specific product used. Standard term is 12 years).
6. Nature of remedy	Monsey Bakor's liability limited to replacement of materials and the cost of labor necessary to maintain or restore the surface to which the Monsey Bakor product is applied in a watertight condition.	Monsey Bakor shall refund to the owner all or part of the original cost of the product based upon a prorating schedule.	Monsey Bakor's liability limited to replacement of materials and cost of labor necessary to maintain or restore the surface to which the membrane is applied in a watertight condition.
7. Monetary limitations	None stated.	Refund to the owner shall be determined by multiplying the original cost of the product times (by) the unexpired fraction of the warranty period.	None stated
8. Notification requirements	Written notice of any material defect of the Monsey Bakor products within 30 days of the defect to Monsey Bakor, Cold Stream Road, Kimberton, PA 19442.	Written notice of any failure of the Monsey Bakor product within 30 days of failure to Monsey Bakor, Cold Stream Road, Kimberton, PA 19442	Written notice of any defect of the membrane within 30 days of the defect to Monsey Bakor, Cold Stream Road, Kimberton, PA 19442
9. Exclusive or additional remedy	Remedy provided in the warranty is the sole and exclusive remedy provided by Monsey Bakor to the owner for any and all claims arising under, in connection with, or in any way related to the Monsey Bakor products; excludes all other warranties, guarantees, conditions, and representations; excludes UCC warranties.	The warranty is in lieu of and excludes all other warranties, guarantees, conditions, and representations; excludes UCC warranties.	Remedy provided in the warranty is the sole and exclusive remedy provided by Monsey Bakor to the owner for any and all claims arising under, in connection with, or in any way related to the membrane or its installation; excludes all other warranties, guarantees, conditions, and representations; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision)	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 3, 4, 5, 8, 9, 11, 17, 19; also excludes normal wear and tear and aesthetic diminution.	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 19, 21; also excludes deterioration of flashings where water has been allowed to enter behind the base flashing from sources other than through the membrane or base flashing.	1, 3, 4, 5, 6, 8, 11, 12, 17; also excludes normal wear and tear and aesthetic diminution.
13. Wind coverage/exclusions	Monsey Bakor indicates that the warranty covers winds up to fresh gales, which are defined on the Beaufort Scale as winds ranging from 39 to 46 mph. The warranty excludes roof damage from fresh gale force winds.	No coverage for damage caused by wind	Monsey Bakor indicates that warranty covers roof damage resulting from wind speeds up to 55 mph. The warranty excludes damage caused by winds exceeding 55 mph as determined by the U.S. or Canadian Weather Bureau, depending on project location.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C, H, I, R	B, C, H, I, R	B, C, H, I, R
15. Cost to obtain	None	None	12 years: \$6.00/square; 15 years: \$10.00/square; 20 years: \$15.00 square
16. Minimum charge	Minimum roof size of 50 squares	None	12 years: \$300; 15 years: \$500; 20 years: \$750
17. Ineligible structure or building use	None	None	Cold-storage facilities; all residential buildings other than multiple dwellings

18. Pre-construction notice and approval requirements	None	None	The contractor must submit details of project, including deck construction, vapor retarder, insulation materials, and all flashing details prior to installation and obtain approval.
19. Approved, authorized, or licensed applicator	No	No	Yes
20. Job inspection policy	No on-site inspections	No on-site inspections	Monsey Bakor personnel make on-site inspections prior to, during (as often as required), and after application, as well as two years following completion; no charge.
21. Contractor's post-installation obligation	None; material-only warranty	None; material-only warranty	The contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Monsey Bakor indicates that it carries umbrella liability insurance covering its warranty obligations in the amount of \$10 million.	No; Monsey Bakor indicates that it carries umbrella liability insurance covering its warranty obligations in the amount of \$10 million.	No; Monsey Bakor indicates that it carries umbrella liability insurance covering its warranty obligations in the amount of \$10 million.
23. Issuing entity manufactures and/or sells products	Monsey Bakor manufacturers and sells the product.	Monsey Bakor manufacturers and sells the product.	Monsey Bakor manufacturers and sells the product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	The warranty is not assignable without Monsey Bakor's prior written consent.	The warranty is not assignable without Monsey Bakor's prior written consent.	The warranty is not assignable without Monsey Bakor's prior written consent.
26. Special features/conditions	Pursuant to the warranty, the owner authorizes Monsey Bakor to investigate or cause to be investigated the alleged material defect of the Monsey Bakor products on the owner's behalf. Should the alleged material defect or the remedy sought by the owner lie outside the scope of the warranty, the owner agrees to promptly reimburse Monsey Bakor for the cost of such investigation, including repair costs. The owner shall bear any expense of removing and replacing traffic walkways or other structures to allow repairs to be made when necessary.	Pursuant to the warranty, the owner authorizes Monsey Bakor to investigate or cause to be investigated the alleged material defect of the Monsey Bakor products on the owner's behalf. Should the alleged material defect or the remedy sought by the owner lie outside the scope of the warranty, the owner agrees to promptly reimburse Monsey Bakor for the cost of any such investigation, including repair costs. Monsey Bakor does not authorize any person, including its representatives, to make any representation or to offer any warranty, condition or guarantee in respect to the product other than this warranty.	Pursuant to the warranty, the owner authorizes Monsey Bakor to investigate or cause to be investigated the alleged material defect of the Monsey Bakor products on the owner's behalf. Should the alleged material defect or the remedy sought by the owner lie outside the scope of the warranty, the owner agrees to promptly reimburse Monsey Bakor for the cost of any such investigation, including repair costs. The owner shall bear any expense of removing and replacing traffic walkways or other structures to allow repairs to be made when necessary.
27. Executed by owner	Yes; the warranty does not come into force until receipt of a signed copy by Monsey Bakor and owner.	Yes; the warranty does not come into force until receipt of a signed copy by Monsey Bakor and owner.	Yes; the warranty does not come into force until receipt of a signed copy by Monsey Bakor and owner.

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Mule-Hide Products	Mule-Hide Products	Mule-Hide Products
2. Title, original publication date, and identifying symbol, if any	"Mule-Hide Membrane Material Warranty"; May 1, 1994	"Mule-Hide Products Co., Inc. Premium System Warranty for Commercial Buildings"; May 1, 1994	"Mule-Hide Products Co., Inc. Standard System Warranty for Commercial Buildings"; May 1, 1994
3. Product, specification, or system covered	EPDM Membranes, Hypalon Membranes, Thermoplastic (PVC) Membranes	EPDM systems: ballasted, mechanically attached, fully adhered; Hypalon systems: ballasted, mechanically attached, fully adhered; Thermoplastic (PVC) systems: mechanically attached, fully adhered	EPDM systems: ballasted, mechanically attached, fully adhered; Hypalon systems: ballasted, mechanically attached, fully adhered; Thermoplastic (PVC) systems: mechanically attached, fully adhered
4. Scope of coverage	Material only; Mule-Hide warrants that the Mule-Hide roofing membrane is free of manufacturing defects at the time of delivery, that the membrane will not prematurely deteriorate due to weathering to the extent that it becomes incapable of maintaining a watertight condition as a single-ply roofing membrane, and that the membrane is manufactured in accordance with the manufacturer's specifications.	Material and workmanship; Mule-Hide warrants that it will be responsible for the repair of leaks in the Mule-Hide Standard System. For purposes of this warranty, System means only the membrane, other components supplied by Mule-Hide, and will exclude the roof insulation, deck, support system, and metal flashings.	Material and workmanship; Mule-Hide warrants that it will be responsible for the repair of leaks in the Mule-Hide Standard System. For purposes of this warranty, System means only the membrane, other components supplied by Mule-Hide, and will exclude the roof insulation, deck, support system, and metal flashings.
5. Length of coverage	EPDM Membrane: 5, 10, 15, 20 years (black only); Hypalon membrane: 5, 10, 15 years; PVC Membrane: 5, 10, 15 years	10 or 15 years	10 or 15 years
6. Nature of remedy	If the membrane prematurely fails due to weathering or manufacturing defects, Mule-Hide will be liable for the cost of the material affected at the time of the claim, prorated for service to date of the claim. Mule-Hide will furnish owner repair material for the affected area or credit to be applied toward the purchase of a new membrane. Warranty does not cover the cost of installation of the repair material. Labor and accessories, including but not limited to flashings, adhesives and caulking are not covered.	The owner's remedies and Mule-Hide's liability shall be limited to Mule-Hide's repair of the system using methods determined to be suitable at Mule-Hide's discretion.	The owner's remedies and Mule-Hide's liability shall be limited to Mule-Hide's repair of the system using methods determined to be suitable at Mule-Hide's discretion.
7. Monetary limitations	The maximum prorated value allowed for repair or credit shall not exceed the original purchase price of the membrane.	None stated.	None stated.
8. Notification requirements	Written notification within 30 days of a failure in the membrane or purported defect by certified mail to Mule-Hide Products Co., Inc., P.O. Box 1057, Beloit, WI 53512-1057, Attention: Warranty Department	Written notice to Mule-Hide and contractor within ten days after owner or any of its agents discover or a reasonable person in owner's or agent's position would have discovered any leak.	Written notice to Mule-Hide and contractor within ten days after owner or any of its agents discover or a reasonable person in owner's or agent's position would have discovered any leak.
9. Exclusive or additional remedy	Warranty and remedies provided are exclusive and in lieu of any other remedy or warranty, whether written, oral, implied or statutory; excludes UCC warranties.	Warranty is the owner's sole and exclusive remedy for failure of the Mule-Hide Standard System; warranty supersedes any and all other express warranties; Mule-Hide shall not be liable under any circumstance or theory of action, including contract, tort, products liability, or otherwise for any incidental or consequential damages, including loss of profit or damage to building, merchandise and loss or damage caused or contributed to by Mule-Hide's approval of the contractor or inspection of, or omission to inspect, the building roof; excludes UCC warranties.	Warranty is the owner's sole and exclusive remedy for failure of the Mule-Hide Standard System; warranty supersedes any and all other express warranties; Mule-Hide shall not be liable under any circumstance or theory of action, including contract, tort, products liability, or otherwise for any incidental or consequential damages, including loss of profit or damage to building, merchandise and loss or damage caused or contributed to by Mule-Hide's approval of the contractor or inspection of, or omission to inspect, the building roof; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Mule-Hide's determination	Mule-Hide's determination (See Special Features/ Conditions.)	Mule-Hide's determination (See Special Features/ Conditions.)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 12, 16, 23	1, 3, 4, 5, 7, 10, 11, 13, 16, 22, 23, 24. (Warranty also excludes the infestation or presence of insects or an animal.)	1, 3, 4, 5, 7, 10, 11, 13, 16, 22, 23, 24. (Warranty also excludes the infestation or presence of insects or an animal.)
13. Wind coverage/exclusions	Warranty excludes wind, hurricanes, and tornadoes. Mule-Hide indicates that there is no coverage for damage caused by wind.	Warranty excludes wind speeds in excess of 55 mph, hurricanes, and tornadoes. Mule-Hide indicates that warranty covers roof damage resulting from wind speeds up to 55 mph.	Warranty excludes wind speeds in excess of 55 mph, hurricanes, and tornadoes. Mule-Hide indicates that warranty covers roof damage resulting from wind speeds up to 55 mph.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C	B, C, F (warranty references owner's care and maintenance information), G, K. Warranty also is cancelled if there is an internal positive pressure condition that causes or contributes to a partial or total failure of the roof.	B, C, F (warranty references owner's care and maintenance information), G, K. Warranty also is cancelled if there is an internal positive pressure condition that causes or contributes to a partial or total failure of the roof.
15. Cost to obtain	10 years: \$25.00; 20 years: \$2.00/square (EPDM black only)	10 years: \$8.00/square; 15 years: \$14.00/square	10 years: \$5.00/square for Hypalon, thermoplastics; \$6.00/square for EPDM
16. Minimum charge	10 years: \$25.00	10 years: \$800; 15 years: \$1,250	10 years: \$500; 15 years: \$900

17.	Ineligible structure or building use	None	Residences	Residences
18.	Pre-construction notice and approval requirements	Submit pre-job survey form and warranty application to Mule-Hide Products Co. prior to job commencement.	Submit pre-job survey form and warranty application to Mule-Hide Products Co. for approval prior to job commencement.	Submit pre-job survey form and warranty application to Mule-Hide Products Co. for approval prior to job commencement.
19.	Approved, authorized, or licensed applicator	No	Yes	Yes
20.	Job inspection policy	No on-site inspections	Mule-Hide field representative makes on site inspections prior to, during, and after completion and two years after issuance of warranty; no charge.	Mule-Hide field representative makes on site inspections prior to, during, and after completion and two years after issuance of warranty; no charge.
21.	Contractor's post-installation obligation	None; material-only warranty	Contractor is obligated to make repairs to workmanship deficiencies for two years.	Contractor is obligated to make repairs to workmanship deficiencies for two years.
22.	Backed by named insurance or surety	No; Mule-Hide indicates that it does not carry insurance covering its warranty obligations.	No; Mule-Hide indicates that it does not carry insurance covering its warranty obligations.	No; Mule-Hide indicates that it does not carry insurance covering its warranty obligations.
23.	Issuing entity manufactures and/or sells products	Mule-Hide sells the product only.	Mule-Hide sells the product only.	Mule-Hide sells the product only.
24.	Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25.	Assignability	No restrictions stated.	Warranty is not assignable by owner; however, Mule-Hide may authorize a new warranty if a written request for a new warranty is submitted to Mule-Hide by the owner and the owner is in good standing under warranty, the roof is inspected by Mule-Hide within a 30-day period prior to the proposed effective date of the new warranty and the condition of the roof is approved by Mule-Hide and an administration and reinspection fee in an amount determined by Mule-Hide is paid to Mule-Hide. A new warranty will then be issued to and executed by the new owner for the remaining term of warranty containing the terms and conditions required by Mule-Hide.	Warranty is not assignable by owner; however, Mule-Hide may authorize a new warranty if a written request for a new warranty is submitted to Mule-Hide by the owner and the owner is in good standing under warranty, the roof is inspected by Mule-Hide within a 30-day period prior to the proposed effective date of the new warranty and the condition of the roof is approved by Mule-Hide and an administration and reinspection fee in an amount determined by Mule-Hide is paid to Mule-Hide. A new warranty will then be issued to and executed by the new owner for the remaining term of warranty containing the terms and conditions required by Mule-Hide.
26.	Special features/conditions	No representative has the authority to make any representations or promises except as stated in warranty.	Any dispute, controversy, or claim between owner and Mule-Hide arising out of or related to warranty or the building shall be settled by final and binding arbitration in accordance with the rules of the American Arbitration Association for the Construction Industry. A reinspection fee (in accordance with Mule-Hide's standard charges) shall be paid by Owner to Mule-Hide in the event the cause of the leak is not covered by the warranty. Mule-Hide is not liable for any promise, representation or other responsibility of the contractor. Warranty is not binding upon Mule-Hide unless executed by an executive officer of Mule-Hide. No representative or employee of Mule-Hide may vary this warranty without the prior written consent of the board of directors of Mule-Hide. The owner acknowledges that owner had a duty to exercise reasonable care in the selection of a contractor.	Any dispute, controversy, or claim between owner and Mule-Hide arising out of or related to warranty or the building shall be settled by final and binding arbitration in accordance with the rules of the American Arbitration Association for the Construction Industry. A reinspection fee (in accordance with Mule-Hide's standard charges) shall be paid by Owner to Mule-Hide in the event the cause of the leak is not covered by the warranty. Mule-Hide is not liable for any promise, representation or other responsibility of the contractor. Warranty is not binding upon Mule-Hide unless executed by an executive officer of Mule-Hide. No representative or employee of Mule-Hide may vary this warranty without the prior written consent of the board of directors of Mule-Hide. The owner acknowledges that owner had a duty to exercise reasonable care in the selection of a contractor.
27.	Executed by owner	No	Yes; owner expressly accepts Mule-Hide's terms, conditions, and limitations.	Yes; owner expressly accepts Mule-Hide's terms, conditions, and limitations.

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20. Job inspection policy	Olympic authorized representative makes on-site inspections after application and prior to issuance of warranty; "spot check" inspections are made after two years; no charge.	No on-site inspections.	PRS employee or an approved roof auditor performs on-site inspections during application (depending on job size), after completion, prior to issuance of guaranty, as well as two years after issuance of guaranty; no charge.
21. Contractor's post-installation obligation	The contractor is obligated to make repairs to workmanship deficiencies for two years	None; material-only warranty	Contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No	No; PRS indicates that it does not carry insurance covering its warranty obligations.	No; PRS indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Olympic Rubber Roofing Systems manufactures and sells the product.	PRS manufactures and sells product.	PRS manufactures and sells product
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	No restrictions stated; warranty requires that Olympic be notified in writing within 30 days upon transfer of ownership.	No restrictions stated.	No restrictions stated.
26. Special features/conditions			<p>Owner shall be invoiced for reasonable repair costs for repairs and a nominal inspection charge if leaks reported to PRS are a result of causes not covered by guaranty.</p> <p>In the event an emergency situation exists, owner may make necessary temporary repairs, either directly or by contacting the original roofing contractor. Upon investigation by a PRS representative, owner shall be reimbursed for reasonable emergency repair costs if the leak is the responsibility of PRS.</p> <p>In the event PRS must make repairs, owner is responsible for providing a clean roof surface such that repairs can be made. This shall include, but not be limited to, the removal of water, ice, snow, dirt, and debris, as well as pavers on inverted roof membrane systems, prior to permanent repairs being made.</p> <p>PRS' specifications and all details must be properly selected by an architect or an engineer to meet specific needs and the applicable design loads for each project. The issuance of this guaranty by PRS, the inspection of the system application for any other parts of the roofing assembly, or any review of project specifications or plans, does not extend the terms and conditions of the guaranty and shall not constitute any substitution of professional judgment required in connection with the design of this project by the building owner or its design professional.</p> <p>Contract is not a maintenance agreement or an insurance policy; routine inspections and maintenance of the system must be completed by the building owner on a regular basis and is owner's responsibility.</p> <p>In the event PRS, the roofing contractor, and the owner cannot agree as to responsibilities under the guaranty, the parties agree to submit any such disagreement to arbitration as an exclusive remedy for resolution of such disagreement. All parties specifically waive any litigation alternative for resolution of any such dispute. (a) Any arbitration shall proceed in accordance with the directions of a professional roofing consultant mutually selected by the parties. In the event the parties cannot agree on an arbitrator, each shall select an independent professional roofing consultant as their representative and these consultants shall, in turn, select another, unaffiliated professional roofing consultant who will serve as the arbitrator. (b) All costs of any arbitrator(s) shall be included in the final judgment of the arbitrator. (c) Once a decision is reached by any arbitrator, the prevailing party can pursue whatever judicial action would be appropriate to enforce such decision.</p>
27. Executed by owner	No	Yes; owner must execute and return to PRS the "Ten Year Limited Material Warranty" notification card.	Yes; owner and roofing contractor must acknowledge and accept the guaranty by signing.

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Performance Roof Systems, Inc. (PRS)	Performance Roof Systems, Inc. (PRS)	Premium Polymers, Incorporated
2. Title, original publication date, and identifying symbol, if any	"Derbigum Roof System Guaranty"; October 1, 1993	"Derbigum Roof Membrane Guaranty"; October 1, 1993	*Premium Polymers Premium-Ply Roofing System Warranty"; January 1992
3. Product, specification, or system covered	Derbigum XPS, Derbigum XPS/FR, Derbicolor XPS, Derbicolor XPS/FR, Derbigum GP, Derbicolor GP, Derbigum GP/FR, Derbicolor GP/FR, Derbibase	Derbigum XPS, Derbigum XPS/FR, Derbicolor XPS, Derbicolor XPS/FR, Derbigum GP, Derbicolor GP, Derbigum GP/FR, Derbicolor GP/FR, Derbibase	EPDM—Premium .045, Premium .060, Premium .045 Reinforced, Premium-Ply.
4. Scope of coverage	Material and workmanship; PRS guarantees that it will undertake all actions necessary to keep the PRS roof system in a watertight condition and will promptly repair deficiencies in the system's condition that could endanger the membrane's ability to remain watertight provided that such actions and repairs are a result of improper installation of the system, membrane performance, or ordinary wear and tear by the elements. The roof system only covers materials PRS sells or approves, other than metal. Building owner is responsible for any costs to repair any building component other than the system if leaks occur. The system consists of all roof components from the roof membrane to the roof deck, including approved base and ply sheets; all adhesives, insulations, and fasteners; but excluding roof decks and coatings or surfacing not factory applied.	Material and workmanship; PRS guarantees that it will undertake all actions necessary to keep the Derbigum roofing and flashing membrane in a watertight condition and will promptly repair deficiencies in the membrane's condition that could endanger the membrane's ability to remain watertight provided that such actions and repairs are a result of improper installation of the membrane, membrane performance, or ordinary wear and tear by the elements. The roof system only covers materials PRS sells or approves, other than metal. Building owner is responsible for any costs to repair any building component other than the membrane if leaks occur.	Material and workmanship: Premium warrants to repair leaks in the Premium Polymers Roofing System caused by defects in the Premium Roofing System's materials or workmanship of the Premium authorized contractor.
5. Length of coverage	10 years	10 years	5 or 10 years from date of acceptance, but not to extend beyond 5 or 10 years from date of substantial completion of roofing system.
6. Nature of remedy	PRS' exclusive responsibility and liability is to make repairs that may be necessary to maintain the roofing system in a watertight condition. PRS' liability is limited to the repair or replacement of any portion of the system damaged by leaks that are a result of covered causes (see Special Features/Conditions).	PRS' exclusive responsibility and liability is to make repairs that may be necessary to maintain the roofing system in a watertight condition. PRS' liability is limited to the repair or replacement of any portion of the membrane damaged by leaks that are a result of covered causes (see Special Features/Conditions).	Premium will repair leaks in the Premium roofing system.
7. Monetary limitations	No limit to PRS' expenditures for damages covered by this guaranty.	No limit to PRS' expenditures for damages covered by this guaranty.	None stated.
8. Notification requirements	Contact PRS immediately at (800) 727-9872 if roof leaks.	Contact PRS immediately at (800) 727-9872 if roof leaks.	Written notice within 30 days of discovery of any leaks in the Premium Roofing System to Premium's Warranty Administration Department
9. Exclusive or additional remedy	PRS disclaims any warranty other than what is specifically described in this guaranty. PRS shall not be liable for damages that are based upon negligence, breach of warranty, strict liability, or any other legal theory of liability other than the exclusive liability set forth in the guaranty; excludes UCC warranties.	PRS disclaims any warranty other than what is specifically described in this guaranty. PRS shall not be liable for damages that are based upon negligence, breach of warranty, strict liability, or any other legal theory of liability other than the exclusive liability set forth in the guaranty; excludes UCC warranties.	Remedies stated in warranty are the sole and exclusive remedies for failure of the Premium Roofing system; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability (See item no. 12 in Introduction.)	Neutral (See Special Features/Conditions.)	Neutral (See Special Features/Conditions.)	Premium's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 17, 22, 24; also excludes damages resulting from vermin, etc.	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 17, 22, 24; also excludes damages resulting from vermin, etc.	1, 3, 5, 7, 13, 16, 17, 18
13. Wind coverage/exclusions	No coverage for damage caused by wind	No coverage for damage caused by wind	Warranty excludes winds of peak gust speed of 55 mph or higher measured at 10 meters above ground, hurricanes and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, F, N; warranty indicates that lack of regular and routine maintenance may void contract.	B, F, N; warranty indicates that lack of regular and routine maintenance may void contract.	B, C, F (see Special Features/Conditions), G
15. Cost to obtain	\$7.50/square	\$6.00/square	5 years: \$4.00/square; 10 years: \$6.00/square
16. Minimum charge	\$1,000	\$750	5 years: \$350; 10 years: \$600
17. Ineligible structure or building use	Condominiums or residential dwellings without prior PRS approval; patios, promenades, parking roofs; partial roof applications, phase construction, heated tanks, silo facilities, freezer, and cold-storage facilities	Condominiums or residential dwellings without prior PRS approval; patios, promenades, parking roofs; partial roof applications, phase construction, heated tanks, silo facilities, freezer, and cold-storage facilities	Residential structures; however, warranty is available for apartment houses, co-ops, condominiums and the like.
18. Pre-construction notice and approval requirements	PRS requires a 14-day guaranty application notification in order to verify specifications and to assign a roof auditor.	PRS requires a 14-day guaranty application notification in order to verify specifications and to assign a roof auditor.	None

	Yes	Yes	Yes	Yes
19. Approved, authorized, or licensed applicator				
20. Job inspection policy	PRS employee or an approved roof auditor performs on-site inspections during application (depending on job size), after completion, prior to issuance of guaranty, as well as two years after issuance of guaranty; no charge.	PRS employee or an approved roof auditor performs on-site inspections during application (depending on job size), after completion, prior to issuance of guaranty, as well as two years after issuance of guaranty; no charge.	Contractor obligated to make repairs to workmanship deficiencies for two years.	Premium technical representative or consultant makes one on-site inspection prior to, during and after application, prior to issuance of warranty; no charge.
21. Contractor's post-installation obligation	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.	No; PRS indicates that it does not carry insurance covering its warranty obligations.	Contractor obligated to make repairs due to materials and workmanship for two years.
22. Backed by named insurance or surety	No; PRS indicates that it does not carry insurance covering its warranty obligations.	No; PRS indicates that it does not carry insurance covering its warranty obligations.	PRS manufactures and sells product	No; Premium indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	PRS manufactures and sells product	PRS manufactures and sells product	No renewal provision	Premium sells product only.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No restrictions stated.	No renewal provision.
25. Assignability	No restrictions stated.	No restrictions stated.	Owner shall be invoiced for reasonable repair costs for repairs and a nominal inspection charge if leaks reported to PRS are a result of causes not covered by guaranty. In the event an emergency situation exists, owner may make necessary temporary repairs, either directly or by contacting the original roofing contractor. Upon investigation by a PRS representative, owner shall be reimbursed for reasonable emergency repair costs if the leak is the responsibility of PRS. In the event PRS must make repairs, owner is responsible for providing a clean roof surface such that repairs can be made. This shall include, but not be limited to, the removal of water, ice, snow, dirt, and debris, as well as pavers on inverted roof membrane systems, prior to permanent repairs being made. PRS' specifications and all details must be properly selected by an architect or an engineer to meet specific needs and the applicable design loads for each project. The issuance of this guaranty by PRS, the inspection of the system application for any other parts of the roofing assembly, or any review of project specifications or plans, does not extend the terms and conditions of the guaranty and shall not constitute any substitution of professional judgment required in connection with the design of this project by the building owner or its design professional. Guaranty is not a maintenance agreement or an insurance policy; routine inspections and maintenance of the system must be completed by the building owner on a regular basis and is owner's responsibility. In the event PRS, the roofing contractor, and the owner cannot agree as to responsibilities under the guaranty, the parties agree to submit any such disagreement to arbitration as an exclusive remedy for resolution of such disagreement. All parties specifically waive any litigation alternative for resolution of any such dispute. (a) Any arbitration shall proceed in accordance with the directions of a professional roofing consultant mutually selected by the parties. In the event the parties cannot agree on an arbitrator, each shall select an independent professional roofing consultant as their representative and these consultants shall, in turn, select another, unaffiliated professional roofing consultant who will serve as the arbitrator. (b) All costs of any arbitrator(s) shall be included in the final judgment of the arbitrator. (c) Once a decision is reached by any arbitrator, the prevailing party can pursue whatever judicial action would be appropriate to enforce such decision.	No restrictions stated.
26. Special features/conditions	Owner shall be invoiced for reasonable repair costs for repairs and a nominal inspection charge if leaks reported to PRS are a result of causes not covered by guaranty. In the event an emergency situation exists, owner may make necessary temporary repairs, either directly or by contacting the original roofing contractor. Upon investigation by a PRS representative, owner shall be reimbursed for reasonable emergency repair costs if the leak is the responsibility of PRS. In the event PRS must make repairs, owner is responsible for providing a clean roof surface such that repairs can be made. This shall include, but not be limited to, the removal of water, ice, snow, dirt, and debris, as well as pavers on inverted roof membrane systems, prior to permanent repairs being made. PRS' specifications and all details must be properly selected by an architect or an engineer to meet specific needs and the applicable design loads for each project. The issuance of this guaranty by PRS, the inspection of the system application for any other parts of the roofing assembly, or any review of project specifications or plans, does not extend the terms and conditions of the guaranty and shall not constitute any substitution of professional judgment required in connection with the design of this project by the building owner or its design professional. Guaranty is not a maintenance agreement or an insurance policy; routine inspections and maintenance of the system must be completed by the building owner on a regular basis and is owner's responsibility. In the event PRS, the roofing contractor, and the owner cannot agree as to responsibilities under the guaranty, the parties agree to submit any such disagreement to arbitration as an exclusive remedy for resolution of such disagreement. All parties specifically waive any litigation alternative for resolution of any such dispute. (a) Any arbitration shall proceed in accordance with the directions of a professional roofing consultant mutually selected by the parties. In the event the parties cannot agree on an arbitrator, each shall select an independent professional roofing consultant as their representative and these consultants shall, in turn, select another, unaffiliated professional roofing consultant who will serve as the arbitrator. (b) All costs of any arbitrator(s) shall be included in the final judgment of the arbitrator. (c) Once a decision is reached by any arbitrator, the prevailing party can pursue whatever judicial action would be appropriate to enforce such decision.	Owner shall be invoiced for reasonable repair costs for repairs and a nominal inspection charge if leaks reported to PRS are a result of causes not covered by guaranty. In the event an emergency situation exists, owner may make necessary temporary repairs, either directly or by contacting the original roofing contractor. Upon investigation by a PRS representative, owner shall be reimbursed for reasonable emergency repair costs if the leak is the responsibility of PRS. In the event PRS must make repairs, owner is responsible for providing a clean roof surface such that repairs can be made. This shall include, but not be limited to, the removal of water, ice, snow, dirt, and debris, as well as pavers on inverted roof membrane systems, prior to permanent repairs being made. PRS' specifications and all details must be properly selected by an architect or an engineer to meet specific needs and the applicable design loads for each project. The issuance of this guaranty by PRS, the inspection of the system application for any other parts of the roofing assembly, or any review of project specifications or plans, does not extend the terms and conditions of the guaranty and shall not constitute any substitution of professional judgment required in connection with the design of this project by the building owner or its design professional. Guaranty is not a maintenance agreement or an insurance policy; routine inspections and maintenance of the system must be completed by the building owner on a regular basis and is owner's responsibility. In the event PRS, the roofing contractor, and the owner cannot agree as to responsibilities under the guaranty, the parties agree to submit any such disagreement to arbitration as an exclusive remedy for resolution of such disagreement. All parties specifically waive any litigation alternative for resolution of any such dispute. (a) Any arbitration shall proceed in accordance with the directions of a professional roofing consultant mutually selected by the parties. In the event the parties cannot agree on an arbitrator, each shall select an independent professional roofing consultant as their representative and these consultants shall, in turn, select another, unaffiliated professional roofing consultant who will serve as the arbitrator. (b) All costs of any arbitrator(s) shall be included in the final judgment of the arbitrator. (c) Once a decision is reached by any arbitrator, the prevailing party can pursue whatever judicial action would be appropriate to enforce such decision.	Warranty states that it will be null and void if owner or lessee fails to use reasonable care in maintaining the roof, including the maintenance listed on the Premium card and maintenance guidelines provided with the warranty.	
27. Executed by owner	Yes; owner and roofing contractor must acknowledge and accept the guaranty by signing.	Yes; owner and roofing contractor must acknowledge and accept the guaranty by signing.	Yes; owner and roofing contractor must acknowledge and accept the guaranty by signing.	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Prospex Roofing Prod. Inc.	Prospex Roofing Prod. Inc.	Protective Coatings, Inc.
2. Title, original publication date, and identifying symbol, if any	Prospex Roofing Products Inc. "Guarantee"; 1982	Prospex Roofing Products Inc. "Guarantee"; 1988; Rev. January 1, 1988	"Republic Powdered Metals Geoflex PIB System Ten Year Warranty"; June 1, 1990
3. Product, specification, or system covered	Proseal FA, Proseal LL, Proseal MF, Proseal PMA	Proseal FA, Proseal LL, Proseal MF, Proseal PMA	Geoflex PIB (Polyisobutylene) Single-Ply System
4. Scope of coverage	Material and workmanship; Prospex guarantees that it will investigate and repair leaks in the Proseal Roofing membrane caused by defects in the roofing membrane supplied by Prospex or the workmanship of the Prospex-authorized roofing contractor.	Material only; Prospex covenants, agrees, and guarantees at its expense to replace any portion of the Proseal roofing membrane that has suffered actual leaks as a result of manufacturing defects in the Proseal roofing membrane.	Material and workmanship; RPM warrants that the Geoflex PIB System will remain free from leaks. Geoflex PIB system means all integral PIB field sheet and accessory PIB materials manufactured and supplied by RPM.
5. Length of coverage	5 or 10 years	10 years	10 years
6. Nature of remedy	Prospex will investigate and repair leaks in the Proseal roofing membrane.	Prospex shall supply and install or supervise the installation by a roofing contractor approved by it of Proseal roofing membrane of equal quality and an adequate quantity to re-place the defective portion of the Proseal roofing membrane.	RPM warrants that it will promptly correct leaks in any areas of Geoflex PIB system at its own expense.
7. Monetary limitations	Prospex's liability is not to exceed the original cost to the owner of the roofing membrane and its installation.	Prospex's liability to supply and install Proseal roofing membrane is not to exceed the purchaser's installation cost of the original Proseal roofing system.	None stated.
8. Notification requirements	Prospex shall have no obligation if owner fails to notify Prospex promptly of any leaks in the roofing membrane.	Written notice to Prospex specifying any defect in the manufacture of the Proseal roofing system after discovery of any leak or damage to the roof	Owner must notify RPM immediately and confirm notification in writing within 7 days of discovery of any leaks in the Geoflex PIB system.
9. Exclusive or additional remedy	Guarantee is in lieu of all other warranties.	Guarantee is in lieu of all other guarantees, agreements, warranties, conditions, representations or collateral agreements; seeks to exclude UCC warranties.	Remedy is sole and exclusive remedy available to building owner. Warranty is in lieu of any other guarantees and/or warranties, expressed or implied; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision)	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	None listed; guarantee applies only to leaks caused by defects in Proseal roofing membrane or workmanship of Prospex-authorized roofing contractor.	1, 2, 3, 4, 5, 6, 8, 10, 13, 16, 17, 18, 19	1, 3, 5, 6, 7, 10, 11, 12, 16, 17, 22, 23, 24
13. Wind coverage/exclusions	Prospex indicates that there is no coverage for damage caused by wind.	Warranty excludes gales, hurricanes, and tornadoes. [Prospex indicates that there is no coverage for damage caused by wind.]	Warranty excludes hurricanes and tornadoes. RPM indicates that damage as a result of wind is not covered by the warranty.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C, F, H, J, R	C, R	A, B, C, F, H, J, L, M
15. Cost to obtain	5 years: \$3.00/square; 10 years: \$6.00/square	None	\$5.00/square
16. Minimum charge	\$775	None	500
17. Ineligible structure or building use	None	None	Residential
18. Pre-construction notice and approval requirements	Contractor must complete preconstruction notice.	None	Contractor must be registered Geoflex applicator and submit notice of award form with job survey and details prior to shipment of materials and scheduling of technical service.

19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	Prospect field representative makes on-site inspections during application and after completion, prior to issuance of guarantee; \$600 charge for final inspection.	Prospect field representative makes on-site inspections during application and after completion, prior to issuance of guarantee; no charge.	RPM technical service representative makes on-site inspections during application (depending on job size, typically three times) and after application, as well as 18 months after issuance of warranty; no charge.
21. Contractor's post-installation obligation	Contractor obligated to make repairs to workmanship deficiencies for two years.	Although this is a material-only warranty, contractor is obligated to make repairs to materials and workmanship for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Prospect indicates that it does not carry insurance covering its warranty obligations.	No; Prospect indicates that it does not carry insurance covering its warranty obligations.	No; RPM indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Prospect manufactures and sells product.	Prospect manufactures and sells product.	Republic Powdered Metals, Inc. manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	No restrictions stated.	Guarantee is nonassignable and shall extend only to purchaser and/or owner of building at the time of sale.	Not transferable
26. Special features/conditions	Owner shall reimburse Prospect for all costs reasonably incurred by Prospect in locating and identifying the cause of an apparent leak if the leak is determined not to have been caused by a defect in Prospect roofing membrane or workmanship.	No change or modification of this guarantee shall be valid un-less in writing signed by Prospect.	Owner understands and agrees that the construction and interpretation of warranty shall be governed by the laws of the state of Ohio, excluding principles of conflicts of law.
27. Executed by owner	Yes	Yes	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Republic Powdered Metals, Inc. (RPM)	Republic Powdered Metals, Inc. (RPM)	Republic Powdered Metals, Inc. (RPM)
2. Title, original publication date, and identifying symbol, if any	"Republic Powdered Metals Geoflex PIB System Ten Year Warranty"; June 1, 1990	"Geoflex PIB System Fifteen Year Warranty"; 9/95, F-12	"Cooley C3 Ten Year Warranty"; 2/96, CY-10
3. Product, specification, or system covered	Geoflex PIB (Polyisobutylene) single-ply system	Geoflex PIB (Polyisobutylene) system	Cooley C3 Single-Ply System
4. Scope of coverage	Material and workmanship; RPM warrants that the Geoflex PIB system will remain free from leaks. Geoflex PIB system means all integral PIB field sheet and accessory PIB materials manufactured and supplied by RPM.	Material and workmanship; RPM warrants that the Geoflex PIB system will remain free from leaks and that, should a leak occur in any areas of the Geoflex PIB system, RPM warrants that it will promptly (within 72 hours of notification) correct such leaks at its own expense. Geoflex PIB System means all integral PIB field sheet and accessory PIB materials manufactured and supplied by RPM.	Material and workmanship; RPM warrants that the Cooley C3 system will remain free from leaks and that, should a leak occur in any area of the Cooley C3 system, RPM will promptly correct such leaks at its own expense. Cooley C3 System means all integral C3 field sheet and accessory C3 materials manufactured and supplied by RPM.
5. Length of coverage	10 years	15 years	10 years
6. Nature of remedy	RPM warrants that it will promptly correct leaks in any areas of Geoflex PIB system at its own expense.	RPM warrants that it will promptly (within 72 hours of notification) correct leaks in any areas of the Geoflex PIB system at its own expense.	RPM warrants that it will promptly correct leaks in any areas of the Cooley C3 system at its own expense.
7. Monetary limitations	None stated.	None stated.	None stated.
8. Notification requirements	The owner must notify RPM immediately and confirm notification in writing within 7 days of discovery of any leaks in the Geoflex PIB system.	The owner must notify RPM immediately upon the discovery of any leaks in the Geoflex PIB system and confirm notification in writing within seven days after such discovery.	The owner must notify RPM immediately upon the discovery of any leaks in the Cooley C3 system and confirm notification in writing within seven days after such discovery.
9. Exclusive or additional remedy	Remedy is sole and exclusive remedy available to building owner. Warranty is in lieu of any other guarantees and/or warranties, expressed or implied; excludes UCC warranties.	Remedy in the warranty is the sole and exclusive remedy available to the building owner so that RPM's repair constitutes fulfillment of all obligations. The warranty is in lieu of any other guarantees or warranties, expressed or implied; no representative, employee, or agent of RPM or any other person has any authority to modify or enlarge the scope of the warranty or to assume for RPM any additional or other liability in connection with the Geoflex PIB System; excludes UCC warranties.	Remedy in the warranty is the sole and exclusive remedy available to the building owner so that RPM's repair constitutes fulfillment of all obligations. The warranty is in lieu of any other guarantees or warranties, expressed or implied; no representative, employee, or agent of RPM or any other person has any authority to modify or enlarge the scope of the warranty or to assume for RPM any additional or other liability in connection with the Cooley C3 System; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision)	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 3, 5, 6, 7, 10, 11, 12, 16, 17, 22, 23, 24	1, 3, 5, 6, 7, 10, 11, 12, 15, 16, 17, 22, 23	1, 3, 5, 6, 7, 10, 11, 12, 15, 16, 17, 22, 23
13. Wind coverage/exclusions	The warranty excludes hurricanes and tornadoes. RPM indicates that damage as a result of wind is not covered by the warranty.	RPM indicates that there is no coverage for damage caused by wind. The warranty excludes hurricanes and tornadoes.	RPM indicates that there is no coverage for damage caused by wind. The warranty excludes hurricanes and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	A, B, C, F, H, J, L, M	A, B, C, F, H, I, L, M	A, B, C, F, H, I, L, M
15. Cost to obtain	\$5.00/square	\$10.00/square	\$5.00/square
16. Minimum charge	500	\$1,000	500
17. Ineligible structure or building use	Residential	Residential	Residential

18. Pre-construction notice and approval requirements	Contractor must be registered Geoflex applicator and submit notice of award form with job survey and details prior to shipment of materials and scheduling of technical service.	Yes	The contractor must be a registered C3 applicator and submit notice of award form with job survey and details prior to shipment of materials and scheduling technical services.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	RPM technical service representative makes on-site inspections during application (depending on job size, typically three times) and after application, as well as 18 months after issuance of warranty; no charge.	RPM technical service representative makes on-site inspections prior to, during application (typically three times) and after application, as well as two years after issuance of warranty; no charge.	RPM technical service representative makes on-site inspections prior to, during application (typically three times) and after application, as well as two years after issuance of warranty; no charge.
21. Contractor's post-installation obligation	The contractor is obligated to make repairs to workmanship deficiencies for two years.	The contractor is obligated to make repairs to workmanship deficiencies for three years.	The contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; RPM indicates that it does not carry insurance covering its warranty obligations.	No; RPM indicates that it does not carry insurance covering its warranty obligations.	No; RPM indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Republic Powdered Metals, Inc. manufactures and sells the product.	RPM manufactures and sells the product.	RPM manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Not transferable	The warranty is nontransferable.	The warranty is nontransferable.
26. Special features/conditions	Owner understands and agrees that the construction and interpretation of warranty shall be governed by the laws of the state of Ohio, excluding principles of conflicts of law.	The owner understands and agrees that the construction and interpretation of the warranty shall be governed by the laws of the state of Ohio, excluding principles of conflicts of law.	The owner understands and agrees that the construction and interpretation of the warranty shall be governed by the laws of the state of Ohio, excluding principles of conflicts of law.
27. Executed by owner	No	No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Republic Powdered Metals, Inc. (RPM)	Roofing Products International Inc. (RPI)
2. Title, original publication date, and identifying symbol, if any	"Cooley C3 Fifteen Year Warranty"; 8/96	"Limited Membrane Only Warranty"; RPI-54-692-5C
3. Product, specification, or system covered	Cooley C3 Single-Ply System	RPI EPDM .045 Black, .060 Black, .045 White, .060 White, RPI FR (Fire Retardant) EPDM .045 Black, .060 Black, .045 White, .060 White.
4. Scope of coverage	Material and workmanship: RPM warrants that the Cooley C3 system will remain free from leaks and that should a leak occur in any area of the Cooley C3 system, RPM will promptly correct such leaks at its own expense. Cooley C3 system means all integral C3 field sheet and accessory C3 materials manufactured and supplied by RPM.	Material and workmanship: RPI warrants to repair any leaks due to defects in the RPI Roofing System materials or in workmanship of the RPI-authorized roofing applicator.
5. Length of coverage	15 years	5, 10, or 15 years
6. Nature of remedy	RPM warrants that it will promptly correct leaks in any areas of the Cooley C3 system at its own expense.	RPI will repair leaks in the RPI Rubber Roofing System.
7. Monetary limitations	None stated.	RPI's obligation to remedy defects shall not exceed owner's original cost of materials and labor for installation of the RPI roofing system.
8. Notification requirements	The owner must notify RPM immediately upon discovery of any leaks in the Cooley C3 system and confirm notification in writing within seven days after such discovery.	Written notification within 30 days of discovery of any leaks, by certified mail, return receipt requested, to RPI at 29542 Manchester Drive, Elkhart, IN 46514, or other such address RPI notifies owner
9. Exclusive or additional remedy	The remedy in warranty is the sole and exclusive remedy available to the building owner so that RPM's repair constitutes fulfillment of all obligations. The warranty is in lieu of any other guarantees or warranties, expressed or implied; no representative, employee, or agent of RPM or any other person has any authority to modify or enlarge the scope of the warranty or to assume for RPM any additional or other liability in connection with the Cooley C3 system; excludes UCC warranties.	Warranty is in lieu of any and all other express warranties that are in conflict; no warranties that extend beyond what is stated on warranty document.
10. Inclusion of consequential damages	No	No
11. Determination of warranty applicability	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 3, 5, 6, 7, 10, 11, 12, 15, 16, 17, 22, 23	1, 3, 4, 6, 7, 11, 12, 16, 17, 18, 22. Warranty also states that RPI shall have no obligation if leaks or damages are caused by failure of owner to comply with every condition, exclusion, or limitation in the warranty document.

13. Wind coverage/exclusions	RPM indicates that there is no coverage for damage caused by wind. The warranty excludes hurricanes and tornadoes.	RPI indicates that there is no coverage for damage caused by wind.	RPI indicates that warranty covers roof damage resulting from wind speeds up to 39 mph. Warranty excludes gales, hurricanes, and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	A, B, C, F, H, I, L, M	None listed.	C
15. Cost to obtain	\$10.00/square	None	Ballasted systems: 5 years: \$5.00/square, 10 years: 8.00/square, 15 years: \$11.00/square; all other systems: 5 years: \$2.00/square; 10 years: \$4.00/square, 15 years: \$8.00/square
16. Minimum charge	\$1,000	None	Ballasted systems: 5 years: \$500, 10 years: \$750, 15 years: \$1,150; all other systems: 5 years: \$350, 10 years: \$500, 15 years: \$850
17. Ineligible structure or building use	Residential	None	Buildings not used for commercial purposes, including buildings used for residential, personal, family or household purposes; cold-storage buildings not approved prior to application; mechanically attached roofs on buildings more than four stories high
18. Pre-construction notice and approval requirements	The contractor must be registered C3 applicator and submit notice of award form with job survey and details prior to shipment of materials and scheduling technical services.	None	Submittal of job start notification form, RPI-91 or RPI-50, to RPI headquarters office for review by technical representative
19. Approved, authorized, or licensed applicator	Yes	No	Yes
20. Job inspection policy	RPM technical service representative makes on-site inspections during application (typically three times) and after application, as well as two years after issuance of warranty; no charge.	No on-site inspections	RPI technical representative makes on-site inspection after application, prior to issuance of warranty; no charge.
21. Contractor's post-installation obligation	The contractor is obligated to make repairs to workmanship deficiencies for three years.	None; material-only warranty	Contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; RPM indicates that it does not carry insurance covering its warranty obligations.	No; RPI indicates that it does not carry insurance covering its warranty obligations.	No; RPI does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	RPM sells the product only.	RPI sells product only.	RPI sells product only.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	The warranty is nontransferable.	No restrictions stated.	No restrictions stated.
26. Special features/conditions	The owner understands and agrees that the construction and interpretation of the warranty shall be governed by the laws of the state of Ohio, excluding principles of conflicts of law.	Warranty states that no representative of RPI has authority to make any representations or promises except as stated in the warranty document itself.	No representative of RPI or any other person or entity has the authority to make any representations or promises except as stated in warranty document.
27. Executed by owner	No	No	No

Roof Membrane Warranties (Bull-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Sarnafil, Inc.	Sarnafil, Inc.	Schuller International, Inc.
2. Title, original publication date, and identifying symbol, if any	"10 Year System Warranty - Sarnafil Roofing Warranty for Commercial Building;" March 1995	"10 Year Standard Warranty - Sarnafil Roofing Warranty for Commercial Building;" March 1995	"Schuller Roofing Systems Gold Shield Roofing System Guarantee"; October 1994; SI-645-2 (10/94)
3. Product, specification, or system covered	Sarnafil G410, S327, G442, G476	Sarnafil G410, S327, G442, G476	BUR specifications: 4GIS, 4GIG, 4GNS, 4GNG, 4GLG, 4GIC, 4GNC, 4GIG-CT, 4GNG-CT, with Glas-Ply Premier Felts, installed over two layers of Fasco-board of FasCore insulation
4. Scope of coverage	Material and workmanship; Sarnafil warrants that it will repair leaks originating from the Sarnafil roofing membrane, Sarnatherm insulation, Sarnafil roofing accessories, or a defect in the Sarnafil authorized applicator's workmanship applied to the Sarnafil membrane.	Material and workmanship; Sarnafil warrants that it will repair leaks originating from the Sarnafil roofing membrane or Sarnafil roofing accessories or a defect in the Sarnafil authorized applicator's workmanship applied to the Sarnafil membrane.	Material and workmanship; Schuller guarantees that it will pay for the materials and labor required to promptly repair the roofing system to return it to a watertight condition if leaks occur due to ordinary wear and tear or deficiencies in any or all of the component materials of the roofing system or workmanship deficiencies in the application of the roofing system. Roof system components are Schuller membrane, flashing, insulation, and accessories; all other components of building are excluded.
5. Length of coverage	10 years	10 years	20 years for new construction or tear-off
6. Nature of remedy	Sarnafil's liability is limited to repair of Sarnafil's roofing membrane, Sarnatherm insulation, or accessory.	Sarnafil's liability is limited to Sarnafil's repair of roofing membrane or accessory.	Schuller will take prompt appropriate action to return the roofing system to a watertight condition.
7. Monetary limitations	None stated.	None stated.	The guarantee includes space for Schuller's maximum monetary obligation to be inserted. (Schuller indicates that for these specifications, Schuller's maximum liability is the original installed cost of the roof system.)
8. Notification requirements	Written notification to Sarnafil, Canton Commerce Center, Canton, MA, within 30 days of discovery of each leak in the roofing system.	Written notification to Sarnafil, Canton Commerce Center, Canton, MA, within 30 days of discovery of each leak in the roofing system.	Written notification to Schuller's Guarantee Services Department, P.O. Box 5108, Denver, CO, 80217, immediately upon discovery of leak and in no event later than 30 days after discovery of leak
9. Exclusive or additional remedy	Warranty is given in lieu of all other warranties; remedies stated in warranty are exclusive; seeks to exclude UCC warranties.	Warranty is given in lieu of all other warranties; remedies stated in warranty are exclusive; seeks to exclude UCC	The guarantee states that Schuller and its affiliates shall not be liable for any damages that are based upon negligence, breach of warranty, strict liability, or any other theory of liability other than exclusive liability set forth in guarantee; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Sarnafil's determination	Sarnafil's determination	Neutral; Schuller arranges inspection
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 6, 7, 8, 12, 17, 23. Roofing damage by wind-blown objects is also specifically excluded.	1, 2, 3, 6, 7, 8, 12, 17, 23. Roofing damage by wind-blown objects is also specifically excluded.	1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 18
13. Wind coverage/exclusions	Sarnafil indicates that warranty covers roof damage resulting from wind speeds up to 60 mph. Warranty excludes windstorms in excess of 60 mph, hurricanes, and tornadoes.	Sarnafil indicates that warranty covers roof damage resulting from wind speeds up to 60 mph. Warranty excludes windstorms in excess of 60 mph, hurricanes, and tornadoes.	Schuller indicates that the guarantee covers roof damage resulting from wind speeds up to 63 mph.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C, G	C, G	C, F, M (See Special Features/Conditions.)
15. Cost to obtain	\$6.00/square	\$6.00/square	\$12.50/square
16. Minimum charge	\$800	\$800	\$1,250
17. Ineligible structure or building use	Private residences	Private residences	Cold-storage buildings, private residences, storage silos, heated tanks
18. Pre-construction notice and approval requirements	Contractor is to submit a Sarnafil "notice of award" form to Sarnafil's technical department for review and acceptance prior to shipment of Sarnafil membrane and accessories.	Contractor is to submit a Sarnafil "notice of award" form to Sarnafil's technical department for review and acceptance prior to shipment of Sarnafil membrane and accessories.	The contractor is required to submit a guarantee application for approval 14 days prior to start of construction.

19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	Sarnafil field technical representatives make on-site inspections during application (determined by field representative schedule) and after completion, as well as two years after issuance of warranty; no charge.	Sarnafil field technical representatives make on-site inspections during application (determined by field representative schedule) and after completion, as well as two years after issuance of warranty; no charge.	Inspections made by field personnel prior, during, and after application as well as two years after issuance of guarantee; no charge
21. Contractor's post-installation obligation	The contractor is obligated to make repairs to workmanship deficiencies for two years.	The contractor is obligated to make repairs to workmanship deficiencies for two years.	The contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Sarnafil indicates that it does not carry insurance covering its warranty obligations.	No; Sarnafil indicates that it does not carry insurance covering its warranty obligations.	No; Schuller indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Sarnafil manufactures and sells the product.	Sarnafil manufactures and sells the product.	Schuller manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision.	No renewal provision.	No renewal provision
25. Assignability	The warranty is extended solely and exclusively to the owner of the building at the time the roofing membrane is installed and is not assignable or transferable unless approved in advance and in writing by Sarnafil and the costs to process the transfer and to inspect and repair the roof, if necessary, are paid for by the original owner.	The warranty is extended solely and exclusively to the owner of the building at the time the roofing membrane is installed and is not assignable or transferable unless approved in advance and in writing by Sarnafil and the costs to process the transfer and to inspect and repair the roof, if necessary, are paid for by the original owner.	The guarantee will be transferred by Schuller, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to Schuller as soon as practical, but no later than 30 days after the date of building ownership transfer.
26. Special features/conditions	Should the roofing membrane be concealed, the cost of exposure of the roofing membrane for purposes of Sarnafil's investigation and/or repair, such as removal and replacement of any paving or overburden, shall be the owner's responsibility. Any controversy or claim arising out of or relating to the warranty shall be settled by arbitration in Boston, Mass. by the American Arbitration Association in accordance with the Construction Industry Arbitration Rules, and judgment upon the arbitration award may be entered in any court having jurisdiction thereof. No representative of Sarnafil has authority to make any representations or promises except as stated in the warranty.	Should the roofing membrane be concealed, the cost of exposure of the roofing membrane for purposes of Sarnafil's investigation and/or repair, such as removal and replacement of any paving or overburden, shall be the owner's responsibility. Any controversy or claim arising out of or relating to the warranty shall be settled by arbitration in Boston, Mass. by the American Arbitration Association in accordance with the Construction Industry Arbitration Rules, and judgment upon the arbitration award may be entered in any court having jurisdiction thereof. No representative of Sarnafil has authority to make any representations or promises except as stated in the warranty.	To be eligible for this 20-year guarantee, a four-ply specification with GlasPly Premier Felt must be installed over two layers of either Schuller Fesco or FasCore insulation; the product must be either new construction or tear-off. In order to continue guarantee coverage, owner must implement a maintenance program prescribed by Schuller on the reverse side of the guarantee, including (a) maintaining a file showing all inspections and repairs; (b) inspecting roof at least semi-annually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing any damaged, loose, or poorly sealed metal flashing and valleys by an approved contractor; (f) repairing damaged masonry, poorly mounted counter-flashing, loose caulking, bad mortar joints, and any loose stone or tile coping that abut the roof; (g) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (h) examining roof top equipment to determine if they move excessively or leak; (i) checking building exterior for settlement or movement; and (j) recoating any cracked, flaking, or blistered areas of protective coatings. In the event of an emergency condition that requires immediate repair to avoid substantial damage to building or its contents, Schuller will reimburse the owner for repair expenses for essential temporary repairs that would have been Schuller's responsibility. All terms and conditions are to be construed under internal laws of Colorado. In the event Schuller pays for repair that are required due to acts or omissions of others, Schuller shall be subrogated to all rights of recovery of the building owner to the extent of the amount of the repairs. No one is authorized to change, alter, or modify the provision of the guarantee other than the Manager, Marketing and Technical Services or authorized delegate.
27. Executed by owner	Yes	Yes	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Schuller International, Inc.	Schuller International, Inc.	Schuller International, Inc.
2. Title, original publication date, and identifying symbol, if any	"Schuller Roofing Systems Gold Shield Roofing System Guarantee"; October 1994; SI-645-2 (10/94)	"Schuller Roofing Systems Gold Shield Roofing System Guarantee"; October 1994; SI-645-2 (10/94)	"Schuller Roofing Systems Gold Shield Roofing System Guarantee"; October 1994; SI-645-2 (10/94)
3. Product, specification, or system covered	BUR specifications 4GIS, 4GIG, 3GIC, 4GIC, 4GNC, 4GNS, with use of GlasPly Premier felts; DynaKap modified bitumen Specifications 2CID, 2CIG, 2CND, 2CNG, 3CID, 3CIG, 3CND, 3CNG. (See Special Features/Conditions.)	BUR specifications 4GIS, 4GIG, 3GIC, 4GNS, 4GNG, with use of GlasPly Premier Felts; DynaKap modified bitumen specifications 3CID, 3CIG, 3CND, 3CNG. (See Special Features/ Conditions.)	EPDM specifications: SE4B, SE6A, SE6B, SE6M, SE4B(T), SE6B(T), SE6M(T), SE6A(T), SE4RM, SE6RM, SE4RM(T), SE6RM(T)
4. Scope of coverage	Material and workmanship: Schuller guarantees that it will pay for the materials and labor required to promptly repair the roofing system to return it to a watertight condition if leaks occur due to ordinary wear and tear or deficiencies in any or all of the component materials of the roofing system or workmanship deficiencies in the application of the roofing system. Roof system components are Schuller membrane, flashing, insulation, and accessories; all other components of building are excluded.	Material and workmanship: Schuller guarantees that it will pay for the materials and labor required to promptly repair the roofing system to return it to a watertight condition if leaks occur due to ordinary wear and tear or deficiencies in any or all of the component materials of the roofing system or workmanship deficiencies in the application of the roofing system. Roof system components are Schuller membrane, flashing, insulation, and accessories; all other components of building are excluded.	Material and workmanship: Schuller guarantees that it will pay for the materials and labor required to promptly repair the roofing system to return it to a watertight condition if leaks occur due to ordinary wear and tear or deficiencies in any or all of the component materials of the roofing system or workmanship deficiencies in the application of the roofing system. Roof system components are Schuller membrane, flashing, insulation, and accessories; all other components of building are excluded.
5. Length of coverage	5 years for reroofing; 10 years for new construction or tear-off	20 years for new construction or tear-off	5, 10, or 15 years
6. Nature of remedy	Schuller will take prompt action to return the roofing system to a watertight condition.	Schuller will take prompt action to return the roofing system to a watertight condition.	Schuller will take prompt action to return the roofing system to a watertight condition.
7. Monetary limitations	Guarantee includes space for Schuller's maximum monetary obligation to be inserted. (Schuller indicates that for these specifications, Schuller's maximum liability is \$100 per square.)	Guarantee includes space for Schuller's maximum monetary liability to be inserted. (For the above listed specifications, Schuller indicates that the warranty can be obtained without a monetary limitation.)	The guarantee includes space for Schuller's maximum monetary obligation to be inserted. (Schuller indicates that for these specifications, Schuller's maximum liability is the original installed cost of the Schuller roof.
8. Notification requirements	Written notification to Schuller's Guarantee Services Department, P.O. Box 5108, Denver, CO 80217, immediately upon discovery of leak and in no event later than 30 days after discovery of leak.	Written notification to Schuller's Guarantee Services Department, P.O. Box 5108, Denver, CO 80217, immediately upon discovery of leak and in no event later than 30 days after discovery of leak.	Written notification to Schuller's Guarantee Services Department, P.O. Box 5108, Denver, CO 80217, immediately upon discovery of leak and in no event later than 30 days after discovery of leak.
9. Exclusive or additional remedy	Guarantee states that Schuller and its affiliates shall not be liable for any damages that are based upon negligence, breach of warranty, strict liability, or any other theory of liability other than exclusive liability set forth in guarantee; excludes UCC warranties.	Guarantee states that Schuller and its affiliates shall not be liable for any damages which are based upon negligence, breach of warranty, strict liability, or any other theory of liability other than exclusive liability set forth in guarantee; excludes UCC warranties.	The guarantee states that Schuller and its affiliates shall not be liable for any damages that are based upon negligence, breach of warranty, strict liability, or any other theory of liability other than exclusive liability set forth in guarantee; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral; Schuller arranges inspection.	Neutral; Schuller arranges inspection.	Neutral; Schuller arranges inspection.
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 3, 4, 5, 6, 7, 8, 10, 11, 13, 18	1, 3, 4, 5, 6, 7, 8, 11, 10, 13, 18	1, 3, 4, 5, 6, 7, 8, 10, 11, 13, 18
13. Wind coverage/exclusions	Schuller indicates that warranty covers roof damage resulting from wind speeds up to 63 mph.	Schuller indicates that warranty covers roof damage resulting from wind speeds up to 63 mph.	Schuller indicates that the warranty covers roof damage resulting from wind speeds up to 63 mph.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C, F, M. (See Special Features/Conditions.)	C, F, M. (See Special Features/Conditions.)	C, F, M. (See Special Features/Conditions.)
15. Cost to obtain	\$8.50/square	\$17.00/square	5 years: \$4.00/square; 10 years: \$8.00/square; 15 years: \$11.00/square
16. Minimum charge	\$850	\$1,700	5 years: \$400; 10 years: \$800; 15 years: \$1,100
17. Ineligible structure or building use	Cold-storage buildings, private residences, storage silos, heated tanks, buildings outside the United States	Cold-storage buildings, private residences, storage silos, heated tanks, buildings outside the United States	Cold-storage buildings, private residences, storage silos, heated tanks, buildings outside the United States.
18. Pre-construction notice and approval requirements	The contractor is required to submit a guarantee application for approval 14 days prior to start of construction.	The contractor is required to submit a guarantee application for approval 14 days prior to start of construction.	The contractor is required to submit a guarantee application for approval 14 days prior to start of construction.

	Yes	Yes	Yes
19. Approved, authorized, or licensed applicator			
20. Job inspection policy	Inspections made by field personnel prior, during, and after application as well as two years after issuance of guarantee; no charge.	Inspections made by field personnel prior, during, and after application as well as two years after issuance of guarantee; no charge.	Inspections made by field personnel prior, during, and after application as well as two years after issuance of guarantee; no charge.
21. Contractor's post-installation obligation	The contractor is obligated to make repairs to workmanship deficiencies for two years.	The contractor is obligated to make repairs to workmanship deficiencies for two years.	The contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Schuller indicates that it does not carry insurance covering its warranty obligations.	No; Schuller indicates that it does not carry insurance covering its warranty obligations.	No; Schuller indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Schuller manufactures and sells product.	Schuller manufactures and sells product.	Schuller manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Guarantee will be transferred by Schuller, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to Schuller as soon as practical, but no later than 30 days after the date of building ownership transfer.	Guarantee will be transferred by Schuller, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to Schuller as soon as practical, but no later than 30 days after the date of building ownership transfer.	The guarantee will be transferred by Schuller, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to Schuller as soon as practical, but no later than 30 days after the date of building ownership transfer.
26. Special features/conditions	<p>Specifications 4GIC, 4GNC, 4GNS and 4GNG are eligible for this guarantee in Manville's designated Region 3 only.</p> <p>In order to continue guarantee coverage, owner must implement a maintenance program prescribed by Schuller on the reverse side of guarantee, including: (a) maintaining a file showing all inspections and repairs; (b) inspecting roof at least semiannually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing any damaged, loose or poorly sealed materials by an approved contractor; (f) repairing damaged masonry, poorly mounted counterflashing, loose caulking, bad mortar joints, and any loose stone or tile coping that abut the roof; (g) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (h) examining roof top equipment to determine if they move excessively or leak; (i) checking building exterior for settlement or movement; and (j) recoating any cracked, flaking, or blistered areas of protective coatings.</p> <p>In the event of an emergency condition that requires immediate repair to avoid substantial damage to building or its contents, Schuller will reimburse the owner for repair expenses for essential temporary repairs that would have been Schuller's responsibility. All terms and conditions are to be construed under internal laws of Colorado.</p> <p>In the event Schuller pays for repairs, which are required due to acts or omissions of others, Schuller shall be subrogated to all rights of recovery of the building owner to the extent of the amount of the repairs. No one is authorized to change, alter, or modify the provisions of the guarantee other than the manager, marketing and technical services or authorized delegate.</p>	<p>Specifications 4GIC, 4GNC, 4GNS and 4GNG are eligible for this guarantee in Manville's designated Region 3 only.</p> <p>In order to continue guarantee coverage, owner must implement a maintenance program prescribed by Schuller on the reverse side of guarantee, including: (a) maintaining a file showing all inspections and repairs; (b) inspecting roof at least semiannually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing any damaged, loose or poorly sealed materials by an approved contractor; (f) repairing damaged masonry, poorly mounted counterflashing, loose caulking, bad mortar joints, and any loose stone or tile coping that abut the roof; (g) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (h) examining roof top equipment to determine if they move excessively or leak; (i) checking building exterior for settlement or movement; and (j) recoating any cracked, flaking, or blistered areas of protective coatings.</p> <p>In the event of an emergency condition that requires immediate repair to avoid substantial damage to building or its contents, Schuller will reimburse the owner for repair expenses for essential temporary repairs that would have been Schuller's responsibility. All terms and conditions are to be construed under internal laws of Colorado.</p> <p>In the event Schuller pays for repairs, which are required due to acts or omissions of others, Schuller shall be subrogated to all rights of recovery of the building owner to the extent of the amount of the repairs. No one is authorized to change, alter, or modify the provisions of the guarantee other than the manager, marketing and technical services or authorized delegate.</p>	<p>All specifications are eligible for the 5-, 10-, or 15-year guarantee. In order to continue guarantee coverage, owner must implement a maintenance program prescribed by Schuller on the reverse side of guarantee, including: (a) maintaining a file showing all inspections and repairs; (b) inspecting roof at least semiannually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing any damaged, loose or poorly sealed materials by an approved contractor; (f) repairing damaged masonry, poorly mounted counterflashing, loose caulking, bad mortar joints, and any loose stone or tile coping that abut the roof; (g) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (h) examining roof top equipment to determine if they move excessively or leak; (i) checking building exterior for settlement or movement; and (j) recoating any cracked, flaking, or blistered areas of protective coatings.</p> <p>In the event of an emergency condition that requires immediate repair to avoid substantial damage to building or its contents, Schuller will reimburse the owner for repair expenses for essential temporary repairs that would have been Schuller's responsibility. All terms and conditions are to be construed under internal laws of Colorado.</p> <p>In the event Schuller pays for repairs that are required due to acts or omissions of others, Schuller shall be subrogated to all rights of recovery of the building owner to the extent of the amount of the repairs. No one is authorized to change, alter, or modify the provisions of the guarantee other than the manager, marketing and technical services or authorized delegate.</p>
27. Executed by owner	No	No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Schuller International, Inc.	Schuller International, Inc.	Schuller International, Inc.
2. Title, original publication date, and identifying symbol, if any	"Schuller Roofing Systems Gold Shield Roofing System Guarantee"; October 1994; SI-645-2 (10/94)	"Schuller Roofing Systems Gold Shield Roofing System Guarantee"; October 1994; SI-645-2 (10/94)	"Schuller Roofing Systems Gold Shield Roofing System Guarantee"; October 1994; SI-645-2 (10/94)
3. Product, specification, or system covered	BUR specifications 4GIS, 3GIS, 4GIG, 3GIG, 4GNS, 3GNS, 4GNG, 3GNG, 4GLG, 3GLG, 4GNC, 3GNC, 4GIG-CT, 4GNG-CT, 3GIG-CT, 3GNG-CT, 2GID, 2GND, 2CID, 2CND, 3CID, 3CIG, 3CNG, 2PIN-W, 2PIS-W, 2PFN-W, 3PIN-W	DynaKap specifications 2GID, 2GND, 2CID, 2CND, 3CID, 3CND; APP Specifications 2PIN-W, 2PIS-W, 2PFN-W, 2CIN-W, 3PIN-W, 3CJN-W	BUR specifications 4GIS, 4GIG, 4GIC, 4GNS, 4GNG, with use of GlasPly Premier Felts and one layer of Fesco Board or FescoCore insulation; DynaKap modified bitumen specifications 3CID, 3CIG, 3CND, 3CNG. (See Special Features/Conditions.)
4. Scope of coverage	Material and workmanship; Schuller guarantees that it will pay for the materials and labor required to promptly repair the roofing system to return it to a watertight condition if leaks occur due to ordinary wear and tear or deficiencies in any or all of the component materials of the roofing system or workmanship deficiencies in the application of the roofing system. Roof system components are Schuller membrane, flashing, insulation, and accessories; all other components of building are excluded.	Material and workmanship; Schuller guarantees that it will pay for the materials and labor required to promptly repair the roofing system to return it to a watertight condition if leaks occur due to ordinary wear and tear or deficiencies in any or all of the component materials of the roofing system or workmanship deficiencies in the application of the roofing system. Roof system components are Schuller membrane, flashing, insulation, and accessories; all other components of building are excluded.	Material and workmanship; Schuller guarantees that it will pay for the materials and labor required to promptly repair the roofing system to return it to a watertight condition if leaks occur due to ordinary wear and tear or deficiencies in any or all of the component materials of the roofing system or workmanship deficiencies in the application of the roofing system. Roof system components are Schuller membrane, flashing, insulation, and accessories; all other components of building are excluded.
5. Length of coverage	5 or 10 years	5, 10, or 15 years	15 years for new construction or tear-off
6. Nature of remedy	Schuller will take prompt action to return the roofing system to a watertight condition.	Schuller will take prompt action to return the roofing system to a watertight condition.	Schuller will take prompt action to return the roofing system to a watertight condition.
7. Monetary limitations	The guarantee includes space for Schuller's maximum monetary obligation to be inserted. (Schuller indicates that for these specifications, Schuller's maximum liability is \$100 per square.)	The guarantee includes space for Schuller's maximum monetary obligation to be inserted. (Schuller indicates that for these specifications, Schuller's maximum liability is \$100 per square or the original installed cost of Schuller materials, at owner's discretion.)	The guarantee includes space for Schuller's maximum monetary obligation to be inserted. (For the above listed specifications, Schuller indicates that the warranty can be obtained without a monetary limitation.)
8. Notification requirements	Written notification to Schuller's Guarantee Services Department, P.O. Box 5108, Denver, CO 80217, immediately upon discovery of leak and in no event later than 30 days after discovery of leak.	Written notification to Schuller's Guarantee Services Department, P.O. Box 5108, Denver, CO 80217, immediately upon discovery of leak and in no event later than 30 days after discovery of leak.	Written notification to Schuller's Guarantee Services Department, P.O. Box 5108, Denver, CO 80217, immediately upon discovery of leak and in no event later than 30 days after discovery of leak.
9. Exclusive or additional remedy	The guarantee states that Schuller and its affiliates shall not be liable for any damages that are based upon negligence, breach of warranty, strict liability, or any other theory of liability other than exclusive liability set forth in guarantee; excludes UCC warranties.	The guarantee states that Schuller and its affiliates shall not be liable for any damages that are based upon negligence, breach of warranty, strict liability, or any other theory of liability other than exclusive liability set forth in guarantee; excludes UCC warranties.	The guarantee states that Schuller and its affiliates shall not be liable for any damages that are based upon negligence, breach of warranty, strict liability, or any other theory of liability other than exclusive liability set forth in guarantee; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral; Schuller arranges inspection.	Neutral; Schuller arranges inspection.	Neutral; Schuller arranges inspection.
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 3, 4, 5, 6, 7, 8, 10, 11, 13, 18	1, 3, 4, 5, 6, 7, 8, 10, 11, 13, 18	1, 3, 4, 5, 6, 7, 8, 10, 11, 13, 18
13. Wind coverage/exclusions	Schuller indicates that the warranty covers roof damage resulting from wind speeds up to 63 mph.	Schuller indicates that warranty covers roof damage resulting from wind speeds up to 63 mph.	Schuller indicates that warranty covers roof damage resulting from wind speeds up to 63 mph.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C, F, M. (See Special Features/Conditions.)	C, F, M. (See Special Features/Conditions.)	C, F, M. (See Special Features/Conditions.)
15. Cost to obtain	5 years: \$5.00/square; 10 years: \$6.00/square	5 years: \$5.00/square; 10 years: \$6.00/square; 15 years: \$8.50/square	\$12.50/square
16. Minimum charge	5 years: \$500; 10 years: \$600	5 years: \$500; 10 years: \$600; 15 years: \$850	\$1,250
17. Ineligible structure or building use	Cold-storage buildings, private residences, storage silos, heated tanks, buildings outside the United States	Cold-storage buildings, private residences, storage silos, heated tanks, buildings outside the United States	Cold-storage buildings, private residences, storage silos, heated tanks, buildings outside the United States.
18. Pre-construction notice and approval requirements	The contractor is required to submit a guarantee application for approval 14 days prior to start of construction.	The contractor is required to submit a guarantee application for approval 14 days prior to start of construction.	The contractor is required to submit a guarantee application for approval 14 days prior to start of construction.

	Yes	Yes	Yes
19. Approved, authorized, or licensed applicator			
20. Job inspection policy	Inspections made by field personnel prior, during, and after application as well as two years after issuance of guarantee; no charge.	Inspections made by field personnel prior, during, and after application as well as two years after issuance of guarantee; no charge.	Inspections made by field personnel prior, during, and after application as well as two years after issuance of guarantee; no charge.
21. Contractor's post-installation obligation	The contractor is obligated to make repairs to workmanship deficiencies for two years.	The contractor is obligated to make repairs to workmanship deficiencies for two years.	The contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Schuller indicates that it does not carry insurance covering its warranty obligations.	No; Schuller indicates that it does not carry insurance covering its warranty obligations.	No; Schuller indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Schuller manufactures and sells product.	Schuller manufactures and sells product.	Schuller manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	The guarantee will be transferred by Schuller, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to Schuller as soon as practical, but no later than 30 days after the date of building ownership transfer.	The guarantee will be transferred by Schuller, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to Schuller as soon as practical, but no later than 30 days after the date of building ownership transfer.	The guarantee will be transferred by Schuller, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to Schuller as soon as practical, but no later than 30 days after the date of building ownership transfer.
26. Special features/conditions	<p>All listed specifications are eligible for either the 5- or 10-year guarantee.</p> <p>In order to continue guarantee coverage, owner must implement a maintenance program prescribed by Schuller on the reverse side of guarantee, including: (a) maintaining a file showing all inspections and repairs; (b) inspecting roof at least semiannually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing any damaged, loose or poorly sealed materials by an approved contractor; (f) repairing damaged masonry, poorly mounted counterflashing, loose caulking, bad mortar joints, and any loose stone or tile coping that about the roof; (g) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (h) examining roof top equipment to determine if they move excessively or leak; (i) checking building exterior for settlement or movement; and (j) recoating any cracked, flaking, or blistered areas of protective coatings.</p> <p>In the event of an emergency condition that requires immediate repair to avoid substantial damage to building or its contents, Schuller will reimburse the owner for repair expenses for essential temporary repairs that would have been Schuller's responsibility. All terms and conditions are to be construed under internal laws of Colorado.</p> <p>In the event Schuller pays for repairs, which are required due to acts or omissions of others, Schuller shall be subrogated to all rights of recovery of the building owner to the extent of the amount of the repairs. No one is authorized to change, alter, or modify the provisions of the guarantee other than the manager, marketing and technical services or authorized delegate.</p>	<p>In order to continue guarantee coverage, owner must implement a maintenance program prescribed by Schuller on the reverse side of guarantee, including: (a) maintaining a file showing all inspections and repairs; (b) inspecting roof at least semiannually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing any damaged, loose or poorly sealed materials by an approved contractor; (f) repairing damaged masonry, poorly mounted counterflashing, loose caulking, bad mortar joints, and any loose stone or tile coping that about the roof; (g) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (h) examining roof top equipment to determine if they move excessively or leak; (i) checking building exterior for settlement or movement; and (j) recoating any cracked, flaking, or blistered areas of protective coatings.</p> <p>In the event of an emergency condition that requires immediate repair to avoid substantial damage to building or its contents, Schuller will reimburse the owner for repair expenses for essential temporary repairs that would have been Schuller's responsibility. All terms and conditions are to be construed under internal laws of Colorado.</p> <p>In the event Schuller pays for repairs, which are required due to acts or omissions of others, Schuller shall be subrogated to all rights of recovery of the building owner to the extent of the amount of the repairs. No one is authorized to change, alter, or modify the provisions of the guarantee other than the manager, marketing and technical services or authorized delegate.</p>	<p>Specifications 4GIC, 4GNC, 4GNS and 4GNG are eligible for this guarantee in Schuller's designated Region 3 only.</p> <p>Schuller's 15-year guarantee is limited to four-ply specifications installed over one layer of FesCore, used in new construction or tear-off projects.</p> <p>In order to continue guarantee coverage, owner must implement a maintenance program prescribed by Schuller on the reverse side of guarantee, including: (a) maintaining a file showing all inspections and repairs; (b) inspecting roof at least semiannually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing any damaged, loose or poorly sealed materials by an approved contractor; (f) repairing damaged masonry, poorly mounted counterflashing, loose caulking, bad mortar joints, and any loose stone or tile coping that about the roof; (g) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (h) examining roof top equipment to determine if they move excessively or leak; (i) checking building exterior for settlement or movement; and (j) recoating any cracked, flaking, or blistered areas of protective coatings.</p> <p>In the event of an emergency condition that requires immediate repair to avoid substantial damage to building or its contents, Schuller will reimburse the owner for repair expenses for essential temporary repairs that would have been Schuller's responsibility. All terms and conditions are to be construed under internal laws of Colorado.</p> <p>In the event Schuller pays for repairs, which are required due to acts or omissions of others, Schuller shall be subrogated to all rights of recovery of the building owner to the extent of the amount of the repairs. No one is authorized to change, alter, or modify the provisions of the guarantee other than the manager, marketing and technical services or authorized delegate.</p>
27. Executed by owner	No	No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Schuller International, Inc.	Schuller International, Inc.	Schuller International, Inc.
2. Title, original publication date, and identifying symbol, if any	"Schuller Roofing Systems Gold Shield Roofing System Guarantee"; October 1994; SI-645-2 (10/94)	"Schuller Roofing Systems Gold Shield Roofing System Guarantee"; October 1994; SI-645-2 (10/94)	"Schuller Roofing Systems Gold Shield Roofing System Guarantee"; October 1994; SI-645-2 (10/94)
3. Product, specification, or system covered	APP modified bitumen products: APPEX Classic FR Premium, Classic FR, Classic M, Classic S, 5S, 4S, 4M, 4MFR, 4.5M, 200, Bicolor, Tricolor, Tricolor MFR, when applied over one or two plies	APP Modified Bitumen Products: Bicolor or Tricolor when installed over two APPEX base sheets, utilizing three plies of material	APPEX 4.5M, utilizing two plies of material
4. Scope of coverage	Material and workmanship; Schuller guarantees that it will pay for the materials and labor required to promptly repair the roofing system to return it to a watertight condition if leaks occur due to ordinary wear and tear or deficiencies in any or all of the component materials of the roofing system or workmanship deficiencies in the application of the roofing system. Roofing system components are Schuller membrane, flashing, insulation, and accessories; all other components of building are excluded.	Material and workmanship; Schuller guarantees that it will pay for the materials and labor required to promptly repair the roofing system to return it to a watertight condition if leaks occur due to ordinary wear and tear or deficiencies in any or all of the component materials of the roofing system or workmanship deficiencies in the application of the roofing system. Roofing system components are Schuller membrane, flashing, insulation, and accessories; all other components of building are excluded.	Material and workmanship; Schuller guarantees that it will pay for the materials and labor required to promptly repair the roofing system to return it to a watertight condition if leaks occur due to ordinary wear and tear or deficiencies in any or all of the component materials of the roofing system or workmanship deficiencies in the application of the roofing system. Roofing system components are Schuller membrane, flashing, insulation, and accessories; all other components of building are excluded.
5. Length of coverage	5 years: any APPEX modified bitumen membrane product installed over one ply of felt or an approved substrate; 10 years: any APPEX modified bitumen membrane product installed over one ply or base sheet over an approved substrate; 12 years: any APPEX modified bitumen membrane product installed over one base ply and an approved substrate.	20 years	15 years
6. Nature of remedy	Schuller will take prompt appropriate action to return the roofing system to a watertight condition.	Schuller will take prompt appropriate action to return the roofing system to a watertight condition.	Schuller will take prompt appropriate action to return the roofing system to a watertight condition.
7. Monetary limitations	The guarantee includes space for Schuller's maximum monetary obligation to be inserted. (Schuller indicates that when one or two plies of felt are used with any APPEX product, Schuller's maximum liability is the original installed cost of the roof system.)	The guarantee includes space for Schuller's maximum monetary obligation to be inserted. (Schuller indicates that when one or two plies of felt are used with any APPEX product, Schuller's maximum liability is the original installed cost of the roof system.)	The guarantee includes space for Schuller's maximum monetary obligation to be inserted. (Schuller indicates that when one or two plies of felt are used with any APPEX product, Schuller's maximum liability is the original installed cost of the roof system.)
8. Notification requirements	Written notification to Schuller Roofing Systems, Guarantee Services Department, P.O. Box 5108, Denver, CO, 80217, immediately upon discovery of leak and in no event later than 30 days after discovery of leak	Written notification to Schuller Roofing Systems, Guarantee Services Department, P.O. Box 5108, Denver, CO, 80217, immediately upon discovery of leak and in no event later than 30 days after discovery of leak	Written notification to Schuller Roofing Systems, Guarantee Services Department, P.O. Box 5108, Denver, CO, 80217, immediately upon discovery of leak and in no event later than 30 days after discovery of leak
9. Exclusive or additional remedy	The guarantee states that Schuller and its affiliates shall not be liable for any damages that are based upon negligence, breach of warranty, strict liability, or any other theory of liability other than the exclusive liability set forth in guarantee; excludes UCC warranties.	The guarantee states that Schuller and its affiliates shall not be liable for any damages that are based upon negligence, breach of warranty, strict liability, or any other theory of liability other than the exclusive liability set forth in guarantee; excludes UCC warranties.	The guarantee states that Schuller and its affiliates shall not be liable for any damages that are based upon negligence, breach of warranty, strict liability, or any other theory of liability other than the exclusive liability set forth in guarantee; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral; Schuller arranges inspection.	Neutral; Schuller arranges inspection.	Neutral; Schuller arranges inspection.
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 3, 4, 5, 6, 7, 8, 10, 11, 13, 18	1, 3, 4, 5, 6, 7, 8, 10, 11, 13, 18	1, 3, 4, 5, 6, 7, 8, 10, 11, 13, 18
13. Wind coverage/exclusions	Schuller indicates that the warranty covers roof damage resulting from wind speeds up to 63 mph.	Schuller indicates that the warranty covers roof damage resulting from wind speeds up to 63 mph.	Schuller indicates that the warranty covers roof damage resulting from wind speeds up to 63 mph.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C, F, M (See Special Features/Conditions.)	C, F, M (See Special Features/Conditions.)	C, F, M (See Special Features/Conditions.)
15. Cost to obtain	5 years: \$5.00/square; 10 years: \$6.00/square; 12 years: \$8.50/square	\$17.00/square	\$12.50/square
16. Minimum charge	5 years: \$500; 10 years: \$600; 12 years: \$850	\$1,700	\$1,250
17. Ineligible structure or building use	Cold-storage buildings, private residences, storage silos, heated tanks	Cold-storage buildings, private residences, storage silos, heated tanks	Cold-storage buildings, private residences, storage silos, heated tanks

18. Pre-construction notice and approval requirements	The contractor is required to submit a guarantee application for approval 14 days prior to start of construction.	Yes	The contractor is required to submit a guarantee application for approval 14 days prior to start of construction.	Yes	The contractor is required to submit a guarantee application for approval 14 days prior to start of construction.
19. Approved, authorized, or licensed applicator	Inspections made by field personnel prior, during, and after application as well as two years after issuance of guarantee; no charge.	Yes	Inspections made by field personnel prior, during, and after application as well as two years after issuance of guarantee; no charge.	Yes	Inspections made by field personnel prior, during, and after application as well as two years after issuance of guarantee; no charge.
20. Job inspection policy	The contractor is obligated to make repairs to workmanship deficiencies for two years.	No	The contractor is obligated to make repairs to workmanship deficiencies for two years.	No	The contractor is obligated to make repairs to workmanship deficiencies for two years.
21. Contractor's post-installation obligation	No; Schuller indicates that it does not carry insurance covering its warranty obligations.	No	No; Schuller indicates that it does not carry insurance covering its warranty obligations.	No	No; Schuller indicates that it does not carry insurance covering its warranty obligations.
22. Backed by named insurance or surety	Schuller manufactures and sells product.	No	Schuller manufactures and sells product.	No	Schuller manufactures and sells product.
23. Issuing entity manufactures and/or sells products	No renewal provision	No	No renewal provision	No	No renewal provision
24. Conditions for renewal or extension	The guarantee will be transferred by Schuller, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to Schuller as soon as practical, but no later than 30 days after the date of building ownership transfer.	No	The guarantee will be transferred by Schuller, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to Schuller as soon as practical, but no later than 30 days after the date of building ownership transfer.	No	The guarantee will be transferred by Schuller, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to Schuller as soon as practical, but no later than 30 days after the date of building ownership transfer.
25. Assignability	In order to continue guarantee coverage, the owner must implement a maintenance program prescribed by Schuller on the reverse side of guarantee, including: (a) maintaining a file showing all inspections and repairs; (b) inspecting roof at least semiannually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing any damaged, loose or poorly sealed materials by an approved contractor; (f) repainting damaged masonry, poorly mounted counterflashing, loose caulking, bad mortar joints, and any loose stone or tile coping that about the roof; (g) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (h) examining roof top equipment to determine if they move excessively or leak; (i) checking building exterior for settlement or movement; and (j) recoating any cracked, flaking, or blistered areas of protective coatings.	No	In order to continue guarantee coverage, the owner must implement a maintenance program prescribed by Schuller on the reverse side of guarantee, including: (a) maintaining a file showing all inspections and repairs; (b) inspecting roof at least semiannually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing any damaged, loose or poorly sealed materials by an approved contractor; (f) repainting damaged masonry, poorly mounted counterflashing, loose caulking, bad mortar joints, and any loose stone or tile coping that about the roof; (g) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (h) examining roof top equipment to determine if they move excessively or leak; (i) checking building exterior for settlement or movement; and (j) recoating any cracked, flaking, or blistered areas of protective coatings.	No	In order to continue guarantee coverage, the owner must implement a maintenance program prescribed by Schuller on the reverse side of guarantee, including: (a) maintaining a file showing all inspections and repairs; (b) inspecting roof at least semiannually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing any damaged, loose or poorly sealed materials by an approved contractor; (f) repainting damaged masonry, poorly mounted counterflashing, loose caulking, bad mortar joints, and any loose stone or tile coping that about the roof; (g) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (h) examining roof top equipment to determine if they move excessively or leak; (i) checking building exterior for settlement or movement; and (j) recoating any cracked, flaking, or blistered areas of protective coatings.
26. Special features/conditions	In the event of an emergency condition that requires immediate repair to avoid substantial damage to building or its contents, Schuller will reimburse the owner for repair expenses for essential temporary repairs that would have been Schuller's responsibility. All terms and conditions are to be construed under internal laws of Colorado.	No	In the event of an emergency condition that requires immediate repair to avoid substantial damage to building or its contents, Schuller will reimburse the owner for repair expenses for essential temporary repairs that would have been Schuller's responsibility. All terms and conditions are to be construed under internal laws of Colorado.	No	In the event of an emergency condition that requires immediate repair to avoid substantial damage to building or its contents, Schuller will reimburse the owner for repair expenses for essential temporary repairs that would have been Schuller's responsibility. All terms and conditions are to be construed under internal laws of Colorado.
27. Executed by owner	In the event Schuller pays for repairs, which are required due to acts or omissions of others, Schuller shall be subrogated to all rights of recovery of the building owner to the extent of the amount of the repairs. No one is authorized to change, alter, or modify the provisions of the Guarantee other than the Manager, Marketing and Technical Services or authorized delegate.	No	In the event Schuller pays for repairs, which are required due to acts or omissions of others, Schuller shall be subrogated to all rights of recovery of the building owner to the extent of the amount of the repairs. No one is authorized to change, alter, or modify the provisions of the Guarantee other than the Manager, Marketing and Technical Services or authorized delegate.	No	In the event Schuller pays for repairs, which are required due to acts or omissions of others, Schuller shall be subrogated to all rights of recovery of the building owner to the extent of the amount of the repairs. No one is authorized to change, alter, or modify the provisions of the Guarantee other than the Manager, Marketing and Technical Services or authorized delegate.

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Seal-Dry/USA, Inc.	Seal-Dry/USA, Inc.	Seal-Dry/USA, Inc.
2. Title, original publication date, and identifying symbol, if any	"10 Year Limited Warranty"; revised 9/94	"10 Year Warranty"; revised 9/94	"15 Year Warranty"; revised 9/94
3. Product, specification, or system covered	Systems 3000, 5000	Systems 3000, 5000	Systems 3000, 5000
4. Scope of coverage	Material and workmanship; Seal-Dry warrants that the Seal-Dry roofing materials, if installed to Seal-Dry specifications, will provide watertight protection. Leaks in the Seal-Dry roof materials, which are the result of defects in material and/or workmanship, are covered. The warranty does not cover any other components of the roof or building. Caulking materials and sealants such as pitch pan fillers are considered maintenance items and are not covered by warranty.	Material and workmanship; Seal-Dry warrants that the Seal-Dry roofing materials, if installed to Seal-Dry specifications, will provide watertight protection. Leaks in the Seal-Dry roof materials, which are the result of defects in material and/or workmanship, are covered. The warranty does not cover any other components of the roof or building. Caulking materials and sealants such as pitch pan fillers are considered maintenance items and are not covered by warranty.	Material and workmanship; Seal-Dry warrants that the Seal-Dry roofing materials, if installed to Seal-Dry specifications, will provide watertight protection. Leaks in the Seal-Dry roof materials, which are the result of defects in material and/or workmanship, are covered. The warranty does not cover any other components of the roof or building. Caulking materials and sealants such as pitch pan fillers are considered maintenance items and are not covered by warranty.
5. Length of coverage	10 years	10 years	15 years
6. Nature of remedy	Seal-Dry will repair, or cause to be repaired (using Seal-Dry materials), leaks in the Seal-Dry materials, installed to Seal-Dry specifications, that are the result of defects in material and/or workmanship.	Seal-Dry will repair, or cause to be repaired (using Seal-Dry materials), leaks in the Seal-Dry materials, installed to Seal-Dry specifications, that are the result of defects in material and/or workmanship.	Seal-Dry will repair, or cause to be repaired (using Seal-Dry materials), leaks in the Seal-Dry materials, installed to Seal-Dry specifications, that are the result of defects in material and/or workmanship.
7. Monetary limitations	Seal-Dry's total liability shall not exceed the original cost of the Seal-Dry materials and the labor to install them.	None stated.	None stated.
8. Notification requirements	Written notice of any defect or leak in the roof within fifteen days of discovery	Written notice of any defect or leak in the roof within fifteen days of discovery	Written notice of any defect or leak in the roof within fifteen days of discovery
9. Exclusive or additional remedy	The owner's sole remedy to a defect in the materials and/or workmanship is Seal-Dry's repair of the leak; the warranty supersedes and is in lieu of all other warranties or guarantees; excludes UCC warranties.	The owner's sole remedy to a defect in the materials and/or workmanship is Seal-Dry's repair of the leak; the warranty supersedes and is in lieu of all other warranties or guarantees; excludes UCC warranties.	The owner's sole remedy to a defect in the materials and/or workmanship is Seal-Dry's repair of the leak; the warranty supersedes and is in lieu of all other warranties or guarantees; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Seal-Dry's determination (See Special Features/Conditions.)	Seal-Dry's determination (See Special Features/Conditions.)	Seal-Dry's determination (See Special Features/Conditions.)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 12, 16, 18. The warranty also excludes animals and atomic radiation.	1, 2, 3, 4, 5, 12, 16, 18. The warranty also excludes animals and atomic radiation.	1, 2, 3, 4, 5, 12, 16, 18. The warranty also excludes animals and atomic radiation.
13. Wind coverage/exclusions	The warranty covers roof damage resulting from wind speeds up to 47 mph; warranty excludes winds with peak gusts in excess of strong gales (defined as 47-54 mph on the Beaufort Scale), tornadoes, and hurricanes.	The warranty covers roof damage resulting from wind speeds up to 47 mph; warranty excludes winds with peak gusts in excess of strong gales (defined as 47-54 mph on the Beaufort Scale), tornadoes, and hurricanes.	The warranty covers roof damage resulting from wind speeds up to 47 mph; warranty excludes winds with peak gusts in excess of strong gales (defined as 47-54 mph on the Beaufort Scale), tornadoes, and hurricanes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C, F, G, I, J, M, N, R	B, C, F, G, I, J, M, N, R	B, C, F, G, I, J, M, N; the warranty also states that Seal-Dry has no obligation under warranty unless Seal-Dry agents or authorized installers are allowed access to roof to make inspections and repairs during regular working hours.
15. Cost to obtain	\$4.00/square	\$6.00/square	\$8.00/square
16. Minimum charge	\$450	\$450	\$450
17. Ineligible structure or building use	Residential single-dwelling homes eligible for membrane only warranty	Residential single-dwelling homes eligible for membrane only warranty	Residential single-dwelling homes eligible for membrane only warranty

18. Pre-construction notice and approval requirements	The contractor to provide pre-installation notice with building and job requirements and obtain approval prior to beginning installation.	Yes	The contractor to provide pre-installation notice with building and job requirements and obtain approval prior to beginning installation.	Yes
19. Approved, authorized, or licensed applicator	Yes		Yes	
20. Job inspection policy	Seal-Dry technical representative makes on-site inspections prior to, during (when necessary), and after application prior to issuance of warranty; two inspections no charge.		Seal-Dry technical representative makes on-site inspections prior to, during (when necessary), and after application prior to issuance of warranty; two inspections no charge.	Seal-Dry technical representative makes on-site inspections prior to, during (when necessary), and after application prior to issuance of warranty; two inspections no charge.
21. Contractor's post-installation obligation	The contractor obligated to make repairs to workmanship deficiencies for two years when a 10-year warranty is issued and for three years when a 15-year warranty is issued.		The contractor obligated to make repairs to workmanship deficiencies for two years when a 10-year warranty is issued and for three years when a 15-year warranty is issued.	The contractor obligated to make repairs to workmanship deficiencies for three years.
22. Backed by named insurance or surety	No; Seal-Dry indicates that it does not carry insurance covering its warranty obligations.		No; Seal-Dry indicates that it does not carry insurance covering its warranty obligations.	No; Seal-Dry indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Seal-Dry manufactures and sells the product.		Seal-Dry manufactures and sells the product.	Seal-Dry manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision		No renewal provision	No renewal provision
25. Assignability	The warranty may be reissued to a subsequent purchaser for the remainder of the term following an inspection and after indicated repairs have been made at the owner's expense. An inspection fee and a warranty issuance fee will be charged. The warranty shall not extend beyond the warranty period.		The warranty may be reissued to a subsequent purchaser for the remainder of the term following an inspection and after indicated repairs have been made at the owner's expense. An inspection fee and a warranty issuance fee will be charged. The warranty shall not extend beyond the warranty period.	The warranty may be reissued to a subsequent purchaser for the remainder of the term following an inspection and after indicated repairs have been made at the owner's expense. An inspection fee and a warranty issuance fee will be charged. The warranty shall not extend beyond the warranty period.
26. Special features/conditions	If Seal-Dry's investigation reveals that leaks are not covered under warranty, the owner shall be responsible for the cost of investigation and any repairs made by Seal-Dry. The warranty is governed by Arkansas law. No representative of Seal-Dry has any authority to bind Seal-Dry with any representation or warranty other than stated in warranty.		If Seal-Dry's investigation reveals that leaks are not covered under warranty, the owner shall be responsible for the cost of investigation and any repairs made by Seal-Dry. The warranty is governed by Arkansas law. No representative of Seal-Dry has any authority to bind Seal-Dry with any representation or warranty other than stated in warranty.	If Seal-Dry's investigation reveals that leaks are not covered under warranty, the owner shall be responsible for the cost of investigation and any repairs made by Seal-Dry. The warranty is governed by Arkansas law. No representative of Seal-Dry has any authority to bind Seal-Dry with any representation or warranty other than stated in warranty.
27. Executed by owner	Yes		Yes	Yes

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

Seal-Dry/USA, Inc.		Seal-Dry/USA, Inc.		Seal-Dry/USA, Inc.	
1. Identity of issuing entity		"5 Year Limited Warranty"; revised 9/94	"15 Year Limited Warranty"; revised 9/94	"5 Year Limited Warranty"; revised 9/94	
2. Title, original publication date, and identifying symbol, if any		Systems 3000, 5000	Systems 3000, 5000	Systems 3000, 5000	
3. Product, specification, or system covered		Material and workmanship; Seal-Dry warrants that the Seal-Dry roofing materials, if installed to Seal-Dry specifications, will provide watertight protection. Leaks in the Seal-Dry roof materials, which are the result of defects in material and/or workmanship, are covered. The warranty does not cover any other components of the roof or building. Caulking materials and sealants such as pitch pan fillers are considered maintenance items and are not covered by warranty.	Material and workmanship; Seal-Dry warrants that the Seal-Dry roofing materials, if installed to Seal-Dry specifications, will provide watertight protection. Leaks in the Seal-Dry roof materials, which are the result of defects in material and/or workmanship, are covered. The warranty does not cover any other components of the roof or building. Caulking materials and sealants such as pitch pan fillers are considered maintenance items and are not covered by warranty.	Material and workmanship; Seal-Dry warrants that the Seal-Dry roofing materials, if installed to Seal-Dry specifications, will provide watertight protection. Leaks in the Seal-Dry roof materials, which are the result of defects in material and/or workmanship, are covered. The warranty does not cover any other components of the roof or building. Caulking materials and sealants such as pitch pan fillers are considered maintenance items and are not covered by warranty.	
4. Scope of coverage		5 years	15 years	5 years	
5. Length of coverage		Seal-Dry will repair, or cause to be repaired (using Seal-Dry materials), leaks in the Seal-Dry materials, installed to Seal-Dry specifications, that are the result of defects in material and/or workmanship.	Seal-Dry will repair, or cause to be repaired (using Seal-Dry materials), leaks in the Seal-Dry materials, installed to Seal-Dry specifications, that are the result of defects in material and/or workmanship.	Seal-Dry will repair, or cause to be repaired (using Seal-Dry materials), leaks in the Seal-Dry materials, installed to Seal-Dry specifications, that are the result of defects in material and/or workmanship.	
6. Nature of remedy		Seal-Dry's total liability shall not exceed the original cost of the Seal-Dry materials and the labor to install them.	Seal-Dry's total liability shall not exceed the original cost of the Seal-Dry materials and the labor to install them.	Seal-Dry's total liability shall not exceed the original cost of the Seal-Dry materials and the labor to install them.	
7. Monetary limitations		Written notice of any defect or leak in the roof within fifteen days of discovery	Written notice of any defect or leak in the roof within fifteen days of discovery	Written notice of any defect or leak in the roof within fifteen days of discovery	
8. Notification requirements		The owner's sole remedy to a defect in the materials and/or workmanship is Seal-Dry's repair of the leak; the warranty supersedes and is in lieu of all other warranties or guarantees; excludes UCC warranties.	The owner's sole remedy to a defect in the materials and/or workmanship is Seal-Dry's repair of the leak; the warranty supersedes and is in lieu of all other warranties or guarantees; excludes UCC warranties.	The owner's sole remedy to a defect in the materials and/or workmanship is Seal-Dry's repair of the leak; the warranty supersedes and is in lieu of all other warranties or guarantees; excludes UCC warranties.	
9. Exclusive or additional remedy		No	No	No	
10. Inclusion of consequential damages		Seal-Dry's determination (See Special Features/Conditions.)	Seal-Dry's determination (See Special Features/Conditions.)	Seal-Dry's determination (See Special Features/Conditions.)	
11. Determination of warranty applicability		1, 2, 3, 4, 5, 12, 16, 18. The warranty also excludes animals and atomic radiation.	1, 2, 3, 4, 5, 12, 16, 18. The warranty also excludes animals and atomic radiation.	1, 2, 3, 4, 5, 12, 16, 18. The warranty also excludes animals and atomic radiation.	
12. Specific exclusions from coverage (See item no. 12 in Introduction.)		The warranty covers roof damage resulting from wind speeds up to 47 mph; warranty excludes winds with peak gusts in excess of strong gales (defined as 47-54 mph on the Beaufort Scale), tornadoes, and hurricanes.	The warranty covers roof damage resulting from wind speeds up to 47 mph; warranty excludes winds with peak gusts in excess of strong gales (defined as 47-54 mph on the Beaufort Scale), tornadoes, and hurricanes.	The warranty covers roof damage resulting from wind speeds up to 47 mph; warranty excludes winds with peak gusts in excess of strong gales (defined as 47-54 mph on the Beaufort Scale), tornadoes, and hurricanes.	
13. Wind coverage/exclusions		B, C, F, G, I, J, M, N; the warranty also states that Seal-Dry has no obligation under warranty unless Seal-Dry agents or authorized installers are allowed access to roof to make inspections and repairs during regular working hours.	B, C, F, G, I, J, M, N; the warranty also states that Seal-Dry has no obligation under warranty unless Seal-Dry agents or authorized installers are allowed access to roof to make inspections and repairs during regular working hours.	B, C, F, G, I, J, M, N; the warranty also states that Seal-Dry has no obligation under warranty unless Seal-Dry agents or authorized installers are allowed access to roof to make inspections and repairs during regular working hours.	
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)		None	\$6.00/square	None	
15. Cost to obtain		None	\$450	None	
16. Minimum charge		Residential single-dwelling homes eligible for membrane only warranty	Residential single-dwelling homes eligible for membrane only warranty	Residential single-dwelling homes eligible for membrane only warranty	
17. Ineligible structure or building use					

18. Pre-construction notice and approval requirements	The contractor to provide pre-installation notice with building and job requirements and obtain approval prior to beginning installation.	Yes	The contractor to provide pre-installation notice with building and job requirements and obtain approval prior to beginning installation.	Yes
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes	Yes
20. Job inspection policy	Seal-Dry technical representative makes on-site inspections prior to, during (when necessary), and after application prior to issuance of warranty; two inspections no charge.	No	Seal-Dry technical representative makes on-site inspections prior to, during (when necessary), and after application prior to issuance of warranty; two inspections no charge.	No
21. Contractor's post-installation obligation	No	No	No	No
22. Backed by named insurance or surety	No; Seal-Dry indicates that it does not carry insurance covering its warranty obligations.	No	No; Seal-Dry indicates that it does not carry insurance covering its warranty obligations.	No
23. Issuing entity manufactures and/or sells products	Seal-Dry manufactures and sells the product.	Seal-Dry manufactures and sells the product.	Seal-Dry manufactures and sells the product.	Seal-Dry manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision	No renewal provision
25. Assignability	The warranty may be reissued to a subsequent purchaser for the remainder of the term following an inspection and after indicated repairs have been made at the owner's expense. An inspection fee and a warranty issuance fee will be charged. The warranty shall not extend beyond the warranty period.	The warranty may be reissued to a subsequent purchaser for the remainder of the term following an inspection and after indicated repairs have been made at the owner's expense. An inspection fee and a warranty issuance fee will be charged. The warranty shall not extend beyond the warranty period.	The warranty may be reissued to a subsequent purchaser for the remainder of the term following an inspection and after indicated repairs have been made at the owner's expense. An inspection fee and a warranty issuance fee will be charged. The warranty shall not extend beyond the warranty period.	The warranty may be reissued to a subsequent purchaser for the remainder of the term following an inspection and after indicated repairs have been made at the owner's expense. An inspection fee and a warranty issuance fee will be charged. The warranty shall not extend beyond the warranty period.
26. Special features/conditions	If Seal-Dry's investigation reveals that leaks are not covered under warranty, the owner shall be responsible for the cost of investigation and any repairs made by Seal-Dry. The warranty is governed by Arkansas law. No representative of Seal-Dry has any authority to bind Seal-Dry with any representation or warranty other than stated in warranty.	If Seal-Dry's investigation reveals that leaks are not covered under warranty, the owner shall be responsible for the cost of investigation and any repairs made by Seal-Dry. The warranty is governed by Arkansas law. No representative of Seal-Dry has any authority to bind Seal-Dry with any representation or warranty other than stated in warranty.	If Seal-Dry's investigation reveals that leaks are not covered under warranty, the owner shall be responsible for the cost of investigation and any repairs made by Seal-Dry. The warranty is governed by Arkansas law. No representative of Seal-Dry has any authority to bind Seal-Dry with any representation or warranty other than stated in warranty.	If Seal-Dry's investigation reveals that leaks are not covered under warranty, the owner shall be responsible for the cost of investigation and any repairs made by Seal-Dry. The warranty is governed by Arkansas law. No representative of Seal-Dry has any authority to bind Seal-Dry with any representation or warranty other than stated in warranty.
27. Executed by owner	Yes	Yes	Yes	Yes

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Seaman Corporation		Seaman Corporation	Seaman Corporation
2. Title, original publication date, and identifying symbol, if any	"Warranty for Commercial Roofing"		"Warranty for Commercial Roofing"	"Materials Warranty for FiberTite Roofing Membrane"
3. Product, specification, or system covered	FiberTite Single-Ply Roof	FiberTite Single-Ply Roof	FiberTite Single-Ply Roof	FiberTite Single-Ply Roof
4. Scope of coverage	Material and workmanship; Seaman warrants that it will repair leaks in the FiberTite roofing system and/or defective workmanship provided by Seaman or its authorized FiberTite single-ply roof applicator.	Material and workmanship; Seaman warrants that it will repair leaks in the FiberTite roofing system and/or defective workmanship provided by Seaman or its authorized FiberTite single-ply roof applicator.	Material and workmanship; Seaman warrants that it will repair leaks in the FiberTite roofing system and/or defective workmanship provided by Seaman or its authorized FiberTite single-ply roof applicator.	Seaman warrants its FiberTite membrane materials to be in accordance with its published specifications and free from material defects in components and workmanship that would affect performance.
5. Length of coverage	5 or 10 years	5 or 10 years	15 years	10 years
6. Nature of remedy	Seaman will repair leaks at its expense.	Seaman will repair leaks at its expense.	Seaman will repair leaks at its expense.	Seaman's obligation is limited to, at its option, allowance for credit, repair, or replacement of any material that may prove defective under normal use and service. Seaman's liability is prorated such that Seaman's liability ranges from 100 percent if the defect occurs in the first year to 8 percent if the defect occurs in the tenth year.
7. Monetary limitations	Seaman's obligation over the lifetime of warranty shall not exceed the original cost of the installed roof.	Seaman's obligation over the lifetime of warranty shall not exceed the original cost of the installed roof.	Seaman's obligation over the lifetime of warranty shall not exceed the original cost of the installed roof.	Seaman's prorated liability is based upon the original sales price.
8. Notification requirements	Written notice to Seaman Corporation, 1000 Venture Blvd., Wooster, OH 44691, within 30 days after discovery of any leaks in the roofing system.	Written notice to Seaman Corporation, 1000 Venture Blvd., Wooster, OH 44691, within 30 days after discovery of any leaks in the roofing system.	Written notice to Seaman Corporation, 1000 Venture Blvd., Wooster, OH 44691, within 30 days after discovery of any leaks in the roofing system.	Written notification within 30 days of discovery of the alleged defect to Seaman Corporation.
9. Exclusive or additional remedy	The owner's sole and exclusive remedy for failure of the roofing system; no employee or representative has authority to make any representations other than those stated in warranty; excludes UCC warranties.	The owner's sole and exclusive remedy for failure of the roofing system; no employee or representative has authority to make any representations other than those stated in warranty; excludes UCC warranties.	The owner's sole and exclusive remedy for failure of the roofing system; no employee or representative has authority to make any representations other than those stated in warranty; excludes UCC warranties.	No other warranties applicable to material; corrections to non-conformities and defects as provided for in the warranty shall constitute fulfillment of all liabilities of Seaman to the customer, whether based on contract, negligence, or otherwise. Should the fabric prove defective to the extent that it precludes the remedying of warranted defects by repair or replacement, customer's sole and exclusive remedy shall be the refund of the purchase price of the fabric or the part thereof that is defective, upon its return to Seaman Corporation. No warranties or representations at any time by any sales representative, dealer, agent, or any person shall be effective to vary or expand the warranty; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No	No
11. Determination of warranty applicability	Seaman's good faith determination.	Seaman's good faith determination.	Seaman's good faith determination.	Seaman's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 3, 4, 5, 6, 7, 9, 10, 12, 18, 22, 24	1, 3, 4, 5, 6, 7, 9, 10, 12, 18, 22, 24	1, 3, 4, 5, 6, 7, 9, 10, 12, 18, 22, 24	1, 3, 13, 16, 18, 20, 21, 23
13. Wind coverage/exclusions	Warranty excludes hurricanes and tornadoes. Seaman indicates that warranty covers roof damage resulting from wind speeds up to 73 mph.	Warranty excludes hurricanes and tornadoes. Seaman indicates that warranty covers roof damage resulting from wind speeds up to 73 mph.	Warranty excludes hurricanes and tornadoes. Seaman indicates that warranty covers roof damage resulting from wind speeds up to 73 mph.	Warranty excludes hurricanes and tornadoes. Seaman indicates that warranty covers roof damage resulting from wind speeds up to 73 mph.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C	B, C	B, C	A, H. Warranty will also be void if any of the specific exclusions listed above occur or if material is exposed to "excessive pressures or sources," external forces, radiation, harmful fumes or foreign substances in the atmosphere, or any use not specifically for roofing application.

15. Cost to obtain	5 years: no charge; 10 years: \$4.00/square	\$7.00/square	None
16. Minimum charge	5 years: none; 10 years: \$400	\$750	None
17. Ineligible structure or building use	Roofing installations for personal, family, or household purposes.	Roofing installations for personal, family, or household purposes.	Roofing installations for personal, family, or household purposes.
18. Pre-construction notice and approval requirements	Contractor must submit FiberTite "request for warranty form/roof award information material submittal data" and obtain approval before material can be shipped.	Contractor must submit FiberTite "request for warranty form/roof award information material submittal data" and obtain approval before material can be shipped.	Contractor must submit FiberTite "request for warranty form/roof award information material submittal data" and obtain approval before material can be shipped.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	Seaman technical service representatives make on-site inspections prior to, during (interim inspections coordinated with representative's travel schedule), and after completion, prior to issuance of warranty; no charge.	Seaman technical service representatives make on-site inspections prior to, during (interim inspections coordinated with representative's travel schedule), and after completion, prior to issuance of warranty; no charge.	Seaman technical service representatives make on-site inspections prior to, during (interim inspections coordinated with representative's travel schedule), and after completion, prior to issuance of warranty; no charge.
21. Contractor's post-installation obligation	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Seaman indicates that it is self-insured.	No; Seaman indicates that it is self-insured.	No; Seaman indicates that it is self-insured.
23. Issuing entity manufactures and/or sells products	Seaman manufactures and sells the product.	Seaman manufactures and sells the product.	Seaman manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Warranty may be assignable to a subsequent owner, only if the original owner requests in writing that Seaman Corporation consent to an assignment to the purchaser of the building, which consent will not be unreasonably withheld.	Warranty may be assignable to a subsequent owner, only if the original owner requests in writing that Seaman Corporation consent to an assignment to the purchaser of the building, which consent will not be unreasonably withheld.	No restrictions stated.
26. Special features/conditions	The owner will be responsible for the cost of investigation if any leak is determined not to be covered by warranty.	The owner will be responsible for the cost of investigation if any leak is determined not to be covered by warranty.	All purchase orders for FiberTite Membrane will be deemed submitted subject to and in accordance with Seaman Corporation standard terms and conditions of sale.
27. Executed by owner	Yes	Yes	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Seaman Corporation	Seaman Corporation	Siplast, Inc.
2. Title, original publication date, and identifying symbol, if any	"Warranty for Commercial Roofing"	"Materials Warranty for FiberTite Roofing Membrane"	Siplast, Inc. "Roof Membrane Limited Warranty"; October 15, 1987
3. Product, specification, or system covered	FiberTite Single-Ply Roof	FiberTite Single-Ply Roof	Paratech
4. Scope of coverage	Material and workmanship; Seaman warrants that it will repair leaks in the FiberTite roofing system and/or defective workmanship provided by Seaman or its authorized FiberTite single-ply roof applicator.	Seaman warrants its FiberTite membrane materials to be in accordance with its published specifications and free from material defects in components and workmanship that would affect performance.	Siplast warrants that the roof membrane shall remain in watertight condition if roof membrane is installed according to Siplast specifications by an approved roofing contractor and the use of Siplast materials has been approved in advance; unclear from the document itself whether warranty covers workmanship. [Siplast indicates that the workmanship of the contractor is covered.]
5. Length of coverage	15 years	15 years	5 or 10 years
6. Nature of remedy	Seaman will repair leaks at its expense.	Seaman's obligation is limited to, at its option, allowance for credit, repair, or replacement of any material that may prove defective under normal use and service. Seaman's liability is prorated such that Seaman's liability ranges from 100 percent if the defect occurs in the first year to 5 percent if the defect occurs in the fifteenth year.	Siplast shall repair the roof membrane at its own expense. (See Special Features/Conditions.)
7. Monetary limitations	None stated.	Seaman's prorated liability is based upon the original sales price.	Siplast's liability for the cost of repairs shall not exceed in the aggregate over the life of the warranty a sum greater than the owner's original cost of the Siplast-supplied materials and the labor used to install such materials.
8. Notification requirements	Written notice to Seaman Corporation, 1000 Venture Blvd., Wooster, OH 44691, within 30 days after discovery of any leaks in the roofing system.	Written notification within 30 days of discovery of the alleged defect to Seaman Corporation.	Written notice within 30 days after leak is discovered or should by reasonable diligence have been discovered
9. Exclusive or additional remedy	The owner's sole and exclusive remedy for failure of the roofing system; no employee or representative has authority to make any representations other than those stated in warranty; excludes UCC warranties.	No other warranties applicable to material; corrections to non-conformities and defects as provided for in the warranty shall constitute fulfillment of all liabilities of Seaman to the customer, whether based on contract, negligence, or otherwise. Should the fabric prove defective to the extent that it precludes the remedying of warranted defects by repair or replacement, customer's sole and exclusive remedy shall be the refund of the purchase price of the fabric or the part thereof that is defective, upon its return to Seaman Corporation. No warranties or representations at any time by any sales representative, dealer, agent, or any person shall be effective to vary or expand the warranty; excludes UCC warranties.	Owner's exclusive remedy against Siplast regarding the roof membrane; excludes all other warranties; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Seaman's good faith determination.	Seaman's determination	Neutral (no provision)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 3, 4, 5, 6, 7, 9, 10, 12, 18, 22, 24	1, 3, 13, 16, 18, 20, 21, 23	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 15, 23
13. Wind coverage/exclusions	Warranty excludes hurricanes and tornadoes. Seaman indicates that warranty covers roof damage resulting from wind speeds up to 73 mph.	Warranty excludes hurricanes and tornadoes. Seaman indicates that warranty covers roof damage resulting from wind speeds up to 73 mph.	Warranty excludes windstorms, hurricanes and tornadoes.

14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C		A, H. Warranty will also be void if any of the specific exclusions listed above occur or if material is exposed to "excessive pressures or sources," external forces, radiation, harmful fumes or foreign substances in the atmosphere, or any use not specifically for roofing application.		C, H, R	
15. Cost to obtain		\$9.00/square		\$2.00/square		5 years, \$4.00/square; 10 years, \$5.00/square
16. Minimum charge		\$900		\$250		\$300 if less than 50 squares
17. Ineligible structure or building use		Roofing installations for personal, family, or household purposes.		Roofing installations for personal, family, or household purposes.		Cold-storage buildings and buildings with high-interior-humidity problems.
18. Pre-construction notice and approval requirements		Contractor must submit FiberTite "request for warranty form/roof award information material submittal data" and obtain approval before material can be shipped.		Contractor must submit FiberTite "request for warranty form/roof award information material submittal data" and obtain approval before material can be shipped.		A guarantee application form listing job conditions and requirements must be submitted and approved by Siplast technical department prior to shipment of materials.
19. Approved, authorized, or licensed applicator		Yes		Yes		Yes
20. Job inspection policy		Seaman technical service representatives make on-site inspections prior to, during (interim inspections coordinated with representative's travel schedule), and after completion, prior to issuance of warranty; no charge.		Seaman technical service representatives make on-site inspections prior to, during (interim inspections coordinated with representative's travel schedule), and after completion, prior to issuance of warranty; no charge.		Inspections by Siplast field technical staff made prior and during application periodically or as needed and after application; no charge.
21. Contractor's post-installation obligation		Contractor obligated to make repairs to workmanship deficiencies for two years.		Contractor obligated to make repairs to workmanship deficiencies for two years.		Contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety		No; Seaman indicates that it is self-insured.		No; Seaman indicates that it is self-insured.		No; Siplast does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products		Seaman manufactures and sells the product.		Seaman manufactures and sells the product.		Siplast manufactures and sells product.
24. Conditions for renewal or extension		No renewal provision		No renewal provision		No renewal provision
25. Assignability		Warranty may be assignable to a subsequent owner, only if the original owner requests in writing that Seaman Corporation consent to an assignment to the purchaser of the building, which consent will not be unreasonably withheld.		No restrictions stated.		No restrictions stated.
26. Special features/conditions		The owner will be responsible for the cost of investigation if any leak is determined not to be covered by warranty.		All purchase orders for FiberTite Membrane will be deemed submitted subject to and in accordance with Seaman Corporation standard terms and conditions of sale.		Warranty provides that the expense of removing and replacing traffic surfaces built over the roof shall be borne by the owner.
27. Executed by owner		Yes		No		No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Siplast, Inc.	Siplast, Inc.	Soprema Roofing and Waterproofing, Inc.
2. Title, original publication date, and identifying symbol, if any	Siplast, Inc. "Roof Membrane Guarantee", March 1, 1982	"Roof System Guarantee"; September 1996	Soprema Roofing and Waterproofing, Inc. "Limited Warranty For Roofing System"; 1984; Rev. 1990
3. Product, specification, or system covered	Paradiene 20/30, Veral, Paradiene 40, Parafor 50 LT	Siplast roof membrane, Siplast Zonolite, Insulperm, NVS, Insulcel and Zonocel roof insulation, and Zono-tite and NVS fasteners	Sopralene; 180, Flam 180, 180 Granules, Flam 180 Granules, 250, Flam 250, 250 Granules, Flam 250 Granules, 350, 350 Granules, Flam Stick, Flam 250 Alu, Flam 250 Copper, Jardin, Flam Antirock, Soprasal; Elastophene; Flam, Granules, Flam Granules, PS, 180, 180 PS, Flam Granules FR, Granules FR, Flam Stick, Colphena Granules; Sopralast; Aluminum, Copper, Stainless, Marmouth Aluminum.
4. Scope of coverage	Siplast guarantees roof membrane shall remain in watertight condition if roof membrane is installed according to Siplast specifications by an approved roofing contractor and the use of Siplast materials has been approved in advance; unclear from the document itself whether guarantee covers workmanship. (Siplast indicates that the workmanship of the contractor is covered.)	Material and workmanship: Siplast warrants that the roof system, comprised solely of the Siplast roof membrane, Siplast roof insulation, and Zono-tite or NVS fasteners, will remain in a watertight condition. Siplast warrants that the actual resistance to heat flow through the roof insulation will be at least 80% of design thermal resistance provided that the roofing membrane is maintained free of leaks; if leaks occur, the insulating performance of the roof insulation will be at least 80% of design thermal resistance within a two-year period following repair of the leak; the roof insulation will remain in a re-roofable condition should the roof membrane require replacement. Damage to the roof insulation caused by a fastener pull-out during removal of the old membrane is excluded; the roof insulation will not cause structural damage to the building as a result of its expansion from thermal or chemical action. (See Special Features/Conditions.)	Material and workmanship: Soprema warrants that the roofing membrane and flashing materials sold by Soprema will remain in a watertight condition and that the roofing system is free from defects in material and installation at the time of application and that the materials in the roofing system conform to Soprema's specifications.
5. Length of coverage	10 years, with additional 5-year and 10-year extension options available	10 years: all systems; 15 and 20 years available for Paradiene 20/30 and Veral systems	10 years all systems; 15 years on one-ply polyester/one-ply fiberglass systems; 20 years on two-ply polyester system.
6. Nature of remedy	Siplast shall repair the roof membrane at its own expense. (See Special Features/Conditions.)	If the roof systems does not remain in a watertight condition, Siplast will repair the roof system at its own expense. If the roof insulation fails to perform as guaranteed, Siplast shall, at its own expense, make or cause to be made repair or modifications to the roof insulation as Siplast deems appropriate so as to enable the roof insulation to perform as guaranteed. Siplast will be liable only for the cost of repair of the roof system by a Siplast approved contractor. The expense of removing and replacing traffic surfaces built over the roof shall be borne by owner.	Soprema will make repairs necessary to correct leaks in the roof membrane and flashing at its own expense, including all labor and materials, resulting from defects in material and faulty or improper installation in the roofing system or the failure of materials to meet Soprema specifications.
7. Monetary limitations	None stated.	None stated.	None stated.
8. Notification requirements	Written notice within 30 days after leak is discovered or should by reasonable diligence have been discovered	Written notice within 30 days after leak is discovered or should by reasonable diligence have been discovered.	Written notification within 30 days after any defect or leak is discovered or in the exercise of ordinary care should have been discovered to Soprema at 310 Quadral Drive, Wadsworth, OH 44281
9. Exclusive or additional remedy	Excludes other warranties; excludes UCC warranties.	The owner's exclusive remedy against Siplast with respect to the roof system; owner waives any and all other claims, actions, and demands relating to roof system; excludes all other guarantees; excludes UCC warranties.	Warranty is sole and exclusive remedy against Soprema; excludes all other warranties; Soprema not liable for special, incidental or consequential damages of any kind, whether arising from breach of contract, negligence, breach of warranty or any other legal theory including loss of use of building or equipment, cost of capital, cost of substitute equipment, facilities or services, lost profits, downtime costs, or claims of customers.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision)	Neutral	Neutral (no provision)
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7, 8, 9, 12, 15, 23	1, 2, 3, 4, 5, 6, 8, 9, 11, 12, 15, 23. Guarantee also specifically excludes chemical or organic deposits or other unusual occurrences.	1, 2, 3, 4, 5, 6, 7, 9, 10, 12, 13 (including exposure to chloro-fluorocarbons, solvents, hydrocarbons, gasoline, acids, corrosives, salts, turpentine, oil, fat, grease, smoke, or fumes), 16, 17, 20, 23. Warranty also excludes damage due to insect infestation, rodents, and vermin.
13. Wind coverage/exclusions	Warranty excludes windstorms, hurricanes, and tornadoes.	Siplast indicates guarantee covers roof damage resulting from winds, but does not indicate covered wind speed. Guarantee excludes windstorms, hurricanes, and tornadoes. (Beaufort scale defines storm as winds between 55 and 63 mph.)	Warranty excludes windstorms in excess of Beaufort Number 8 of the Beaufort Scale, hurricanes, and tornadoes. Warranty covers roof damage resulting from wind speeds up to 46 mph.

	C, H, R	C, H, R	A, B, C, F (including keeping all drains unclogged and properly working at all times, preventing excessive traffic across the roof and maintaining pitch pans and flashings in a watertight condition), H, N, R
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)			
15. Cost to obtain	None, if over 50 squares		10 years: no charge; 15 years: \$7.50/square; 20 years: \$12.50/square
16. Minimum charge	\$300 if less than 50 squares		None
17. Ineligible structure or building use	Cold-storage buildings and buildings with high-interior-humidity problems		None
18. Pre-construction notice and approval requirements	A guarantee application form listing job conditions and requirements must be submitted and approved by Siplast technical department prior to shipment of materials.		Soprema requires a pre-bid approval from the specifier and contractor. Once received and approved, the respective parties receive approval notification. (All approvals are registered with the home office).
19. Approved, authorized, or licensed applicator	Yes		Yes
20. Job inspection policy	Inspections by field technical staff prior to and during application as needed, after application and two years after issuance of warranty; no charge.		Soprema-authorized representative makes on-site inspections prior, during (depending on the circumstances), and after application prior to issuance of warranty, as well as two years after issuance of warranty; no charge.
21. Contractor's post-installation obligation	Contractor is obligated to make repairs to workmanship deficiencies for two years.		Contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Siplast does not carry insurance covering its warranty obligations.		No; Soprema indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Siplast manufactures and sells product.		Soprema manufactures and sells product.
24. Conditions for renewal or extension	Siplast offers 5-year and 10-year addendum options to extend the roof membrane guarantee. In order to obtain either the 5-year or 10-year extension, the owner must properly execute and return the Siplast Addendum to Roof Membrane Guarantee to Siplast prior to issuance of the original guarantee. In order for the option to become effective, within six months prior to expiration of the original guarantee, the owner shall notify the Siplast technical department, in writing, to arrange for a free job inspection that will be made within 30 days by Siplast. The owner is to have a Siplast-approved contractor effect property all maintenance and non-roof membrane-related repairs deemed necessary by Siplast in accordance with Siplast's instructions and is to provide written verification that all such maintenance and repairs have been completed. Siplast will then invoice the owner for the guarantee extension charge in effect at time of extension. Current charges to extend the guarantee are \$4.00/square for a 5-year extension and \$10.00/square for a 10-year extension. Owner shall promptly pay to Siplast the renewal charges, after inspection and written verification that all maintenance and repairs have been completed in accordance with Siplast's instructions and specifications.		No renewal provision
25. Assignability	No restrictions stated.		Warranty extends only to original owner and is not transferable or assignable without prior written consent of Soprema. If repairs are required, expense of removing and replacing traffic surfaces or other structures built over the roof shall be borne by owner.
26. Special features/conditions	Guarantee provides that the expense of removing and replacing traffic surfaces built over the roof shall be borne by the owner.		Any product sold by Soprema and not manufactured by Soprema is sold "as is" and without any warranty. Soprema disclaims any liability or responsibility for specifications, design, or construction of any portion of the building, including the roofing system, except as stated in warranty. Warranty shall be construed according to laws of Ohio.
27. Executed by owner	No		No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Southwestern Petroleum Corporation (SWEPCO)	Tamko Roofing Products, Inc.	Tamko Roofing Products, Inc.
2. Title, original publication date, and identifying symbol, if any	"SWEPCO Brand Roofing Products Limited Warranty"; October 1989; J-7433-08-90-BP	"Tam-Ply IV Labor and Material Guarantee (A Limited Warranty)"; Jan. 15, 1994; 997296	"Versa-Cap FR Labor and Material Guarantee (A Limited Warranty)"; Jan. 15, 1994; 997297
3. Product, specification, or system covered	Uni + Shield Single-Ply Roof System 302; Heavy Duty Cold Process BUR System 301; Uni + Shield II Cold Process BUR System 303	BUR specifications: 601, 602, 603, 604, 605, 607, 612, 614, 615, 616. (Specification 604 is only available in Regions 2 and 3.)	Specification Series 700
4. Scope of coverage	Material only; SWEPCO warrants that it will furnish sufficient roofing material to correct any roof leaks that occur in warranted applications solely as a result of a proven product defect. SWEPCO does not warrant that products will resist the effects of normal aging for the entire warranty period.	Material only; Tamko warrants that the Tam-Ply IV is free from manufacturing defects that result in leaks.	Material only; Tamko warrants that the Versa-Cap FR is free from manufacturing defects that result in leaks.
5. Length of coverage	Uni + Shield: 5 years without extended-life coating option; Uni + Shield: 12 years with extended-life coating option; PolyShield: 8 years without extended life coating option; PolyShield: 12 years with extended-life coating option	10 years	10 years
6. Nature of remedy	Replacement material only; SWEPCO will furnish materials required to repair leaks. Value of materials calculated at list prices current at the time of claim; under no circumstances are cash payments made.	If manufacturing defects result in leaks, Tamko shall have 90 days after receipt of notification to make repairs or cause repairs to be made to the Tam-Ply IV or replace the Tam-Ply IV (exclusive of non-Tamko flashing and metal work and materials used as a roof base over which the Tam-Ply IV is applied and repairs required by defects therein) as required to prevent leaks in the roof resulting from manufacturing defects.	If manufacturing defects result in leaks, Tamko shall have 90 days after receipt of notification to make repairs or cause repairs or replacement of the Versa-Cap FR to be made, (exclusive of non-Tamko flashing and metal work and materials used as a roof base over which the Versa-Cap FR is applied and repairs required by defects therein) as required to prevent leaks in the roof resulting from manufacturing defects.
7. Monetary limitations	Maximum aggregate value of replacement SWEPCO-brand roofing products recoverable over the life of the warranty shall not exceed the original invoiced price for warranted SWEPCO-brand roofing products.	Tamko's maximum liability shall be limited to repair and replacement of Tamko materials up to a maximum liability over the term of the warranty of \$60 for each installed roofing square for the first five years; reduced by 20 percent for each year following the initial five years of the warranty of that portion of the manufacturing defect which has resulted in leaks.	Tamko's maximum liability shall be limited to repair and replacement of Tamko materials up to a maximum liability over the term of the warranty of \$100 per square for the first five years, reduced by 20 percent for each year following the initial five years of the warranty of that portion of the Versa-Cap FR containing a manufacturing defect which has resulted in leaks.
8. Notification requirements	Owner shall notify SWEPCO promptly and provide written confirmation by registered mail to SWEPCO at P.O. Box 961005, Ft. Worth, TX 76161-0005, within 14 days of discovery of any leaks	Written notification by certified mail to Tamko at P. O. Box 1404, Joplin, MO 64802, within 30 days following discovery of any leaks alleged to result directly from manufacturing defects.	Written notification by certified mail to Tamko at P. O. Box 1404, Joplin, MO 64802 within 30 days following discovery of any leaks alleged to result directly from manufacturing defects.
9. Exclusive or additional remedy	Owner accepts warranty as its sole and exclusive remedy; owner expressly waives any and all other claims; excludes UCC warranties.	Guarantee is in lieu of any other obligations, guarantees, warranties, or liabilities on the part of Tamko; excludes UCC warranties.	Guarantee is in lieu of any other obligations, guarantees, warranties, or liabilities on the part of Tamko; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	Tamko's determination
11. Determination of warranty applicability	SWEPCO's determination	Tamko's determination	Tamko's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 15, 16, 17, 19, 20, 22, 23	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 (including exposure from aliphatic or aromatic solvents, chlorinated hydrocarbons, turpentine, oils, organic or inorganic polar materials, and exposure to ionized radiation or contamination by radioactivity from any nuclear source), 15, 19, 20, 22, 23	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 (including exposure from aliphatic or aromatic solvents, chlorinated hydrocarbons, turpentine, oils, organic or inorganic polar materials, and exposure to ionized radiation or contamination by radioactivity from any nuclear source), 15, 19, 20, 22, 23

13. Wind coverage/exclusions	Warranty excludes windstorms, gales, hurricanes, and tornadoes. [SWEPCO indicates that it does not have a definition of windstorm based upon wind speed.]	Warranty excludes strong gales, windstorms, violent storms, hurricanes, and tornadoes. [Tamko does not indicate that wind speeds are covered by guarantee.]
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	A, B, C, G, H, M. Also failure to promptly apply replacement products provided under warranty or provide written verification of application will automatically terminate warranty.	K
15. Cost to obtain	None	None
16. Minimum charge	None	None
17. Ineligible structure or building use	None	Individual residences, condominiums, cooperative apartments, heated tanks, storage silos, dry kilns, car wash buildings, swimming pools, and other structures with high-humidity conditions
18. Pre-construction notice and approval requirements	None	None
19. Approved, authorized, or licensed applicator	No	No
20. Job inspection policy	No on-site inspections	No on-site inspections
21. Contractor's post-installation obligation	None; material-only warranty	None; material-only warranty
22. Backed by named insurance or surety	No	No; Tamko indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	SWEPCO manufactures and sells PolyShield product; SWEPCO sells Uni + Shield product only.	Tamko Asphalt Products, Inc. manufactures and sells the product.
24. Conditions for renewal or extension	Uni + Shield 12-year warranty (with extended-life coating option) may be extended to 20 years. Extension is contingent upon satisfactory inspection and recoating with the original coating at the end of the 12-year term.	No renewal provision
25. Assignability	Any transfer of warranty to subsequent owners, purchasers, or tenants must be approved in writing by SWEPCO vice president of customer service.	Not transferable or assignable in any manner
26. Special features/conditions	Any replacement products due under warranty will be made FOB SWEPCO's principal place of business or nearest warehouse.	Tamko is not responsible for any cost related to the removal or abatement of any asbestos present in the existing roof to which the Versa-Cap FR is applied. Tamko requires that the owner initiate and follow a preventive maintenance program substantially in accordance with the preventive recommendations found on the reverse side of warranty. Specific maintenance items listed on reverse of guarantee must be performed at least semiannually to maintain guarantee coverage. Coatings over smooth surfaced products must be maintained to provide surface protection. No action for breach of guarantee shall be brought later than one year after any cause of action has occurred.
27. Executed by owner	No; however, SWEPCO's order form, incorporating the warranty, requires buyer's signature	No

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Tamko Roofing Products, Inc.	Tamko Roofing Products, Inc.	Tamko Roofing Products, Inc.
2. Title, original publication date, and identifying symbol, if any	"Premium Roofing System NDL Guarantee (A Limited Warranty)"; February 1995; JP22255 997226	"Roofing Systems Guarantee (A Limited Warranty)"; February 1995; 997225	"Commercial Roofing Labor and Material Guarantee (A Limited Warranty)"; April 15, 1996; JP21926 997295
3. Product, specification, or system covered	BUR specifications 503, 507; modified bitumen specifications 103, 108, 109, 103 HW, 108 HW, 109 HW, 103 FR, 108 FR, 109 FR. Base flashings must use Premium Grade Awaplan.	BUR specification 500 series, 600 series, 400 series; modified bitumen specification 100, 100 FR, 100 HW, 100C, 200, 200 FR, 200C, 700 series. This guarantee is intended for recover systems over existing roofs and certain other Tamko specifications.	Awaplan Premium FR, Awaplan Premium, Awaplan Heat Welding, Awaplan 170 FR, Awaplan 170, Awaplan Versa-Smooth, Awaflex, Versa-Flash 160, Tam-Glass Premium, Vapor-Chan, Glass-Base Sheet, Base-N-Ply, Versa-Base, Versa-Base FR
4. Scope of coverage	Material and workmanship; Tamko agrees to provide roof repair services for leaks in the roofing system (exclusive of metal work and non-Tamko-approved flashings) attributable to ordinary wear and tear of the roofing system or workmanship deficiencies in application to the extent necessary to return the roofing system to a watertight condition.	Material and workmanship; Tamko agrees to provide roof repair services for leaks in the roofing system (exclusive of metal work and non-Tamko-approved flashings) attributable to ordinary wear and tear of the roofing system or workmanship deficiencies in application to the extent necessary to return the roofing system to a watertight condition.	Material only; Tamko warrants that its product is free from manufacturing defects that result in leaks.
5. Length of coverage	20 years	5, 10, 12, or 15 years	5 years: Versa-Base, Versa-Base FR, Base-N-Ply, Glass-Base Sheet, Vapor Chan; 10 years: Tam-Glass Premium, Versa-Flash 160, Awaflex; 12 years: Awaplan, Versa-Smooth, Awaplan 170, Awaplan 170 FR; 15 years: Awaplan Heating Welding, Awaplan Premium, Awaplan Premium FR
6. Nature of remedy	Tamko will arrange for repair to the roofing membrane and base flashing. Tamko shall have no more than 90 days after receipt of notification of leaks to make or cause to be made repairs or replacement unless otherwise prevented by acts of God. Prior to the expiration of such 90-day period, Tamko will not be liable for any cost of repair or replacement unless Tamko has given its written approval.	Tamko will arrange for repair to the roofing membrane and base flashing. Tamko shall have no more than 90 days after receipt of notification of leaks to make or cause to be made repairs or replacement unless otherwise prevented by acts of God. Prior to the expiration of such 90-day period, Tamko will not be liable for any cost of repair or replacement unless Tamko has given its written approval.	If manufacturing defects result in leaks, Tamko shall have 90 days after receipt of notification to make repairs or cause repairs to be made to its product or will replace the Tamko product (exclusive of non-Tamko flashing and metal work and materials used as a roof base over which the Tamko product is applied and repairs required by defects therein) as required to prevent leaks in the roof resulting from manufacturing defects.
7. Monetary limitations	None stated.	Tamko inserts maximum total liability in guarantee form prior to issuance. Tamko indicates \$100/square is the usual limitation inserted by Tamko at the time of issuance of guarantee.	Tamko's maximum liability shall be limited to repair and replacement or the reasonable costs thereof of that portion of the Tamko product containing a manufacturing defect that has resulted in leaks.
8. Notification requirements	Written notice to Tamko no later than 30 days after discovery of any leaks.	Written notice to Tamko no later than 30 days after discovery of any leaks.	Written notice by certified mail to Tamko at P.O. Box 1404, Joplin, MO 64802, within 30 days following discovery of any leaks alleged to result directly from manufacturing defects.
9. Exclusive or additional remedy	The guarantee is in lieu of any other obligations, guarantees, warranties, or liability on the part of Tamko; excludes UCC warranties.	The guarantee is in lieu of any other obligations, guarantees, warranties, or liability on the part of Tamko; excludes UCC warranties.	The guarantee is in lieu of any other obligations, guarantees, warranties, or liability on the part of Tamko; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Tamko will solely determine the condition of watertightness.	Tamko will solely determine the condition of watertightness.	Tamko's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 6, 7, 8, 11, 12, 13 (including exposure from aliphatic or aromatic solvents, chlorinated hydrocarbons, turpentine, oils or organic or inorganic polar materials, and exposure to ionized radiation or contamination by radio-activity from any nuclear source), 15, 18, 20, 23	1, 2, 3, 4, 6, 7, 8, 11, 12, 13 (including exposure from aliphatic or aromatic solvents, chlorinated hydrocarbons, turpentine, oils or organic or inorganic polar materials, and exposure to ionized radiation or contamination by radio-activity from any nuclear source), 15, 18, 20, 23	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 (including exposure from aliphatic or aromatic solvents, chlorinated hydrocarbons, turpentine, oils, organic or inorganic polar materials, and exposure to ionized radiation or contamination by radioactivity from any nuclear source), 15, 19, 20, 22, 23.
13. Wind coverage/exclusions	The warranty excludes strong gales, windstorms, violent storms, hurricanes, and tornadoes. (Tamko does not indicate what wind speeds are covered by guarantee. Strong gales are defined on the Beaufort Scale as storms with winds between 55-63 mph and storms as having winds between 47 and 54 mph.)	The warranty excludes strong gales, windstorms, violent storms, hurricanes and tornadoes. Tamko does not indicate wind speeds covered by guarantee.	The warranty excludes strong gales, windstorms, violent storms, hurricanes, and tornadoes. (Tamko does not indicate what wind speeds are covered by guarantee. Strong gales are defined on the Beaufort Scale as storms with winds between 55-63 mph and storms as having winds between 47 and 54 mph.)

14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C, F, K	B (Tamko may, at its option, cancel the guarantee), C	K
15. Cost to obtain	\$17.50/square	5 years: \$4.00/square; 10 years: \$8.50/square; 12 years: \$9.00/square; 15 years: \$12.50/square	None
16. Minimum charge	\$1,200	5 years: \$400; 10 years: \$850; 12 years: \$850; 15 years: \$1,000	None
17. Ineligible structure or building use	Individual residences, condominiums, cooperative apartments, heated tanks, storage silos, dry kilns, car wash buildings, swimming pools, and other structures with high-humidity conditions.	Individual residences, condominiums, cooperative apartments, heated tanks, storage silos, dry kilns, car wash buildings, swimming pools, and other structures with high-humidity conditions.	Individual residences, condominiums, cooperative apartments, heated tanks, storage silos, dry kilns, car wash buildings, swimming pools and other structures with high-humidity conditions
18. Pre-construction notice and approval requirements	The contractor is required to submit a request for issuance of guarantee describing the job at least two weeks prior to the commencement of the job. Job specifications must be in accordance with Tamko's published specifications and recommendations unless changes are approved in writing by Tamko's manager of technical services.	The contractor is required to submit a request for issuance of guarantee describing the job at least two weeks prior to the commencement of the job. Job specifications must be in accordance with Tamko's published specifications and recommendations unless changes are approved in writing by Tamko's manager of technical services.	No
19. Approved, authorized, or licensed applicator	Yes	Yes	No
20. Job inspection policy	Tamko representative makes on-site inspection after application prior to issuance of guarantee and two years after issuance of guarantee; no charge.	Tamko built-up roofing representative makes on-site inspection after application prior to issuance of guarantee and two years after issuance of guarantee; no charge.	No on-site inspections
21. Contractor's post-installation obligation	The contractor is obligated to make repairs to workmanship deficiencies for two years.	The contractor is obligated to make repairs to workmanship deficiencies for two years.	None; material-only warranty
22. Backed by named insurance or surety	No; Tamko indicates that it does not carry insurance covering its warranty obligations.	No; Tamko indicates that it does not carry insurance covering its warranty obligations.	No; Tamko indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Tamko Roofing Products, Inc. manufactures and sells the products.	Tamko Roofing Products, Inc. manufactures and sells product.	Tamko Roofing Products, Inc. manufactures and sells the products.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	The guarantee cannot be assigned, sold, or transferred in any manner whatsoever. The warranty inures only to the benefit of the first consumer, purchaser, or owner of the Tamko product.	Not transferable in any manner.	The guarantee cannot be assigned, sold, or transferred in any manner whatsoever. The warranty inures only to the benefit of the first consumer, purchaser, or owner of the Tamko product.
26. Special features/conditions	Tamko is not responsible for cost related to the removal or abatement of any asbestos present in the existing roof system to which Tamko roof system is applied. No action for breach of warranty shall be brought later than one year after any cause of action has occurred. Nothing contained in the guarantee shall be construed to be a waiver of Tamko's right for contribution or indemnity. No representative, employee, agent of Tamko, or any other person has any authority to assume for Tamko any additional or other liability or responsibility.	Tamko is not responsible for cost related to the removal or abatement of any asbestos present in the existing roof system to which Tamko roof system is applied. No action for breach of warranty shall be brought later than one year after any cause of action has occurred. Nothing contained in the guarantee shall be construed to be a waiver of Tamko's right for contribution or indemnity. No representative, employee, agent of Tamko, or any other person has any authority to assume for Tamko any additional or other liability or responsibility.	Claims will require proof of purchase. Tamko requires that the owner initiate and follow a preventive maintenance program substantially in accordance with the preventive recommendations found on the reverse side of warranty. Specific maintenance items listed on reverse of guarantee must be performed at least semiannually to maintain guarantee coverage. Coatings over smooth-surfaced products must be maintained to provide surface protection. Tamko is not responsible for any cost related to the removal or abatement of any asbestos present in the existing roof to which the Tamko product is applied. No action for breach of warranty shall be brought later than one year after any cause of action has occurred. No representative, employee, agent of Tamko, or any other person has any authority to assume for Tamko any additional or other liability or responsibility.
27. Executed by owner	No	No	No

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of Issuing entity	Tamko Roofing Products, Inc	Tamko Roofing Products, Inc	Tamko Roofing Products, Inc
2. Title, original publication date, and identifying symbol, if any	"Twelve Year Limited Material Warranty (A Limited Warranty)"; January 1996; JP32996 997572	"Ten Year Limited Material Warranty (A Limited Warranty)"; January 1996; JP32996 997574	"Roofing System NDJ Guarantee (A Limited Warranty)"; February 1996; JP22254 997228
3. Product, specification, or system covered	Speedwell APP	Speedwell (Smooth)	Built-up roofing specifications: 400 Series, 500 Series, 600 Series; modified bitumen specifications: 100, 100 FR, 100 HW, 100 C, 200, 200 FR, 200 C, 700 and 1000 Series
4. Scope of coverage	Material only; Tamko warrants to the first consumer purchaser or owner that the Tamko product will, at the time of purchase, be free from manufacturing defects that result in leaks.	Material only; Tamko warrants to the first consumer purchaser or owner that the Tamko product will, at the time of purchase, be free from manufacturing defects that result in leaks.	Material and workmanship; Tamko agrees to provide roof repair services for leaks in the roofing system (e.g., membrane exclusive of metal work and non-Tamko approved flashings) attributable to ordinary wear and tear of the roofing system or workmanship deficiencies in application to the extent necessary to return the roofing system to a watertight condition.
5. Length of coverage	12 years	10 years	5, 10, 12, or 15 years
6. Nature of remedy	If Tamko determines there are manufacturing defects covered by the warranty, Tamko shall have 90 days after receipt of notification to either (1) refund the lesser of: (a) the cost of repairs to the roofing membrane to restore its watertight integrity, or (b) the prorated portion of the purchase price of the product; or (2) replace a portion of the product, based upon a prorating schedule ranging from 100% in years one and two to 10% in year ten. Prior to the expiration of such 90-day period, Tamko shall not be liable for any cost of repair or replacement unless Tamko has given its written approval of the repair or replacement of defective product and the cost thereof.	If Tamko determines there are manufacturing defects covered by the warranty, Tamko shall have 90 days after receipt of notification to either (1) refund the lesser of: (a) the cost of repairs to the roofing membrane to restore its watertight integrity, or (b) the prorated portion of the purchase price of the product; or (2) replace a portion of the product, based upon a prorating schedule ranging from 100% in years one and two to 10% in year ten. Prior to the expiration of such 90-day period, Tamko shall not be liable for any cost of repair or replacement unless Tamko has given its written approval of the repair or replacement of defective product and the cost thereof.	Tamko will arrange for repairs to the roofing membrane and base flashing and shall have no more than 90 days after receipt of notification of leaks to make or cause to be made repairs or replacements unless prevented by acts of God.
7. Monetary limitations	For first and second year, Tamko's liability limited to the amount of original purchase price: 90% in year three; 70% in year four; 60% in year five; 50% in year six; 40% in year seven; 30% in year eight; 20% in year nine; and 10% in year ten.	For first and second year, Tamko's liability limited to the amount of original purchase price: 90% in year three; 70% in year four; 60% in year five; 50% in year six; 40% in year seven; 30% in year eight; 20% in year nine; and 10% in year ten.	None stated.
8. Notification requirements	Written notice by certified mail of any leaks alleged to result directly from manufacturing defects within 30 days following discovery to Tamko, P.O. Box 1404, Joplin, MO 64802	Written notice by certified mail of any leaks alleged to result directly from manufacturing defects within 30 days following discovery to Tamko, P.O. Box 1404, Joplin, MO 64802	Written notice to Tamko, P.O. Box 1404, Joplin, Missouri, 64802, no later than 30 days after discovery of a leak from any cause
9. Exclusive or additional remedy	The warranty is expressly in lieu of any and all other obligations, guarantees and warranties; Tamko's obligation to refund the cost of repair, a portion of the product's original purchase cost or to replace a portion of the product, in accordance with the prorating schedule, shall be the sole and exclusive remedy against Tamko under the warranty or otherwise; excludes UCC warranties.	The warranty is expressly in lieu of any and all other obligations, guarantees and warranties; Tamko's obligation to refund the cost of repair, a portion of the product's original purchase cost or to replace a portion of the product, in accordance with the prorating schedule, shall be the sole and exclusive remedy against Tamko under the warranty or otherwise; excludes UCC warranties.	The obligation contained in guarantee is expressly in lieu of any other guarantees, warranties, obligations, or liability on the part of Tamko; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Tamko's determination	Tamko's determination	Solely Tamko will determine the condition of watertightness.
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 6, 7, 8, 11, 12, 13 (including exposure from aliphatic or aromatic solvents, chlorinated hydrocarbons, turpentine, oils, organic or inorganic polar materials, and exposure to ionized radiation or contamination by radioactivity from any nuclear source), 15, 19, 23. The warranty excludes damage due to splitting, cracking, blistering, delamination, or separation due to underlying materials.	1, 2, 3, 4, 6, 7, 8, 11, 12, 13 (including exposure from aliphatic or aromatic solvents, chlorinated hydrocarbons, turpentine, oils, organic or inorganic polar materials, and exposure to ionized radiation or contamination by radioactivity from any nuclear source), 15, 19, 23. The warranty excludes damage due to splitting, cracking, blistering, delamination, or separation due to underlying materials.	1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 15, 23, 24; exposure to ionized radiation or contamination by radioactivity from any nuclear source
13. Wind coverage/exclusions	The warranty excludes strong gales, windstorms, violent storms, hurricanes, and tornadoes. (Tamko does not indicate what wind speeds are covered by the warranty; the Beaufort Scale defines a strong gale as winds between 47 and 54 mph.)	The warranty excludes strong gales, windstorms, violent storms, hurricanes, and tornadoes. (Tamko does not indicate what wind speeds are covered by the warranty; the Beaufort Scale defines a strong gale as winds between 47 and 54 mph.)	The warranty excludes strong gales, windstorms, hurricanes, tornadoes and violent storms. (Strong gales are defined on the Beaufort Scale as winds between 47 and 54 mph and storms are defined as winds between 55 and 63 mph.)

14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	C, G, K, R. (The warranty states that Tamko's obligations under the warranty shall terminate if (1) Tamko is not reimbursed for all reasonable expenses, including, but not limited to, transportation, meals and lodging, associated with the inspection of a complaint, within 30 days of receipt of invoice from Tamko when Tamko has determined that the complaint is expressly excluded by the terms of the warranty; or (2) the owner fails to reimburse Tamko for any additional costs incurred by Tamko attributable to the lack of reasonable access to the roof within 30 days of receipt of invoice from Tamko.	C, G, K, R. (The warranty states that Tamko's obligations under the warranty shall terminate if (1) Tamko is not reimbursed for all reasonable expenses, including, but not limited to, transportation, meals and lodging, associated with the inspection of a complaint, within 30 days of receipt of invoice from Tamko when Tamko has determined that the complaint is expressly excluded by the terms of the warranty; or (2) the owner fails to reimburse Tamko for any additional costs incurred by Tamko attributable to the lack of reasonable access to the roof within 30 days of receipt of invoice from Tamko.	A, B, C, F, K, N
15. Cost to obtain	None	None	5 years: \$4.00/square; 10 years: \$8.50/square; 12 years: \$9.00/square; 15 years: \$12.50/square
16. Minimum charge	None	None	5 years: \$400; 10 years: \$850; 12 years: \$850; 15 years: \$1,000
17. Ineligible structure or building use	Individual residences, condominiums, cooperative apartments, heated tanks, storage silos, dry kilns, car wash buildings, swimming pools, and other structures with high-humidity conditions	Individual residences, condominiums, cooperative apartments, heated tanks, storage silos, dry kilns, car wash buildings, swimming pools, and other structures with high-humidity conditions	Individual residences, condominiums, cooperative apartments, heated tanks, storage silos, dry kilns, car wash buildings, swimming pools, and other structures with high-humidity conditions
18. Pre-construction notice and approval requirements	None required.	None required.	The contractor is required to submit a request for issuance of guarantee describing the job at least two weeks prior to the commencement of the job. Job specifications must be in accordance with Tamko's published specifications and recommendations unless changes are approved in writing by Tamko's manager of technical services.
19. Approved, authorized, or licensed applicator	No	No	Yes
20. Job inspection policy	No on-site inspections	No on-site inspections	Tamko representative makes inspection after completion, prior to issuing warranty and two years after issuing warranty. Tamko representative makes on-site inspection during application for specification 243 only; no charge.
21. Contractor's post-installation obligation	None; material-only warranty	None; material-only warranty	The contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Tamko indicates that it does not carry insurance covering its warranty obligations.	No; Tamko indicates that it does not carry insurance covering its warranty obligations.	No; Tamko indicates that it does not carry insurance to cover its warranty obligations.
23. Issuing entity manufactures and/or sells products	Tamko manufactures and sells the product.	Tamko manufactures and sells the product.	Tamko manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	The warranty shall accrue and inure only to the benefit of the first consumer purchaser or owner of the Tamko product and shall not be assigned, sold, or transferred in any manner whatsoever. Any assignment, sale or transfer of the warranty or of the building to which the product is applied shall void all warranties.	The warranty shall accrue and inure only to the benefit of the first consumer purchaser or owner of the Tamko product and shall not be assigned, sold, or transferred in any manner whatsoever. Any assignment, sale or transfer of the warranty or of the building to which the product is applied shall void all warranties.	The guarantee shall accrue and inure only to the benefit of the first consumer purchaser or owner of the Tamko product and shall not be assigned, sold or transferred in any manner whatsoever.
26. Special features/conditions	Claims under warranty will require proof of purchase by first consumer purchaser or owner. Tamko shall not be responsible for any claims without such proof of purchase. The warranty states that owner acknowledges that it is the owner's sole responsibility to determine that the product has been installed in compliance with (i) any contract specifications provided by the owner to the contractor and (ii) the terms and conditions of warranty. The warranty may not be modified except in a writing signed by Tamko's president. No representative, employee, agent of Tamko or any person, other than the president of Tamko, has any authority to assume for Tamko any additional or other liability or responsibility. Warranty is not valid in Hawaii, Alaska and California. A separate limited warranty is available for products used in California. Products are sold "as is" and "with all faults" when used outside of the 48 contiguous United States. No action for breach of this limited warranty shall be brought later than one year after any cause of action has accrued. See item 14 above.	Claims under warranty will require proof of purchase by first consumer purchaser or owner. Tamko shall not be responsible for any claims without such proof of purchase. The warranty states that owner acknowledges that it is the owner's sole responsibility to determine that the product has been installed in compliance with (i) any contract specifications provided by the owner to the contractor and (ii) the terms and conditions of warranty. The warranty may not be modified except in a writing signed by Tamko's president. No representative, employee, agent of Tamko or any person, other than the president of Tamko, has any authority to assume for Tamko any additional or other liability or responsibility. Warranty is not valid in Hawaii, Alaska and California. A separate limited warranty is available for products used in California. Products are sold "as is" and "with all faults" when used outside of the 48 contiguous United States. No action for breach of this limited warranty shall be brought later than one year after any cause of action has accrued. See item 14 above.	No action for breach of this limited warranty may be brought later than one year after any cause of action has accrued. Nothing contained in the guarantee shall be construed to be a waiver of Tamko's right for contribution or indemnity for any liability incurred as a result of this guarantee. No representative, employee, agent of Tamko or any other person has any authority to assume for Tamko any additional or other liability or responsibility. Tamko shall not be responsible for or liable if there is any change or amendment to the Tamko built-up roof specification, unless such change or amendment is approved in writing by Tamko.
27. Executed by owner	Yes, owner is to sign and retain warranty with the contractor's receipt for future reference.	Yes, owner is to sign and retain warranty with the contractor's receipt for future reference.	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of Issuing Entity	Tamko Roofing Products, Inc.	Texas Refinery Corporation (TRC)	Tremco Incorporated
2. Title, original publication date, and identifying symbol, if any	"Total System Coverage Guarantee (A Limited Warranty)"; February 1995; JP222287 997227	"Texas Refinery Corporation's Limited Roof System Warranty"; 1988; 2M0488	"Tremco Quality Assurance Program 10 Year Warranty"; 1991; 1/92
3. Product, specification, or system covered	Built-up roofing specifications: All insulated specifications in 400, 500 and 600 series; modified bitumen specifications: All insulated specifications in series 100, 200, 700 and 1000	MightyPlate Single-Ply; MightyPlate Two-Ply System; MightyPlate Liquid Type II Glasbase Roof System; MightyPlate Liquid Poly-Mat Roof System; MightyPlate Liquid Mighty-Ply Roof System.	Therm 100, Therm 200, Burmastic 100, Burmastic 200, BUR Combinations, HP4510, 3G25 FR, 2C6S, 2C2S, LTD
4. Scope of coverage	Material and workmanship: Tamko agrees to provide roof repair services for leaks in the roofing system (e.g., membrane exclusive of metal work and non-Tamko approved flashings) attributable to ordinary wear and tear of the roofing system or workmanship deficiencies in application to the extent necessary to return the roofing system to a watertight condition.	Material only: TRC agrees to furnish sufficient roofing materials to repair leaks through the roofing system caused by natural deterioration resulting from ordinary wear and tear by the elements: blisters, fishmouths, ridges, wrinkles, and splits, unless due to movement or failure of the substrate over which the roofing system is installed; and slippage of the roofing system.	Material and workmanship: Tremco warrants that it will repair any leaks in the Tremco Roofing System (TRS). TRS shall be defined as the weatherproofing assembly and its components as specified by Tremco, which includes membrane, insulation, flashings, and termination details.
5. Length of coverage	5, 10, 12, 15, or 20 years	5 years: MightyPlate Modified Bitumen Roof Membrane, MightyPlate System, MightyPlate Liquid Type II Glasbase Roof System, MightyPlate Liquid Poly-Mat Roof System; 10 years: MightyPlate Modified Bitumen Roof Membrane, MightyPlate Liquid Type II Glasbase Roof System, MightyPlate Liquid Poly-Mat Roof System with aluminum roof coating or Textotric surfacing; MightyPlate System with aluminum roof coating, textotric or Ceramic Granules.	10 years
6. Nature of remedy	Tamko will arrange for repairs to the roofing membrane and base flashing and shall have no more than 90 days after receipt of notification of leaks to make or cause to be made repairs or replacements unless prevented by acts of God.	TRC agrees to furnish without charge, F.O.B. closest U.S.A. warehouse, sufficient TRC roofing patching material to stop leaks.	Tremco will inspect the TRS roof and at its own expense make or cause to be made all necessary repairs to the TRS roof to put it in watertight condition.
7. Monetary limitations	None stated.	TRC's obligation to furnish additional material is not to exceed original purchase amount.	Tremco's total liability during the first year of the warranty shall not exceed the dollar value of the installed contract price of the TRS. Tremco's maximum liability, following year one, shall be pro-rated on a straight-line declining-value basis over the life of the warranty, and shall not in any event exceed such prorated amount.
8. Notification requirements	Written notice to Tamko, P.O. Box 1404, Joplin, Missouri, 64802, no later than 30 days after discovery of a leak from any cause	Notification to TRC within 30 days of discovery of leak, confirming oral notice in writing within 10 days	Owner shall notify Tremco, 10701 Shaker Blvd., Cleveland, OH 44104, as soon as possible, but in no event more than 30 days, after leakage is or should have been discovered.
9. Exclusive or additional remedy	The obligation contained in guarantee is expressly in lieu of any other guarantees, obligations or liability on the part of Tamko; excludes UCC warranties.	TRC's exclusive responsibility and liability is to furnish sufficient patching materials to maintain the roofing system in a watertight condition; owner recognizes and agrees that TRC has no liability for any alleged breach of warranty, negligence, strict liability or any other theory or damage of any nature whatsoever other than limited and exclusive liability set forth in warranty document.	Remedy stated in warranty is owner's sole and exclusive remedy for any and all claims arising under, or in connection with, or in any way relating to the Tremco roof system. Tremco not liable for any damages that are based upon negligence, breach of warranty, strict liability, or any other theory of liability other than exclusive liability set forth in the warranty. Warranty is given in lieu of any and all other warranties; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Solely Tamko will determine the condition of watertightness.	Neutral: TRC arranges for inspection once leak reported.	Unclear: warranty states, "Tremco will inspect the TRS roof and if the leak is within coverage of this warranty, will..."
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 15, 23, 24; exposure to ionized radiation or contamination by radioactivity from any nuclear source	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 15, 20, 22, 23 (Also excludes damages due to unauthorized test cuts.)	1, 2, 3, 5, 9, 11, 13, 16, 17
13. Wind coverage/exclusions	The warranty excludes strong gales, windstorms, hurricanes, tornadoes and violent storms. (Strong gales are defined on the Beaufort Scale as storms with winds between 47 and 54 mph and storms are defined as winds between 55 and 63 mph.)	Warranty excludes windstorms, hurricanes, and tornadoes. [TRC indicates that there is no coverage for damage caused by wind.]	Tremco indicates that warranty covers roof damage resulting from wind speeds up to 74 miles per hour. Warranty excludes hurricane force winds (74 mph or greater) and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	A, B, C, F, K, N	M (See Special Features/Conditions.)	B, C, F, H, J, M, S. Warranty also states that Tremco may void warranty for specific exclusions 4, 10, 22.
15. Cost to obtain	5 years: \$4.00/square; 10 years: \$8.50/square; 12 years: \$9.00/square; 15 years: \$12.50/square; 20 years: \$17.50/square	None	\$8.00/square
16. Minimum charge	5 years: \$400; 10 years: \$850; 12 years: \$850; 15 years: \$1,000; 20 years: \$1,200	None	\$500

17. Ineligible structure or building use	Individual residences, condominiums, cooperative apartments, heated tanks, storage silos, dry kilns, ear wash buildings, swimming pools, and other structures with high-humidity conditions.	Cold-storage buildings; residential	Residential
18. Pre-construction notice and approval requirements	The contractor is required to submit a request for issuance of guarantee describing the job at least two weeks prior to the commencement of the job. Job specifications must be in accordance with Tamko's published specifications and recommendations unless changes are approved in writing by Tamko's manager of technical services.	None required	None
19. Approved, authorized, or licensed applicator	Yes	No	Yes
20. Job inspection policy	Tamko representative makes inspection after completion, prior to issuing warranty and, two years after issuing warranty. Tamko representative makes on-site inspection during application for specification 243 only; no charge.	Inspection made by TRC sales consultant prior, at least two times during, and after completion, as well as two years after issuance of warranty; no charge.	Tremco technical service and field representatives make on-site inspections prior, during and after application, as well as two years and five years after issuance of warranty; no charge.
21. Contractor's post-installation obligation	The contractor is obligated to make repairs to workmanship deficiencies for two years.	Although this is a material-only warranty, contractor obligated to make repairs to all leaks and any defects, including materials and workmanship, for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No: Tamko indicates that it does not carry insurance to cover its warranty obligations.	No: TRC indicates that it carries insurance covering its warranty obligations and that TRC home office should be contacted for details.	No: Tremco indicates that it maintains significant levels of product liability insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Tamko manufactures and sells the product.	TRC manufactures and sells product.	Tremco manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	Initial 10-year warranty can be renewed for one additional five-year period at a price of \$5.00/ square, with a \$500 minimum. To renew: (a) owner must notify Tremco in writing no later than 90 days prior to original warranty expiration date; (b) upon verification of owner's intent to renew original warranty, Tremco shall inspect roof, report condition, and advise owner of any maintenance or restoration work in the form of an executive summary; (c) owner shall make repairs as specified at owner's sole expense by a Tremco approved roofing contractor within 60 days of report delivery; (d) upon completion, Tremco shall inspect repairs to determine satisfactory completion. If roof passes Tremco's final inspection and upon payment by owner to Tremco warranty renewal fees, warranty will be extended.
25. Assignability	The guarantee shall accrue and inure only to the benefit of the first consumer purchaser or owner of the Tamko product and shall not be assigned, sold or transferred in any manner whatsoever.	No restrictions stated.	Owner's rights under warranty are not transferable.
26. Special features/conditions	No action for breach of this limited warranty may be brought later than one year after any cause of action has accrued. Nothing contained in the guarantee shall be construed to be a waiver of Tamko's right for contribution or indemnity for any liability incurred as a result of this guarantee. No representative, employee, agent of Tamko, or any other person has any authority to assume for Tamko any additional or other liability or responsibility. Tamko shall not be responsible for or liable if there is any change or amendment to the Tamko built-up roof specification, unless such change or amendment is approved in writing by Tamko.	No representative, employee, or agent of TRC or any other person other than the TRC manager of technical services, located in Fort Worth, Texas, has any authority to change, alter, or modify the provisions of this warranty. In the event that (a) owner notifies TRC of the need to repair roof leaks, (b) TRC is unable to promptly inspect the roof, and (c) an emergency condition exists that requires immediate repair to avoid substantial damage, owner may make immediate repair to avoid substantial damage to owner, and owner may make temporary repairs as may be essential and such action shall not be a breach of warranty.	To the extent any repairs to any part of the building other than the TRS roof are required, or the removal or replacement of any traffic surfaces or other appurtenances built over the roof are required in order to put the TRS roof in watertight condition, the liability or expense for such repair, removal or replacement, shall be assumed and paid by the owner. If the leak is not within warranty coverage, Tremco shall advise the owner, and the owner shall have the repairs performed within thirty days, according to Tremco specifications, by a Tremco-approved applicator. In the event an emergency condition exists that requires immediate repair to avoid substantial damage to the building or its contents, Tremco may instruct the owner to make necessary temporary repairs. Tremco will, during the second year of the warranty, inspect and provide a written executive summary of the roof. Tremco will retain the right to make core extractions and properly repair such extractions.
27. Executed by owner	No	No	No

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of Issuing entity	Tremco Incorporated	Tri-Ply, Inc.	Tri-Ply, Inc.
2. Title, original publication date, and identifying symbol, if any	"Tremco Quality Assurance Program 5 Year Warranty"; 1991; 1/92	"Material and Labor Warranty"; 1992	"Limited Material and Labor Warranty"; 1992
3. Product, specification, or system covered	Therm 100, Therm 200, Burmastic 100, Burmastic 200, BUR Combinations, HP4510, 3G25 FR, 2C6S, 2C2S, LTD	Modified Bitumen Specifications: TP-4, TP-4G, Karifak 305, 307, 308, Karifak 306 FR, 307 FR	BUR Specifications: I-5-4P-M, I-4-4P-G, I-4-4P-S, I-4-3P-M, I-3-3P-G, I-3-3P-S, I-3-2P-M, NN-5-83P-M, NN-4-83P-G, NN-4-83P-S, NN-4-82P-M, NN-3-82P-G, NN-3-82P-S, NN-3-82P-M, NN-5-83P-M, N-5-83P-G, N-4-83P-S, N-4-82P-M, N-3-82P-G, N-3-82P-S, N-3-82P-M
4. Scope of coverage	Material and workmanship; Tremco warrants that it will repair any leaks in the Tremco Roofing System (TRS). TRS shall be defined as the weatherproofing assembly and its components as specified by Tremco, which includes membrane, insulation, flashings, and termination details.	Material and workmanship (see Special Features/Conditions); Tri-Ply warrants that its roofing membrane will be free from (1) manufacturing defects; (2) deterioration as a result of the ordinary wear and tear from exposure to the elements; (3) splits, fissures, or tears not caused by structural or roof deck movement or failure; and (4) application/installation defects.	Material and workmanship (see Special Features/Conditions); Tri-Ply warrants that its roofing membrane will be free from (1) manufacturing defects; (2) deterioration as a result of the ordinary wear and tear from exposure to the elements; (3) splits, fissures, or tears not caused by structural or roof deck movement or failure; and (4) application/installation defects.
5. Length of coverage	5 years	6, 10, 12 years for all specifications; 15 years: KA-300-NI, KA-310-N, KA-320-NI, KA-330-NI, TP-300-NI, TP-310-N, TP-320-NI, TP-330-NI; 20 years: KA-400-NI, KA-410-N, KA-420-NI, KA-430-NI.	5 or 10 years for all specifications; 15 years: I-5-4P-M, I-4-4P-G, I-4-4P-S, I-4-3P-M, I-3-3P-G, NN-5-83P-M, NN-4-83P-G, NN-4-83P-S, NN-4-82P-M, NN-3-82P-G, N-5-83P-M, N-4-83P-S, N-4-82P-M, N-3-82P-G, N-3-82P-S, N-3-82P-M
6. Nature of remedy	Tremco will inspect the TRS roof and at its own expense make or cause to be made all necessary repairs to the TRS roof to put it in watertight condition.	If defects cause the membrane to fail to perform to customary industry tolerances, Tri-Ply shall be obligated, at its sole discretion, to repair the membrane or portion that has failed or is otherwise proven defective or refund that portion of the original cost of the Tri-Ply membrane equal to the lesser of the estimated cost of repair or the entirety of the original cost of the membrane.	If defects cause the membrane to fail to perform to customary industry tolerances, Tri-Ply shall be obligated, at its sole discretion, to repair the membrane or portion which has failed or is otherwise proven defective or refund sums equal to the lesser of the estimated cost of repair or the entirety of the dollar value of warranty.
7. Monetary limitations	Tremco's total liability during the first year of the warranty shall not exceed the dollar value of the installed contract price of the TRS. Tremco's maximum liability, following year one, shall be prorated on a straight-line declining-value basis over the life of the warranty, and shall not in any event exceed such prorated amount.	Warranty shall be limited to a refund of the original cost of the Tri-Ply membrane. Cost of Tri-Ply membrane shall be based upon published price list per roll of Tri-Ply in effect on date of warranty validation.	Warranty shall be limited to the dollar value designated in warranty. Tri-Ply indicates that owner has option of selecting \$35 per square or \$50 per square penal sum coverage depending upon amount of warranty charge paid to Tri-Ply; see Cost to Obtain. Any partial payments of repair costs or refunds shall be deducted from Tri-Ply's aggregate obligation.
8. Notification requirements	Owner shall notify Tremco, 10701 Shaker Blvd., Cleveland, OH 44104, as soon as possible, but in no event more than 30 days, after leakage is or should have been discovered.	Written notification to Tri-Ply within 15 days of discovering conditions that are the basis of a warranty claim against Tri-Ply	Written notification to Tri-Ply within 15 days of discovering conditions that are the basis of a warranty claim against Tri-Ply
9. Exclusive or additional remedy	Remedy stated in warranty is owner's sole and exclusive remedy for any and all claims arising under, or in connection, with or in any way relating to the Tremco roof system. Tremco not liable for any damages that are based upon negligence, breach of warranty, strict liability, or any other theory of liability other than exclusive liability set forth in the warranty. Warranty is given in lieu of any and all other warranties; excludes UCC warranties.	Warranty shall be sole and exclusive remedies of the owner, and owner shall be entitled to no further or additional remedies; owner waives any and all other claims for damages, including property damages and personal injury damage to the owner or third parties; excludes UCC warranties.	Warranty shall be sole and exclusive remedies of the owner, and owner shall be entitled to no further or additional remedies; owner waives any and all other claims for damages, including property damages, personal injury damage to the owner or third parties; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Unclear; warranty states, "Tremco will inspect the TRS roof and if the leak is within coverage of this warranty, will . . ."	Tri-Ply's determination	Tri-Ply's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 5, 9, 11, 13, 16, 17	1, 2, 3, 4, 5, 6, 7, 9, 12, 13 (including exposure to ionized radiation or contamination by radioactivity from any nuclear fuel or from any nuclear waste), 17, 19. Warranty states that Specific Condition M and S also makes the warranty inapplicable.	1, 2, 3, 4, 5, 6, 7, 9, 12, 13 (including exposure to ionized radiation or contamination by radioactivity from any nuclear fuel or from any nuclear waste), 17, 19. Warranty states that Specific Condition M and S also makes the warranty inapplicable.
13. Wind coverage/exclusions	Tremco indicates that warranty covers roof damage resulting from wind speeds up to 74 miles per hour. Warranty excludes hurricane force winds (74 mph or greater) and tornadoes.	Warranty excludes wind storms, hurricanes, and tornadoes. [Tri-Ply indicates that there is no coverage for damage caused by wind.]	Warranty excludes wind storms, hurricanes and tornadoes. [Tri-Ply indicates that there is no coverage for damage caused by wind.]
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C, F, H, J, M, S. Warranty also states that Tremco may void warranty for specific exclusions 4, 10, 22.	A, B, C (including owner's failure to reimburse Tri-Ply within 30 days for all reasonable inspection expenses if Tri-Ply determines that a warranty complaint is expressly excluded by the terms of the warranty), D, E, F (including failure of owner to timely and completely comply with the maintenance and inspection procedures outlined in the roof owners manual, which is incorporated), G, H, I, K, L, M, R, S	A, B, C (including owner's failure to reimburse Tri-Ply within 30 days for all reasonable inspection expenses if Tri-Ply determines that a warranty complaint is expressly excluded by the terms of the warranty), D, E, F (including failure of owner to timely and completely comply with the maintenance and inspection procedures outlined in the roof owners manual, which is incorporated), G, H, I, K, L, M, R, S
15. Cost to obtain	\$4.00/square	6, 10, 12 years: no charge; 15 years: \$5.00/square; 20 years: \$7.50/square	\$35 penal sum; 5 years: \$3.50/square; 10 years: \$4.50/square; 15 years: \$5.50/square; 20 years: \$6.50/square; 20 years: \$7.50/square
16. Minimum charge	\$500	5, 10, 12 years: no charge; 15 years: \$400; 20 years \$600	5 years: \$600; 10 years: \$800; 15 years: \$800; 20 years: \$1,000

17. Ineligible structure or building use	Residential	Cold-storage buildings, structures outside of U.S. and Canada, structures with conduit or piping between roof deck and membrane (see Tri-Ply's specification manual for additional ineligible structures).	Contractor must submit Tri-Ply request for warranty form with notice of start and anticipated completion date.	Yes	Cold-storage buildings, structures outside of U.S. and Canada, structures with conduit or piping between roof deck and membrane (see Tri-Ply's specification manual for additional ineligible structures).	Contractor must submit Tri-Ply request for warranty form with notice of start and anticipated completion date.	Yes	Tri-Ply technical field representatives may make periodic on-site inspections prior to and during application and after completion prior to issuance of warranty; no charge. Warranty states that Tri-Ply will cause the membrane and roofing system to be inspected, at its option, within a period one month prior to expiration of two years from warranty issuance to one month after two years or as soon as practicable thereafter and issue a report detailing any application related inadequacies/failures in the membrane and roofing system.	Warranty states that contractor and owner acknowledge and agree that any application inadequacies/failures in the membrane roofing system will be remedied in a workmanlike manner so as to return roof to warrantable condition within 60 days after receiving two year inspection report prepared by Tri-Ply. Failure of contractor and owner to remedy conditions within 30 days or as soon as practicable after receiving notice renders warranty void immediately.	No; Tri-Ply indicates that it does not carry insurance covering its warranty obligations.	Tri-Ply manufactures and sells product.	No renewal provision	Warranty may be transferred only, if within 30 days of transfer of title to property upon which Tri-Ply membrane has been installed, transferee (1) notifies Tri-Ply of transfer by certified mail addressed to Tri-Ply, Attention: Warranty Division, P.O. Box 2685, Port Arthur, TX 77643; (2) requests transfer forms, which must be completed and returned to Tri-Ply according to instructions; and (3) tenders to Tri-Ply the transfer fee of \$750. Further, transfer and/or assignment of warranty is not valid unless owner consents to a roof inspection by Tri-Ply and until owner completes repairs delineated by Tri-Ply necessary to bring the roofing system within compliance with Tri-Ply's most recent specification manual.	Warranty states that owner and contractor acknowledge, as evidenced by their signatures, that if the membrane fails due to misapplication or failure to install the membrane in compliance with Tri-Ply's most recent specification manual, and if the failure is discovered or discoverable within the first 24 months after validation of warranty, the repair/replacement of the membrane is the sole responsibility of the contractor and Tri-Ply shall have no obligation regarding same. Warranty becomes void immediately if contractor and owner do not remedy application related inadequacies and failures or other conditions within 30 days of being notified by Tri-Ply (see item 21 above). Warranty becomes effective only and if it is validated by an authorized representative of Tri-Ply and executed and approved by both the roofing contractor and the owner, with a copy of same, fully executed, returned to Tri-Ply within 30 days of validation by Tri-Ply at its offices in Port Arthur, Texas. In the event it is determined by Tri-Ply, after inspection of warranty complaint, that warranty complaint is expressly excluded by the terms of the warranty, the owner shall be responsible for reimbursement of all reasonable expenses associated with completion of the inspection. Failure of owner to reimburse Tri-Ply for reasonable expenses within 30 days after receipt of an invoice shall void warranty. Aesthetic irregularities or normal aging effects do not constitute a loss of watertight integrity and are not sufficient cause for maintenance, repair or replacement by Tri-Ply. Unless Tri-Ply has validated warranty, the Tri-Ply roofing membrane is sold as is. No suit for breach of warranty may be filed later than one year of either (1) tender of delivery of the project to the owner or (2) the expiration of the warranty, whichever shall occur later. Tri-Ply is not bound by any oral expression or representation made by any agent or party purporting to act for or on behalf of Tri-Ply, or by any commitment, arrangement or agreement not specified in the warranty. By signing warranty, owner acknowledges that it has read roof owners manual and agrees to comply with all terms, obligations and requirements detailed therein.	Owner and contractor must execute warranty (see Special Features Conditional).		
18. Pre-construction notice and approval requirements	None		Contractor must submit Tri-Ply request for warranty form with notice of start and anticipated completion date.	Yes			Yes	Tri-Ply technical field representatives may make periodic on-site inspections prior to and during application and after completion prior to issuance of warranty; no charge. Warranty states that Tri-Ply will cause the membrane and roofing system to be inspected, at its option, within a period one month prior to expiration of two years from warranty issuance to one month after two years or as soon as practicable thereafter and issue a report detailing any application related inadequacies/failures in the membrane and roofing system.	Warranty states that contractor and owner acknowledge and agree that any application inadequacies/failures in the membrane roofing system will be remedied in a workmanlike manner so as to return roof to warrantable condition within 60 days after receiving two year inspection report prepared by Tri-Ply. Failure of contractor and owner to remedy conditions within 30 days or as soon as practicable after receiving notice renders warranty void immediately.	No; Tri-Ply indicates that it does not carry insurance covering its warranty obligations.	Tri-Ply manufactures and sells product.	No renewal provision	Warranty may be transferred only, if within 30 days of transfer of title to property upon which Tri-Ply membrane has been installed, transferee (1) notifies Tri-Ply of transfer by certified mail addressed to Tri-Ply, Attention: Warranty Division, P.O. Box 2685, Port Arthur, TX 77643; (2) requests transfer forms, which must be completed and returned to Tri-Ply according to instructions; and (3) tenders to Tri-Ply the transfer fee of \$750. Further, transfer and/or assignment of warranty is not valid unless owner consents to a roof inspection by Tri-Ply and until owner completes repairs delineated by Tri-Ply necessary to bring the roofing system within compliance with Tri-Ply's most recent specification manual.	Warranty states that owner and contractor acknowledge, as evidenced by their signatures, that if the membrane fails due to misapplication or failure to install the membrane in compliance with Tri-Ply's most recent specification manual, and if the failure is discovered or discoverable within the first 24 months after validation of warranty, the repair/replacement of the membrane is the sole responsibility of the contractor and Tri-Ply shall have no obligation regarding same. Warranty becomes void immediately if contractor and owner do not remedy application related inadequacies and failures or other conditions within 30 days of being notified by Tri-Ply (see item 21 above). Warranty becomes effective only and if it is validated by an authorized representative of Tri-Ply and executed and approved by both the roofing contractor and the owner, with a copy of same, fully executed, returned to Tri-Ply within 30 days of validation by Tri-Ply at its offices in Port Arthur, Texas. In the event it is determined by Tri-Ply, after inspection of warranty complaint, that warranty complaint is expressly excluded by the terms of the warranty, the owner shall be responsible for reimbursement of all reasonable expenses associated with completion of the inspection. Failure of owner to reimburse Tri-Ply for reasonable expenses within 30 days after receipt of an invoice shall void warranty. Aesthetic irregularities or normal aging effects do not constitute a loss of watertight integrity and are not sufficient cause for maintenance, repair or replacement by Tri-Ply. Unless Tri-Ply has validated warranty, the Tri-Ply roofing membrane is sold as is. No suit for breach of warranty may be filed later than one year of either (1) tender of delivery of the project to the owner or (2) the expiration of the warranty, whichever shall occur later. Tri-Ply is not bound by any oral expression or representation made by any agent or party purporting to act for or on behalf of Tri-Ply, or by any commitment, arrangement or representation not specified in the warranty. By signing warranty, owner acknowledges that it has read roof owners manual and agrees to comply with all terms, obligations and requirements detailed therein.	Owner and contractor must execute warranty (see Special Features Conditional).		
19. Approved, authorized, or licensed applicator	Yes																
20. Job inspection policy		Tremco technical service and field representatives make on-site inspections prior, during and after application, as well as two years and five years after issuance of warranty; no charge.															
21. Contractor's post-installation obligation		Contractor obligated to make repairs to workmanship deficiencies for two years.															
22. Backed by named insurance or surety		No; Tremco indicates that it maintains significant levels of product liability insurance covering its warranty obligations.															
23. Issuing entity manufactures and/or sells products		Tremco manufactures and sells product.															
24. Conditions for renewal or extension		No renewal provision															
25. Assignability		Owner's rights under warranty are not transferable.															
26. Special features/conditions		To the extent any repairs to any part of the building other than the TRS roof are required, or the removal or replacement of any traffic surfaces or other appurtenances built over the roof are required in order to put the TRS roof in watertight condition, the liability or expense for such repair, removal or replacement, shall be assumed and paid by the owner. If the leak is not within warranty coverage, Tremco shall advise the owner, and the owner shall have the repairs performed within thirty days, according to Tremco specifications, by a Tremco-approved applicator. In the event an emergency condition exists that requires immediate repair to avoid substantial damage to the building or its contents, Tremco may instruct the owner to make necessary temporary repairs. Tremco will, during the second year of the warranty, inspect and provide a written executive summary of the roof. Tremco will retain the right to make core extractions and properly repair such extractions.															
27. Executed by owner	No																

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Tri-Ply	Tri-Ply	Tri-Ply
2. Title, original publication date, and identifying symbol, if any	Tri-Ply "The Guarantee"; 1989	"Tri-Ply Ten Year Limited Roofing Warranty"; 1992	Tri-Ply, Inc. "Inspection and Service Contract"; June 1, 1987
3. Product, specification, or system covered	TP-4, TP-4G; Karifalt 306, 307, and 308; Karifalt 306 FR, 307 FR	BUR Specifications: I-5-4P-M, I-4-4P-G, I-4-4P-S, I-4-3P-M, I-3-3P-S, I-3-2P-M, NN-5-B3P-M, NN-4-B3P-G, NN-4-B3P-S, NN-4-B2P-M, NN-3-B2P-G, NN-3-B2P-S, NN-3-BP, N-5-B3P-M, N-4-B3P-G, N-4-B3P-S, N-4-B2P-M, N-3-B2P-G, N-3-B2P-S, N-3-BP-M; Modified Bitumen Specifications: TP-4, TP-4G, TP-170, Karifalt 306, 307, 308, Karifalt 306 FR, 307 FR	Modified Bitumen Specifications; 400M, 400F, 320M, 320F, 310M, 310F
4. Scope of coverage	Tri-Ply warrants that its membrane will be free from defects and deterioration of the membrane as a result of ordinary wear and tear from exposure to the elements or splits, fissures, or tears in the membrane not caused by structural or roof deck movement or failure (see Special Features/Conditions).	Material only; Tri-Ply warrants that the Tri-Ply roofing membrane will be free from manufacturing defects when installed according to the requirements of Tri-Ply specifications.	Tri-Ply warrants that the roof system will retain its watertight integrity in normal use. Aesthetic irregularities or normal aging effects do not constitute a loss of watertight integrity and are not sufficient cause for maintenance, repair, or replacement by Tri-Ply.
5. Length of coverage	6, 10, 12 years for all specifications; 15 years for specifications KA-300-NI, KA-310-N, KA-320-NI, KA-330-NN, TP-300-NI, TP-310-N, TP-320-NNI, TP-330-NN; 20 years for specifications KA-400-NI, KA-410-N, KA-420-NNI, KA-430-NN	10 years	10 years for all specifications; 15 years for specifications 320M, 320F, 310M, 310F; 20 years for specifications 400M, 400F
6. Nature of remedy	Tri-Ply will repair membrane, including material or workmanship, or replace same at Tri-Ply's option, at no cost to the purchaser or refund the cost of the membrane.	If manufacturing defects develop in the membrane that cause the membrane to leak, Tri-Ply will refund to the owner the original costs incurred of the membrane.	Tri-Ply shall maintain, repair, or replace the roof system at no cost to building owner. Tri-Ply will inspect the roof every five years for the duration of the inspection and service contract and will provide maintenance recommendations.
7. Monetary limitations	Tri-Ply's liabilities shall in no event exceed amount of replacement sale price of the membrane.	Warranty is limited to a refund of the original cost of the Tri-Ply membrane.	Tri-Ply's liabilities shall in no event exceed the amount of the replacement price of the roof system.
8. Notification requirements	Written notification within 15 days following any failure of membrane by registered mail or certified mail to Tri-Ply's offices at 1250 14 Mile Road, Suite 103, Clawson, MI 48017.	Written notification to Tri-Ply's Port Arthur, Texas, office within 10 days after discovery of leak in the roofing membrane (see Special Features/Conditions).	Written notification by registered or certified mail to Tri-Ply's offices in Madison Heights, Mich., within 72 hours of discovery of any loss of watertight integrity of the roof system or by telephone notification to Tri-Ply followed by written confirmation.
9. Exclusive or additional remedy	Owner's exclusive guaranty; excludes UCC warranties.	Warranty shall be sole and exclusive remedies of the owner and owner shall be entitled to no further or additional remedies; owner expressly waives any and all claims for damages, including property damages, personal injury damage to the owner or third parties, and/or loss of business or profits; attempts to exclude UCC warranties.	Inspection and service contract is owner's sole and exclusive remedy; excludes all other warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Tri-Ply's determination	Neutral (no provision)	Tri-Ply's determination as to whether roof system should be maintained, repaired, or replaced.
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 3, 4, 10, 12, 16	1, 2, 4, 6, 7, 8, 9, 10, 13, 17, 22 (also specifically excludes any other causes other than inherent defects in the roofing membrane)	1, 3, 4, 10, 16
13. Wind coverage/exclusions	Warranty excludes gales, hurricanes, and tornadoes. [Tri-Ply indicates that there is no coverage for damage caused by wind.]	Warranty excludes wind damage and tornadoes. [Tri-Ply indicates that there is no coverage for damage caused by wind.]	Warranty excludes gales, hurricanes, and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B, C, G, H, L, R	G, I, L	B, C, F, G, H, R

15. Cost to obtain	None	None	10 years: \$10.00/square; 15 years: \$15.00/square; 20 years: \$20.00/square
16. Minimum charge	None	None	10 years: \$1,000; 15 years: \$1,500; 20 years: \$2,000
17. Ineligible structure or building use	Cold-storage buildings, structures outside of U.S. and Canada, structures with conduit or piping between roof deck and membrane (see Tri-Ply's specification manual for additional ineligible structures)	Cold-storage buildings, structures outside of U.S. and Canada, structures with conduit or piping between roof deck and membrane (see Tri-Ply's specification manual for additional ineligible structures)	Storage silos, heated tanks, cold-storage buildings
18. Pre-construction notice and approval requirements	Contractor must submit Tri-Ply's request for warranty form with notice of start and anticipated completion date.	None	Contractor must submit Tri-Ply request warranty form with notice of start and anticipated completion date.
19. Approved, authorized, or licensed applicator	Yes	No	Yes
20. Job inspection policy	Tri-Ply technical field representative may make periodic on-site inspections prior, during, and after application prior to issuance of warranty; no charge.	No on-site inspections	Tri-Ply technical services representative makes on-site inspection prior to and during application depending on project conditions, and after application, as well as five years after issuance of contract; no charge.
21. Contractor's post-installation obligation	Contractor obligated to make repairs to workmanship deficiencies for two years (see Special Features/Conditions).	None; material-only warranty	Contractor obligated to make repairs to workmanship deficiencies for five years.
22. Backed by named insurance or surety	No; Tri-Ply indicates that it does not carry insurance covering its warranty obligations.	No; Tri-Ply indicates that it does not carry insurance covering its warranty obligations.	No; Tri-Ply indicates that it carries product liability insurance to cover its warranty obligations.
23. Issuing entity manufactures and/or sells products	Tri-Ply manufactures and sells product.	Tri-Ply manufactures and sells products.	Tri-Ply manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	Contract can be extended for five years at a charge of \$5.00/square; owner must submit written request for contract extension 60 days prior to expiration and pay for inspection and repair costs.
25. Assignability	Warranty may be transferred if transferee, within 30 days from date of transfer of title, by certified mail to Tri-Ply, 1250 14 Mile Road, Suite 103, Clawson, MI 48017, (1) notifies Tri-Ply of transfer, (2) consents to a roof inspection conducted by a Tri-Ply technical representative and any repairs needed shall be made at owner's sole expense, (3) requests transfer forms which must be completed and returned to Tri-Ply according to instructions, and (4) pays an assignment fee of \$500 to Tri-Ply. Warranty is not otherwise assignable, directly or indirectly.	Not assignable except that it may be assigned to new owner of building if request is made in writing within 30 days of transfer of ownership of building and Tri-Ply acknowledges the transfer in writing.	Assignable upon approval of the proposed assignment by Tri-Ply's Technical Services Department
26. Special features/conditions	Guarantee document states that no liability for faulty and/or improper installation until 24 months following installation, and the obligation to repair and/or replace the membrane due to improper installation shall be the exclusive obligation of the contractor who installed same. Guarantee is executed by Tri-Ply authorized contractor.	Installation of the Tri-Ply membrane is the sole responsibility of the owner and the owner's contractors, and Tri-Ply does not warrant the quality of installation under any circumstances. Owner must sign and mail warranty registration form to Tri-Ply within 10 days of date of installation.	Document states that this warranty is specifically conditioned upon the building owner's observance of and compliance with the general terms and provisions of the contract and the requirements of Tri-Ply as stated in the Tri-Ply Systems Manual. The terms and conditions in the inspection and service contract may not be enlarged or altered by anyone in any manner unless by an officer of Tri-Ply in writing. Roof must be installed by a Tri-Ply "Eagle Elite" contractor according to written and Tri-Ply approved specifications and drawings.
27. Executed by owner	No	Owner signs Tri-Ply warranty registration form.	Yes

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Tri-Ply, Inc.	Uniroof Corporation	Uniroof Corporation
2. Title, original publication date, and identifying symbol, if any	"Material and Installation—No Dollar Limit"; 1992	Uniroof Corporation "Trafifgard Limited Warranty"; January 1, 1994	Uniroof Corporation "Uniroof Membrane Roofing Limited Warranty"; April 1989; 4/24/89
3. Product, specification, or system covered	BUR Specifications: I-5-4P-M, I-4-4P-G, I-4-4P-S, I-4-3P-M, I-3-3P-G, I-3-3P-S, I-3-2P-M, NN-5-B3P-M, NN-4-B3P-G, NN-4-B3P-S, NN-3-B2P-M, NN-3-B2P-G, NN-3-B2P-S, N-4-B3P-M, N-4-B2P-M, N-3-52P-G, N-3-B2P-S, N-3-B2P-M; Modified Bitumen Specifications: TP-4, TP-4S, Karifit 306, 307, 308, Karifit 306 FR, 307 FR	Trafifgard	Uniroof Membrane Roofing
4. Scope of coverage	Material and workmanship (see Special Features/Conditions); Tri-Ply warrants that its roofing membrane will be free from: (1) manufacturing defects; (2) deterioration as a result of the ordinary wear and tear from exposure to the elements; (3) splits, fissures or tears not caused by structure or roof deck movement or failure; and (4) application/installation defects.	Material only: Uniroof warrants the Trafifgard material will not deteriorate its condition to the extent of causing leakage or providing an unfit or faulty membrane. One-year warranty for defective products used in such manufacture is covered. Uniroof does not warrant to color match replacement material to surrounding area. Blisters, regardless of size, shall not be considered to be a defect.	Material and workmanship; applicator warrants for a period of two years that Uniroof roofing membrane will remain in a watertight condition. For the next eight or thirteen years, depending upon the length of the warranty selected, Uniroof warrants that the Uniroof roofing membrane will remain watertight.
5. Length of coverage	5 or 10 years for all BUR specifications; 6, 10, or 12 years for all modified bitumen specifications; 15 years: KA-300-NI, KA-31-D-N, KA-320-NI, KA-330-NI, TP-300-NI, TP-310-N, TP-320-NI, TP-330-NI; 20 years: KA-400-NI, KA-410-N, KA-420-NI, KA-430-NI	10 years	10 or 15 years
6. Nature of remedy	If defects cause the membrane to fail to perform to customary industry tolerances, Tri-Ply shall be obligated to repair and/or replace, at its sole discretion, the membranes or portion which have failed or are otherwise proven defective, at Tri-Ply's sole cost and expense.	Uniroof will furnish Trafifgard material as may be required to repair those areas that have failed as a result of the deterioration of the originally furnished Trafifgard material. Labor to install this material is not included.	Applicator will, for the first two years, and Uniroof will thereafter, each at its own expense, cause the repairs or modifications to the membrane to be made to the extent necessary to enable the membrane to perform as warranted.
7. Monetary limitations	None stated.	The total cost of materials provided under warranty shall not exceed in the aggregate over the life of warranty a sum greater than the original cost of the Uniroof supplied material.	The total cost of repairs provided under warranty shall not exceed in the aggregate over the life of warranty a sum greater than the original cost of Uniroof-supplied material and the labor used to install such material.
8. Notification requirements	Written notification to Tri-Ply within 15 days of discovering conditions that are the basis of a warranty claim against Tri-Ply	Prompt written notification to Uniroof within thirty days after owner's discovery of any failure of the roof to perform as warranted	Written notification sent by certified mail to applicator and Uniroof at P.O. Box 160133, Altamonte Springs, FL 32716-0133, during the respective warranty periods within 30 days after owner's discovery of any failure of the roof to perform as warranted.
9. Exclusive or additional remedy	Warranty shall be sole and exclusive remedies of the owner and owner shall be entitled to no further or additional remedies; owner waives any and all other claims for damages, including property damages and personal injury damage to the owner or third parties; excludes UCC warranties.	Warranty states that its provisions shall constitute the exclusive remedy; warranty is in lieu of all other guarantees and warranties; excludes UCC warranties.	Warranty states that its provisions shall constitute the exclusive remedy. Warranty is in lieu of all other guarantees and warranties; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Tri-Ply's determination	Warranty will be ineffective if, in Uniroof's judgement, the performance of the material is impaired by any alterations or repairs made without Uniroof's written approval or by work done by anyone other than a Uniroof-approved applicator.	Uniroof's determination if warranty ineffective because performance of the roof and/or the membrane is impaired by (1) any alterations or repairs made without Uniroof's written approval, (2) by work done on the roof by anyone other than a Uniroof approved roofer/applicator, or (3) by change in use of the roof or building
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7, 9, 12, 13 including exposure to ionized radiation or contamination by radioactivity from nuclear fuel or from any nuclear reactor, 17, 18, 19. Warranty states that Specific Condition M and S also makes the warranty inapplicable.	1, 3, 4, 5, 10, 18, 22	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15, 22, 23. Warranty also excludes tests or test cuts not authorized by Uniroof.
13. Wind coverage/exclusions	Warranty excludes wind storms, hurricanes, and tornadoes. [Tri-Ply indicates that there is no coverage for damage caused by wind.]	Uniroof indicates that there is no coverage for damage caused by wind.	Warranty excludes windstorms, hurricanes, and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	A, B, C including owner's failure to reimburse Tri-Ply within 30 days for all reasonable inspection expenses if Tri-Ply determines that a warranty claim is expressly excluded by the terms of the warranty; D, E, F including failure of owner to timely and completely comply with the maintenance and inspection procedures outlined in the roof owner's manual, which is incorporated; G, H, I, K, L, M, R, S	B, C, F, H, N	A, B, C, F, H, I, J, L, N, R
15. Cost to obtain	For BUR Specifications: 5 years: \$ 6.00/square; 10 years: \$ 7.50/square; 15 years: \$10.00/square; 20 years: \$15.00/square; for Modified Bitumen Specifications: 6, 10, 12 years: no charge; 15 years: \$ 5.00/square; 20 years: \$ 7.50/square;	None	10 years: \$4.00/square; 15 years: \$7.00/square
16. Minimum charge	For BUR Specifications: 5 years: \$600; 10 years: \$800; 15 years: \$1,000; 20 years: \$1,500; for Modified Bitumen Specifications: 6, 10, 12 years: no charge; 15 years: \$400; 20 years: \$600	None	10 years: \$200; 15 years: \$350

17. Ineligible structure or building use	Cold-storage buildings, structures outside of U.S. and Canada, structures with conduit or piping between roof deck and membrane, Tri-Ply's specification manual for additional ineligible structures.	None	None
18. Pre-construction notice and approval requirements	Contractor must submit Tri-Ply request for warranty form with notice of start and anticipated completion date.	Contractor required to give pre-construction notice and to obtain pre-construction approval from Uniroof by fax, mail, or telephone.	Contractor required to give pre-construction notice and to obtain pre-construction approval from Uniroof in writing or by telephone.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes
20. Job inspection policy	Tri-Ply technical field representatives may make periodic on-site inspections prior to and during application, and after completion prior to issuance of warranty; no charge. Warranty states that Tri-Ply will cause the membrane and roofing system to be inspected, at its option, within a period one month after completion of two years from warranty issuance to one month after two years or as soon as practicable thereafter, and issue a report detailing any application related inadequacies/failures in the membrane and roofing system.	Uniroof makes on-site inspections prior to and during application at its discretion and after completion prior to issuance of warranty; Uniroof charges out-of-pocket expenses for inspections on jobs that are out of state.	Uniroof makes on-site inspections prior to, during, and after application, as well as two years after issuance of warranty. Uniroof does charge for inspections on jobs that are out-of-state. Charges may be waived on larger jobs.
21. Contractor's post-installation obligation	Warranty states that contractor and owner acknowledge and agree that any application inadequacies/failures in the membrane roofing system will be remedied in a workmanlike manner so as to return roof to warrantable condition within 60 days after receiving two year inspection report prepared by Tri-Ply. Failure of contractor and owner to remedy conditions within 30 days or as soon as practicable after receiving notice renders warranty void immediately.	None; material-only warranty	Contractor obligated to repair all leaks and any defects for two years.
22. Backed by named insurance or surety	No; Tri-Ply indicates that it does not carry insurance covering its warranty obligations.	No; Uniroof indicates that it carries product liability insurance.	No; Uniroof indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Tri-Ply manufactures and sells product.	Uniroof manufactures and sells the product.	Uniroof sells product only.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Warranty may be transferred only, if within 30 days of transfer of title to property upon which Tri-Ply membrane has been installed, transferee: (1) notifies Tri-Ply of transfer by certified mail addressed to Tri-Ply, Attention: Warranty Division, P.O. Box 2685, Port Arthur, TX 77643; (2) requests transfer forms, which must be completed and returned to Tri-Ply according to instructions; and (3) tenders to Tri-Ply the transfer fee of \$750. Further, transfer and/or assignment of warranty is not valid unless owner consents to a roof inspection by Tri-Ply and until owner completes repairs delineated by Tri-Ply necessary to bring the roofing system within compliance with Tri-Ply's most recent specification manual.	Warranty is nontransferable.	Nontransferable
26. Special features/conditions	Warranty states that owner and contractor acknowledge, as evidenced by their signatures, that if the membrane fails due to misapplication or failure to install the membrane in accordance with Tri-Ply's most recent specification manual, and if the failure is discovered or discoverable within the first 24 months after validation of warranty, the repair/replacement of the membrane is the sole responsibility of the contractor and Tri-Ply shall have no obligation regarding same. Warranty becomes effective only and if it's validated by an authorized representative of Tri-Ply and executed and approved by both the roofing contractor and the owner, with a copy of same, fully executed, returned to Tri-Ply within 30 days of validation by Tri-Ply at its offices in Port Arthur, Texas. In the event it is determined by Tri-Ply, after inspection of warranty complaint, that warranty complaint is expressly excluded by the terms of the warranty, the owner shall be responsible for reimbursement of all reasonable expenses associated with completion of the inspection. Failure of owner to reimburse Tri-Ply for reasonable expenses within 30 days after receipt of an invoice shall void warranty. Aesthetic irregularities or normal aging effects do not constitute a loss of watertight integrity and are not sufficient basis for maintenance, repair or replacement by Tri-Ply. Unless Tri-Ply has notified owner in writing that the roofing membrane is sold as is. No suit for breach of warranty may be filed more than one year of either (1) tender of delivery of the product to the owner or (2) the expiration of the warranty, whichever shall occur later. Tri-Ply is not bound by any oral expression or representation made by any agent or party purporting to act for or on behalf of Tri-Ply, or by any commitment, arrangement or representation not specified in the warranty. By signing warranty, owner acknowledges that it has read roof owners manual and agrees to comply with all terms, obligations, and requirements detailed therein.	The owner is responsible for all costs for inspection and/or repairs if condition is found not to be covered by warranty. Responsibility of owner to insure at all times that all required routine maintenance is performed, including cleaning drains, repairing damaged areas, and replacing deteriorated caulking.	This is a joint contractor/manufacturer warranty in that the warranty document itself states that the applicator warrants that the roof will remain in a watertight condition for the first two years. In addition to execution by building owner and Uniroof, the warranty is to be signed by the applicator, who as stipulated in the specification manual, Owner res-ponsibility for all inspection and/or repairs if reported condition is found not to be covered under the warranty. Responsibility of Owner to insure at all times that all required routine roof maintenance is performed, including cleaning roof drains and replacing deteriorated caulking.
27. Executed by owner	Owner and contractor must execute warranty (see Special Features Conditions).	Yes	Yes (See Special Features/Conditions.)

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of Issuing entity	U.S. Intec, Inc.	Versico Incorporated, a subsidiary of Carlisle Corporation	Versico Incorporated, a subsidiary of Carlisle Corporation
2. Title, original publication date, and identifying symbol, if any	"U.S. Intec, Inc. Roofing and Waterproofing Products Full Value Warranty"; March 1992	"Versico Roofing System Warranty (With Extended Membrane Material Warranty)"; June 1995	"Versico Total Roofing System Warranty"; June 1995
3. Product, specification, or system covered	Specifications listed under the following roof systems: B-SP-4000-N, B-SP-4000-NI, B-SP-4000-NNI, B-SP-4000-NN, B-SP-7000-N, B-SP-7000-NI, B-SP-7000-NNI, B-SP-7000-NN, B-SP-9000-N, B-SP-9000-NI, B-SP-9000-NNI, B-SP-9000-NN, B-2000-N, B-2000-NI, B-2000-NNI, B-300-N, B-300-NI, B-300-NNI, B-400-N, B-400-NI, B-400-NNI, B-500-N, B-500-NI, B-500-NNI. Other systems must be approved in writing by technical services department.	VersiGard roofing systems, VersiWeld roofing systems; available for black VersiGard membranes only	VersiGard roofing systems, VersiWeld roofing systems
4. Scope of coverage	Material and workmanship (see Special Features/Conditions); U.S. Intec warrants that its roofing membranes will be free from (1) manufacturing defects; (2) deterioration as a result of the ordinary wear and tear from exposure to the elements; (3) splits, fissures, or tears not caused by structural or roof deck movement or failure; and (4) application/installation defects.	Material and workmanship for initial 5 or 10 years; material-only for as long as 20 years. For initial term, Versico warrants it will repair leaks in the Versico roofing systems caused by defects in the roofing system's material or workmanship of the Versico authorized roofing contractor in installing the same. For the balance of 20 years, Versico will provide to the owner a credit to be applied toward the purchase of new membrane material in the event of premature deterioration of the Versico membrane material to the point of failure. The Versico roofing system is defined as the Versico membrane, flashings, adhesives and sealants, and any other Versico brand products utilized in the installation.	Material and workmanship; Versico warrants that it will repair leaks in the Versico total roofing system caused by defects in the roofing system's material or workmanship of the Versico authorized roofing contractor in installing the same. The Versico total roofing system is defined as the Versico membrane, flashings, adhesives and sealants, fasteners, accessories, metal edging, any Versico-brand products utilized in the installation, and any other products specifically approved by Versico for coverage under warranty.
5. Length of coverage	10 years: FR-2, FR-3, BraiFlex 170; 12 years: Brai SP-4 with surfacing applied, Brai Flex-M; 15 years: 2-ply Brai SP-4 with surfacing; 20 years: GBSP-4 and BraiFlex 170, 170FR, 250FR, under special circumstances (contact manufacturer for details)	5 or 10 years material and workmanship; coverage for black VersiGard membrane material only can be extended up to 20 years.	10 or 15 years; white VersiGard limited to 10 years.
6. Nature of remedy	If defects cause the membrane to fail to perform to customary industry tolerances, U.S. Intec shall be obligated to repair and/or replace, at its sole discretion, the membrane or portion that has failed or is otherwise proven defective, at U.S. Intec's sole cost and expense.	For the initial 5- or 10-year term, the owner's remedies and Versico's liability shall be limited to Versico's repair of the leak in this roofing system. For the balance of 20 years, Versico will provide a credit to be applied toward the purchase of new membrane material, based on the number of remaining months of warranty and prorated at current prices.	The owner's remedies and Versico's liability shall be limited to Versico's repair of the leak in the roofing system.
7. Monetary limitations	None stated.	For 5- or 10-year material and workmanship warranty: no monetary limitation stated; extended warranty on membrane material credit based on the number of remaining months of warranty and prorated at current prices.	None stated.
8. Notification requirements	Written notification to U.S. Intec within 15 days of discovering conditions which are the basis of a warranty claim against U.S. Intec	The owner shall provide Versico with written notice to Versico at 3485 Fortuna Drive, Akron, OH 44312, within 30 days of the discovery of any leaks in the roofing system.	The owner shall provide Versico with written notice to Versico at 3485 Fortuna Drive, Akron, OH 44312, within 30 days of the discovery of any leaks in the roofing system.
9. Exclusive or additional remedy	Warranty shall be sole and exclusive remedies of the owner and owner shall be entitled to no further or additional remedies; owner waives any and all other claims for damages, including property damages, personal injury damage to the owner or third parties; excludes UCC warranties.	Remedies stated in warranty are the sole and exclusive remedies for failure of the roofing system or its components; excludes UCC warranties.	Remedies stated in warranty are the sole and exclusive remedies for failure of the roofing system or its components; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	U.S. Intec's determination	Versico's determination	Versico's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13 (including exposure to ionized radiation or contamination by radioactivity from any nuclear fuel or from any nuclear waste), 17, 19, 22. Warranty states that Specific Condition M and S also makes the warranty inapplicable.	1, 2, 3, 4 (including damage by the building structure failing to have adequate strength to support all live and dead loads, including water and snow loads), 9 (including recreational activities), 10, 11, 13, 16, 22. Warranty excludes damage caused by insects.	1, 2, 3, 4 (including damage by the building structure failing to have adequate strength to support all live and dead loads, including water and snow loads), 9 (including recreational activities), 10, 11, 13, 16, 22. Warranty excludes damage caused by insects.
13. Wind coverage/exclusions	Warranty excludes windstorms, hurricanes, and tornadoes. [U.S. Intec indicates that there is no coverage for damage caused by wind.]	Versico indicates that warranty covers roof damage resulting from wind speeds up to 55 mph. Warranty excludes winds in excess of 55 mph measured at roof level and tornadoes.	Versico indicates that warranty covers roof damage resulting from wind speeds up to 55 mph. Warranty excludes winds in excess of 55 mph measured at roof level and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	A, B, C (including owner's failure to reimburse U.S. Intec within 30 days for all reasonable inspection expenses if U.S. Intec determines that a warranty claim is expressly excluded by the terms of the warranty), D, E, F, G, H, I, K, L, M, R, S	B (including taking of test cuts), C, F (including periodic cleaning of drains and removal of harmful debris from roof), G	B (including taking of test cuts), C, F (including periodic cleaning of drains and removal of harmful debris from roof), G
15. Cost to obtain	10 years: no charge; 12 years: no charge; 15 years: \$10.00/square (for Brai Flex); 20 years: \$15.00/square (for Brai Flex)		
16. Minimum charge	10 years: no charge; 12 years: no charge 15 years: \$800; 20 years: \$1,000		
17. Ineligible structure or building use	See U.S. Intec's specification manual.	Single-family residences	Single-family residences

18. Pre-construction notice and approval requirements	Contractor provides notice to U.S. Intec through submittal of request for inspection form.	Yes	The contractor is required to submit job approval forms before project is authorized for warranty.	The contractor is required to submit job approval forms before project is authorized for warranty.
19. Approved, authorized, or licensed applicator	Yes	Yes	Yes	Yes
20. Job inspection policy	U.S. Intec technical field representatives may make periodic on-site inspections prior to and during application. Technical field representative performs on-site inspection after completion prior to issuance of warranty; no charge. Warranty states that U.S. Intec will cause the membrane and roofing system to be inspected, at its option, within a period one month prior to expiration of two years from warranty issuance to one month after two years, or as soon as practicable thereafter, and issue a report detailing any application-related inadequacies/failures in the membrane and roofing system.	U.S. Intec technical field representatives may make periodic on-site inspections prior to and during application. Technical field representative performs on-site inspection after completion prior to issuance of warranty; no charge. Warranty states that U.S. Intec will cause the membrane and roofing system to be inspected, at its option, within a period one month prior to expiration of two years from warranty issuance to one month after two years, or as soon as practicable thereafter, and issue a report detailing any application-related inadequacies/failures in the membrane and roofing system.	Versico inspector makes on-site inspection after completion, prior to issuance of warranty.	Versico inspector makes on-site inspection after completion, prior to issuance of warranty.
21. Contractor's post-installation obligation	Warranty states that contractor and owner acknowledge and agree that any application inadequacies/failures in the membrane and roofing system will be remedied in a workmanlike manner so as to return roof to a warrantable condition within 60 days after receiving two-year inspection report prepared by U.S. Intec. Failure of contractor and owner to remedy conditions within 30 days or as soon as practicable after receiving notice renders warranty void immediately.	Warranty states that contractor and owner acknowledge and agree that any application inadequacies/failures in the membrane and roofing system will be remedied in a workmanlike manner so as to return roof to a warrantable condition within 60 days after receiving two-year inspection report prepared by U.S. Intec. Failure of contractor and owner to remedy conditions within 30 days or as soon as practicable after receiving notice renders warranty void immediately.	The contractor is obligated to make repairs to workmanship deficiencies for three years.	The contractor is obligated to make repairs to workmanship deficiencies for three years.
22. Backed by named insurance or surety	No; U.S. Intec indicates that it carries product liability insurance covering its warranty obligations.	No; U.S. Intec indicates that it carries product liability insurance covering its warranty obligations.	No; Versico indicates that it does not carry insurance covering its warranty obligations.	No; Versico indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	U.S. Intec manufactures and sells product.	U.S. Intec manufactures and sells product.	Versico manufactures and sells product.	Versico manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision	No renewal provision	No renewal provision
25. Assignability	Warranty may be transferred only, if within 30 days of transfer of title to property upon which U.S. Intec membrane has been installed, transferee (1) notifies U.S. Intec of transfer by certified mail addressed to U.S. Intec, Attention: Technical Services Department, P.O. Box 2854, Fort Arthur, TX 77643; (2) requests transfer forms, which must be completed and returned to U.S. Intec according to instructions; and (3) tenders to U.S. Intec the transfer fee of \$750. Further, transfer and/or assignment of warranty is not valid unless owner completes repairs delineated by U.S. Intec and until owner completes repairs within compliance with U.S. Intec's most recent specification manual.	Warranty may be transferred only, if within 30 days of transfer of title to property upon which U.S. Intec membrane has been installed, transferee (1) notifies U.S. Intec of transfer by certified mail addressed to U.S. Intec, Attention: Technical Services Department, P.O. Box 2854, Fort Arthur, TX 77643; (2) requests transfer forms, which must be completed and returned to U.S. Intec according to instructions; and (3) tenders to U.S. Intec the transfer fee of \$750. Further, transfer and/or assignment of warranty is not valid unless owner completes repairs delineated by U.S. Intec and until owner completes repairs within compliance with U.S. Intec's most recent specification manual.	Warranty states that it is not assignable by operation of law or otherwise. Application may be made by a new building owner for reissuance of the warranty during the original warranty period. Certain procedures, including an inspection of the roofing system by Versico representative, and fees will apply to any reissuance. Versico reserves the right, in its sole discretion, to refuse to reissue this warranty.	Warranty states that it is not assignable by operation of law or otherwise. Application may be made by a new building owner for reissuance of the warranty during the original warranty period. Certain procedures, including an inspection of the roofing system by Versico representative, and fees will apply to any reissuance. Versico reserves the right, in its sole discretion, to refuse to reissue this warranty.
26. Special features/conditions	Warranty states that owner and contractor acknowledge, as evidenced by their signatures, that if the membrane fails due to misapplication or failure to install the membrane in compliance with U.S. Intec's most recent specification manual, and if the failure is discovered or discoverable within the first 24 months after validation of warranty, the repair/replacement of the membrane is the sole responsibility of the contractor, and U.S. Intec shall have no obligation regarding same. Warranty becomes void immediately if contractor and owner do not remedy application-related inadequacies and failures or other conditions within 30 days of being notified by U.S. Intec (see item 21 above). Warranty becomes effective only and if it's validated by an authorized representative of U.S. Intec and executed and approved by both the roofing contractor and the owner, with a copy of same fully executed, returned to U.S. Intec within 30 days of validation by U.S. Intec at its offices in Fort Arthur, Texas. In the event it is determined by U.S. Intec, after inspection of warranty claimant, that warranty complaint is expressly excluded by the terms of the warranty, the owner shall be responsible for reimbursement of all reasonable expenses associated with completion of the inspection. Failure of owner to reimburse U.S. Intec for reasonable expenses within 30 days after receipt of an invoice shall void warranty. Aesthetic irregularities or normal aging effects do not constitute a loss of watertight integrity and are not sufficient cause for maintenance, repair, or replacement by U.S. Intec. Unless U.S. Intec has validated warranty, the U.S. Intec roofing membrane is sold as is. No suit for breach of warranty may be filed later than one year of either (1) tender of delivery of the project to the owner or (2) the expiration of the warranty, whichever shall occur later. U.S. Intec is not bound by any oral expression or representation made by any agent or party purporting to act for or on behalf of U.S. Intec, or by any commitment, arrangement or representation not specified in the warranty.	Warranty states that owner and contractor acknowledge, as evidenced by their signatures, that if the membrane fails due to misapplication or failure to install the membrane in compliance with U.S. Intec's most recent specification manual, and if the failure is discovered or discoverable within the first 24 months after validation of warranty, the repair/replacement of the membrane is the sole responsibility of the contractor, and U.S. Intec shall have no obligation regarding same. Warranty becomes void immediately if contractor and owner do not remedy application-related inadequacies and failures or other conditions within 30 days of being notified by U.S. Intec (see item 21 above). Warranty becomes effective only and if it's validated by an authorized representative of U.S. Intec and executed and approved by both the roofing contractor and the owner, with a copy of same fully executed, returned to U.S. Intec within 30 days of validation by U.S. Intec at its offices in Fort Arthur, Texas. In the event it is determined by U.S. Intec, after inspection of warranty claimant, that warranty complaint is expressly excluded by the terms of the warranty, the owner shall be responsible for reimbursement of all reasonable expenses associated with completion of the inspection. Failure of owner to reimburse U.S. Intec for reasonable expenses within 30 days after receipt of an invoice shall void warranty. Aesthetic irregularities or normal aging effects do not constitute a loss of watertight integrity and are not sufficient cause for maintenance, repair, or replacement by U.S. Intec. Unless U.S. Intec has validated warranty, the U.S. Intec roofing membrane is sold as is. No suit for breach of warranty may be filed later than one year of either (1) tender of delivery of the project to the owner or (2) the expiration of the warranty, whichever shall occur later. U.S. Intec is not bound by any oral expression or representation made by any agent or party purporting to act for or on behalf of U.S. Intec, or by any commitment, arrangement or representation not specified in the warranty.	By notifying Versico of a leak, the owner authorizes Versico to investigate the cause of the leak. Should the investigation reveal the cause of the leak to be outside the scope of the warranty, investigation and repair costs shall be paid by owner.	By notifying Versico of a leak, the owner authorizes Versico to investigate the cause of the leak. Should the investigation reveal the cause of the leak to be outside the scope of the warranty, investigation and repair costs shall be paid by owner.
27. Executed by owner	Owner and contractor must execute warranty (see Special Features/Conditions).	Owner and contractor must execute warranty (see Special Features/Conditions).	No	No

MEMBRANE WARRANTIES

Roof Membrane Warranties (Built-up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Versico Incorporated, a subsidiary of Carlisle Corporation	Versico Incorporated, a subsidiary of Carlisle Corporation
2. Title, original publication date, and identifying symbol, if any	"Versico Roofing System Warranty"; June 1995	"Versico Total Roofing System Warranty (With Extended Membrane Material Warranty)"; June 1995
3. Product, specification, or system covered	VersiGard roofing systems, VersiWeld roofing systems	VersiGard roofing systems, VersiWeld roofing systems; available for black VersiGard membranes only.
4. Scope of coverage	Material and workmanship; Versico warrants that it will repair leaks in the Versico total roofing system caused by defects in the roofing system's material or workmanship of the Versico authorized roofing contractor in installing the same. The Versico total roofing system is defined as the Versico membrane, flashings, adhesives and sealants, fastener assemblies, metal edging, any Versico-brand products utilized in the installation, and any other products specifically approved by Versico for coverage under warranty.	Material and workmanship for initial 10 or 15 years; material-only for as long as 20 years. For initial term, Versico warrants it will repair leaks in the Versico total roofing system caused by defects in the roofing system's material or workmanship of the Versico authorized roofing contractor in installing the same. For the balance of 20 years, Versico will provide the owner a credit to be applied toward the purchase of new membrane material in the event of premature deterioration of the Versico membrane material to the point of failure. The Versico total roofing system is defined as the Versico membrane, flashings, adhesives and sealants, any other Versico-brand products utilized in the installation, and any other products specifically approved by Versico for coverage under the warranty.
5. Length of coverage	10 or 15 years	10 or 15 years material and workmanship; coverage for black VersiGard membrane material only can be extended up to 20 years.
6. Nature of remedy	The owner's remedies and Versico's liability shall be limited to Versico's repair of the leak in the roofing system.	For initial 10- or 15-year term, the owner's remedies and Versico's liability shall be limited to Versico's repair of the leak in the roofing system. For balance of 20 years, Versico will provide a credit to be applied toward the purchase of new membrane material based on the number of remaining months of warranty and prorated at current prices.
7. Monetary limitations	None stated.	For 10- or 15-year material and workmanship warranty: no monetary limitation stated; extended warranty on membrane material: credit based on the number of remaining months of warranty and prorated at current prices.
8. Notification requirements	The owner shall provide Versico with written notice to Versico at 3485 Fortuna Drive, Akron, OH 44312, within 30 days of the discovery of any leaks in the roofing system.	The owner shall provide Versico with written notice to Versico at 3485 Fortuna Drive, Akron, OH 44312, within 30 days of the discovery of any leaks in the roofing system.
9. Exclusive or additional remedy	Remedies stated in warranty are the sole and exclusive remedies for failure of the roofing system or its components; excludes UCC warranties.	Remedies stated in warranty are the sole and exclusive remedies for failure of the roofing system or its components; excludes UCC warranties.
10. Inclusion of consequential damages	No	No
11. Determination of warranty applicability	Versico's determination	Versico's determination
12. Specific exclusions from coverage (See item no. 12 in Introduction.)	1, 2, 3, 4 (including damage by the building structure failing to have adequate strength to support all live and dead loads, including water and snow loads), 9 (including recreational activities), 10, 11, 13, 16, 22. Warranty excludes damages caused by insects.	1, 2, 3, 4 (including damage by the building structure failing to have adequate strength to support all live and dead loads, including water and snow loads), 9 (including recreational activities), 10, 11, 13, 16, 22. Warranty excludes damages caused by insects.

13. Wind coverage/exclusions	Versico indicates that warranty covers roof damage resulting from wind speeds up to 55 mph. Warranty excludes winds in excess of 55 mph measured at roof level and tornadoes.	Versico indicates that warranty covers roof damage resulting from wind speeds up to 55 mph. Warranty excludes winds in excess of 55 mph measured at roof level and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (See item no. 14 in Introduction.)	B (including taking of test cuts), C, F (including periodic cleaning of drains and removal of harmful debris from roof), G	B (including taking of test cuts), C, F (including periodic cleaning of drains and removal of harmful debris from roof), G
15. Cost to obtain	5 years: \$3.00/square; 10 years: \$8.00/square	10 years: \$7.00/square; 15 years: \$12.00/square; 20-year extended membrane material: add \$200 to per-square fee when above minimum size.
16. Minimum charge	5 years: \$400; 10 years: \$400	10 years: \$600; 15 years: \$800; 20-year extended membrane material: add \$200 to per-square fee when above minimum size.
17. Ineligible structure or building use	Single-family residences	Single-family residences
18. Pre-construction notice and approval requirements	The contractor is required to submit job approval forms before project is authorized for warranty.	The contractor is required to submit job approval forms before project is authorized for warranty.
19. Approved, authorized, or licensed applicator	Yes	Yes
20. Job inspection policy	Versico inspector makes on-site inspection after completion, prior to issuance of warranty; \$300 inspection charge.	Versico inspector makes on-site inspection after completion, prior to issuance of warranty; \$300 inspection charge.
21. Contractor's post-installation obligation	The contractor is obligated to make repairs to workmanship deficiencies for three years.	The contractor is obligated to make repairs to workmanship deficiencies for three years.
22. Backed by named insurance or surety	No; Versico indicates that it does not carry insurance covering its warranty obligations.	No; Versico indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Versico manufactures and sells product.	Versico manufactures and sells product.
24. Conditions for renewal or extension	No renewal provision	No renewal provision
25. Assignability	Warranty states that it is not assignable by operation of law or otherwise. Application may be made by a new building owner for reissuance of the warranty during the original warranty period. Certain procedures, including an inspection of the roofing system by Versico representative, and fees will apply to any reissuance. Versico reserves the right, in its sole discretion, to refuse to reissue this warranty.	Warranty states that it is not assignable by operation of law or otherwise. Application may be made by a new building owner for reissuance of the warranty during the original warranty period. Certain procedures, including an inspection of the roofing system by Versico representative, and fees will apply to any reissuance. Versico reserves the right, in its sole discretion, to refuse to reissue this warranty.
26. Special features/conditions	By notifying Versico of leak, the owner authorizes Versico to investigate the cause of the leak. Should the investigation reveal the cause of the leak to be outside the scope of the warranty, investigation and repair costs shall be paid by owner.	By notifying Versico of leak, the owner authorizes Versico to investigate the cause of the leak. Should the investigation reveal the cause of the leak to be outside the scope of the warranty, investigation and repair costs shall be paid by owner.
27. Executed by owner	No	No

Section 4

Roof Board Insulation

Information on Commercial Roof Board Insulation

General Information

Rigid roof board insulation materials are manufactured from a variety of base materials and chemical compounds and are typically categorized as either homogeneous or composite constructions. Homogeneous insulating boards are prefabricated products with one insulation layer component manufactured from any one of several base materials. Top and/or bottom surfaces may or may not be coated or impregnated with asphalt or other binders and/or covered with facer materials, such as foils, organic felts, glass fibers, and kraft paper.

Composite insulating boards consist of multiple layers of insulations and/or a variety of other board materials (typically perlite, polyisocyanurate, fiberboard, plywood, and gypsum board) that form a unified, bonded multilayer component. Top and/or bottom surfaces may or may not be coated or impregnated with asphalt or other binders and/or covered with facer materials, such as foils, organic felts, glass fibers, and kraft paper. Composite insulations containing polyisocyanurate are listed in the 1997 edition of the *Guide* together with homogeneous boards because of the applicability to both of ASTM 1289-95.

The generic classes of homogeneous roofing insulation boards are:

- Expanded polystyrene
- Extruded polystyrene
- Glass fiber/mineral fiber
- Cellular glass
- Phenolic
- Fiberboard
- Perlite
- Polyisocyanurate

Following is additional information on each of these product types.

Expanded (molded) polystyrene (EPS) EPS board is formed from a plastic polymer (polystyrene), which is supplied by several companies to regional converters. The process includes molding into blocks, manufacturing sheets, and, optionally, applying facer materials.

The converted materials generally conform to material specifications published by the Society of the Plastics Industry (SPI). Some of these specifications, together with other calculated data, are shown in the material data sheet in this section.

Extruded polystyrene Extruded polystyrene board is also formed from a polystyrene polymer. Closed cells are integrally formed within the insulation materials during the expansion process. Continuous extrusion produces a

tight and complete skin (free of open cells) to form on each side of the insulation board. Boards are expanded to a specific thickness during manufacture.

Glass fiber Glass fiber roof board insulation is a rigid insulating material composed of fine glass fibers, which provide the insulating properties of the product. The glass-fiber-reinforced asphalt and kraft paper top surface of the insulation boards provides a tough, impact-resistant mopping surface upon which a built-up roof system may be applied.

Cellular glass Cellular glass roof insulation is a rigid insulating material composed of heat-fused, closed glass cells. It is available in standard insulation board or block form and in special tapered boards that provide drainage slope for roof decks.

Phenolic foam Phenolic foam insulation board is a closed-cell, rigid, thermosetting phenolic foam core material manufactured in various thicknesses. Because no manufacturers have listed phenolic products in the 1994 edition of the *Commercial Guide*, the product category has been omitted from the index.

Fiberboard Fiberboard insulation is a preformed rigid fibrous-felted panel, composed principally of wood or cane fibers integrally treated with waterproofing binders.

Perlite Perlite roof board insulation is a rigid insulating material manufactured from expanded volcanic minerals combined with organic fibers and waterproofing binders. The top surface is generally treated to minimize bitumen absorption and to provide an intimate bond with built-up roofing materials.

Polyisocyanurate Polyisocyanurate foam board insulation is produced from a polyisocyanurate-based chemical. The polyisocyanurate material is usually sandwiched between asphalt-saturated organic or inorganic felt facer sheets. Glass fiber reinforcement used in some foam cores provides additional fire resistance and greater dimensional stability.

Selection Criteria

The selection of the appropriate roof insulation materials for a building application involves consideration of the insulation as a component of a specific roof system. Some issues that should be considered are compatibility of the insulation with other roof system components, the nature of the substrate, thermal objectives, durability, resistance to climatic conditions, stability, installed weight, method of attachment, fire and wind resistance, life-cycle cost, and slope and drainage requirements. In practice, no single commercial product possesses all of the ideal properties. The designer therefore must choose materials with properties that, on balance, are best suited to the specific project.

Thermal Values

Thermal values are provided in the insulation section of the *Guide* in the item called "Common Available Thicknesses." These properties are stated as thermal conductance (C) and thermal resistance (R). The data provided are C-values and R-values at both 40 and 75 degrees F for the different thicknesses. A brief explanation of these terms is provided below; for a complete discussion of issues relating to insulating value of roof board insulation, see the *NRCA Energy Manual*, available from the National Roofing Contractors Association.

A BTU (British Thermal Unit) is the amount of heat required to raise the temperature of one pound of water 1 degree F. The k-value of a material is a measurement of the number of BTUs that pass through a 1-in.-thick sample of material 1 ft. by 1 ft. square in one hour with a difference in temperature between the top and bottom of 1 degree F. The C-value is simply the conductance of a material at any thickness; for example, if an insulating material has a k-value of 0.16, then 2 inches of the material will have a C-value of 0.08 (0.16/2). The R-value is the resistance to heat flow, not its conductance; it's the reciprocal of the C-value, so the larger the number of the R-value, the better insulating value the material has. R-values are more commonly used because they can be added together, whereas C-values cannot.

Technical Information

For a general discussion of fire ratings according to Underwriters Laboratories (UL) and/or Factory Mutual (FM) test methods and ASTM performance-related standard specifications and/or standard test methods, see Technical Information on Products in the *Commercial Guide*, in the Introduction. There you will also find a list of ASTM standards pertaining specifically to insulation. Omitted from the list is reference to expanded polystyrene insulation, the test methods for which are enumerated in the material data sheet shown below.

Throughout the insulation section of the *Commercial Guide*, there are provisions for information on UL design numbers and code approvals. These can be found as the third-to-last item in the insulation board listings for each product. Called "UL 'P' Design Numbers; Building Code Agency Approved Design Numbers; ICBO..." this space is for the manufacturer to enter UL design numbers and code agency approvals. If there is insufficient room is the space provided, this data will be found in the insulation appendix.

The term "*P*" Design Number refers to the UL numbering system for rated fire assemblies. The fire ratings are based on the test method and acceptance criteria found in Fire Tests of Building Construction and Materials, ANSI/UL 263 (ASTM E 119). When a test assembly meets the criteria, a description of the assembly, its performance, and such other information as the specifica-

tion of materials and alternate details, are included in a report to the test sponsor. The summarized form of the test assembly is identified by an alphanumeric design number, the prefix letter for which designates the construction group. A P is used for roof-ceiling designs. So, the fact that a product has a "P" Design Number indicates that it is included in an assembly with the specific number as a component in one of the configurations. The assemblies can be found in the *UL Directory* entitled *Fire Resistance—Vol. 1*.

As indicated, there is space for listers to enter code approvals; this is where the acronyms for code-setting organizations, which include Building Officials & Code Administrators International, Inc. (BOCA), Southern Building Code Congress International (SBCCI), and International Conference of Building Officials (ICBO), will be found and also where some government jurisdictions that use their own code approvals will be listed (e.g., Metro.-Dade County, [Fla.]). This information is provided as a quick reference for the *Guide* user only; it is necessary to refer to the publications of the organizations to understand the context in which these approvals are given. Each of the organizations has its own set of criteria, and each region of the country sets codes based on the recommendations of one or another of the code-setting bodies. The *Guide* user needs to determine which set of criteria in general is relevant to his particular locality and then understand what the approval process for the particular code-setting organization implies.

Follow are the publications produced by the code-setting organizations and where they may be obtained:

BOCA publishes *The BOCA National Building Code/Year*; 4051 W. Flossmor Rd., Country Club Hills, Ill. 60477

ICBO publishes *Uniform Building Code (UBC)*; 5360 So. Workman Mill Rd., Whittier, Calif., 90601.

SBCCI publishes *Standard Building Code — Edition*; 900 Montclair Rd., Birmingham, Ala. 35213.

Manufacturers will also enter other approvals, such as those from government agencies (e.g., HUD) and any other approvals that the product may have received. In such cases, it will be necessary to contact the manufacturer directly to obtain further details on the nature and significance of these approvals.

Product Types for Part 2 of Polyisocyanurate Roof Board Insulation Section

Following is a description of the product types in Item 3.1 of the of the test results section for polyisocyanurate insulation as they appear in ASTM Standard C 1289-95.

Polyisocyanurate Insulation Product Types

Product Type	Type I, Class 1	Type I, Class 2	Type II	Type III	Type IV	Type V	Type VI
Facer covering one surface	Aluminum foil	Aluminum foil	Fibrous felt or glass fiber mat membrane	Perlite insulation board	Cellulosic fiber insulating board	Oriented- strand board or waferboard	Perlite insulation board
Facer covering opposite surface	Aluminum foil	Aluminum foil	Fibrous felt or glass fiber mat membrane	Fibrous felt or glass fiber mat membrane	Fibrous felt or glass fiber mat membrane	Fibrous felt or glass fiber mat membrane or aluminum foil	Perlite insulation board

Expanded Polystyrene Homogeneous Roof Board Insulation Material Data Sheet

Density		Typical Thicknesses																							
		3/4"			1"			2"			3"			4"			5"			6"					
		Thermal Values		lbs/ sq ft	Thermal Values		lbs/ sq ft	Thermal Values		lbs/ sq ft	Thermal Values		lbs/ sq ft	Thermal Values		lbs/ sq ft	Thermal Values		lbs/ sq ft	Thermal Values		lbs/ sq ft			
		C	R		C	R		C	R		C	R		C	R		C	R		C	R				
1.0 lbs/ cu ft	040 075	0.32 3.13 0.346 2.89	0.63	0.24 4.17 0.26 3.85	0.083	0.12 8.30 0.13 7.69	0.166	0.08 12.50 0.087 11.49	0.249	0.06 16.6 0.065 15.38	0.332	0.05 20.8 0.052 19.23	0.415	0.04 25.00 0.043 23.26	0.498										
1.25 lbs/ cu ft	040 075	0.313 3.19 0.34 2.94	0.078	0.235 4.26 0.255 3.92	0.104	0.118 8.47 0.128 7.81	0.208	0.078 12.82 0.085 11.76	0.312	0.059 16.95 0.064 15.63	0.416	0.047 21.28 0.051 19.61	0.52	0.039 25.64 0.043 23.26	0.624										
1.50 lbs/ cu ft	040 075	0.293 3.41 0.32 3.13	0.094	0.22 4.55 0.24 4.17	0.125	0.11 9.09 0.12 8.33	0.25	0.073 13.70 0.08 12.50	0.375	0.055 18.18 0.06 16.67	0.50	0.044 22.73 0.048 20.83	0.625	0.037 27.03 0.04 25.00	0.75										
2.0 lbs/ cu ft	040 075	0.30 3.33 0.307 3.26	0.125	0.21 4.76 0.23 4.35	0.167	0.105 9.52 0.115 8.70	0.334	0.07 14.29 0.077 12.29	0.501	0.053 18.87 0.058 17.24	0.668	0.042 23.81 0.046 21.74	0.835	0.035 28.57 0.038 26.32	1.00										

Density per ASTM C303 (lbs/cu ft)	1.0	1.25	1.50	2.0
Applicable Standard Specifications:				
ASTM C 578-83 (Types I, II, and III);				
Fed. Spec. HHI-524C	X	X	X	X
Compressive Strength per ASTM				
D 1621 (psi @10 percent deformation)	10-14	13-18	15-21	25-33
Water Absorption per ASTM C 272				
(percent by volume, not including facer)	<2.5	<2.5	<2.0	<1.0
Flexural Strength per ASTM C 203				
(percent by volume, not including facer)	25-30	32-38	40-50	55-75

Above data courtesy of the Society of the Plastics Industry, Inc.

Note: Sized material is typically fabricated to order and is commonly available in dimensions of 2 ft x 4 ft, 3 ft x 4 ft, 4 ft x 4 ft, and 4 ft x 8 ft, and custom sized in any dimension from 20 inches thick, 48 inches wide, and 16 feet long. The thicknesses used in this table were selected to show relative C-values and weight per square foot. Expanded polystyrene can be fabricated up to 24 inches.

Index to Listed Roof Board Insulations

	EXPANDED POLYSTYRENE	EXTRUDED POLYSTYRENE	GLASS FIBER	CELLULAR GLASS	FIBERBOARD	PERLITE	POLYISO- CYANURATE	COMPOSITE
A F M CORP. P.O. Box 246 Excelsior, MN 55331 800/255-0176	546	548						576
ALLIEDSIGNAL INC. COMMERCIAL ROOFING SYSTEMS 2000 Regency Parkway Suite 255 Cary, NC 27511 919/461-4701 (NC) 800/221-6490 FAX 919/461-4720			554		558	562	564	
AMOCO FOAM PRODUCTS INC. 2907 Loq Cabin Drive Smyrna, GA 30080-7013 404/350-1314 800/241-4402 FAX 404/350-1489		548						
APACHE PRODUCTS COMPANY 107 Service Road Anderson, SC 29625 800/777-3707	546						564	576
ARVRON INC. 4720 Clay S.W. Grand Rapids, MI 49548 616/530-1888	546							
ATLAS ROOFING CORPORATION 1775 The Exchange, Suite 160 Atlanta, GA 30339 770/933-4476 FAX 770/952-3170							564	
AVILITE CORPORATION 55 So. Commercial St. Manchester, NH 03101 603/626-4388	546							
BENCHMARK FOAM INC. 3200 9th Ave. S.E. Watertown, SD 57201-9102 605/886-8084 800/658-3444	546							577
BIG SKY INSULATIONS INC. 15 Arden Drive/POB 838 Belgrade, MT 59714 406/388-4146	546							577
BMCA INSULATION PRODUCTS INC. 300 N. Haven Avenue Ontario, CA 91761 800/858-8868 FAX 909/390-8764						562		
CARLISLE SYNTEC INCORPORATED P.O. Box 7000 Carlisle, PA 17013 717/245-7000	546	549			558		565	
CARPENTER INSULATION CO. P.O. Box 27205 Richmond, VA 23261 800/288-3836	546							578
THE CELOTEX CORPORATION 4010 Boy Scout Blvd. Tampa, FL 33607 813/873-1700					558	562	565	
DOW CHEMICAL USA Granville Research Center Building F Box 515 Granville, OH 43023 614/587-3600		549						579

	EXPANDED POLYSTYRENE	EXTRUDED POLYSTYRENE	GLASS FIBER	CELLULAR GLASS	FIBERBOARD	PERLITE	POLYISO- CYANURATE	COMPOSITE
FALCON MANUFACTURING OF CALIF. 14110 Towne Avenue P.O. Box 61216 Los Angeles, CA 90061 310/515-7102	547							
FALCON MANUFACTURING ACQUISITIONS CORP. 8240 Byron Center Road Byron Center, MI 49315 616/878-1568	547							
FIRESTONE BUILDING PRODUCTS INC. 525 Congressional Blvd. Carmel, IN 46032-5607 800/428-4442							565	
FOAM PLASTICS OF NEW ENGLAND Route 69 Prospect, CT 06712 203/758-6651 (CT) 800/237-3763	547							
GAF MATERIALS CORP. 1361 Alps Road Wayne, NJ 07470 201/628-3000 FAX 201/628-3356					559	563	565	
GEORGIA PACIFIC CORP. 133 Peachtree St. NE P.O. Box 105605 Atlanta, GA 30348-5605 404/652-5547 FAX 404/230-7845					559			
GILMAN BROTHERS CO. Gilman, CT 06336 203/889-8444 800/852-4220	547							
HUEBERT FIBERBOARD CO. 1545 E. Morgan St., Box 67 Boonville, MO 65233 816/882-2704					559			
INSUL-BOARD, INC. P.O. Box 8103 Erie, PA 16505 814/833-7400	547							
INSULATED BUILDING SYSTEMS, INC. 22377 Cedar Green Road Sterling, VA 20166 703/450-4886 FAX 703/450-6642	547							579
INSULATION CORP. OF AMERICA 2571 Mitchell Avenue Allentown, PA 18103 610/791-4200	547							579
INSUL-STOP INC. 240 Boundary Road Marlboro, NJ 07746 908/431-3500 FAX 908/462-3648	547							
KNAUF USA POLYSTYRENE 139 Harmon Avenue Lebanon, OH 45036 800/221-6923 FAX 513/932-3506	547							
KOPPERS INDUSTRIES INC. Commercial Roofing Dept. 436 Seventh Avenue Pittsburgh, PA 15219-1800 800/558-2706					559	563	566	

Index to Listed Roof Board Insulations

	EXPANDED POLYSTYRENE	EXTRUDED POLYSTYRENE	GLASS FIBER	CELLULAR GLASS	FIBERBOARD	PERLITE	POLYISO- CYANURATE	COMPOSITE
LUCAS SALES CO. INC. 10623 Baur Blvd. St. Louis, MO 63132 314/993-9610 FAX 314/993-4836	550					563		
MASONITE/WOOD FIBER INDUSTRIES 1 South Wacker Drive Chicago, IL 60606 312/407-9210					560			580
NRG BARRIERS/SCHULLER 27 Pearl St. Portland, ME 04101 800/343-1285 800/514-1968 (ME) FAX 800/343-1331							566	
OWENS CORNING SPECIALTY & FOAM PRODUCTS 3 Century Dr. Parsippany, NJ 07054 201/267-1605	551							580
PACEMAKER PLASTICS CO. INC. 126 New Pace Rd. P.O. Box 279 Newcomerstown, OH 43832 800/446-2188 pacemaker@tusco.net http://www.tusco.pacemaker.net	547							
PITTSBURGH CORNING CORP. 800 Presque Isle Drive Pittsburgh, PA 15239 800/359-8433				556				
PLYMOUTH FOAM PRODUCTS 1800 Sunset Drive Plymouth, WI 53073 414/893-0535 414/892-4986	547							

	EXPANDED POLYSTYRENE	EXTRUDED POLYSTYRENE	GLASS FIBER	CELLULAR GLASS	FIBERBOARD	PERLITE	POLYISO- CYANURATE	COMPOSITE
POLY FOAM INC. 116 Pine Street South Lester Prairie, MN 55354-0218 320/395-2551	547							
POLYFOAM PACKERS CORP. CONSTRUCTION PRODUCTS DIV 3751 Sunset Ave. Waukegan, IL 60087 800/800-0359 847/263-0200 FAX 847/263-0350	547							580
R-MAX INC. 13524 Welch Road Dallas, TX 75244 214/387-4500							566	
SCHULLER INTERNATIONAL INC. Roofing Systems Division P.O. Box 5108 Denver, CO 80217 303/978-2000 FAX 303/978-2808			554			563	567	
TEMPLE-INLAND FOREST PRODUCTS CORP. P.O. Drawer N Diboll, TX 75941 800/231-6060					560			
THERMCO INDUSTRIES INC 809 East 15th St. P.O. Box 49 Washington, IA 52353 800/247-7831 319/653-6216	547							
WOOLLEY & COMPANY 6865 Mimms Drive Doraville, GA 30340 770/448-8473	547							

Expanded Polystyrene Roof Board Insulation

(Homogeneous Only)

1. COMPANY NAME	AFM CORP	AFM CORP	AFM CORP	APACHE PRODUCTS COMPANY	ARVRON INC.
2. STATE	MN	MN	MN	SC	MI
3. PRODUCT NAME	AFM PERFORM	AFM CONTOUR TAPER TILE	AFM PERFORM PROTECT	EPS ROOF INSULATION	STEER-O-CELL
4. DENSITIES PER ASTM C 303 OR OTHER					
4.1 1.00 lbs/ft ²	X	X	X	X	X
4.2 1.25 lbs/ft ²	X	X	X	X	X
4.3 1.50 lbs/ft ²	X	X	X	X	X
4.4 2.00 lbs/ft ²	X	X	X	X	X
5. SURFACE TREATMENTS					
5.1 ROOFING FELT	X	X			
5.2 FOIL FACED KRAFT	X	X		X	X
5.3 TREATED KRAFT					
5.4 KRAFT					X
5.5 OTHER	X	X	X		
6. AVAILABLE AS TAPERED MATERIAL					
6.1 WITH FACER		YES		NO	YES
6.2 WITHOUT FACER		YES		YES	YES
7. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1966	1966	1994	1957	1978
8. ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION (assuming a continuous mean temperature differential and constant moisture content)					
@ 1 year	100	100	100	100	100
@ 5 years	100	100	100	100	100
@ 10 years	100	100	100	100	100
9. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	SEE APPENDIX	SEE APPENDIX	UL 1256 CO. NO. 411 CO. NO. 412 SEE APPENDIX	SBCCI 9443 P213, P251, P255, P410, P411, P509, P513, P810, P901 P905, P906, P910, P911, P913, P914, P916, P917, P919, P920, P923	
10. LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	
11. SEE INSULATION APPENDIX IF CHECKED	X	X	X	X	

1. COMPANY NAME	AVILITE INDUSTRIES	BENCHMARK FOAM INC.	BIG SKY INSULATIONS INC.	CARLISLE SYNTEC INCORPORATED	CARPENTER INSULATION COMPANY
2. STATE	NH	SD	MT	PA	VA
3. PRODUCT NAME	EPS	PERMAFORM	SNOFOAM EPS	SURE-SEAL EPS	CARPENTER STYRODECK
4. DENSITIES PER ASTM C-303 OR OTHER					
4.1 1.00 lbs/ft ²	X	X	X	X	X
4.2 1.25 lbs/ft ²	X	X	X	X	X
4.3 1.50 lbs/ft ²	X	X	X	X	X
4.4 2.00 lbs/ft ²		X	X	X	X
5. SURFACE TREATMENTS					
5.1 ROOFING FELT		X	X		X
5.2 FOIL FACED KRAFT		X	X		X
5.3 TREATED KRAFT					X
5.4 KRAFT			X		X
5.5 OTHER					X
6. AVAILABLE AS TAPERED MATERIAL					
6.1 WITH FACER	NO	YES	YES		YES
6.2 WITHOUT FACER	YES	YES	YES		YES
7. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1977	1977	1977	1981	1977
8. ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION (assuming a continuous mean temperature differential and constant moisture content)					
@ 1 year	100	100	100	100	100
@ 5 years	100	100	100	100	100
@ 10 years	100	100	100	100	100
9. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)		ASTM C 578-87A RADCO 1165 P225, P701 P801, P803 P814, P815 P817	SEE APPENDIX	BOCA 93-39 ICBO 3826 SBCCI 9457 DADE COUNTY: 94-0805.03	ASTM C 578-91
10. LIMITATIONS AND/OR RESTRICTIONS			SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
11. SEE INSULATION APPENDIX IF CHECKED			X	X	X

For thermal conductance (C) and thermal resistance (R), see the expanded polystyrene material data sheet.
NA=not applicable

(Homogeneous Only)

KNAUF USA POLYSTYRENE	PACEMAKER PLASTICS CO. INC.	PLYMOUTH FOAM PRODUCTS	POLY FOAM INC.	POLYFOAM PACKERS CORP	THERMCO INDUSTRIES INC.	WOOLLEY & CO.
OH EPS	OH CHEMFOAM (PERFORM)	WI POLYTEC	MN DRI-LITE	IL THERMOSAFE	IA THERMCO EPS	GA ACRASPAN
X	X	X	X	X	X	X
X	X	X	X	X	X	X
X	X	X	X	X	X	X
X	X	X	X	X	X	X
		X	X	X	X	
		X	X	X	X	
		X		X	X	
		X	X	X		
NO	YES	YES	YES	YES		
YES	YES	YES	YES	YES	YES	YES
1970	1975	1978	1960	1990	1963	1976
100	100	100	100	100	100	100
100	100	100	100	100	100	100
100	100	100	100	100	100	100
UL R8997 FM 2W1A7.AM ASTM C 578-91	SEE APPENDIX		ICBO 4169 P225,P701 P801,P803 P814,P815 P817	UL R14213, FM OV8A0.AC, FM OV8A1.AC FM OV8A2.AC CABO 236, 238, 384, 479 CONSTR. NO. 458 WISC. APPROVAL NO. 960041-I		
			SEE APPENDIX	SEE APPENDIX		
	X		X	X		

Extruded Polystyrene Roof Board Insulation

(Homogeneous Only)

1. COMPANY NAME	AFM CORP	AFM CORP	AMOCO FOAM PRODUCTS CO.	AMOCO FOAM PRODUCTS CO.	AMOCO FOAM PRODUCTS CO.
2. STATE	MN	MN	GA	GA	GA
3. PRODUCT NAME	AFM CONTOUR TAPER TILE-X	AFM CONTOUR TAPER TILE-X	AMOCOR-PB6	AMOCOR PLYGOOD PG38 & PG39	AMOFOAM-RCY
4. DENSITY PER ASTM C 303 OR OTHER (lbs/ft ³)	1.8	1.4	3.6	3.6	2.0
5. SURFACE TREATMENT					
TOP SURFACE	CONTINUOUS SKIN 1 SIDE TAPER=ONE SIDE	CONTINUOUS SKIN 1 Side TAPER=ONE SIDE	EXTRUDED CORE, PLASTIC CAPSHEETS	EXTRUDED CORE, PLASTIC CAPSHEETS	CONTINUOUS CLOSED-CELL EXTRUDED SKIN
BOTTOM SURFACE	CONTINUOUS SKIN ONE SIDE TAPER=ONE SIDE	CONTINUOUS SKIN ONE SIDE TAPER=ONE SIDE	EXTRUDED CORE, PLASTIC CAPSHEETS	EXTRUDED CORE, PLASTIC CAPSHEETS	CONTINUOUS CLOSED-CELL EXTRUDED SKIN
6. AVAILABLE AS TAPERED MATERIAL	YES	YES	NO	NO	YES
7. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1980	1980	1987	1988	1991
8. MEETS APPLICABLE STANDARDS	ASTM C 578-87a TYPE IV	ASTM C 578-87a TYPE X			ASTM C 578-92 TYPE IV,
9. COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi)	25 MIN	15	12 AVG.	12 AVG.	35 AVG.
10. WATER ABSORPTION PER ASTM C 272 OR OTHER (% by volume)	0.15	0.20	0.40	0.40	0.10
11. FLEXURAL STRENGTH PER ASTM C 203 (psi)	100 LG,62 TR	100 LG,62 TR			50 MIN
12. COMMON AVAILABLE SIZES					
12.1 2' x 4'					
12.2 3' x 4'					
12.3 4' x 4'					
12.4 4' x 8'	X	X	X	X	X
12.5 OTHER	X (2'x 8')	X (2'x 8')	X (4' x 50')	X (4' x 9')	X (2' x 8')
13. COMMON AVAILABLE THICKNESSES (C=VALUE, R=VALUE, WEIGHT/FT ²)					
13.1 THICKNESS (inches)	1.0	1.0	0.38	0.38	1.0
THERMAL CONDUCTANCE (C) @40 F	0.18	0.18			0.185
THERMAL CONDUCTANCE (C) @75 F	0.20	0.20	0.67	0.67	0.20
THERMAL RESISTANCE (R) @40 F	5.56	5.56			5.41
THERMAL RESISTANCE (R) @75 F	5.0	5.0	1.5	1.5	5.0
WEIGHT (lbs/ft ²)			0.11	0.11	0.18
13.2 THICKNESS (inches)	1.5	1.5			1.5
THERMAL CONDUCTANCE (C) @40 F	0.123				0.123
THERMAL CONDUCTANCE (C) @75 F	0.133	0.133			0.133
THERMAL RESISTANCE (R) @40 F	8.13				8.1
THERMAL RESISTANCE (R) @75 F	7.52	7.52			7.5
WEIGHT (lbs/ft ²)					0.26
13.3 THICKNESS (inches)	2.0	2.0			2.0
THERMAL CONDUCTANCE (C) @40 F	0.092				0.093
THERMAL CONDUCTANCE (C) @75 F	0.10	0.10			0.10
THERMAL RESISTANCE (R) @40 F	10.87				10.8
THERMAL RESISTANCE (R) @75 F	10.0	10.0			10.0
WEIGHT (lbs/ft ²)					0.35
13.4 THICKNESS (inches)	2.5	2.5			
THERMAL CONDUCTANCE (C) @40 F	0.074				
THERMAL CONDUCTANCE (C) @75 F	0.08	0.08			
THERMAL RESISTANCE (R) @40 F	13.51				
THERMAL RESISTANCE (R) @75 F	12.5	12.5			
WEIGHT (lbs/ft ²)					
13.5 THICKNESS (inches)	3.0	3.0			
THERMAL CONDUCTANCE (C) @40 F	0.061				
THERMAL CONDUCTANCE (C) @75 F	0.066	0.066			
THERMAL RESISTANCE (R) @40 F	16.39				
THERMAL RESISTANCE (R) @75 F	15.15	15.15			
WEIGHT (lbs/ft ²)					
13.6 THICKNESS (inches)					
THERMAL CONDUCTANCE (C) @40 F					
THERMAL CONDUCTANCE (C) @75 F					
THERMAL RESISTANCE (R) @40 F					
THERMAL RESISTANCE (R) @75 F					
WEIGHT (lbs/ft ²)					
14. ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION (assuming a continuous mean temperature @ 1 year differential and constant moisture content) @ 5 years @ 10 years	100 100 >90	100 100 >90	>90	>90	>90
15. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	SEE APPENDIX	SEE APPENDIX	UL A184 ICBO 4280 BOCA 89-48 SBCCI 94107	UL A184 ICBO 4280 BOCA 89-48 SBCCI 94107	UL A186 BOCA 90-78 SBCCI 94107
16. LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX			
17. SEE INSULATION APPENDIX IF CHECKED	X	X	X	X	X

NA=not applicable

(Homogeneous Only)

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Extruded Polystyrene Roof Board Insulation

(Homogeneous Only)

1. COMPANY NAME	DOW CHEMICAL USA	DOW CHEMICAL USA	DOW CHEMICAL USA	LUCAS SALES COMPANY INC	LUCAS SALES COMPANY INC
2. STATE	CANADA	OH	CANADA	MO	MO
3. PRODUCT NAME	DECKMATE 200	STYROFOAM RECOVERMATE	ROOFMATE	LUCAS LITE TAPERED	LUCAS LITE TAPERED
4. DENSITY PER ASTM C 303 OR OTHER (lbs/ft ³)		2.0		1.35 MIN	1.6 MIN
5. SURFACE TREATMENT					
TOP SURFACE	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EX- TRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN
BOTTOM SURFACE	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EX- TRUDED SKIN	SAW CUT SURFACE	SAW CUT SURFACE
6. AVAILABLE AS TAPERED MATERIAL	YES	NO	YES	YES	YES
7. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1990	1994	1971	1983	1983
8. MEETS APPLICABLE STANDARDS	CAN/CGSB 51- 20-M87 TYPE 3		CAN/CGSB 51- 20-M87	ASTM C 578-87a TYPE X	ASTM C 578-87a TYPE IV
9. COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi)	20 MIN	15 MIN	35 MIN	15 MIN	25 MIN
10. WATER ABSORPTION PER ASTM C 272 OR OTHER (% by volume)	<0.1		<0.1	<0.10	<0.10
11. FLEXURAL STRENGTH PER ASTM C 203 (psi)	44 MIN		50 MIN	60 MIN	100 MIN
12. COMMON AVAILABLE SIZES					
12.1 2' x 4'	X		X		
12.2 3' x 4'					
12.3 4' x 4'					
12.4 4' x 8'		X		X	X
12.5 OTHER	X (2'x 8')			X (2'x 8')	X (2'x 8')
13. COMMON AVAILABLE THICKNESSES (C-VALUE, R-VALUE, WEIGHT/FT ²)					
13.1 THICKNESS (inches)	1.0	0.5	1.0	1.0	1.0
THERMAL CONDUCTANCE (C) @40 F	0.185	0.212	0.185	0.185	0.185
THERMAL CONDUCTANCE (C) @75 F	0.20	0.2	0.20	0.20	0.20
THERMAL RESISTANCE (R) @40 F	5.4	4.7	5.4	5.4	5.4
THERMAL RESISTANCE (R) @75 F	5.0	4.7	5.0	5.0	5.0
WEIGHT (lbs/ft ²)		0.08		0.11	0.13
13.2 THICKNESS (inches)	1.5		1.5	1.5	1.5
THERMAL CONDUCTANCE (C) @40 F	0.123		0.123	0.123	0.123
THERMAL CONDUCTANCE (C) @75 F	0.133		0.133	0.133	0.133
THERMAL RESISTANCE (R) @40 F	8.1		8.1	8.1	8.1
THERMAL RESISTANCE (R) @75 F	7.5		7.5	7.5	7.5
WEIGHT (lbs/ft ²)				0.165	0.20
13.3 THICKNESS (inches)	2.0		2.0	2.0	2.0
THERMAL CONDUCTANCE (C) @40 F	0.093		0.093	0.093	0.093
THERMAL CONDUCTANCE (C) @75 F	0.10		0.10	0.10	0.10
THERMAL RESISTANCE (R) @40 F	10.8		10.8	10.8	10.8
THERMAL RESISTANCE (R) @75 F	10.0		10.0	10.0	10.0
WEIGHT (lbs/ft ²)				0.22	0.27
13.4 THICKNESS (inches)	2.5		2.5	3.0	3.0
THERMAL CONDUCTANCE (C) @40 F	0.074		0.074	0.062	0.062
THERMAL CONDUCTANCE (C) @75 F	0.08		0.08	0.067	0.067
THERMAL RESISTANCE (R) @40 F	13.5		13.5	16.2	16.2
THERMAL RESISTANCE (R) @75 F	12.5		12.5	15.0	15.0
WEIGHT (lbs/ft ²)				0.33	0.40
13.5 THICKNESS (inches)	3.0		3.0		
THERMAL CONDUCTANCE (C) @40 F	0.062		0.062		
THERMAL CONDUCTANCE (C) @75 F	0.067		0.067		
THERMAL RESISTANCE (R) @40 F	16.2		16.2		
THERMAL RESISTANCE (R) @75 F	15.0		15.0		
WEIGHT (lbs/ft ²)					
13.6 THICKNESS (inches)			4.0		
THERMAL CONDUCTANCE (C) @40 F			0.046		
THERMAL CONDUCTANCE (C) @75 F			0.050		
THERMAL RESISTANCE (R) @40 F			21.6		
THERMAL RESISTANCE (R) @75 F			20.0		
WEIGHT (lbs/ft ²)					
14. ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION (assuming a continuous mean temperature @ 1 year differential and constant moisture content) @ 5 years @ 10 years		100 96 94		>95 >90	>95 >90
15. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)		ICBO 2257 BOCA 95-33 SBCCI 9576A SEE APPENDIX			
16. LIMITATIONS AND/OR RESTRICTIONS		SEE APPENDIX		SEE APPENDIX	SEE APPENDIX
17. SEE INSULATION APPENDIX IF CHECKED		X		X	X

NA=not applicable

Extruded Polystyrene Roof Board Insulation

(Homogeneous Only)

LUCAS SALES COMPANY INC	LUCAS SALES COMPANY INC	OWENS CORNING SPECIALTY & FOAM PRODUCTS	OWENS CORNING SPECIALTY & FOAM PRODUCTS	OWENS CORNING SPECIALTY & FOAM PRODUCTS	OWENS CORNING SPECIALTY & FOAM PRODUCTS	OWENS CORNING SPECIALTY & FOAM PRODUCTS	OWENS CORNING SPECIALTY & FOAM PRODUCTS	OWENS CORNING SPECIALTY & FOAM PRODUCTS
MO	MO	OH	OH	OH	OH	OH	OH	OH
LUCAS LITE TAPERED	LUCAS LITE TAPERED	FOAMULAR 150	FOAMULAR 250	FOAMULAR 400	FOAMULAR 404	FOAMULAR 404RB	FOAMULAR 600	FOAMULAR 604
1.8 MIN	2.2 MIN	1.30 MIN	1.6 MIN	1.8 MIN	1.8 MIN	1.8 MIN	2.2 MIN	2.2 MIN
CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CHANNELED	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN
SAW CUT SURFACE	SAW CUT SURFACE	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN
YES	YES	NO	NO	NO	NO	NO	NO	NO
1984	1984	1983	1983	1984	1984	1991	1984	1984
ASTM C 578-87a TYPE VI	ASTM C 578-87a TYPE VII	ASTM C 578 TYPE X	ASTM C 578 TYPE IV	ASTM C 578 TYPE VI	ASTM C 578 TYPE VI	ASTM C 578 TYPE VI	ASTM C 578 TYPE VII	ASTM C 578 TYPE VII
40 MIN <0.05	60 MIN <0.05	15 MIN <0.10	25 MIN <0.10	40 MIN <0.05	40 MIN <0.05	40 MIN <0.05	60 MIN <0.05	60 MIN <0.05
115 MIN	140 MIN	60 MIN	75 MIN	115 MIN	115 MIN	115 MIN	140 MIN	140 MIN
X (2'x 8')	X (2'x 8')	X X (2'x 8')	X X (2'x 8')	X (2'x 8')	X (2'x 8')	X (2'x 8')	X (2'x 8')	X (2'x 8')
1.5	1.5	1.0	0.5	1.0	1.5	1.5	1.5	1.5
0.123	0.123	0.185	0.370	0.19	0.123	0.123	0.123	0.123
0.133	0.133	0.20	0.40	0.20	0.133	0.143	0.133	0.133
8.1	8.1	5.4	2.70	5.4	8.1	8.1	8.1	8.1
7.5	7.5	5.0	2.50	5.0	7.5	7.0	7.5	7.5
0.23	0.28	0.11	0.07	0.23	0.23	0.21	0.28	0.28
2.0	2.0	1.5	1.0	1.5	2.0	2.0	2.0	2.0
0.093	0.093	0.123	0.185	0.123	0.093	0.093	0.093	0.93
0.10	0.10	0.133	0.20	0.133	0.10	0.105	0.10	0.10
10.8	10.8	8.1	5.4	8.1	10.8	10.8	10.8	10.8
10.0	10.0	7.5	5.0	7.5	10.0	9.5	10.0	10.0
0.30	0.37	0.17	0.13	0.23	0.30	0.29	0.37	0.37
3.0	3.0	2.0	1.5	2.0	2.5	3.0	2.5	2.5
0.062	0.062	0.093	0.123	0.093	0.074	0.074	0.074	0.074
0.067	0.067	0.10	0.133	0.10	0.08	0.069	0.08	0.08
16.2	16.2	10.8	8.1	10.8	13.5	13.5	13.5	13.5
15.0	15.0	10.0	7.5	10.0	12.5	14.5	12.5	12.5
0.45	0.55	0.23	0.20	0.30	0.38	0.44	0.46	0.46
		2.5	2.0	2.5	3.0		3.0	3.0
		0.074	0.093	0.074	0.062		0.062	0.062
		0.08	0.10	0.08	0.067		0.067	0.067
		13.5	10.8	13.5	16.2		16.2	16.2
		12.5	10.0	12.5	15.0		15.0	15.0
		0.28	0.27	0.38	0.45		0.55	0.55
		3.0	3.0	3.0	4.0		4.0	
		0.062	0.062	0.062	0.046		0.046	
		0.067	0.067	0.067	0.05		0.05	
		16.2	16.2	16.2	21.6		21.6	
		15.0	15.0	15.0	20.0		20.0	
		0.34	0.40	0.45	0.60		0.73	
		4.0	4.0					
		0.046	0.046					
		0.05	0.05					
		21.6	21.6					
		20.0	20.0					
		0.45	0.53					
>95	>95	95	95	95	95	95	95	95
>90	>90	90	90	90	90	90	90	90
		ICBO 3628 BOCA 91-54 SBCCI PST & ESI 94191 SEE APPENDIX	ICBO 3628 BOCA 91-54 SBCCI PST & ESI 94191 SEE APPENDIX	ICBO 3628 BOCA 91-54 SBCCI PST & ESI 94191 SEE APPENDIX	ICBO 3628 BOCA 91-54 SBCCI PST & ESI 94191 SEE APPENDIX	ICBO 3628 BOCA 91-54 SBCCI PST & ESI 94191 SEE APPENDIX	ICBO 3628 BOCA 91-54 SBCCI PST & ESI 94191 SEE APPENDIX	ICBO 3628 BOCA 91-54 SBCCI PST & ESI 94191 SEE APPENDIX
SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
X	X	X	X	X	X	X	X	X

Extruded Polystyrene Roof Board Insulation

(Homogeneous Only)

1. COMPANY NAME	OWENS CORNING SPECIALTY & FOAM PRODUCTS	OWENS CORNING SPECIALTY & FOAM PRODUCTS	OWENS CORNING SPECIALTY & FOAM PRODUCTS	OWENS CORNING SPECIALTY & FOAM PRODUCTS	OWENS CORNING SPECIALTY & FOAM PRODUCTS
2. STATE	OH	OH	OH	OH	OH
3. PRODUCT NAME	FOAMULAR 604RB	DURAPINK	DURAPINK FA	DURAPINK PLUS	THERMAPINK 18
4. DENSITY PER ASTM C 303 OR OTHER (lbs/ft ³)	2.2 MIN	1.6 MIN	1.6 MIN	1.5 MIN	1.3 MIN
5. SURFACE TREATMENT TOP SURFACE BOTTOM SURFACE	CHANNELED	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	LAMINATED GLASS FIBER	CONTINUOUS EXTRUDED SKIN
	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	LAMINATED POLYETHYLENE	LAMINATED POLYETHYLENE	CONTINUOUS EXTRUDED SKIN
6. AVAILABLE AS TAPERED MATERIAL	NO	NO	NO	NO	NO
7. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1991	1993	1993	1994	1996
8. MEETS APPLICABLE STANDARDS	ASTM C 578 TYPE VII	ASTM C 578 TYPE IV	ASTM C 578	ASTM C 578	ASTM C 578 TYPE X
9. COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi)	60 MIN	25 MIN	25 MIN	18 MIN	18 MIN
10. WATER ABSORPTION PER ASTM C 272 OR OTHER (% by volume)	<0.05	< 0.10	< 0.10	< 0.10	< 0.10
11. FLEXURAL STRENGTH PER ASTM C 203 (psi)	140 MIN	NA	75 MIN	80 MIN	60 MIN
12. COMMON AVAILABLE SIZES					
12.1 2' x 4'					
12.2 3' x 4'					
12.3 4' x 4'					
12.4 4' x 8'		X	X	X	X
12.5 OTHER	X (2' x 8')				
13. COMMON AVAILABLE THICKNESSES (C-VALUE, R-VALUE, WEIGHT/FT ²)					
13.1 THICKNESS (inches)	1.5	0.5	0.75	0.5	1.0
THERMAL CONDUCTANCE (C) @40 F		0.37	0.25	0.37	0.185
THERMAL CONDUCTANCE (C) @75 F	0.143	0.40	0.27	0.40	0.20
THERMAL RESISTANCE (R) @40 F		2.70	4.05	2.70	5.4
THERMAL RESISTANCE (R) @75 F	7.0	2.50	3.75	2.50	5.0
WEIGHT (lbs/ft ²)	0.26	0.06	0.10	0.12	0.11
13.2 THICKNESS (inches)	2.0	0.75	1.0		1.5
THERMAL CONDUCTANCE (C) @40 F		0.25	0.185		0.123
THERMAL CONDUCTANCE (C) @75 F	0.105	0.27	0.20		0.133
THERMAL RESISTANCE (R) @40 F		4.05	5.4		8.1
THERMAL RESISTANCE (R) @75 F	9.5	3.75	5.0		7.5
WEIGHT (lbs/ft ²)	0.35	0.10	0.13		0.17
13.3 THICKNESS (inches)	3.0	1.0	1.5		2.0
THERMAL CONDUCTANCE (C) @40 F		0.185	0.123		0.093
THERMAL CONDUCTANCE (C) @75 F	0.105	0.20	0.133		0.10
THERMAL RESISTANCE (R) @40 F		5.4	8.1		10.8
THERMAL RESISTANCE (R) @75 F	14.5	5.0	7.5		10.0
WEIGHT (lbs/ft ²)	0.54	0.13	0.20		0.23
13.4 THICKNESS (inches)			2.0		3.0
THERMAL CONDUCTANCE (C) @40 F			0.093		0.062
THERMAL CONDUCTANCE (C) @75 F			0.10		0.067
THERMAL RESISTANCE (R) @40 F			10.8		16.2
THERMAL RESISTANCE (R) @75 F			10.0		15.0
WEIGHT (lbs/ft ²)			0.27		0.34
13.5 THICKNESS (inches)					4.0
THERMAL CONDUCTANCE (C) @40 F					0.046
THERMAL CONDUCTANCE (C) @75 F					0.05
THERMAL RESISTANCE (R) @40 F					21.6
THERMAL RESISTANCE (R) @75 F					20.0
WEIGHT (lbs/ft ²)					0.45
13.6 THICKNESS (inches)					
THERMAL CONDUCTANCE (C) @40 F					
THERMAL CONDUCTANCE (C) @75 F					
THERMAL RESISTANCE (R) @40 F					
THERMAL RESISTANCE (R) @75 F					
WEIGHT (lbs/ft ²)					
14. ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION (assuming a continuous mean temperature @ 1 year differential and constant moisture content) @ 5 years @ 10 years	95 90	95 90	95 90	95 90	95 90
15. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	ICBO 3628 BOCA 91-54 SBCCI PST & ESI 94191 SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
16. LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
17. SEE INSULATION APPENDIX IF CHECKED	X	X	X	X	X

NA=not applicable

Extruded Polystyrene Roof Board Insulation

(Homogeneous Only)

OWENS CORNING SPECIALTY & FOAM PRODUCTS	OWENS CORNING SPECIALTY & FOAM PRODUCTS	OWENS CORNING SPECIALTY & FOAM PRODUCTS
OH	OH	OH
THERMAPINK 25	THERMAPINK 40	THERMAPINK 60
1.6 MIN	1.8 MIN	2.2 MIN
CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN
CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN
YES	YES	YES
1996	1996	1996
ASTM C 578 TYPE IV	ASTM C 578 TYPE VI	ASTM C 578 TYPE VII
25 MIN < 0.10 70 MIN	40 MIN < 0.05 115 MIN	60 MIN < 0.05 140 MIN
X	X	X (2' X 8')
1.0 0.185 0.20 5.4 5.0 0.13	1.5 0.123 0.133 8.1 7.5 0.23	1.5 0.123 0.133 8.1 7.5 0.28
1.5 0.123 0.133 8.1 7.5 0.20	2.0 0.093 0.10 10.8 10.0 0.30	2.0 0.093 0.10 10.8 10.0 0.37
2.0 0.093 0.10 10.8 10.0 0.27	3.0 0.062 0.067 16.2 15.0 0.45	3.0 0.062 0.067 16.2 15.0 0.55
3.0 0.062 0.067 16.2 15.0 0.40		
4.0 0.046 0.05 21.6 20.0 0.53		
95 90	95 90	95 90
SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
X	X	X

Glass Fiber/Mineral Fiber Roof Board Insulation

(Homogeneous Only)

1. COMPANY NAME	ALLIEDSIGNAL	SCHULLER INTERNATIONAL INC.
2. STATE	NC	CO
3. PRODUCT NAME	ARMO-R GLAS	FIBER GLASS ROOF INSULATION
4. SURFACE TREATMENT TOP SURFACE	GLASS REINFORCED ASPHALT AND KRAFT CAP SHEET	GLASS REINFORCED ASPHALT AND KRAFT CAP SHEET
BOTTOM SURFACE	NONE	NONE
5. AVAILABLE AS TAPERED MATERIAL	YES	YES
6. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1941	1941
7. MEETS APPLICABLE STANDARDS	ASTM C 726	ASTM C 726
8. COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi)	ABOVE 12	12
9. WATER ABSORPTION PER ASTM C 272 OTHER (% by volume)	BELOW 10	10
11. COMMON AVAILABLE SIZES		
11.1 2' x 4'		
11.2 3' x 4'		
11.3 4' x 4'	X	X
11.4 4' x 8'	X	X
11.5 OTHER		
12. COMMON AVAILABLE THICKNESSES (C-VALUE, R-VALUE, WEIGHT/ft ²)		
12.1 THICKNESS (inches)	0.75	0.75
THERMAL CONDUCTANCE (C) @40 F		
THERMAL CONDUCTANCE (C) @75 F	0.36	0.36
THERMAL RESISTANCE (R) @40 F		
THERMAL RESISTANCE (R) @75 F	2.78	2.78
WEIGHT (lbs/ft ²)	0.98	0.78
12.2 THICKNESS (inches)	0.938	0.938
THERMAL CONDUCTANCE (C) @40 F		
THERMAL CONDUCTANCE (C) @75 F	0.27	0.27
THERMAL RESISTANCE (R) @40 F		
THERMAL RESISTANCE (R) @75 F	3.70	3.70
WEIGHT (lbs/ft ²)	1.03	0.94
12.3 THICKNESS (inches)	1.063	1.063
THERMAL CONDUCTANCE (C) @40 F		
THERMAL CONDUCTANCE (C) @75 F	0.24	0.24
THERMAL RESISTANCE (R) @40 F		
THERMAL RESISTANCE (R) @75 F	4.17	4.17
WEIGHT (lbs/ft ²)	1.06	0.94
12.4 THICKNESS (inches)	1.313	1.63
THERMAL CONDUCTANCE (C) @40 F		
THERMAL CONDUCTANCE (C) @75 F	0.19	0.15
THERMAL RESISTANCE (R) @40 F		
THERMAL RESISTANCE (R) @75 F	5.26	6.67
WEIGHT (lbs/ft ²)	1.30	1.32
12.5 THICKNESS (inches)	2.063	2.000
THERMAL CONDUCTANCE (C) @40 F		
THERMAL CONDUCTANCE (C) @75 F	0.12	0.13
THERMAL RESISTANCE (R) @40 F		
THERMAL RESISTANCE (R) @75 F	8.33	8.00
WEIGHT (lbs/ft ²)	1.70	1.59
12.6 THICKNESS (inches)	2.437	2.25
THERMAL CONDUCTANCE (C) @40 F		
THERMAL CONDUCTANCE (C) @75 F	0.10	0.11
THERMAL RESISTANCE (R) @40 F		
THERMAL RESISTANCE (R) @75 F	10.0	9.09
WEIGHT (lbs/ft ²)	1.95	1.71
13. ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION (assuming a continuous mean temperature @ 1 year differential and constant moisture content) @ 5 years @ 10 years	100 100 100	100 100 100
14. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)		SEE APPENDIX
15. LIMITATIONS AND/OR RESTRICTIONS		SEE APPENDIX
16. SEE INSULATION APPENDIX IF CHECKED		X

NA=not applicable

Cellular Glass Roof Board Insulation

(Homogeneous Only)

1. COMPANY NAME	PITTSBURGH CORNING CORP
2. STATE	PA
3. PRODUCT TRADE NAME	FOAMGLAS
4. SURFACE TREATMENT	
TOP SURFACE	KRAFT SHEET
BOTTOM SURFACE	KRAFT SHEET
5. AVAILABLE AS TAPERED MATERIAL	YES
6. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1943
7. MEETS APPLICABLE STANDARDS	ASTM C 552
8. COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi)	87
9. WATER ABSORPTION PER ASTM C 272 OR OTHER (psi)	0.2
10. FLEXURAL STRENGTH PER ASTM C 203 (psi)	60
11. COMMON AVAILABLE SIZES	
11.1 2' x 4'	X
11.2 3' x 4'	
11.3 4' x 4'	
11.4 4' x 8'	
11.5 OTHER	
12. COMMON AVAILABLE THICKNESSES (C-VALUE, R-VALUE, WEIGHT/FT2)	
12.1 THICKNESS (inches)	1.5
THERMAL CONDUCTANCE (C) @40 F	0.210
THERMAL CONDUCTANCE (C) @75 F	0.220
THERMAL RESISTANCE (R) @40 F	4.85
THERMAL RESISTANCE (R) @75 F	4.55
WEIGHT (lbs/ft2)	1.06
12.2 THICKNESS (inches)	2.0
THERMAL CONDUCTANCE (C) @40 F	0.155
THERMAL CONDUCTANCE (C) @75 F	0.165
THERMAL RESISTANCE (R) @40 F	6.45
THERMAL RESISTANCE (R) @75 F	6.06
WEIGHT (lbs/ft2)	1.42
12.3 THICKNESS (inches)	3.0
THERMAL CONDUCTANCE (C) @40 F	0.103
THERMAL CONDUCTANCE (C) @75 F	0.110
THERMAL RESISTANCE (R) @40 F	9.68
THERMAL RESISTANCE (R) @75 F	9.09
WEIGHT (lbs/ft2)	2.12
12.4 THICKNESS (inches)	4.0
THERMAL CONDUCTANCE (C) @40 F	0.078
THERMAL CONDUCTANCE (C) @75 F	0.083
THERMAL RESISTANCE (R) @40 F	12.90
THERMAL RESISTANCE (R) @75 F	12.12
WEIGHT (lbs/ft2)	2.83
12.5 THICKNESS (inches)	
THERMAL CONDUCTANCE (C) @40 F	
THERMAL CONDUCTANCE (C) @75 F	
THERMAL RESISTANCE (R) @40 F	
THERMAL RESISTANCE (R) @75 F	
WEIGHT (lbs/ft2)	
12.6 THICKNESS (inches)	
THERMAL CONDUCTANCE (C) @40 F	
THERMAL CONDUCTANCE (C) @75 F	
THERMAL RESISTANCE (R) @40 F	
THERMAL RESISTANCE (R) @75 F	
WEIGHT (lbs/ft2)	
13. ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION (assuming a continuous mean temperature @ 1 year differential and constant moisture content) @ 5 years @ 10 years	100 100 100
14. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	P227, P508, P701, P715, P717, P801, P819, NYCMEA 138 81-M, BSA 131-44-SM, LA APVL #RR22534
15. LIMITATIONS AND/OR RESTRICTIONS	
16. SEE INSULATION APPENDIX IF CHECKED	

NA=not applicable

Fiberboard Roof Board Insulation

(Homogeneous Only)

1. COMPANY NAME	ALLIEDSIGNAL	ALLIEDSIGNAL	CARLISLE SYNTEC INCORPORATED	CELOTEX CORPORATION THE	CELOTEX CORPORATION THE
2. STATE	NC	NC	PA	FL	FL
3. PRODUCT NAME	ARMOR BOARD REGULAR	ARMOR BOARD HIGH DENSITY	HP RECOVERY BOARD	REGULAR FBRBD ROOF INSUL	HIGH-DENSITY FBRBD RF INS
4. SURFACE TREATMENT TOP SURFACE	SURFACE TREATMENT	SURFACE TREATMENT	ASPHALT EMULSION	SURFACE TREATMENT	SURFACE TREATMENT
BOTTOM SURFACE	NONE	NONE	NONE	NONE	NONE
5. AVAILABLE AS TAPERED MATERIAL	NO	NO	NO	NO	NO
6. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1928	1928	1981	1928	1928
7. MEETS APPLICABLE STANDARDS	LLLI535B ASTM C 208	LLLI535B ASTM C 208	ASTM C 208 GRADE 2	LLLI535B ASTM C 208	LLLI535B ASTM C 208
8. COMMON AVAILABLE SIZES					
8.1 2' x 4'	X			X	
8.2 3' x 4'					
8.3 4' x 4'	X	X	X	X	X
8.4 4' x 8'	X	X	X	X	X
8.5 OTHER					
9. COMMON AVAILABLE THICKNESSES WATER ABSORPTION, TRANSVERSE STRENGTH, C-VALUES, R-VALUES, PERCENT BY VOLUME					
9.1 THICKNESS (inches)	0.5	0.5	0.5	0.5	0.5
WATER ABSORPTION PER ASTM C-209 OR OTHER (% by volume)			7 MAX		
TRANSVERSE STRENGTH ASTM C-203 OR OTHER (psi)			14		
THERMAL CONDUCTANCE (C) @40 F					
THERMAL CONDUCTANCE (C) @75 F	0.72	0.77	0.80	0.72	0.77
THERMAL RESISTANCE (R) @40 F	1.39	1.3	1.25	1.39	1.3
THERMAL RESISTANCE (R) @75 F	0.70	0.80	0.65	0.70	0.80
WEIGHT (lbs/ft ²)					
9.2 THICKNESS (inches)	1.0	1.0	1.0	1.0	1.0
WATER ABSORPTION PER ASTM C-209 OR OTHER (% by volume)			7 MAX		
TRANSVERSE STRENGTH ASTM C-203 OR OTHER (psi)			14		
THERMAL CONDUCTANCE (C) @40 F					
THERMAL CONDUCTANCE (C) @75 F	0.36	0.40	0.4	0.36	0.40
THERMAL RESISTANCE (R) @40 F	2.78	2.5	2.5	2.78	2.5
THERMAL RESISTANCE (R) @75 F	1.4	1.6	1.4	1.4	1.6
WEIGHT (lbs/ft ²)					
9.3 THICKNESS (inches)	1.5	1.5		1.5	1.5
WATER ABSORPTION PER ASTM C-209 OR OTHER (% by volume)					
TRANSVERSE STRENGTH ASTM C-203 OR OTHER (psi)					
THERMAL CONDUCTANCE (C) @40 F					
THERMAL CONDUCTANCE (C) @75 F	0.24	0.26		0.24	0.26
THERMAL RESISTANCE (R) @40 F	4.17	3.8		4.17	3.8
THERMAL RESISTANCE (R) @75 F	2.1	2.4		2.1	2.4
WEIGHT (lbs/ft ²)					
9.4 THICKNESS (inches)	2.0			2.0	
WATER ABSORPTION PER ASTM C-209 OR OTHER (% by volume)					
TRANSVERSE STRENGTH ASTM C-203 OR OTHER (psi)					
THERMAL CONDUCTANCE (C) @40 F					
THERMAL CONDUCTANCE (C) @75 F	0.18			0.18	
THERMAL RESISTANCE (R) @40 F	5.56			5.56	
THERMAL RESISTANCE (R) @75 F	2.8			2.8	
WEIGHT (lbs/ft ²)					
9.5 THICKNESS (inches)					
WATER ABSORPTION PER ASTM C-209 OR OTHER (% by volume)					
TRANSVERSE STRENGTH ASTM C-203 OR OTHER (psi)					
THERMAL CONDUCTANCE (C) @40 F					
THERMAL CONDUCTANCE (C) @75 F					
THERMAL RESISTANCE (R) @40 F					
THERMAL RESISTANCE (R) @75 F					
WEIGHT (lbs/ft ²)					
9.6 THICKNESS (inches)					
WATER ABSORPTION PER ASTM C-209 OR OTHER (% by volume)					
TRANSVERSE STRENGTH ASTM C-203 OR OTHER (psi)					
THERMAL CONDUCTANCE (C) @40 F					
THERMAL CONDUCTANCE (C) @75 F					
THERMAL RESISTANCE (R) @40 F					
THERMAL RESISTANCE (R) @75 F					
WEIGHT (lbs/ft ²)					
10. ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION (assuming a continuous mean temperature @ 1 year differential and constant moisture content) @ 5 years @ 10 years	100 100 100	100 100 100		100 100 100	100 100 100
11. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)			BOCA 93-39, ICBO: 3826; SBCCI: 9467 D. CTY.: 94-0805.03		
12. LIMITATIONS AND/OR RESTRICTIONS					
13. SEE INSULATION APPENDIX IF CHECKED					

NA=not applicable

Fiberboard Roof Board Insulation

(Homogeneous Only)

GAF MATERIALS CORP.	GAF MATERIALS CORP.	GEORGIA PACIFIC CORP.	GEORGIA PACIFIC CORP.	GEORGIA PACIFIC CORP.	HUEBERT FIBERBOARD CO.	HUEBERT FIBERBOARD CO.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.
NJ	NJ	VA	VA	VA	MO	MO	PA	PA
GAFTMP REG. FBRBRD	GAFTMP HIGH DEN. FBRBRD	HIGH-DENSITY	REGULAR DENSITY	STURDI-TOP	HFB	H.D. COATED	REGULAR FIBERBOARD	DENSE FIBERBOARD
SURFACE TREATMENT	SURFACE TREATMENT	ASPHALT EMULSION	ASPHALT EMULSION	ASPHALT EMULSION	NONE	ASPHALT EMULSION	ASPHALT EMULSION	ASPHALT EMULSION
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
NO	YES	NO	NO	NO	NO	NO	NO	NO
1928	1928	1986	1986	1986	1961	1990	1986	1986
LLLI535B ASTM C 208, ASTM C 209	LLLI535B ASTM C 208, ASTM C 209	ASTM C208, GRADE 2 ANSI/AHA 194.1-1985 TYPE IV, CLASS 1	ASTM C208, GRADE 1 ANSI/AHA 194.1-1985 TYPE VI	ASTM C208, GRADE 2 ANSI/AHA 194.1-1985 TYPE IV, CLASS 1	ASTM C 208 LLLI535B, ClsC PS57-73	ASTM C 208 LLLI535B	LLLI535B ASTM C 208-94 GRADE 1	LLLI535B ASTM C 208-94 GRADE 2
X		X		X	X	X	X	X
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
0.5	0.5	0.5 7 MAX 14	0.5 10 MAX 7	0.5 7 MAX 14	0.5 5 to 10 7 MIN	0.5 7 MAX 12 MIN	0.5 10 MAX 7	0.5 7 MAX 14
0.72	0.77	0.78	0.78	0.80	0.72	0.72	0.78	0.78
1.39	1.3	1.25	1.25	1.25	1.39	1.39	1.25	1.28
0.70	0.80	0.67	0.65	0.67	0.75	0.81	0.65	0.67
1.0	1.0	1.0 7 MAX 30			0.75 5 to 10 12 MIN	0.75 7 MAX 18 MIN		0.75 7 MAX 24
0.36	0.40	0.36			0.48	0.48		0.48
2.78	2.5	0.28			1.1	1.1		2.10
1.4	1.6	1.13			2.08	2.08		0.875
1.5	1.5	0.75 7 MAX 24			1.0	1.0		1.0
0.24	0.26	0.48			5 to 10 14 MIN	7 MAX 24 MIN		7 MAX 30
4.17	3.8	2.1			0.36	0.36		0.36
2.1	2.4	0.875			2.78	2.78		2.78
2.0	2.0				1.5	1.6		1.13
					0.24			
0.18	0.16				0.24			
5.56	5.0				2.3			
2.8	3.2				4.17			
					2.3			
					2.0			
					0.19			
					5.26			
					3.0			
100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100
		SEE APPENDIX			SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
		X			X	X	X	X

Fiberboard Roof Board Insulation

(Homogeneous Only)

1. COMPANY NAME	MASONITE/ WOOD FIBER INDUSTRIES	MASONITE/ WOOD FIBER INDUSTRIES	TEMPLE-INLAND FOREST PRODUCTS CORP.
2. STATE	IL	IL	TX
3. PRODUCT NAME	WFI ROOF INSUL	STRUCTODEK	FIBER BASE HD
4. SURFACE TREATMENT TOP SURFACE	PLAIN OR ASPHALT EMULSION	PLAIN OR ASPHALT EMULSION	ASPHALT COATED OR UNCOATED
BOTTOM SURFACE	NONE	NONE	ASPHALT COATED OR UNCOATED
5. AVAILABLE AS TAPERED MATERIAL	NO	NO	NO
6. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1961	1984	1982
7. MEETS APPLICABLE STANDARDS	ASTM C 208 LLL-I-535 CISC, ANSI194.1	ASTM C 208 LLL-I-535 CISC, ANSI194.1	ASTM C 208
8. COMMON AVAILABLE SIZES			
8.1 2' x 4'	X		X
8.2 3' x 4'			
8.3 4' x 4'	X	X	X
8.4 4' x 8'	X	X	X
8.5 OTHER			
9. COMMON AVAILABLE THICKNESSES WATER ABSORPTION, TRANSVERSE STRENGTH, C-VALUES, R-VALUES, PERCENT BY VOLUME			
9.1 THICKNESS (inches)	0.5	0.5	0.5
WATER ABSORPTION PER ASTM C-209 OR OTHER (% by volume)	10	7 MAX	7 MAX
TRANSVERSE STRENGTH ASTM C-203 OR OTHER (psi)	7	14	14
THERMAL CONDUCTANCE (C) @40 F			
THERMAL CONDUCTANCE (C) @75 F	0.72	0.80	0.758
THERMAL RESISTANCE (R) @40 F	1.39	1.25	1.32
THERMAL RESISTANCE (R) @75 F	0.60	0.675	0.75
WEIGHT (lbs/ft ²)			
9.2 THICKNESS (inches)	1.0		1.0
WATER ABSORPTION PER ASTM C-209 OR OTHER (% by volume)	10		7 MAX
TRANSVERSE STRENGTH ASTM C-203 OR OTHER (psi)	14		28
THERMAL CONDUCTANCE (C) @40 F			
THERMAL CONDUCTANCE (C) @75 F	0.36		0.40
THERMAL RESISTANCE (R) @40 F	1.34		
THERMAL RESISTANCE (R) @75 F	2.78		2.50
WEIGHT (lbs/ft ²)	1.34		1.5
9.3 THICKNESS (inches)	1.5		
WATER ABSORPTION PER ASTM C-209 OR OTHER (% by volume)	10		
TRANSVERSE STRENGTH ASTM C-203 OR OTHER (psi)	21		
THERMAL CONDUCTANCE (C) @40 F			
THERMAL CONDUCTANCE (C) @75 F	0.24		
THERMAL RESISTANCE (R) @40 F	4.17		
THERMAL RESISTANCE (R) @75 F	2.01		
WEIGHT (lbs/ft ²)			
9.4 THICKNESS (inches)	2.0		
WATER ABSORPTION PER ASTM C-209 OR OTHER (% by volume)	10		
TRANSVERSE STRENGTH ASTM C-203 OR OTHER (psi)	28		
THERMAL CONDUCTANCE (C) @40 F			
THERMAL CONDUCTANCE (C) @75 F	0.19		
THERMAL RESISTANCE (R) @40 F	2.68		
THERMAL RESISTANCE (R) @75 F	5.26		
WEIGHT (lbs/ft ²)	2.68		
9.5 THICKNESS (inches)	2.5		
WATER ABSORPTION PER ASTM C-209 OR OTHER (% by volume)	10		
TRANSVERSE STRENGTH ASTM C-203 OR OTHER (psi)	35		
THERMAL CONDUCTANCE (C) @40 F			
THERMAL CONDUCTANCE (C) @75 F	0.15		
THERMAL RESISTANCE (R) @40 F	6.67		
THERMAL RESISTANCE (R) @75 F	3.35		
WEIGHT (lbs/ft ²)			
9.6 THICKNESS (inches)			
WATER ABSORPTION PER ASTM C-209 OR OTHER (% by volume)			
TRANSVERSE STRENGTH ASTM C-203 OR OTHER (psi)			
THERMAL CONDUCTANCE (C) @40 F			
THERMAL CONDUCTANCE (C) @75 F			
THERMAL RESISTANCE (R) @40 F			
THERMAL RESISTANCE (R) @75 F			
WEIGHT (lbs/ft ²)			
10. ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION (assuming a continuous mean temperature @ 1 year differential and constant moisture content) @ 5 years @ 10 years	100 100 100	100 100 100	100 100 100
11. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)			UL 51P7
12. LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	
13. SEE INSULATION APPENDIX IF CHECKED	X	X	X

NA=not applicable

Perlite Roof Board Insulation

(Homogeneous Only)

1. COMPANY NAME	ALLIEDSIGNAL	ALLIEDSIGNAL	BMCA INSULATION PRODUCTS INC.	BMCA INSULATION PRODUCTS INC.	CELOTEX CORPORATION, THE
2. STATE	NC	NC	CA	CA	FL
3. PRODUCT NAME	ARMOR LITE	ARMOR LITE 1/2" RECOVER BOARD	PERMALITE ROOF INSULATION	1/2" RECOVER BOARD	CELOTERM PERLITE
4. SURFACE TREATMENT TOP SURFACE	LIMIT BITUMEN SOAK-UP		COATED	COATED	
BOTTOM SURFACE	NONE	NONE	NONE	NONE	NONE
5. AVAILABLE AS TAPERED MATERIAL	YES	NO	YES	NO	NO
6. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1962	1985	1962	1985	1958
7. MEETS APPLICABLE STANDARDS	HHI529b ASTM C 728-91		HHI529b ASTM C 728-91	ASTM C 728-91	HHI529b ASTM C 728-91
8. COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi)	35 NOM.	40 NOM.	35 NOM.	40 NOM.	35
9. WATER ABSORPTION PER ASTM C 272 OR OTHER (% by volume)	1.2 NOM.	3.5 MAX.	1.5 MAX.	3.5 MAX.	1.5
10. FLEXURAL STRENGTH PER ASTM C 203 (psi)	60 NOM.		60 NOM.	100 NOM.	40
11. COMMON AVAILABLE SIZES					
11.1 2' x 4'	X	X	X	X	X
11.2 3' x 4'					
11.3 4' x 4'	X	X	X	X	X
11.4 4' x 8'				X	
11.5 OTHER				X	
12. COMMON AVAILABLE THICKNESSES (C-VALUE, R-VALUE, WEIGHT/FT ²)					
12.1 THICKNESS (inches)	0.50	0.50	0.75	0.50	0.75
THERMAL CONDUCTANCE (C) @40 F					
THERMAL CONDUCTANCE (C) @75 F	0.76	0.72	0.48	0.72	0.48
THERMAL RESISTANCE (R) @40 F					
THERMAL RESISTANCE (R) @75 F	1.32	1.39	2.08	1.32	2.08
WEIGHT (lbs/ft ²)	0.45	0.55	0.6	0.50	0.6
12.2 THICKNESS (inches)	0.75		1.0		1.0
THERMAL CONDUCTANCE (C) @40 F					
THERMAL CONDUCTANCE (C) @75 F	0.48		0.36		0.36
THERMAL RESISTANCE (R) @40 F					
THERMAL RESISTANCE (R) @75 F	2.08		2.78		2.78
WEIGHT (lbs/ft ²)	0.68		0.8		0.8
12.3 THICKNESS (inches)	1.0		1.5		1.5
THERMAL CONDUCTANCE (C) @40 F					
THERMAL CONDUCTANCE (C) @75 F	0.36		0.24		0.24
THERMAL RESISTANCE (R) @40 F					
THERMAL RESISTANCE (R) @75 F	2.78		4.17		4.17
WEIGHT (lbs/ft ²)	0.90		1.2		1.2
12.4 THICKNESS (inches)	1.5		2.0		2.0
THERMAL CONDUCTANCE (C) @40 F					
THERMAL CONDUCTANCE (C) @75 F	0.24		0.18		0.18
THERMAL RESISTANCE (R) @40 F					
THERMAL RESISTANCE (R) @75 F	4.17		5.56		5.56
WEIGHT (lbs/ft ²)	1.35		1.6		1.6
12.5 THICKNESS (inches)	2.0		2.5		
THERMAL CONDUCTANCE (C) @40 F					
THERMAL CONDUCTANCE (C) @75 F	0.18		0.15		
THERMAL RESISTANCE (R) @40 F					
THERMAL RESISTANCE (R) @75 F	5.56		6.67		
WEIGHT (lbs/ft ²)	1.8		2.0		
12.6 THICKNESS (inches)	2.5		3.0		
THERMAL CONDUCTANCE (C) @40 F					
THERMAL CONDUCTANCE (C) @75 F	0.15		0.12		
THERMAL RESISTANCE (R) @40 F					
THERMAL RESISTANCE (R) @75 F	6.67		8.33		
WEIGHT (lbs/ft ²)	2.25		2.4		
13. ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION (assuming a continuous mean temperature @ 1 year differential and constant moisture content)	100	100	100	100	100
@ 5 years	100	100	100	100	100
@ 10 years	100	100	100	100	100
14. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)					
15. LIMITATIONS AND/OR RESTRICTIONS					
16. SEE INSULATION APPENDIX IF CHECKED					

NA=not applicable

Perlite Roof Board Insulation

(Homogeneous Only)

GAF MATERIALS CORP.	GAF MATERIALS CORP.	KOPPERS INDUSTRIES INC	KOPPERS INDUSTRIES INC	LUCAS SALES COMPANY, INC	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.	SCHULLER INTERNATIONAL INC.
NJ	NJ	PA	PA	MO	CO	CO	CO
GAFTEMP PERMALITE	1/2" RECOVER BOARD	PERLITE ROOF INSULATION	1/2" RECOVER BOARD	LUCAS TAPERED PERLITE	NORD BOARD	FESCO BOARD	1/2" RETROFIT BOARD
COATED	COATED	COATED	COATED		MODIFIED APP ASPHALT		
NONE	NONE	NONE	NONE	SAW CUT SURFACE	NONE	NONE	NONE
YES	NO	YES	NO	YES	NO	YES	NO
1958	1985	1962	1985	1974	1987	1958	1982
HHI529b ASTM C 728-91	ASTM C 728-91	HHI529b ASTM C 728-91	ASTM C 728-91	ASTM C 728-91	ASTM C 728	ASTM C 728	ASTM C 728
35	40 NOM.	35 NOM.	40 NOM.	35	35	20 NOM.	35 NOM.
1.5	3.5 MAX.	1.5 MAX.	3.5 MAX.	1.5	3.5	1.5 MAX.	3.5 MAX.
40	1.0 NOM.	60 NOM.	1.0 NOM.	40	60 MIN.	40 MIN.	60 MIN.
X	X	X	X	X		X	X
X	X	X	X	X	X	X	X
	X		X				X
	X		X				X
0.75	0.50	0.75	0.50	0.75	0.50	0.75	0.5
0.48	0.72	0.48	0.72	0.48	0.76	0.48	0.76
2.08	1.32	2.08	1.32	2.08	1.32	2.08	1.32
0.6	0.50	0.6	0.50	0.6	0.8	0.6	0.46
1.0		1.0		1.0		1.0	
0.36		0.36		0.36		0.36	
2.78		2.78		2.78		2.78	
0.98		0.8		0.08		0.8	
1.5		1.5		1.5		1.5	
0.24		0.24		0.24		0.24	
4.17		4.17		4.17		4.17	
1.2		1.2		1.2		1.2	
2.0		2.0		2.0		2.0	
0.18		0.18		0.18		0.18	
5.56		5.56		5.56		5.56	
1.6		1.6		1.6		1.6	
2.5		2.5		3.0		3.0	
0.15		0.15		0.12		0.12	
6.67		6.67		8.33		8.33	
2.0		2.0		2.4		2.4	
3.0		3.0					
0.12		0.12					
8.33		8.33					
2.4		2.4					
100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100
SEE APPENDIX				SEE APPENDIX			
SEE APPENDIX				SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
X				X	X	X	X

Polyisocyanurate Roof Board Insulation Part 1: General Information

(Homogeneous and Composite Boards)

1. COMPANY NAME	ALLIEDSIGNAL	APACHE PRODUCT COMPANY	APACHE PRODUCT COMPANY	APACHE PRODUCT COMPANY	APACHE PRODUCT COMPANY
2. STATE	NC	SC	SC	SC	SC
3. PRODUCT TRADE NAME	ARMOR-R PLUS	PYROX	ISOFOIL	MILLOX FIBERBOARD	MILLOX PERLITE
4. HOMOGENEOUS OR COMPOSITE	HOMOGENOUS	HOMOGENOUS	HOMOGENOUS	COMPOSITE	COMPOSITE
5. DENSITY PER ASTM D 1622 OR OTHER (homogeneous boards only) (lbs/ft ³)	2.0 NOM.	2.0 NOM.	2.0 NOM.	2.0 NOM.	2.0 NOM.
6. COMPOSITE COMPONENTS POLYISOCYANURATE INSULATION AND: 6.1 EXPANDED POLYSTYRENE 6.2 EXTRUDED POLYSTYRENE 6.3 POLYURETHANE 6.4 PERLITE 6.5 GYPSUM BOARD 6.6 FIBER BOARD 6.7 PLYWOOD 6.8 OTHER				X	
7. SURFACE TREATMENT TOP SURFACE BOTTOM SURFACE	GLASS REINFORCED FELT GLASS REINFORCED FELT	ORG./INORG. NON-ASPH. FELT ORG./INORG. NON-ASPH. FELT	TRI-LAMINATE FOIL TRI-LAMINATE FOIL	H. D. FIBER- BOARD ORG./INORG. NON-ASPH. FELT	PERLITE BOARD ORG./INORG. NON-ASPH. FELT
8. AVAILABLE AS TAPERED MATERIAL (yes/no)	YES	YES	YES	YES	YES
9. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1987	1985	1985	1985	1985
10. COMMON AVAILABLE SIZES 10.1 2' x 4' 10.2 3' x 8' 10.3 4' x 4' 10.4 4' x 8' 10.5 OTHER (specify)	X X	X X	X X	X X X	X X X
11. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS: ICBO, BOCA, SBCCI (OTHERS)	SEE APPENDIX	CONTACT APACHE IC-3240, SB-9443, BO-2603	CONTACT APACHE IC-3240, SB-9443, BO-2603	CONTACT APACHE IC-3240, SB-9443, BO-2603	CONTACT APACHE IC-3240, SB-9443, BO-2603
12. LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
13. SEE INSULATION APPENDIX IF CHECKED	X	X	X	X	X

1. COMPANY NAME	APACHE PRODUCT COMPANY	APACHE PRODUCT COMPANY	ATLAS ROOFING CORPORATION	ATLAS ROOFING CORPORATION	ATLAS ROOFING CORPORATION
2. STATE	SC	SC	GA	GA	GA
3. PRODUCT TRADE NAME	NAIL LINE	NAIL LINE V	ACFOAM-II	ACFOAM-III	ACFOAM RECOVER BOARD
4. HOMOGENEOUS OR COMPOSITE	COMPOSITE	COMPOSITE	HOMOGENOUS	HOMOGENOUS	HOMOGENOUS
5. DENSITY PER ASTM D 1622 OR OTHER (homogeneous boards only) (lbs/ft ³)	2.0 NOM.	2.0 NOM.	2.0 NOM.	2.0 NOM.	1.8 NOM.
6. COMPOSITE COMPONENTS POLYISOCYANURATE INSULATION AND: 6.1 EXPANDED POLYSTYRENE 6.2 EXTRUDED POLYSTYRENE 6.3 POLYURETHANE 6.4 PERLITE 6.5 GYPSUM BOARD 6.6 FIBER BOARD 6.7 PLYWOOD 6.8 OTHER	STRUCTURAL BOARD	ORIEN. STRUCT. BD. & RUNNERS			
7. SURFACE TREATMENT TOP SURFACE BOTTOM SURFACE	ORIENTED STRUCTURAL BOARD ORG./INORG. NON-ASPH. FELT	ORIENTED STRUCTURAL BOARD ORG./INORG. NON-ASPH. FELT	GLASS REINFORCED FELT	COATED GLASS	COATED GLASS
8. AVAILABLE AS TAPERED MATERIAL (yes/no)	NO	NO	YES	YES	NO
9. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1985	1985	1987	1995	1995
10. COMMON AVAILABLE SIZES 10.1 2' x 4' 10.2 3' x 8' 10.3 4' x 4' 10.4 4' x 8' 10.5 OTHER (specify)	X	X	X X	X X	X X
11. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS: ICBO, BOCA, SBCCI (OTHERS)	CONTACT APACHE IC-3240, SB-9443, BO-2603	CONTACT APACHE IC-3240, SB-9443, BO-2603	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
12. LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
13. SEE INSULATION APPENDIX IF CHECKED	X	X	X	X	X

Polyisocyanurate Roof Board Insulation Part 1: General Information

ATLAS ROOFING CORPORATION	ATLAS ROOFING CORPORATION	ATLAS ROOFING CORPORATION	ATLAS ROOFING CORPORATION	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE
GA	GA	GA	GA	PA	PA	PA	FL	FL
ACFOAM SUPREME 2.0 NOM.	ACFOAM COMPOSITE	ACFOAM NAIL- BASE INSULATION	VENTED-R	POLYISO-HP	POLYISO-HP-N	POLYISO-HP-W	HY-THERM COMPOSITE	HY-THERM NAIL-LINE
HOMOGENOUS	COMPOSITE	COMPOSITE	COMPOSITE	2.0 NOM. HOMOGENOUS	2.0 NOM. HOMOGENOUS	2.0 NOM. HOMOGENOUS	COMPOSITE	COMPOSITE
	X						X	
		X	X					ORIENTED STRAND BOARD
MULTILAYER FOIL	PERLITE INSULATION	OSB	OSB	FIBROUS FELT	FIBROUS FELT	FIBROUS FELT		
MULTILAYER FOIL	FIBER REINFORCED FELT	FIBER REINFORCED FELT	FIBER REINFORCED FELT	FIBROUS FELT	FIBROUS FELT	FIBROUS FELT		
NO				YES	YES	YES	NO	NO
1988	1985	1985	1991	1985	1985	1985		
X X	X X	X	X	X X	X X	X X	X	X X
SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	BOCA 93-39 ICBO 3826 SCBCII 9457 METRO-DADE, FL 94-0805.3	BOCA 93-39 ICBO 3826 SCBCII 9457 METRO-DADE, FL 94-0805.3	BOCA 93-39 ICBO 3826 SCBCII 9457 METRO-DADE, FL 94-0805.3	ICBO 1713 BOCA 1317.0 SBCCI 717	
SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX		
X	X	X	X	X	X	X		

CELOTEX CORPORATION, THE	FIRESTONE BUILDING PRODUCTS, INC.	FIRESTONE BUILDING PRODUCTS, INC.	FIRESTONE BUILDING PRODUCTS, INC.	FIRESTONE BUILDING PRODUCTS, INC.	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION
FL	IN	IN	IN	IN	NJ	NJ	NJ	NJ
HY-THERM AP	ISO 95 + ISOCYANURATE	FIRESTONE NAILBASE	FIRESTONE COMPOSITE	FIRESTONE COMPOSITE	GAFTEMP ISOTHERM R	GAFTEMP ISOTHERM RA	GAFTEMP ISOTHERM RN	GAFTEMP COMPOSITE BOARD
HOMOGENOUS 25	HOMOGENOUS 2.0 NOM.	COMPOSITE	COMPOSITE	COMPOSITE	HOMOGENOUS	HOMOGENOUS	HOMOGENOUS	COMPOSITE
			X	X				
			X	X				X
		7/16-IN. OSB	1/2-IN. STOCK	3/4-IN. STOCK				
ASPHALT ROOFING FELT	GLASS REINFORCED ORGANIC MAT	ORIENTED STRAND BOARD	PERLITE OR WOOD FIBER	PERLITE OR WOOD FIBER	COMPOSITE FACER	GLASS FACER	GLASS FACER	
ASPHALT ROOFING FELT	GLASS REINFORCED ORGANIC MAT	GLASS REINFORCED ORGANIC MAT	GLASS REINFORCED ORGANIC MAT	GLASS REINFORCED ORGANIC MAT	COMPOSITE FACER	GLASS FACER	GLASS FACER	COMPOSITE FACER
YES	YES	NO	YES	YES	YES	YES	YES	YES
	1980	1980	1980	1980	1988	1992	1992	1988
X X	X X X	X X	X X	X X	X X X	X X X	X X X	X X
SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
X	X	X	X	X	X	X	X	X

Polyisocyanurate Roof Board Insulation Part 1: General Information

(Homogeneous and Composite Boards)

1. COMPANY NAME	GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	NRG/SCHULLER
2. STATE	NJ	NJ	PA	PA	ME
3. PRODUCT TRADE NAME	GAFTEMP RA COMPOSITE BOARD	GAFTEMP RN COMPOSITE BOARD	KOP-R ISOCYANURATE HOMOGENOUS	KOP-R COMPOSITE	E'NRGY 2
4. HOMOGENEOUS OR COMPOSITE	COMPOSITE	COMPOSITE	HOMOGENOUS	COMPOSITE	HOMOGENOUS
5. DENSITY PER ASTM D 1622 OR OTHER (homogeneous boards only) (lbs/ft ³)			2.0 NOM.		
6. COMPOSITE COMPONENTS POLYISOCYANURATE INSULATION AND: 6.1 EXPANDED POLYSTYRENE 6.2 EXTRUDED POLYSTYRENE 6.3 POLYURETHANE 6.4 PERLITE 6.5 GYPSUM BOARD 6.6 FIBER BOARD 6.7 PLYWOOD 6.8 OTHER					
7. SURFACE TREATMENT TOP SURFACE			GLASS REINFORCED FELT	PERLITE INSULATION	GLASS REINFORCED FELT
BOTTOM SURFACE	COMPOSITE FACER	COMPOSITE FACER	GLASS REINFORCED FELT	FIBER REINFORCED FELT	GLASS REINFORCED FELT
8. AVAILABLE AS TAPERED MATERIAL (yes/no)	YES	YES	YES		YES
9. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1992	1992	1987	1985	
10. COMMON AVAILABLE SIZES 10.1 2' x 4' 10.2 3' x 8' 10.3 4' x 4' 10.4 4' x 8' 10.5 OTHER (specify)					
	X	X	X	X	X
	X	X	X	X	X
11. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE UL DIRECT. NBC 2603, SBC 717, UBC 1713
12. LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
13. SEE INSULATION APPENDIX IF CHECKED	X	X	X	X	X

1. COMPANY NAME	NRG/SCHULLER	NRG/SCHULLER	NRG/SCHULLER	NRG/SCHULLER	RMAX, INC.
2. STATE	ME	ME	ME	ME	TX
3. PRODUCT TRADE NAME	E'NRGY 2 FF	E'NRGY 2 COMPOSITE	E'NRGY 2 PLUS	NAILBOARD	MULTI-MAX
4. HOMOGENEOUS OR COMPOSITE	HOMOGENOUS	COMPOSITE	COMPOSITE	COMPOSITE	HOMOGENOUS
5. DENSITY PER ASTM D 1622 OR OTHER (homogeneous boards only) (lbs/ft ³)					2
6. COMPOSITE COMPONENTS POLYISOCYANURATE INSULATION AND: 6.1 EXPANDED POLYSTYRENE 6.2 EXTRUDED POLYSTYRENE 6.3 POLYURETHANE 6.4 PERLITE 6.5 GYPSUM BOARD 6.6 FIBER BOARD 6.7 PLYWOOD 6.8 OTHER					
		X			
			X		
				X	
7. SURFACE TREATMENT TOP SURFACE	TRI-LAMINATE FOIL	PERLITE FELT	WOOD FIBERBOARD	OSB	GLASS FIBER
BOTTOM SURFACE	TRI-LAMINATE FOIL	PERLITE FELT	GLASS REINFORCED FELT	GLASS REINFORCED FELT	GLASS FIBER
8. AVAILABLE AS TAPERED MATERIAL (yes/no)	NO	YES	YES	NO	YES
9. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM					1985
10. COMMON AVAILABLE SIZES 10.1 2' x 4' 10.2 3' x 8' 10.3 4' x 4' 10.4 4' x 8' 10.5 OTHER (specify)					
	X	X	X	X	X
	X	X	X	X	X
	X	X	X	X	X
11. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	SEE UL DIRECT. NBC 2603, SBC 717, UBC 1713	SEE UL DIRECT. NBC 2603, SBC 717, UBC 1713	SEE UL DIRECT. NBC 2603, SBC 717, UBC 1713	SEE UL DIRECT. NBC 2603, SBC 717, UBC 1713	SEE APPENDIX
12. LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
13. SEE INSULATION APPENDIX IF CHECKED	X	X	X	X	X

Polyisocyanurate Roof Board Insulation Part 1: General Information

RMAX, INC.	RMAX, INC.	RMAX, INC.	SCHULLER INTERNATIONAL INC. CO	SCHULLER INTERNATIONAL INC. CO
TX	TX	TX	ULTRAGARD	FESCO FOAM
MULTI-MAX FA	TAPERED THERMAROOF	THERMAROOF PLUS	HOMOGENOUS 2.0 NOM.	COMPOSITE
HOMOGENOUS 2.0	HOMOGENOUS 2.0	HOMOGENOUS 2.0		
				X
GLASS FIBER	GLASS FIBER	GLASS FIBER ALUM FOIL	FIBERGLASS- REINFORCED FACER	FIBERGLASS- REINFORCED FACER
GLASS FIBER	GLASS FIBER	GLASS FIBER ALUM FOIL	FIBERGLASS- REINFORCED FACER	PERLITE
NO	YES	NO	YES	YES
1988	1986	1978	1983	1970
X X X	X	X X X	X X	X X
SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
X	X	X	X	X

Polyisocyanurate Roof Board Insulation Part 2: Test Results

Test description and suggested values as specified in ASTM C 1289-95

1. COMPANY NAME		ALLIEDSIGNAL	APACHE PRODUCTS COMPANY PYROX	APACHE PRODUCTS COMPANY ISOFOIL	APACHE PRODUCTS COMPANY MILLOX WITH FIBERBOARD	APACHE PRODUCTS COMPANY MILLOX WITH PERLITE
2. PRODUCT NAME		ARMOR-R PLUS				
3.1 PRODUCT TYPE *						
3.1.1 TYPE 1, CLASS 1 OR CLASS 2				X		
3.1.2 TYPE II		X	X			
3.1.3 TYPE III						X
3.1.4 TYPE IV					X	
3.1.5 TYPE V						
3.1.6 TYPE VI						
3.2 PHYSICAL PROPERTY						
3.2.1 COMPRESSIVE STRENGTH (min., psi, nominal 1-in. core foam)	16	20	16	16	16	16
3.2.2 DIMENSIONAL STABILITY (nominal, 1-in. core foam)						
3.2.2.1 Percent linear change, max. (-40°F)						
Type I, Class 1; Types II-VI	2.0	< 2	2.0	2.0	2.0	2.0
Type I, Class 2	1.5					
(amb. RH 158°F)						
Type I, Class 1	2.0					
Type II-VI	4.0	< 4	2.0	2.0	2.0	2.0
Type I, Class 2	1.5					
(97% RH 200°F)						
Type I, Class 1; Types II-VI	4.0	< 4	2.0	2.0	2.0	2.0
Type I, Class 2	1.5					
3.2.3 FLEXURAL STRENGTH (nominal, 1-in. core foam)						
3.2.3.1 Modulus of rupture, psi, min.						
Types I-V	40		40	40	40	40
Type VI	50					
3.2.3.2 Break load, lbf, min.						
Type I	8					
Types II-V	17	8	8	17	17	17
Type VI	33					
3.2.4 TENSILE STRENGTH (psf, min., perpendicular to board surface, nominal 1-in. core foam)	500		500	500	500	500
3.2.5 WATER ABSORPTION (2H % by vol., max., nom. 1-in. core surface)						
Types I, III, V	1.0			1.0		1.0
Types II, VI	1.5	< 1	1.0		2.0	
Type IV	2.0					
3.2.6 WATER TRANSMISSION (perm., max., nominal 1-in. core surface)						
Type I	0.3			0.3		
Type II	1.0	1	1.0			
Types III-VI	NA					
3.3 MINIMUM MEAN THERMAL RESISTANCE						
3.3.1 @ 40 ± 2°F MEAN TEMPERATURE						
1-inch product Type I, Class 1	7.2			7.1		
1-inch product Type I, Class 2	7.9					
1-inch product Type II	6.6		6.6			
1.5-inch product Type I, Class 1	10.8					
1.5-inch product Type I, Class 2; Type II	11.0		10.0	11.1		
1.5-inch product Type III	8.1					8.1
1.5-inch product Type IV	8.0				8.0	
1.5-inch product Type V	7.1					
2-inch product Type I, Class 1	14.3			14.3		
2-inch product Type I, Class 2	15.8					
2-inch product Type II	15.7		15.7			
2-inch product Type III	12.5					12.5
2-inch product Type IV	12.4				12.4	
2-inch product Type V	11.5					
2-inch product Type VI	8.6					
3.3.2 @ 75 ± 2°F MEAN TEMPERATURE						
1-inch product Type I, Class 1	6.5			7.1		
1-inch product Type I, Class 2	7.2					
1-inch product Type II	6.0	6.0	6.0			
1.5-inch product Type I, Class 1	9.8			11.1		
1.5-inch product Type I, Class 2; Type II	10.0	10.0	10.0			
1.5-inch product Type III	7.4					7.2
1.5-inch product Type IV	7.3				7.2	
1.5-inch product Type V	6.5					
2-inch product Type I, Class 1	13.0			14.3		
2-inch product Type I, Class 2	14.4					
2-inch product Type II	14.3	14.3	14.3			
2-inch product Type III	11.4					11.1
2-inch product Type IV	11.3				11.1	
2-inch product Type V	10.5					
2-inch product Type VI	7.5					
3.3.3 @ 110 ± 2°F MEAN TEMPERATURE						
1-inch product Type I, Class 1	5.9			5.9		
1-inch product Type I, Class 2	6.5					
1-inch product Type II	5.4		5.4			
1.5-inch product Type I, Class 1	8.8			8.8		
1.5-inch product Type I, Class 2; Type II	9.0		9.0			6.7
1.5-inch product Type III	6.7					
1.5-inch product Type IV	6.6				6.6	
1.5-inch product Type V	5.9					
2-inch product Type I, Class 1	11.7			11.7		
2-inch product Type I, Class 2	13.0					
2-inch product Type II	12.9		12.9			
2-inch product Type III	10.3					10.3
2-inch product Type IV	10.2				10.2	
2-inch product Type V	9.5					
2-inch product Type VI	6.7					
4. SEE INSULATION APPENDIX IF CHECKED		X				

* See Introduction to insulation section for full descriptions of product types

NA=not applicable

Polyisocyanurate Roof Board Insulation Part 2: Test Results

APACHE PRODUCTS COMPANY\ NAIL LINE	APACHE PRODUCTS COMPANY NAIL LINE V	ATLAS ROOFING CORPORATION ACFOAM-II	ATLAS ROOFING CORPORATION ACFOAM-III	ATLAS ROOFING CORPORATION ACFOAM RECOVER BOARD	ATLAS ROOFING CORPORATION ACFOAM SUPREME	ATLAS ROOFING CORPORATION ACFOAM COMPOSITE	ATLAS ROOFING CORPORATION ACFOAM NAIL- BASE INSULATION	ATLAS ROOFING CORPORATION VENTED-R
					CLASS 1			
X	X	X	X	X		X	X	X
16	16	20	20	16	20	20	20	20
2.0	2.0	< 2	< 2	< 2	< 2	< 2	< 2	< 2
2.0	2.0	< 4	< 4	< 4	< 2	< 4	< 4	< 4
2.0	2.0					< 4	< 4	< 4
40	40					40	40	40
17	17					17	17	17
500	500					500	500	500
1.0	1.0	< 1	< 1	< 1	< 1	< 1	< 1	< 1
7.1								
11.5								
					7.2			
6.6		6.0 10.0	6.0 10.0	6.0		7.4	7.3	
		14.3	14.3		15.2			
10.5						11.4	11.3	7.1
5.9								
9.5								
		X	X	X	X	X	X	X

Polyisocyanurate Roof Board Insulation Part 2: Test Results

Test description and suggested values as specified in ASTM C 1289-95

1. COMPANY NAME		CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	CELOTEX CORPORATION, THE	CELOTEX CORPORATION, THE
2. PRODUCT NAME		POLYISO-HP	POLYISO-HP-N	POLYISO-HP-W	HY-THERM COMPOSITE	HY-THERM NAIL-LINE
3.1 PRODUCT TYPE *						
3.1.1 TYPE 1, CLASS 1 OR CLASS 2						
3.1.2 TYPE II		X	X	X		
3.1.3 TYPE III						
3.1.4 TYPE IV					X	
3.1.5 TYPE V						X
3.1.6 TYPE VI						
3.2 PHYSICAL PROPERTY						
3.2.1 COMPRESSIVE STRENGTH (min., psi, nominal 1-in. core foam)		16	16	16	16	16
3.2.2 DIMENSIONAL STABILITY (nominal, 1-in. core foam)						
3.2.2.1 Percent linear change, max. (-40°F)						
Type I, Class 1; Types II-VI		2.0	2.0	2.0	2.0	2.0
Type I, Class 2		1.5				
(amb. RH 158°F)						
Type I, Class 1		2.0				
Type II-VI		4.0	2.0	2.0	4.0	4.0
Type I, Class 2		1.5				
(97% RH 200°F)						
Type I, Class 1; Types II-VI		4.0	4.0	4.0	4.0	4.0
Type I, Class 2		1.5				
3.2.3 FLEXURAL STRENGTH (nominal, 1-in. core foam)						
3.2.3.1 Modulus of rupture, psi, min.						
Types I-V		40	40	40	40	40
Type VI		50				
3.2.3.2 Break load, lbf, min.						
Type I		8				
Types II-V		17	17	17	17	17
Type VI		33				
3.2.4 TENSILE STRENGTH (psf, min., perpendicular to board surface, nominal 1-in. core foam)		500	500	500	500	500
3.2.5 WATER ABSORPTION (2H % by vol., max., nom. 1-in. core surface)						
Types I, III, V		1.0				1.0
Types II, VI		1.5	1.5	1.5		
Type IV		2.0			2.0	
3.2.6 WATER TRANSMISSION (perm., max., nominal 1-in. core surface)						
Type I		0.3				
Type II		1.0	1.0	1.0		
Types III-VI		NA				
3.3 MINIMUM MEAN THERMAL RESISTANCE						
3.3.1 @ 40 ± 2°F MEAN TEMPERATURE						
1-inch product Type I, Class 1		7.2				
1-inch product Type I, Class 2		7.9				
1-inch product Type II		6.6	6.6	6.6		
1.5-inch product Type I, Class 1		10.8				
1.5-inch product Type I, Class 2; Type II		11.0	11.0	11.0		
1.5-inch product Type III		8.1				
1.5-inch product Type IV		8.0			8.0	
1.5-inch product Type V		7.1				7.1
2-inch product Type I, Class 1		14.3				
2-inch product Type I, Class 2		15.8				
2-inch product Type II		15.7	15.7	15.7		
2-inch product Type III		12.5				
2-inch product Type IV		12.4			12.4	
2-inch product Type V		11.5				11.5
2-inch product Type VI		8.6				
3.3.2 @ 75 ± 2°F MEAN TEMPERATURE						
1-inch product Type I, Class 1		6.5				
1-inch product Type I, Class 2		7.2				
1-inch product Type II		6.0	6.0	6.0		
1.5-inch product Type I, Class 1		9.8				
1.5-inch product Type I, Class 2; Type II		10.0	10.0	10.0		
1.5-inch product Type III		7.4				
1.5-inch product Type IV		7.3			7.3	
1.5-inch product Type V		6.5				6.5
2-inch product Type I, Class 1		13.0				
2-inch product Type I, Class 2		14.4				
2-inch product Type II		14.3	14.3	14.3		
2-inch product Type III		11.4				
2-inch product Type IV		11.3			11.3	
2-inch product Type V		10.5				10.5
2-inch product Type VI		7.5				
3.3.3 @ 110 ± 2°F MEAN TEMPERATURE						
1-inch product Type I, Class 1		5.9				
1-inch product Type I, Class 2		6.5				
1-inch product Type II		5.4	5.4	5.4		
1.5-inch product Type I, Class 1		8.8				
1.5-inch product Type I, Class 2; Type II		9.0	9.0	9.0		
1.5-inch product Type III		6.7				
1.5-inch product Type IV		6.6			6.6	
1.5-inch product Type V		5.9				5.9
2-inch product Type I, Class 1		11.7				
2-inch product Type I, Class 2		13.0				
2-inch product Type II		12.9	12.9	12.9		
2-inch product Type III		10.3				
2-inch product Type IV		10.2			10.2	
2-inch product Type V		9.5				9.5
2-inch product Type VI		6.7				
4. SEE INSULATION APPENDIX IF CHECKED		X	X	X		

* See Introduction to insulation section for full descriptions of product types

NA=not applicable

Polyisocyanurate Roof Board Insulation Part 2: Test Results

CELOTEX CORPORATION, THE HY-THERM AP	FIRESTONE BUILDING PRODUCTS INC. ISO 95+ ISOCYANURATE	FIRESTONE BUILDING PRODUCTS INC. FIRESTONE COMPOSITE	FIRESTONE BUILDING PRODUCTS INC. FIRESTONE COMPOSITE	FIRESTONE BUILDING PRODUCTS INC. FIRESTONE NAILBASE	GAF MATERIALS CORPORATION GAFTEMP ISOTHERM R	GAF MATERIALS CORPORATION GAFTEMP ISOTHERM RA	GAF MATERIALS CORPORATION GAFTEMP ISOTHERM RN	GAF MATERIALS CORPORATION GAFTEMP COMPOSITE BOARD
X	X	X	X	X	X	X	X	X
2	20	20	20	20	20	20	20	20
2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0
	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
40	40	40	40	40	40	40	40	40
17	17	17	17	17	17	17	17	17
500	500	500	500	500	500	500	500	500
1.5	1.5	1.0	2.0	1.0	1.5	1.5	1.5	2.0
1.0	1.0				1.0	1.0	1.0	
	6.6				6.6	6.6	6.6	
	11.0	8.1	8.0	7.1	11.0	11.0	11.0	8.0
	15.7	12.5	12.4	11.5	15.7	15.7	15.7	12.4
6.0	6.0				6.0	6.0	6.0	
10.0	10.0	7.4	7.3	6.5	10.0	10.0	10.0	7.3
14.3	14.3	11.4	11.3	10.5	14.3	14.3	14.3	11.3
	5.4				5.4	5.4	5.4	
	9.0	6.7	6.6	5.9	9.0	9.0	9.0	6.6
	12.9	10.3	10.2	9.5	12.9	12.9	12.9	10.2
	X	X	X	X				

Polyisocyanurate Roof Board Insulation Part 2: Test Results

Test description and suggested values as specified in ASTM C 1289-95

1. COMPANY NAME		GAF MATERIALS CORPORATION	GAF MATERIALS CORPORATION	KOPPERS INDUSTRIES, INC.	KOPPERS INDUSTRIES, INC.	NRG/ SCHULLER
2. PRODUCT NAME		GAFTEMP RA COMPOSITE BOARD	GAFTEMP RN COMPOSITE BOARD	KOP-R ISOCYANURATE	KOP-R COMPOSITE	E'NRGY' 2
3.1 PRODUCT TYPE *						
3.1.1 TYPE 1, CLASS 1 OR CLASS 2						
3.1.2 TYPE II						
3.1.3 TYPE III		X	X	X	X	X
3.1.4 TYPE IV		X				
3.1.5 TYPE V						
3.1.6 TYPE VI						
3.2 PHYSICAL PROPERTY						
3.2.1 COMPRESSIVE STRENGTH (min., psi, nominal 1-in. core foam)	16	20	20	20	20	20/25
3.2.2 DIMENSIONAL STABILITY (nominal, 1-in. core foam)						
3.2.2.1 Percent linear change, max. (-40°F)						
Type I, Class 1; Types II-VI	2.0	2.0	2.0	< 2.0	< 2.0	2.0
Type I, Class 2	1.5					
(amb. RH 158°F)						
Type I, Class 1	2.0					
Type II-VI	4.0	2.0	2.0	< 4.0	< 4.0	2.0
Type I, Class 2	1.5					
(97% RH 200°F)						
Type I, Class 1; Types II-VI	4.0	4.0	4.0		< 4.0	2.0
Type I, Class 2	1.5					
3.2.3 FLEXURAL STRENGTH (nominal, 1-in. core foam)						
3.2.3.1 Modulus of rupture, psi, min.						
Types I-V	40	40	40		40	40
Type VI	50					
3.2.3.2 Break load, lbf, min.						
Type I	8					
Types II-V	17	17	17		17	17
Type VI	33					
3.2.4 TENSILE STRENGTH (psf, min., perpendicular to board surface, nominal 1-in. core foam)	500	500	500		500	500
3.2.5 WATER ABSORPTION (2H % by vol., max., nom. 1-in. core surface)						
Types I, III, V	1.0	1.0	1.0		< 1.0	1.5
Types II, VI	1.5					
Type IV	2.0	2.0				
3.2.6 WATER TRANSMISSION (perm., max., nominal 1-in. core surface)						
Type I	0.3					
Type II	1.0			1.0		1.0
Types III-VI	NA					
3.3 MINIMUM MEAN THERMAL RESISTANCE						
3.3.1 @ 40 ± 2°F MEAN TEMPERATURE						
1-inch product Type I, Class 1	7.2					
1-inch product Type I, Class 2	7.9					
1-inch product Type II	6.6					6.6
1.5-inch product Type I, Class 1	10.8					
1.5-inch product Type I, Class 2; Type II	11.0					11.0
1.5-inch product Type III	8.1	8.1	8.1			
1.5-inch product Type IV	8.0					
1.5-inch product Type V	7.1	8.0				
2-inch product Type I, Class 1	14.3					
2-inch product Type I, Class 2	15.8					
2-inch product Type II	15.7					15.7
2-inch product Type III	12.5	12.5	12.5			
2-inch product Type IV	12.4	12.4				
2-inch product Type V	11.5					
2-inch product Type VI	8.6					
3.3.2 @ 75 ± 2°F MEAN TEMPERATURE						
1-inch product Type I, Class 1	6.5					
1-inch product Type I, Class 2	7.2					
1-inch product Type II	6.0			6.0		6.0
1.5-inch product Type I, Class 1	9.8					
1.5-inch product Type I, Class 2; Type II	10.0			10.0		10.0
1.5-inch product Type III	7.4	7.4	7.4		7.4	
1.5-inch product Type IV	7.3	7.3				
1.5-inch product Type V	6.5					
2-inch product Type I, Class 1	13.0					
2-inch product Type I, Class 2	14.4					
2-inch product Type II	14.3			14.3		14.3
2-inch product Type III	11.4	11.4	11.4		11.4	
2-inch product Type IV	11.3	11.3				
2-inch product Type V	10.5					
2-inch product Type VI	7.5					
3.3.3 @ 110 ± 2°F MEAN TEMPERATURE						
1-inch product Type I, Class 1	5.9					
1-inch product Type I, Class 2	6.5					
1-inch product Type II	5.4					6.4
1.5-inch product Type I, Class 1	8.8					
1.5-inch product Type I, Class 2; Type II	9.0					9.0
1.5-inch product Type III	6.7	6.7	6.7			
1.5-inch product Type IV	6.6	6.6				
1.5-inch product Type V	5.9					
2-inch product Type I, Class 1	11.7					
2-inch product Type I, Class 2	13.0					
2-inch product Type II	12.9					12.9
2-inch product Type III	10.3	10.3	10.3			
2-inch product Type IV	10.2	10.2				
2-inch product Type V	9.5					
2-inch product Type VI	6.7					
4. SEE INSULATION APPENDIX IF CHECKED				X	X	

* See Introduction to insulation section for full descriptions of product types

NA=not applicable

Polyisocyanurate Roof Board Insulation Part 2: Test Results

NRG/ SCHULLER	NRG/ SCHULLER	NRG/ SCHULLER	NRG/ SCHULLER	RMAX, INC.	RMAX, INC.	RMAX, INC.	RMAX, INC.	SCHULLER INTERNATIONAL INC.
E'NRG'Y 2 FF	E'NRG'Y 2 COMPOSITE	E'NRG'Y 2 PLUS	NAILBOARD	MULTI-MAX	MULTI-MAX FA	TAPERED THERMAROOF	THERMAROOF PLUS	ULTRAGARD
X	X	X	X	X	X	X	CLASS 1	X
20/25	20/25	20/25	20/25	> 16	> 16	> 16	> 16	20
2.0	2.0	2.0	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
2.0	2.0	2.0	2.0	< 4.0	< 4.0	< 4.0	< 2.0	< 4.0
2.0	2.0	2.0	2.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
40	40	40	40	> 40	> 40	> 40	> 40	> 40
8	17	17	17	> 17	> 17	> 17	> 8	> 17
500	500	500	500	> 500	> 500	> 500	> 500	> 500
1.0	1.0	2.0	1.0	< 1.5	< 1.5	< 1.5	1.0	< 1.5
0.3				> 1.0	> 1.0	> 1.0	<1.0	> 1.0
7.9								> 6.6
11.0	8.0	8.0	8.0					> 11.0
15.7	12.5	12.5	12.4					> 15.7
7.2								> 6.0
10.8	7.4	7.3	7.3					> 10.0
14.4	11.4	11.3	11.4					> 14.3
5.9								> 5.4
8.8	6.7	6.6	6.9					> 9.0
13.0	10.3	10.2	10.3					> 12.9
								X

Polyisocyanurate Roof Board Insulation Part 2: Test Results

Test description and suggested values as specified in ASTM C 1289-95

1. COMPANY NAME		SCHULLER INTERNATIONAL INC.
2. PRODUCT NAME		FESCO FOAM
3.1 PRODUCT TYPE *		
3.1.1 TYPE 1, CLASS 1 OR CLASS 2		
3.1.2 TYPE II		
3.1.3 TYPE III		X
3.1.4 TYPE IV		
3.1.5 TYPE V		
3.1.6 TYPE VI		
3.2 PHYSICAL PROPERTY		
3.2.1 COMPRESSIVE STRENGTH (min., psi, nominal 1-in. core foam)	16	16
3.2.2 DIMENSIONAL STABILITY (nominal, 1-in. core foam)		
3.2.2.1 Percent linear change, max. (-40°F)		
Type I, Class 1; Types II-VI	2.0	< 2.0
Type I, Class 2	1.5	
(amb. RH 158°F)		
Type I, Class 1	2.0	
Type II-VI	4.0	< 4.0
Type I, Class 2	1.5	
(97% RH 200°F)		
Type I, Class 1; Types II-VI	4.0	< 4.0
Type I, Class 2	1.5	
3.2.3 FLEXURAL STRENGTH (nominal, 1-in. core foam)		
3.2.3.1 Modulus of rupture, psi, min.		
Types I-V	40	> 40
Type VI	50	
3.2.3.2 Break load, lbf, min.		
Type I	8	
Types II-V	17	> 17
Type VI	33	
3.2.4 TENSILE STRENGTH (psf, min., perpendicular to board surface, nominal 1-in. core foam)	500	500
3.2.5 WATER ABSORPTION (2H % by vol., max., nom. 1-in. core surface)		
Types I, III, V	1.0	< 1.0
Types II, VI	1.5	
Type IV	2.0	
3.2.6 WATER TRANSMISSION (perm., max., nominal 1-in. core surface)		
Type I	0.3	
Type II	1.0	
Types III-VI	NA	
3.3 MINIMUM MEAN THERMAL RESISTANCE		
3.3.1 @ 40 ± 2°F MEAN TEMPERATURE		
1-inch product Type I, Class 1	7.2	
1-inch product Type I, Class 2	7.9	
1-inch product Type II	6.6	
1.5-inch product Type I, Class 1	10.8	
1.5-inch product Type I, Class 2; Type II	11.0	
1.5-inch product Type III	8.1	> 8.1
1.5-inch product Type IV	8.0	
1.5-inch product Type V	7.1	
2-inch product Type I, Class 1	14.3	
2-inch product Type I, Class 2	15.8	
2-inch product Type II	15.7	
2-inch product Type III	12.5	> 12.5
2-inch product Type IV	12.4	
2-inch product Type V	11.5	
2-inch product Type VI	8.6	
3.3.2 @ 75 ± 2°F MEAN TEMPERATURE		
1-inch product Type I, Class 1	6.5	
1-inch product Type I, Class 2	7.2	
1-inch product Type II	6.0	
1.5-inch product Type I, Class 1	9.8	
1.5-inch product Type I, Class 2; Type II	10.0	
1.5-inch product Type III	7.4	> 7.4
1.5-inch product Type IV	7.3	
1.5-inch product Type V	6.5	
2-inch product Type I, Class 1	13.0	
2-inch product Type I, Class 2	14.4	
2-inch product Type II	14.3	
2-inch product Type III	11.4	> 11.4
2-inch product Type IV	11.3	
2-inch product Type V	10.5	
2-inch product Type VI	7.5	
3.3.3 @ 110 ± 2°F MEAN TEMPERATURE		
1-inch product Type I, Class 1	5.9	
1-inch product Type I, Class 2	6.5	
1-inch product Type II	5.4	
1.5-inch product Type I, Class 1	8.8	
1.5-inch product Type I, Class 2; Type II	9.0	
1.5-inch product Type III	6.7	> 6.7
1.5-inch product Type IV	6.6	
1.5-inch product Type V	5.9	
2-inch product Type I, Class 1	11.7	
2-inch product Type I, Class 2	13.0	
2-inch product Type II	12.9	
2-inch product Type III	10.3	> 10.3
2-inch product Type IV	10.2	
2-inch product Type V	9.5	
2-inch product Type VI	6.7	
4. SEE INSULATION APPENDIX IF CHECKED		X

* See Introduction to insulation section for full descriptions of product types

NA=not applicable

Composite Roof Board Insulation

1. COMPANY NAME	AFM CORP	AFM CORP	APACHE PRODUCTS COMPANY	APACHE PRODUCTS COMPANY	APACHE PRODUCTS COMPANY
2. STATE	MN	MN	SC	SC	SC
3. PRODUCT NAME	AFM PERFORM 1, 2 & 3	AFM CONTOUR TAPER TILE	EPS PERLITE	EPS PLYWOOD	EPS GYPSUM BOARD
4. COMPOSITE COMPONENTS					
4.1 EXPANDED POLYSTYRENE	X	X	X	X	X
4.2 EXTRUDED POLYSTYRENE					
4.3 POLYURETHANE					
4.4 POLYISOCYANURATE					
4.5 PERLITE	X	X	X		X
4.6 GYPSUM BOARD					
4.7 FIBER BOARD	X	X			
4.8 PLYWOOD	X	X		X	
4.9 OTHER	X	X			
5. SURFACE TREATMENT					
5.1 ASPHALT ROOFING FELT					
5.2 FOIL FACER	X	X			
5.3 KRAFT FACER					
5.4 OTHER	X	X			
6. AVAILABLE AS TAPERED MATERIAL	NO	YES	YES	YES	YES
7. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1971	1966	1957	1957	1957
8. COMMON AVAILABLE SIZES					
8.1 2' x 4'	X	X			
8.2 3' x 4'					
8.3 4' x 4'	X	X	X	X	X
8.4 4' x 8'	X		X	X	X
8.5 OTHER	X	X			
9. COMMON AVAILABLE THICKNESSES					
WATER ABSORPTION, TRANSVERSE STRENGTH, C-VALUES, R-VALUES, PERCENT BY VOLUME					
9.1 THICKNESS (inches)	2.67	2.67	1.5	1.5	1.5
THERMAL CONDUCTANCE (C) @75 F	0.103	0.103	0.19	0.22	0.23
THERMAL RESISTANCE (R) @75 F	9.73	9.73	5.26	4.55	4.35
WEIGHT (lbs/ft ²)	0.8	0.8			
9.2 THICKNESS (inches)	4.16	4.16	2.0	2.0	2.0
THERMAL CONDUCTANCE (C) @75 F	0.065	0.065	0.15	0.16	0.16
THERMAL RESISTANCE (R) @75 F	15.47	15.47	6.67	6.25	6.25
WEIGHT (lbs/ft ²)	0.93	0.93			
9.3 THICKNESS (inches)	7.36	7.36	2.5	2.5	2.5
THERMAL CONDUCTANCE (C) @75 F	0.036	0.036	0.12	0.12	0.12
THERMAL RESISTANCE (R) @75 F	27.79	27.79	8.33	8.33	8.33
WEIGHT (lbs/ft ²)	1.2	1.2			
9.4 THICKNESS (inches)	2.67	2.67	3.0	3.0	3.0
THERMAL CONDUCTANCE (C) @75 F	0.093	0.093	0.10	0.097	0.098
THERMAL RESISTANCE (R) @75 F	10.77	10.77	10.0	10.31	10.20
WEIGHT (lbs/ft ²)	0.98	0.98			
9.5 THICKNESS (inches)	4.16	4.16	3.5	3.5	3.5
THERMAL CONDUCTANCE (C) @75 F	0.058	0.058	0.08	0.081	0.082
THERMAL RESISTANCE (R) @75 F	17.3	17.3	12.5	12.34	12.20
WEIGHT (lbs/ft ²)	1.23	1.23			
9.6 THICKNESS (inches)	7.36	7.36	4.0	4.0	4.0
THERMAL CONDUCTANCE (C) @75 F	0.032	0.032	0.07	0.07	0.071
THERMAL RESISTANCE (R) @75 F	31.21	31.21	14.29	14.29	14.08
WEIGHT (lbs/ft ²)	1.76	1.76			
10. ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION					
(assuming a continuous mean temperature @ 1 year	100	100	100	100	100
differential and constant moisture content) @ 5 years	100	100	100	100	100
@ 10 years	100	100	100	100	100
11. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	SEE APPENDIX	SEE APPENDIX	SBCCI 9443	SBCCI 9443	SBCCI 9443
12. LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
13. SEE INSULATION APPENDIX IF CHECKED	X	X	X	X	X

NA=not applicable

Composite Roof Board Insulation

APACHE PRODUCTS COMPANY	APACHE PRODUCTS COMPANY	BENCHMARK FOAM INC	BENCHMARK FOAM INC	BENCHMARK FOAM INC	BENCHMARK FOAM INC	BIG SKY INSULATIONS INC	BIG SKY INSULATIONS INC	BIG SKY INSULATIONS INC
SC	SC	SD	SD	SD	SD	MT	MT	MT
EPS WAVER BOARD	EPS FIBERBOARD	PERMAFOAM COMPOSITE	ENERCEPT PANELS	PERMAFOAM COMPOSITE	PERMAFOAM COMPOSITE	EPS-PERLITE COMPOSITE	EPS-GYPSUM COMPOSITE	EPS-FIBERBOARD COMPOSITE
X	X	X	X	X	X	X	X	X
	X		X	X	X	X	X	X
WAVER BOARD		X	X					
YES	YES	YES	NO	YES	YES	YES	YES	YES
1975	1957	1977	1982	1977	1977	1981	1981	1981
		X		X	X	X	X	X
X	X	X		X	X	X		X
X	X	X	X	X	X	X	X	X
			4 x 12 OR 4 x 16					
1.5	1.5	2.0	8.0	2.0	2.0	1.75	1.5	1.5
0.22	0.19	0.10	0.033	0.10	0.10	0.169	0.233	0.193
4.55	5.26	10.0	30.30	10.0	10.0	5.92	4.29	5.18
						0.769	1.062	0.753
2.0	2.0	4.0	6.0	4.0	4.0	2.25	2.0	2.0
0.16	0.14	0.06	0.045	0.05	0.06	0.127	0.161	0.14
6.25	7.14	16.67	22.22	20.0	16.67	7.87	6.21	7.14
						0.811	1.104	0.795
2.5	2.5	6.0		6.0	6.0	2.75	2.5	2.5
0.12	0.11	0.04		0.04	0.04	0.102	0.123	0.11
8.33	9.09	25.0		25.0	25.0	9.80	8.13	9.09
						0.853	1.146	0.837
3.0	3.0	8.0		8.0	8.0	3.25	3.0	3.0
0.097	0.09	0.03		0.03	0.03	0.085	0.099	0.091
10.31	11.11	33.33		33.33	33.33	11.76	10.10	10.99
						0.845	1.187	0.878
3.5	3.5					3.75	3.5	3.5
0.081	0.076					0.073	0.083	0.077
12.34	13.16					13.70	12.05	12.99
						0.936	1.229	0.92
4.0	4.0					4.25	4.0	4.0
0.07	0.066					0.064	0.072	0.067
14.29	15.15					15.63	13.89	14.93
						0.978	1.271	0.96
100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100
SBCCI 9443	SBCCI 9443		ICBO 4246 HUD 1067 RADCO 1165					
SEE APPENDIX	SEE APPENDIX							
X	X							

Composite Roof Board Insulation

1. COMPANY NAME	CARPENTER INSULATION COMPANY	CARPENTER INSULATION COMPANY	CARPENTER INSULATION COMPANY	CARPENTER INSULATION COMPANY	CARPENTER INSULATION COMPANY
2. STATE	VA	VA	VA	VA	VA
3. PRODUCT NAME	CARPENTER EPS/PLYWOOD	CARPENTER EPS/PERLITE	CARPENTER EPS/STYROFOIL	CARPENTER EPS/GYPSUM	CARPENTER EPS/WAFER- BOARD
4. COMPOSITE COMPONENTS					
4.1 EXPANDED POLYSTYRENE	X	X	X	X	X
4.2 EXTRUDED POLYSTYRENE					
4.3 POLYURETHANE					
4.4 POLYISOCYANURATE					
4.5 PERLITE		X			
4.6 GYPSUM BOARD				X	
4.7 FIBER BOARD					
4.8 PLYWOOD	X		X		X
4.9 OTHER					
5. SURFACE TREATMENT					
5.1 ASPHALT ROOFING FELT			X		
5.2 FOIL FACER			X		
5.3 KRAFT FACER					
5.4 OTHER					
6. AVAILABLE AS TAPERED MATERIAL	YES	YES	YES	YES	YES
7. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1977	1977	1977	1977	1977
8. COMMON AVAILABLE SIZES					
8.1 2' x 4'		X			
8.2 3' x 4'					
8.3 4' x 4'	X	X	X	X	X
8.4 4' x 8'	X		X	X	X
8.5 OTHER			X		
9. COMMON AVAILABLE THICKNESSES					
WATER ABSORPTION, TRANSVERSE STRENGTH, C-VALUES, R-VALUES, PERCENT BY VOLUME					
9.1 THICKNESS (inches)	1.5	1.75	1.0	1.5	1.5
THERMAL CONDUCTANCE (C) @75 F	0.22	0.168	0.259	0.23	0.20
THERMAL RESISTANCE (R) @75 F	4.48	5.94	3.86	4.28	5.08
WEIGHT (lbs/ft ²)	1.5	0.68	0.085	2.18	1.5
9.2 THICKNESS (inches)	2.0	2.25	2.0	2.0	2.0
THERMAL CONDUCTANCE (C) @75 F	0.156	0.126	0.129	0.16	0.14
THERMAL RESISTANCE (R) @75 F	6.40	7.86	7.75	6.21	7.0
WEIGHT (lbs/ft ²)	1.53	0.73	0.17	2.23	1.53
9.3 THICKNESS (inches)	2.5	2.75	2.5	2.5	2.5
THERMAL CONDUCTANCE (C) @75 F	0.12	0.102	0.104	0.12	0.11
THERMAL RESISTANCE (R) @75 F	8.33	9.78	9.62	8.13	8.93
WEIGHT (lbs/ft ²)	1.57	0.77	0.22	2.27	1.57
9.4 THICKNESS (inches)	3.0	3.25	3.0	3.0	3.0
THERMAL CONDUCTANCE (C) @75 F	0.097	0.085	0.086	0.099	0.092
THERMAL RESISTANCE (R) @75 F	10.35	11.71	11.63	10.06	10.85
WEIGHT (lbs/ft ²)	1.61	0.81	0.255	2.31	1.61
9.5 THICKNESS (inches)	3.5	3.75	3.5	3.5	3.5
THERMAL CONDUCTANCE (C) @75 F	0.082	0.073	0.074	0.083	0.078
THERMAL RESISTANCE (R) @75 F	12.18	13.63	13.51	11.98	12.77
WEIGHT (lbs/ft ²)	1.65	0.85	0.30	2.35	1.65
9.6 THICKNESS (inches)	4.0	4.25	4.0	4.0	4.0
THERMAL CONDUCTANCE (C) @75 F	0.07	0.064	0.065	0.072	0.068
THERMAL RESISTANCE (R) @75 F	14.11	15.55	15.38	13.90	14.70
WEIGHT (lbs/ft ²)	1.7	0.90	0.34	2.4	1.7
10. ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION					
(assuming a continuous mean temperature @ 1 year	100	100	100	100	100
differential and constant moisture content) @ 5 years	100	100	100	100	100
@ 10 years	100	100	100	100	100
11. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)					
12. LIMITATIONS AND/OR RESTRICTIONS					
13. SEE INSULATION APPENDIX IF CHECKED					

NA=not applicable

Composite Roof Board Insulation

CARPENTER INSULATION COMPANY	DOW CHEMICAL, USA	DOW CHEMICAL, USA	INSULATED BUILDING SYSTEMS	INSULATED BUILDING SYSTEMS	INSULATION CORP OF AMERICA	INSULATION CORP OF AMERICA	INSULATION CORP OF AMERICA	INSULATION CORP OF AMERICA
VA	OH	CANADA	VA	VA	PA	PA	PA	PA
CARPENTER EPS/FIBERBOARD	STYROFOAM THERMADRY 1750	ROOFMATE CT	AFM PERFORM 1, 2 & 3	AFM CONTOUR TAPER TILE	ICALITE EPS/FIBERBOARD	ICALITE EPS/PLYWOOD	ICALITE EPS/PERLITE	ICALITE EPS/GYPSUM- BOARD
X	X	X	X	X	X	X	X	X
X	FILTER FABRIC		X	X	X	X	X	X
			X	X		X		
	DRAINAGE CHANNELS	X	X	X				
YES	NO	NO	NO	YES	YES	YES	YES	YES
1977	1990	1985	1971	1966	1979	1979	1979	1979
X	2 X 8		X	X	X	X	X	X
			X	X	X	X	X	X
1.5	1.5		1.5	1.5	1.5	1.0	1.75	1.625
0.19	0.145		0.193	0.193	0.19	0.26	0.14	0.19
5.17	6.9		5.18	5.18	5.26	3.84	7.14	5.26
0.83	0.26		0.83	0.83	0.5	0.5	0.75	2.0
2.0	2.25		2.0	2.0	2.0	1.5	2.25	2.125
0.14	0.094		0.141	0.141	0.15	0.17	0.13	0.17
7.10	10.6		7.09	7.09	6.67	5.88	7.69	5.88
0.88	0.35		0.85	0.85	0.625	0.125	1.0	2.125
2.5			2.5	2.5	2.5	2.0	2.75	2.625
0.11			0.111	0.111	0.11	0.13	0.11	0.13
9.02			9.01	9.01	9.09	7.69	9.09	7.69
0.92			0.88	0.88	0.75	0.167	1.25	2.25
3.0			3.0	3.0				
0.091			0.091	0.091				
10.95			10.99	10.99				
0.96			0.92	0.92				
3.5			3.5	3.5				
0.078			0.078	0.078				
12.87			12.82	12.82				
0.99			0.964	0.964				
4.0			4.0	4.0				
0.068			0.068	0.068				
14.80			14.71	14.71				
1.04			1.0	1.0				
100	>98		100	100	100	100	100	100
100	>96		100	100	100	100	100	100
100	>95		100	100	100	100	100	100
	SEE APPENDIX		SEE APPENDIX	SEE APPENDIX	P211,P701 P801,P803 P814,P815 UL-9702	P211,P701 P801,P803 P814,P815 UL-9702	P211,P701 P801,P803 P814,P815 UL-9702	P211,P701 P801,P803 P814,P815 UL-9702
			SEE APPENDIX	SEE APPENDIX				
	X		X	X				

Composite Roof Board Insulation

1. COMPANY NAME	MASONITE/ WOOD FIBER INDUSTRIES	OWENS CORNING SPECIALTY & FOAM PRODUCTS	POLYFOAM PACKERS CORP	POLYFOAM PACKERS CORP	POLYFOAM PACKERS CORP
2. STATE	IL	OH	IL	IL	IL
3. PRODUCT NAME	STRUCTODEK FS	FOAMULAR INSUL-DRAIN	THERMOSAFE- PLUS WITH FIBER AND PERLITE	THERMOSAFE- + PERLITE	THERMOSAFE- PLUS WITH FIBER AND PERLITE
4. COMPOSITE COMPONENTS					
4.1 EXPANDED POLYSTYRENE			X	X	X
4.2 EXTRUDED POLYSTYRENE		X			
4.3 POLYURETHANE					
4.4 POLYISOCYANURATE					
4.5 PERLITE				X	X
4.6 GYPSUM BOARD			X		X
4.7 FIBER BOARD	X				
4.8 PLYWOOD					
4.9 OTHER	X	FILTER FABRIC ADHESIVE			
5. SURFACE TREATMENT					
5.1 ASPHALT ROOFING FELT			X	X	
5.2 FOIL FACER			X	X	
5.3 KRAFT FACER			X	X	
5.4 OTHER	X	DRAINAGE CHANNELS	X	X	
6. AVAILABLE AS TAPERED MATERIAL		NO	YES	YES	YES
7. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1986	1991	1990	1990	1990
8. COMMON AVAILABLE SIZES					
8.1 2' x 4'			X	X	X
8.2 3' x 4'			X	X	X
8.3 4' x 4'			X	X	X
8.4 4' x 8'		X	X	X	X
8.5 OTHER	X		X	X	X
9. COMMON AVAILABLE THICKNESSES					
WATER ABSORPTION, TRANSVERSE STRENGTH, C-VALUES, R-VALUES, PERCENT BY VOLUME					
9.1 THICKNESS (inches)	0.41	1.0	1.5	1.75	2.25
THERMAL CONDUCTANCE (C) @75 F	0.88	0.227	0.174	0.155	0.127
THERMAL RESISTANCE (R) @75 F	1.14	4.4	5.74	6.43	7.82
WEIGHT (lbs/ft ²)	0.71	0.16	0.76	0.76	1.36
9.2 THICKNESS (inches)		1.5	2.5	2.75	3.25
THERMAL CONDUCTANCE (C) @75 F		0.145	0.099	0.092	0.082
THERMAL RESISTANCE (R) @75 F		6.9	10.09	10.78	12.17
WEIGHT (lbs/ft ²)		0.24	0.93	0.93	1.53
9.3 THICKNESS (inches)	0.53	2.25	3.5	3.75	4.25
THERMAL CONDUCTANCE (C) @75 F	0.80	0.094	0.069	0.066	0.06
THERMAL RESISTANCE (R) @75 F	1.25	10.6	14.44	15.13	16.52
WEIGHT (lbs/ft ²)	0.967	0.35	1.1	1.1	1.7
9.4 THICKNESS (inches)			4.5	4.75	5.25
THERMAL CONDUCTANCE (C) @75 F			0.053	0.051	0.048
THERMAL RESISTANCE (R) @75 F			18.79	19.48	20.87
WEIGHT (lbs/ft ²)			1.27	1.27	1.87
9.5 THICKNESS (inches)			5.5	5.75	6.25
THERMAL CONDUCTANCE (C) @75 F			0.043	0.042	0.04
THERMAL RESISTANCE (R) @75 F			23.14	23.83	25.22
WEIGHT (lbs/ft ²)			1.43	1.43	2.03
9.6 THICKNESS (inches)			6.5	6.75	7.25
THERMAL CONDUCTANCE (C) @75 F			0.036	0.035	0.034
THERMAL RESISTANCE (R) @75 F			27.49	28.18	29.57
WEIGHT (lbs/ft ²)			1.6	1.6	2.2
10. ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION					
(assuming a continuous mean temperature @ 1 year	100		100	100	100
differential and constant moisture content) @ 5 years	100	95	100	100	100
@ 10 years	100	90	100	100	100
11. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)			UL R14213, FM OV8A0.AC, FM OV8A1.AC, FM OV8A2.AC, CABO 236, 238, 384, 479	UL R14213, FM OV8A0.AC, FM OV8A1.AC, FM OV8A2.AC, CABO 236, 238, 384, 479	UL R14213, FM OV8A0.AC, FM OV8A1.AC, FM OV8A2.AC, CABO 236, 238, 384, 479
12. LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
13. SEE INSULATION APPENDIX IF CHECKED	X	X	X	X	X

NA=not applicable

Appendix, Roof Board Insulation

AFM CORPORATION

The following companies, included in the *Commercial Guide Index* to Listed Roof Board Insulations, manufacture AFM Perform, AFM Contour Taper Tile, and AFM Perform Protect expanded polystyrene insulations; AFM Contour Taper Tile-X extruded polystyrene insulation in both 1.4 and 1.8 densities; and AFM Perform 1, 2, and 3 and AFM Perform Contour Taper Tile composite insulations: Advance Foam Plastics, Inc., Colo. (5250 N. Sherman St., Denver 80216, 303/297-3844); Advance Foam Plastics, Inc., Utah (1751 W. Fortune Road, Salt Lake City, UT 84104, 801/974-5680); Advance Foam Plastics, Inc., Nevada (902 Kleppe Lane, Sparks, NV 89431); All American Foam Products (301 Eubank Southeast, Albuquerque, NM 87123, 505/299-7653); Allied Foam Products, Inc. (1604 Athens Hwy/Box 2861, Gainesville, GA 30501, 404/536-7900); Big Sky Insulations, Inc.; Branch River Foam Plastics, Inc.; Contour Products, Inc. Kansas City and Newton, Kansas (4001 Kaw Drive, Kansas City, KS 66102, 913/321-4114); Flexible Packaging, Co. (P.O. Box Y, Bayamon, PR 00620, 809/786-8405); Insulated Building Systems, Inc. (100 Powers Court, Sterling, VA 20166); Team Industries, Inc. (4580 Airwest Drive S.E., Grand Rapids, MI 49508, 616/698-2001; NPS Corporation (Industrial Drive/POB 31, Perryville, MO 63775, 314/547-8388); Pacemaker Plastics Co., Inc. (126 New Pace Rd. P.O. Box 453, Newcomerstown, OH 43832, 800/446-2188); Pacific Allied Products, Ltd. (Campbell Industrial Park, 91-102B Kaomi Loop, Ewa Beach, HI 96707, 808/682-2038); Plasti-Fab, British Columbia (679 Aldford Avenue, Annacis Industrial Estates, New Westminster, BC V3M 5P5, 604/526-2771); Plasti-Fab, Alberta (820-28 Street N.E., Calgary, Alberta T2A 6K1, 403/248-3990); Plasti-Fab, Manitoba (Unit #6 Sioux Ind. Park, 845 Lagimodiere Blvd., Winnipeg, Manitoba R2J 3M2, 204/237-7711); Plasti-Fab, Ontario (152 Birch Avenue, Kitchener, Ontario N2G 4E1, 519/570-6100); Plasti-Fab, Saskatchewan (837 57th Street East; Saskatoon, Saskatchewan S7K 5Z2, 306/934-3345); Poly Foam, Inc. (116 Pine Street So., Lester Prairie, MN 55354); Stanark Plastics (Highway 70 East/Box 3231, North Little Rock, AR 72117, 501/945-1114); Therma Foams, Inc. (P.O. Box 161128, Ft. Worth, TX 76161, 817/624-7204); Thermal Foam, Inc.; Thermal Foams/Syracuse, Inc. (6173 South Bay Rd/Box 396, Cicero, NY 13039, 315/699-8734 800/873-6267); Insulfoam, Alaska (628 Western Dr., Anchorage, AK 99501, 907/279-9407); Insulfoam, Ariz. (3632 East LaSalle St., Phoenix, AZ 85040, 602/437-4395); Insulfoam, Chino and Dixon, Calif. (5635 Schaefer P.O. Box 765, Chino, CA 91710, 714/591-7425; 1155 Industrial Place P.O. Box 1058, Dixon, CA 95620, 916/753-4010); Insulfoam, Ore. (1215 West First Street P.O. Box 970, The Dalles, OR 97058, 503/298-4136); Insulfoam, Wash. (19041 80th Avenue S P.O. Box 279, Kent, WA 98032, 206/242-9424); Insulfoam (R.R. 1, Box 101, Mead, NE 68041); Insulfoam (3524 Broadway S.E., Albuquerque, NM 87105); Insulfoam (12601 East 33rd Ave., #114 Aurora, CO 80011; Wisconsin EPS, (90 Trowbridge Drive/FOB 669, Fond Du Lac, WI 54935; 414/923-4146). See the appropriate listing under AFM Corporation for a description of these products.

AFM Perform, Contour Taper Tile, and AFM Perform Protect Roof Insulations: UL listing: AFM Perform and Contour Taper Tile EPS Roof Insulations have been tested under UL 790 and ASTM E108 for flame-spread classification. The AFM listing provides for the use of Perform and Contour Taper Tile in unlimited thickness in any UL-classified roof membrane assembly. EPS may be of uniform thickness or tapered. AFM UL-classified EPS may be used in the following assemblies as designated in the 1990 UL Fire Resistance Directory: P211, P225, P230, P231, P238, P246, P250, P251, P254, P255, P261, P410, P262, P410, P411, P508, P509, P510, P511, P513, P514, P515, P701, P710, P711, P713, P715, P717, P801, P803, P814, P815, P817, P818, P902, P909, P912, P915, P919, P920, P921, P922, P933, J999, K902, Const. No. 237, Cons. No. 458. AFM EPS may be substituted for other UL-listed insulation products in UL-rated roof assemblies. See UL Roofing Materials Directory for complete listing. **Building Codes:** ICBO 4169, BOCA 92-4, SBCCI 94136, AFM UL file number R11812. The AFM Quality-Control Program and Third-Party Certification Program meet or exceed all requirements for ICBO, BOCA, and SBCCI.

Installation: Follow recommended installation guidelines contained in AFM Perform, Contour Taper Tile Spec-Data form. **Warranty:** AFM Perform and Contour Taper Tile, and Perform Protect are covered by a 20-year, 100 percent R-value-retention warranty. Consult AFM for specific details.

ALLIEDSIGNAL

AlliedSignal Armor-R Plus features a closed-cell polyisocyanurate foam core laminated to heavy black (nonasphaltic) glass fiber reinforced felt facers. **Compliances:** Federal specifications: HH-I-1972/GEN; HH-I-1972/2, Class 1; HH-I-1972/1, Class 1; H-I-1972/3; Metro-Dade County, Fla.; California State Insul. Qual. Standards & Title 25 Foam Flammability Criteria (License #TC 1231); BOCA, ICBO, and SBCCI sections on foam insulation; FM Standard 4450/4470 approval for Class 1 insulated roof deck construction; UL Standard 1256 Classification: insulated metal deck construction assemblies, Construction Nos. 120 & 123; UL Standard 790 Classification: Class A; UL Standard 263 Fire Resistance Classification listings: P225, P230, P259, P263, P508, P510, P514, P701, P713, P717, P718, P719, P720, P722, P723, P724, P725, P728, P729, P730, P732, P801, P814, P815, P817, P818, P819, and P823. Canada/CGSB 51.26-M86-Type 3 CCMC No. 12-464-R.

AMOCO FOAM PRODUCTS COMPANY

Extruded Polystyrene Roofing Recovery Board (3/8-in. thickness): Available as 4 ft. x 50 ft. fanfolded bundle (Amocor-PB6), 4 ft. x 8 ft. sheets (Amocor Plygood-PG38), or 4 ft. x 9 ft. sheets (Amocor Plygood-PG39).

Extruded Polystyrene Insulation Board: Available as Amofam-CM (square edge or tapered), Amofam-SL (shiplap edge), or Amofam-DC (drainage channel). Amofam available as 2 ft. x 8 ft. and 4 ft. x 8 ft. sizes. R-values and C-values for Amofam are for Type IV. Amofam-RCY is made with a minimum of 50 percent recycled polystyrene resin. **Underwriters Laboratories, Inc. design numbers:** Amofam-CM, SL, DC, and RCY:: P225, P230, P232, P235, P238, P250, P254, P404, P508, P510, P514, P701, P710, P711, P713, P715, P717, P801, P814, P815, P817, P904, P907, P909, P912, P915. **Underwriter Laboratories, Inc. roof deck construction numbers:** Amofam-CM, SL, DC, and RCY:: 1, 2, 3, 9, 14, 58, 87, 200.

Limitations and/or restrictions: Amocor-PB6, Amocor-Plygood-PG38, and Amocor Plywood-PG39 Roofing Recovery Boards are designed for use in mechanically fastened or loose-laid and ballasted single-ply roofing systems. Amofam Roofing Insulation Boards are designed for use in partially or fully adhered (1/2-in. wood fiberboard must be applied prior to membrane application), mechanically fastened or loose-laid and ballasted, protected roof membrane assemblies, and tapered systems. All Amocor Roofing Recovery and Amofam Insulation Boards have poor resistance to fuel oil, oil-based paint, olefins, ketones, gasoline, chlorinated and aromatic hydrocarbons, and naphthas. Although these products contain a flame retardant additive intended to inhibit a small source fire, they, like most commercially available foam plastic insulations, are combustible and should not be exposed to flame or other ignition sources. These materials may constitute a fire hazard if improperly used. Fire and building codes should be followed. **Specific information:** Obtain installation instructions from your supplier or Amoco Foam Products Company, 2907 Log Cabin Drive, Smyrna, GA 30080-7013.

APACHE PRODUCTS COMPANY

Please refer to Apache Products catalogs for application and installation information. Please follow all restrictions, limitations, and warnings contained therein. Following are Apache plant locations: isocyanurate insulation only: Belvidere, Ill., 1005 McKinley Ave. P.O. Box 7, 61008, 815/544-3193, 800/435-5493; Jackson, Miss., 100 Apache Road, P.O. Box 7111, 39282-7111, 601/373-1222, 800/648-2154; Linden, N.J., 2025 East Linden Ave., P.O. Box 1009, 07036, 908/486-6723, 800/526-4056; and Riverside, Calif., 6942 Ed Perkin St., 92504, 909/687-7070, 800/241-7444; isocyanurate and expanded polystyrene: Anderson, S.C., 5720 Highway 81 South, Starr, SC 29684, 803/296-3424, 800/845-3080; expanded polystyrene only: Lakeland, Fla., 4500 South Frontage Rd., 33801, 813/688-8879; Miami, Fla., 1020 S.W. 69th Ave., P.O. Box 4440488, 33144, 305/261-4637; Union, Miss., Industrial Park, P.O. Box 160, Union, MS 39365, 601/774-8285, 800/530-7762.

ATLAS ROOFING CORPORATION

ACFoam-II features a closed-cell polyisocyanurate foam core laminated to heavy black (nonasphaltic) glass-fiber reinforced felt facers. This product is suitable

for all single-ply systems.

ACFoam III also features the closed-cell foam core integrally laminated to heavy coated glass facers. It is specifically designed for all single-ply, cold-applied BUR, and cold-applied modified bitumen membrane systems. Do not use with hot-applied membranes.

ACFoam Supreme has a polyisocyanurate foam core with tri-laminate foil facers and provides highest R-value of all ACFoam products. Specifically designed for use with mechanically attached and loosed laid ballasted single-ply systems. ACFoam Supreme cannot be used directly with hot asphalt or torch-applied systems.

ACFoam Composite consists of a polyisocyanurate foam core bonded to 1/2-in. perlite on one side and a heavy black (nonasphaltic) glass-fiber reinforced felt on the other side. The perlite eliminates the need for cover boards or vented base sheets normally recommended over foam insulation. The product is recommended for use with BUR, modified bitumen, and single-ply roofing systems.

ACFoam Recover Board is part of the Atlas family of thermally efficient polyiso foam board insulations. The foam core of Recover Board is a Class 1 fire-rated foam core and is covered on both sides with a heavy, strong coated fibrous facer.

Tapered ACFoam features a closed-cell polyisocyanurate foam core laminated to heavy black (nonasphaltic) glass-fiber reinforced felt facers. It is available in 4' x 4' panels with slopes of 1/8-in., 1/4-in., and 1/2-in. for crickets.

ACFoam Nail Base Insulation provides a base for shingles, tile, or metal roof panels and may be applied over wood or steel decking. Particularly suited for cathedral ceiling and log home applications, the product is a polyisocyanurate foam core that is bonded between 7/16-in. APA-rated OSB and glass-fiber reinforced felt facer.

Vented-R is a polyiso insulation, laminated to OSB, constructed with ventilation spaces to dissipate moisture vapor and heat buildup.

Compliances: (Check with Atlas for specific applications for each product.) **federal specifications** HH-I-1972/GEN; HH-I-1972/2, Class 1; HH-I-1972/1, Class 1; HH-I-1972/3; Metro-Dade County, FL No. 89-0509.3; Calif. State Insul. Qual. Standards & Title 25 Foam Flammability Criteria (License #TC 1231); BOCA, ICBO, and SBCCI sections on foam insulation; FM Standard 4450/4470 approval for Class 1 insulated roof deck construction; UL Standard 1256 Classification: insulated metal deck construction assemblies, Construction Nos. 120 & 123; UL Standard 790 Classification: Class A with most roof membrane systems; UL Standard 263 Fire Resistance Classification (ACFoam-III/ACFoam Composite): some listings are P225, P230, P232, P259, P263, P508, P510, P514, P701, P710, P713, P717, P718, P719, P720, P722, P723, P724, P725, P728, P729, P730, P732, P801, P814, P815, P817, P818, P819, and P823. Can/CGSB 51.26-M86-Type 3 CCMC No. 12-464-R. ASTM C1289-95, Type II; C1289-95, Type V; C1289-95, Type I, Class I; C1289-95 Type III.

BIG SKY INSULATIONS, INC.

SnoFoam EPS: Approvals: ASTM C-578-87a, ICBO 4169, UL P design numbers: P211, P225, P230, P231, P232, P238, P246, P250, P251, P254, P255, P261, P262, P410, P411, P508, P509, P510, P511, P513, P514, P515, P701, P710, P713, P715, P717, P801, P803, P814, P815, P817, P818, P902, P909, P912, P915, P919, P920, P921, P922, P923, J999, K901, K902, K903.

CARLISLE SYNTEC INCORPORATED

Sure-Seal EPS Insulation: UL Classified, FM Approved; Sure-Seal EPS Foam must be protected from: (a) temperatures greater than 160 F.; (b) oil, solvents, and other aliphatic or hydrocarbon substances that could degrade the foam. When used over coal tar roof membranes, the following procedures apply: (a) The coal tar roof membrane to be covered must have been exposed in field surface environment for at least five years. (b) A minimum one-half inch butt-joined wood fiberboard separation barrier (joints taped securely) is installed prior to laying of the EPS. (c) The system design temperature does not exceed 130 F. at the coal tar membrane/wood fiberboard interface. Protect from sunlight during storage. Review the Carlisle EPS Material Safety Data Sheet for complete safety information prior to use.

Foamular150/250: UL Roof Deck Const. 200, 219, 237, 289; UL Class A: See UL Fire Resistance directory for below-membrane design numbers

P225, P230, P251, P513, P701, P801, P803, P814, P815, P902, P922, P923. FM approved. Product should not be used in contact with chimneys, heater vents, steam pipes, or other surfaces where temperatures exceed 150 F. Product should be installed under a membrane applied to a substrate having an adequate fire rating as required by building codes, over metal or combustible deck. Separator sheet should be used where insulation may come in contact with PVC membrane if required by membrane manufacturer. Any material containing organic solvents should not be used in direct contact with polystyrene insulation unless previously evaluated. Protect from extended exposure of sunlight. The product will ignite if exposed to fire of sufficient heat and intensity, although it does contain a flame retardant additive to inhibit ignition from small fire sources.

Foamular 404: UL Roof Deck Constr. 1,2,3,9,14,27,58,87,200; UL Class A; FM Class I & I-60 or I-90 Insulated Steel Roof Deck: UL Design Numbers for inverted roof insulation: P225, P226, P229, P235, P248, P404, P505, P507, P701, P801, P803, P805, P811, P813, P902, P908, P909, P912, P915, P708. Product should not be used in contact with chimneys, heater vents, steam pipes, or other surfaces where temperatures exceed 150 F. Product should be installed under a membrane applied to a substrate having an adequate fire rating as required by building codes, over metal or combustible deck. Separator sheet should be used where insulation may come in contact with PVC membrane if required by membrane manufacturer. Any material containing organic solvents should not be used in direct contact with polystyrene insulation unless previously evaluated. Protect from extended exposure of sunlight. The product will ignite if exposed to fire of sufficient heat and intensity, although it does contain a flame retardant additive to inhibit ignition from small fire sources.

Polyisocyanurate HP, HP-N, HP-W: UL Classified, FM Approved: Carlisle SynTec's Polyisocyanurate products are non-structural, non-load bearing materials. They are not designed for direct traffic usage unless adequately protected. All roof insulation should be kept dry and protected from the elements. No more insulation should be installed than can be covered in the same day. Isocyanurate foam will burn if exposed to a flame of sufficient heat and intensity. Contact Carlisle SynTec for advice on the use of these products if there is any doubt concerning the proper product for the job, the proper installation procedure or the proper code approvals.

HP Recovery Board: UL classified, FM approved. HP Recovery Board is a wood fiberboard underlayment for use with Carlisle roofing systems. All roof insulation should be kept dry and protected from the elements. No more insulation should be installed than can be covered in the same day. Wood fiberboard will burn if exposed to a flame of sufficient heat and intensity.

CARPENTER INSULATION COMPANY

Styrodeck flat and tapered expanded polystyrene: Styrodeck is preferred for building roofs having normal temperature conditions but should not be used in contact with chimneys, heater vents, steam pipes, or other surfaces where temperatures exceed 150 F. It is not recommended for unballasted applications where sustained roof temperatures exceed 165 degrees F and intermittent temperatures exceed 180 F. Consult the roofing department at Carpenter Insulation Company before using EPS with coal tar pitch. Contact Carpenter Insulation for compliance with UL design "P" assemblies.

CELOTEX CORPORATION

Hy-Therm AP: UL Design Numbers: P225, P230, P232, P263, P508, P510, P514, P713, P717, P719, P722, P723, P724, P727, P729, P730, P732, P734, P735, P739, P801, P814, P815, P818, P819, P823, P827.

DOW CHEMICAL USA

Blue Styrofoam Brand Roofmate Insulation, Blue Styrofoam Brand Plazamate Insulation, Blue Styrofoam Thermadry Brand Insulation, Blue Styrofoam Brand Square Edge Insulation, Blue Styrofoam Brand Tongue & Groove Insulation, Blue Styrofoam-Brand Roofing Recovery Board, Blue Styrofoam Brand Recovermate, Dow Deckmate Insulation, Dow Deckmate Plus Insulation, Styrofoam Brand Insulations: UL Design Numbers: D2708, P225, P229, P230, P235, P248, P250, P251, P254, P255, P259, P261, P404, P505, P507, P508, P510, P513, P514, P701, P710, P711, P713, P714, P715, P717, P801, P803, P805, P811, P813, P814, P815, P817, P818, P902, P904, P907, P908, P909, P912, P915, P921, U326, U330, U460, U902, U912, P923. UL Roof

Deck Construction Numbers: 1, 2, 3, 9, 14, 58, 87, 200, 237, 260, 276, 380, 287, 440.

Limitations and/or restrictions: Styrofoam Brand Roofing Material insulation is designed for use above waterproofing membranes in roof construction. Styrofoam Brand Plazamate and Styrofoam Brand Thermadry insulations are designed for use above waterproofing membranes in plaza and parking roof deck construction and in other areas where high compressive strength insulation is required. Styrofoam Brand Square Edge, Styrofoam Brand Tongue & Groove, Styrofoam-Brand Roofing Recovery Board, Styrofoam brand Recovermate, and DOW Deckmate and Deckmate Plus insulations are intended for use beneath loose-laid and ballasted or mechanically attached sheet membranes in roof construction. Styrofoam brand insulations and DOW Deckmate and Deckmate Plus have poor resistance to aromatic hydrocarbons, chlorinated hydrocarbons, olefins, naphthas, ketones, gasoline, fuel oil, and oil-based paint. Maximum service temperature: 165 F, except for Styrofoam brand Recovermate, which has a maximum service temperature of 200 F. **Light stability:** When stored outdoors for extended periods, Styrofoam brand insulations and DOW Deckmate and Deckmate Plus insulations should be shielded from the sunlight with an opaque, light-colored covering. **Notice:** Styrofoam brand insulation and DOW Deckmate and Deckmate Plus are combustible and should be stored, handled, and used properly. They should be installed with code-acceptable thermal barriers or used in approved alternative constructions. For more information, contact Dow (800-441-4DOW).

FIRESTONE BUILDING PRODUCTS, INC.

ISO 95+: FM Class 1, 1-60 or 1-90. Firestone roof insulation products are non-structural, non-load bearing materials. They are not designed for direct traffic usage unless adequately protected. All roof insulation should be kept dry and protected from the elements. Asphalt mopping temperature must not exceed 450 F. No more insulation should be installed than can be covered in the same day. Isocyanurate foam will burn if exposed to a flame of sufficient heat and intensity. Contact Firestone for advice on the use of these products if there is any doubt concerning the proper product for the job, the proper installation procedure or the proper code approvals. Code approvals: Classified in UL designs, P225, P230, P232, P259, P263, P508, P510, P514, P701, P710, P717, P718, P719, P722, P723, P724, P725, P727, P728, P729, P730, P732, P801, P814, P815, P818, P819, P823, P828; meets the requirements of ICBO Section 2602, SBCCI Section 2603, and BOCA Section 2603; Classified in UL deck construction 120 and 123.

Composite Roof Insulation: UL Classification, FM Class 1, 1-60 or 1-90. Firestone's roof insulation products are non-structural, non-load bearing materials. They are not designed for direct traffic usage unless adequately protected. All roof insulation should be kept dry and protected from the elements. Asphalt mopping temperature must not exceed 450 F. No more insulation should be installed than can be covered in the same day. Isocyanurate foam will burn if exposed to flame of sufficient heat and intensity. Contact Firestone for advice on the use of these products if there is any doubt concerning the proper product for the job, the proper installation procedure, or the proper code approvals. Classified in UL designs, P225, P230, P232, P508, P510, P514, P701, P710, P717, P718, P719, P723, P801, P815, P818, P828; BOCA 2603; meets the requirements of ICBO Section 2602, SBCCI Section 2603, and BOCA Section 2603; Classified in UL deck construction 120 and 123.

GAF MATERIALS CORPORATION

GAFTEMP Permalite: UL Design Numbers: P001, P004, P201, P206, P210, P211, P224, P225, P230, P232, P237, P238, P250, P254, P259, P263, P404, P508, P514, P701, P708, P710, P713, P718, P801, P803, P805, P810, P814, P815, P817, P818, P819, P904, P909, P912, P915, S601, S702, S716, S717, S718. **Limitations and Restrictions:** GAFTEMP Permalite roof insulation should not be left exposed to the weather. GAFTEMP Permalite insulation products are not recommended for continuous use at temperatures over 200 F. All insulation boards must be maintained in a dry condition prior to installation. For ambient temperatures below 40 degrees F, the use of hot bitumen application is not recommended due the rapid cooling of the bitumen. **Direct torching:** GAF does not recommend that modified bitumen roof membranes be directly torched to any insulation. A base sheet should be applied to the surface of the insulation and the torchable membrane torched to the base sheet.

GAFTEMP Isotherm: GAFTEMP Isotherm roof insulation is a non-structural, non-loadbearing material. It is not designed for direct traffic usage unless adequately protected. GAFTEMP Isotherm roof insulation should be stored dry and protected from the elements. No more insulation should be installed than can be completely covered with roofing on the same day. As unprotected urethane will burn, fire safety precautions should be observed wherever any isocyanurate products are used. GAFTEMP Isotherm is an insulation board made up of composite mat facers bonded to a core of isocyanurate foam. **UL Design Numbers:** P225, P230, P232, P259, P508, P510, P514, P710, P713, P715, P717, P718, P719, P720, P722, P723, P724, P727, P728, P729, P730, P732, P735, P738, P801, P815, P814, P818, P819, P823, P827.

Mechanical Fasteners: GAF recommends the use of GAFITTE Coated or Stainless Steel mechanical fasteners for the attachment of GAFTEMP roof insulation products to steel decks. The correct number and type, per the Factory Mutual Approval Guide, should be used. **Limitations:** The values listed herein are typical, nominal values obtained under laboratory conditions using industry-standard test methods. These values are subject to change at any time without notice.

GEORGIA-PACIFIC CORP.

Georgia-Pacific roof fiberboard is produced in 1/2", 3/4", and 1" homogenous thickness (non-laminated) in both High Density for adhered roof systems and Regular Density (1/2" only) for ballasted or mechanically fastened systems. High Density is FM approved for 1-60 and 1-90 wind uplift in FM report J.I. OV7A2.AM and is also available, upon request, UL classified.

Compliances: ASTM C-208-1995 Type II, Grade 1 (High Density) and Grand 2 (Regular Density); ANSI-AHA 194.1-1985 Type IV, Class 1 (High Density) and Type VI (Regular Density).

Warning: Do not apply open flame directly to fiberboard.

HUEBERT FIBERBOARD, CO.

HFB Insulation Board: Contact Huebert Fiberboard, Co. for any information on limitations or restrictions.

KOPPERS INDUSTRIES, INC.

Refer to Koppers current literature for additional product information, application instructions, and technical details. Contact Koppers Sales and Service Center at 800-558-2706 for additional information and assistance.

LUCAS SALES COMPANY, INC.

Lucas Lite Tapered Extruded Polystyrene: Lucas Lite is practical for building roofs having normal roof temperature conditions, but should not be used in contact with chimneys, heat vents, steam pipes, or other surfaces where temperatures exceed 150 F. It is not recommended for unballasted applications where sustained roof temperatures exceed 165 F. or intermittent temperatures exceeding 180 F. Lucas Lite is recommended for flat roofs only (less than 2:12 slope). Lucas Lite is not to be applied with plastic, oil, or solvent-based roof cements. Lucas Lite will provide slope on flat roof decks. Deflected areas or low spots should be filled to provide a relatively level deck for the new tapered system.

The Lucas Tapered System: **UL Design Numbers:** P001, P004, P201, P202, P203, P204, P205, P206, P210, P211, P221, P224, P225, P230, P232, P233, P237, P238, P243, P252, P404. **Building Codes:** ICBO 3549, BOCA 8336, SBCCI 80108. **Limitations and/or restrictions:** Lucas Tapered System is not structural in nature; while highly moisture resistant, it should not be left exposed to the elements. Therefore, no more insulation should be applied than can be completely protected the same day. Lucas Tapered System is not designed for direct traffic unless appropriately protected. Lucas Tapered System is not acceptable for applications where it shall be exposed to direct interface with continuous soaking temperatures of 250 F. Lucas Tapered System will provide slope on flat roof decks. Deflected areas or low spots should be filled to provide a relatively level deck for new tapered roof insulation system. When applying directly over metal decks, 3/4" thickness at low points is recommended as a minimum. Check flute span requirements for specific minimum thickness requirements.

MASONITE/WOOD FIBER INDUSTRIES

Structodek: Structodek Roofing Substrate is an ideal wood fiberboard underlayment for fully or partially adhered, mechanically fastened and ballasted single-ply systems. **Attachment methods and other restrictions:** Structodek should be installed over dry surfaces. Ponded water, snow, ice, and surface irregularities must be removed from roof surface prior to substrate attachment. In all cases, the insulation must be covered with membrane the same day the insulation is installed. The decision to reroof directly over an existing roof should be made by a qualified roofing technician after evaluation of the existing roofing surfaces. Also refer to membrane manufacturer's instructions for recommendations on roof surface preparation. Keep Structodek Roofing Substrate dry during storage and installation. When stored outdoors, product must be kept off the ground and protected by a waterproof covering. If product becomes wet, it must be dried before installation. Since all wood fiber products are susceptible to expansion & contraction (primarily in high humidity areas) it is recommended that a gap between panels of 1/16" to 1/8" be maintained in order to reduce the incidence of buckling. **Structodek FS:** Structodek FS Roofing Substrate is a wood fiber recovery board with a factory-applied 28 lb. fiberglass base sheet on the top surface. The base sheet, laminated to the substrate board with an asphalt adhesive, is offset from the panel to provide a 3/4" shiplap on two adjacent edges. Other edges are cut square to produce well aligned joints. Nominal substrate size is 1/2" x 3' x 8 1/2' (actual insulation size is 3/8" x 35 1/4" x 102"). Substrate is packaged with three extra base sheets 3' x 8 1/2' for cutouts and edges. **Attachment methods and other restrictions:** Lay substrate panels in parallel rows with end joints staggered in adjacent rows. Place lapped and non-lapped ends and edges closely but not forced together. Protect all edges from exposure to direct flame. Anchor substrate panels with Factory Mutual-approved fastener and plate assembly. Secure full-size panels with a minimum of eight fasteners and smaller sizes with one fastener per 2 sq. ft. of panel. Cover intersections at walls, cutouts, vents, skylights and other non-protected edges with 6-in.-wide base sheet strips secured with mechanical fasteners or nonflammable roofing adhesive. Strips of base sheet may be cut from extra sheets provided in the unit. All panel edges must be protected from direct flame with 6-in strips of base sheet or modified bitumen. Modified bitumen strips must be torched in a safe location away from exposed panel edges. When heated until tacky, modified bitumen strips are easily applied over edges. Application of torch-applied modified bitumen to Structodek FS Substrate represents a potential fire hazard. It is the sole responsibility of the applicator to incorporate all appropriate safety precautions. Masonite will accept no responsibility for damages or injuries to personnel or property before, during or after application. **Masonite Roof Insulation attachment methods and other restrictions:** Masonite Roof Insulation should be installed over dry surfaces. Ponded water, snow, ice, and surface irregularities must be removed from roof surface prior to substrate attachment. Since all wood fiber products are susceptible to expansion and contraction, a gap of 1/16 to 1/8 inch is recommended between panels. In all cases, the insulation must be covered with built-up roofing felts the same day the insulation is installed. The decision to reproof directly over an existing roof should be made by a qualified roofing technician after evaluation of the existing roofing surfaces. Keep Masonite Roof Insulation dry during storage and installation. When stored outdoors, product must be kept off the ground and protected by a waterproof covering. If product becomes wet, it must be dried before installation.

NRG/SCHULLER

E'NRG'Y-2: UL "P" design numbers and code approvals: BOCA 2603, ICBO 1712, SBCCI 717, P225, P230, P259, P510, P701, P717, P719, P720, P722, P723, P725, P727, P728, P729, P730, P732, P801, P814, P815, P817, P819, P823.

Metro-Dade Product Control #94-0727.05. California State Insulation Quality Standards and Title 25 Foam Flammability Criteria. (License #TD 1328)

OWENS CORNING SPECIALTY & FOAM PRODUCTS

General: Product should not be used in contact with chimneys, heater vents, steam pipes, or other surfaces where temperatures exceed 150 F. Product should be applied to a substrate having an adequate fire rating as required by building codes, over metal or combustible deck. Some Thermapink applications

may be directly over steel decking without the need for a thermal barrier, such as, gypsum board. Durapink Plus or a separator sheet should be used where insulation may come in contact with PVC membrane if required by membrane manufacturer. Any material containing organic solvents should not be used in direct contact with polystyrene insulation unless previously evaluated. Protect from extended exposure to sunlight. Product will ignite if exposed to fire of sufficient heat and intensity, although it does contain a flame retardant additive to inhibit ignition from small fire sources. For additional information, contact Owens Corning S&FP technical service (800) 828-7155.

Foamular 150/250: FM Class I and 60 or 90 PSF, Insulated Roof Deck; UL Roof Deck Constr. 200, 219, 237, 289; UL Class A; See UL Fire Resistance directory for below membrane design numbers P225, P230, P251, P513, P701, P801, P803, P814, P815, P902, P922, P923.

Foamular 404: UL Roof Deck Constr. 1, 2, 3, 9, 14, 27, 58, 87, 200; UL Class A; FM Class I & 60 or 90 PSF, Insulated Steel Roof Deck; UL Design Numbers for inverted roof insulation: P225, P226, P229, P235, P248, P404, P505, P507, P701, P801, P803, P805, P811, P813, P902, P908, P909, P912, P915, P708.

Thermapink 18/25/40/60: Thermapink products are used in all applications where the Foamular product of similar compressive strength is used. Thermapink has the added advantage of being listed for use by UL in Roof Deck construction #457, applied directly over steel roof decks without the use of a thermal barrier. Roofing assemblies that require timed fire resistance or surface flame spread ratings may still require a gypsum board layer. See the UL Roofing Materials and Systems Directory for necessary details.

Tapered Insulation: Tapered Thermapink 25, 40, and 60 are available for use in UL listed assemblies. See the appropriate listing directory for complete details.

Foamular 404 RB/Foamular 604 RB: For use in protected roof membrane assemblies and plaza decks when pavers are used as ballast or as a wearing surface. These are high-compressive-strength extruded polystyrene boards with drainage channels on the bottom four edges, as well as channels cut in the top of the board to separate the paver from the insulation.

Foamular 400/Foamular 600: High-compressive-strength products able to withstand heavy loads without damage to the panels or deterioration of the insulating value.

Durapink/Durapink FA, Durapink Plus: Specially designed for use in reroofing applications, either total tear-off or over existing BUR under single-ply mechanically attached black EPDM without the need for any overlayment protection, ballast, or pavers and, in the case of Durapink Plus, directly under PVC. These products are not intended for use as a cover board in new roof construction or over added insulation in reroofing. Durapink FA can be used directly under fully adhered single-ply membranes, including black EPDM, by using water-based adhesives. Durapink and Durapink Plus provide excellent moisture resistance properties and a 25-psi compressive strength that endures foot traffic abuse and exposure to moisture; UL Class A and FM Class I-60 or 90 recover systems available with a wide variety of single-ply membranes. Durapink Plus has an 18 psi compressive strength and excellent moisture resistance. See UCI guide specification for detailed instructions.

Insul-Drain: Designed to be installed on below-grade foundation walls to the exterior side of the waterproofing membrane, the product has a network of precision-cut channels covered with filter fabric to provide drainage, protection, and insulation for the foundation.

PACEMAKER PLASTICS CO., INC.

Expanded polystyrene roof insulation available flat or tapered in sheet sizes to 48-in. x 96-in. Products manufactured under quality control program are UL classified and can be used in place of other roof insulations in UL-classified assemblies. Factory Mutual listed products; 20-year, 100 percent R-value warranty; laminated products; and Dow tapered insulation are also available.

Chemfoam: Approvals: ASTM C-578-87a, ICBO 4169, BOCA 8715, SBCII 8735, UL R 12372, FM. UL P design numbers: P211, P225, P230, P232, P238, P246, P250, P251, P254, P261, P262, P410, P411, P508, P509, P510, P511, P514, P701, P710, P713, P715, P717, P803, P814, P815, P817, P818, P902, P909, P912, P915, P919, P920, P921, P922, P923, J999, K901, K902, K903.

POLYFOAM PACKERS CORPORATION

ThermoSafe EPS and EPS/Composite Board Insulation: Available in sizes up

to 192 inches long by 48.5 inches wide by 1/2-in to 40 inches thick. Boards between 2 and 8 inches thick are cut with 1/2-in. x 1/2-in. thickness shiplap edges on all sides as standard (ThermoLock) and at no additional charge. Boards with square edges are available on request. Tapered boards (ThermoSafe DrainMaster), for slope-to-drain systems are available with complete shop drawings. Both flat and tapered insulation boards are available with factory-laminated thermal barriers, facers, and coverboards (ThermoSafe-Plus) on one or two sides.

Approvals: ASTM C-578; CABO 236, 238, 384 and 479; Factory Mutual file no. 0V8A0.AC, 0V8A1.AC, 0V8A2.AC; UL classification file R14213: tested under UL 790, 1256, and modified full-scale, ASTM E-108, and ASTM E-84 for flame spread and smoke, developed for use as designated in the UL Fire Resistance Directory. UL Design numbers: P211, P225, P226, P230, P232, P235, P238, P254, P325, P404, P413, P508, P510, P514, P904, P909, P912, P925, P941, P970. UL Construction number 458, and Wisconsin DILHR number 960041-I.

Quality Control: The ThermoSafe quality control program and UL classification meet or exceed requirements for building codes across the United States. ThermoSafe EPS roof insulation may be used with UL-approved (or equivalent) roof membrane systems and in place of other roof insulation in UL-classified assemblies.

Installation: Follow guideline specifications in current ThermoSafe EPS roof insulation literature or contact Polyfoam Packers Corp., 3751 Sunset Ave., Waukegan, IL 60087; (800) 800-0359.

Warranty: 20 year for 100 percent R-value retention and dimensional stability when installed as specified. See current literature for details.

RMAX, INC.

Thermarof Plus: **Uses:** Designed for use under mechanically fastened or ballasted single-ply systems only over steel or non-combustible roof decks.

Attachment: Use four FM-approved screw and plate fasteners per 4' x 8' sheet under mechanically fastened single-ply membranes. Consult membrane supplier for additional fastening requirements. **Restrictions:** Not for use under fully adhered single-ply, modified bitumen, or built-up roof membranes. Not to be used in exposed insulation systems.

Multi-Max: **Uses:** Designed for use under mechanically fastened or ballasted single-ply, built-up roof, or modified bitumen membranes. Consult Rmax for applications. **Attachment:** Use one FM-approved screw and plate mechanical fastener per three or four square feet of insulation under built-up roof membranes. Use one FM-approved mechanical fastener per two square feet of insulation under modified bitumen systems.

Multi-Max FA: **Uses:** Designed and suitable for use under built-up roofs or modified bitumen membrane systems. May be overlaid with perlite, wood fiberboard, or other suitable overlay to obtain membrane warranty from membrane manufacturer. Consult membrane manufacturer for requirements. Designed for use under all types of single-ply membranes: fully adhered, loose-laid and ballasted, and mechanically fastened. **Attachment:** Suitable for attachment with hot bitumens according to NRCA specifications, or use FM-listed and approved mechanical screw-and-plate fasteners at recommended density according to Rmax, Inc.: typically, one per four square feet for BUR or solid mopped-in overlay. Use one per two square feet for fully adhered single-ply membranes.

Thermarof Composite: **Uses:** Designed for use under built-up roof or modified bitumen membranes. May be used under single-ply membranes when perlite layer specified over roof deck. May be applied to deck with perlite layer up to receive torch applied modified bitumen or hot mopped built-up roof membrane. **Attachment:** Use one FM-approved screw and plate mechanical fastener per three or four square feet of insulation under built-up roof membranes. Use one FM-approved mechanical fastener per two square feet of insulation under modified bitumen systems.

SCHULLER INTERNATIONAL INC., ROOFING SYSTEMS DIVISION

Fesco Board, Fesco-Foam, UltraGard, 1/2" Retro-Fit Board, Fiber Glass, Nord Board: **Restrictions:** **Temperature:** Schuller insulation products are not recommended for continuous use at temperatures over 200 F. (93 c). **Storage:** All insulation boards must be maintained in a dry condition prior to installation. See the Schuller Industrial/Commercial Roofing Systems Manual for additional information on storage. **Cold weather application:** For ambient temperatures below 40 degrees F. the use of hot bitumen application is not recommended due

to the rapid cooling of the bitumen. **Direct torching:** Schuller does not recommend that roof membranes be directly torched to any Schuller insulation. A base sheet should be applied to the surface of the insulation and the torchable membrane torched to the base sheet. **Mechanical fasteners:** Schuller recommends the use of mechanical fasteners for the attachment of Schuller roof insulation products to steel decks. The correct number and type, per the Factory Mutual Approval Guide should be used. Schuller also recommends that the mechanical fasteners used should have a quality corrosion resistant coating, such as Schuller's Ultra Fast's and Buildex's Climaseal coating, to reduce the chance of fastener failure due to corrosion. Attachment of Schuller Roof Insulation to other types of roof decks by the appropriate mechanical fastener is acceptable to Schuller. Nord Board must be mechanically fastened. **Adhesive application:** All Schuller roof insulation is compatible with hot bitumen. The facer used on UltraGard is compatible with asphalt and many single-ply bonding adhesives used for fully adhered single-ply systems; check with Schuller or single-ply supplier for information on compatibility of the particular adhesive being used. Schuller Roof Insulation can be attached to decks, where appropriate, with hot bitumen. **Limitations:** The values listed herein are typical nominal values obtained under laboratory conditions using industry standard test methods. These values are subject to change at any time without notice. **UltraGard UL Design Numbers:** P225, P232, P253, P508, P510, P514, P701, P710, P711, P715, P717, P718, P719, P801, P815, P818, P819, P821.

FescoFoam UL Design Numbers: P225, P230, P232, P259, P263, P508, P514, P701, P710, P713, P717, P718, P719, P720, P722, P723, P724, P727, P728, P729, P730, P801, P814, P815, P817, P818, P819.

FiberGlass Roof Insulation: UL Design Numbers: P213, P214, P224, P225, P228, P230, P238, P240, P242, P245, P250, P257, P259, P263, P409, P501, P504, P506, P508, P510, P512, P708, P711, P715, P717, P719, P723, P810, P814, P816, P817, P818, P820, P904, P907, P909, P912, P915.

TEMPLE-INLAND FOREST PRODUCTS CORP.

Fiber Base HD: FM-approved roof insulation for I-60 and I-90 wind uplift rated system as outlined in FM report J.I. 2M3A2.AM and J.I. 1T6A2.AM. FM allows Fiber Base HD wherever a generically described wood fiber insulation is listed. Fiber Base HD is available by special order as UL-classified product for the built-up roof covering material. See R11115(N) under TFJR in UL Building Materials directory for specific details. Consult the roofing membrane manufacturer and the current FM approval guide for system compatibility and specific application instructions. **Warning:** Do not apply flame directly to Fiber Base HD. When applying modified bitumen membranes, a base sheet is required. Fiber Base HD may smolder or burn. Extinguish completely if ignited. Refer to Fiber Base HD applications instructions for specific recommendations. **Compliances:** Industry Standard ANSI/AHA A 194.1 and ASTM C208.

THERMAL FOAMS, INC.

Expanded Polystyrene: Thermal Foam EPS is recommended for use on building roofs that have normal roof temperature conditions. EPS should not come in contact with steam pipes, heater vents, chimneys or other surfaces where temperatures exceed 150 F. It is not recommended for non-ballasted applications where a sustained roof temperature will exceed 165 F. or exceed 180 F. intermittent temperatures. Thermal Foam EPS is not recommended for use directly over a steel deck; a 15 minute thermal barrier should be installed on the metal deck first. Coal tar pitch, oil base or plastic roof cements are not recommended for use with Thermal Foam EPS. UL Class A and FM Class I tested and listed for insulated steel deck and gypsum and concrete deck roof constructions.

Consult Thermal Foams, Inc. for further recommendations and applications.

The following UL Design number accept the use of AFM UL-classified Foamed Plastic EPS in hourly rated assemblies: P211, P225, P230, P232, P238, P246, P250, P251, P254, P261, P262, P410, P411, P508, P509, P510, P511, P514, P701, P710, P713, P715, P717, P803, P814, P815, P817, P818, P902, P909, P912, P915, P919, P920, P922, P923, J999, K901, K902, K903.

Section 5

Roof Fasteners

Information on Roof Fasteners

General Information

The Roof Fastener Section of the *Commercial Low-Slope Roofing Materials Guide* provides information on a variety of types of fasteners used for attaching roofing materials to the deck. It is divided into four separate parts depending on the type of deck that the fastener is intended to be used with: (1) Steel Decks; (2) Wood Decks; (3) Concrete Decks; and (4) Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks. No attempt has been made to categorize the listed fastener by fastener type (e.g., screws, staples); the name and description of the product should be informative in this regard. The data in this section has been provided the *Commercial Guide* by the manufacturer and/or company that markets its name-brand fastener product.

Material Type

In some instances, a number will be added to carbon steel, hardened carbon steel, and stainless steel. Such designations as *1022* for carbon steel and *304* for stainless steel refer to certain properties of the steel involving strength, corrosion resistance, and alloys used. The descriptive standards for these designations are promulgated by the American Iron & Steel Institute (AISI) and are available from AISI.

Shank Type

There is a variety of terms used to describe the shanks in threaded fasteners. Some listers simply indicate that the shank is *threaded* (or *spiral threaded* or *annular threaded*), others that the shank has a *standard thread*, a *buttress thread*, or a *modified buttress thread*, and still others that the threads are *single lead* or *twin lead*. There are basically three types of spiral threaded shanks: standard thread, buttress thread, and modified buttress thread. The standard thread projects top and bottom at a 30-degree angle. The buttress thread projects at the top at a 4-degree angle and at the bottom at a 30-degree angle; it is, in effect, more nearly perpendicular to the shank at the top. The modified buttress thread projects at an angle anywhere between the angles of the standard thread and the buttress thread. Twin-lead threads are two separate threads that wind around the shank, in contrast to the single-lead threaded screw. Annular-threaded shanks consist of a series of ringed grooves rather than a spiral. Fluted shanks have wider spirals and flutes, or vertical parallel grooves.

Point Types

The terms *self-drilling* and *self-piercing* are commonly used, sometimes in combination with other descriptions, such as *pinch* and *gimlet*. Often, the latter terms are used independently. There are a variety of descriptions of point types (*pinch*, *x*) that are self-drilling, that is, the point drills a pilot hole for the screw. The term *gimlet* refers to a self-piercing point, which, unlike the self-drilling point, punches a hole for the threaded fastener. *Nail point* and *diamond point* fasteners are varieties of non-self-drilling fasteners.

Head Shape

Head shapes are described variously, and manufacturers do not always agree as to nomenclature. Common terms are *No. 3 phillips head* or *No. 2 phillips head*, which refer to the size of the phillips grooves; however, these terms can be combined with such terms as *pan head*, *truss head*, and the like, which describe the shape of the head. Among the more common shapes are hex-head, which has a hexagonal shape; flat head, which is flat at the top and is designed for countersinking; pan head, which is rounded at the top; and truss head, which is basically a flattened pan head. Many additional terms are used by manufacturers; if in doubt, the *Commercial Guide* user should refer to their literature to determine the exact head shape.

Technical Information on Roof Fastener Products

Factory Mutual Requirements

Specific reference is made in the Fastener Section to FM Approval Standard for Class I Roof Covers Class Number 4470. (For information concerning the totality of the 4470 standard, see the general introduction.) In addition, results are requested on individual tests that are associated with this standard, that FM commonly performs for manufacturers when products are submitted for evaluation, or that may be performed by independent laboratories. An enumeration of these follow.

Item 17 Average Pullout Resistance (lbs.); (Item 18 Lightweight Concrete,...Section) In the sections for steel, concrete, and wood decks, reference is made to FM Tinius Olsen pullout resistance tests. Factory Mutual does not report on fastener pullout resistance tests as a part of its approval requirements for Standard 4470 Class I Roof Covers or Standard 4450 Class I Insulated Steel

Deck Roofs. Manufacturers may request that FM conduct such tests or may use either their own resources or other laboratories to conduct them. The inference should not be made that the test results published in this section were necessarily conducted by Factory Mutual. The gauges listed for steel decks and the wood and concrete specifications are simply those normally associated with the Tinius Pullout Resistance tests.

In the section for lightweight concrete, gypsum, and cementitious wood fiber decks, results of any pullout tests that the manufacturer may have conducted are requested.

Item 18 Meets FM Approval Requirements as a Component of Class I...Deck It should be stressed that Factory Mutual issues approvals based on an evaluation of total roof systems, not for individual components, such as fasteners. This category only requests that the manufacturer indicate whether the fastener is approved by FM as a component of a system. Readers should refer to the *FM Approval Guide* and its supplements for details concerning the applicable roof systems in which the fasteners are used.

Item 19 (Steel Decks) Passes Test Procedure for Corrosion Resistance for Standard 4470 FM Standard 4470 includes a test for corrosion resistance. Known as DIN 50018 Standard Kesternick Test, it is designed to assess the potential damage to metal fasteners used for mechanically attached roof covers and mechanical fasteners used for insulation.

Item 20 (Steel Decks) Item 19 Other Sections Accepted by the Following Codes: This is where the acronyms for code-setting organizations, which include Building Officials & Code Administrators International, Inc. (BOCA), Southern Building Code Congress International (SBCCI), and International Conference of Building Officials (ICBO), will be found and also where some government jurisdictions that use their own code approvals will be listed (e.g., Metro.-Dade County, [Fla.]). This information is provided as a quick reference for the *Guide* user only; it is necessary to refer to the publications of the organizations to understand the context in which these approvals are given. Each of the organizations has its own set of criteria, and each region of the country sets codes based on the recommendations of one or another of the code-setting bodies. The *Guide* user needs to determine which set of criteria in general is relevant to his particular locality and then understand what the approval process for the particular code-setting organization implies.

Follow is a list of the publications produced by the code-setting organizations and where they may be obtained:

BOCA publishes *The BOCA National Building Code/Year*; 4051 W. Flossmor Rd., Country Club Hills, Ill. 60477

ICBO publishes *Uniform Building Code (UBC)*; 5360 So. Workman Mill Rd., Whittier, Calif., 90601.

SBCCI publishes *Standard Building Code — Edition*; 900 Montclair Rd., Birmingham, Ala. 35213.

Manufacturers will also enter other approvals, such as those from government agencies (e.g., HUD) and any other approvals that the product may have received. In such cases, it will be necessary to contact the manufacturer directly to obtain further details on the nature and significance of these approvals.

Item 21 (Steel Decks) Item 20 Other Sections Warranty Available from the Manufacturer The warranty available from the manufacturer may refer to a roof system warranty of which the fastener product is only a component. For details, contact the manufacturer.

Appendix, Roof Fasteners

BMCA INSULATION PRODUCTS, INC.

Lexusu clips are installed using a rubber mallet. No power tools or power sources are required. Lexusu clips hook under the deck, cannot back out, and are corrosion resistant. They are available in three sizes. Companion plates are required.

CELOTEX CORPORATION

Anchorbond #12 HWH requires recessed 2 7/8-inch plate only. Anchorbond #12 not available in #3 phillips head in 6-inch lengths.

CONSTRUCTION FASTENERS, INC., DEKFAST PRODUCT GROUP

Fasteners, steel decks: Dekfast #12 HWH requires recessed 2 7/8-inch hex plate only. Stainless steel (Trimrite) screws require special plates.

Fasteners, wood decks: one-quarter-inch penetration through the plywood is required on 3/4-in. plywood decks. Stainless steel (Trimrite) screws require special plates.

Fasteners, lightweight concrete decks: Deklite pull-out data is based on the following: (a) lightweight concrete, 2 1/2-in. penetration, (b) gypsum, 2-in. penetration, (c) cementitious wood fiber, 2-in. penetration.

GAF MATERIALS CORPORATION

For GAFITTE wood deck fasteners, 1/2-inch penetration is required through plywood.

The Fluted Concrete Nail is installed by driving into pre-drilled hole with carpenter or small sledge hammer (e.g., two lbs.). For GAFITTE Toggle Bolts (carbon and stainless steel) and Iron-Lok Toggle Bolt, pullout values are expected averages. Actual pullouts may vary. 1.2-in. base sheet fastener is recommended.

Iron-Lok Toggle Bolts can be used for any application, but primary use is for membrane attachment of mechanically attached single-ply. Factory-applied adhesives on threads prevent loosening of toggle bolt assembly due to membrane flutter. Lite-Deck Fasteners can be used in specially designed batten strip.

GAFITTE #14-10 and #12-11 fasteners are available with a 1/4-in. hex head design.

ITW BUILDDEX

ITW Buildex Accutrac roof insulation fastening tool installs fasteners and plates in a one-step continuous process. The Accutrac tool was designed exclusively to be used with ITW Buildex Accutrac fasteners and plates.

The ITW Buildex Lite Weight Concrete Fastening System combines new packaging that doubles as a carrying pouch, a stand-up magnetic driver, and an assembled fastener and plate.

NATIONAL NAIL CORP.

Round-Top and R/S Round Top round heads eliminate tearing or cutting of felt and/or insulation roofing material.

Plasti-Top fasteners are not to be used on hot built-up roofs or if application temperatures exceed 190 F for more than two minutes.

Plasti-Cap fasteners are not to be used on hot built-up roofs or if application temperatures exceed 170 F for more than three minutes.

Ardox H.T. Galvanized Concrete Fasteners are available in 50-lb. cartons or 100-count packages.

OLYMPIC MANUFACTURING GROUP, INC.

For Olympic wood deck fasteners, 1/2-inch penetration is required through plywood.

The Fluted Concrete Nail is installed by driving into pre-drilled hole with carpenter or small sledge hammer (e.g., two lbs.). For Olympic Toggle Bolts

(carbon and stainless steel) and Iron-Lok Toggle Bolt, pullout values are expected averages. Actual pullouts may vary.

Iron-Lok Toggle Bolts can be used for any application, but primary use is for membrane attachment of mechanically attached single-ply. Factory-applied adhesives on threads prevent loosening of toggle bolt assembly due to membrane flutter. Lite-Deck Fasteners can be used in specially designed batten strip.

Olympic #14-10 and #12-11 fasteners are available with a 1/4-in. hex head design.

Base Sheet Fastener and Plate are also available assembled.

For gypsum, the 1.2-in. base sheet fastener is recommended.

POWERS RAWL, POWERS FASTENING, INC.

The Woodie is for attachment of insulation, membrane, or metal roofing clips to oriented strand board (OSB) or plywood.

#12 Hex Washer Head Deck Screws may be used with Rawl 3-in. round recessed plates only.

Speed Lock Toggles may be used for all deck types and are preassembled with 3-in. round plates for insulation attachment.

#12 Deck Screws are also available preassembled to insulation plates.

SCHULLER INTERNATIONAL, INC.

The UltraFast fastener line is available as pre-assembled as UltraFast Pre-Assembled (metal plate) and UltraFast ASAP (plastic plate).

Schuller's SPM reinforced 10' spaced FM 1-90 rating requires the use of either the #15 SPM Fastener with the SPM Premium Locking Plate or the SPM ASAP pre-assembled fastener and plate, in the membrane lap.

SFS STADLER INC.

Insul-Fixx #12-11: Shank lengths longer than 8 inches are available upon request. Insul-Fixx #14-10: Shank lengths longer than 12 inches are available upon request. Isosoft IF2: Shank lengths longer than 6 1/4 inches are available upon request.

All ES products are preassembled. ES-I is for insulation attachment; shank lengths longer than 12 inches are available upon request. ES-L is for membrane lap attachment; shank lengths longer than 12 inches are available upon request.

SUBCON PRODUCTS CORP.

TPR fasteners are also appropriate for 24-, 26-, and 28-gauge steel decks. Deck penetration for 24-gauge and lighter decks is 1 1/4 inches. No predrilling is required for these decks.

For TPR fasteners in lightweight concrete, gypsum, and wood fiber decks, required deck-penetration figures are for inches through the deck. When securement is in the deck, required penetration is 1 3/4 inches for lightweight concrete and cementitious wood fiber decks and 2 inches for gypsum decks. No predrilling is required with these decks. Average pullout resistance figure for gypsum decks is when fastener is secured beneath the deck; the figure for securement in a gypsum decks is 415 lbs.

Index to Listed Roof Fasteners

	STEEL DECKS	WOOD DECKS	CONCRETE DECKS	LIGHTWEIGHT CON- CRETE, GYPSUM, OR WOOD FIBER DECKS
BMCA INSULATION PRODUCTS INC. 300 N. Haven Avenue Ontario, CA 91761 800/858-8868 FAX 909/390-8764	592			
CARLISLE SYNTEC INCORPORATED 1285 Ritner Hwy. P.O. Box 7000 Carlisle, PA 17013 717/245-7000 FAX 717/245-7053	592	616	640	654
CELOTEX CORP. 4010 Boy Scout Blvd. Tampa, FL 33607 813/873-4000	593	617	641	655
CONSTRUCTION FASTENERS INC. DEKFAST PRODUCT GROUP Spring & Van Reed Box 6326 Wyomissing, PA 19610 610/376-5751 FAX 610/376-8551	595	618	641	655
DURO-LAST INC. 525 Morley Drive Saginaw, MI 48601 517/753-6486 800/248-0280	596	620	642	
ES PRODUCTS INC. 280 Franklin Street P.O. Box 810 Bristol, RI 02809 401/253-8600 FAX 401/253-8896		620		656
FIRESTONE BUILDING PRODUCTS 525 Congressional Blvd. Carmel, IN 46032 800/428-4442 FAX 317/575-7100	597	621	643	660
GAF MATERIALS CORP. 1361 Alps Road Wayne, NJ 07470 201/628-3000 FAX 201/628-3356	597	621	643	661
HILTI INC. P.O. Box 21148 Tulsa, OK 74121 800/879-8000 FAX 918/252-6988	599	623	645	663
ITW BUILDEX 1349 W. Bryn Mawr Ave. Itasca, IL 60143 800/284-5339 630/595-3500 FAX 630/595-6329	601	625	646	663

	STEEL DECKS	WOOD DECKS	CONCRETE DECKS	LIGHTWEIGHT CON- CRETE, GYPSUM, OR WOOD FIBER DECKS
NATIONAL NAIL CORP. 2964 Clydon SW Grand Rapids, MI 49509 800/746-5659 FAX 616/531-5970		627	647	
OLYMPIC MANUFACTURING GROUP INC. P.O. Box 508 153 Bowles Road Agawam, MA 01001 800/633-3800 413/789-0252 FAX 413/789-1069	604	629	648	664
POWERS RAWL, POWERS FASTENING, INC. 2 Powers Square New Rochelle, NY 10802 914/235-6300 800/524-3244 FAX 914/576-6483	606	631	649	667
SCHULLER INTERNATIONAL INC. Roofing Systems Division P.O. Box 5108 Denver, CO 80217 303/978-2000 FAX 303/978-2792	607	632	650	667
SENCO PRODUCTS 8485 Broadwell Road Cincinnati, OH 45244 800/543-4596 FAX 800/543-3299		633		
SFS STADLER INC. 5460 Wegman Drive Valley City, OH 44280 330/273-7171 800/648-6032 FAX 330/273-7181	609	634	651	668
SUBCON PRODUCTS CORP. 100 Bomont Place Totoma, NJ 07812 800/634-5979 FAX 201/785-1114	613	637	652	669
TRI-PLY 1250 Fourteen Mile Rd. Clawson, MI 48017 313/288-9780 800/445-9856	613		652	669
TRU-FAST CORPORATION U.S. Hwy. 6 and State Route 2 Bryan, OH 43506 800/443-9602 FAX 419/636-1784	614	637	653	670

Roof Fasteners: Steel Decks

1. COMPANY NAME	BMCA INSULATION PRODUCTS INC.				CARLISLE SYNTEC INCORPORATED			
2. PRODUCT NAME	LEXSUCO INSULATION CLIP				HP FASTENER			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
5. MATERIAL TYPE	HARDENED STEEL				CARBON STEEL			
6. COATING TYPE	PROPRIETARY				EPOXY ELECTRODEPOSITION			
7. SHANK TYPE	MULTI-HOOK				SINGLE LEAD, BUTTRESS THREAD			
8. POINT TYPE	HARDENED PIERCING				MINI-DRILL POINT			
9. METHOD OF ATTACHMENT	MECHANICAL LOCKING TONGUES				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	NA	2 3/8	1 3/8	15/16	0.180	1 1/4	1/2	3/4
	NA	3 5/8	2 5/8	15/16	0.180	1 3/4	1	3/4
	NA	4 5/8	3 5/8	15/16	0.180	2 1/4	1 1/2	3/4
					0.180	2 3/4	2	3/4
					0.180	3 1/4	2 1/2	3/4
					0.180	3 3/4	3	3/4
					0.180	4 1/4	3 1/2	3/4
					0.180	5	4 1/4	3/4
					0.180	6	5 1/4	3/4
					0.180	7	6 1/4	3/4
					0.180	8	7 1/4	3/4
					0.180	9	8 1/4	3/4
					0.180	10	9 1/4	3/4
					0.180	11	10 1/4	3/4
					0.180	12	11 1/4	3/4
					0.180	13	12 1/4	3/4
					0.180	14	13 1/4	3/4
					0.180	15	14 1/4	3/4
11. HEAD SHAPE	FLAT RECTANGLE				WAFER			
12. HEAD DIMENSIONS (inches)								
THICKNESS	1.00 X 0.6875				0.105			
DIAMETER					0.430			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	3 1/8	STEEL		SQUARE W/ ROUNDED CORNERS	2 7/8	GALVALUME	
					ROUND LOCKING	2	GALVALUME GALVALUME W/ PLASTIC	
					ROUND ROUND	2 3	PLASTIC PLASTIC	
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)					REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)								
SPECIAL TOOL NEEDED (optional/required)	RUBBER Mallet (REQUIRED)				AUTOMATIC FASTENING TOOL			
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)								
18 GAUGE								
20 GAUGE	325				579			
22 GAUGE								
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I STEEL ROOF DECK (yes/no)	NO				YES			
18. PASSES FM TEST PROCEDURE 4470 FOR CORROSION RESISTANCE (yes/no)	NO				YES			
19. ACCEPTED BY THE FOLLOWING CODES	UL				FM			
20. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	NO				YES			
21. SEE APPENDIX IF CHECKED	X							

NA=not applicable

Roof Fasteners: Steel Decks

CARLISLE SYNTEC INCORPORATED				THE CELOTEX CORPORATION				THE CELOTEX CORPORATION			
HP PURLIN FASTENER				ANCHORBOND #12				ANCHORBOND #14			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
CARBON STEEL				HARDENED CARBON STEEL				HARDENED CARBON STEEL			
EPOXY ELECTRODEPOSITION				ORGANIC FLUOROPOLYMERS				ORGANIC FLUOROPOLYMERS			
SINGLE LEAD, "V" THREAD				SPIRAL THREAD				SPIRAL THREAD			
DRILL POINT				SELF-DRILLING				SELF-DRILLING			
THREADED				THREADED				THREADED			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
0.160	3	2	1	0.222	1 5/8	1 1/4	3/8	0.238	1 1/4	7/8	3/8
0.160	4	3	1	0.222	2 1/4	1 7/8	3/8	0.238	1 5/8	1 1/4	3/8
0.160	5	4	1	0.222	2 7/8	2 1/2	3/8	0.238	1 7/8	1 7/8	3/8
0.160	6	5	1	0.222	3 3/4	3 3/8	3/8	0.238	2 7/8	2 1/2	3/8
				0.222	4 1/2	4 1/8	3/8	0.238	3 1/4	2 7/8	3/8
				0.222	5	4 5/8	3/8	0.238	3 3/4	3 3/8	3/8
								0.238	4 1/2	4 1/8	3/8
								0.238	5	4 5/8	3/8
								0.238	6	5 5/8	3/8
								0.238	7	6 5/8	3/8
								0.238	8	7 5/8	3/8
HEX				#3 PHILLIPS TRUSS & 1/4" HEX WASHER HEAD				#3 PHILLIPS FLAT TRUSS			
0.140				0.109				0.109			
0.430				0.438				0.438			
YES				YES				YES			
YES				YES				YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
LOCKING ROUND	2 2	GALVALUME WITH PLASTIC PLASTIC		HEXAGONAL	2 7/8	GALVALUME		HEXAGONAL HEXAGONAL HEXAGONAL ROUND	2 7/8 2 7/8 3 2	STAINLESS STEEL GALVALUME PLASTIC GALVALUME	
REQUIRED				REQUIRED OPTIONAL				REQUIRED OPTIONAL			
				637				721			
				551				639			
				430				507			
NO				YES				YES			
				YES				YES			
				FM				FM, UL			
YES				YES				YES			
				X							

Roof Fasteners: Steel Decks

1. COMPANY NAME	THE CELOTEX CORPORATION				THE CELOTEX CORPORATION			
2. PRODUCT NAME	ANCHORBOND #15 HEAVY DUTY				ANCHORBOND #14 STAINLESS STEEL			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
5. MATERIAL TYPE	HARDENED CARBON STEEL				STAINLESS STEEL (#304)			
6. COATING TYPE	ORGANIC FLUOROPOLYMERS				ORGANIC FLUOROPOLYMERS			
7. SHANK TYPE	SPIRAL THREAD				SPIRAL THREAD			
8. POINT TYPE	SELF-DRILLING				SELF-DRILLING			
9. METHOD OF ATTACHMENT	THREADED				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.264	1 1/4	3/4	1/2	0.264	3	2	1
	0.264	2	1 1/2	1/2	0.264	4	3	1
	0.264	3	2 1/2	1/2	0.264	5	4	1
	0.264	4	3 1/2	1/2	0.264	6	5	1
	0.264	5	4 1/2	1/2	0.264	7	6	1
	0.264	6	5 1/2	1/2	0.264	8	7	1
	0.264	7	6 1/2	1/2				
	0.264	8	7 1/2	1/2				
	0.264	10	9 1/2	1/2				
	0.264	12	11 1/2	1/2				
	0.264	14	13 1/2	1/2				
	0.264	16	15 1/2	1/2				
11. HEAD SHAPE	#3 PHILLIPS TRUSS				#3 PHILLIPS TRUSS			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.109				0.109			
DIAMETER	0.438				0.438			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	HEXAGONAL	2 7/8	STAINLESS STEEL		HEXAGONAL	2 7/8	STAINLESS STEEL	
	HEXAGONAL	2 7/8	GALVALUME		HEXAGONAL	2 7/8	GALVALUME	
	ROUND	2	GALVALUME		HEXAGONAL	3	PLASTIC	
					ROUND	2	GALVALUME	
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED				REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)	OPTIONAL				OPTIONAL			
SPECIAL TOOL NEEDED (optional/required)								
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)								
18 GAUGE	735				790			
20 GAUGE	689				550			
22 GAUGE	493				457			
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I STEEL ROOF DECK (yes/no)	YES				YES			
18. PASSES FM TEST PROCEDURE 4470 FOR CORROSION RESISTANCE (yes/no)	YES				YES			
19. ACCEPTED BY THE FOLLOWING CODES	FM				FM			
20. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
21. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Steel Decks

CONSTRUCTION FASTENERS, INC.				CONSTRUCTION FASTENERS, INC.				CONSTRUCTION FASTENERS, INC.			
DEKFAST #12				DEKFAST #14				DEKFAST #15 HI-STRENGTH			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
HARDENED CARBON STEEL				HARDENED CARBON STEEL				HARDENED CARBON STEEL			
ORGANIC				ORGANIC				ORGANIC			
SPIRAL THREAD				SPIRAL THREAD				SPIRAL THREAD			
SELF-DRILLING				SELF-DRILLING				SELF-DRILLING			
THREADED				THREADED				THREADED			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
0.222	1 5/8	1 1/4	3/8	0.238	1 1/4	7/8	3/8	0.264	1 1/4	3/4	1/2
0.222	2 1/4	1 7/8	3/8	0.238	1 5/8	1 1/4	3/8	0.264	2	1 1/2	1/2
0.222	2 7/8	2 1/2	3/8	0.238	2 1/4	1 7/8	3/8	0.264	3	2 1/2	1/2
0.222	3 3/4	3 3/8	3/8	0.238	2 7/8	2 1/2	3/8	0.264	4	3 1/2	1/2
0.222	4 1/2	4 1/8	3/8	0.238	3 1/4	2 7/8	3/8	0.264	5	4 1/2	1/2
0.222	5	5 5/8	3/8	0.238	3 3/4	3 3/8	3/8	0.264	6	5 1/2	1/2
0.222	6	5 5/8	3/8	0.238	4 1/2	4 1/8	3/8	0.264	7	6 1/2	1/2
0.222	7	6 5/8	3/8	0.238	5	4 5/8	3/8	0.264	8	7 1/2	1/2
0.222	8	7 5/8	3/8	0.238	6	5 5/8	3/8	0.264	10	9 1/2	1/2
				0.238	7	6 5/8	3/8	0.264	12	11 1/2	1/2
				0.238	8	7 5/8	3/8	0.264	14	13 1/2	1/2
				0.238	10	9 5/8	3/8	0.264	16	15 1/2	1/2
				0.238	12	11 5/8	3/8	0.264	18	17 1/2	1/2
								0.264	20	19 1/2	1/2
								0.264	22	21 1/2	1/2
								0.264	24	23 1/2	1/2
								0.264	26	25 1/2	1/2
#3 PHILLIPS TRUSS & 1/4" HEX WASHER HEAD				#3 PHILLIPS FLAT TRUSS				#3 PHILLIPS TRUSS			
0.109, 0.130				0.109				0.109			
0.438, 0.335				0.438				0.438			
YES				YES				YES			
YES				YES				YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
HEXAGONAL	2 7/8	GALVALUME		HEXAGONAL	2 7/8	STAINLESS STEEL		HEXAGONAL	2 7/8	STAINLESS STEEL	
HEXAGONAL	2 7/8	GALVALUME		HEXAGONAL	2 7/8	GALVALUME		HEXAGONAL	2 7/8	GALVALUME	
HEXAGONAL	3	PLASTIC		HEXAGONAL	3	PLASTIC		HEXAGONAL	2	GALVALUME	
ROUND	2	GALVALUME		ROUND	2	GALVALUME		ROUND			
REQUIRED				REQUIRED				REQUIRED			
OPTIONAL				OPTIONAL				OPTIONAL			
637				721				935			
551				639				689			
430				507				493			
YES				YES				YES			
YES				YES				YES			
FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY			
YES				YES				YES			
X											

Roof Fasteners: Steel Decks

1. COMPANY NAME	CONSTRUCTION FASTENERS, INC.				DURO LAST INC.			
2. PRODUCT NAME	DEKFAST STAINLESS STEEL				DURO LAST SCREWS #14			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
5. MATERIAL TYPE	STAINLESS STEEL (TRIMRITE)				STEEL			
6. COATING TYPE	NONE				FLUOROCARBON			
7. SHANK TYPE	SPIRAL THREAD				SPIRAL THREAD			
8. POINT TYPE	SELF-DRILLING				SELF-DRILLING			
9. METHOD OF ATTACHMENT	THREADED				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.160	1 5/8	1 1/8	1/2	0.190	1 3/4	1 1/4	1/2
	0.160	2 1/4	1 3/4	1/2	0.190	2	1 1/2	1/2
	0.160	3	2 1/2	1/2	0.190	3	2 1/2	1/2
	0.160	3 3/4	3 1/4	1/2	0.190	4	3 1/2	1/2
	0.160	4	3 1/2	1/2	0.190	5	4 1/2	1/2
	0.160	4 1/2	4	1/2	0.190	6	5 1/2	1/2
	0.160	5	4 1/2	1/2	0.190	7	6 1/2	1/2
	0.160	6	5 1/2	1/2	0.190	8	7 1/2	1/2
	0.160	7	6 1/2	1/2	0.190	9	8 1/2	1/2
	0.160	8	7 1/2	1/2	0.190	10	9 1/2	1/2
	0.160	10	9 1/2	1/2	0.190	11	10 1/2	1/2
	0.160	12	11 1/2	1/2	0.190	12	11 1/2	1/2
11. HEAD SHAPE	#3 PHILLIPS TRUSS				TRUSS			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.105				0.103			
DIAMETER	0.440				0.438			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2	GALVALUME		ROUND	2	PLASTIC	
	ROUND	3	GALVALUME		ROUND	2 1/2	PLASTIC	
	ROUND	3	PLASTIC					
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED				REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)	OPTIONAL							
SPECIAL TOOL NEEDED (optional/required)								
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)								
18 GAUGE	720				517			
20 GAUGE	620							
22 GAUGE	473							
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I STEEL ROOF DECK (yes/no)	YES				YES			
18. PASSES FM TEST PROCEDURE 4470 FOR CORROSION RESISTANCE (yes/no)	YES				YES			
19. ACCEPTED BY THE FOLLOWING CODES	FM, METRO.-DADE COUNTY				FM, ICBO, BOCA, SBCCI			
20. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
21. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Steel Decks

FIRESTONE BUILDING PRODUCTS				FIRESTONE BUILDING PRODUCTS				GAF MATERIALS CORP.			
FIRESTONE ALL PURPOSE				FIRESTONE HEAVY DUTY				GAFTITE #12-11 (S.STEEL)			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
SAE 1022, HEAT TREATED				SAE 1022, HEAT TREATED				STAINLESS STEEL, SPECIAL 400-SERIES BLEND			
ORGANIC				4 COAT FLUOROCARBON				CR-10 FLUOROCARBON			
SPIRAL THREADED				SPIRAL THREADED				THREADED			
SELF-DRILLING				SELF-DRILLING				PINCH, SELF-DRILLING			
THREADED				THREADED				THREADED			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
0.235	1 1/4	3/4	1/2	0.264	1 1/4	1/2	3/4	0.172	1 5/8	1 3/8	1/2
0.235	1 5/8	1 1/8	1/2	0.264	2	1 1/4	3/4	0.172	2 1/4	1 3/4	1/2
0.235	2 1/4	1 3/4	1/2	0.264	3	2 1/4	3/4	0.172	2 7/8	2 3/8	1/2
0.235	2 7/8	2 3/8	1/2	0.264	4	3 1/4	3/4	0.172	3 1/4	2 3/4	1/2
0.235	3 1/4	2 3/4	1/2	0.264	5	4 1/4	3/4	0.172	3 3/4	3 1/4	1/2
0.235	3 3/4	3 1/4	1/2	0.264	6	5 1/4	3/4	0.172	4 1/2	4	1/2
0.235	4 1/2	4	1/2	0.264	7	6 1/4	3/4	0.172	5	4 1/2	1/2
0.235	5	4 1/2	1/2	0.264	8	7 1/4	3/4	0.172	6	5 1/2	1/2
0.235	6	5 1/2	1/2	0.264	10	9 1/4	3/4	0.172	7	6 1/2	1/2
0.235	7	6 1/2	1/2	0.264	12	11 1/4	3/4	0.172	8	7 1/2	1/2
0.235	8	7 1/2	1/2	0.264	14	13 1/4	3/4				
ROUND MUSHROOM #3 PHILLIPS				ROUND MUSHROOM #3 PHILLIPS				ROUND TRUSS, #3 PHILLIPS			
0.110				0.110				0.110			
0.437				0.437				0.435			
YES				YES				YES			
YES				YES				YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
HEX (INSULATION) ROUND (IN-SEAM)	2 7/8	GALVALUME		HEX (INSULATION) ROUND (IN-SEAM)	2 7/8	GALVALUME		ROUND	2	STAINLESS STEEL	
	2	GALVALUME			2	GALVALUME		ROUND	3	STAINLESS STEEL	
								ROUND	2	STEEL	
								ROUND	2	PLASTIC	
								ROUND	3	STEEL	
								ROUND	3	PLASTIC	
REQUIRED				REQUIRED				REQUIRED			
								OPTIONAL			
400				450				540			
								501			
								456			
YES				YES				YES			
YES				YES				YES			
FM, ICBO, UL, SBCCI				FM, ICBO, UL, SBCCI				FM, UL, ICBO, METRO.-DADE COUNTY			
YES				YES				YES			

Roof Fasteners: Steel Decks

1. COMPANY NAME	GAF MATERIALS CORP.				GAF MATERIALS CORP.			
2. PRODUCT NAME	GAFITITE #14-10 (C.STEEL)				GAFITITE #12-11 (C.STEEL)			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
5. MATERIAL TYPE	HARDENED CARBON STEEL				HARDENED CARBON STEEL			
6. COATING TYPE	CR-10 FLUOROCARBON				CR-10 FLUOROCARBON			
7. SHANK TYPE	THREADED				THREADED			
8. POINT TYPE	PINCH, SELF-DRILLING OR TAPEX				PINCH, SELF-DRILLING; GIMLET, OR TAPEX			
9. METHOD OF ATTACHMENT	THREADED				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.190	1 1/4	3/4	1/2	0.160	1 5/8	1 1/8	1/2
	0.190	1 3/4	1 1/4	1/2	0.160	2 1/4	1 3/4	1/2
	0.190	2	1 1/2	1/2	0.160	2 7/8	2 3/8	1/2
	0.190	3	2 1/2	1/2	0.160	3 1/4	2 3/4	1/2
	0.190	4	3 1/2	1/2	0.160	3 3/4	3 1/4	1/2
	0.190	5	4 1/2	1/2	0.160	4 1/2	4	1/2
	0.190	6	5 1/2	1/2	0.160	5	4 1/2	1/2
	0.190	7	6 1/2	1/2	0.160	6	5 1/2	1/2
	0.190	8	7 1/2	1/2	0.160	8	7 1/2	1/2
	0.190	9	8 1/2	1/2				
	0.190	10	9 1/2	1/2				
	0.190	11	10 1/2	1/2				
	0.190	12	11 1/2	1/2				
	0.190	14	13 1/2	1/2				
	0.190	16	15 1/2	1/2				
	0.201	17	16 1/2	1/2				
	0.201	18	17 1/2	1/2				
	0.201	20	19 1/2	1/2				
	0.201	21	20 1/2	1/2				
	0.201	22	21 1/2	1/2				
	0.201	24	23 1/2	1/2				
11. HEAD SHAPE	ROUND TRUSS, #3 PHILLIPS				ROUND TRUSS, #3 PHILLIPS			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.110				0.110			
DIAMETER	0.435				0.435			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2	STEEL		ROUND	2	STEEL	
	ROUND	2	PLASTIC		ROUND	2	PLASTIC	
	ROUND	3	STEEL		ROUND	3	STEEL	
	ROUND	3	PLASTIC		ROUND	2	STAINLESS STEEL	
	ROUND	2	STAINLESS STEEL		ROUND	3	STAINLESS STEEL	
	ROUND	3	STAINLESS STEEL		ROUND	3	PLASTIC	
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED				REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)	OPTIONAL				OPTIONAL			
SPECIAL TOOL NEEDED (optional/required)								
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)								
18 GAUGE	585				540			
20 GAUGE	535				501			
22 GAUGE	505				436			
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I STEEL ROOF DECK (yes/no)	YES				YES			
18. PASSES FM TEST PROCEDURE 4470 FOR CORROSION RESISTANCE (yes/no)	YES				YES			
19. ACCEPTED BY THE FOLLOWING CODES	FM, UL, ICBO, METRO.-DADE COUNTY				FM, UL, ICBO, METRO.-DADE COUNTY			
20. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
21. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Steel Decks

GAF MATERIALS CORP.				GAF MATERIALS CORP./N.T.B. FASTENING SYSTEM INC.				HILTI INC.			
GAFTITE #14-10 (S.STEEL)				N-C				HILTI FASTENERS #12			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
STAINLESS STEEL, SPECIAL 400-SERIES BLEND				NYLON				CARBON STEEL C-1022			
CR-10 FLUOROCARBON				NA				TRU-KOTE PC-3 (FLOUOROCARBON PAINT)			
THREADED				SPIRAL THREAD				THREADED			
PINCH, SELF-DRILLING				THREADED, SPIN WELD				DOUBLE FLUTESELF-DRILLING			
THREADED				THREADED				THREADED			
Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4
Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)
0.201	1 1/4	3/4	1/2	0.250	4	3 3/4	1/2	0.160	1 5/8	1 1/8	1/2
0.201	1 3/4	1 1/4	1/2	0.250	6	5 3/4	1/2	0.160	2 1/4	1 3/4	1/2
0.201	2	1 1/2	1/2	0.250	8	7 3/4	1/2	0.160	2 7/8	2 3/8	1/2
0.201	3	2 1/2	1/2	0.250	10	9 3/4	1/2	0.160	3 1/4	2 3/4	1/2
0.201	4	3 1/2	1/2	0.250	12	11 3/4	1/2	0.160	3 3/4	3 1/2	1/2
0.201	5	4 1/2	1/2					0.160	4 1/2	4	1/2
0.201	6	5 1/2	1/2					0.160	5	4 1/2	1/2
0.201	7	6 1/2	1/2					0.160	6	5 1/2	1/2
0.201	8	7 1/2	1/2					0.160	7	6 1/2	1/2
0.201	9	8 1/2	1/2					0.160	8	7 1/2	1/2
0.201	10	9 1/2	1/2					0.160	10	9 1/2	1/2
0.201	12	11 1/2	1/2					0.160	12	11 1/2	1/2
0.201	14	13 1/2	1/2								
0.201	16	15 1/2	1/2								
0.201	18	17 1/2	1/2								
0.201	20	19 1/2	1/2								
0.201	21	20 1/2	1/2								
0.201	22	21 1/2	1/2								
0.201	24	23 1/2	1/2								
ROUND TRUSS, #3 PHILLIPS				DOUBLE HEX				TRUSS #3 PHILLIPS, 1/4 HEX WASHER			
0.108				0.100				0.105			
0.435				1.0				0.440			
YES				YES				YES			
YES				YES				YES			
Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4
Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material	
ROUND	2	STAINLESS STEEL	ROUND	ROUND	2	NYLON		ROUND	2	GALVALUME	
ROUND	3	STAINLESS STEEL	WITH SPIKES	ROUND	3	CARBON STEEL		ROUND	3	GALVALUME	
ROUND	2	STEEL	ROUND					ROUND	3	PLASTIC	
ROUND	2	PLASTIC	WITH SPIKES								
ROUND	3	STEEL									
ROUND	3	PLASTIC									
REQUIRED				REQUIRED				REQUIRED			
OPTIONAL				OPTIONAL				OPTIONAL			
585				500+				558			
535				500+				456			
505				500+				452			
YES				YES				YES			
YES				NA				YES			
FM, UL, ICBO, METRO.-DADE COUNTY				FM				FM, METRO.-DADE COUNTY			
YES				YES				YES			

Roof Fasteners: Steel Decks

1. COMPANY NAME	HILTI INC.				HILTI INC.			
2. PRODUCT NAME	HILTI FASTENERS #12 S.S.				HILTI FASTENERS #10			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
5. MATERIAL TYPE	STAINLESS STEEL (TRIMRITE ALLOY #S42010)				CARBON STEEL C-1022			
6. COATING TYPE					TRU-KOTE PC-3 (FLOUOROCARBON PAINT)			
7. SHANK TYPE	THREADED				THREADED			
8. POINT TYPE	SELF-DRILLING				GIMLET			
9. METHOD OF ATTACHMENT	THREADED				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.160	1 5/8	1 1/8	1/2	0.150	1 5/8	1 1/8	1/2
	0.160	2 1/4	1 3/4	1/2	0.150	2 1/4	1 3/4	1/2
	0.160	2 7/8	2 3/8	1/2	0.150	2 7/8	2 3/8	1/2
	0.160	3 3/4	3 1/2	1/2	0.150	3 3/4	3 1/2	1/2
	0.160	4 1/2	4	1/2	0.150	4 1/2	4	1/2
	0.160	5	4 1/2	1/2	0.150	5	4 1/2	1/2
	0.160	6	5 1/2	1/2	0.150	6	5 1/2	1/2
	0.160	7	6 1/2	1/2	0.160	7	6 1/2	1/2
	0.160	8	7 1/2	1/2	0.160	8	7 1/2	1/2
	0.160	10	9 1/2	1/2	0.160	10	9 1/2	1/2
	0.160	12	11 1/2	1/2	0.160	12	11 1/2	1/2
11. HEAD SHAPE	TRUSS #3 PHILLIPS				#10 TRUSS, PHILLIPS #3			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.105				0.110			
DIAMETER	0.440				0.390			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2	GALVALUME		ROUND	2	GALVALUME	
	ROUND	3	GALVALUME		ROUND	3	GALVALUME	
	ROUND	3	PLASTIC		ROUND	3	PLASTIC	
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED				REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)	OPTIONAL				OPTIONAL			
SPECIAL TOOL NEEDED (optional/required)								
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)								
18 GAUGE	720				610			
20 GAUGE	620				494			
22 GAUGE	473							
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I STEEL ROOF DECK (yes/no)	YES				YES			
18. PASSES FM TEST PROCEDURE 4470 FOR CORROSION RESISTANCE (yes/no)	YES				YES			
19. ACCEPTED BY THE FOLLOWING CODES	FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY			
20. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
21. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Steel Decks

HILTI INC.				ITW BUILDEX				ITW BUILDEX			
HILTI FASTENERS #14				HEXTRA				ROOFGRIP			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
CARBON STEEL C-1022				HARDENED CARBON STEEL				HARDENED CARBON STEEL			
TRU-KOTE PC-3 (FLOUOROCARBON PAINT)				CLIMASEAL OR SPEX				SPEX			
THREADED				MODIFIED BUTTRESS THREAD				MODIFIED BUTTRESS THREAD			
DOUBLE FLUTESELF-DRILLING				SELF-DRILLING				SELF-DRILLING			
THREADED				THREADED				THREADED			
Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4
Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)
0.180	1 1/2	1	1/2	0.215	1 5/8	1 1/8	1/2	0.215	1 5/8	1 1/8	1/2
0.180	2	1 1/2	1/2	0.215	2 1/4	1 3/4	1/2	0.215	2 1/4	1 3/4	1/2
0.180	3	2 1/2	1/2	0.215	2 7/8	2 3/8	1/2	0.215	2 7/8	2 3/8	1/2
0.180	4	3 1/2	1/2	0.215	3 1/4	2 3/4	1/2	0.215	3 1/4	2 3/4	1/2
0.180	5	4 1/2	1/2	0.215	3 3/4	3 1/4	1/2	0.215	3 3/4	3 1/4	1/2
0.180	6	5 1/2	1/2	0.215	4 3/8	3 7/8	1/2	0.215	4 3/8	3 7/8	1/2
0.180	7	6 1/2	1/2	0.215	5	4 1/2	1/2	0.215	5	4 1/2	1/2
0.180	8	7 1/2	1/2	0.215	6	5 1/2	1/2	0.215	6	5 1/2	1/2
0.180	10	9 1/2	1/2	0.215	7	6 1/2	1/2	0.215	7	6 1/2	1/2
0.180	12	11 1/2	1/2	0.215	8	7 1/2	1/2	0.215	8	7 1/2	1/2
#10 TRUSS, PHILLIPS #3				1/4-IN. HEX HEAD				#3 PHILLIPS PAN HEAD			
0.105				0.180				0.118			
0.440				0.392				0.448			
YES				YES				YES			
YES				YES				YES			
Column 1	Column 2	Column 3		Column 1	Column 2	Column 3		Column 1	Column 2	Column 3	
Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material	
ROUND	2	GALVALUME		SQUARE	3 X 3	GALVALUME		SQUARE	3 X 3	GALVALUME	
ROUND	3	GALVALUME		GEARLOCK	3	POLYOLEFIN		GEARLOCK	3	POLYOLEFIN	
ROUND	3	PLASTIC		ROUND	2	GALVALUME		ROUND	2	GALVALUME	
REQUIRED				REQUIRED				REQUIRED			
OPTIONAL				ACCUDRIVE XL PLUS (OPTIONAL)				ACCUDRIVE XL PLUS (OPTIONAL)			
850				674				674			
656				502				502			
472				425				425			
YES				YES				YES			
YES				YES				YES			
FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY			
YES				YES				YES			

Roof Fasteners: Steel Decks

1. COMPANY NAME	ITW BUILDEX				ITW BUILDEX			
2. PRODUCT NAME	14-10 ROOFGRIP				ACCUTRAC FASTENER			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X							
C. SINGLE-PLY MEMBRANES	X							
5. MATERIAL TYPE	HARDENED CARBON STEEL				HARDENED CARBON STEEL			
6. COATING TYPE	SPEX OR CLIMASEAL				SPEX OR CLIMASEAL			
7. SHANK TYPE	STANDARD THREAD				MODIFIED BUTTRESS THREAD			
8. POINT TYPE	SELF-DRILLING				SELF-DRILLING			
9. METHOD OF ATTACHMENT	THREADED				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.245	1 1/4	3/4	1/2	0.215	1 5/8	1 1/8	1/2
	0.245	1 3/4	1 1/4	1/2	0.215	2 1/4	1 3/4	1/2
	0.245	2	1 1/2	1/2	0.215	2 7/8	2 3/8	1/2
	0.245	3	2 1/2	1/2	0.215	3 1/4	2 3/4	1/2
	0.245	4	3 1/2	1/2	0.215	3 3/4	3 1/4	1/2
	0.245	5	4 1/2	1/2	0.215	4 3/8	3 7/8	1/2
	0.245	6	5 1/2	1/2	0.215	5	4 1/2	1/2
	0.245	7	6 1/2	1/2	0.215	6	5 1/2	1/2
	0.245	8	7 1/2	1/2				
	0.245	9	8 1/2	1/2				
	0.245	10	9 1/2	1/2				
	0.245	12	11 1/2	1/2				
	0.245	14	13 1/2	1/2				
11. HEAD SHAPE	#3 PHILLIPS PAN HEAD				1/4 IN. HEX HEAD			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.118				0.180			
DIAMETER	0.448				0.392			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	SQUARE	3 X 3	GALVALUME		SQUARE	3 X 3	GALVALUME	
	GEARLOCK	3	POLYOLEFIN					
	ROUND	2	GALVALUME					
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED				ACCUTRAC OR ACCUTRAC II TOOL (REQUIRED)			
INSTALLATION TOOL WITH SCREW GUN (optional/required)	ACCUDRIVE XL PLUS (OPTIONAL)							
SPECIAL TOOL NEEDED (optional/required)								
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)								
18 GAUGE	670				674			
20 GAUGE	450				502			
22 GAUGE	360				425			
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I STEEL ROOF DECK (yes/no)	YES				YES			
18. PASSES FM TEST PROCEDURE 4470 FOR CORROSION RESISTANCE (yes/no)	YES				YES			
19. ACCEPTED BY THE FOLLOWING CODES	FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY			
20. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
21. SEE APPENDIX IF CHECKED					X			

NA=not applicable

Roof Fasteners: Steel Decks

ITW BUILDDEX #14 ROOFGRIP				ITW BUILDDEX #15 ROOFGRIP				ITW BUILDDEX HEXTRA PLUS			
U.S.				U.S.				U.S.			
X				X				X			
X				X							
X				X							
HARDENED CARBON STEEL				HARDENED CARBON STEEL				CARBON STEEL			
CLIMASEAL				CLIMASEAL				CLIMASEAL			
MODIFIED BUTTRESS THREAD				STANDARD THREAD				MODIFIED BUTTRESS THREAD			
SELF-DRILLING				SELF-DRILLING				SELF-DRILLING			
THREADED				THREADED				THREADED			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
0.245	2	1 1/2	1/2	0.260	1 1/4	3/4	1/2	0.215	2 1/4	1 3/4	1/2
0.245	3	2 1/2	1/2	0.260	2	1 1/2	1/2	0.215	2 7/8	2 3/8	1/2
0.245	4	3 1/2	1/2	0.260	3	2 1/2	1/2	0.215	3 1/4	2 3/4	1/2
0.245	5	4 1/2	1/2	0.260	4	3 1/2	1/2	0.215	3 3/4	3 1/4	1/2
0.245	6	5 1/2	1/2	0.260	5	4 1/2	1/2	0.215	4 3/8	3 7/8	1/2
0.245	7	6 1/2	1/2	0.260	6	5 1/2	1/2	0.215	5	4 1/2	1/2
0.245	8	7 1/2	1/2	0.260	7	6 1/2	1/2	0.215	6	5 1/2	1/2
0.245	9	8 1/2	1/2	0.260	8	7 1/2	1/2	0.215	7	6 1/2	1/2
0.245	10	9 1/2	1/2	0.260	10	9 1/2	1/2	0.215	8	7 1/2	1/2
0.245	11	10 1/2	1/2	0.260	12	11 1/2	1/2				
0.245	12	11 1/2	1/2	0.260	14	13 1/2	1/2				
0.245	14	13 1/2	1/2								
#3 PHILLIPS PAN HEAD				#3 PHILLIPS PAN HEAD							
0.118				0.118				0.180			
0.448				0.448				0.392			
YES				YES				YES			
YES				YES				YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
ROUND	2	GALVALUME		ROUND	2	GALVALUME		ROUND	3	GALVALUME	
SQUARE	3	GALVALUME		SQUARE	3	GALVALUME					
ROUND	3	PLASTIC									
REQUIRED				REQUIRED				REQUIRED			
ACCUDRIVE XL PLUS (OPTIONAL)				ACCUDRIVE XL PLUS (OPTIONAL)				ACCUFAST STAND-UP TOOL (OPTIONAL)			
795				881				674			
598				678				502			
505				584				425			
YES				YES				YES			
YES				YES				YES			
FM, METRO-DADE COUNTY				FM				FM			
YES				YES				YES			

Roof Fasteners: Steel Decks

1. COMPANY NAME	OLYMPIC MAN. GROUP/N.T.B. FASTENING SYSTEM INC.				OLYMPIC MANUFACTURING GROUP			
2. PRODUCT NAME	N-C				OLYMPIC FASTENER #12-11 (C.STEEL)			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
5. MATERIAL TYPE	NYLON				HARDENED CARBON STEEL			
6. COATING TYPE	NA				CR-10 FLUOROCARBON			
7. SHANK TYPE	SPIRAL THREAD				THREADED			
8. POINT TYPE					PINCH, SELF-DRILLING; GIMLET, OR TAPEX			
9. METHOD OF ATTACHMENT	THREADED				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.250	4	3 3/4	1/2	0.160	1 5/8	1 1/8	1/2
	0.250	6	5 3/4	1/2	0.160	2 1/4	1 3/4	1/2
	0.250	8	7 3/4	1/2	0.160	2 7/8	2 3/8	1/2
	0.250	10	9 3/4	1/2	0.160	3 1/4	2 3/4	1/2
	0.250	12	11 3/4	1/2	0.160	3 3/4	3 1/4	1/2
					0.160	4 1/2	4	1/2
					0.160	5	4 1/2	1/2
					0.160	6	5 1/2	1/2
					0.160	7	6 1/2	1/2
					0.160	8	7 1/2	1/2
11. HEAD SHAPE	DOUBLE HEX				ROUND TRUSS, #3 PHILLIPS, OR HEX HEAD			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.100				0.110			
DIAMETER	1.0 and 2.0				0.435			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2	NYLON		ROUND	2	STEEL	
	WITH SPIKES				ROUND	2	PLASTIC	
	ROUND	3	CARBON STEEL		ROUND	3	STEEL	
	WITH SPIKES				ROUND	3	PLASTIC	
					ROUND	3 1/2	STEEL	
					ROUND	2	STAINLESS STEEL	
					ROUND	3	STAINLESS STEEL	
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED				REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)					OPTIONAL			
SPECIAL TOOL NEEDED (optional/required)								
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)								
18 GAUGE	500+				540			
20 GAUGE	500+				501			
22 GAUGE	500+				456			
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I STEEL ROOF DECK (yes/no)	YES				YES			
18. PASSES FM TEST PROCEDURE 4470 FOR CORROSION RESISTANCE (yes/no)	NA				YES			
19. ACCEPTED BY THE FOLLOWING CODES	FM				FM, UL, ICBO, METRO.-DADE COUNTY			
20. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
21. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Steel Decks

OLYMPIC MANUFACTURING GROUP				OLYMPIC MANUFACTURING GROUP				OLYMPIC MANUFACTURING GROUP			
OLYMPIC FASTENER #12-11 (S.STEEL)				OLYMPIC FASTENER #14-10 (C.STEEL)				OLYMPIC FASTENER #14-10 (S.STEEL)			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
STAINLESS STEEL, SPECIAL 400-SERIES BLEND				HARDENED CARBON STEEL				STAINLESS STEEL, SPECIAL 400-SERIES BLEND			
CR-10 FLUOROCARBON				CR-10 FLUOROCARBON				CR-10 FLUOROCARBON			
THREADED				THREADED				THREADED			
PINCH, SELF-DRILLING				PINCH, SELF-DRILLING OR TAPEX				PINCH, SELF-DRILLING			
THREADED				THREADED				THREADED			
Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4
Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)
0.160	1 5/8	1 1/8	1/2	0.190	1 1/4	3/4	1/2	0.201	1 1/4	3/4	1/2
0.160	2 1/4	1 3/4	1/2	0.190	1 3/4	1 1/4	1/2	0.201	1 3/4	1 1/4	1/2
0.160	2 7/8	2 3/8	1/2	0.190	2	1 1/2	1/2	0.201	2	1 1/2	1/2
0.160	3 1/4	2 3/4	1/2	0.190	3	2 1/2	1/2	0.201	3	2 1/2	1/2
0.160	3 3/4	3 1/4	1/2	0.190	4	3 1/2	1/2	0.201	4	3 1/2	1/2
0.160	4 1/2	4	1/2	0.190	5	4 1/2	1/2	0.201	5	4 1/2	1/2
0.160	5	4 1/2	1/2	0.190	6	5 1/2	1/2	0.201	6	5 1/2	1/2
0.160	6	5 1/2	1/2	0.190	7	6 1/2	1/2	0.201	7	6 1/2	1/2
0.160	7	6 1/2	1/2	0.190	8	7 1/2	1/2	0.201	8	7 1/2	1/2
0.160	8	7 1/2	1/2	0.190	9	8 1/2	1/2	0.201	9	8 1/2	1/2
				0.190	10	9 1/2	1/2	0.201	10	9 1/2	1/2
				0.190	11	10 1/2	1/2	0.201	11	10 1/2	1/2
				0.190	12	11 1/2	1/2	0.201	12	11 1/2	1/2
				0.190	14	13 1/2	1/2	0.201	14	13 1/2	1/2
				0.190	16	15 1/2	1/2	0.201	16	15 1/2	1/2
				0.201	17	16 1/2	1/2	0.201	18	17 1/2	1/2
				0.201	18	17 1/2	1/2	0.201	20	19 1/2	1/2
				0.201	20	19 1/2	1/2	0.201	21	20 1/2	1/2
				0.201	21	20 1/2	1/2	0.201	22	21 1/2	1/2
				0.201	22	21 1/2	1/2	0.201	24	23 1/2	1/2
				0.201	24	23 1/2	1/2				
ROUND TRUSS, #3 PHILLIPS				ROUND TRUSS, #3 PHILLIPS				ROUND TRUSS, #3 PHILLIPS			
0.110				0.110				0.108			
0.435				0.435				0.435			
YES				YES				YES			
YES				YES				YES			
Column 1	Column 2	Column 3		Column 1	Column 2	Column 3		Column 1	Column 2	Column 3	
Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material	
ROUND	2	STAINLESS STEEL		ROUND	2	STEEL		ROUND	2	STAINLESS STEEL	
ROUND	3	STAINLESS STEEL		ROUND	2	PLASTIC		ROUND	3	STAINLESS STEEL	
ROUND	2	STEEL		ROUND	3	STEEL		ROUND	2	STEEL	
ROUND	2	PLASTIC		ROUND	3	PLASTIC		ROUND	2	PLASTIC	
ROUND	3	STEEL		ROUND	3 1/2	STEEL		ROUND	3	STEEL	
ROUND	3	PLASTIC		ROUND	2	STAINLESS STEEL		ROUND	3	PLASTIC	
ROUND	3 1/2	STEEL		ROUND	3	STAINLESS STEEL		ROUND	3 1/2	STEEL	
REQUIRED				REQUIRED				REQUIRED			
OPTIONAL				OPTIONAL				OPTIONAL			
540				585				585			
501				535				535			
456				505				505			
YES				YES				YES			
YES				YES				YES			
FM, UL, ICBO, METRO.-DADE COUNTY				FM, UL, ICBO, METRO.-DADE COUNTY				FM, UL, ICBO, METRO.-DADE COUNTY			
YES				YES				YES			

Roof Fasteners: Steel Decks

1. COMPANY NAME	POWERS RAWL, INC.				POWERS RAWL, INC.			
2. PRODUCT NAME	#12 DECK SCREW				#14-13 DECK SCREW			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
5. MATERIAL TYPE	HARDENED STEEL				HARDENED STEEL			
6. COATING TYPE	PERMASEAL				PERMASEAL			
7. SHANK TYPE	SPIRAL THREAD				SPIRAL THREAD			
8. POINT TYPE	SELF-DRILLING				SELF-DRILLING			
9. METHOD OF ATTACHMENT	THREADED				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.222	1 5/8	1 1/8	1/2	0.238	1 5/8	1 1/8	1/2
	0.222	2 1/4	1 3/4	1/2	0.238	2 1/4	1 3/4	1/2
	0.222	2 7/8	2 3/8	1/2	0.238	2 7/8	2 3/8	1/2
	0.222	3 1/4	2 3/4	1/2	0.238	3 3/4	3 1/4	1/2
	0.222	3 3/4	3 1/4	1/2	0.238	4 1/2	4	1/2
	0.222	4 1/2	4	1/2	0.238	5	4 1/2	1/2
	0.222	5	4 1/2	1/2	0.238	6	5 1/2	1/2
	0.222	6	5 1/2	1/2	0.238	7	6 1/2	1/2
	0.222	7	6 1/2	1/2	0.238	8	7 1/2	1/2
	0.222	8	7 1/2	1/2	0.238	10	9 1/2	1/2
					0.238	12	11 1/2	1/2
11. HEAD SHAPE	ROUND TRUSS #3 PHILLIPS & 1/4" HEX WASHER				ROUND TRUSS #3 PHILLIPS RECESS			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.109, 0.130				0.109			
DIAMETER	0.438, 0.335				0.438			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2	GALVALUME		ROUND	2	GALVALUME	
	BARBED				BARBED			
	ROUND	2	STAINLESS STEEL		ROUND	2	STAINLESS STEEL	
	BARBED	3	GALVALUME		BARBED	3	GALVALUME	
	ROUND	3	STAINLESS STEEL		ROUND	3	STAINLESS STEEL	
	ROUND	3	PLASTIC		ROUND	3	PLASTIC	
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED				REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)	OPTIONAL				OPTIONAL			
SPECIAL TOOL NEEDED (optional/required)								
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)								
18 GAUGE	725				735			
20 GAUGE	655				630			
22 GAUGE	550				505			
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I STEEL ROOF DECK (yes/no)	YES				YES			
18. PASSES FM TEST PROCEDURE 4470 FOR CORROSION RESISTANCE (yes/no)	YES				YES			
19. ACCEPTED BY THE FOLLOWING CODES	FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY			
20. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
21. SEE APPENDIX IF CHECKED	X				X			

NA=not applicable

Roof Fasteners: Steel Decks

POWERS RAWL, INC.				SCHULLER INTERNATIONAL INC.				SCHULLER INTERNATIONAL INC.			
#15 DECK SCREW				ULTRAFAST/HEX HEAD				ULTRAGRIP/PHILLIPS HEAD #12			
U.S.				U.S.				U.S.			
X				X				X			
X											
X											
HARDENED STEEL				HARDENED CARBON STEEL				HARDENED CARBON STEEL			
PERMASEAL				CLIMASEAL				SPEX			
SPIRAL THREAD				MODIFIED BUTTRESS THREAD				MODIFIED BUTTRESS THREAD			
SELF-DRILLING				SELF-DRILLING X-POINT				SELF-DRILLING X-POINT			
THREADED				THREADED				THREADED			
Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4
Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)
0.264	1 1/4	3/4	1/2	0.215	1 5/8	1 1/8	1/2	0.215	1 5/8	1 1/8	1/2
0.264	2	1 1/2	1/2	0.215	2 1/4	1 3/4	1/2	0.215	2 1/4	1 3/4	1/2
0.264	3	2 1/2	1/2	0.215	2 7/8	2 3/8	1/2	0.215	2 7/8	2 3/8	1/2
0.264	4	3 1/2	1/2	0.215	3 1/4	2 3/4	1/2	0.215	3 1/4	2 3/4	1/2
0.264	5	4 1/2	1/2	0.215	3 3/4	3 1/4	1/2	0.215	3 3/4	3 1/4	1/2
0.264	6	5 1/2	1/2	0.215	4 3/8	3 7/8	1/2	0.215	4 3/8	3 7/8	1/2
0.264	7	6 1/2	1/2	0.215	5	4 1/2	1/2	0.215	5	4 1/2	1/2
0.264	8	7 1/2	1/2	0.215	6	5 1/2	1/2	0.215	6	5 1/2	1/2
0.264	9	8 1/2	1/2	0.215	7	6 1/2	1/2	0.215	7	6 1/2	1/2
0.264	10	9 1/2	1/2	0.215	8	7 1/2	1/2	0.215	8	7 1/2	1/2
0.264	11	10 1/2	1/2								
0.264	12	11 1/2	1/2								
0.264	13	12 1/2	1/2								
0.264	14	13 1/2	1/2								
0.264	15	14 1/2	1/2								
0.264	16	15 1/2	1/2								
ROUND TRUSS #3 PHILLIPS				1/4-IN. HEX HEAD				#3 PHILLIPS HEAD			
0.109				0.180				0.118			
0.438				0.392				0.448			
YES				YES				YES			
YES				YES				YES			
Column 1	Column 2	Column 3		Column 1	Column 2	Column 3		Column 1	Column 2	Column 3	
Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material	
ROUND	2	GALVALUME		SQUARE	3 X 3	CARBON STEEL WITH GALVALUME		SQUARE	3 X 3	CARBON STEEL WITH GALVALUME	
BARBED	2	STAINLESS STEEL		SCHULLER ROUND LOCK- ING PLATE	3	POLYOLEFIN		SCHULLER ROUND LOCK- ING PLATE	3	POLYOLEFIN	
ROUND	3	GALVALUME									
ROUND	3	STAINLESS STEEL									
REQUIRED				REQUIRED				REQUIRED			
OPTIONAL				OPTIONAL (ACCU DRIVE XL)				OPTIONAL (ACCU DRIVE XL)			
935				674				674			
689				502				502			
493				425				425			
YES				YES				YES			
YES				YES				YES			
FM				FM, UL, ICBO, METRO.-DADE COUNTY				FM, UL, ICBO, METRO.-DADE COUNTY			
YES				YES				YES			

Roof Fasteners: Steel Decks

1. COMPANY NAME	SCHULLER INTERNATIONAL INC.				SCHULLER INTERNATIONAL INC.			
2. PRODUCT NAME	ULTRAGRIP/PHILLIPS HEAD #14				#15 SPM FASTENER			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X							
B. BUILT-UP MEMBRANES					X			
C. SINGLE-PLY MEMBRANES	X							
5. MATERIAL TYPE	HARDENED CARBON STEEL				HARDENED CARBON STEEL			
6. COATING TYPE	SPEX				CLIMASEAL			
7. SHANK TYPE	STANDARD THREAD				MODIFIED BUTTRESS THREAD			
8. POINT TYPE	SELF-DRILLING X-POINT				SELF-DRILLING X-POINT			
9. METHOD OF ATTACHMENT	THREADED				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.245	1 1/4	3/4	1/2	0.20	1 1/4	3/4	1/2
	0.245	1 3/4	1 1/4	1/2	0.20	2	1 1/2	1/2
	0.245	2	1 1/2	1/2	0.20	3	2 1/2	1/2
	0.245	3	2 1/2	1/2	0.20	4	3 1/2	1/2
	0.245	4	3 1/2	1/2	0.20	5	4 1/2	1/2
	0.245	5	4 1/2	1/2	0.20	6	5 1/2	1/2
	0.245	6	5 1/2	1/2	0.20	7	6 1/2	1/2
	0.245	7	6 1/2	1/2	0.20	8	7 1/2	1/2
	0.245	8	7 1/2	1/2	0.20	10	9 1/2	1/2
	0.245	9	8 1/2	1/2	0.20	12	11 1/2	1/2
	0.245	10	9 1/2	1/2				
	0.245	12	11 1/2	1/2				
	0.245	14	13 1/2	1/2				
11. HEAD SHAPE	#3 PHILLIPS PAN HEAD				#3 PHILLIPS HEAD			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.118							
DIAMETER	0.448				0.435			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	SQUARE	3 X 3	CARBON STEEL WITH GALVALUME POLYOLEFIN		ROUND PREM. LOCKING PLATE	2	CARBON STEEL W/ POLYOLEFIN (LOCKING)	
	ROUND	3						
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED				REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)	OPTIONAL (ACCUDRIVE XL)							
SPECIAL TOOL NEEDED (optional/required)								
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.) (FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)								
18 GAUGE	670				850			
20 GAUGE	450				675			
22 GAUGE	360				500			
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I STEEL ROOF DECK (yes/no)	YES				YES			
18. PASSES FM TEST PROCEDURE 4470 FOR CORROSION RESISTANCE (yes/no)	YES				YES			
19. ACCEPTED BY THE FOLLOWING CODES	FM				FM			
20. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
21. SEE APPENDIX IF CHECKED					X			

NA=not applicable

Roof Fasteners: Steel Decks

SCHULLER INTERNATIONAL INC.				SFS STADLER INC.				SFS STADLER INC.			
SPM ASAP				ISOFAST IF2-M				ISOFAST IF2-C-M			
U.S.				U.S.				U.S.			
X				X				X			
HARDENED CARBON STEEL				CARBON STEEL				CARBON STEEL			
CR-10				TUFF-TITE II				TUFF-TITE II			
MODIFIED BUTTRESS THREAD				THREADED				THREADED			
SPADE POINT				SELF-DRILLING 2-FLUTE DRILL POINT				SELF-DRILLING 2-FLUTE DRILL POINT			
THREADED				THREADED				THREADED			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
0.16	2 1/4	1 3/4	1/2	0.189	2	1 1/2	1/2	0.189	2 1/8	1 5/8	1/2
0.16	2 7/8	2 3/8	1/2	0.189	2 1/4	1 3/4	1/2	0.189	2 1/4	1 3/4	1/2
0.16	3 1/4	2 3/4	1/2	0.189	2 3/4	2 1/4	1/2	0.189	2 3/4	2 1/4	1/2
0.16	3 3/4	3 1/4	1/2	0.189	3 1/8	2 5/8	1/2	0.189	3 1/8	2 5/8	1/2
0.16	4 1/2	4	1/2	0.189	3 7/8	3 3/8	1/2	0.189	3 7/8	3 3/8	1/2
0.17	5	4 1/2	1/2	0.189	4 3/4	4 1/4	1/2	0.189	4 3/4	4 1/4	1/2
0.17	6	5 1/2	1/2	0.189	5 1/2	4 3/4	1/2	0.189	5 1/2	4 3/4	1/2
0.17	7	6 1/2	1/2	0.189	6 1/4	5 1/2	1/2	0.189	6 1/4	5 1/2	1/2
0.17	8	7 1/2	1/2								
#3 PHILLIPS HEAD				5/16 HEX HEAD				#2 POSI-DRIVE COUNTERSUNK			
0.435				0.156 0.406				0.156 0.406			
YES YES				YES YES				YES YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
ROUND	2	NYLON (LOCKING)		OVAL	3 1/4 X 1 5/8	GALVALUME		OVAL	3 1/4 X 1 5/8	GALVALUME	
				SQUARE	2 3/4 X 2 3/4	GALVALUME		SQUARE	2 3/4 X 2 3/4	GALVALUME	
				DOMED CONVEX	3 1/4 X 1 5/8	GALVALUME		DOMED CONVEX	3 1/4 X 1 5/8	GALVALUME	
REQUIRED				REQUIRED REQUIRED REQUIRED				REQUIRED REQUIRED REQUIRED			
575 525 475				552 505				552 505			
YES				YES				YES			
YES				YES				YES			
FM				FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY			
YES				YES				YES			
X				X				X			

Roof Fasteners: Steel Decks

1. COMPANY NAME	SFS STADLER INC.				SFS STADLER INC.			
2. PRODUCT NAME	ISOFAST IF2-S				SYSTEM ES-IF #10			
3. COUNTRY OF MANUFACTURE	SWITZERLAND				U.S			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X							
C. SINGLE-PLY MEMBRANES	X							
5. MATERIAL TYPE	300 SERIES STAINLESS STEEL				HARDENED STEEL			
6. COATING TYPE					TUFF TITE II			
7. SHANK TYPE	THREADED				SPIRAL THREAD			
8. POINT TYPE	SELF-DRILLING 2-FLUTE DRILL POINT				SELF-DRILLING AND FLUTE DRILL POINT			
9. METHOD OF ATTACHMENT	THREADED				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.189	2	1 1/2	1/2	0.189	2	1 1/2	1/2
	0.189	3 1/8	2 5/8	1/2	0.189	2 1/4	1 3/4	1/2
	0.189	3 7/8	3 3/8	1/2	0.189	2 3/4	2 1/4	1/2
	0.189	4 3/4	4 1/4	1/2	0.189	3 1/8	2 5/8	1/2
	0.189	5 1/2	4 3/4	1/2	0.189	3 7/8	3 3/8	1/2
	0.189	6 1/4	5 1/2	1/2	0.189	4 3/4	4 1/4	1/2
					0.189	5 1/2	4 3/4	1/2
					0.189	6 1/4	5 1/2	1/2
11. HEAD SHAPE	8mm HEX HEAD				8mm HEX HEAD			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.156				0.156			
DIAMETER	0.406				0.406			
13. PLATES								
A. REQUIRED (yes/no)					YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)					YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	OVAL	3 1/4 X 1 5/8	GALVALUME		ROUND	3	POLYETHYLENE	
	SQUARE	2 3/4 X 2 3/4	GALVALUME		ROUND	3	GALVALUME	
	DOMED CONVEX	3 1/4 X 1 5/8	GALVALUME					
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED				REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)	OPTIONAL				OPTIONAL			
SPECIAL TOOL NEEDED (optional/required)	OPTIONAL				OPTIONAL			
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.) (FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)								
18 GAUGE					552			
20 GAUGE					451			
22 GAUGE								
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I STEEL ROOF DECK (yes/no)					YES			
18. PASSES FM TEST PROCEDURE 4470 FOR CORROSION RESISTANCE (yes/no)					YES			
19. ACCEPTED BY THE FOLLOWING CODES					FM, METRO.-DADE COUNTY			
20. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)					YES			
21. SEE APPENDIX IF CHECKED	X				X			

NA=not applicable

Roof Fasteners: Steel Decks

SFS STADLER INC. INSUL-FIXX #12-11				SFS STADLER INC. INSUL-FIXX #14-10				SFS STADLER INC. SYSTEM ES I #14-10			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
HARDENED STEEL				HARDENED STEEL				HARDENED STEEL			
TUFF-TITE II				TUFF-TITE II				TUFF-TITE II			
SPIRAL THREAD				THREADED				THREADED			
DRILL POINT				DRILL POINT				DRILL POINT			
THREADED				THREADED				THREADED			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
0.172	1 5/8	1 3/8	1/2	0.190	1 1/4	3/4	1/2	0.190	2	1 3/8	1/2
0.172	2 1/4	1 3/4	1/2	0.190	2	1 1/2	1/2	0.190	3	2 1/2	1/2
0.172	2 7/8	2 3/8	1/2	0.190	3	2 1/2	1/2	0.190	4	3 1/2	1/2
0.172	3 1/4	2 3/4	1/2	0.190	4	3 1/2	1/2	0.190	5	4 1/2	1/2
0.172	3 3/4	3 1/4	1/2	0.190	5	4 1/2	1/2	0.190	6	5 1/2	1/2
0.172	4 1/2	4	1/2	0.190	6	5 1/2	1/2	0.190	7	6 1/2	1/2
0.172	5	4 1/2	1/2	0.190	7	6 1/2	1/2	0.190	8	7 1/2	1/2
0.172	6	5 1/2	1/2	0.190	8	7 1/2	1/2	0.190	10	9 1/2	1/2
0.172	7	6 1/2	1/2	0.190	10	9 1/2	1/2	0.190	12	11 1/2	1/2
0.172	8	7 1/2	1/2	0.190	12	11 1/2	1/2				
				0.190	14	13 1/2	1/2				
				0.190	16	15 1/2	1/2				
				0.190	18	17 1/2	1/2				
				0.190	20	19 1/2	1/2				
				0.190	22	21 1/2	1/2				
				0.190	24	23 1/2	1/2				
				0.190	26	25 1/2	1/2				
ROUND WITH #3 PHILLIPS TRUSS				ROUND WITH #3 PHILLIPS TRUSS				ROUND WITH #3 PHILLIPS TRUSS			
0.103				0.103				0.103			
0.425				0.425				0.425			
YES				YES				YES			
YES				YES				YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
ROUND	3	POLYETHYLENE		ROUND	3	POLYETHYLENE		ROUND	3	POLYETHYLENE	
ROUND	3	GALVALUME		ROUND	3	GALVALUME					
				ROUND	2	GALVALUME					
				ROUND	2	NYLON WITH GLASS					
REQUIRED				REQUIRED				REQUIRED			
								OPTIONAL			
								OPTIONAL			
660				690				690			
575				610				610			
481				535				535			
YES				YES				YES			
YES				YES				YES			
FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY			
YES				YES				YES			
X				X				X			

Roof Fasteners: Steel Decks

1. COMPANY NAME	SFS STADLER INC.				SFS STADLER INC.			
2. PRODUCT NAME	SYSTEM ES I #12-11				SYSTEM ES L #14-10			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
5. MATERIAL TYPE	HARDENED STEEL				HARDENED STEEL			
6. COATING TYPE	TUFF-TITE II				TUFF-TITE II			
7. SHANK TYPE	SPIRAL THREAD				THREADED			
8. POINT TYPE	DRILL POINT				DRILL POINT			
9. METHOD OF ATTACHMENT	THREADED				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.172	2 1/4	1 3/4	1/2	0.190	2	1 3/8	1/2
	0.172	2 7/8	2 3/8	1/2	0.190	3	2 1/2	1/2
	0.172	3 1/4	2 3/4	1/2	0.190	4	3 1/2	1/2
	0.172	3 3/4	3 1/4	1/2	0.190	5	4 1/2	1/2
	0.172	4 1/2	4	1/2	0.190	6	5 1/2	1/2
	0.172	5	4 1/2	1/2	0.190	7	6 1/2	1/2
	0.172	6	5 1/2	1/2	0.190	8	7 1/2	1/2
	0.172	7	6 1/2	1/2	0.190	10	9 1/2	1/2
	0.172	8	7 1/2	1/2	0.190	12	11 1/2	1/2
11. HEAD SHAPE	ROUND WITH #3 PHILLIPS TRUSS				ROUND WITH #3 PHILLIPS TRUSS			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.103				0.103			
DIAMETER	0.425				0.425			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND ROUND	3 3	POLYETHYLENE GALVALUME		ROUND	2	NYLON WITH GLASS	
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED				REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)	OPTIONAL				REQUIRED			
SPECIAL TOOL NEEDED (optional/required)	OPTIONAL				REQUIRED			
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.) (FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)								
18 GAUGE	650				690			
20 GAUGE	575				610			
22 GAUGE	481				535			
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I STEEL ROOF DECK (yes/no)	YES				YES			
18. PASSES FM TEST PROCEDURE 4470 FOR CORROSION RESISTANCE (yes/no)	YES				YES			
19. ACCEPTED BY THE FOLLOWING CODES	FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY			
20. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
21. SEE APPENDIX IF CHECKED	X				X			

NA=not applicable

Roof Fasteners: Steel Decks

SFS STADLER INC.				SUBCON PRODUCTS CORP.				TRI-PLY			
EXTRA LOAD FASTENER HD				THE PEEL RIVET, OR TPR				TRI-FAST DP			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
CARBON STEEL				HIGH MAGNESIUM ALUMINUM ALLOY				CARBON STEEL			
TUFF-TITE II				NA				TRU-KOTE PC-3 (FLUOROCARBON PAINT)			
THREADED				SMOOTH, THREADLESS BODY				THREADED			
DRILL				SELF-PENETRATING				DOUBLE FLUTE SELF-DRILLING			
THREADED				MECHANICAL				THREADED			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
0.205	1 1/4	3/4	1/2	0.250	1 1/2	3/4	3/4	0.160	1 5/8	1 1/8	1/2
0.205	2	1 1/2	1/2	0.250	2	1 1/4	3/4	0.160	2 1/4	1 3/4	1/2
0.205	3	2 1/2	1/2	0.250	3	2 1/4	3/4	0.160	2 7/8	2 3/8	1/2
0.205	4	3 1/2	1/2	0.250	4	3 1/4	3/4	0.160	3 3/4	3 1/4	1/2
0.205	5	4 1/2	1/2	0.250	5	4 1/4	3/4	0.160	4 1/2	4	1/2
0.205	6	5 1/2	1/2	0.250	6	5 1/4	3/4	0.160	5	4 1/2	1/2
0.205	8	7 1/2	1/2	0.250	7	6 1/4	3/4	0.160	6	5 1/2	1/2
0.205	10	9 1/2	1/2	0.250	8	7 1/4	3/4	0.160	7	6 1/2	1/2
0.205	12	11 1/2	1/2	0.250	9	8 1/4	3/4	0.160	8	7 1/2	1/2
0.205	14	13 1/2	1/2	0.250	10	9 1/4	3/4	0.160	10	9 1/2	1/2
0.205	16	15 1/2	1/2					0.160	12	11 1/2	1/2
ROUND WITH #3 PHILLIPS TRUSS				SLIGHTLY CONVEX RIVET HEAD				1/4" HEX HEAD			
0.103				0.0625				0.105			
0.425				0.485				0.440			
YES				YES				YES			
YES				YES				YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
ROUND	3	GALVALUME		ROUND	2	GALVALUME		ROUND	2	GALVALUME	
ROUND	2	GALVALUME		BARBED ROUND	3	GALVALUME		ROUND ROUND ROUND	3 3 3	GALVALUME GALVALUME PLASTIC	
REQUIRED				REQUIRED REQUIRED (COMPRESSOR)				REQUIRED OPTIONAL			
782				775 776				795 605 428			
YES				YES				YES			
YES				YES				YES			
FM				FM				FM			
YES				YES				YES			
				X							

Roof Fasteners: Steel Decks

1. COMPANY NAME	TRU-FAST CORPORATION				TRU-FAST CORPORATION			
2. PRODUCT NAME	DP ULTRA STAINLESS STEEL				TP			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
5. MATERIAL TYPE	STAINLESS STEEL (TRIMRITE ALLOY #S-42010)				CARBON STEEL C-1022			
6. COATING TYPE					TRU-KOTE PC-3 (FLUOROCARBON PAINT)			
7. SHANK TYPE	THREADED				THREADED			
8. POINT TYPE	DOUBLE FLUTE SELF-DRILLING				GIMLET			
9. METHOD OF ATTACHMENT	THREADED				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.160	1 5/8	1 1/8	1/2	0.150	1 5/8	1 1/8	1/2
	0.160	2 1/4	1 3/4	1/2	0.150	2 1/4	1 3/4	1/2
	0.160	3	2 1/2	1/2	0.150	2 7/8	2 3/8	1/2
	0.160	3 3/4	3 1/4	1/2	0.150	3 3/4	3 1/4	1/2
	0.160	4 1/2	4	1/2	0.150	4 1/2	4	1/2
	0.160	5	4 1/2	1/2	0.150	5	4 1/2	1/2
	0.160	6	5 1/2	1/2	0.150	6	5 1/2	1/2
	0.160	7	6 1/2	1/2				
	0.160	8	7 1/2	1/2				
	0.160	10	9 1/2	1/2				
	0.160	12	11 1/2	1/2				
11. HEAD SHAPE	TRUSS #3 PHILLIPS				TRUSS #3 PHILLIPS			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.105				0.110			
DIAMETER	0.440				0.390			
13. PLATES								
A. REQUIRED (yes/no)	YES							
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES							
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2	GALVALUME		ROUND	2	GALVALUME	
	ROUND	3	GALVALUME		ROUND	3	GALVALUME	
	ROUND	3	PLASTIC		ROUND	3	PLASTIC	
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)								
INSTALLATION TOOL WITH SCREW GUN (optional/required)	REQUIRED				REQUIRED			
SPECIAL TOOL NEEDED (optional/required)	OPTIONAL				OPTIONAL			
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.) (FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)								
18 GAUGE	720				610			
20 GAUGE	620				494			
22 GAUGE	473							
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I STEEL ROOF DECK (yes/no)	YES				YES			
18. PASSES FM TEST PROCEDURE 4470 FOR CORROSION RESISTANCE (yes/no)	YES				YES			
19. ACCEPTED BY THE FOLLOWING CODES	FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY			
20. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
21. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Steel Decks

TRU-FAST CORPORATION				TRU-FAST CORPORATION			
DP (DRILL POINT)				HD (HEAVY DUTY) #14			
U.S.				U.S.			
X				X			
X				X			
X				X			
CARBON STEEL C-1022				CARBON STEEL C-1022			
TRU-KOTE PC-3 (FLUOROCARBON PAINT)				TRU-KOTE PC-3 (FLUOROCARBON PAINT)			
THREADED				THREADED			
DOUBLE FLUTE SELF-DRILLING				DOUBLE FLUTE SELF-DRILLING			
THREADS				THREADS			
Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4
Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)
0.160	1 5/8	1 1/8	1/2	0.180	1 1/2	1	1/2
0.160	2 1/4	1 3/4	1/2	0.180	2	1 1/2	1/2
0.160	2 7/8	2 3/8	1/2	0.180	3	2 1/2	1/2
0.160	3 1/4	2 3/4	1/2	0.180	4	3 1/2	1/2
0.160	3 3/4	3 1/4	1/2	0.180	5	4 1/2	1/2
0.160	4 1/2	4	1/2	0.180	6	5 1/2	1/2
0.160	5	4 1/2	1/2	0.180	7	6 1/2	1/2
0.160	6	5 1/2	1/2	0.180	8	7 1/2	1/2
0.160	7	6 1/2	1/2	0.180	10	9 1/2	1/2
0.160	8	7 1/2	1/2	0.180	12	11 1/2	1/2
				TRUSS #3 PHILLIPS			
0.105				0.105			
0.440				0.440			
YES				YES			
YES				YES			
Column 1	Column 2	Column 3		Column 1	Column 2	Column 3	
Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material	
ROUND	2	GALVALUME		ROUND	2	GALVALUME	
ROUND	3	GALVALUME		ROUND	3	GALVALUME	
ROUND	3	PLASTIC		ROUND	3	PLASTIC	
REQUIRED				REQUIRED			
OPTIONAL				OPTIONAL			
558				850			
456				656			
452				472			
YES				YES			
YES				YES			
FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY			
YES				YES			

Roof Fasteners: Wood Decks

1. COMPANY NAME	CARLISLE SYNTEC INCORPORATED					CARLISLE SYNTEC INCORPORATED				
2. PRODUCT NAME	HP FASTENER					HP WOODIE				
3. COUNTRY OF MANUFACTURE	U.S.					U.S.				
4. USED WITH:										
A. INSULATION ATTACHMENT	X					X				
B. BUILT-UP MEMBRANES										
C. SINGLE-PLY MEMBRANES	X					X				
5. MATERIAL TYPE	CARBON STEEL					ZAMAC				
6. COATING TYPE	EPOXY ELECTRODEPOSITION									
7. SHANK TYPE	SINGLE LEAD, BUTTRESS THREAD					SPIRAL THREAD				
8. POINT TYPE	MINI-DRILL POINT					PIERCE-POINT				
9. METHOD OF ATTACHMENT	THREADED					THREADED				
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)
	0.180	1 1/4	1/4	1	1	0.500	1 3/4	0		
	0.180	1 3/4	3/4	1	1	0.500	2 1/2	1/2 to 3/4		
	0.180	2 1/4	1 1/4	1	1	0.500	3 1/4	1 to 1 1/2		
	0.180	2 3/4	1 3/4	1	1					
	0.180	3 1/4	2 1/4	1	1					
	0.180	3 3/4	2 3/4	1	1					
	0.180	4 1/4	3 1/4	1	1					
	0.180	5	4	1	1					
	0.180	6	5	1	1					
	0.180	7	6	1	1					
	0.180	8	7	1	1					
	0.180	9	8	1	1					
	0.180	10	9	1	1					
	0.180	11	10	1	1					
	0.180	12	11	1	1					
	0.180	13	12	1	1					
	0.180	14	13	1	1					
	0.180	15	14	1	1					
11. HEAD SHAPE	WAFER					FLUSH RECESS				
12. HEAD DIMENSIONS (inches)										
THICKNESS	0.105					0.073				
DIAMETER	0.430					0.600				
13. PLATES										
A. REQUIRED (yes/no)	YES					YES				
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	SQUARE WITH ROUNDED CORNERS	2 7/8	GALVALUME	ROUND	2	GALVALUME	ROUND	3	GALVALUME	
	ROUND	2	GALVALUME	ROUND	3	GALVALUME				
	LOCKING	2	GALVALUME WITH PLASTIC							
	ROUND	2	PLASTIC							
	ROUND	3	PLASTIC							
15. INSTALLATION EQUIPMENT										
SCREW GUN (optional/required)	REQUIRED					REQUIRED				
INSTALLATION TOOL WITH SCREW GUN (optional/required)										
SPECIAL TOOL NEEDED (optional/required)										
OTHER	AUTOMATIC FASTENING TOOL									
16. AVERAGE PULLOUT RESISTANCE (lbs.)										
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)										
3/4-INCH PLYWOOD										
2-INCH PINE PLANK										
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I WOOD ROOF										
(yes/no)	YES					YES				
18. ACCEPTED BY THE FOLLOWING CODES	FM					FM				
19. WARRANTY AVAILABLE FROM MANUFACTURER										
(yes/no)	YES					YES				
20. SEE APPENDIX IF CHECKED										

NA=not applicable

Roof Fasteners: Wood Decks

THE CELOTEX CORPORATION					THE CELOTEX CORPORATION					THE CELOTEX CORPORATION				
ANCHORBOND #12					ANCHORBOND #14					ANCHORBOND #15 HEAVY DUTY				
U.S.					U.S.					U.S.				
X					X					X				
X					X					X				
X					X					X				
HARDENED CARBON STEEL					HARDENED CARBON STEEL					HARDENED CARBON STEEL				
ORGANIC FLUOROPOLYMERS					ORGANIC FLUOROPOLYMERS					ORGANIC FLUOROPOLYMERS				
SPIRAL THREAD					SPIRAL THREAD					SPIRAL THREAD				
SELF-DRILLING					SELF-DRILLING					SELF-DRILLING				
THREADED					THREADED					THREADED				
Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)
0.222	1 5/8	5/8	3/4	1	0.238	1 1/4	1/4	3/4	1	0.264	1 1/4	1/4	3/4	1
0.222	2 1/4	1 1/4	3/4	1	0.238	1 5/8	5/8	3/4	1	0.264	2	1	3/4	1
0.222	2 7/8	1 7/8	3/4	1	0.238	1 7/8	1 1/4	3/4	1	0.264	3	2	3/4	1
0.222	3 3/4	2 3/4	3/4	1	0.238	2 7/8	1 7/8	3/4	1	0.264	4	3	3/4	1
0.222	4 1/2	3 1/2	3/4	1	0.238	3 1/4	2 1/4	3/4	1	0.264	5	4	3/4	1
0.222	5	4	3/4	1	0.238	3 3/4	2 3/4	3/4	1	0.264	6	5	3/4	1
					0.238	4 1/2	3 1/2	3/4	1	0.264	7	6	3/4	1
					0.238	5	4	3/4	1	0.264	8	7	3/4	1
					0.238	6	5	3/4	1	0.264	10	9	3/4	1
					0.238	7	6	3/4	1	0.264	12	11	3/4	1
					0.238	8	7	3/4	1	0.264	14	13	3/4	1
										0.264	16	15	3/4	1
#3 PHILLIPS TRUSS & 1/4" HEX WASHER HEAD					#3 PHILLIPS FLAT TRUSS					#3 PHILLIPS TRUSS				
0.109					0.109					0.109				
0.438					0.438					0.438				
YES					YES					YES				
YES					YES					YES				
Column 1	Column 2	Column 3			Column 1	Column 2	Column 3			Column 1	Column 2	Column 3		
Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material		
HEXAGONAL	2 7/8	GALVALUME			HEXAGONAL HEXAGONAL HEXAGONAL ROUND	2 7/8 2 7/8 3 2	STAINLESS STEEL GALVALUME PLASTIC GALVALUME			HEXAGONAL HEXAGONAL ROUND	2 7/8 2 7/8 2	STAINLESS STEEL GALVALUME GALVALUME		
REQUIRED					REQUIRED					REQUIRED				
OPTIONAL					OPTIONAL					OPTIONAL				
617					671					780				
1,265					1,470					1,500				
YES					YES					YES				
FM					FM					FM				
YES					YES					YES				
X														

Roof Fasteners: Wood Decks

1. COMPANY NAME	THE CELOTEX CORPORATION					CONSTRUCTION FASTENERS, INC.				
2. PRODUCT NAME	ANCHORBOND #14 STAINLESS STEEL					DEKFAST #12				
3. COUNTRY OF MANUFACTURE	U.S.					U.S.				
4. USED WITH:										
A. INSULATION ATTACHMENT	X					X				
B. BUILT-UP MEMBRANES	X					X				
C. SINGLE-PLY MEMBRANES	X					X				
5. MATERIAL TYPE	STAINLESS STEEL (#304)					HARDENED CARBON STEEL				
6. COATING TYPE	ORGANIC FLUOROPOLYMERS					ORGANIC				
7. SHANK TYPE	SPIRAL THREAD					SPIRAL THREAD				
8. POINT TYPE	SELF-DRILLING					SELF-DRILLING				
9. METHOD OF ATTACHMENT	THREADED					THREADED				
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)
	0.264	3	1 1/2	3/4	1	0.222	1 5/8	5/8	3/4	1
	0.264	4	2 1/2	3/4	1	0.222	2 1/4	1 1/4	3/4	1
	0.264	5	3 1/2	3/4	1	0.222	2 7/8	1 7/8	3/4	1
	0.264	6	4 1/2	3/4	1	0.222	3 3/4	2 3/4	3/4	1
	0.264	7	5 1/2	3/4	1	0.222	4 1/2	3 1/2	3/4	1
	0.264	8	6 1/2	3/4	1	0.222	5	4	3/4	1
						0.222	6	5	3/4	1
						0.222	7	6	3/4	1
						0.222	8	7	3/4	1
11. HEAD SHAPE	#3 PHILLIPS TRUSS					#3 PHILLIPS TRUSS & 1/4" HEX WASHER HEAD				
12. HEAD DIMENSIONS (inches)										
THICKNESS	0.109					0.109, 0.130				
DIAMETER	0.438					0.438, 0.335				
13. PLATES										
A. REQUIRED (yes/no)	YES					YES				
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material			Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		
	HEXAGONAL	2 7/8	STAINLESS STEEL			HEXAGONAL	2 7/8	STAINLESS STEEL		
	HEXAGONAL	2 7/8	GALVALUME			HEXAGONAL	2 7/8	GALVALUME		
	HEXAGONAL	3	PLASTIC			HEXAGONAL	3	PLASTIC		
	ROUND	2	GALVALUME			ROUND	2	GALVALUME		
						ROUND	2	NYLON		
15. INSTALLATION EQUIPMENT										
SCREW GUN (optional/required)	REQUIRED					REQUIRED				
INSTALLATION TOOL WITH SCREW GUN (optional/required)	OPTIONAL					OPTIONAL				
SPECIAL TOOL NEEDED (optional/required)										
OTHER										
16. AVERAGE PULLOUT RESISTANCE (lbs.)										
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)										
3/4-INCH PLYWOOD	773					617				
2-INCH PINE PLANK	1,250					1,265				
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I WOOD ROOF (yes/no)	YES					YES				
18. ACCEPTED BY THE FOLLOWING CODES	FM					FM, METRO-DADE COUNTY				
19. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
20. SEE APPENDIX IF CHECKED						X				

NA=not applicable

Roof Fasteners: Wood Decks

CONSTRUCTION FASTENERS, INC.					CONSTRUCTION FASTENERS, INC.					CONSTRUCTION FASTENERS, INC.				
DEKFAST #14					DEKFAST #15 HI-STRENGTH					DEKFAST STAINLESS STEEL				
U.S.					U.S.					U.S.				
X					X					X				
X					X					X				
X					X					X				
HARDENED CARBON STEEL					HARDENED CARBON STEEL					STAINLESS STEEL (TRIMRITE)				
ORGANIC					ORGANIC					NONE				
SPIRAL THREAD					SPIRAL THREAD					SPIRAL THREAD				
SELF-DRILLING					SELF-DRILLING					SELF-DRILLING				
THREADED					THREADED					THREADED				
Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
Shank Dia-meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia-meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia-meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)
0.238	1 1/4	1/4	3/4	1	0.264	1 1/4	1/4	3/4	1	0.160	1 5/8	5/8	3/4	1
0.238	1 5/8	5/8	3/4	1	0.264	2	1	3/4	1	0.160	2 1/4	1 1/4	3/4	1
0.238	2 1/4	1 1/4	3/4	1	0.264	3	2	3/4	1	0.160	3	2	3/4	1
0.238	2 7/8	1 7/8	3/4	1	0.264	4	3	3/4	1	0.160	3 3/4	2 3/4	3/4	1
0.238	3 1/4	2 1/4	3/4	1	0.264	5	4	3/4	1	0.160	4	3	3/4	1
0.238	3 3/4	2 3/4	3/4	1	0.264	6	5	3/4	1	0.160	4 1/2	3 1/2	3/4	1
0.238	4 1/2	3 1/2	3/4	1	0.264	7	6	3/4	1	0.160	5	4	3/4	1
0.238	5	4	3/4	1	0.264	8	7	3/4	1	0.160	6	5	3/4	1
0.238	6	5	3/4	1	0.264	10	9	3/4	1	0.160	7	6	3/4	1
0.238	7	6	3/4	1	0.264	12	11	3/4	1	0.160	8	7	3/4	1
0.238	8	7	3/4	1	0.264	14	13	3/4	1	0.160	10	9	3/4	1
0.238	10	9	3/4	1	0.264	16	15	3/4	1	0.160	12	11	3/4	1
0.238	12	11	3/4	1	0.264	18	17	3/4	1					
					0.264	20	19	3/4	1					
					0.264	22	21	3/4	1					
					0.264	24	23	3/4	1					
					0.264	26	25	3/4	1					
#3 PHILLIPS FLAT TRUSS					#3 PHILLIPS TRUSS					#3 PHILLIPS TRUSS				
0.109					0.109					0.105				
0.438					0.438					0.440				
YES					YES					YES				
YES					YES					YES				
Column 1	Column 2	Column 3			Column 1	Column 2	Column 3			Column 1	Column 2	Column 3		
Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material		
HEXAGONAL	2 7/8	STAINLESS STEEL			HEXAGONAL	2 7/8	STAINLESS STEEL			ROUND	2	GALVALUME		
HEXAGONAL	2 7/8	GALVALUME			HEXAGONAL	2 7/8	GALVALUME			ROUND	3	GALVALUME		
HEXAGONAL	3	PLASTIC			ROUND	2	GALVALUME			ROUND	3	PLASTIC		
ROUND	2	GALVALUME												
ROUND	2	NYLON												
REQUIRED					REQUIRED					REQUIRED				
OPTIONAL					OPTIONAL					OPTIONAL				
671					780					451				
1,470					1,500					938				
YES					YES					YES				
FM, METRO-DADE COUNTY					FM, METRO-DADE COUNTY					FM, METRO-DADE COUNTY				
YES					YES					YES				
X					X					X				

Roof Fasteners: Wood Decks

1. COMPANY NAME	DURO LAST INC.					E.S. PRODUCTS INC				
2. PRODUCT NAME	DURO LAST SCREWS #14					HARDENED DO-ALL LOC-NAIL				
3. COUNTRY OF MANUFACTURE	U.S.					U.S.				
4. USED WITH:										
A. INSULATION ATTACHMENT	X					X				
B. BUILT-UP MEMBRANES										
C. SINGLE-PLY MEMBRANES	X									
5. MATERIAL TYPE	STEEL					HARDENED COLD ROLLED STEEL				
6. COATING TYPE	FLUOROCARBON					ZINC PLATED				
7. SHANK TYPE	SPIRAL THREAD					SPLIT, SERRATED				
8. POINT TYPE	SELF-DRILLING					2 SHARP POINTS				
9. METHOD OF ATTACHMENT	THREADED					SPREAD OF SERRATED SHANKS				
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)
	0.190	1 3/4	3/4	1	1	0.240	1 3/8	1/4	1/2	1
	0.190	2	1	1	1					
	0.190	3	2	1	1					
	0.190	4	3	1	1					
	0.190	5	4	1	1					
	0.190	6	5	1	1					
	0.190	7	6	1	1					
	0.190	8	7	1	1					
	0.190	9	8	1	1					
	0.190	10	9	1	1					
	0.190	11	10	1	1					
	0.190	12	11	1	1					
11. HEAD SHAPE	TRUSS					SQUARE WITH ROUNDED CORNERS				
12. HEAD DIMENSIONS (inches)										
THICKNESS	0.103					0.050				
DIAMETER	0.438					0.375				
13. PLATES										
A. REQUIRED (yes/no)	YES					YES				
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material							
	ROUND	2	PLASTIC							
	ROUND	2 1/2	PLASTIC							
15. INSTALLATION EQUIPMENT										
SCREW GUN (optional/required)	REQUIRED									
INSTALLATION TOOL WITH SCREW GUN (optional/required)										
SPECIAL TOOL NEEDED (optional/required)										
OTHER						HAMMER				
16. AVERAGE PULLOUT RESISTANCE (lbs.)										
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)										
3/4-INCH PLYWOOD	930					134				
2-INCH PINE PLANK	983					141				
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I WOOD ROOF (yes/no)	YES									
18. ACCEPTED BY THE FOLLOWING CODES	FM, ICBO, BOCA, SBCCI									
19. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
20. SEE APPENDIX IF CHECKED										

NA=not applicable

Roof Fasteners: Wood Decks

FIRESTONE BUILDING PRODUCTS					FIRESTONE BUILDING PRODUCTS					GAF MATERIALS CORP.				
FIRESTONE ALL PURPOSE					FIRESTONE HEAVY DUTY					GAFTITE #12-11 (C.STEEL)				
U.S.					U.S.					U.S.				
X					X					X				
X					X					X				
SAE 1022, HEAT TREATED					SAE 1022, HEAT TREATED					HARDENED CARBON STEEL				
ORGANIC					4 COAT FLUOROCARBON					CR-10 FLUOROCARBON				
SPIRAL THREADED					SPIRAL THREADED					THREADED				
SELF-DRILLING					SELF-DRILLING					PINCH, SELF-DRILLING; GIMLET, OR TAPEX				
THREADED					THREADED					THREADED				
Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)
0.235	1 1/4	1/4	1	1	0.264	1 1/4	1/4	1	1	0.160	1 5/8	5/8	1/2	1
0.235	1 5/8	5/8	1	1	0.264	2	1	1	1	0.160	2 1/4	1 1/4	1/2	1
0.235	2 1/4	1 1/4	1	1	0.264	3	2	1	1	0.160	2 7/8	1 7/8	1/2	1
0.235	2 7/8	1 7/8	1	1	0.264	4	3	1	1	0.160	3 1/4	2 1/4	1/2	1
0.235	3 1/4	2 1/4	1	1	0.264	5	4	1	1	0.160	3 3/4	2 3/4	1/2	1
0.235	3 3/4	1 3/4	1	1	0.264	6	5	1	1	0.160	4 1/2	3 1/2	1/2	1
0.235	4 1/2	3 1/2	1	1	0.264	7	6	1	1	0.160	5	4	1/2	1
0.235	5	4	1	1	0.264	8	7	1	1	0.160	6	5	1/2	1
0.235	6	5	1	1	0.264	10	9	1	1	0.160	7	6	1/2	1
0.235	7	6	1	1	0.264	12	11	1	1	0.160	8	7	1/2	1
0.235	8	7	1	1	0.264	14	13	1	1					
ROUND MUSHROOM #3 PHILLIPS					ROUND MUSHROOM #3 PHILLIPS					ROUND TRUSS, #3 PHILLIPS				
0.110					0.110					0.110				
0.437					0.437					0.435				
YES					YES					YES				
YES					YES					YES				
Column 1	Column 2	Column 3			Column 1	Column 2	Column 3			Column 1	Column 2	Column 3		
Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material		
HEX (INSULATION) ROUND (IN-SEAM)	2 7/8 2	GALVALUME GALVALUME			HEX (INSULATION) ROUND (IN-SEAM)	2 7/8 2	GALVALUME GALVALUME			ROUND ROUND ROUND ROUND ROUND	2 2 2 3 3	STEEL PLASTIC STAINLESS STEEL STEEL PLASTIC STAINLESS STEEL		
REQUIRED					REQUIRED					REQUIRED OPTIONAL				
										531 735				
YES					YES					YES				
FM, ICBO, UL, SBCCI					FM, ICBO, UL, SBCCI					FM, ICBO, UL, METRO.-DADE COUNTY				
YES					YES					YES				
										X				

Roof Fasteners: Wood Decks

1. COMPANY NAME	GAF MATERIALS CORP.					GAF MATERIALS CORP.				
2. PRODUCT NAME	GAFITE #12-11 (S.STEEL)					GAFITE #14-10 (C.STEEL)				
3. COUNTRY OF MANUFACTURE	U.S.					U.S.				
4. USED WITH:										
A. INSULATION ATTACHMENT	X					X				
B. BUILT-UP MEMBRANES	X					X				
C. SINGLE-PLY MEMBRANES	X					X				
5. MATERIAL TYPE	STAINLESS STEEL, SPECIAL 400-SERIES BLEND					HARDENED CARBON STEEL				
6. COATING TYPE	CR-10 FLUOROCARBON					CR-10 FLUOROCARBON				
7. SHANK TYPE	THREADED					THREADED				
8. POINT TYPE	PINCH, SELF-DRILLING					PINCH, SELF-DRILLING OR TAPEX				
9. METHOD OF ATTACHMENT	THREADED					THREADED				
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)
	0.160	1 5/8	1 3/8	1/2	1	0.190	1 1/4	1/4	1/2	1
	0.160	2 1/4	1 3/4	1/2	1	0.190	1 3/4	3/4	1/2	1
	0.160	2 7/8	2 3/8	1/2	1	0.190	2	1	1/2	1
	0.160	3 1/4	2 3/4	1/2	1	0.190	3	2	1/2	1
	0.160	3 3/4	3 1/4	1/2	1	0.190	4	3	1/2	1
	0.160	4 1/2	4	1/2	1	0.190	5	4	1/2	1
	0.160	5	4 1/2	1/2	1	0.190	6	5	1/2	1
	0.160	6	5 1/2	1/2	1	0.190	7	6	1/2	1
	0.160	7	6 1/2	1/2	1	0.190	8	7	1/2	1
	0.160	8	7 1/2	1/2	1	0.190	10	9	1/2	1
						0.190	12	11	1/2	1
						0.190	14	13	1/2	1
						0.190	16	15	1/2	1
						0.201	17	16	1/2	1
						0.201	18	17	1/2	1
						0.201	20	19	1/2	1
						0.201	21	20	1/2	1
						0.201	22	21	1/2	1
						0.201	24	23	1/2	1
11. HEAD SHAPE	ROUND TRUSS, #3 PHILLIPS					ROUND TRUSS, #3 PHILLIPS				
12. HEAD DIMENSIONS (inches)										
THICKNESS	0.110					0.110				
DIAMETER	0.435					0.435				
13. PLATES										
A. REQUIRED (yes/no)	YES					YES				
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 4 Dimensions (inches)
	ROUND	2	STAINLESS STEEL	ROUND	2	STAINLESS STEEL	ROUND	2	STAINLESS STEEL	STAINLESS STEEL
	ROUND	3	STAINLESS STEEL	ROUND	3	STAINLESS STEEL	ROUND	3	STAINLESS STEEL	STAINLESS STEEL
	ROUND	2	STEEL	ROUND	2	STEEL	ROUND	2	STEEL	STEEL
	ROUND	2	PLASTIC	ROUND	2	PLASTIC	ROUND	2	PLASTIC	PLASTIC
	ROUND	3	STEEL	ROUND	3	STEEL	ROUND	3	STEEL	STEEL
	ROUND	3	PLASTIC	ROUND	3	PLASTIC	ROUND	3	PLASTIC	PLASTIC
15. INSTALLATION EQUIPMENT										
SCREW GUN (optional/required)	REQUIRED					REQUIRED				
INSTALLATION TOOL WITH SCREW GUN (optional/required)	OPTIONAL					OPTIONAL				
SPECIAL TOOL NEEDED (optional/required)										
OTHER										
16. AVERAGE PULLOUT RESISTANCE (lbs.)										
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)										
3/4-INCH PLYWOOD	531					590				
2-INCH PINE PLANK	735					820				
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I WOOD ROOF (yes/no)	YES					YES				
18. ACCEPTED BY THE FOLLOWING CODES	FM, ICBO, UL, METRO-DADE COUNTY					FM, ICBO, UL, METRO-DADE COUNTY				
19. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
20. SEE APPENDIX IF CHECKED	X					X				

NA=not applicable

Roof Fasteners: Wood Decks

GAF MATERIALS CORP.					HILTI INC.					HILTI INC.				
GAFTITE #14-10 (S.STEEL)					HILTI FASTENERS #12					HILTI FASTENERS #12 S.S.				
U.S.					U.S.					U.S.				
X					X					X				
X					X					X				
X					X					X				
STAINLESS STEEL, SPECIAL 400-SERIES BLEND					CARBON STEEL C-1022					STAINLESS STEEL (TRIMRITE ALLOY #S-42010)				
CR-10 FLUOROCARBON					TRU-KOTE PC-3 (FLUOROPOLYMER PAINT)					NA				
THREADED					THREADED					THREADED				
PINCH, SELF-DRILLING					DOUBLE FLUTED SELF-DRILLING					DOUBLE FLUTED SELF-DRILLING				
THREADED					THREADED					THREADED				
Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)
0.201	1 1/4	1/4	1/2	1	0.160	1 5/8	5/8	1	1	0.160	1 5/8	5/8	1	1
0.201	1 3/4	3/4	1/2	1	0.160	2 1/4	1 1/4	1	1	0.160	2 1/4	1 1/4	1	1
0.201	2	1	1/2	1	0.160	2 7/8	1 7/8	1	1	0.160	2 7/8	1 7/8	1	1
0.201	3	2	1/2	1	0.160	3 1/4	2 1/4	1	1	0.160	3 3/4	2 3/4	1	1
0.201	4	3	1/2	1	0.160	3 3/4	2 3/4	1	1	0.160	4 1/2	3 1/2	1	1
0.201	5	4	1/2	1	0.160	4 1/2	3 1/2	1	1	0.160	5	4	1	1
0.201	6	5	1/2	1	0.160	5	4	1	1	0.160	6	5	1	1
0.201	7	6	1/2	1	0.160	6	5	1	1	0.160	7	6	1	1
0.201	8	7	1/2	1	0.160	7	6	1	1	0.160	8	7	1	1
0.201	9	9	1/2	1	0.160	8	7	1	1	0.160	10	9	1	1
0.201	10	11	1/2	1						0.160	12	11	1	1
0.201	12	13	1/2	1										
0.201	14	15	1/2	1										
0.201	16	16	1/2	1										
0.201	18	17	1/2	1										
0.201	20	19	1/2	1										
0.201	21	20	1/2	1										
0.201	22	21	1/2	1										
0.201	24	23	1/2	1										
ROUND TRUSS, #3 PHILLIPS					#10 TRUSS, PHILLIPS #3					#10 TRUSS, PHILLIPS #3				
0.108					0.105					0.105				
0.435					0.440					0.440				
YES					YES					YES				
YES					YES					YES				
Column 1	Column 2	Column 3	Column 1	Column 2	Column 3	Column 1	Column 2	Column 3	Column 1	Column 2	Column 3	Column 1	Column 2	Column 3
Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material
ROUND	2	STAINLESS STEEL	ROUND	2	GALVALUME	ROUND	2	GALVALUME	ROUND	2	GALVALUME	ROUND	2	GALVALUME
ROUND	3	STAINLESS STEEL	ROUND	3	GALVALUME	ROUND	3	GALVALUME	ROUND	3	GALVALUME	ROUND	3	GALVALUME
ROUND	2	STEEL	ROUND	3	PLASTIC	ROUND	3	PLASTIC	ROUND	3	PLASTIC	ROUND	3	PLASTIC
ROUND	2	PLASTIC												
ROUND	3	STEEL												
ROUND	3	PLASTIC												
REQUIRED					REQUIRED					REQUIRED				
OPTIONAL					OPTIONAL					OPTIONAL				
590					566					566				
820					1,248					1,248				
YES					YES					YES				
FM, ICBO, UL, METRO-DADE COUNTY					FM, METRO-DADE COUNTY					FM, METRO-DADE COUNTY				
YES					YES					YES				
X														

Roof Fasteners: Wood Decks

1. COMPANY NAME	HILTI INC.					HILTI INC.				
2. PRODUCT NAME	HILTI FASTENERS #14					HILTI FASTENERS #10				
3. COUNTRY OF MANUFACTURE	U.S.					U.S.				
4. USED WITH:										
A. INSULATION ATTACHMENT	X					X				
B. BUILT-UP MEMBRANES	X					X				
C. SINGLE-PLY MEMBRANES	X					X				
5. MATERIAL TYPE	CARBON STEEL C-1022					CARBON STEEL C-1022				
6. COATING TYPE	TRU-KOTE PC-3 (FLUOROPOLYMER PAINT)					TRU-KOTE PC-3 (FLUOROPOLYMER PAINT)				
7. SHANK TYPE	THREADED					THREADED				
8. POINT TYPE	DOUBLE FLUTED SELF-DRILLING					GIMLET				
9. METHOD OF ATTACHMENT	THREADED					THREADED				
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)
	0.180	1 1/2	1/2	1	1	0.150	1 5/8	5/8	1	1
	0.180	2	1	1	1	0.150	2 1/4	1 1/4	1	1
	0.180	3	2	1	1	0.150	2 7/8	1 7/8	1	1
	0.180	4	3	1	1	0.150	3 3/4	2 3/4	1	1
	0.180	5	4	1	1	0.150	4 1/2	3 1/2	1	1
	0.180	6	5	1	1	0.150	5	4	1	1
	0.180	7	6	1	1	0.150	6	5	1	1
	0.180	8	7	1	1					
	0.180	10	9	1	1					
	0.180	12	11	1	1					
11. HEAD SHAPE	TRUSS #3 PHILLIPS					TRUSS #3 PHILLIPS				
12. HEAD DIMENSIONS (inches)										
THICKNESS	0.105					0.110				
DIAMETER	0.440					0.390				
13. PLATES										
A. REQUIRED (yes/no)	YES					YES				
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2	GALVALUME	ROUND	2	GALVALUME	ROUND	2	GALVALUME	
	ROUND	3	GALVALUME	ROUND	3	GALVALUME	ROUND	3	GALVALUME	
	ROUND	3	PLASTIC	ROUND	3	PLASTIC	ROUND	3	PLASTIC	
15. INSTALLATION EQUIPMENT										
SCREW GUN (optional/required)	REQUIRED					REQUIRED				
INSTALLATION TOOL WITH SCREW GUN (optional/required)	OPTIONAL					OPTIONAL				
SPECIAL TOOL NEEDED (optional/required)										
OTHER										
16. AVERAGE PULLOUT RESISTANCE (lbs.)										
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)										
3/4-INCH PLYWOOD	495					636				
2-INCH PINE PLANK	517					938				
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I WOOD ROOF (yes/no)	YES					YES				
18. ACCEPTED BY THE FOLLOWING CODES	FM, METRO-DADE COUNTY					FM, METRO-DADE COUNTY				
19. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
20. SEE APPENDIX IF CHECKED										

NA=not applicable

Roof Fasteners: Wood Decks

ITW BUILDEX					ITW BUILDEX					ITW BUILDEX				
HEXTRA					ROOFGRIP					ACCUTRAC FASTENER				
U.S.					U.S.					U.S.				
X					X					X				
X					X									
X					X									
HARDENED CARBON STEEL					HARDENED CARBON STEEL OR STAINLESS (#410)					HARDENED CARBON STEEL				
CLIMASEAL OR SPEX					SPEX					SPEX OR CLIMASEAL				
MODIFIED BUTTRESS THREAD					MODIFIED BUTTRESS THREAD					MODIFIED BUTTRESS THREAD				
SELF-DRILLING					SELF-DRILLING					SELF-DRILLING				
THREADED					THREADED					THREADED				
Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)
0.215	1 5/8	5/8	1	1	0.215	1 5/8	5/8	1	1	0.215	1 5/8	5/8	1	1
0.215	2 1/4	1 1/4	1	1	0.215	2 1/4	1 1/4	1	1	0.215	2 1/4	1 1/4	1	1
0.215	2 7/8	1 7/8	1	1	0.215	2 7/8	1 7/8	1	1	0.215	2 7/8	1 7/8	1	1
0.215	3 1/4	2 1/4	1	1	0.215	3 1/4	2 1/4	1	1	0.215	3 1/4	2 1/4	1	1
0.215	3 3/4	2 3/4	1	1	0.215	3 3/4	2 3/4	1	1	0.215	3 3/4	2 3/4	1	1
0.215	4 3/8	3 3/8	1	1	0.215	4 3/8	3 3/8	1	1	0.215	4 3/8	3 3/8	1	1
0.215	5	4	1	1	0.215	5	4	1	1	0.215	5	4	1	1
0.215	6	5	1	1	0.215	6	5	1	1	0.215	6	5	1	1
0.215	7	6	1	1	0.215	7	6	1	1					
0.215	8	7	1	1	0.215	8	7	1	1					
1/4-IN. HEX HEAD					#3 PHILLIPS PAN HEAD					1/4 IN. HEX HEAD				
0.180					0.118					0.180				
0.392					0.448					0.392				
YES					YES					YES				
YES					YES					YES				
Column 1	Column 2	Column 3			Column 1	Column 2	Column 3			Column 1	Column 2	Column 3		
Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material		
SQUARE GEARLOCK ROUND	3 X 3 3 2	GALVALUME POLYOLEFIN GALVALUME			SQUARE GEARLOCK ROUND	3 X 3 3 2	GALVALUME POLYOLEFIN GALVALUME			SQUARE	3 X 3	GALVALUME		
REQUIRED					REQUIRED									
ACCUDRIVE XL PLUS (OPTIONAL)					ACCUDRIVE XL PLUS (OPTIONAL)					ACCUTRAC OR ACCUTRAC II TOOL (REQUIRED)				
544					544					544				
1,292					1,292					1292				
YES					YES					YES				
FM, METRO-DADE COUNTY					FM, METRO-DADE COUNTY					FM, METRO-DADE COUNTY				
YES					YES					YES				
										X				

Roof Fasteners: Wood Decks

1. COMPANY NAME	ITW BUILDDEX					ITW BUILDDEX				
2. PRODUCT NAME	14-10 ROOFGRIP					#14 ROOFGRIP				
3. COUNTRY OF MANUFACTURE	U.S.					U.S.				
4. USED WITH:										
A. INSULATION ATTACHMENT	X					X				
B. BUILT-UP MEMBRANES	X					X				
C. SINGLE-PLY MEMBRANES	X					X				
5. MATERIAL TYPE	HARDENED CARBON STEEL					HARDENED CARBON STEEL				
6. COATING TYPE	SPEX OR CLIMASEAL					CLIMASEAL				
7. SHANK TYPE	STANDARD THREAD					MODIFIED BUTTRESS THREAD				
8. POINT TYPE	SELF-DRILLING					SELF-DRILLING				
9. METHOD OF ATTACHMENT	THREADED					THREADED				
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)
	0.245	1 1/4	3/4	1/2	1/2	0.245	2	1 1/2	1/2	1/2
	0.245	1 3/4	1 1/4	1/2	1/2	0.245	3	2 1/2	1/2	1/2
	0.245	2	1 1/2	1/2	1/2	0.245	4	3 1/2	1/2	1/2
	0.245	3	2 1/2	1/2	1/2	0.245	5	4 1/2	1/2	1/2
	0.245	4	3 1/2	1/2	1/2	0.245	6	5 1/2	1/2	1/2
	0.245	5	4 1/2	1/2	1/2	0.245	7	6 1/2	1/2	1/2
	0.245	6	5 1/2	1/2	1/2	0.245	8	7 1/2	1/2	1/2
	0.245	7	6 1/2	1/2	1/2	0.245	9	8 1/2	1/2	1/2
	0.245	8	7 1/2	1/2	1/2	0.245	10	9 1/2	1/2	1/2
	0.245	10	9 1/2	1/2	1/2	0.245	11	10 1/2	1/2	1/2
	0.245	12	11 1/2	1/2	1/2	0.245	12	11 1/2	1/2	1/2
	0.245	14	13 1/2	1/2	1/2	0.245	14	13 1/2	1/2	1/2
11. HEAD SHAPE	#3 PHILLIPS PAN HEAD					#3 PHILLIPS PAN HEAD				
12. HEAD DIMENSIONS (inches)										
THICKNESS	0.118					0.118				
DIAMETER	0.448					0.448				
13. PLATES										
A. REQUIRED (yes/no)	YES					YES				
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	SQUARE	3 X 3	GALVALUME	ROUND	2	GALVALUME	ROUND	3	GALVALUME	
	GEARLOCK	3	POLYOLEFIN	SQUARE	3	PLASTIC				
	ROUND	2	GALVALUME	ROUND	3					
15. INSTALLATION EQUIPMENT	REQUIRED					REQUIRED				
SCREW GUN (optional/required)	REQUIRED					REQUIRED				
INSTALLATION TOOL WITH SCREW GUN (optional/required)	ACCUDRIVE XL PLUS (OPTIONAL)					ACCUDRIVE XL PLUS (OPTIONAL)				
SPECIAL TOOL NEEDED (optional/required)										
OTHER										
16. AVERAGE PULLOUT RESISTANCE (lbs.)										
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)										
3/4-INCH PLYWOOD	637					637				
2-INCH PINE PLANK	1,112					1,112				
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I WOOD ROOF										
(yes/no)	YES					YES				
18. ACCEPTED BY THE FOLLOWING CODES	FM, METRO-DADE COUNTY					FM, METRO-DADE COUNTY				
19. WARRANTY AVAILABLE FROM MANUFACTURER										
(yes/no)	YES					YES				
20. SEE APPENDIX IF CHECKED										

NA=not applicable

Roof Fasteners: Wood Decks

ITW BUILDDEX					ITW BUILDDEX					NATIONAL NAIL CORPORATION				
#15 ROOFGRIP					HEXTRA PLUS					ROUND-TOP				
U.S.					U.S.					U.S.				
X					X					X				
X										X				
X										X				
HARDENED CARBON STEEL					CARBON STEEL					CARBON STEEL				
CLIMASEAL					CLIMASEAL					NA				
MODIFIED BUTTRESS THREAD					MODIFIED BUTTRESS THREAD					SPIRAL THREAD				
SELF-DRILLING					SELF-DRILLING					DIAMOND				
THREADED					THREADED					THREADED FRICTION				
Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)
0.260	1 1/4	3/4	1/2	1/2	0.215	2 1/4	1 3/4	1/2	1/2	0.110	3/4	1/8	1	1
0.260	2	1 1/2	1/2	1/2	0.215	2 7/8	2 3/8	1/2	1/2	0.110	7/8	1/8	1	1
0.260	3	2 1/2	1/2	1/2	0.215	3 1/4	2 3/4	1/2	1/2	0.110	1 1/4	1/2	1	1
0.260	4	3 1/2	1/2	1/2	0.215	3 3/4	3 1/4	1/2	1/2	0.110	1 1/2	3/4	1	1
0.260	5	4 1/2	1/2	1/2	0.215	4 3/8	3 7/8	1/2	1/2	0.110	1 3/4	1	1	1
0.260	6	5 1/2	1/2	1/2	0.215	5	4 1/2	1/2	1/2	0.110	2	1 1/4	1	1
0.260	7	6 1/2	1/2	1/2	0.215	6	5 1/2	1/2	1/2	0.110	2 1/2	1 3/4	1	1
0.260	8	7 1/2	1/2	1/2	0.215	7	6 1/2	1/2	1/2	0.138	3	2 1/4	1	1
0.260	10	9 1/2	1/2	1/2	0.215	8	7 1/2	1/2	1/2	0.138	3 1/2	2 3/4	1	1
0.260	12	11 1/2	1/2	1/2						0.177	4	3 1/4	1	1
0.260	14	13 1/2	1/2	1/2						0.177	5	3 3/4	1	1
										0.177	6	4 1/4	1	1
										0.192	7	4 3/4	1	1
										0.192	8	5 1/4	1	1
#3 PHILLIPS PAN HEAD										ROUND				
0.118					0.18					0.045				
0.448					0.392					1.00				
YES					YES					NO				
YES					YES									
Column 1	Column 2	Column 3	Column 1	Column 2	Column 3	Column 1	Column 2	Column 3	Column 1	Column 2	Column 3			
Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material			
ROUND	2	GALVALUME	ROUND	3	GALVALUME	NA			NA					
SQUARE	3	GALVALUME												
REQUIRED					REQUIRED									
ACCU DRIVE XL PLUS (OPTIONAL)					ACCU FAST STAND-UP TOOL (OPTIONAL)					HAMMER (REQUIRED)				
606					544									
1,410					1,292									
YES					YES					NO				
FM					FM					BOCA, ICBO				
YES					YES					YES				
										X				

Roof Fasteners: Wood Decks

1. COMPANY NAME	NATIONAL NAIL CORPORATION					NATIONAL NAIL CORPORATION				
2. PRODUCT NAME	R/S ROUND-TOP					ROUND-TOP MASONRY				
3. COUNTRY OF MANUFACTURE	U.S.					U.S.				
4. USED WITH:										
A. INSULATION ATTACHMENT	X					X				
B. BUILT-UP MEMBRANES	X					X				
C. SINGLE-PLY MEMBRANES	X					X				
5. MATERIAL TYPE	CARBON STEEL					HIGH CARBON STEEL				
6. COATING TYPE	NA					NA				
7. SHANK TYPE	ANULAR THREADED					FLUTED				
8. POINT TYPE	DIAMOND					DIAMOND				
9. METHOD OF ATTACHMENT	THREADED FRICTION					THREADED FRICTION				
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)
	0.990	3/4	1/8	1	1	0.164	5/8	1/8	1/2	1
	0.990	7/8	1/8	1	1	0.164	3/4	1/8	1/2	1
	0.990	1	1/8	1	1	0.164	7/8	1/8	1/2	1
	0.990	1 1/4	1/2	1	1	0.164	1	1/2	1/2	1
	0.990	1 1/2	3/4	1	1	0.164	1 1/4	3/4	1/2	1
	0.990	1 3/4	1	1	1	0.164	1 1/2	1	1/2	1
	0.990	2	1 1/4	1	1	0.164	1 3/4	1 1/4	1/2	1
	0.110	2 1/2	1 3/4	1	1	0.164	2	1 1/2	1/2	1
	0.128	3	2 1/4	1	1	0.164	2 1/2	2	1/2	1
						0.164	3	2 1/2	1/2	1
						0.164	3 1/2	3	1/2	1
						0.164	4	3 1/2	1/2	1
11. HEAD SHAPE	ROUND					ROUND				
12. HEAD DIMENSIONS (inches)										
THICKNESS	0.045					0.045				
DIAMETER	1.00					1.00				
13. PLATES										
A. REQUIRED (yes/no)	NO					NO				
B. AVAILABLE FROM MANUFACTURER (yes/no)										
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	
15. INSTALLATION EQUIPMENT										
SCREW GUN (optional/required)										
INSTALLATION TOOL WITH SCREW GUN (optional/required)										
SPECIAL TOOL NEEDED (optional/required)										
OTHER										
16. AVERAGE PULLOUT RESISTANCE (lbs.)	HAMMER (REQUIRED)					HAMMER (REQUIRED)				
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)										
3/4-INCH PLYWOOD										
2-INCH PINE PLANK										
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I WOOD ROOF										
(yes/no)	NO					NO				
18. ACCEPTED BY THE FOLLOWING CODES	BOCA, ICBO					BOCA, ICBO				
19. WARRANTY AVAILABLE FROM MANUFACTURER										
(yes/no)	YES					YES				
20. SEE APPENDIX IF CHECKED	X									

NA=not applicable

Roof Fasteners: Wood Decks

NATIONAL NAIL CORPORATION					NATIONAL NAIL CORPORATION					OLYMPIC MANUFACTURING GROUP				
PLASTI-TOP					PLASTI-CAP					OLYMPIC FASTENER #12-11 (C.STEEL)				
U.S.					U.S.					U.S.				
X					X					X				
X					X					X				
X					X					X				
CARBON STEEL					CARBON STEEL					HARDENED CARBON STEEL				
NA					NA					CR-10 FLUOROCARBON				
ANNULAR THREAD					SPIRAL THREAD					THREADED				
DIAMOND					DIAMOND					PINCH, SELF-DRILLING, GIMLET, OR TAPEX				
THREADED FRICTION					THREADED FRICTION					THREADED				
Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)
0.990	3/4	1/8	1	1	0.110	3/4	1/8	1	1	0.160	1 5/8	5/8	1/2	1
0.990	7/8	1/8	1	1	0.110	7/8	1/8	1	1	0.160	2 1/4	1 1/4	1/2	1
0.990	1	1/8	1	1	0.110	1	1/8	1	1	0.160	2 7/8	1 7/8	1/2	1
0.990	1 1/4	1/2	1	1	0.110	1 1/4	1/2	1	1	0.160	3 1/4	2 1/4	1/2	1
0.990	1 1/2	3/4	1	1	0.110	1 1/2	3/4	1	1	0.160	3 3/4	2 3/4	1/2	1
0.990	1 3/4	1	1	1	0.110	1 3/4	1	1	1	0.160	4 1/2	3 1/2	1/2	1
0.990	2	1 1/4	1	1	0.110	2	1 1/4	1	1	0.160	5	4	1/2	1
0.990	2 1/2	1 3/4	1	1	0.110	2 1/2	1 3/4	1	1	0.160	6	5	1/2	1
					0.110	3	2 1/4	1	1	0.160	7	6	1/2	1
										0.160	8	7	1/2	1
ROUND					OCTAGON					ROUND TRUSS, #3 PHILLIPS, OR HEX HEAD				
0.060					0.060					0.110				
1.00					1.00					0.435				
NO					NO					YES				
YES					YES					YES				
Column 1	Column 2	Column 3			Column 1	Column 2	Column 3			Column 1	Column 2	Column 3		
Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material		
NA	NA	NA			NA	NA	NA			ROUND	2	STEEL		
										ROUND	2	PLASTIC		
										ROUND	2	STAINLESS STEEL		
										ROUND	3	STEEL		
										ROUND	3	PLASTIC		
										ROUND	3	STAINLESS STEEL		
										ROUND	3 1/2	STEEL		
REQUIRED					REQUIRED					REQUIRED				
OPTIONAL					OPTIONAL					OPTIONAL				
HAMMER (REQUIRED)					HAMMER (REQUIRED)					HAMMER (REQUIRED)				
										531				
										735				
NO					NO					YES				
BOCA, ICBO					BOCA, ICBO					FM, UL, ICBO, METRO-DADE COUNTY				
YES					YES					YES				
X					X					X				

Roof Fasteners: Wood Decks

1. COMPANY NAME	OLYMPIC MANUFACTURING GROUP					OLYMPIC MANUFACTURING GROUP				
2. PRODUCT NAME	OLYMPIC FASTENER #12-11 (S.STEEL)					OLYMPIC FASTENER #14-10 (C.STEEL)				
3. COUNTRY OF MANUFACTURE	U.S.					U.S.				
4. USED WITH:										
A. INSULATION ATTACHMENT	X					X				
B. BUILT-UP MEMBRANES	X					X				
C. SINGLE-PLY MEMBRANES	X					X				
5. MATERIAL TYPE	STAINLESS STEEL, SPECIAL 400-SERIES BLEND					HARDENED CARBON STEEL				
6. COATING TYPE	CR-10 FLUOROCARBON					CR-10 FLUOROCARBON				
7. SHANK TYPE	THREADED					THREADED				
8. POINT TYPE	PINCH, SELF-DRILLING					PINCH, SELF-DRILLING OR TAPEX				
9. METHOD OF ATTACHMENT	THREADED					THREADED				
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)
	0.160	1 5/8	5/8	1/2	1	0.190	1 1/4	3/4	1/2	1
	0.160	2 1/4	1 1/4	1/2	1	0.190	1 3/4	1 1/4	1/2	1
	0.160	2 7/8	2 3/8	1/2	1	0.190	2	1 1/2	1/2	1
	0.160	3 1/4	2 1/4	1/2	1	0.190	3	2 1/2	1/2	1
	0.160	3 3/4	2 3/4	1/2	1	0.190	4	3 1/2	1/2	1
	0.160	4 1/2	3 1/2	1/2	1	0.190	5	4 1/2	1/2	1
	0.160	5	4	1/2	1	0.190	6	5 1/2	1/2	1
	0.160	6	5	1/2	1	0.190	7	6 1/2	1/2	1
	0.160	7	6	1/2	1	0.190	8	7 1/2	1/2	1
	0.160	8	7	1/2	1	0.190	9	8 1/2	1/2	1
						0.190	10	9 1/2	1/2	1
						0.190	11	10 1/2	1/2	1
						0.190	12	11 1/2	1/2	1
						0.190	14	13 1/2	1/2	1
						0.190	16	15 1/2	1/2	1
						0.201	17	16 1/2	1/2	1
						0.201	18	17 1/2	1/2	1
						0.201	20	19 1/2	1/2	1
						0.201	21	20 1/2	1/2	1
						0.201	22	21 1/2	1/2	1
						0.201	24	23 1/2	1/2	1
11. HEAD SHAPE	ROUND TRUSS, #3 PHILLIPS					ROUND TRUSS, #3 PHILLIPS				
12. HEAD DIMENSIONS (inches)										
THICKNESS	0.110					0.110				
DIAMETER	0.435					0.435				
13. PLATES										
A. REQUIRED (yes/no)	YES					YES				
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2	STAINLESS STEEL	ROUND	2	STAINLESS STEEL	ROUND	2	STAINLESS STEEL	
	ROUND	3	STAINLESS STEEL	ROUND	3	STAINLESS STEEL	ROUND	3	STAINLESS STEEL	
	ROUND	2	STEEL	ROUND	2	STEEL	ROUND	2	STEEL	
	ROUND	2	PLASTIC	ROUND	2	PLASTIC	ROUND	2	PLASTIC	
	ROUND	3	STEEL	ROUND	3	STEEL	ROUND	3	STEEL	
	ROUND	3	PLASTIC	ROUND	3	PLASTIC	ROUND	3	PLASTIC	
	ROUND	3 1/2	STEEL	ROUND	3 1/2	STEEL	ROUND	3 1/2	STEEL	
15. INSTALLATION EQUIPMENT										
SCREW GUN (optional/required)	REQUIRED					REQUIRED				
INSTALLATION TOOL WITH SCREW GUN (optional/required)	OPTIONAL					OPTIONAL				
SPECIAL TOOL NEEDED (optional/required)										
OTHER										
16. AVERAGE PULLOUT RESISTANCE (lbs.)										
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)										
3/4-INCH PLYWOOD	531					590				
2-INCH PINE PLANK	735					820				
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I WOOD ROOF (yes/no)	YES					YES				
18. ACCEPTED BY THE FOLLOWING CODES	FM, UL, ICBO, METRO-DADE COUNTY					FM, UL, ICBO, METRO-DADE COUNTY				
19. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
20. SEE APPENDIX IF CHECKED	X					X				

NA=not applicable

Roof Fasteners: Wood Decks

OLYMPIC MANUFACTURING GROUP					POWERS RAWL, INC.					POWERS RAWL, INC.				
OLYMPIC FASTENER #14-10 (S.STEEL)					#14-13 DECK SCREW					WOODIE				
U.S.					U.S.					U.S.				
X					X					X				
X					X					X				
X					X					X				
STAINLESS STEEL, SPECIAL 400-SERIES BLEND					HARDENED STEEL					ZINC				
CR-10 FLUOROCARBON					PERMASEAL									
THREADED					SPIRAL THREAD					TAPERED/THREADED				
PINCH, SELF-DRILLING					SELF-DRILLING					SELF-DRILLING				
THREADED					THREADED					THREADED				
Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)
0.190	1 1/4	3/4	1/2	1	0.238	1 5/8	1 1/8	1	1	0.289	1 3/4	1/4	1 1/2	
0.190	1 3/4	1 1/4	1/2	1	0.238	2 1/4	1 3/4	1	1	0.289	2 1/2	3/4	1 3/4	
0.190	2	1 1/2	1/2	1	0.238	2 7/8	2 3/8	1	1	0.289	3 1/4	1 1/2	1 3/4	
0.190	3	2 1/2	1/2	1	0.238	3 3/4	3 1/4	1	1	0.289	4	2 1/4	1 3/4	
0.190	4	3 1/2	1/2	1	0.238	4 1/2	4	1	1	0.289	4 3/4	3	1 3/4	
0.190	5	4 1/2	1/2	1	0.238	5	4 1/2	1	1					
0.190	6	5 1/2	1/2	1	0.238	6	5 1/2	1	1					
0.190	7	6 1/2	1/2	1	0.238	7	6 1/2	1	1					
0.190	8	7 1/2	1/2	1	0.238	8	7 1/2	1	1					
0.190	9	8 1/2	1/2	1										
0.190	10	9 1/2	1/2	1										
0.190	11	10 1/2	1/2	1										
0.190	12	11 1/2	1/2	1										
0.190	14	13 1/2	1/2	1										
0.190	16	15 1/2	1/2	1										
0.201	17	16 1/2	1/2	1										
0.201	18	17 1/2	1/2	1										
0.201	20	19 1/2	1/2	1										
0.201	21	20 1/2	1/2	1										
0.201	22	21 1/2	1/2	1										
0.201	24	23 1/2	1/2	1										
ROUND TRUSS, #3 PHILLIPS					ROUND TRUSS, #3 PHILLIPS					FLAT, SQUARE RECESS				
0.110					0.109					0.100				
0.435					0.438					0.597				
YES					YES					YES				
YES					YES					YES				
Column 1	Column 2	Column 3	Column 1	Column 2	Column 3	Column 1	Column 2	Column 3	Column 1	Column 2	Column 3	Column 1	Column 2	Column 3
Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material
ROUND	2	STAINLESS STEEL	ROUND BARBED	2	GALVALUME	ROUND BARBED	2	STAINLESS STEEL	ROUND BARBED	2	GALVALUME	ROUND BARBED	2	GALVALUME
ROUND	3	STAINLESS STEEL	ROUND BARBED	2	STAINLESS STEEL	ROUND	3	GALVALUME	ROUND	3	GALVALUME	ROUND	3	GALVALUME
ROUND	2	STEEL	ROUND	3	STAINLESS STEEL	ROUND	3	STAINLESS STEEL						
ROUND	2	PLASTIC	RECTANGULAR	1 1/2 X 2	GALVALUME									
ROUND	3	STEEL												
ROUND	3	PLASTIC												
ROUND	3 1/2	STEEL												
REQUIRED					REQUIRED					REQUIRED				
OPTIONAL					OPTIONAL					OPTIONAL				
										SQUARE DRIVER (INCLUDED)				
590					760					590				
820					1,200									
YES					YES					YES				
FM, UL, ICBO, METRO-DADE COUNTY					FM, METRO.-DADE COUNTY					FM, METRO.-DADE COUNTY				
YES					YES					YES				
X										X				

Roof Fasteners: Wood Decks

1. COMPANY NAME	POWERS RAWL, INC.					SCHULLER INTERNATIONAL INC.				
2. PRODUCT NAME	#12 DECK SCREW					ULTRAFAST/HEX HEAD				
3. COUNTRY OF MANUFACTURE	U.S.					U.S.				
4. USED WITH:										
A. INSULATION ATTACHMENT	X					X				
B. BUILT-UP MEMBRANES	X									
C. SINGLE-PLY MEMBRANES	X									
5. MATERIAL TYPE	HARDENED STEEL					HARDENED CARBON STEEL				
6. COATING TYPE	PERMASEAL					CLIMASEAL				
7. SHANK TYPE	SPIRAL THREAD					MODIFIED BUTTRESS THREAD				
8. POINT TYPE	SELF-DRILLING					SELF-DRILLING X-POINT				
9. METHOD OF ATTACHMENT	THREADED					THREADED				
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)
	0.222	1 5/8	5/8	3/4	1	0.215	1 5/8	5/8	1	1
	0.222	2 1/4	1 1/4	3/4	1	0.215	2 1/4	1 1/4	1	1
	0.222	2 7/8	1 7/8	3/4	1	0.215	2 7/8	1 7/8	1	1
	0.222	3 1/4	2 1/4	3/4	1	0.215	3 1/4	2 1/4	1	1
	0.222	3 3/4	2 3/4	3/4	1	0.215	3 3/4	2 3/4	1	1
	0.222	4 1/2	3 1/2	3/4	1	0.215	4 3/8	3 3/8	1	1
	0.222	5	4	3/4	1	0.215	5	4	1	1
	0.222	6	5	3/4	1	0.215	6	5	1	1
	0.222	7	6	3/4	1	0.215	7	6	1	1
	0.222	8	7	3/4	1	0.215	8	7	1	1
	11. HEAD SHAPE	ROUND TRUSS #3 PHILLIPS & 1/4 HEX WASHER HEAD					1/4-IN. HEX HEAD			
12. HEAD DIMENSIONS (inches)										
THICKNESS	0.109, 0.130					0.180				
DIAMETER	0.438, 0.335					0.392				
13. PLATES										
A. REQUIRED (yes/no)	YES					YES				
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1	Column 2	Column 3			Column 1	Column 2	Column 3		
	Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material		
	ROUND BARBED	2	GALVALUME			SQUARE ROUND SCHULLER LOCKING PLATE	3 X 3 3	CARBON STEEL WITH GALVALUME POLYOLEFIN		
	ROUND BARBED	2	STAINLESS STEEL							
	ROUND	3	GALVALUME							
ROUND	3	STAINLESS STEEL								
RECTANGULAR	1 1/2 X 2	GALVALUME								
15. INSTALLATION EQUIPMENT										
SCREW GUN (optional/required)	REQUIRED					REQUIRED				
INSTALLATION TOOL WITH SCREW GUN (optional/required)	OPTIONAL					OPTIONAL (ACCUDRIVE)				
SPECIAL TOOL NEEDED (optional/required)										
OTHER										
16. AVERAGE PULLOUT RESISTANCE (lbs.)										
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)										
3/4-INCH PLYWOOD	710					544				
2-INCH PINE PLANK	1,265					1,292				
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I WOOD ROOF										
(yes/no)	YES					YES				
18. ACCEPTED BY THE FOLLOWING CODES	FM, METRO-DADE COUNTY					FM, UL, METRO-DADE COUNTY				
19. WARRANTY AVAILABLE FROM MANUFACTURER										
(yes/no)	YES					YES				
20. SEE APPENDIX IF CHECKED	X									

NA=not applicable

Roof Fasteners: Wood Decks

SCHULLER INTERNATIONAL INC.					SCHULLER INTERNATIONAL INC.					SENCO PRODUCTS, INC.				
ULTRA GRIP PHILLIPS HEAD #12					ULTRAGRIP/PHILLIPS HEAD #14					SENCO BASE TAPE SYSTEM				
U.S.					U.S.					U.S.				
X					X					X				
HARDENED CARBON STEEL					HARDENED CARBON STEEL					CLASS 1 GALVANIZED STEEL				
SPEX					SPEX					SENCOTE PLASTIC POLYMER				
MODIFIED BUTTRESS THREAD					STANDARD THREAD					STAPLE-16 GA.				
SELF-DRILLING X-POINT					SELF-DRILLING					DIVERGENT				
THREADED					THREADED					MECHANICALLY ATTACHED				
Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Required Deck Penetration, Wood (inches)
0.215	1 5/8	5/8	1	1	0.245	1 1/4	3/4	1/2	1/2	0.62 X	7/8			
0.215	2 1/4	1 1/4	1	1	0.245	1 3/4	1 1/4	1/2	1/2	0.055				
0.215	2 7/8	1 7/8	1	1	0.245	2	1 1/2	1/2	1/2					
0.215	3 1/4	2 1/4	1	1	0.245	3	2 1/2	1/2	1/2					
0.215	3 3/4	2 3/4	1	1	0.245	4	3 1/2	1/2	1/2					
0.215	4 3/8	3 3/8	1	1	0.245	5	4 1/2	1/2	1/2					
0.215	5	4	1	1	0.245	6	5 1/2	1/2	1/2					
0.215	6	5	1	1	0.245	7	6 1/2	1/2	1/2					
0.215	7	6	1	1	0.245	8	7 1/2	1/2	1/2					
0.215	8	7	1	1	0.245	10	9 1/2	1/2	1/2					
					0.245	12	11 1/2	1/2	1/2					
					0.245	14	13 1/2	1/2	1/2					
#3 PHILLIPS					#3 PHILLIPS PAN HEAD					STAPLE				
0.118					0.118									
0.448					0.448									
YES					YES					NO				
YES					YES									
Column 1	Column 2	Column 3	Column 1	Column 2	Column 3	Column 1	Column 2	Column 3	Column 1	Column 2	Column 3	Column 1	Column 2	Column 3
Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material	Shape	Dimensions (inches)	Material
SQUARE	3 X 3	CARBON STEEL WITH GALVALUME POLYOLEFIN	SQUARE	3 X 3	CARBON STEEL WITH GALVALUME POLYOLEFIN	SQUARE	3 X 3	CARBON STEEL WITH GALVALUME POLYOLEFIN						
ROUND SCHULLER LOCKING PLATE	3		ROUND	3										
REQUIRED					REQUIRED					REQUIRED				
OPTIONAL (ACCUDRIVE)														
544					637									
1,292					1,112									
YES					YES					NO				
FM, UL, METRO-DADE COUNTY					FM					ICBO				
NO										NO				

Roof Fasteners: Wood Decks

1. COMPANY NAME	SFS STADLER INC.					SFS STADLER INC.					
2. PRODUCT NAME	INSUL-FIXX #12-11					INSUL-FIXX #14-10					
3. COUNTRY OF MANUFACTURE	U.S.					U.S.					
4. USED WITH:											
A. INSULATION ATTACHMENT	X					X					
B. BUILT-UP MEMBRANES	X					X					
C. SINGLE-PLY MEMBRANES	X					X					
5. MATERIAL TYPE	HARDENED STEEL					HARDENED STEEL					
6. COATING TYPE	TUFF-TITE II					TUFF-TITE II					
7. SHANK TYPE	SPIRAL THREAD					SPIRAL THREAD					
8. POINT TYPE	DRILL POINT					DRILL POINT					
9. METHOD OF ATTACHMENT	THREADED					THREADED					
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5	
	Shank Dia-meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia-meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	
	0.172	1 5/8	1 1/8	1/2	1	0.190	1 1/4	3/4	1/2	1	
	0.172	2 1/4	1 3/4	1/2	1	0.190	2	1 1/2	1/2	1	
	0.172	2 7/8	2 3/8	1/2	1	0.190	3	2 1/2	1/2	1	
	0.172	3 1/4	2 3/4	1/2	1	0.190	4	3 1/2	1/2	1	
	0.172	3 3/4	3 1/4	1/2	1	0.190	5	4 1/2	1/2	1	
	0.172	4 1/2	4	1/2	1	0.190	6	5 1/2	1/2	1	
	0.172	5	4 1/2	1/2	1	0.190	7	6 1/2	1/2	1	
	0.172	6	5 1/2	1/2	1	0.190	8	7 1/2	1/2	1	
	0.172	7	6 1/2	1/2	1	0.190	10	9 1/2	1/2	1	
	0.172	8	7 1/2	1/2	1	0.190	12	11 1/2	1/2	1	
						0.190	14	13 1/2	1/2	1	
						0.190	16	15 1/2	1/2	1	
						0.190	18	17 1/2	1/2	1	
						0.190	20	19 1/2	1/2	1	
						0.190	22	21 1/2	1/2	1	
						0.190	24	23 1/2	1/2	1	
						0.190	26	25 1/2	1/2	1	
	11. HEAD SHAPE	ROUND WITH #3 PHILLIPS TRUSS					ROUND WITH #3 PHILLIPS TRUSS				
	12. HEAD DIMENSIONS (inches)										
	THICKNESS	0.103					0.103				
DIAMETER	0.425					0.425					
13. PLATES											
A. REQUIRED (yes/no)	YES					YES					
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES					
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1	Column 2	Column 3			Column 1	Column 2	Column 3			
	Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material			
	ROUND	3	POLYETHYLENE			ROUND	3	POLYETHYLENE			
	ROUND	3	GALVALUME			ROUND	3	GALVALUME			

NA=not applicable

Roof Fasteners: Wood Decks

SFS STADLER INC.					SFS STADLER INC.					SFS STADLER INC.				
SYSTEM ES I #14-10					SYSTEM ES L #14-10					SYSTEM ES I #12-11				
U.S.					U.S.					U.S.				
X					X					X				
X					X					X				
X					X					X				
HARDENED STEEL					HARDENED STEEL					HARDENED STEEL				
TUFF TITE II					TUFF TITE II					TUFF-TITE II				
SPIRAL THREAD					SPIRAL THREAD					SPIRAL THREAD				
DRILL POINT					DRILL POINT					DRILL POINT				
THREADED					THREADED					THREADED				
Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)
0.190	2	1	1/2	1	0.190	2	1	1/2	1	0.172	2 1/4	1 3/4	1/2	1
0.190	3	2	1/2	1	0.190	3	2	1/2	1	0.172	2 7/8	2 3/8	1/2	1
0.190	4	3	1/2	1	0.190	4	3	1/2	1	0.172	3 1/4	2 3/4	1/2	1
0.190	5	4	1/2	1	0.190	5	4	1/2	1	0.172	3 3/4	3 1/4	1/2	1
0.190	6	5	1/2	1	0.190	6	5	1/2	1	0.172	4 1/2	4	1/2	1
0.190	7	6	1/2	1	0.190	7	6	1/2	1	0.172	5	4 1/2	1/2	1
0.190	8	7	1/2	1	0.190	8	7	1/2	1	0.172	6	5 1/2	1/2	1
0.190	10	9	1/2	1	0.190	10	9	1/2	1	0.172	7	6 1/2	1/2	1
0.190	12	11	1/2	1	0.190	12	11	1/2	1	0.172	8	7 1/2	1/2	1
ROUND WITH #3 PHILLIPS TRUSS					ROUND WITH #3 PHILLIPS TRUSS					ROUND WITH #3 PHILLIPS TRUSS				
0.103					0.103					0.103				
0.425					0.425					0.425				
YES					YES					YES				
YES					YES					YES				
Column 1	Column 2	Column 3			Column 1	Column 2	Column 3			Column 1	Column 2	Column 3		
Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material		
ROUND	3	POLYETHYLENE			ROUND	2	NYLON WITH GLASS			ROUND	3	POLYETHYLENE		
REQUIRED					REQUIRED					REQUIRED				
OPTIONAL					OPTIONAL					OPTIONAL				
OPTIONAL														
691					691					630				
819					819					756				
YES					YES					YES				
FM, METRO.-DADE COUNTY					FM, METRO.-DADE COUNTY					FM, METRO.-DADE COUNTY				
YES					YES					YES				
X					X					X				

Roof Fasteners: Wood Decks

1. COMPANY NAME	SFS STADLER INC.					SFS STADLER INC.				
2. PRODUCT NAME	ISOFAST IG-M					ISOFAST IW-T-M				
3. COUNTRY OF MANUFACTURE	U.S.					U.S.				
4. USED WITH:										
A. INSULATION ATTACHMENT	X					X				
B. BUILT-UP MEMBRANES	X					X				
C. SINGLE-PLY MEMBRANES	X					X				
5. MATERIAL TYPE	CARBON STEEL					CARBON STEEL				
6. COATING TYPE	TUFF-TITE II					TUFF-TITE II				
7. SHANK TYPE	THREADED					THREADED				
8. POINT TYPE	GIMLET					GIMLET				
9. METHOD OF ATTACHMENT	THREADED					THREADED				
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)
	0.236	2 1/4	1	1 1/4	1 1/4	0.196	1 5/8	1 3/4	1	1
	0.236	2 3/4	1 1/2	1 1/4	1 1/4	0.196	2 3/4	3/8	1	1
	0.236	3 1/8	1 7/8	1 1/4	1 1/4					
	0.236	3 7/8	2 5/8	1 1/4	1 1/4					
	0.236	4 3/4	3 1/2	1 1/4	1 1/4					
	0.236	5 1/2	4 1/4	1 1/4	1 1/4					
	0.236	6 1/4	5	1 1/4	1 1/4					
11. HEAD SHAPE	5/16 HEX HEAD					COUNTERSUNK POSI-DRIVE #2				
12. HEAD DIMENSIONS (inches)										
THICKNESS	0.156					0.156				
DIAMETER	0.406					0.406				
13. PLATES										
A. REQUIRED (yes/no)	YES					YES				
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	OVAL	3 1/4 X 1 5/8	GALVALUME	OVAL	3 1/4 X 1 5/8	GALVALUME				
	SQUARE	2 3/4 X 2 3/4	GALVALUME	SQUARE	2 3/4 X 2 3/4	GALVALUME				
	DOMED CONVEX	3 1/4 X 1 5/8	GALVALUME							
15. INSTALLATION EQUIPMENT										
SCREW GUN (optional/required)	REQUIRED					REQUIRED				
INSTALLATION TOOL WITH SCREW GUN (optional/required)	REQUIRED					REQUIRED				
SPECIAL TOOL NEEDED (optional/required)	REQUIRED					REQUIRED				
OTHER										
16. AVERAGE PULLOUT RESISTANCE (lbs.)										
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)										
3/4-INCH PLYWOOD	545					445				
2-INCH PINE PLANK	1,100					880				
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I WOOD ROOF (yes/no)	YES					YES				
18. ACCEPTED BY THE FOLLOWING CODES	FM, METRO.-DADE COUNTY					FM, METRO.-DADE COUNTY				
19. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES					YES				
20. SEE APPENDIX IF CHECKED	X					X				

NA=not applicable

Roof Fasteners: Wood Decks

SUBCON PRODUCTS CORP. THE PEEL RIVET, OR TPR U.S.					TRU-FAST CORPORATION DP ULTRA STAINLESS STEEL U.S.					TRU-FAST CORPORATION TP U.S.				
X X X					X X X					X X X				
HIGH MAGNESIUM ALUMINUM ALLOY NA					STAINLESS STEEL (TRIMRITE ALLOY #S-42010) NA					CARBON STEEL C-1022 TRU-KOTE PC-3 (FLUOROCARBON PAINT)				
SMOOTH, THREADLESS BODY					THREADED					THREADED				
SELF-PENETRATING					DOUBLE FLUTE SELF-DRILLING					GIMLET				
MECHANICAL					THREADED					THREADED				
Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5	Column 1	Column 2	Column 3	Column 4	Column 5
Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)	Shank Dia- meters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration, Plywood (inches)	Required Deck Penetration, Wood (inches)
0.250	1 1/2	3/4	3/4	3/4	0.160	1 5/8	5/8	1	1	0.150	1 5/8	5/8	1	1
0.250	2	1 1/4	3/4	3/4	0.160	2 1/4	1 1/4	1	1	0.150	2 1/4	1 1/4	1	1
0.250	3	2 1/4	3/4	3/4	0.160	3	2	1	1	0.150	2 7/8	1 7/8	1	1
0.250	4	3 1/4	3/4	3/4	0.160	3 3/4	2 3/4	1	1	0.150	3 3/4	2 3/4	1	1
0.250	5	4 1/4	3/4	3/4	0.160	4 1/2	3 1/4	1	1	0.150	4 1/2	3 1/4	1	1
0.250	6	5 1/4	3/4	3/4	0.160	5	4	1	1	0.150	5	4	1	1
0.250	7	6 1/4	3/4	3/4	0.160	6	5	1	1	0.150	6	5	1	1
0.250	8	7 1/4	3/4	3/4	0.160	7	6	1	1					
0.250	9	8 1/4	3/4	3/4	0.160	8	7	1	1					
0.250	10	9 1/4	3/4	3/4	0.160	10	9	1	1					
0.250			3/4	3/4	0.160	12	11	1	1					
SLIGHTLY CONVEX RIVET HEAD					#10 TRUSS PHILLIPS #3					#10 TRUSS PHILLIPS #3				
0.0625					0.105					0.110				
0.485					0.440					0.390				
YES					YES									
YES					YES									
Column 1	Column 2	Column 3			Column 1	Column 2	Column 3			Column 1	Column 2	Column 3		
Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material			Shape	Dimensions (inches)	Material		
ROUND BARBED ROUND	2 3	GALVALUME GALVALUME			ROUND ROUND ROUND	2 3 3	GALVALUME GALVALUME PLASTIC			ROUND ROUND ROUND	2 3 3	GALVALUME GALVALUME PLASTIC		
REQUIRED REQUIRED (COMPRESSOR)					REQUIRED OPTIONAL					REQUIRED OPTIONAL				
572					451 938					636 938				
YES					YES					YES				
FM					FM, METRO.-DADE COUNTY					FM, METRO.-DADE COUNTY				
YES					YES					YES				
X														

Roof Fasteners: Wood Decks

1. COMPANY NAME	TRU-FAST CORPORATION					TRU-FAST CORPORATION				
2. PRODUCT NAME	DP					HD (HEAVY DUTY) #14				
3. COUNTRY OF MANUFACTURE	U.S.					U.S.				
4. USED WITH:										
A. INSULATION ATTACHMENT	X					X				
B. BUILT-UP MEMBRANES	X					X				
C. SINGLE-PLY MEMBRANES	X					X				
5. MATERIAL TYPE	CARBON STEEL C-1022					CARBON STEEL C-1022				
6. COATING TYPE	TRU-KOTE PC-3 (FLUOROCARBON PAINT)					TRU-KOTE PC-3 (FLUOROCARBON PAINT)				
7. SHANK TYPE	THREADED					THREADED				
8. POINT TYPE	DOUBLE FLUTE SELF-DRILLING					DOUBLE FLUTE SELF-DRILLING				
9. METHOD OF ATTACHMENT	THREADED					THREADS				
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)	Column 1 Shank Dia- meters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration, Plywood (inches)	Column 5 Required Deck Penetration, Wood (inches)
	0.160	1 5/8	5/8	1	1	0.180	1 1/2	1/2	1	1
	0.160	2 1/4	1 1/4	1	1	0.180	2	1	1	1
	0.160	2 7/8	1 7/8	1	1	0.180	3	2	1	1
	0.160	3 1/4	2 1/4	1	1	0.180	4	3	1	1
	0.160	3 3/4	2 3/4	1	1	0.180	5	4	1	1
	0.160	4 1/2	3 1/4	1	1	0.180	6	5	1	1
	0.160	5	4	1	1	0.180	7	6	1	1
	0.160	6	5	1	1	0.180	8	7	1	1
	0.160	7	6	1	1	0.180	10	9	1	1
	0.160	8	7	1	1	0.180	12	11	1	1
11. HEAD SHAPE	#10 TRUSS PHILLIPS #3					TRUSS #3 PHILLIPS				
12. HEAD DIMENSIONS (inches)										
THICKNESS	0.105					0.105				
DIAMETER	0.440					0.440				
13. PLATES										
A. REQUIRED (yes/no)						YES				
B. AVAILABLE FROM MANUFACTURER (yes/no)						YES				
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2	GALVALUME	ROUND	2	GALVALUME	ROUND	2	GALVALUME	
	ROUND	3	GALVALUME	ROUND	3	GALVALUME	ROUND	3	GALVALUME	
	ROUND	3	PLASTIC	ROUND	3	PLASTIC	ROUND	3	PLASTIC	
15. INSTALLATION EQUIPMENT										
SCREW GUN (optional/required)	REQUIRED					REQUIRED				
INSTALLATION TOOL WITH SCREW GUN (optional/required)	OPTIONAL					OPTIONAL				
SPECIAL TOOL NEEDED (optional/required)										
OTHER										
16. AVERAGE PULLOUT RESISTANCE (lbs.)										
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)										
3/4-INCH PLYWOOD	566					495				
2-INCH PINE PLANK	1,248					517				
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I WOOD ROOF										
(yes/no)	YES					YES				
18. ACCEPTED BY THE FOLLOWING CODES	FM, METRO.-DADE COUNTY					FM, METRO.-DADE COUNTY				
19. WARRANTY AVAILABLE FROM MANUFACTURER										
(yes/no)	YES					YES				
20. SEE APPENDIX IF CHECKED										

NA=not applicable

Roof Fasteners: Concrete Decks

1. COMPANY NAME	CARLISLE SYNTEC INCORPORATED				CARLISLE SYNTEC INCORPORATED			
2. PRODUCT NAME	HP FASTENER				HP CONCRETE SPIKE			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
5. MATERIAL TYPE	CARBON STEEL				CARBON STEEL			
6. COATING TYPE	EPOXY ELECTRODEPOSITION				EPOXY ELECTRODEPOSITION			
7. SHANK TYPE	SINGLE LEAD, BUTTRESS THREAD							
8. POINT TYPE	NA				NA			
9. METHOD OF ATTACHMENT	THREADED				SHANK COMPRESSION			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.180	1 3/4	1/2	1 1/4	0.240	1 1/2	1/4	1 1/4
	0.180	2 1/4	1	1 1/4	0.240	2	3/4	1 1/4
	0.180	2 3/4	1 1/2	1 1/4	0.240	2 1/2	1 1/4	1 1/4
	0.180	3 1/4	2	1 1/4	0.240	3	1 3/4	1 1/4
	0.180	3 3/4	2 1/2	1 1/4	0.240	3 1/2	2 1/4	1 1/4
	0.180	4 1/4	3	1 1/4	0.240	4	2 3/4	1 1/4
	0.180	5	3 3/4	1 1/4	0.240	4 1/2	3 1/4	1 1/4
	0.180	6	4 3/4	1 1/4	0.240	5	3 3/4	1 1/4
					0.240	5 1/2	4 1/4	1 1/4
					0.240	6	4 3/4	1 1/4
					0.240	6 1/2	5 1/4	1 1/4
					0.240	7	5 3/4	1 1/4
					0.240	7 1/2	6 1/4	1 1/4
					0.240	8	6 3/4	1 1/4
					0.240	8 1/2	7 1/4	1 1/4
					0.240	9	7 3/4	1 1/4
					0.240	9 1/2	8 1/4	1 1/4
					0.240	10	8 3/4	1 1/4
					0.240	10 1/2	9 1/4	1 1/4
					0.240	11	9 3/4	1 1/4
					0.240	12	10 3/4	1 1/4
					0.240	13	11 3/4	1 1/4
					0.240	14	12 3/4	1 1/4
					0.240	15	13 3/4	1 1/4
					0.240	16	14 3/4	1 1/4
11. HEAD SHAPE	WAFER				TRUSS			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.150				0.110			
DIAMETER	0.430				0.440			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	SQUARE W/ ROUNDED CORNERS	2 7/8	GALVALUME		SQUARE W/ ROUNDED CORNERS	2 7/8	GALVALUME	
	ROUND ROUND	2 3	GALVALUME PLASTIC		ROUND	2	GALVALUME	
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED							
INSTALLATION TOOL WITH SCREW GUN (optional/required)					SDS SPIKE HAMMER (OPTIONAL)			
SPECIAL TOOL NEEDED (optional/required)					HAMMER (REQUIRED)			
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS, 3,000 PSI AGED 28 DAYS)								
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF CLASS I CONCRETE ROOF CONSTRUCTION (yes/no)	YES				YES			
18. ACCEPTED BY THE FOLLOWING CODES	FM				FM			
19. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
20. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Concrete Decks

THE CELOTEX CORPORATION				THE CELOTEX CORPORATION				CONSTRUCTION FASTENERS, INC.			
ANCHORBOND #14				ANCHORBOND #15 HEAVY DUTY				DEKFAST #14			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
HARDENED CARBON STEEL				HARDENED CARBON STEEL				HARDENED CARBON STEEL			
ORGANIC FLUOROPOLYMERS				ORGANIC FLUOROPOLYMERS				ORGANIC			
SPIRAL THREAD				SPIRAL THREAD				SPIRAL THREAD			
SELF-DRILLING				SELF-DRILLING				SELF-DRILLING			
THREADED				THREADED				THREADED			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
0.238	1 1/4	1/4	1	0.238	1 1/4	1/4	1	0.238	1 1/4	1/4	1
0.238	1 5/8	5/8	1	0.238	2	1	1	0.238	1 5/8	5/8	1
0.238	1 7/8	1 1/4	1	0.238	3	2	1	0.238	2 1/4	1 1/4	1
0.238	2 7/8	1 7/8	1	0.238	4	3	1	0.238	2 7/8	1 7/8	1
0.238	3 1/4	2 1/4	1	0.238	5	4	1	0.238	3 1/4	2 1/4	1
0.238	3 3/4	2 3/4	1	0.238	6	5	1	0.238	3 3/4	2 3/4	1
0.238	4 1/2	3 1/2	1	0.238	7	6	1	0.238	4 1/2	3 1/2	1
0.238	5	4	1	0.238	8	7	1	0.238	5	4	1
0.238	6	5	1	0.238	10	9	1	0.238	6	5	1
0.238	7	6	1	0.238	12	11	1	0.238	7	6	1
0.238	8	7	1	0.238	14	13	1	0.238	8	7	1
				0.238	16	15	1	0.238	10	9	1
								0.238	12	11	1
#3 PHILLIPS FLAT TRUSS				#3 PHILLIPS FLAT TRUSS				#3 PHILLIPS FLAT TRUSS			
0.109				0.109				0.109			
0.438				0.438				0.438			
YES				YES				YES			
YES				YES				YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
HEXAGONAL	2 7/8	STAINLESS STEEL		HEXAGONAL	2 7/8	STAINLESS STEEL		HEXAGONAL	2 7/8	STAINLESS STEEL	
HEXAGONAL	2 7/8	GALVALUME		HEXAGONAL	2 7/8	GALVALUME		HEXAGONAL	2 7/8	GALVALUME	
HEXAGONAL	3	PLASTIC		ROUND	2	GALVALUME		HEXAGONAL	3	PLASTIC	
ROUND	2	GALVALUME						ROUND	2	GALVALUME	
								ROUND	2	NYLON	
REQUIRED				REQUIRED				REQUIRED			
HAMMER DRILL (REQUIRED)				HAMMER DRILL (REQUIRED)				HAMMER DRILL (REQUIRED)			
959				935				959			
YES				YES				YES			
FM				FM				FM, METRO.-DADE COUNTY			
YES				YES				YES			

Roof Fasteners: Concrete Decks

1. COMPANY NAME	CONSTRUCTION FASTENERS, INC.				DURO LAST INC.			
2. PRODUCT NAME	DEKFAST #15 HI-STRENGTH				DURO LAST SCREWS #14			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
5. MATERIAL TYPE	HARDENED CARBON STEEL				STEEL			
6. COATING TYPE	ORGANIC				FLUOROCARBON			
7. SHANK TYPE	SPIRAL THREAD				SPIRAL THREAD			
8. POINT TYPE	SELF-DRILLING				SELF-DRILLING			
9. METHOD OF ATTACHMENT	THREADED				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.264	1 1/4	1/4	1	0.190	1 3/4	3/4	1
	0.264	2	1	1	0.190	2	1	1
	0.264	3	2	1	0.190	3	2	1
	0.264	4	3	1	0.190	4	3	1
	0.264	5	4	1	0.190	5	4	1
	0.264	6	5	1	0.190	6	5	1
	0.264	7	6	1	0.190	7	6	1
	0.264	8	7	1	0.190	8	7	1
	0.264	10	9	1	0.190	9	8	1
	0.264	12	11	1	0.190	10	9	1
	0.264	14	13	1	0.190	11	10	1
	0.264	16	15	1	0.190	12	11	1
	0.264	18	17	1				
	0.264	20	19	1				
	0.264	22	21	1				
	0.264	24	23	1				
	0.264	26	25	1				
11. HEAD SHAPE	#3 PHILLIPS TRUSS				TRUSS			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.109				0.103			
DIAMETER	0.438				0.438			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	HEXAGONAL	2 7/8	STAINLESS STEEL		ROUND	2	PLASTIC	
	HEXAGONAL	2 7/8	GALVALUME		ROUND	2 1/2	PLASTIC	
	ROUND	2	GALVALUME					
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED				REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)								
SPECIAL TOOL NEEDED (optional/required)	HAMMER DRILL (REQUIRED)							
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS, 3,000 PSI AGED 28 DAYS)	935				1,285			
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF CLASS I CONCRETE ROOF CONSTRUCTION (yes/no)	YES				YES			
18. ACCEPTED BY THE FOLLOWING CODES	FM, METRO.-DADE COUNTY				FM, ICBO, BOCA, SBCCI			
19. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
20. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Concrete Decks

FIRESTONE BUILDING PRODUCTS				FIRESTONE BUILDING PRODUCTS				GAF MATERIALS CORP.			
FIRESTONE HEAVY DUTY				FIRESTONE CONCRETE DRIVE				GAFTITE CD-10			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
SAE 1022, HEAT TREATED FLUOROCARBON POLYMER				1038-1040 HARDENED STEEL ORGANIC				HARDENED CARBON STEEL CR-10 FLUOROCARBON			
SPIRAL THREADED				NAIL-TYPE				DIAMOND STARTER POINT			
SELF-DRILLING								SHANK EXPANSION			
THREADED											
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
0.264	1 1/4	1/4	1	0.250	1 1/2	1/4	1 1/4	0.215	2	1	1
0.264	2	1	1	0.250	2	3/4	1 1/4	0.215	2 1/2	1 1/2	1
0.264	3	2	1	0.250	2 1/2	1 1/4	1 1/4	0.215	3	2	1
0.264	4	3	1	0.250	3	1 3/4	1 1/4	0.215	3 1/2	2 1/2	1
0.264	5	4	1	0.250	3 1/2	2 1/4	1 1/4	0.215	4	3	1
0.264	6	5	1	0.250	4	2 3/4	1 1/4	0.215	4 1/2	3 1/2	1
0.264	7	6	1	0.250	4 1/2	3 1/4	1 1/4	0.215	5	4	1
0.264	8	7	1	0.250	5	3 3/4	1 1/4	0.215	5 1/2	4 1/2	1
0.264	10	9	1	0.250	5 1/2	4 1/4	1 1/4	0.215	6	5	1
0.264	12	11	1	0.250	6	4 3/4	1 1/4	0.215	6 1/2	5 1/2	1
0.264	14	13	1	0.250	6 1/2	5 1/4	1 1/4	0.215	7	6	1
				0.250	7	5 3/4	1 1/4	0.215	7 1/2	6 1/2	1
				0.250	7 1/2	6 1/4	1 1/4	0.215	8	7	1
				0.250	8	6 3/4	1 1/4	0.215	8 1/2	7 1/2	1
								0.215	9	8	1
								0.215	9 1/2	8 1/2	1
								0.215	10	9	1
								0.215	10 1/2	9 1/2	1
								0.215	11	10	1
								0.215	11 1/2	10 1/2	1
								0.215	12	11	1
ROUND MUSHROOM #3 PHILLIPS				NAIL-TYPE				ROUND			
0.110				0.110				0.105			
0.437				0.430				0.435			
YES				YES				YES			
YES				YES				YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
HEX (INSULATION) ROUND (IN-SEAM)	2 7/8	GALVALUME		HEX (INSULATION) ROUND (IN-SEAM)	2 7/8	GALVALUME		ROUND	2	STEEL	
	2	GALVALUME			2	GALVALUME		ROUND	2	PLASTIC	
								ROUND	2	STAINLESS STEEL	
								ROUND	3	STEEL	
								ROUND	3	PLASTIC	
								ROUND	3	STAINLESS STEEL	
REQUIRED				REQUIRED				HAMMER DRILL			
REQUIRED				HAMMER DRILL							
700				1,000				1,164			
YES				YES				YES			
FM, ICBO, UL, SBCCI				FM, ICBO, UL, SBCCI				FM, UL, ICBO, METRO.-DADE COUNTY			
YES				YES				YES			

Roof Fasteners: Concrete Decks

1. COMPANY NAME	GAF MATERIALS CORP.				GAF MATERIALS CORP.			
2. PRODUCT NAME	FLUTED CONCRETE NAIL				GAFTITE #14-10 (C. STEEL)			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
5. MATERIAL TYPE	HARDENED CARBON STEEL				HARDENED CARBON STEEL			
6. COATING TYPE	CR-10 FLUOROCARBON				CR-10 FLUOROCARBON			
7. SHANK TYPE	SPIRAL FLUTED				THREADED			
8. POINT TYPE	DIAMOND				PINCH, SELF-DRILLING			
9. METHOD OF ATTACHMENT	FRICTION				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.215	1 1/8	1/8	1	0.190	1 1/4	1/4	1
	0.215	1 1/2	1/2	1	0.190	1 3/4	3/4	1
	0.215	2	1	1	0.190	2	1	1
	0.215	2 1/2	1 1/2	1	0.190	3	2	1
	0.215	3	2	1	0.190	4	3	1
	0.215	3 1/2	2 1/2	1	0.190	5	4	1
	0.215	4	3	1	0.190	6	5	1
	0.215	4 1/2	3 1/2	1	0.190	7	6	1
	0.215	5	4	1	0.190	8	7	1
	0.215	5 1/2	4 1/2	1	0.190	9	8	1
	0.215	6	5	1	0.190	10	9	1
	0.215	6 1/2	5 1/2	1	0.190	11	10	1
	0.215	7	6	1	0.190	12	11	1
	0.215	7 1/2	6 1/2	1	0.190	14	13	1
	0.215	8	7	1	0.190	16	15	1
					0.201	17	16	1
					0.201	18	17	1
					0.201	20	19	1
					0.201	21	20	1
					0.201	22	21	1
					0.201	24	23	1
11. HEAD SHAPE	ROUND				ROUND TRUSS, #3 PHILLIPS			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.125				0.110			
DIAMETER	0.410				0.435			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2	STEEL		ROUND	2	STEEL	
	ROUND	2	PLASTIC		ROUND	2	PLASTIC	
	ROUND	2	STAINLESS STEEL		ROUND	2	STAINLESS STEEL	
	ROUND	3	STEEL		ROUND	3	STEEL	
	ROUND	3	PLASTIC		ROUND	3	PLASTIC	
	ROUND	3	STAINLESS STEEL		ROUND	3	STAINLESS STEEL	
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)					REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)					OPTIONAL			
SPECIAL TOOL NEEDED (optional/required)	HAMMER DRILL				HAMMER DRILL (REQUIRED)			
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS, 3,000 PSI AGED 28 DAYS)	600				800			
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF CLASS I CONCRETE ROOF CONSTRUCTION (yes/no)	YES				YES			
18. ACCEPTED BY THE FOLLOWING CODES	FM, UL, ICBO, METRO.-DADE COUNTY				FM, UL, ICBO, METRO.-DADE COUNTY			
19. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
20. SEE APPENDIX IF CHECKED	X				X			

NA=not applicable

Roof Fasteners: Concrete Decks

HILTI INC. HILTI FASTENERS #12 U.S.				HILTI INC. HILTI FASTENERS #12 S.S. U.S.				HILTI INC. HILTI FASTENERS #14 U.S.			
X				X				X			
X				X				X			
X				X				X			
CARBON STEEL C-1022				STAINLESS STEEL (TRIMRITE ALLOY #S42010)				CARBON STEEL C-1022			
TRU-KOTE PC-3 (FLOUROCARBON PAINT)								TRU-KOTE PC-3 (FLOUROCARBON PAINT)			
THREADED				THREADED				THREADED			
DOUBLE FLUTESELF-DRILLING				SELF-DRILLING				DOUBLE FLUTESELF-DRILLING			
THREADED				THREADED				THREADED			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
0.160	1 5/8	1 1/8	1/2	0.160	1 5/8	1 1/8	1	0.180	1 1/2	1	1/2
0.160	2 1/4	1 3/4	1/2	0.160	2 1/4	1 3/4	1	0.180	2	1 1/2	1/2
0.160	2 7/8	2 3/8	1/2	0.160	2 7/8	2 3/8	1	0.180	3	2 1/2	1/2
0.160	3 1/4	2 3/4	1/2	0.160	3 3/4	3 1/2	1	0.180	4	3 1/2	1/2
0.160	3 3/4	3 1/2	1/2	0.160	4 1/2	4	1	0.180	5	4 1/2	1/2
0.160	4 1/2	4	1/2	0.160	5	4 1/2	1	0.180	6	5 1/2	1/2
0.160	5	4 1/2	1/2	0.160	6	5 1/2	1	0.180	7	6 1/2	1/2
0.160	6	5 1/2	1/2	0.160	7	6 1/2	1	0.180	8	7 1/2	1/2
0.160	7	6 1/2	1/2	0.160	8	7 1/2	1	0.180	10	9 1/2	1/2
0.160	8	7 1/2	1/2	0.160	10	9 1/2	1	0.180	12	11 1/2	1/2
0.160	10	9 1/2	1/2	0.160	12	11 1/2	1				
0.160	12	11 1/2	1/2								
TRUSS #3 PHILLIPS, 1/4 HEX WASHER				#10 TRUSS, PHILLIPS #3				TRUSS #3 PHILLIPS			
0.105				0.105				0.105			
0.440				0.440				0.440			
YES				YES YES							
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
ROUND	2	G90 GALVANIZED		ROUND	2	G90 GALVANIZED		ROUND	2	G90 GALVANIZED	
ROUND	3	G90 GALVANIZED		ROUND	3	G90 GALVANIZED		ROUND	3	G90 GALVANIZED	
ROUND	3	CO-POLYMER PLASTIC		ROUND	3	CO-POLYMER PLASTIC		ROUND	3	CO-POLYMER PLASTIC	
ROUND	2	GALFAN		ROUND	2	GALFAN		ROUND	2	GALFAN	
ROUND	3	GALFAN		ROUND	3	GALFAN		ROUND	3	GALFAN	
REQUIRED				REQUIRED				REQUIRED			
CARBIDE DRILL BIT (REQUIRED)				CARBIDE DRILL BIT (REQUIRED)				CARBIDE DRILL BIT (REQUIRED)			
1,285				1,285				799			
YES				YES				YES			
FM, BOCA, ICBO, METRO.-DADE COUNTY				FM, BOCA, ICBO, METRO.-DADE COUNTY				FM, BOCA, ICBO, METRO.-DADE COUNTY			
YES				YES							

Roof Fasteners: Concrete Decks

1. COMPANY NAME	HILTI INC.				ITW BUILDDEX			
2. PRODUCT NAME	HILTI FASTENERS #10				14-10 ROOFGrip			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
5. MATERIAL TYPE	CARBON STEEL C-1022				HARDENED CARBON STEEL			
6. COATING TYPE	TRU-KOTE PC-3 (FLOUOROCARBON PAINT)				SPEX OR CLIMASEAL			
7. SHANK TYPE	THREADED				STANDARD THREAD			
8. POINT TYPE	GIMLET				SELF-DRILLING			
9. METHOD OF ATTACHMENT	THREADED				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.150	1 5/8	1 1/8	1/2	0.245	1 1/4	3/4	1/2
	0.150	2 1/4	1 3/4	1/2	0.245	1 3/4	1 1/4	1/2
	0.150	2 7/8	2 3/8	1/2	0.245	2	1 1/2	1/2
	0.150	3 3/4	3 1/2	1/2	0.245	3	2 1/2	1/2
	0.150	4 1/2	4	1/2	0.245	4	3 1/2	1/2
	0.150	5	4 1/2	1/2	0.245	5	4 1/2	1/2
	0.150	6	5 1/2	1/2	0.245	6	5 1/2	1/2
					0.245	7	6 1/2	1/2
					0.245	8	7 1/2	1/2
					0.245	9	8 1/2	1/2
					0.245	10	9 1/2	1/2
					0.245	12	11 1/2	1/2
					0.245	14	13 1/2	1/2
11. HEAD SHAPE	#10 TRUSS, PHILLIPS #3				#3 PHILLIPS PAN HEAD			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.110				0.118			
DIAMETER	0.390				0.448			
13. PLATES								
A. REQUIRED (yes/no)					YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)					YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2	G90 GALVANIZED		SQUARE	3 X 3	GALVALUME	
	ROUND	3	G90 GALVANIZED		ROUND	3	POLYOLEFIN	
	ROUND	3	CO-POLYMER PLASTIC		GEARLOCK	3	POLYOLEFIN	
	ROUND	2	GALFAN		ROUND	2	GALVALUME	
	ROUND	3	GALFAN					
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED				REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)					DRILL BIT WITH ROTARY HAMMER			
SPECIAL TOOL NEEDED (optional/required)	CARBIDE DRILL BIT (REQUIRED)							
OTHER								
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS, 3,000 PSI AGED 28 DAYS)	799				1,110			
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF CLASS I CONCRETE ROOF CONSTRUCTION (yes/no)	YES				YES			
18. ACCEPTED BY THE FOLLOWING CODES	FM, BOCA, ICBO, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY			
19. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)					YES			
20. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Concrete Decks

ITW BUILDEX KING-CON U.S.				ITW BUILDEX #15 ROOFGRIP U.S.				NATIONAL NAIL CORPORATION ARDOX H.T. GALVANIZED CONCRETE CANADA			
X				X				X			
X				X				X			
X				X				X			
HARDENED CARBON STEEL				HARDENED CARBON STEEL				HARDENED STEEL			
CLIMASEAL				CLIMASEAL				HOT-DIPPED GALVANIZED			
PARTIALLY SPIRAL FLUTED				THREADED				SPIRAL FLUTED			
NAIL				SELF-DRILLING				DIAMOND			
FRICTION				THREADED				FRICTION			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
0.250	1 1/8	1/8	1 1/4	0.260	1 1/4	1/4	1	0.212	1 1/8	1/2	1
0.250	1 1/2	1/4	1 1/4	0.260	2	1	1	0.212	1 1/2	3/4	1
0.250	2	3/4	1 1/4	0.260	3	2	1	0.212	2	1 1/4	1
0.250	2 1/2	1 1/4	1 1/4	0.260	4	3	1	0.212	2 1/2	1 3/4	1
0.250	3	1 3/4	1 1/4	0.260	5	4	1	0.212	3	2 1/4	1
0.250	3 1/2	2 1/4	1 1/4	0.260	6	5	1	0.212	3 1/2	2 3/4	1
0.250	4	2 3/4	1 1/4	0.260	7	6	1	0.212	4	3 1/4	1
0.250	4 1/2	3 1/4	1 1/4	0.260	8	7	1	0.212	4 1/2	3 3/4	1
0.250	5	3 3/4	1 1/4	0.260	10	9	1	0.212	5	4 1/4	1
0.250	5 1/2	4 1/4	1 1/4	0.260	12	11	1	0.212	5 1/2	4 3/4	1
0.250	6	4 3/4	1 1/4	0.260	14	13	1	0.212	6	5 1/4	1
0.250	7	5 3/4	1 1/4					0.212	6 1/2	5 3/4	1
0.250	8	6 3/4	1 1/4					0.212	7	6 1/4	1
0.250	9	7 3/4	1 1/4					0.225	8	6 3/4	1
0.250	10	8 3/4	1 1/4					0.225	9	7 1/4	1
								0.225	10	7 3/4	1
								0.225	12	8 1/4	1
ROUND				#3 PHILLIPS PAN HEAD				COMMON TYPE			
0.100				0.118				0.09375			
0.440				0.448				0.4375			
YES				YES				YES			
YES				YES				YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
ROUND SQUARE	2 3	GALVALUME GALVALUME		ROUND SQUARE	2 3	GALVALUME GALVALUME		ROUND	3	PLASTIC	
HAMMER DRILL				HAMMER DRILL				ROTARY DRILL AND HAMMER			
1,031				1,157				600			
YES				YES				NO			
FM, METRO.-DADE COUNTY				FM				NO			
YES				YES				NO			
								X			

Roof Fasteners: Concrete Decks

1. COMPANY NAME	OLYMPIC MANUFACTURING GROUP				OLYMPIC MANUFACTURING GROUP			
2. PRODUCT NAME	FLUTED CONCRETE NAIL				OLYMPIC FASTENER #14-10 (C.STEEL)			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
5. MATERIAL TYPE	HARDENED CARBON STEEL				HARDENED CARBON STEEL			
6. COATING TYPE	CR-10 FLUOROCARBON				CR-10 FLUOROCARBON			
7. SHANK TYPE	SPIRAL FLUTED				THREADED			
8. POINT TYPE	DIAMOND				PINCH, SELF-DRILLING OR TAPEX			
9. METHOD OF ATTACHMENT	FRICTION				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.215	1 1/8	1/8	1	0.190	1 1/4	1/4	1
	0.215	1 1/2	1/2	1	0.190	1 3/4	3/4	1
	0.215	2	1	1	0.190	2	1	1
	0.215	2 1/2	1 1/2	1	0.190	3	2	1
	0.215	3	2	1	0.190	4	3	1
	0.215	3 1/2	2 1/2	1	0.190	5	4	1
	0.215	4	3	1	0.190	6	5	1
	0.215	4 1/2	3 1/2	1	0.190	7	6	1
	0.215	5	4	1	0.190	8	7	1
	0.215	5 1/2	4 1/2	1	0.190	9	8	1
	0.215	6	5	1	0.190	10	9	1
	0.215	6 1/2	5 1/2	1	0.190	11	10	1
	0.215	7	6	1	0.190	12	11	1
	0.215	7 1/2	6 1/2	1	0.190	14	13	1
	0.215	8	7	1	0.190	16	15	1
					0.201	17	16	1
					0.201	18	17	1
					0.201	20	19	1
					0.201	21	20	1
					0.201	22	21	1
					0.201	24	23	1
11. HEAD SHAPE	ROUND				ROUND TRUSS, #3 PHILLIPS			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.125				0.110			
DIAMETER	0.425				0.435			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2	STEEL		ROUND	2	STEEL	
	ROUND	2	PLASTIC		ROUND	2	PLASTIC	
	ROUND	2	STAINLESS STEEL		ROUND	2	STAINLESS STEEL	
	ROUND	3	STEEL		ROUND	3	STEEL	
	ROUND	3	PLASTIC		ROUND	3	PLASTIC	
	ROUND	3	STAINLESS STEEL		ROUND	3	STAINLESS STEEL	
	ROUND	3 1/2	STEEL		ROUND	3 1/2	STEEL	
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)					REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)					OPTIONAL			
SPECIAL TOOL NEEDED (optional/required)					HAMMER DRILL (REQUIRED)			
OTHER	HAMMER DRILL							
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS, 3,000 PSI AGED 28 DAYS)	600				800			
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF CLASS I CONCRETE ROOF CONSTRUCTION (yes/no)	YES				YES			
18. ACCEPTED BY THE FOLLOWING CODES	FM, UL, ICBO, METRO.-DADE COUNTY				FM, UL, ICBO, METRO.-DADE COUNTY			
19. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
20. SEE APPENDIX IF CHECKED	X				X			

NA=not applicable

Roof Fasteners: Concrete Decks

OLYMPIC MANUFACTURING GROUP				POWERS RAWL, INC.				POWERS RAWL, INC.			
OLYMPIC CD-10				3/16" SPIKE				HEAVY DUTY #15 SCREW			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
HARDENED CARBON STEEL				HARDENED STEEL AND STAINLESS STEEL				HARDENED STEEL			
CR-10 FLUOROCARBON				PERMASEAL				PERMASEAL			
DIAMOND STARTER POINT				NA				SPIRAL THREAD			
SHANK EXPANSION				SHANK COMPRESSION				PINCH, SELF-DRILLING			
THREADED											
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
0.215	2	1	1	0.190	1 1/2	1/4	1 1/4	0.205	1 1/4	1/4	1
0.215	2 1/2	1 1/2	1	0.190	2	3/4	1 1/4	0.205	2	1	1
0.215	3	2	1	0.190	2 1/2	1 1/4	1 1/4	0.205	3	2	1
0.215	3 1/2	2 1/2	1	0.190	3	1 3/4	1 1/4	0.205	4	3	1
0.215	4	3	1	0.190	3 1/2	2 1/4	1 1/4	0.205	5	4	1
0.215	4 1/2	3 1/2	1	0.190	4	2 3/4	1 1/4	0.205	6	5	1
0.215	5	4	1	0.190	4 1/2	3 1/4	1 1/4	0.205	7	6	1
0.215	5 1/2	4 1/2	1	0.190	5	3 3/4	1 1/4	0.205	8	7	1
0.215	6	5	1	0.190	5 1/2	4 1/4	1 1/4	0.205	10	9	1
0.215	6 1/2	5 1/2	1	0.190	6	4 3/4	1 1/4	0.205	12	11	1
0.215	7	6	1	0.190	6 1/2	5 1/4	1 1/4	0.205	14	13	1
0.215	7 1/2	6 1/2	1	0.190	7	5 3/4	1 1/4	0.205	16	15	1
0.215	8	7	1	0.190	7 1/2	6 1/4	1 1/4				
0.215	8 1/2	7 1/2	1	0.190	8	6 3/4	1 1/4				
0.215	9	8	1	0.190	8 1/2	7 1/4	1 1/4				
0.215	9 1/2	8 1/2	1	0.190	9	7 3/4	1 1/4				
0.215	10	9	1	0.190	9 1/2	8 1/4	1 1/4				
0.215	10 1/2	9 1/2	1	0.190	10	8 3/4	1 1/4				
0.215	11	10	1								
0.215	11 1/2	10 1/2	1								
0.215	12	11	1								
ROUND				MUSHROOM				ROUND TRUSS #3 PHILLIPS RECESS			
0.125				0.110				0.112			
0.435				0.422				0.435			
YES				YES				YES			
YES				YES				YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
ROUND	2	STEEL		ROUND	2	GALVALUME		ROUND	2	GALVALUME	
ROUND	2	PLASTIC		BARBED	3	GALVALUME		ROUND	3	GALVALUME	
ROUND	2	STAINLESS STEEL		ROUND	2	STAINLESS STEEL		ROUND	2	STAINLESS STEEL	
ROUND	3	STEEL		BARBED	3	STAINLESS STEEL		BARBED	3	STAINLESS STEEL	
ROUND	3	PLASTIC		ROUND	1 1/2 X 2	GALVALUME		ROUND	1 1/2 X 2	GALVALUME	
ROUND	3	STAINLESS STEEL		RECTANGULAR				RECTANGULAR			
ROUND	3 1/2	STEEL									
								REQUIRED OPTIONAL			
HAMMER DRILL				SDA SPIKE (OPTIONAL) HAMMER DRILL (REQUIRED)				HAMMER DRILL (REQUIRED)			
1,164				1,000				1,100			
YES				YES				YES			
FM, UL, ICBO, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY				FM			
YES				YES				YES			

Roof Fasteners: Concrete Decks

1. COMPANY NAME	POWERS RAWL, INC.				SCHULLER INTERNATIONAL INC.			
2. PRODUCT NAME	1/4" SPIKE				CD-10			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X							
C. SINGLE-PLY MEMBRANES	X							
5. MATERIAL TYPE	HARDENED STEEL AND STAINLESS STEEL				HARDENED CARBON STEEL			
6. COATING TYPE	PERMASEAL				CR-10			
7. SHANK TYPE					SPLIT SHANK			
8. POINT TYPE	NA				45-DEGREE DIAMOND STARTER			
9. METHOD OF ATTACHMENT	SHANK COMPRESSION				SHANK EXPANSION			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.240	1 1/2	1/4	1 1/4	0.215	2	1	1
	0.240	2	3/4	1 1/4	0.215	2 1/2	1 1/2	1
	0.240	2 1/2	1 1/4	1 1/4	0.215	3	2	1
	0.240	3	1 3/4	1 1/4	0.215	3 1/2	2 1/2	1
	0.240	3 1/2	2 1/4	1 1/4	0.215	4	3	1
	0.240	4	2 3/4	1 1/4	0.215	4 1/2	3 1/2	1
	0.240	4 1/2	3 1/4	1 1/4	0.215	5	4	1
	0.240	5	3 3/4	1 1/4	0.215	5 1/2	4 1/2	1
	0.240	5 1/2	4 1/4	1 1/4	0.215	6	5	1
	0.240	6	4 3/4	1 1/4	0.215	7	6	1
	0.240	6 1/2	5 1/4	1 1/4	0.215	8	7	1
	0.240	7	5 3/4	1 1/4	0.215	9	8	1
	0.240	7 1/2	6 1/4	1 1/4				
	0.240	8	6 3/4	1 1/4				
	0.240	8 1/2	7 1/4	1 1/4				
	0.240	9	7 3/4	1 1/4				
	0.240	9 1/2	8 1/4	1 1/4				
	0.240	10	8 3/4	1 1/4				
	0.240	10 1/2	9 1/4	1 1/4				
	0.240	11	9 3/4	1 1/4				
	0.240	11 1/2	10 1/4	1 1/4				
	0.240	12	10 3/4	1 1/4				
	0.240	12 1/2	11 1/4	1 1/4				
	0.240	13	11 3/4	1 1/4				
	0.240	13 1/2	12 1/4	1 1/4				
	0.240	14	12 3/4	1 1/4				
	0.240	14 1/2	13 1/4	1 1/4				
	0.240	15	13 3/4	1 1/4				
	0.240	15 1/2	14 1/4	1 1/4				
	0.240	16	14 3/4	1 1/4				
11. HEAD SHAPE	MUSHROOM				ROUND			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.110				0.125			
DIAMETER	0.422				0.435			
13. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2	GALVALUME		ROUND	3	PLASTIC	
	BARBED	3	GALVALUME					
	ROUND							
	BARBED	2	STAINLESS STEEL					
	ROUND	3	STAINLESS STEEL					
	RECTANGULAR	1 1/2 X 2	GALVALUME					
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)					REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)								
SPECIAL TOOL NEEDED (optional/required)	SDS SPIKE DRIVER (OPTIONAL)				HAMMER DRILL			
OTHER	HAMMER DRILL (REQUIRED)							
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS, 3,000 PSI AGED 28 DAYS)	1,100				1,164			
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF CLASS I CONCRETE ROOF CONSTRUCTION (yes/no)	YES				YES			
18. ACCEPTED BY THE FOLLOWING CODES	FM, METRO DADE				FM, UL, ICBO, METRO-DADE COUNTY			
19. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
20. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Concrete Decks

SFS STADLER INC.				SFS STADLER INC.				SFS STADLER INC.			
INSUL-FIXX #14-10				STADLER SPIKE				STADLER SPIKE			
U.S.											
X				X				X			
X				X				X			
X				X				X			
HARDENED STEEL				HARDENED STEEL				HARDENED STEEL			
TUFF-TITE II				PERMASEAL				PERMASEAL			
SPIRAL THREAD											
DRILL POINT				NA				NA			
THREADED				COMPRESSION				COMPRESSION			
Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4
Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)
0.190	1 1/4	1/4	1	0.187	1 1/2	1/4	1 1/4	0.240	1 1/2	1/4	1 1/4
0.190	2	1	1	0.187	2	3/4	1 1/4	0.240	2	3/4	1 1/4
0.190	3	2	1	0.187	2 1/2	1 1/4	1 1/4	0.240	2 1/2	1 1/4	1 1/4
0.190	4	3	1	0.187	3	1 3/4	1 1/4	0.240	3	1 3/4	1 1/4
0.190	5	4	1	0.187	3 1/2	2 1/4	1 1/4	0.240	3 1/2	2 1/4	1 1/4
0.190	6	5	1	0.187	4	2 3/4	1 1/4	0.240	4	2 3/4	1 1/4
0.190	7	6	1	0.187	4 1/2	3 1/4	1 1/4	0.240	4 1/2	3 1/4	1 1/4
0.190	8	7	1	0.187	5	3 3/4	1 1/4	0.240	5	3 3/4	1 1/4
0.190	10	9	1	0.187	5 1/2	4 1/4	1 1/4	0.240	5 1/2	4 1/4	1 1/4
0.190	12	11	1	0.187	6	4 3/4	1 1/4	0.240	6	4 3/4	1 1/4
0.190	14	13	1	0.187	6 1/2	5 1/4	1 1/4	0.240	6 1/2	5 1/4	1 1/4
0.190	16	15	1	0.187	7	5 3/4	1 1/4	0.240	7	5 3/4	1 1/4
				0.187	7 1/2	6 1/4	1 1/4	0.240	8	6 3/4	1 1/4
				0.187	8	6 3/4	1 1/4	0.240	9	7 3/4	1 1/4
				0.187	9	7 3/4	1 1/4	0.240	10	8 3/4	1 1/4
				0.187	10	8 3/4	1 1/4	0.240	12	10 3/4	1 1/4
								0.240	14	12 3/4	1 1/4
ROUND WITH #3 PHILLIPS TRUSS				ROUND				ROUND			
0.103				0.110				0.110			
0.425				0.422				0.422			
YES				YES				YES			
YES				YES				YES			
Column 1	Column 2	Column 3		Column 1	Column 2	Column 3		Column 1	Column 2	Column 3	
Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material	
ROUND	3	GALVALUME		ROUND	3	GALVALUME		ROUND	3	GALVALUME	
ROUND	2	GALVALUME		ROUND	2	GALVALUME		ROUND	2	GALVALUME	
				SDS SPIKE DRIVER (OPTIONAL)				SDS SPIKE DRIVER (OPTIONAL)			
HIGH-TORQUE SCREW GUN (REQUIRED)				HAMMER (REQUIRED)				HAMMER (REQUIRED)			
648				1,100				1,100			
YES				YES				YES			
FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY			
YES				YES				YES			
X											

Roof Fasteners: Concrete Decks

1. COMPANY NAME	SUBCON PRODUCTS CORP.				TRI-PLY			
2. PRODUCT NAME	THE PEEL RIVET, OR TPR				TRI-FAST DP			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
5. MATERIAL TYPE	HIGH MAGNESIUM ALUMINUM ALLOY				CARBON STEEL			
6. COATING TYPE	NA				TRU-KOTE			
7. SHANK TYPE	SMOOTH, THREADLESS BODY				THREADED			
8. POINT TYPE	SELF-PENETRATING							
9. METHOD OF ATTACHMENT	MECHANICAL				THREADED			
10. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.250	1 1/2	1/2	1	0.180	1 1/4	1/4	1
	0.250	2	1	1	0.180	1 3/4	3/4	1
	0.250	3	2	1	0.180	2 1/4	1 1/4	1
	0.250	4	3	1	0.180	2 3/4	1 3/4	1
	0.250	5	4	1	0.180	3 1/4	2 1/4	1
	0.250	6	5	1	0.180	3 3/4	2 3/4	1
	0.250	7	6	1	0.180	4 1/4	3 1/4	1
	0.250	8	7	1	0.180	5	4	1
	0.250	9	8	1	0.180	6	5	1
	0.250	10	9	1	0.180	7	6	1
					0.180	8	7	1
11. HEAD SHAPE	SLIGHTLY CONVEX RIVET HEAD				MODIFIED PHILLIPS #3			
12. HEAD DIMENSIONS (inches)								
THICKNESS	0.0625				0.118			
DIAMETER	0.485				0.445			
13. PLATES								
A. REQUIRED (yes/no)	YES							
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES							
14. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND, BARBED ROUND	2 3	GALVALUME GALVALUME		ROUND ROUND ROUND	2 3 3	GALVALUME GALVALUME PLASTIC	
15. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)					REQUIRED			
INSTALLATION TOOL WITH SCREW GUN (optional/required)					OPTIONAL			
SPECIAL TOOL NEEDED (optional/required)								
OTHER	HAMMER DRILL WITH 9/32-IN. DRILL BIT (REQUIRED)							
16. AVERAGE PULLOUT RESISTANCE (lbs.)								
(FM TINIUS OLSEN PULLOUT RESISTANCE TESTS, 3,000 PSI AGED 28 DAYS)	717				925			
17. MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF CLASS I CONCRETE ROOF CONSTRUCTION (yes/no)	YES				YES			
18. ACCEPTED BY THE FOLLOWING CODES	FM				FM			
19. WARRANTY AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
20. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Concrete Decks

TRU-FAST CORPORATION DP ULTRA STAINLESS STEEL				TRU-FAST CORPORATION CF TAP GRIP				TRU-FAST CORPORATION HD (HEAVY DUTY) #14			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
STAINLESS STEEL (TRIMRITE ALLOY #S-42010)				CARBON STEEL C-1022				CARBON STEEL C-1022			
NA				TRU-KOTE PC-3 (FLUOROPOLYMER PAINT)				TRU-KOTE PC-3 (FLUOROPOLYMER PAINT)			
THREADED				THREADED				THREADED			
DOUBLE FLUTE SELF-DRILLING				THREADED				DOUBLE FLUTE SELF-DRILLING			
THREADED				THREADED				THREADED			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
0.160	1 5/8	5/8	1	0.180	1 1/4	1/4	1	0.180	1 1/2	1/2	1
0.160	2 1/4	1 1/4	1	0.180	1 3/4	3/4	1	0.180	2	1	1
0.160	3	2	1	0.180	2 1/4	1 1/4	1	0.180	3	2	1
0.160	3 3/4	2 3/4	1	0.180	2 3/4	1 3/4	1	0.180	4	3	1
0.160	4 1/2	3 1/2	1	0.180	3 1/4	2 1/4	1	0.180	5	4	1
0.160	5	4	1	0.180	3 3/4	2 3/4	1	0.180	6	5	1
0.160	6	5	1	0.180	4 1/4	3 1/4	1	0.180	7	6	1
0.160	7	6	1	0.180	5	4	1	0.180	8	7	1
0.160	8	7	1	0.180	6	5	1	0.180	10	9	1
0.160	10	9	1	0.180	7	6	1	0.180	12	11	1
0.160	12	11	1	0.180	8	7	1	0.180	9	8	1
				0.180	5 1/2	4 1/2	1	0.180	11	10	1
				0.180	6 1/2	5 1/2	1				
				0.180	7 1/2	6 1/2	1				
#10 TRUSS PHILLIPS #3				MODIFIED PHILLIPS #3				TRUSS #3 PHILLIPS			
0.106				0.118				0.105			
0.440				0.445				0.440			
YES				YES				YES			
YES				YES				YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 4 Shape	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 4 Shape	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 4 Shape
ROUND	2	GALVALUME	ROUND	ROUND	2	GALVALUME	ROUND	ROUND	2	GALVALUME	ROUND
ROUND	3	GALVALUME	ROUND	ROUND	3	GALVALUME	ROUND	ROUND	3	GALVALUME	ROUND
ROUND	3	PLASTIC	ROUND	ROUND	3	PLASTIC	ROUND	ROUND	3	PLASTIC	ROUND
REQUIRED				REQUIRED				REQUIRED			
OPTIONAL				OPTIONAL				OPTIONAL			
679				925				740			
YES				YES				YES			
FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY			
YES				YES				YES			

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

1. COMPANY NAME	CARLISLE SYNTEC INCORPORATED				CARLISLE SYNTEC INCORPORATED			
2. PRODUCT NAME	HP SPEED-LOCK TOGGLE BOLT				HP TOGGLE BOLT			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. DECK TYPE								
A. LIGHTWEIGHT CONCRETE	X				X			
B. GYPSUM	X				X			
C. CEMENTITIOUS WOOD FIBER	X				X			
5. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
6. MATERIAL TYPE	CARBON STEEL				CARBON STEEL			
7. COATING TYPE	ZINC-BASED PRIMER, FLUOROPOLYMER COATING				ZINC RICH COATING, LOCKING ADHESIVE			
8. SHANK TYPE	THREADED				THREADED			
9. POINT TYPE	NA				NA			
10. METHOD OF ATTACHMENT	TOGGLE BOLT PLUS WING THROUGH PREDRILLED HOLE				TOGGLE BOLT PLUS WING THROUGH PREDRILLED HOLE			
11. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.215	4	2 1/2	1 1/2	0.215	4	2 1/2	1 1/2
	0.215	6	4 1/2	1 1/2	0.215	6	4 1/2	1 1/2
	0.215	7	5 1/2	1 1/2	0.215	7	5 1/2	1 1/2
	0.215	8	6 1/2	1 1/2	0.215	8	6 1/2	1 1/2
	0.215	9	7 1/2	1 1/2	0.215	8	6 1/2	1 1/2
	0.215	10	8 1/2	1 1/2	0.215	10	8 1/2	1 1/2
	0.215	12	10 1/2	1 1/2	0.215	12	10 1/2	1 1/2
	0.215	14	12 1/2	1 1/2	0.215	14	12 1/2	1 1/2
	0.215	16	14 1/2	1 1/2	0.215	16	14 1/2	1 1/2
12. HEAD SHAPE	ROUND TRUSS WITH #3 PHILLIPS				ROUND TRUSS WITH #3 PHILLIPS			
13. HEAD DIMENSIONS (inches)								
THICKNESS	0.110				0.110			
DIAMETER	0.435				0.435			
14. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
15. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	SQUARE W/ ROUNDED CORNERS ROUND	2 7/8 2	GALVALUME GALVALUME		SQUARE W/ ROUNDED CORNERS ROUND	2 7/8 2	GALVALUME GALVALUME	
16. INSTALLATION EQUIPMENT	REQUIRED				REQUIRED			
SCREW GUN (optional/required)								
INSTALLATION TOOL WITH SCREW GUN (optional/required)								
SPECIAL TOOL NEEDED (optional/required)								
OTHER								
17. AVERAGE PULLOUT RESISTANCE (lbs.)								
A. LIGHTWEIGHT CONCRETE								
B. GYPSUM								
C. CEMENTITIOUS WOOD FIBER								
18. ACCEPTED BY THE FOLLOWING CODES								
A. LIGHTWEIGHT CONCRETE								
B. GYPSUM								
C. CEMENTITIOUS WOOD FIBER								
19. WARRANTY AVAILABLE FROM THE MANUFACTURER (yes/no)	YES				YES			
20. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

CARLISLE SYNTEC INCORPORATED				THE CELOTEX CORPORATION				CONSTRUCTION FASTENERS INC.			
HP LIGHTWEIGHT FASTENER				ANCHORBOND AUGUR FASTENERS				DEKLITE			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
NYLON				NYLON				NYLON			
NA				NA				NA			
SPIRAL THREAD				SPIRAL THREAD				SPIRAL THREAD			
GIMLET				GIMLET				GIMLET			
THREADED, SUBSTRATE COMPACTION				THREADED, SUBSTRATE COMPACTION				THREADED, SUBSTRATE COMPACTION			
Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4
Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)
0.430	2	1/2	1 1/2	0.430	2	1/2	1 1/2	0.430	2	1/2	1 1/2
0.430	2 1/2	1	1 1/2	0.430	2 1/2	1	1 1/2	0.430	2 1/2	1	1 1/2
0.430	3	1 1/2	1 1/2	0.430	3	1 1/2	1 1/2	0.430	3	1 1/2	1 1/2
0.430	3 1/2	2	1 1/2	0.430	3 1/2	2	1 1/2	0.430	3 1/2	2	1 1/2
0.430	4	2 1/2	1 1/2	0.430	4	2 1/2	1 1/2	0.430	4	2 1/2	1 1/2
0.430	4 1/2	3	1 1/2	0.430	4 1/2	3	1 1/2	0.430	4 1/2	3	1 1/2
0.430	5	3 1/2	1 1/2	0.430	5	3 1/2	1 1/2	0.430	5	3 1/2	1 1/2
0.430	5 1/2	4	1 1/2	0.430	5 1/2	4	1 1/2	0.430	5 1/2	4	1 1/2
0.430	6	4 1/2	1 1/2	0.430	6	4 1/2	1 1/2	0.430	6	4 1/2	1 1/2
0.430	6 1/2	5	1 1/2	0.430	6 1/2	5	1 1/2	0.430	6 1/2	5	1 1/2
0.430	7	5 1/2	1 1/2	0.430	7	5 1/2	1 1/2	0.430	7	5 1/2	1 1/2
0.430	7 1/2	6	1 1/2	0.430	7 1/2	6	1 1/2	0.430	7 1/2	6	1 1/2
0.430	8	6 1/2	1 1/2	0.430	8	6 1/2	1 1/2	0.430	8	6 1/2	1 1/2
0.430	8 1/2	7	1 1/2	0.430	8 1/2	7	1 1/2	0.430	8 1/2	7	1 1/2
0.430	9	7 1/2	1 1/2	0.430	9	7 1/2	1 1/2	0.430	9	7 1/2	1 1/2
0.430	9 1/2	8	1 1/2	0.430	9 1/2	8	1 1/2	0.430	9 1/2	8	1 1/2
0.430	10	8 1/2	1 1/2	0.430	10	8 1/2	1 1/2	0.430	10	8 1/2	1 1/2
ROUND, 1/4-IN. RECESS				ROUND, 1/4-IN. RECESS				ROUND, 1/4-IN. RECESS			
0.120				0.120				0.120			
1.00				1.00				1.00			
YES				YES				YES			
YES				YES				YES			
Column 1	Column 2	Column 3		Column 1	Column 2	Column 3		Column 1	Column 2	Column 3	
Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material	
ROUND BARBE	2	GALVALUME		ROUND BARBE	2	GALVALUME		ROUND BARBE	2	GALVALUME	
ROUND BARBE	3	GALVALUME		HEX BARBED	2 7/8	GALVALUME		HEX BARBED	2 7/8	GALVALUME	
IMPACT WRENCH, ELECTRIC DRILL (OPTIONAL)				IMPACT WRENCH, ELECTRIC DRILL (OPTIONAL)				IMPACT WRENCH, ELECTRIC DRILL (OPTIONAL)			
450				450				365			
450				450				540			
450				450				440			
FM				FM				FM			
YES				YES				YES			
X				X				X			

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

1. COMPANY NAME	ES PRODUCTS INC.				ES PRODUCTS INC.			
2. PRODUCT NAME	HARDENED DO-ALL LOC-NAIL				INSULDECK LOC-NAIL			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. DECK TYPE								
A. LIGHTWEIGHT CONCRETE								
B. GYPSUM	X				X			
C. CEMENTITIOUS WOOD FIBER								
5. USED WITH:								
A. INSULATION ATTACHMENT								
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES								
6. MATERIAL TYPE	HARDENED COLD-ROLLED STEEL				COLD-ROLLED STEEL			
7. COATING TYPE	ZINC PLATED				GALVALUME (AZ-55)			
8. SHANK TYPE	SPLIT, SERRATED				DOUBLE THICKNESS HALF-ROUND			
9. POINT TYPE	TWO SHARP POINTS				FINE, SHARP			
10. METHOD OF ATTACHMENT	SPREAD OF SERRATED SHANKS				AUTOMATIC KNEE-BEND GRIPPING			
11. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.240	1 3/8	1 1/4	1 1/8	0.230	1 7/8	1 1/4	1 1/8
12. HEAD SHAPE	SQUARE WITH ROUNDED CORNERS				ROUND, CUPPED			
13. HEAD DIMENSIONS (inches)								
THICKNESS	0.050				0.045			
DIAMETER	0.375				0.500			
14. PLATES								
A. REQUIRED (yes/no)	YES				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
15. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	1 3/16	PRE-TINNED STEEL		ROUND	2.7	GALVALUME	
16. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)								
INSTALLATION TOOL WITH SCREW GUN (optional/required)								
SPECIAL TOOL NEEDED (optional/required)								
OTHER	HAMMER				INSULDECK DRIVER HAMMER			
17. AVERAGE PULLOUT RESISTANCE (lbs.)								
A. LIGHTWEIGHT CONCRETE					60/100			
B. GYPSUM	60				79			
C. CEMENTITIOUS WOOD FIBER								
18. ACCEPTED BY THE FOLLOWING CODES								
A. LIGHTWEIGHT CONCRETE								
B. GYPSUM	UL				FM, METRO-DADE COUNTY			
C. CEMENTITIOUS WOOD FIBER								
19. WARRANTY AVAILABLE FROM THE MANUFACTURER (yes/no)	YES				YES			
20. SEE APPENDIX IF CHECKED					X			

NA=not applicable

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

ES PRODUCTS INC. FM-75 BASE PLY FASTENER				ES PRODUCTS INC. NAIL-TITE TYPE A				ES PRODUCTS INC. NAIL-TITE TYPE R			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
STEEL				CARBON STEEL				CARBON STEEL			
HOT-DIPPED G-90 GALVANIZED & URETHANE				ZINC PLATED				ZINC PLATED			
TWO-PIECE RECTANGULAR				TAPERED CONE				TAPERED CONE			
NA				ROUND				ROUND			
SHANK EXPANSION				CONICAL EXTENDING LEGS				CONICAL EXTENDING LEGS			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
NA	1 1/5	NA	NA	NA	1 1/2	1/16	1 7/16	NA	1	1/16	15/16
ROUND				ROUND				ROUND			
2.70				0.015 1.7				0.015 1.7			
NO				NO NA				NO NA			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	Column 4 Shape	Column 5 Dimensions (inches)	Column 6 Material	Column 7 Shape	Column 8 Dimensions (inches)	Column 9 Material	Column 10 Shape	Column 11 Dimensions (inches)	Column 12 Material
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MAGNETIC DRIVER (REQUIRED)				MAGNETIC DRIVER (REQUIRED)				MAGNETIC DRIVER (REQUIRED)			
90 MIN				NA				NA			
NA				159				159			
NA				NA				NA			
FM, METRO-DADE COUNTY				UL, FM, METRO-DADE COUNTY				UL, FM, METRO-DADE COUNTY			
NA				NA				NA			
YES				YES				YES			

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

1. COMPANY NAME	ES PRODUCTS INC.				ES PRODUCTS INC.			
2. PRODUCT NAME	ES-90 BASE PLY FASTENER				ES-60 BASE PLY FASTENER			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. DECK TYPE								
A. LIGHTWEIGHT CONCRETE	X				X			
B. GYPSUM								
C. CEMENTITIOUS WOOD FIBER								
5. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES								
6. MATERIAL TYPE	STEEL				STEEL			
7. COATING TYPE	HOT DIPPED G-90 GALVANIZED				HOT DIPPED G-90 GALVANIZED			
8. SHANK TYPE	TWO-PIECE RECTANGULAR				TWO-PIECE RECTANGULAR			
9. POINT TYPE	NA				NA			
10. METHOD OF ATTACHMENT	SHANK EXPANSION				SHANK EXPANSION			
11. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	NA	1 7/10	NA	NA	NA	1 7/10	NA	NA
12. HEAD SHAPE	ROUND				ROUND			
13. HEAD DIMENSIONS (inches)								
THICKNESS	2.75				1.20			
DIAMETER								
14. PLATES								
A. REQUIRED (yes/no)	NO				NO			
B. AVAILABLE FROM MANUFACTURER (yes/no)	NO				NO			
15. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	NA	NA	NA		ROUND	2 3/4	GALVALUME	
16. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)								
INSTALLATION TOOL WITH SCREW GUN (optional/required)								
SPECIAL TOOL NEEDED (optional/required)								
OTHER	MAGNETIC DRIVER (REQUIRED)				MAGNETIC DRIVER (REQUIRED)			
17. AVERAGE PULLOUT RESISTANCE (lbs.)								
A. LIGHTWEIGHT CONCRETE	90 MIN.				90 MIN.			
B. GYPSUM	NA				NA			
C. CEMENTITIOUS WOOD FIBER	NA				NA			
18. ACCEPTED BY THE FOLLOWING CODES								
A. LIGHTWEIGHT CONCRETE	NA				NA			
B. GYPSUM	NA				NA			
C. CEMENTITIOUS WOOD FIBER								
19. WARRANTY AVAILABLE FROM THE MANUFACTURER (yes/no)	YES				YES			
20. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

ES PRODUCTS INC. ES-45 BASE PLY FASTENER				ES PRODUCTS INC. FM-90 BASE PLY FASTENER				ES PRODUCTS INC. FM-60 BASE PLY FASTENER			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
STEEL				STEEL				STEEL			
HOT DIPPED G-90 GALVANIZED				HOT DIPPED G-90 GALVANIZED & URETHANE COATING				HOT DIPPED G-90 GALVANIZED & URETHANE COATING			
TWO-PIECE RECTANGULAR				TWO-PIECE RECTANGULAR				TWO-PIECE RECTANGULAR			
NA				NA				NA			
SHANK EXPANSION				SHANK EXPANSION				SHANK EXPANSION			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
NA	1 1/5	NA	NA	NA	1 7/10	NA	NA	NA	1 7/10	NA	NA
ROUND				ROUND				ROUND			
1.20				2.75				1.20			
NO YES				NO YES				NO YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
ROUND	2 3/4	GALVANIZED STEEL						ROUND	2 3/4	GALVALUME	
MAGNETIC DRIVER (REQUIRED)				MAGNETIC DRIVER (REQUIRED)				MAGNETIC DRIVER (REQUIRED)			
90 MIN. NA NA				90 MIN. NA NA				90 MIN. NA NA			
NA NA				FM, UL, METRO-DADE COUNTY FM, UL, METRO-DADE COUNTY NA				FM, UL, METRO-DADE COUNTY FM, UL, METRO-DADE COUNTY NA			
YES				YES				YES			

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

1. COMPANY NAME	ES PRODUCTS INC.				FIRESTONE BUILDING PRODUCTS			
2. PRODUCT NAME	FM-45 BASE PLY FASTENER				FIRESTONE POLYMER FASTENERS			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. DECK TYPE								
A. LIGHTWEIGHT CONCRETE	X				X			
B. GYPSUM					X			
C. CEMENTITIOUS WOOD FIBER								
5. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES								
6. MATERIAL TYPE	STEEL				GLASS-REINFORCED NYLON			
7. COATING TYPE	HOT DIPPED G-90 GALVANIZED & URETHANE COATING				NA			
8. SHANK TYPE	TWO-PIECE RECTANGULAR				THREADED AUGER			
9. POINT TYPE	NA				TAPERED			
10. METHOD OF ATTACHMENT	SHANK EXPANSION				THREADED			
11. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	NA	1 1/5	NA	NA	0.675	2 3/4	1 1/4	1 1/2
					0.675	3	1 1/2	1 1/2
					0.675	3 1/2	2	1 1/2
					0.675	4	2 1/2	1 1/2
					0.675	4 1/2	3	1 1/2
					0.675	5	3 1/2	1 1/2
					0.675	5 1/2	4	1 1/2
					0.675	6	4 1/2	1 1/2
					0.675	6 1/2	5	1 1/2
					0.675	7	5 1/2	1 1/2
					0.675	7 1/2	6	1 1/2
					0.675	8	6 1/2	1 1/2
12. HEAD SHAPE	ROUND				INTERNAL 1/4-IN. SQUARE DRIVE			
13. HEAD DIMENSIONS (inches)								
THICKNESS	1.20				0.140			
DIAMETER					1.0			
14. PLATES								
A. REQUIRED (yes/no)	NO				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
15. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2 3/4	GALVALUME		SQUARE (INSULATION) ROUND (IN-SEAM)	2 17/20 2	GALVALUME GALVALUME	
16. INSTALLATION EQUIPMENT					REQUIRED			
SCREW GUN (optional/required)								
INSTALLATION TOOL WITH SCREW GUN (optional/required)								
SPECIAL TOOL NEEDED (optional/required)								
OTHER	MAGNETIC DRIVER (REQUIRED)				PREDRILL (REQUIRED FOR GYPSUM)			
17. AVERAGE PULLOUT RESISTANCE (lbs.)								
A. LIGHTWEIGHT CONCRETE	90 MIN.				NA			
B. GYPSUM	NA				375			
C. CEMENTITIOUS WOOD FIBER	NA				320			
18. ACCEPTED BY THE FOLLOWING CODES								
A. LIGHTWEIGHT CONCRETE	FM, METRO-DADE COUNTY				NA			
B. GYPSUM	NA							
C. CEMENTITIOUS WOOD FIBER	NA							
19. WARRANTY AVAILABLE FROM THE MANUFACTURER (yes/no)	YES				YES			
20. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

GAF MATERIALS CORPORATION TOGGLE BOLT (STAINLESS STEEL)				GAF MATERIALS CORPORATION TOGGLE BOLT (CARBON STEEL)				GAF MATERIALS CORPORATION IRON-LOK TOGGLE BOLT			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
STAINLESS STEEL				CARBON STEEL				CARBON STEEL			
NA				CR-10 FLUOROCARBON				ENDURION, WITH IRON-LOK ADHESIVE			
THREADED				THREADED				THREADED			
NA				NA				NA			
TOGGLE BOLT PLUS WING THRU PREDRILLED HOLE				TOGGLE BOLT PLUS WING THRU PREDRILLED HOLE				TOGGLE BOLT PLUS WING THRU PREDRILLED HOLE			
Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4
Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)
0.215	4	2 1/2	1 1/2	0.215	4	2 1/2	1 1/2	0.215	4	2 1/2	1 1/2
0.215	6	4 1/2	1 1/2	0.215	6	4 1/2	1 1/2	0.215	6	4 1/2	1 1/2
0.215	7	5 1/2	1 1/2	0.215	7	5 1/2	1 1/2	0.215	7	5 1/2	1 1/2
0.215	8	6 1/2	1 1/2	0.215	8	6 1/2	1 1/2	0.215	8	6 1/2	1 1/2
0.215	10	8 1/2	1 1/2	0.215	10	8 1/2	1 1/2	0.215	10	8 1/2	1 1/2
0.215	12	10 1/2	1 1/2	0.215	12	10 1/2	1 1/2	0.215	12	10 1/2	1 1/2
0.215	14	12 1/2	1 1/2	0.215	14	12 1/2	1 1/2	0.215	14	12 1/2	1 1/2
0.215	16	14 1/2	1 1/2	0.215	16	14 1/2	1 1/2	0.215	16	14 1/2	1 1/2
0.215	18	16 1/2	1 1/2	0.215	18	16 1/2	1 1/2	0.215	18	16 1/2	1 1/2
0.215	20	18 1/2	1 1/2	0.215	20	18 1/2	1 1/2	0.215	20	18 1/2	1 1/2
0.215	22	20 1/2	1 1/2	0.215	22	20 1/2	1 1/2	0.215	22	20 1/2	1 1/2
0.215	24	22 1/2	1 1/2	0.215	24	22 1/2	1 1/2	0.215	24	22 1/2	1 1/2
ROUND TRUSS WITH #3 PHILLIPS				ROUND TRUSS WITH #3 PHILLIPS				ROUND TRUSS WITH #3 PHILLIPS			
0.110				0.110				0.110			
0.435				0.435				0.435			
YES				YES				YES			
YES				YES				YES			
Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4
Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material	
ROUND	2	STAINLESS STEEL		ROUND	2	STAINLESS STEEL		ROUND	2	STEEL	
ROUND	3	STAINLESS STEEL		ROUND	3	STAINLESS STEEL		ROUND	2	PLASTIC	
ROUND	2	STEEL		ROUND	2	STEEL		ROUND	2	STAINLESS STEEL	
ROUND	2	PLASTIC		ROUND	2	PLASTIC		ROUND	3	STEEL	
ROUND	3	STEEL		ROUND	3	STEEL		ROUND	3	PLASTIC	
ROUND	3	PLASTIC		ROUND	3	PLASTIC		ROUND	3	STAINLESS STEEL	
REQUIRED				REQUIRED				REQUIRED			
600				600				600			
600				600				600			
600				600				600			
FM, METRO-DADE COUNTY				FM, METRO-DADE COUNTY				FM, METRO-DADE COUNTY			
FM, METRO-DADE COUNTY				FM, METRO-DADE COUNTY				FM, METRO-DADE COUNTY			
YES				YES				YES			
X				X				X			

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

1. COMPANY NAME	GAF MATERIALS CORPORATION				GAF MATERIALS CORPORATION			
2. PRODUCT NAME	GAFTITE LITE-DECK				GAFTITE BASE SHEET FASTENER			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. DECK TYPE								
A. LIGHTWEIGHT CONCRETE					X			
B. GYPSUM	X							
C. CEMENTITIOUS WOOD FIBER	X							
5. USED WITH:								
A. INSULATION ATTACHMENT	X							
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
6. MATERIAL TYPE	HARDENED CARBON STEEL				STEEL			
7. COATING TYPE	CR-10 FLUOROCARBON				G-90 HOT DIPPED GALVANIZED OR CR-10 FLUOROCARBON			
8. SHANK TYPE	THREADED				SPLIT BODY			
9. POINT TYPE	PINCH				NA			
10. METHOD OF ATTACHMENT	THREADED				SHANK EXPANSION			
11. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.310	3	1	2	NA	1.81	NA	NA
	0.310	4	2	2		1.20		
	0.310	5	3	2				
	0.310	6	4	2				
	0.310	8	6	2				
	0.310	9	7	2				
	0.310	10	8	2				
	0.310	12	10	2				
12. HEAD SHAPE	ROUND #3 PHILLIPS				RECTANGULAR WITH ROUNDED CORNERS			
13. HEAD DIMENSIONS (inches)								
THICKNESS	0.558				1 X 1.3			
DIAMETER								
14. PLATES								
A. REQUIRED (yes/no)	YES				NO			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
15. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	3	STEEL		ROUND	2 3/4	G-90 GALVANIZED AND GALVALUME	
16. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED							
INSTALLATION TOOL WITH SCREW GUN (optional/required)								
SPECIAL TOOL NEEDED (optional/required)					MALLET (REQUIRED)			
OTHER								
17. AVERAGE PULLOUT RESISTANCE (lbs.)								
A. LIGHTWEIGHT CONCRETE	NA				40 MIN.			
B. GYPSUM	450				40 MIN.			
C. CEMENTITIOUS WOOD FIBER	450				NA			
18. ACCEPTED BY THE FOLLOWING CODES					FM, UL, METRO-DADE COUNTY			
A. LIGHTWEIGHT CONCRETE					NA			
B. GYPSUM					NA			
C. CEMENTITIOUS WOOD FIBER								
19. WARRANTY AVAILABLE FROM THE MANUFACTURER (yes/no)	YES				NO			
20. SEE APPENDIX IF CHECKED	X							

NA=not applicable

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

GAF MATERIALS/N.T.B. FASTENERS				HILTI INC.				ITW BUILDEX			
TOGGLE-LESS MAGNUM WITH & WITHOUT WIRES				HILTI TOGGLE BOLT				POLYMER GYPTEC			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
NYLON				CARBON STEEL (C1008)				GLASS-FILLED NYLON			
NA				TAFT COAT (FLUOROPOLYMER PAINT)				NA			
SPIRAL THREAD				THREADED				THREADED AUGER			
NA				NA				TAPERED			
THREADED, SPIN WELD WITH AND WITHOUT WIRES				PREDRILL HOLE				THREADED			
Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4
Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)
0.4375	2 1/2	1	1 1/2	0.215	4	2 3/4	1 1/4	0.430	2 3/4	1 1/4	1 1/2
0.4375	3	1 1/2	1 1/2	0.215	5	3 3/4	1 1/4	0.430	3	1 1/2	1 1/2
0.4375	3 1/2	2	1 1/2	0.215	6	4 3/4	1 1/4	0.430	3 1/2	2	1 1/2
0.4375	4	2 1/2	1 1/2	0.215	7	5 3/4	1 1/4	0.430	4	2 1/2	1 1/2
0.4375	4 1/2	3	1 1/2	0.215	8	6 3/4	1 1/4	0.430	4 1/2	3	1 1/2
0.4375	5	3 1/2	1 1/2	0.215	9	7 3/4	1 1/4	0.430	5	3 1/2	1 1/2
0.4375	5 1/2	4	1 1/2	0.215	10	8 3/4	1 1/4	0.430	5 1/2	4	1 1/2
0.4375	6	4 1/2	1 1/2	0.215	11	9 3/4	1 1/4	0.430	6	4 1/2	1 1/2
0.4375	6 1/2	5	1 1/2	0.215	12	10 3/4	1 1/4	0.430	6 1/2	5	1 1/2
0.4375	7	5 1/2	1 1/2	0.215	13	11 3/4	1 1/4	0.430	7	5 1/2	1 1/2
0.4375	7 1/2	6	1 1/2	0.215	14	12 3/4	1 1/4	0.430	7 1/2	6	1 1/2
0.4375	8	6 1/2	1 1/2	0.215	15	13 3/4	1 1/4	0.430	8	6 1/2	1 1/2
0.4375	8 1/2	7	1 1/2	0.215	16	14 3/4	1 1/4				
0.4375	9	7 1/2	1 1/2	0.215	17	15 3/4	1 1/4				
0.4375	9 1/2	8	1 1/2	0.215	18	16 3/4	1 1/4				
0.4375	10	8 1/2	1 1/2	0.215	19	17 3/4	1 1/4				
				0.215	20	18 3/4	1 1/4				
				0.215	22	20 3/4	1 1/4				
				0.215	23	21 3/4	1 1/4				
				0.215	24	22 3/4	1 1/4				
DOUBLE HEX				TRUSS				ROUND, 1/4-INCH SQUARE RECESS			
0.100				0.111				0.130			
1.0				0.437				1.00			
YES				YES				YES			
YES				YES				YES			
Column 1	Column 2	Column 3		Column 1	Column 2	Column 3		Column 1	Column 2	Column 3	
Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material	
ROUND WITH SPIKES	2	NYLON		ROUND	2	G-90 GALVANIZED		SQUARE	3 X 3	GALVALUME	
ROUND				ROUND	3	G-90 GALVANIZED		ROUND	2	GALVALUME	
ROUND WITH SPIKES	3	CARBON STEEL		ROUND	3	CO-POLY PLASTIC					
				ROUND	2	GALFAN					
				ROUND	3	GALFAN					
OPTIONAL				REQUIRED				REQUIRED			
AIR WRENCH OR HANDSET TOLL (OPTIONAL)				TOGGLE TOOL, ADHESIVE				7/16-IN. DRILL BIT (REQUIRED FOR GYPSUM)			
ELECTRIC IMPACT WRENCH/ELIMINATOR (OPTIONAL)											
375				480/590				NA			
450				476/600				518			
450				476/600				422			
FM				FM, BOCA, ICBO, METRO-DADE COUNTY				NA			
FM				FM, BOCA, ICBO, METRO-DADE COUNTY				FM, METRO-DADE COUNTY			
FM				FM, BOCA, ICBO, METRO-DADE COUNTY				FM, METRO-DADE COUNTY			
YES				YES				YES			
X											

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

1. COMPANY NAME	ITW BUILD EX				OLYMPIC MANUFACTURING GROUP/N.T.B. FASTENERS			
2. PRODUCT NAME	LITE WEIGHT CONCRETE FASTENER				TOGGLE-LESS MAGNUM WITH & WITHOUT WIRES			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. DECK TYPE								
A. LIGHTWEIGHT CONCRETE	X				X			
B. GYPSUM					X			
C. CEMENTITIOUS WOOD FIBER					X			
5. USED WITH:								
A. INSULATION ATTACHMENT					X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
6. MATERIAL TYPE	G-90 STEEL				NYLON			
7. COATING TYPE	GRAY POLYMER				NA			
8. SHANK TYPE	TWO-PIECE RECTANGULAR				SPIRAL THREAD			
9. POINT TYPE	NA				NA			
10. METHOD OF ATTACHMENT	SHANK EXPANSION				THREADED, SPIN WELD WITH AND WITHOUT WIRES			
11. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	NA	1.7	NA	NA	0.4375	2 1/2	1	1 1/2
					0.4375	3	1 1/2	1 1/2
					0.4375	3 1/2	2	1 1/2
					0.4375	4	2 1/2	1 1/2
					0.4375	4 1/2	3	1 1/2
					0.4375	5	3 1/2	1 1/2
					0.4375	5 1/2	4	1 1/2
					0.4375	6	4 1/2	1 1/2
					0.4375	6 1/2	5	1 1/2
					0.4375	7	5 1/2	1 1/2
					0.4375	7 1/2	6	1 1/2
					0.4375	8	6 1/2	1 1/2
					0.4375	8 1/2	7	1 1/2
					0.4375	9	7 1/2	1 1/2
					0.4375	9 1/2	8	1 1/2
					0.4375	10	8 1/2	1 1/2
12. HEAD SHAPE	ROUND				DOUBLE HEX			
13. HEAD DIMENSIONS (inches)								
THICKNESS					0.100			
DIAMETER	1.1				1.0			
14. PLATES								
A. REQUIRED (yes/no)	NO				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
15. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	2.7	GALVALUME		ROUND WITH SPIKES	2	NYLON	
					ROUND WITH SPIKES	3	CARBON STEEL	
16. INSTALLATION EQUIPMENT					OPTIONAL			
SCREW GUN (optional/required)								
INSTALLATION TOOL WITH SCREW GUN (optional/required)					ELIMINATOR TOOL (OPTIONAL)			
SPECIAL TOOL NEEDED (optional/required)					ELECTRIC IMPACT WRENCH/ELIMINATOR (OPTIONAL)			
OTHER	BX LITE DRIVE							
17. AVERAGE PULLOUT RESISTANCE (lbs.)								
A. LIGHTWEIGHT CONCRETE	140				375			
B. GYPSUM					450			
C. CEMENTITIOUS WOOD FIBER					400			
18. ACCEPTED BY THE FOLLOWING CODES								
A. LIGHTWEIGHT CONCRETE	FM, METRO -DADE COUNTY				FM, METRO-DADE COUNTY			
B. GYPSUM					FM, METRO-DADE COUNTY			
C. CEMENTITIOUS WOOD FIBER					FM, METRO-DADE COUNTY			
19. WARRANTY AVAILABLE FROM THE MANUFACTURER (yes/no)	YES				YES			
20. SEE APPENDIX IF CHECKED	X				X			

NA=not applicable

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

OLYMPIC MANUFACTURING GROUP TOGGLE BOLT (STAINLESS STEEL)				OLYMPIC MANUFACTURING GROUP TOGGLE BOLT (CARBON STEEL)				OLYMPIC MANUFACTURING GROUP IRON-LOK TOGGLE BOLT			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
STAINLESS STEEL				CARBON STEEL				CARBON STEEL			
NA				CR-10 FLUOROCARBON				CR-10, WITH IRON-LOK ADHESIVE			
THREADED				THREADED				THREADED			
NA				NA				NA			
TOGGLE BOLT PLUS WING THRU PREDRILLED HOLE				TOGGLE BOLT PLUS WING THRU PREDRILLED HOLE				TOGGLE BOLT PLUS WING THRU PREDRILLED HOLE			
Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4
Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)	Shank Diameters Available (inches)	Shank Lengths Available (inches)	Fastening Range, Max. Total Thickness (inches)	Required Deck Penetration (inches)
0.215	4	2 1/2	1 1/2	0.215	4	2 1/2	1 1/2	0.215	4	2 1/2	1 1/2
0.215	6	4 1/2	1 1/2	0.215	6	4 1/2	1 1/2	0.215	6	4 1/2	1 1/2
0.215	7	5 1/2	1 1/2	0.215	7	5 1/2	1 1/2	0.215	7	5 1/2	1 1/2
0.215	8	6 1/2	1 1/2	0.215	8	6 1/2	1 1/2	0.215	8	6 1/2	1 1/2
0.215	10	8 1/2	1 1/2	0.215	10	8 1/2	1 1/2	0.215	10	8 1/2	1 1/2
0.215	12	10 1/2	1 1/2	0.215	12	10 1/2	1 1/2	0.215	12	10 1/2	1 1/2
0.215	14	12 1/2	1 1/2	0.215	14	12 1/2	1 1/2	0.215	14	12 1/2	1 1/2
0.215	16	14 1/2	1 1/2	0.215	16	14 1/2	1 1/2	0.215	16	14 1/2	1 1/2
0.215	18	16 1/2	1 1/2	0.215	18	16 1/2	1 1/2	0.215	18	16 1/2	1 1/2
0.215	20	18 1/2	1 1/2	0.215	20	18 1/2	1 1/2	0.215	20	18 1/2	1 1/2
0.215	22	20 1/2	1 1/2	0.215	22	20 1/2	1 1/2	0.215	22	20 1/2	1 1/2
0.215	24	22 1/2	1 1/2	0.215	24	22 1/2	1 1/2	0.215	24	22 1/2	1 1/2
ROUND TRUSS WITH #3 PHILLIPS				ROUND TRUSS WITH #3 PHILLIPS				ROUND TRUSS WITH #3 PHILLIPS			
0.110				0.110				0.110			
0.435				0.435				0.435			
YES				YES				YES			
YES				YES				YES			
Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4	Column 1	Column 2	Column 3	Column 4
Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material	
ROUND	2	STAINLESS STEEL		ROUND	2	STEEL		ROUND	2	STEEL	
ROUND	3	STAINLESS STEEL		ROUND	2	PLASTIC		ROUND	2	PLASTIC	
ROUND	2	STEEL		ROUND	2	STAINLESS STEEL		ROUND	2	STAINLESS STEEL	
ROUND	2	PLASTIC		ROUND	3	STEEL		ROUND	3	STEEL	
ROUND	3	STEEL		ROUND	3	PLASTIC		ROUND	3	PLASTIC	
ROUND	3	PLASTIC		ROUND	3	STAINLESS STEEL		ROUND	3	STAINLESS STEEL	
ROUND	3 1/2	STEEL		ROUND	3 1/2	STEEL		ROUND	3 1/2	STEEL	
REQUIRED				REQUIRED				REQUIRED			
600				600				600			
600				600				600			
600				600				600			
FM, METRO-DADE COUNTY				FM, METRO-DADE COUNTY				FM, METRO-DADE COUNTY			
FM, METRO-DADE COUNTY				FM, METRO-DADE COUNTY				FM, METRO-DADE COUNTY			
YES				YES				YES			
X				X				X			

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

1. COMPANY NAME	OLYMPIC MANUFACTURING GROUP				OLYMPIC MANUFACTURING GROUP			
2. PRODUCT NAME	LITE-DECK				OLYMPIC BASE SHEET FASTENER			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. DECK TYPE								
A. LIGHTWEIGHT CONCRETE					X			
B. GYPSUM	X				X			
C. CEMENTITIOUS WOOD FIBER	X							
5. USED WITH:								
A. INSULATION ATTACHMENT	X							
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES	X				X			
6. MATERIAL TYPE	HARDENED CARBON STEEL				STEEL			
7. COATING TYPE	CR-10 FLUOROCARBON				G-90 HOT DIPPED GALVANIZED AND CR-10 FLUOROCARBON			
8. SHANK TYPE	THREADED				SPLIT BODY			
9. POINT TYPE	PINCH				NA			
10. METHOD OF ATTACHMENT	THREADED				SHANK EXPANSION			
11. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.310	3	1	2	NA	1.75	NA	NA
	0.310	4	2	2		1.20		
	0.310	5	3	2				
	0.310	6	4	2				
	0.310	8	6	2				
	0.310	9	7	2				
	0.310	10	8	2				
	0.310	12	10	2				
12. HEAD SHAPE	ROUND #3 PHILLIPS				RECTANGULAR WITH ROUNDED CORNERS			
13. HEAD DIMENSIONS (inches)								
THICKNESS	0.558				1 X 1.3			
DIAMETER								
14. PLATES								
A. REQUIRED (yes/no)	YES				NO			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
15. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND	3	STEEL		ROUND	2 3/4	G-90 GALVANIZED AND GALVALUME	
16. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	REQUIRED							
INSTALLATION TOOL WITH SCREW GUN (optional/required)								
SPECIAL TOOL NEEDED (optional/required)					P090			
OTHER					MALLET (REQUIRED)			
17. AVERAGE PULLOUT RESISTANCE (lbs.)								
A. LIGHTWEIGHT CONCRETE	NA				40 MIN.			
B. GYPSUM	450				NA			
C. CEMENTITIOUS WOOD FIBER	450				NA			
18. ACCEPTED BY THE FOLLOWING CODES								
A. LIGHTWEIGHT CONCRETE					FM, UL, METRO-DADE COUNTY			
B. GYPSUM	FM, UL, METRO-DADE COUNTY				FM			
C. CEMENTITIOUS WOOD FIBER	FM, UL, METRO-DADE COUNTY				NA			
19. WARRANTY AVAILABLE FROM THE MANUFACTURER (yes/no)	YES				NO			
20. SEE APPENDIX IF CHECKED	X							

NA=not applicable

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

POWERS RAWL, INC.				POWERS RAWL, INC.				SCHULLER INTERNATIONAL INC.			
SPEED-LOCK TOGGLE				POWERLITE				NTB			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
CARBON STEEL & STAINLESS STEEL				DUPONT ZYTEL NYLON				NYLON			
PERMASEAL (ON CARBON STEEL)				NA				NA			
ANNULAR THREAD				TAPERED ROOT, SPIRAL THREAD				SPIRAL THREAD			
NA				GIMLET				NA			
TOGGLE BOLT				THREADED, SUBSTRATE COMPACTION				THREADED, SPIN WELD W/ & W/O WIRES			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
0.245	5	3 1/2	1 1/2	0.430	2	1/2	1 1/2	0.4375	2 1/2	1 1/4	1 1/2
0.245	6	4 1/2	1 1/2	0.430	2 1/2	1	1 1/2	0.4375	3	1 1/2	1 1/2
0.245	7	5 1/2	1 1/2	0.430	3	1 1/2	1 1/2	0.4375	3 1/2	2	1 1/2
0.245	8	6 1/2	1 1/2	0.430	3 1/2	2	1 1/2	0.4375	4	2 1/2	1 1/2
0.245	9	7 1/2	1 1/2	0.430	4	2 1/2	1 1/2	0.4375	4 1/2	3	1 1/2
0.245	10	8 1/2	1 1/2	0.430	4 1/2	3	1 1/2	0.4375	5	3 1/2	1 1/2
0.245	12	10 1/2	1 1/2	0.430	5	3 1/2	1 1/2	0.4375	5 1/2	4	1 1/2
0.245	14	12 1/2	1 1/2	0.430	5 1/2	4	1 1/2	0.4375	6	4 1/2	1 1/2
0.245	16	14 1/2	1 1/2	0.430	6	4 1/2	1 1/2	0.4375	6 1/2	5	1 1/2
0.245	18	16 1/2	1 1/2	0.430	6 1/2	5	1 1/2	0.4375	7	5 1/2	1 1/2
				0.430	7	5 1/2	1 1/2	0.4375	7 1/2	6	1 1/2
				0.430	7 1/2	6	1 1/2	0.4375	8	6 1/2	1 1/2
				0.430	8	6 1/2	1 1/2				
				0.430	8 1/2	7	1 1/2				
				0.430	9	7 1/2	1 1/2				
				0.430	9 1/2	8	1 1/2				
				0.430	10	8 1/2	1 1/2				
				0.430	11	9 1/2	1 1/2				
				0.430	12	10 1/2	1 1/2				
				0.430	13	11 1/2	1 1/2				
				0.430	14	12 1/2	1 1/2				
TRUSS				ROUND, 1/4-IN. RECESS				DOUBLE HEX			
0.10				0.120				0.10			
0.48				1.00				1.00			
YES				YES				YES			
YES				YES				YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
ROUND BARBED ROUND	2	GALVALUME		ROUND BARBED ROUND	2	GALVALUME		ROUND WITH SPIKES ROUND WITH SPIKES	2	NYLON	
	3	GALVALUME			3	GALVALUME			3	CARBON STEEL	
REQUIRED								OPTIONAL			
								AIR WRENCH OR HANDSET TOOL (OPTIONAL)			
ELECTRIC DRILL (OPTIONAL)				IMPACT WRENCH, ELECTRIC DRILL (OPTIONAL)				ELECTRIC IMPACT WRENCH/ELIMINATOR (OPTIONAL)			
1,000				280				375			
1,000				600				450			
1,000				450				450			
FM, METRO.-DADE COUNTY FM, METRO.-DADE COUNTY FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY FM, METRO.-DADE COUNTY FM, METRO.-DADE COUNTY				FM, METRO.-DADE COUNTY FM, METRO.-DADE COUNTY			
YES				YES				YES			
X											

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

1. COMPANY NAME	SCHULLER INTERNATIONAL INC.				SFS STADLER INC.			
2. PRODUCT NAME	LWC CR BASE SHEET FASTENERS				INSUL-LITE			
3. COUNTRY OF MANUFACTURE	U.S.				U.S.			
4. DECK TYPE								
A. LIGHTWEIGHT CONCRETE	X				X			
B. GYPSUM					X			
C. CEMENTITIOUS WOOD FIBER					X			
5. USED WITH:								
A. INSULATION ATTACHMENT	X				X			
B. BUILT-UP MEMBRANES	X				X			
C. SINGLE-PLY MEMBRANES					X			
6. MATERIAL TYPE	STEEL				NYLON			
7. COATING TYPE	CR-10				NA			
8. SHANK TYPE	TWO-PIECE RECTANGULAR				SPIRAL THREAD			
9. POINT TYPE	NA				GIMLET			
10. METHOD OF ATTACHMENT	SHANK EXPANSION				SUBSTRATE COMPACTION			
11. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	NA	1.75	NA	1.75	0.430	2	1/2	1 1/2
					0.430	2 1/2	1	1 1/2
					0.430	3	1 1/2	1 1/2
					0.430	3 1/2	2	1 1/2
					0.430	4	2 1/2	1 1/2
					0.430	4 1/2	3	1 1/2
					0.430	5	3 1/2	1 1/2
					0.430	5 1/2	4	1 1/2
					0.430	6	4 1/2	1 1/2
					0.430	7	5 1/2	1 1/2
					0.430	8	6 1/2	1 1/2
					0.430	9	7 1/2	1 1/2
					0.430	10	8 1/2	1 1/2
12. HEAD SHAPE	SQUARE, ROUND				ROUND			
13. HEAD DIMENSIONS (inches)								
THICKNESS	NA				0.120			
DIAMETER	1 1/8, 2 3/4				1.00			
14. PLATES								
A. REQUIRED (yes/no)	YES, NO				YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES				YES			
15. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1	Column 2	Column 3		Column 1	Column 2	Column 3	
	Shape	Dimensions (inches)	Material		Shape	Dimensions (inches)	Material	
	ROUND	2 3/4	GALVALUME		ROUND BARBED ROUND BARBED	2 3	GALVALUME GALVALUME	
16. INSTALLATION EQUIPMENT								
SCREW GUN (optional/required)	NA							
INSTALLATION TOOL WITH SCREW GUN (optional/required)	NA							
SPECIAL TOOL NEEDED (optional/required)	NA							
OTHER	MALLET				IMPACT WRENCH			
17. AVERAGE PULLOUT RESISTANCE (lbs.)								
A. LIGHTWEIGHT CONCRETE	40 MIN.				280			
B. GYPSUM					600			
C. CEMENTITIOUS WOOD FIBER					450			
18. ACCEPTED BY THE FOLLOWING CODES								
A. LIGHTWEIGHT CONCRETE	FM, METRO-DADE COUNTY				FM			
B. GYPSUM					FM			
C. CEMENTITIOUS WOOD FIBER					FM			
19. WARRANTY AVAILABLE FROM THE MANUFACTURER (yes/no)	YES				YES			
20. SEE APPENDIX IF CHECKED								

NA=not applicable

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

SFS STADLER INC.				SUBCON PRODUCTS CORP.				TRI-PLY			
FM-90 BASE PLY				THE PEEL RIVET, OR TPR				DEKLITE			
U.S.				U.S.				U.S.			
X				X				X			
				X				X			
				X				X			
				X				X			
X				X				X			
X				X				X			
STEEL				HIGH MAGNESIUM ALUMINUM ALLOY				NYLON			
HOT DIPPED G90 GALVANIZED & URETHANE				NA				NA			
TWO-PIECE RECTANGULAR				SMOOTH, THREADLESS BODY				SPIRAL THREADED			
NA				SELF-PENETRATING				GIMLET			
SHANK EXPANSION				MECHANICAL				THREADED			
Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
NA	1 7/10	NA	NA	0.250	1 1/2	3/4	3/4	0.750	2 1/2	3/4	1 3/4
				0.250	2	1 1/4	3/4	0.750	3	1 1/4	1 3/4
				0.250	3	2 1/4	3/4	0.750	3 1/2	1 3/4	1 3/4
				0.250	4	3 1/4	3/4	0.750	4	2 1/4	1 3/4
				0.250	6	4 1/4	3/4	0.750	4 1/2	2 3/4	1 3/4
				0.250	7	6 1/4	3/4	0.750	5	3 1/4	1 3/4
				0.250	8	7 1/4	3/4	0.750	5 1/2	3 3/4	1 3/4
				0.250	9	8 1/4	3/4	0.750	6	4 1/4	1 3/4
				0.250	10	9 1/4	3/4	0.750	6 1/2	4 3/4	1 3/4
								0.750	7	5 1/4	1 3/4
								0.750	7 1/2	5 3/4	1 3/4
								0.750	8	6 1/4	1 3/4
								0.750	8 1/2	6 3/4	1 3/4
								0.750	9	7 1/4	1 3/4
								0.750	9 1/2	7 3/4	1 3/4
								0.750	10	8 1/4	1 3/4
ROUND				SLIGHTLY CONVEX RIVET HEAD				ROUND			
2.75				0.0625 0.485				0.125 1.0			
NO YES				YES YES				YES YES			
Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material		Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
		ROUND BARBE		ROUND	2 3	GALVALUME GALVALUME		ROUND HEX	2 2 7/8	GALVALUME GALVALUME	
MAGNETIC DRIVER (REQUIRED)				COMPRESSOR (REQUIRED)				REQUIRED			
90 MIN NA NA				509 507 374				200 400 350/250			
FM, METRO-DADE COUNTY				FM FM FM							
YES				YES X				YES			

Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

1. COMPANY NAME	TRU-FAST CORPORATION			
2. PRODUCT NAME	TL (TECTUM LIGHTWEIGHT)			
3. COUNTRY OF MANUFACTURE	U.S.			
4. DECK TYPE				
A. LIGHTWEIGHT CONCRETE	X			
B. GYPSUM	X			
C. CEMENTITIOUS WOOD FIBER	X			
5. USED WITH:				
A. INSULATION ATTACHMENT	X			
B. BUILT-UP MEMBRANES	X			
C. SINGLE-PLY MEMBRANES	X			
6. MATERIAL TYPE	DUPONT ZYTEL NYLON			
7. COATING TYPE	NA			
8. SHANK TYPE	SPIRAL THREAD			
9. POINT TYPE	GIMLET			
10. METHOD OF ATTACHMENT	THREADED, SUBSTRATE COMPACTION			
11. DIAMETER, LENGTH, FASTENING RANGE, PENETRATION	Column 1 Shank Diameters Available (inches)	Column 2 Shank Lengths Available (inches)	Column 3 Fastening Range, Max. Total Thickness (inches)	Column 4 Required Deck Penetration (inches)
	0.430	2	1/2	1 1/2
	0.430	2 1/2	1	1 1/2
	0.430	3	1 1/2	1 1/2
	0.430	3 1/2	2	1 1/2
	0.430	4	2 1/2	1 1/2
	0.430	4 1/2	3	1 1/2
	0.430	5	3 1/2	1 1/2
	0.430	5 1/2	4	1 1/2
	0.430	6	4 1/2	1 1/2
	0.430	6 1/2	5	1 1/2
	0.430	7	5 1/2	1 1/2
	0.430	7 1/2	6	1 1/2
	0.430	8	6 1/2	1 1/2
	0.430	8 1/2	7	1 1/2
	0.430	9	7 1/2	1 1/2
	0.430	9 1/2	8	1 1/2
	0.430	10	8 1/2	1 1/2
12. HEAD SHAPE	ROUND, 1/4-IN. RECESS			
13. HEAD DIMENSIONS (inches)				
THICKNESS	0.120			
DIAMETER	1.00			
14. PLATES				
A. REQUIRED (yes/no)	YES			
B. AVAILABLE FROM MANUFACTURER (yes/no)	YES			
15. PLATE SHAPE, DIMENSIONS, AND MATERIAL	Column 1 Shape	Column 2 Dimensions (inches)	Column 3 Material	
	ROUND BARBE	2	GALVALUME	
	ROUND BARBE	3	GALVALUME	
	ROUND BARBE	2	STAINLESS STEEL	
	ROUND BARBE	3	STAINLESS STEEL	
16. INSTALLATION EQUIPMENT				
SCREW GUN (optional/required)				
INSTALLATION TOOL WITH SCREW GUN (optional/required)				
SPECIAL TOOL NEEDED (optional/required)				
OTHER	IMPACT WRENCH, ELECTRIC DRILL (OPTIONAL)			
17. AVERAGE PULLOUT RESISTANCE (lbs.)				
A. LIGHTWEIGHT CONCRETE	280			
B. GYPSUM	600			
C. CEMENTITIOUS WOOD FIBER	450			
18. ACCEPTED BY THE FOLLOWING CODES				
A. LIGHTWEIGHT CONCRETE	FM			
B. GYPSUM	FM			
C. CEMENTITIOUS WOOD FIBER	FM			
19. WARRANTY AVAILABLE FROM THE MANUFACTURER (yes/no)	YES			
20. SEE APPENDIX IF CHECKED				

NA=not applicable