



*Low-Slope Roofing  
Materials Guide*

**2000**

# **2000 LOW-SLOPE ROOFING MATERIALS GUIDE**

The information source on low-slope membranes, insulation boards, roof coatings and cements, roof fastener products and membrane warranties for the commercial roof designer, specifier, installer, manufacture and user.



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# Low-Slope Roofing Materials Guide

## Introduction

The 2000 edition of NRCA's *Low-Slope Roofing Materials Guide* is a comprehensive report on commercial, industrial and institutional low-slope roof covering, rigid insulation board, fastener, and cements and coating products currently on the market in the United States. It also provides pertinent information about the warranties offered for most membrane roof systems.

The National Roofing Contractors Association (NRCA) publishes the guide annually as a service to the roofing industry. The objective of the guide is to provide information that will be helpful to users in determining which specific manufacturers' products will best serve their particular needs. It is of special value to those associated with the design, specification, application and use of low-slope roof systems.

The guide's first edition was published in 1983. From its inception until 1992, it was titled the *Roofing Materials Guide*. The 1993 edition of this publication was the first one to bear the title *Commercial Low-Slope Roofing Materials Guide*. The term "commercial low-slope" distinguished it from a companion publication, the *Residential Steep-Slope Roofing Materials Guide*, which was first published in November 1992. The *Residential Steep-Slope Roofing Materials Guide* provided information on asphalt shingle, clay and concrete tile, wood shake and shingle, fiber-cement and synthetic shingle, slate, architectural metal panel and underlayment products, and asphalt shingle warranties.

When applied to the U.S. roofing market, the terms "commercial low-slope" and "residential steep-slope" are by no means definitive. Low-slope roofing products commonly are used on non-residential buildings (e.g., commercial, industrial, and institutional buildings) and are sometimes used on residential buildings (e.g., single family homes, townhouses). Conversely, steep-slope roofing products are commonly used on residential buildings and are sometimes used on non-residential buildings.

Beginning in 1999, the titles of these guides changed to the *Low-Slope Roofing Materials Guide* and the *Steep-Slope Roofing Materials Guide*. The reason for these title changes, and division of product categories, is for consistency with other NRCA publications, including *The NRCA Roofing and Waterproofing Manual*.

Low-slope roofing products are those primarily intended for roofs with slopes of 3:12 (14 degrees) or less. Built-up, polymer modified bitumen, single-ply, spray polyurethane foam-based, and structural metal panel roof systems fit this category.

Steep-slope roofing products are defined as those primarily intended for roofs with slopes greater than 3:12 (14 degrees). Asphalt shingle, fiber-cement and synthetic, clay and concrete tile, wood shake and

shingle, slate and architectural metal panel roof systems fit this category.

In publishing the *Low-Slope Roofing Materials Guide*, NRCA maintains a policy of objectivity in its reporting of data. Nothing is required from listing manufacturers other than to adhere to the prescribed reporting format. Any manufacturer of a product in the product categories included in the guide can be listed by submitting its information 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. Manufacturers interested in having their products listed in future editions of the guide are encouraged to contact NRCA at:

National Roofing Contractors Association  
Attention: Roofing Materials Guide  
10255 West Higgins Road, Suite 600  
Rosemont, Illinois 60018-5607

NRCA exercises due care in accurately reporting the data supplied by product manufacturers. NRCA does not audit test procedures used to arrive at the reported data, nor assume responsibility for the accuracy or completeness of the data submitted. The presence or absence of a listing of products or manufacturers in the guide does not imply NRCA's approval or disapproval of the products or companies, nor does NRCA recommend that any specific materials be used or not.

NRCA does not develop standards itself but, instead, works towards and supports the improvements of existing standards and 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 the values of the reference standards, documents, recommendations or criteria does not necessarily imply that they will or will not produce acceptable roof systems.

## How the Guide is Organized

The *Low-Slope Roofing Materials Guide* is divided into six primary sections:

- Section 1: Roof Coverings
- Section 2: Rigid Board Insulation
- Section 3: Roof Fasteners
- Section 4: Roof Cements and Coatings
- Section 5: Roof Membrane Warranties
- Section 6: Incomplete Data.

There is a general index listing all product manufacturers included in the guide and the locations of their specific product listings at the end of this introductory section. Also a listing of all product manufacturers and the locations of their specific products is provided at the beginning of each section, with exception to Section 6: Incomplete Data.

There is also an introduction to information for each section at the beginning of each section. The introduction to Section 1: Roof Coverings encompasses built-up, polymer modified bitumen, single-ply, spray polyurethane foam-based and metal panel roof system products.

Finally, there are separate appendices at the end of Section 1: Roof Coverings, Section 2: Rigid Board Insulation, Section 3: Roof Fasteners and Section 4: Roof Cements and Coatings. The purpose of these appendices is to provide manufacturer-supplied information that expands 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".

When reviewing the data in the guide, users should keep in mind that the format is designed to facilitate side-by-side product comparisons. For this reason, listing companies can only respond to existing items of requested information; they cannot add their own items. Footnoting is not permitted in guide listings; companies instead may expand on or clarify information by providing copy for the appendix.

## **Product Listings with Incomplete Data**

Product manufacturers included in the guide are encouraged to provide NRCA with listing information for their products that is as complete as possible for publication in the guide. Beginning with this edition of the guide, when manufacturers submit product information (e.g., test results) that is incomplete, these specific products have been omitted from the detailed listing sections of the guide. Manufacturers and products with incomplete product listing information are included in a new section of the guide, entitled Section 6: Incomplete Data.

NRCA has established this policy regarding manufacturers' product listings with incomplete data at the request of users of the guide, who are clearly seeking detailed and complete product information from the guide and the companies listed.

Users of the guide who are interested in specific product information on a manufacturer's product that is included in Section 6: Incomplete Data are encouraged to contact the product manufacturer directly. Manufacturers' contact information is provided in the index section of the guide.

# General Index

	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	OTHER PRE-FABRICATED	SPF BASED SYSTEMS	TPO	METAL	EXTRUDED INSULATION	CELLULAR GLASS FIBER / MINERAL FIBER INSULATION	WOOD FIBERBOARD INSULATION	PERLITE INSULATION	COMPOSITE INSULATION POLYISOCYANURATE	ROOF FASTENERS	CEMENTS & COATINGS	MEMBRANE WARRANTIES	INCOMPLETE DATA		
<b>ACRYMAX TECHNOLOGIES INC.</b> 221 Brooke Street Media, PA 19063 610/566-7470 FAX: 610/891-0834 E-mail: acrymax.com																		482	668	
																		530		
<b>AEP-SPAN</b> P O Box 150449 Dallas, TX 75315 214/827-1746 FAX: 214/828-1394  Web site: www.aep-span.com										278										
<b>AFM R-CONTROL BUILDING SYS.</b> P.O. Box 246 Excelsior, MN 55331 800/255-0176  E-mail: afm@r-control.com Web site: www.r-control.com											332	334				356				
<b>ALCO-NVC, INC.</b> P O Box 14001 Detroit, MI 48214 800/323-0029 FAX: 313/331-4726 E-mail:alconvc@aol.com Web site: www.alconvc.com																		482	668	
																		530		
<b>ALDO PRODUCTS CO., INC.</b> 1604 N. Main Street Kannapolis, NC 28081 704/932-3054 FAX: 704/932-3041 E-mail: aldocoat@aol.com										258										
<b>ALLIEDSIGNAL ROOFING SYSTEMS</b> 2000 Regency Parkway, Suite 225 Cary, NC 27511-8507 919/461-0670 (NC) 800/221-6490 FAX: 919/461-4720 E-mail: alliedroof@alliedsignal.com Web site: www.alliedroof.com	48	84										340		342	344	346			570	665
		140															350			
		184																		
<b>ALUMINUM COATING MFRS.</b> 7301 Bessemer Avenue Cleveland, OH 44127 800/556-8030 FAX: 216/341-5833 E-mail: sales@alum.com																		483		
																		531		
																		668		
<b>AMERICAN BUILDING ROOFING &amp; ARCHITECTURAL PRODUCT</b> P O Box 800 Eufaula, AL 36072 334/687-2032 FAX: 334/68700298 E-mail: info@americanbuildings.com										281										
<b>AMERICAN LUBRICANTS CO.</b> 1227 Deeds Avenue Dayton, OH 45401 937/222-2851 FAX: 937/461-7729		84																	574	
		124																		



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<b>AMERICAN STEEL BUILDING CO.</b> P O Box 14244 Houston, TX 77221 713/433-5661 FAX: 713/433-0847										283											
<b>AMERICAN TAR COMPANY</b> A Division of Fields Company, LLC 2240 Taylor Way Tacoma, WA 98421 253/627-4098 FAX 253/627-3859																			485	668	
																			532		
<b>ANDEK CORP.</b> P O Box 392 850 Glen Avenue Moorestown, NJ 08057 888/88ANDEK FAX: 888/44ANDEK									258										487	665	
																			533	668	
<b>ARS INDUSTRIES</b> 9606 Parkway East, Suite E Birmingham, AL 32515 205/836-6777 FAX: 205/836-4090										284											
<b>ARVRON INC.</b> 4720 Clay, SW Grand Rapids, MI 49548 616/530-1888										332											
<b>ATAS INTERNATIONAL, INC.</b> Iron Run Industrial Park 6612 Snowdrift Road Allentown, PA 18106 610/395-8445 FAX: 610/395-9342 E-mail: info@atas.com										285											
<b>ATLAS ROOFING CORP.</b> 1775 The Exchange, Suite 160 Atlanta, GA 30339 770/933-4478 FAX: 770/952-3170  Web site: www.atlasroofing.com																	346				
																	350				
<b>BARRETT COMPANY</b> 3422 Old Capitol Trail Wilmington, DE 19808 800/647-0100	49																			574	665
<b>BENCHMARK FOAM INC.</b> 3200 9th Ave., S.E. Watertown, SD 57201-9102 800/658-3444 FAX: 605/886-8099 E-mail: getfoam@benchmarkfoam.com Web site: www.benchmarkfoam.com										332							356				

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<b>BERRIDGE MANUFACTURING CO.</b> Roof Division Houston, TX 77026 713/223-4971 FAX: 713/433-0847 E-mail: sales@berridge.com Web site: www.berridge.com									288										
<b>BIG SKY INSULATION INC.</b> 15 Arden Drive P O Box 838 Belgrade, MT 59714 406/388-4146										332							357		
<b>BITEC INC.</b> #2 Industrial Park Dr. Morrilton, AR 72110 800/535-8597 FAX 501/354-3019 E-mail: dga@bitec.com Web site: www.bi-tec.com		85 124 141 185																578	
<b>BMCA INSULATION PRODUCTS</b> 300 N. Haven Avenue Ontario, CA 91761 800/858-8868 FAX: 909/390-8764										344							376		
<b>BONDCOTE ROOFING SYSTEMS</b> 984 Southford Road Middlebury, CT 06762 800/368-2160							244 250											580	
<b>BURKE INDUSTRIES</b> 2250 South 10th St. San Jose, Ca 95112 408/297-3500 800/297-7010 FAX 408/280-0938						234 236												580	
<b>BUTLER MANUFACTURING CO.</b> BMA Tower Penn Valley Park Kansas City, MO 64141 816/968-2370 FAX 816/968-2371									291										
<b>CARLISLE SYNTEC INC</b> P.O. Box 7000 Carlisle, PA 17013 717/245-7000 FAX 717/245-7245				218 228		244 251				332	334			342		346 351	376 402 434 452	582	
<b>CARPENTER INSULATION CO</b> P.O. Box 27205 Richmond, VA 23261 800/288-3836										332							357		

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<b>CELOTEX CORP.</b> 4010 Boy Scout Blvd. Tampa, FL 33607 813/873-1700 FAX: 813/873-4080 E-mail: aharrington@celotex.com	51	87 125 186												342 345 347 351		378 403 435 454	488 533 584 666
<b>CERTAINTED</b> ROOFING PRODUCTS GROUP 750 E. Swedesford Rd P O Box 860 Valley Forge, PA 19482 800/359-7298 FAX: 610/341-7055 Web site: www.certainteed.com	54	87 125 144 187															
<b>CONKLIN CO.</b> P.O. Box 155 Shakopee, MN 55379-0155 800/888-8838 FAX 612/496-4285 E-mail: marketing@conklin.com Web site: www.conklin.com					234 236		259									489 535	588 668
<b>CONSTRUCTION FASTENERS INC.</b> Dekfast Product Group Spring & Van Reed Box 6326 Wyomissing, PA 19610 610/376-5751 FAX: 610/376-8551																379 405 436 454	
<b>COOLEY ENGINEERED MEMBRANE INC.</b> 50 Esten Avenue Box 939 Pawtucket, RI 02862-0939 401/724-0490 FAX: 401/726-8731 E-mail: cooleygroup.com						245 251											
<b>CURVELINE INC.</b> P.O. Box 4268 Ontario, CA 91761 909/947-6022 FAX 909/947-1510 E-mail: curveline@cyberg8t.com Web site: www.met.tile.com/curveline							293										
<b>DANOSA CARIBBEAN INC.</b> Box 13757, Santurce Station San Juan, PR 00908 809/785-4545 FAX 809/787-3902 E-mail: danosapr@icepr.com Web site:		89 147 189															590 666
<b>DERMABIT, WATERPROOFING INDUSTRIES INC.</b> P. O Box 273 Alexandria, VA 22313-0273 703/739-2801 FAX 703/739-2802		91 127 148															590
<b>DEWITT PRODUCTS CO.</b> 5860 Plumer Detroit, MI 48209 313/554-0575 800/962-8599 FAX 313/554-2171 Web site: www.dewitt@globalbiz.com																489 535	669

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<b>DIBITEN</b> P.O. Box 5108 Denver, CO 80217-5108 800/342-4836 FAX 303/978-3904			91 127 189															592
<b>DOW CHEMICAL CO., THE</b> Fabricated Products Business Center 1605 Joseph Drive, Larkin 200 Building Midland, MI 48674 517/638-5225											335					358		
<b>DOW CORNING CORPORATION</b> P.O. Box 994 Midland, MI 48686-0994 517/496-6000 FAX 517/496-8026									260									
<b>DURADEK U.S., LTD.</b> Ensuroco Duradek 1722 Iron Street North Kansas City, MO 84116 800/338-3568 FAX: 816/421-2924 E-mail: duradek@kcnet.com			206 212															596
<b>DURO-LAST INC.</b> 525 Morley Drive Saginaw, MI 48601 800/248-0280 (All U.S.) FAX 800/432-9331							245 252									381 407 437		594
<b>ECOLOGY ROOF SYSTEMS</b> 505 N. Tustin Avenue #188 Santa Ana, CA 92705 714/972-1001 FAX: 714/972-1079  Web site: www.ecologyroofsystems.com	56	91 127 149 190					245 252										491 535	
<b>ENGLERT INC.</b> 1200 Amboy Ave. Perth Amboy, NJ 08862 732/826-8614 FAX 732/826-8865									294									
<b>ERSYSTEMS</b> Elastomeric Roofing Systems, Inc. 50 Medina Street Loretto, MN 55357-0056 612/479-6690 FAX: 612/479-6691 E-mail: ersinfo@ersystems.com Web site: www.ersystems.com				220 229			245 252	260 276									493 537	598
<b>ES PRODUCTS</b> 280 Franklin Street, P.O. Box 810 Bristol, RI 02809 401/253-8600 FAX: 401/253-8896																	407 455	

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<b>FABRAL</b> 3449 Hempland Road Lancaster, PA 17601 717/397-2741 FAX 717/397-1040 E-mail: fabinf@fabral.com										295									
<b>FIELDS COMPANY, LLC</b> 2240 Taylor Way Tacoma, WA 98421 253/627-4098 FAX 253/383-2181	58																	495	
																		537	
<b>FIRESTONE BUILDING PRODUCTS CO.</b> 525 Congressional Blvd. Carmel, IN 46032 800/428-4442 E-mail: firestonebpco.com	61	93	206	221		240											347	381	600
		128	212	229		242											352	407	
		151																437	
		191																459	
<b>FLEX MEMBRANE INTERNATIONAL, INC.</b> Bethlehem Drive Morgantown, PA 19543 610/286-7788 FAX 610/286-7786 E-mail flexroof@compuserve.com			206			245													604
			212			253													
<b>FOAM PLASTICS OF NEW ENGLAND</b> Route 69 Prospect, CT 06712 203/758-6651 (CT) 800/2327-3763 FAX: 203/758-3162 E-mail: foamplastic@sprintmail.com										332									
<b>FOLLANSBEE STEEL</b> P.O. Box 610 Follansbee, WV 26037 800/624-6906 FAX 304/527-1269 E-mail: folrfg@lbcorp.com										297									
<b>GAF MATERIALS CORP.</b> 1361 Alps Road Wayne, NJ 07470 973/628-3000 800/766-3411 FAX: 973/628-3451 Web site: www.gaf.com	62	95	207			240					332	336			343	345	347	382	499
		129	221			242											353	408	539
		153																438	
		192																460	
<b>GACO WESTERN, INC.</b> P.O. Box 88698 Seattle, WA 98138-2698 800/456-4226 FAX 206/575-0587									261										
									276										
<b>GALVAMET, INC.</b> 2267 Via Burton Street Anaheim, CA 92806 714/758-4848 FAX 714/758-4855 E-mail: jgeortner@galvamet.com										298									

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<b>GARDNER ASPHALT CORP./APOC DIVISION</b> P.O. Box 5449 Tampa, FL 33675-5449 FAX 813/248-6768									265										499 540
<b>GARLAND COMPANY INC.</b> 3800 E. 91st Street Cleveland, OH 44105 216/641-7500 FAX 216/641-0633																			666 669
<b>G. E. SILICONES</b> division of GENERAL ELECTRIC 260 Hudson River Rd. Bldg. 25-73 Waterford, NY 12188 518/237-3330 FAX 518/233-3931									265										
<b>GENFLEX ROOFING SYSTEMS</b> 1722 Indian Wood Circle Maumee, OH 43537 800/448-4272 FAX: 419/891-4436  Web site: www.genflex.com			208 213	222 230			240 243	246 253											612
<b>GEORGIA PACIFIC CORP.</b> 133 Peachtree St, NE P O Box 105624 Atlanta, GA 30348-5624 404/652-5547 800/879-7781 FAX: 404/230-7845 Ej-mail:															343				
<b>GMX, INC.</b> 9105 Way Ave. Cleveland, OH 44105 216/641-7502 FAX 216/641-0633																			501 541
<b>GRACE &amp; CO., W.R.</b> 62 Whittemore Avenue Cambridge, MA 02140 617/876-1400																			616 667
<b>GRUNDY INDUSTRIES, INC.</b> 1301 Herkimer St. Joliet, IL 60432 815/726-5087 800/435-1210 FAX 815/726-7301																			502 541 669
<b>GS ROOFING PRODUCTS CO. INC.</b> See: Certainteed Corporation																			

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<b>HENRY COMPANY</b> 2911 Slauson Avenue Huntington Park, CA 90255 213/583-5000 FAX 213/582-6429	65																505 543	618
<b>HICKMAN SYSTEMS INC., W.P.</b> 30700 Solon Industrial Parkway Solon, OH 44139 440/248-7760 FAX 440/248-6524 E-mail: wphickman@wphickman.com	82																	
<b>HILTI INC.</b> P. O. Box 21148 Tulsa, OK 21148 800/879-8000 FAX: 918/252-6988 E-mail: ushilti.com																	385 410 439 462	
<b>HUEBERT FIBERBOARD CO.</b> 1545 E. Morgan Street, Box 167 Booneville, MO 65233 660/882-2704 FAX: 660/882-2704														343				
<b>IB ROOF SYSTEMS</b> 2877 Chad Drive-B Eugene, OR 97408 541/242-2871 FAX: 541/302-6692 E-mail: solution@ibroof.com			209 214															
<b>ICA, INC.</b> P.O. Box 679 Warrington, PA 18976 215/918-0889 FAX 215/918-0890 E-mail: hedges1@aol.com		98 129 194																
<b>IKO INDUSTRIES</b> 120 Hay Rd. Wilmington, DE 19809 302/764-3100 FAX 302/764-5852		98 131 156 194																666
<b>IMPER ITALIA S.P.A.</b> Strada Lanzo 131 10148 Torino, ITALY 11-262-0941 FAX 11-262-1621		666																620
<b>INNOVATIVE METALS CO., INC.</b> 2070 Steel Drive Tucker, GA 30084 770/908-1030 FAX 770/908-2264									299									

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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	TPO	OTHER PRE-FABRICATED	SPF BASED SYSTEMS	INSULATION	EXTRUDED INSULATION	GLASS FIBER / MINERAL FIBER	CELLULAR GLASS INSULATION	WOOD FIBERBOARD	PERLITE INSULATION	COMPOSITE INSULATION	POLYISOCYANURATE	CEMENTS & COATINGS	MEMBRANE WARRANTIES	INCOMPLETE DATA
<b>INSUL-BOARD, INC.</b> 2120 Colonial Ave. P.O. Box 679 Erie, PA 16505 814/833-7400 FAX: 814/838-4774 E-mail: insul@erie.net												333							
<b>INSULATED BUILDING SYSTEMS, INC.</b> 9912 Georgetown Pike, Suite D2 Great Falls, VA 22066 703/757-0118 FAX: 703/757-0119 E-mail: aol.com/insbldgsys/libr.htm												333					358		
<b>INSULATION CORP. OF AMERICA</b> 2571 Mitchell Avenue Allentown, PA 18103 610/791-4200												333							
<b>INTEC/PERMAGLAS</b> P.O. Box 2845 Port Arthur, TX 77643 800/231-4631 FAX 409/724-2348 E-mail: support@usintec.com	66																	620	
<b>INTERCONTINENTAL COATINGS CORP. (I-CON)</b> 16744 W. Park Circle Drive Chagrin Falls, OH 44023 440/543-3114 FAX: 440/543-3443								246 254											
<b>INTERNATIONAL DIAMOND SYSTEMS INC.</b> P.O. Box 351950 Toledo, OH 43635 419/382-0111 FAX 419/382-3275				222 230														620	
<b>IPS Insulated Panel Systems</b> P . O. Box 968 Stafford, TX 77497-0968 281/499-2605 FAX 281/499-3363										301									
<b>ITW BUILDDEX</b> 1349 W. Bryn Mawr Avenue Itasca, IL 60143 800/284-5339 630/595-33500 FAX: 630/595-6329																	386 411 441 463		
<b>JOHNS MANVILLE INTNL</b> Roofing Systems Group P.O. Box 5108 Denver, CO 80217 303/978-2000 FAX 303/978-3904	67	101 131 159 195	209 215	223 230								340			345	347 354	389 414 443 464	622	



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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	TPO	SPF BASED SYSTEMS	OTHER PRE-FABRICATED	METAL	EXTRUDED INSULATION	GLASS FIBER / MINERAL FIBER INSULATION	CELLULAR GLASS INSULATION	WOOD FIBERBOARD INSULATION	PERLITE INSULATION	COMPOSITE INSULATION POLYISOCYANURATE	CEMENTS & COATINGS	MEMBRANE WARRANTIES	INCOMPLETE DATA
<b>KARNAK CORPORATION</b> 330 Central Avenue Clark, NJ 07066 732/388-0300 800/526-4236 FAX 732/388-9422  Web site: www.karnakcorp.com	68																508 545	
<b>KEMPER SYSTEMS, INC.</b> 550 S. Michigan St. Seattle, WA 98108 206/767-9505 800/541-5455 FAX 206/767-9531 E-mail: kempersys.com																	511 546	
<b>KNAUF USA POLYSTYRENE</b> 2725 Henkle Drive Lebanon, OH 45036 513/922-6823 FAX: 513/932-3506										333								
<b>KOKEM PRODUCTS INC.</b> 4432 N.E. Davis Portland, OR 97213 503/235-9206 FAX 503/235-9206																	511 546	
<b>KOPPERS INDUSTRIES INC.</b> 436 Seventh Avenue Pittsburgh, PA 15219 800/558-2706 FAX: 412/227-2002  Web site: www.koppers.com	69													343	345	348 355		630 666
<b>LUCAS SALES CO., INC.</b> 10623 Baur Blvd. St. Louis, MO 63132 314/993-9610 FAX: 314/993-4836										336					345			
<b>MALARKEY ROOFING CO.</b> P.O. Box 17217 Portland, OR 97217-0217 503/283-1191 OR 800/545-1191	70	103 132 162 196																618
<b>MBCI/NCI</b> P.O. Box 38217 Houston, TX 77238 281/445-8555 FAX 281/445-1791 E-mail www.mbc.com										301								
<b>MBTECHNOLOGY CORPORATION</b> 188 South Teilman Ave Fresno, CA 93706 800/621-9281 FAX 209/233-4607																		632 666

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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	OTHER PRE-FABRICATED	TPO	SPF BASED SYSTEMS	EXTRUDED INSULATION	GLASS FIBER / MINERAL FIBER INSULATION	CELLULAR GLASS INSULATION	WOOD FIBERBOARD INSULATION	PERLITE INSULATION	COMPOSITE INSULATION POLYISOCYANURATE	CEMENTS & COATINGS	MEMBRANE WARRANTIES	INCOMPLETE DATA
<b>MCELROY METAL CO.</b> 1500 Hamilton Road Bossier City, LA 71111 318/747-8000 FAX 318/747-8029									305								
<b>MERCHANT &amp; EVANS INC.</b> 100 Connecticut Drive Burlington, NJ 08016 609/387-3033 FAX 609/387-4838									308								
<b>METACRYLICS ACRYLIC POLYESTER ROOFING PRODUCT</b> 142 N. 27th Street San Jose, CA 95116 408/280-7733 FAX 408/280-6329 E-mail: metacrylics@msn.com																511 546	
<b>METAL SALES MFG CORP</b> 7800 State Rd. 60 Sellersburg, IN 47172 812/246-0819 FAX 812/246-0829 E-mail: pserv@aye.net Web site: www.mtlsales.com									310								
<b>MFM BUILDING PRODUCTS</b> P.O. Box 340 520 Orange St. Coshocton, OH 43812 7404/622-2645 800/882-7663 E-mail: mfm@coshocton.com	77																
<b>MONSEY - DIV OF HENRY CO.</b> 336 Cold Stream Road Kimberton, PA 19442 800/523-0268 FAX: 610/933-4598																513 547 669	
<b>MONSEY BAKOR</b> 336 Cold Stream Road Kimberton, PA 19442 800/523-0268 FAX 610/933-4598 E-mail: monsey-bakor.com		105 163 199														636	
<b>MULE HIDE PRODUCTS CO., INC.</b> 2924 Wyetta Drive Beloit, WI 53511 608/365-3111			209 215	224 231	234 236											636	
<b>NATIONAL COATINGS CORP.</b> 1201 Calle Suerte Camarillo, CA 93012 805/388-7112 FAX 805/388-8140 E-mail: nationalcoatings.com									265 276							517 549	

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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	TPO	SPF BASED SYSTEMS	OTHER PRE-FABRICATED	METAL	EPS INSULATION	EXTRUDED INSULATION	GLASS FIBER / MINERAL FIBER INSULATION	CELLULAR GLASS INSULATION	WOOD FIBERBOARD INSULATION	PERLITE INSULATION	COMPOSITE INSULATION	POLYISOCYANURATE	CEMENTS & COATINGS	MEMBRANE WARRANTIES	INCOMPLETE DATA
<b>NATIONAL NAIL CORP.</b> 2964 Clydon, SW Grand Rapids, MI 49509 800/746-5659 FAX: 616/531-5970																		415 443		
<b>NEOGARD, DIV JONES BLAIR</b> 6900 Maple Avenue P.O. Box 35288 Dallas, TX 75235 800/321-6588 FAX 214/357-7532 E-mail: neogard@neogard.org									265											
<b>NORTH CAROLINA FOAM IND.</b> 1515 Carter St. P.O. Box 1528 Mount Airy, NC 27030 336/789-9161 FAX 336/789-9586  Web site: www.ncfi.com									277											
<b>OLYMPIC MANUFACTURING GROUP</b> P.O. Box 508 153 Bowles Road Agawam, MI 01001 800/633-3800 413/789-0252 FAX: 413/789-1069 E-mail: info@olyfast.com																		391 417 443 465		
<b>OLYMPIC RUBBER ROOFING SYSTEMS INC.</b> P.O. Box 091082 Milwaukee, WI 53209 800/552-5393 414/442-3117				224 231															636	
<b>OWENS CORNING</b> 275 Southwest Avenue Tallmadge, OH 44278 330/633-6735													337							
<b>OWENS CORNING FALCON FOAM</b> 8240 Byron Center Road Byron, MI 49315 616/878-1588 FAX: 616/878-0874													333							
<b>PACEMAKER PLASTICS CO., INC.</b> 126 New Pace Road, P. O. Box 279 Newcomerstown, OH 43832 800/446-2188 FAX: 740/498-4184 E-mail: pacemaker@tusco.net Web site: www.pacemakerplastics.com													333							
<b>PERFORMANCE ROOF SYSTEMS</b> 4821 Chelsea Ave. Kansas City, MO 64130 816/921-0221 FAX 816/921-5540 E-mail: prshunt@aol.com		107 133 200																	368	667

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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	TPO	SPF BASED SYSTEMS	OTHER PRE-FABRICATED	METAL	EPS INSULATION	EXTRUDED INSULATION	GLASS FIBER / MINERAL FIBER INSULATION	CELLULAR GLASS INSULATION	WOOD FIBERBOARD INSULATION	PERLITE INSULATION	COMPOSITE INSULATION	POLYISOCYANURATE	CEMENTS & COATINGS	MEMBRANE WARRANTIES	INCOMPLETE DATA
<b>PETERSEN ALUMINUM</b> 1005 Tonne Rd. Elk Grove Village, IL 60007 800/323-1960 FAX 800/722-7150  www.pac-clad.com									311											
<b>PITTSBURGH CORNING CORP.</b> 800 Presque Isle Drive Pittsburg, PA 15239 800/359-8433 FAX: 724/327-5890  Web site: www.foamglas/insulation.com															341					
<b>PLASTIC COATINGS CORP.</b> P.O. Box 1068 St. Albans, WV 25177 304/755-9151 FAX 304/755-0229									267											
<b>PLYMOUTH FOAM INC.</b> 1800 Sunset Drive Plymouth, WI 53073 920/893-0535 FAX: 920/892-4986  Web site: www.plymouthfoam.com										333										
<b>POLY FOAM INC.</b> 116 Pine Street, South Lester Prairie, MN 55354-0218 320/395-2551										333										
<b>POLYDYNE</b> 260 Grell Lane Johnson Creek, WI 53038 800/225-7659 FAX 414/648-5647									267											
<b>POLYFOAM PACKERS CORP.</b> Construction Products Division 3751 Sunset Avenue Waukegan, IL 60067 800/800-0359 847/263-0200 FAX: 847/263-0350																	358			
<b>POLYGLASS USA</b> 150 Lyon Drive Fernley, NV 89408 702/575-6007 FAX 702/575-2314 E-mail: otto@polyglass.com		108 135 166 201																		667
<b>POLYTHANE SYSTEMS, INC.</b> P.O. Box 1452 Spring, TX 77383-6450 281/350-9000 FAX 281/288-6450 E-mail: ridgestock@aol.com									269 277											

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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	TPO	SPF BASED SYSTEMS	OTHER PRE-FABRICATED	METAL	EXTRUDED INSULATION	GLASS FIBER / MINERAL FIBER INSULATION	CELLULAR GLASS INSULATION	WOOD FIBERBOARD INSULATION	PERLITE INSULATION	COMPOSITE INSULATION	POLYISOCYANURATE	CEMENTS & COATINGS	MEMBRANE WARRANTIES	INCOMPLETE DATA
<b>POWERS RAWL,</b> Powers Fasteners, Inc. New Rochelle, NY 10801 914/235-6300 FAX: 914/576-6483																	393 418 445 467		
<b>PROTECTIVE COATINGS INC.</b> 1620 Birchwood Avenue Fort Wayne, IN 46803 800/992-8299 FAX: 219/422-7147				225 231														642	
<b>QUANTUM COATING</b> 9200 Latty Avenue St. Louis, MO 63042 800/624-4995 FAX: 314/524-6522									269										
<b>R-MAX INC.</b> 13524 Welch Road Dallas, TX 75244 972/387-4500 FAX: 972/387-4673  Web site: www.rm-inc.com																348 355			
<b>REPUBLIC POWDERED METALS, INC.</b> 3735 Green Road Beachwood, OH 44122 800/551-7081 FAX: 888/742-1759					238 293													517 549	642 669
<b>R.M. LUCAS CO.</b> 3211 South Wood St. Chicago, IL 60608 773/523-4300 FAX 773/523-3290 E-mail: rmlucas@ix.netcam.com																		518 549	669
<b>ROOFING PRODUCTS INTERNATIONAL</b> 57460 Dewitt St. Elkhart, IN 46517 800/628-2957 219/293-9096 FAX 219/294-3450  Web site: www.roofingproductsint.com				226 232														644	
<b>SARNAFIL INC.</b> 100 Dan Road Canton, MA 02021 800/451-2504			210 216															646	
<b>SEAMAN CORPORATION</b> FiberTite Roofing Systems 1000 Venture Blvd. Wooster, OH 44691 800/927-8578 FAX: 800/649-2737							247 256											646	

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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	TPO	OTHER PRE-FABRICATED	SPF BASED SYSTEMS	CELLULAR GLASS INSULATION	EXTRUDED INSULATION	GLASS FIBER MINERAL FIBER	WOOD FIBERBOARD	PERLITE INSULATION	COMPOSITE INSULATION	POLYISOCYANURATE	CEMENTS & COATINGS	MEMBRANE WARRANTIES	INCOMPLETE DATA
<b>SENCO PRODUCTS</b> 8485 Broadwell Road Cincinnati, OH 45244 800/543-4596 FAX: 800/543-3299  Web site: www.senco.com																	420	
<b>SFS STADLER INC.</b> 5460 Wegman Drive Valley City, OH 44280 330/273-7171 800/648-6032 FAX: 330/273-7181																	394 421 446 468	
<b>SIMPLEX NAILS &amp; FASTENERS, INC.</b> 100 Petty Road, Suite A Lawrenceville, GA 30043-4813 800/622-3354 FAX: 770/822-6822 E-mail: technical@www.simplexnails.com																	424 448 469	
<b>SIPLAST INC.</b> 1111 Hwy. 67 South Arkadelphia, AR 71923 870/246-8094  E-mail: kersey@siplast.com			111 167 202														650	
<b>SOMAY PRODUCTS, INC.</b> 4301 N.W. 35th Avenue Miami, FL 33142-4382 305/633-6333 FAX 305/638-5524 E-mail: paint@somay.com																	669	
<b>SOPREMA, INC.</b> 310 Quadral Drive Wadsworth, OH 44281 330/334-0066 800/356-3521 FAX 330/334-4289			113 171														652	
<b>SOUTHWESTERN PETROLEUM CORPORATION (SWEPCO)</b> 534 No. Main St. P.O. Box 961005 Fort Worth, TX 76161-0005 817/332-2336 800/877-9372 FAX 817/877-4047 E-mail: swepcousa.com	78																521 551	652 669
<b>SPM THERMO-SHIELD INC.</b> Rt. 2, Box 208A Custer, SD 57730 605/673-3201 FAX 605/673-3200 E-mail: spm@thermoshield.com Web site:																	522 551	
<b>STEELOX ROOF SYSTEMS</b> P.O. Box 8181 Mason, OH 45040-8181 513/573-5200 FAX 513/573-5511									313									

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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	TPO	SPF BASED SYSTEMS	OTHER PRE-FABRICATED	METAL	EXTRUDED INSULATION	CELLULAR GLASS INSULATION	WOOD FIBERBOARD INSULATION	PERLITE INSULATION	COMPOSITE INSULATION	POLYISOCYANURATE	CEMENTS & COATINGS	MEMBRANE WARRANTIES	INCOMPLETE DATA
<b>STEVENS ROOFING SYSTEMS</b> J.P.S. Elastomerics Corp. 9 Sullivan Road Holyoke, MA 01040-2800 800/621-ROOF FAX 413/552-1198 E-mail: info@stvroof.com						235 237	241 243											628
<b>SUNGUARD MARKETING CORP.</b> 4432 N.E. Davis Portland, OR 97213 503/235-9206 FAX 503/235-9206																		669
<b>SWD URETHANE COMPANY</b> 222 South Date St. Mesa, AZ 85210 480/969-8413 800/828-1394 FAX 480/461-6926 E-mail: whip@swdurethane.com Web site: www.swdurethane.com									271 277									
<b>T-CLEAR CORPORATION</b> P. O. Box 416 Hamilton, OH 45012 800/544-7398 or 513/870-9243 FAX: 513/870-9606 E-mail: telesouth1.com																359		
<b>TAMKO ROOFING PRODUCTS, INC.</b> 220 West 4th Street PO Box 1404 Joplin, MO 64802 417/624-6644 FAX 417/624-8935  Web site: www.tamko.com		117 137 179 202															522 551	654
<b>TEMPLE</b> P O Drawer N Diboll, TX 75941 409/829-1254 800/231-6060  Web site: www.temple.com													343					
<b>TENNECO BUILDING PRODUCTS</b> 2907 Log Cabin Drive Smyrna, GA 30080-7013 800/241-4402 FAX: 404/350-1489												339						
<b>TEXAS REFINERY CORP.</b> One Refinery Place P.O. Box 711 Ft. Worth, TX 76101 817/332-1161 FAX 817/332-2340  Web site: www.texasrefinery.com		119 138 204															524 553	660 670
<b>TEXSA, S.A.</b> Poligono Can Pelegri San Andreu de la Barca, Spain 34-3-6820770 FAX 34-3-6820752		119 138 181 204																

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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	OTHER PRE-FABRICATED	TPO	SPF BASED SYSTEMS	METAL	EXTRUDED INSULATION	GLASS FIBER / MINERAL FIBER INSULATION	CELLULAR GLASS INSULATION	WOOD FIBERBOARD INSULATION	PERLITE INSULATION	COMPOSITE INSULATION POLYISOCYANURATE	CEMENTS & COATINGS	MEMBRANE WARRANTIES	INCOMPLETE DATA
<b>THERMCO INDUSTRIES INC.</b> 809 E 15th St., P.O. Box 49 Washington, IA 52353 800/247-7831 319/653-6216										333								
<b>TOPCOAT, INC., A SUBSIDIARY OF GAF MATERIALS CORP.</b> 24 Industrial Road Walpole, MA 02081-1305 800/323-0009 FAX 508/660-2471																	524 553	670
<b>TREMCO INC.</b> 3735 Green Rd. P.O. Box 228069 Beachwood, OH 44122-8069 216/292-5000 FAX: 216/766-5629 Web site: www.tremcoroofing.com	79	119 181				235 237	238 239										525 553	660
<b>TRI-PLY</b> P.O. Box 2685 Port Arthur, TX 77643 800/331-3007 FAX 409/727-0771	80																389	
<b>TRU-FAST CORPORATION</b> 02105 William County Road 12-C Bryan, OH 43506 800/443-9804 FAX: 419/636-1784 E-mail: tru-fast@bright.net Web site: trufast.com																	399 431 449 471	
<b>UCSC, LTD.</b> 1208 N. Grand Roswell, NM 88201 505/623-9726 FAX 505/623-1908 E-mail: ucscurethane.com									272 277									
<b>UNIFLEX, INDUSTRIAL DIV. OF KOOL SEAL, INC.</b> 1499 Enterprise Parkway Twinsburg, OH 44087 216/425-4717 FAX 216/425-9778																	527 555	670
<b>UNIROOF CORPORATION</b> P.O. Box 160133 Altamonte Springs, FL 32716-0133 407/869-5110																	528 555	667 668
<b>UNITED COATINGS</b> 19011 E Cataldo Greenacres, WA 99016 509/926-7143 FAX 509/928-1116									273								528 555	



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<b>UNITED STEEL DECK INC.</b> 475 Springfield Avenue P.O. Box 662 Summit, NJ 07902-0662 908/277-1617 FAX 908/277-1619 E-mail: heagler@ix.netcom.com									314								
<b>U.S. INTEC INC.</b> 1361 Alps Road Wayne, NJ 07470 800/624-6832 FAX: 973/628-4167  Web site: www.usintec.com		120 139 182													349 355	401 433 451 472	662
<b>VERISCO INCORPORATED</b> 3485 Fortuna Drive Akron, OH 44312 216/644-6700 800/992-7663 FAX 216/644-2613				227 232			248 257										664
<b>VINCENT METAL GOODS</b> P.O. Box 360 Minneapolis, MN 55440 612/717-9000 FAX 612/717-7122									316								
<b>W P HICKMAN SYSTEMS INC.</b> 30700 Solon Industrial Parkway Solon, OH 44139 440/248-7760 FAX 440/248-6524 E-mail: wphickman@wphickman.com	82				235 237												664 667
<b>WOOLLEY &amp; COMPANY</b> 6865 Mimms Drive Doraville, GA 30340 770/448-8473 FAX: 770/448-3061										333							

## Section 1

# *Low-Slope Roofing Materials Guide*

# *2000*

*Roof Coverings*

# Information on Section 1: Roof Coverings

## General Information

Section 1: Roof Coverings in the 2000 edition of NRCA's *Low-Slope Roofing Materials Guide* is divided into 10 primary sections based on roof covering product type. These primary sections are as follows:

- Built-up membrane
- Modified bitumen sheet membrane
- PVC single-ply membrane
- EPDM single-ply membrane
- CSPE single-ply membrane
- PIB single-ply membrane
- TPO single-ply membrane
- Other prefabricated single-ply membranes
- Spray polyurethane foam-based
- Metal panels

A specific description of each particular roof covering type and a general description of the specific information contained within each primary section are included at the conclusion of this General Information section.

An index of the manufacturers included in Section 1: Roof Coverings and locations of their specific products within this section immediately follows this Roof Coverings section.

## Built-Up Membrane

A built-up roof membrane is defined in *The NRCA Roofing and Waterproofing Manual, Fourth Edition* as "a continuous, semi-flexible multi-ply roof membrane, consisting of plies or layers of saturated felts, coated felts, fabrics or mats between which alternate layers of bitumen are applied. Generally, built-up roof membranes are surfaced with mineral aggregate and bitumen, a liquid-applied coating or a granule-surfaced cap sheet."

Information on built-up membrane products is presented in the guide on the basis of built-up membrane system designations provided by the listing manufacturers. Manufacturers' system designations typically identify the specific membrane substrate, number and type of membrane plies, interply bitumen and surfacing.

Specific listing information included in the guide for manufacturers' built-up membrane system specifications is as follows:

1. Number of regional service locations
2. Licensed application agreement
3. Distribution method
4. Preformed accessories available
5. Limitations/Restrictions
6. Sales/Technical information
7. Felts data: Trade name
8. Specification number

9. Hot and/or cold applied
10. Deck type
11. Slope requirements
12. Number of plies
13. Type of felt
14. Interply adhesive
15. Surfacing
16. Weight
17. Restricted regions
18. Year of first commercial use
19. Test results per NBS BSS #55

Reporting of test result data for built-up membrane systems is provided in Item 19: Test Results per NBS BSS #55 on the basis of the National Bureau of Standards (NBS) Building Science Series (BSS) #55, titled "Preliminary Criteria for Bituminous Membrane Roofing", dated 1974.

Warranty information for built-up membrane roof systems is provided in Section 5: Roof Membrane Warranties.

Users of the guide who are interested in additional information regarding built-up membrane roof systems are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

## Modified Bitumen Sheet Membrane

A modified bitumen sheet membrane is defined in *The NRCA Roofing and Waterproofing Manual, Fourth Edition* as a "composite sheet consisting of a polymer modified bitumen often reinforced and sometimes surfaced with various types of mats, films, foils and mineral granules." Polymer modified bitumen is further defined as "a bitumen modified through the inclusion of one or more polymers." The most common modifiers used in bitumen polymer modification are atactic polypropylene (APP) and styrene butadiene styrene (SBS).

Information on modified bitumen sheet products is presented in the guide in three parts: Part 1: General Information, Part 2: Test Results and Part 3: Modified Bitumen Specifications. Part 2: Test Results is further divided into two sections based upon polymer modifier type, APP Modified Bitumen Part 2: Test Results and SBS Modified Bitumen Part 2: Test Results.

Specific listing information included in Part 1: General Information is as follows:

1. Company name
2. Product name
3. Product description
4. Kinds of field surfacing required
5. Use in
6. Field joint lap method
7. Types of roof systems

8. Minimum slope required
9. Acceptable substrates
10. Restricted regions
11. Workable temperature range
12. Flashing material
13. Flashing method
14. Preformed accessories available
15. Country of origin and manufacture
16. Year of first commercial use
17. Number of squares installed
18. Methods of distribution
19. Number of regional locations
20. Licensed applicator agreement
21. Sales information contact
22. Technical information contact

In Part 2: Test Results for APP modified bitumen sheet products, specific listing information is as follows:

1. Company name
2. Product name
3. Product description
4. Complies with (ASTM standard designation)
5. Dimensions and masses of sheet materials
6. Physical properties.

Reporting of test result data for Items 4, 5 and 6 is based upon the following American Society for Testing and Materials (ASTM) standards:

- ASTM D6222-98, titled "Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using Polyester Reinforcements"
- ASTM D6223-98, titled "Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements".

In Part 2: Test Results for SBS modified bitumen sheet products, specific listing information is as follows:

1. Company name
2. Product name
3. Product description
4. Complies with (ASTM standard designation)
5. Dimensions and masses of sheet materials
6. Physical properties.

Reporting of test result data for Items 4, 5 and 6 is based on the following American Society for Testing and Materials (ASTM) standards:

- ASTM D6162, titled "Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements"
- ASTM D6163, titled "Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements"
- ASTM D6164, titled "Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements".

In Part 3: Modified Bitumen Specifications, manufacturers listing information is provided based upon the following

- Company name
- Manufacturers specification number
- Type of roof installation and substrate
- Total number of plies
- Base sheet description
- Names of sheet products used in membrane

Warranty information for modified bitumen membrane roof systems is provided in Section 5: Roof Membrane Warranties.

Users of the guide who are interested in additional information regarding modified bitumen membrane roof systems are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

## PVC Single-Ply Membrane

A polyvinyl chloride (PVC) single-ply membrane is a factory-manufactured thermoplastic sheet consisting of a reinforcing fabric and a synthetic thermoplastic polymer prepared from vinyl chloride.

Information on PVC single-ply membrane sheet products is presented in the guide in two parts: Part 1: General Information and Part 2: Test Results.

Specific information included in Part 1: General Information is as follows:

1. Company name
2. Product name
3. Product description
4. Coating required
5. Use in
6. Field lap joint method
7. Types of roof systems
8. Minimum slope required
9. Acceptable substrates
10. Restricted regions
11. Workable temperature range
12. Flashing material
13. Flashing method
14. Preformed accessories available
15. Country of origin and manufacture
16. Year of first commercial use
17. Number of squares installed
18. Method of distribution
19. Number of regional locations
20. Licensed applicator agreement
21. Sales information contact
22. Technical information contact

In Part 2: Test Results, specific information included is as follows:

1. Company name
2. Product name

3. Type (ASTM standard designation)
4. Overall thickness
5. Tensile strength
6. Breaking strength
7. Elongation
8. Seam strength
9. Retention of properties after heat aging
10. Tear resistance
11. Tear strength
12. Low temperature bend
13. Accelerated weathering
14. Linear dimensional change
15. Change in weight after water immersion

Reporting of test result data in Items 3 through 15 is based on American Society for Testing and Materials (ASTM) Standard D4434-95, titled "Specification for Poly (Vinyl Chloride) Sheet Roofing."

Warranty information for PVC single-ply membrane roof systems is provided in Section 5: Roof Membrane Warranties.

Users of the guide who are interested in additional information regarding PVC single-ply membrane roof systems are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

## EPDM Single-Ply Membrane

An ethylene propylene diene monomer (EPDM), or terpolymer, single-ply membrane is factory-manufactured thermoset single-ply membrane that is principally composed of two components, ethylene and propylene. When these components are combined with diene, a flexible rubber matrix is formed. EPDM single-ply membranes are available in two types, non-reinforced and reinforced.

Information on EPDM single-ply membrane sheet products is presented in the guide in two parts: Part 1: General Information and Part 2: Test Results.

Specific information included in Part 1: General Information is as follows:

1. Company name
2. Product name
3. Product description
4. Coatings required
5. Use in
6. Field lap joint method
7. Types of roof systems
8. Minimum slope required
9. Acceptable substrates
10. Restricted regions
11. Workable temperature range
12. Flashing material
13. Flashing method
14. Preformed accessories available

15. Country of origin and manufacture
16. Year of first commercial use
17. Number of squares installed
18. Methods of distribution
19. Number of regional locations
20. Licensed applicator agreement
21. Sales information contact
22. Technical information contact

In Part 2: Test Results, specific information included is as follows:

1. Company name
2. Product name
3. Grade
4. Class
5. Thickness
6. Breaking strength
7. Tensile strength
8. Ultimate elongation
9. Tensile set
10. Tear resistance
11. Tearing strength
12. Brittleness point
13. Ozone resistance
14. Heat aging
15. Water absorption
16. Factory seam strength
17. Weather resistance

Reporting of test result data for Items 3 through 17 is based upon American Society for Testing and Materials (ASTM) Standard D4637-96, titled "Specification for Vulcanized Rubber Sheet Used in Single-Ply Roof Membrane."

Warranty information for EPDM single-ply membrane roof systems is provided in Section 5: Roof Membrane Warranties.

Users of the guide who are interested in additional information regarding EPDM single-ply membrane roof systems are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

## CSPE Single-Ply Membrane

A chlorosulfonated polyethylene (CSPE) single-ply membrane is factory-manufactured thermoset single-ply membrane that is principally composed of a synthetic rubber material commonly called Hypalon, which is a proprietary trade name of a compound developed by E.I. duPont de Nemours & Co., Inc.

Information on CSPE single-ply membrane sheet products is presented in the guide in two parts: Part 1: General Information and Part 2: Test Results.

Specific information included in Part 1: General Information is as follows:

1. Company name
2. Product name
3. Product description
4. Coating required
5. Use in
6. Field lap joint method
7. Types of roof systems
8. Minimum slope required
9. Acceptable substrates
10. Restricted regions
11. Workable temperature range
12. Flashing material
13. Flashing method
14. Preformed accessories available
15. Country of origin and manufacture
16. Year of first commercial use
17. Number of squares installed
18. Methods of distribution
19. Number of regional locations
20. Licensed applicator agreement
21. Sales information contact
22. Technical information contact

In Part 2: Test Results, specific information included is as follows:

1. Company name
2. Product name
3. Sheet construction
4. Thickness
5. Breaking strength
6. Elongation
7. Tearing strength
8. Low temperature bend
9. Linear dimensional change
10. Fabric adhesion
11. Ply adhesion
12. Hydrostatic resistance
13. Ozone resistance
18. Weather resistance

Reporting of test result data for Items 3 through 14 is based on American Society for Testing and Materials (ASTM) Standard D5019-96, titled "Specification for Reinforced Non-Vulcanized Polymeric Sheet Used in Roofing Membrane."

Warranty information for CSPE single-ply membrane roof systems is provided in Section 5: Roof Membrane Warranties.

Users of the guide who are interested in additional information regarding CSPE single-ply membrane roof systems are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

## PIB Single-Ply Membrane

A polyisobutylene (PIB) single-ply membrane is factory-manufactured thermoplastic single-ply membrane that

is composed of a butyl-based compound that is extruded into sheet form.

Information on PIB single-ply membrane sheet products is presented in the guide in two parts: Part 1: General Information and Part 2: Test Results.

Specific information included in Part 1: General Information is as follows:

1. Company name
2. Product name
3. Product description
4. Coating required
5. Use in
6. Field lap joint method
7. Types of roof systems
8. Minimum slope required
9. Acceptable substrates
10. Restricted regions
11. Workable temperature range
12. Flashing material
13. Flashing method
14. Preformed accessories available
15. Country of origin and manufacture
16. Year of first commercial use
17. Number of squares installed
18. Methods of distribution
19. Number of regional locations
20. Licensed applicator agreement
21. Sales information contact
22. Technical information contact

In Part 2: Test Results, specific information included is as follows:

1. Company name
2. Product name
3. Thickness
4. Breaking strength
5. Elongation
6. Tearing strength
7. Low temperature bend
8. Linear dimensional change
9. Fabric adhesion
10. Hydrostatic resistance
11. Ozone resistance
12. Weather resistance
13. Tensile strength of coating
14. Elongation of coating
15. Tear resistance of coating
16. Ozone resistance of coating
17. Water absorption of coating

Reporting of test result data for Items 3 through 17 is based on American Society for Testing and Materials (ASTM) Standard D5019-96, titled "Specification for Reinforced Non-Vulcanized Polymeric Sheet Used in Roofing Membrane."

Warranty information for PIB single-ply membrane roof systems is provided in Section 5: Roof Membrane Warranties.

Users of the guide who are interested in additional information regarding PIB single-ply membrane roof systems are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

## TPO Single-Ply Membrane

A thermoplastic olefin (TPO) is a factory manufactured thermoplastic single-ply membrane that is compounded from a blend of polypropylene and ethylene-propylene polymers. TPO single-ply membranes are available in two types, non-reinforced and reinforced.

Information on TPO single-ply membrane sheet products is presented in the guide in two parts: Part 1: General Information and Part 2: Test Results.

Specific information included in Part 1: General Information is as follows:

1. Company name
2. Product name
3. Product description
4. Coating required
5. Use in
6. Field lap joint method
7. Types of roof systems
8. Minimum slope required
9. Acceptable substrates
10. Restricted regions
11. Workable temperature range
12. Flashing material
13. Flashing method
14. Preformed accessories available
15. Country of origin and manufacture
16. Year of first commercial use
17. Manufacturing plant location(s)
18. Methods of distribution
19. Number of regional locations
20. Licensed applicator agreement
21. Sales information contact
22. Technical information contact

In Part 2: Test Results, specific information included is as follows:

1. Company name
2. Product name
3. Type/class
4. Physical properties

Reporting of test results data for Items 3 and 4 is based on a draft American Society for Testing and Materials (ASTM) product standard for the sheet membrane.

Warranty information for TPO single-ply membrane roof systems is provided in Section 5: Roof Membrane Warranties.

Users of the guide who are interested in additional information regarding TPO single-ply membrane roof systems are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

## Other Prefabricated Single-Ply Membranes

Other prefabricated single-ply membrane products are sheet-applied membrane products that do not fit classifications as PVC, EPDM, CSPE, PIB or TPO products.

Information on other prefabricated single-ply membrane products is presented in the guide in two parts: Part 1: General Information and Part 2: Test Results.

Specific information included in Part 1: General Information is as follows:

1. Company name
2. Product name
3. Product description
4. Coating required
5. Use in
6. Field lap joint method
7. Types of roof systems
8. Minimum slope required
9. Acceptable substrates
10. Restricted regions
11. Workable temperature range
12. Flashing material
13. Flashing method
14. Preformed accessories available
15. Country of origin and manufacture
16. Year of first commercial use
17. Number of squares installed
18. Methods of distribution
19. Number of regional locations
20. Licensed applicator agreement
21. Sales information contact
22. Technical information contact

In Part 2: Test Results, specific information included is as follows:

1. Company name
2. Product name
3. Product description
4. Thickness
5. Tensile strength
6. Lap joint method
7. Elongation at break
8. Tensile set
9. Low temperature flexibility
10. Water absorption
11. Dimensional stability
12. Heat aging

13. Ozone resistance
14. Accelerated weathering
15. Dynamic impacting
16. Tear resistance
17. Tearing strength
18. Low temperature impact
19. Permeability
20. Dimensional change
21. Cone penetration

Reporting of test results data for Items 4 through 21 is based on recognized test methods. The specific test methods utilized are at the discretion of the listing manufacturers for their specific products; the specific test methods utilized by the manufacturers are listed within the test data.

Warranty information for other prefabricated single-ply membrane roof systems is provided in Section 5: Roof Membrane Warranties.

Users of the guide who are interested in additional information regarding other prefabricated single-ply membrane roof systems are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

## Spray Polyurethane Foam-Based

Spray polyurethane foam-based (SPF) roof systems consist of a two-part liquid that is spray-applied in the field to form an insulation base. Over this base, a protective coating is applied, which provides the weatherproofing component of the roof system.

Information on SPF-based roof system products is presented in the guide in two parts: Part 1: Protective Coatings and Part 2: Insulation.

Specific information included in Part 1: Protective Coatings is as follows:

1. Company name
2. Product name
3. Coating description
4. Name of base coat and top coat
5. Number of coating applications required
6. Required dry film thickness
7. Film cure time
8. Minimum slope required
9. Requirements for use
10. Flashing material
11. Application conditions
12. Application equipment requirements
13. Restricted regions
14. Restricted building uses
15. Recommended recoating schedule
16. Physical properties
17. UL 790, Class A
18. Foam insulation requirements

19. Foam available from manufacturer
20. Year of first commercial use
21. Number of squares installed
22. Manufacturer-qualified applicator required
23. Methods of distribution
24. Number of regional service locations
25. Sales and technical information contacts

Specific information included in Part 2: insulation is as follows:

1. Company name
2. Product name
3. Recommended types of protective coatings
4. System coating available from manufacturer
5. Required application conditions
6. Physical properties of the foam
7. UL 790, Class A
8. Year of first commercial use
9. Number of squares installed
10. Manufacturer-qualified applicators required
11. Methods of distribution
12. Number of regional sales locations
13. Sales and technical information contacts

Users of the guide who are interested in additional information regarding SPF-based roof systems are encouraged to refer to *The NRCA SPF-Based Roofing Manual* or *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

## Metal Panel

Metal panel roof systems are traditionally divided into two categories: structural metal panels and architectural metal panels. Generally, structural metal panel roof systems are installed on low-slope roofs, that is roofs with slopes less than 3:12 (14 degrees). Architectural metal panel roof systems are generally installed on steep-slope roof systems, that is roofs with slopes of 3:12 (14 degrees) or greater. Structural metal panel roof systems can support structural loads without being applied over separate roof decks. Architectural metal panel roof systems are applied over structural roof decks that resists structural loads.

Information on metal panel roof systems, both structural metal panels and architectural metal panels, is contained in the guide. Specific information included is as follows:

1. Company name
2. Product name
3. Architectural/structural applications
4. Panel configuration
5. System requirements
6. Panel profile
7. Seam processing, height and sealant
8. Fastening method
9. Specialty applications
10. Manufacturer and product data



11. ASTM E 331 water penetration
12. ASTM E 1646 water penetration
13. ASTM E 283 air infiltration
14. ASTM E 1680 air infiltration
15. FM/UL wind uplift ratings

Users of the guide who are interested in additional information regarding metal panel roof systems are encouraged to refer to *The NRCA Metal Roofing Manual* or *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

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<b>AEP-SPAN</b> P O Box 150449 Dallas, TX 75315 214/827-1746 FAX: 214/828-1394 E-mail: Web: www.aep-span.com										278	
<b>ALCO-NVC, INC.</b> P O Box 14001 Detroit, MI 48214 800/323-0029 FAX: 313/331-4726 E-mail:alconvc@aol.com Web: www.alconvc.com											
<b>ALDO PRODUCTS CO., INC.</b> 1604 N. Main Street Kannapolis, NC 28081 704/932-3054 FAX: 704/932-3041 E-mail: aldocoat@aol.com Web:									258		
<b>ALLIEDSIGNAL ROOFING SYSTEMS</b> 2000 Regency Parkway, Suite 225 Cary, NC 27511-8507 919/461-0670 (NC) 800/221-6490 FAX: 919/461-4720 E-mail: alliedroof@alliedsignal.com Web: www.alliedroof.com	48	84 140 184									674
<b>AMERICAN BUILDING ROOFING &amp; ARCHITECTURAL PRODUCTS</b> P O Box 800 Eufaula, AL 36072 334/687-2032 FAX: 334/68700298 E-mail: info@americanbuildings.com										281	
<b>AMERICAN LUBRICANTS CO.</b> 1227 Deeds Avenue Dayton, OH 45401 937/222-2851 FAX: 937/461-7729 E-mail: Web:		84 124									
<b>AMERICAN STEEL BUILDING CO.</b> P O Box 14244 Houston, TX 77221 713/433-5661 FAX: 713/433-0847 E-mail: Web:										283	
<b>ANDEK CORP.</b> P O Box 392 850 Glen Avenue Moorestown, NJ 08057 888/88ANDEK FAX: 888/44ANDEK E-mail:									258		674

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<b>ARS INDUSTRIES</b> 9606 Parkway East, Suite E Birmingham, AL 32515 205/836-6777 FAX: 205/836-4090 E-mail: Web:										284	
<b>ATAS INTERNATIONAL, INC.</b> Iron Run Industrial Park 6612 Snowdrift Road Allentown, PA 18106 610/395-8445 FAX: 610/395-9342 E-mail: info@atas.com										285	
<b>BARRETT COMPANY</b> 3422 Old Capitol Trail Wilmington, DE 19808 800/647-0100 FAX: E-mail: Web:	49										674
<b>BERRIDGE MANUFACTURING CO.</b> Roof Division Houston, TX 77026 713/223-4971 FAX: 713/433-0847 E-mail: sales@berridge.com Web: www.berridge.com										288	
<b>BITEC INC.</b> #2 Industrial Park Dr. Morriton, AR 72110 800/535-8597 FAX 501/354-3019 E-mail: dga@bitec.com Web: www.bi-tec.com		85 124 141 185									
<b>BONDCOTE ROOFING SYSTEMS</b> 984 Southford Road Middlebury, CT 06762 800/368-2160 FAX: E-mail: Web:						244 250					
<b>BURKE INDUSTRIES</b> 2250 South 10th St. San Jose, Ca 95112 408/297-3500 800/297-7010 FAX 408/280-0938 E-mail: Web:					234 236						
<b>BUTLER MANUFACTURING CO.</b> BMA Tower Penn Valley Park Kansas City, MO 64141 816/968-2370 FAX 816/968-2371 E-mail:										291	

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<b>CARLISLE SYNTEC INCORPORATED</b> P.O. Box 7000 Carlisle, PA 17013 717/245-7000 FAX 717/245-7245				218 228		244 251					
<b>CELOTEX CORP.</b> 4010 Boy Scout Blvd. Tampa, FL 33607 813/873-1700 FAX: 813/873-4080 E-mail: aharrington@celotex.com Web:	51	87 125 186		219 228							675
<b>CERTAINTED</b> ROOFING PRODUCTS GROUP 750 E. Swedesford Rd P O Box 860 Valley Forge, PA 19482 800/359-7298 FAX: 610/341-7055 Web: www.certainteed.com	54	87 125 144 187									
<b>CONKLIN CO.</b> P.O. Box 155 Shakopee, MN 55379-0155 800/888-8838 FAX 612/496-4285 E-mail: marketing@conklin.com Web: www.conklin.com					234 236			259			
<b>COOLEY ENGINEERED MEMBRANE INC.</b> 50 Esten Avenue Box 939 Pawtucket, RI 02862-0939 401/724-0490 FAX: 401/726-8731 E-mail: cooleygroup.com							245 251				
<b>CURVELINE INC.</b> P.O. Box 4268 Ontario, CA 91761 909/947-6022 FAX 909/947-1510 E-mail: curveline@cyberg8t.com Web: www.met.tile/com/curveline									293		
<b>DANOSA CARIBBEAN INC.</b> Box 13757, Santurce Station San Juan, PR 00908 809/785-4545 FAX 809/787-3902 E-mail: danosapr@icepr.com Web:		89 147 189									675
<b>DERMABIT, WATERPROOFING INDUSTRIES INC.</b> P. O Box 273 Alexandria, VA 22313-0273 703/739-2801 FAX 703/739-2802 E-mail:		91 127 148									

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<b>DIBITEN</b> P.O. Box 5108 Denver, CO 80217-5108 800/342-4836 FAX 303/978-3904 E-mail: Web:		206 127 189									
<b>DOW CORNING CORPORATION</b> P.O. Box 994 Midland, MI 48686-0994 517/496-6000 FAX 517/496-8026 E-mail: Web:								260			
<b>DURADEK U.S., LTD.</b> 1722 Iron Street North Kansas City, MO 84116 800/338-3568 FAX: 816/421-2924 E-mail: duradek@kcnet.com Web:			206 212								
<b>DURO-LAST INC.</b> 525 Morley Drive Saginaw, MI 48601 800/248-0280 (All U.S.) FAX 800/432-9331 Ej-mail: Web:							245 252				
<b>ECOLOGY ROOF SYSTEMS</b> 505 N. Tustin Avenue #188 Santa Ana, CA 92705 714/972-1001 FAX: 714/972-1079 E-mail: Web: www.ecologyroofsystems.com	56	91 127 149 190					245 252				
<b>ENGLERT INC.</b> 1200 Amboy Ave. Perth Amboy, NJ 08862 732/826-8614 FAX 732/826-8865 E-mail: Web:									294		
<b>ERSYSTEMS</b> Elastomeric Roofing Systems, Inc. 50 Medina Street Loretto, MN 55357-0056 612/479-6690 FAX: 612/479-6691 E-mail: ersinfo@ersystems.com Web: www.ersystems.com				220 229			245 252	260 276			
<b>FABRAL</b> 3449 Hempland Road Lancaster, PA 17601 717/397-2741 FAX 717/397-1040 E-mail: fabinf@fabral.com Web:									295		

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<b>FIELDS COMPANY, LLC</b> 2240 Taylor Way Tacoma, WA 98421 253/627-4098 FAX 253/383-2181 E-mail: Web:	58										
<b>FIRESTONE BUILDING PRODUCTS CO.</b> 525 Congressional Blvd. Carmel, IN 46032 800/428-4442 E-mail: firestonebpco.com Web:	61	93 128 151 191	206 212	221 229		240 242					
<b>FLEX MEMBRANE INTERNATIONAL, INC.</b> Bethlehem Drive Morgantown, PA 19543 610/286-7788 FAX 610/286-7786 E-mail flexroof@compuserve.com			206 212				245 253				
<b>FOLLANSBEE STEEL</b> P.O. Box 610 Follansbee, WV 26037 800/624-6906 FAX 304/527-1269 E-mail: folrfg@lbcorp.com Web:									297		
<b>GAF MATERIALS CORP.</b> 1361 Alps Road Wayne, NJ 07470 973/628-3000 800/766-3411 FAX: 973/628-3451 Web: www.gaf.com	62	95 129 153 192	207 212			240 242					
<b>GACO WESTERN, INC.</b> P.O. Box 88698 Seattle, WA 98138-2698 800/456-4226 FAX 206/575-0587 E-mail: Web:								261 276			
<b>GALVAMET, INC.</b> 2267 Via Burton Street Anaheim, CA 92806 714/758-4848 FAX 714/758-4855 E-mail: jgeortner@galvamet.com Web:									298		
<b>GARDNER ASPHALT CORP./APOC DIVISION</b> P.O. Box 5449 Tampa, FL 33675-5449 FAX 813/248-6768 E-mail: Web:								265			

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<b>GARLAND COMPANY INC.</b> 3800 E. 91st Street Cleveland, OH 44105 216/641-7500 FAX 216/641-0633 E-mail: Web:											299	675
<b>G. E. SILICONES</b> <b>division of GENERAL ELECTRIC</b> 260 Hudson River Rd. Bldg. 25-73 Waterford, NY 12188 518/237-3330 FAX 518/233-3931 E-mail:									265			
<b>GENFLEX ROOFING SYSTEMS</b> 1722 Indian Wood Circle Maumee, OH 43537 800/448-4272 FAX: 419/891-4436 E-mail: Web: www.genflex.com			208 213	222 230		240 243	246 253					
<b>GRACE &amp; CO., W.R.</b>  62 Whittemore Avenue Cambridge, MA 02140 617/876-1400 E-mail: Web:												676
<b>GS ROOFING PRODUCTS</b>  <b>CO. INC.</b> See: Certainteed Corporation												
<b>HENRY COMPANY</b> 2911 Slauson Avenue Huntington Park, CA 90255 213/583-5000 FAX 213/582-6429 E-mail: Web:	65											
<b>HICKMAN SYSTEMS INC., W.P.</b> 30700 Solon Industrial Parkway Solon, OH 44139 440/248-7760 FAX 440/248-6524 E-mail: wphickman@wphickman.com Web:	82					235 237						676
<b>IB ROOF SYSTEMS</b> 2877 Chad Drive-B Eugene, OR 97408 541/242-2871 FAX: 541/302-6692 E-mail: solution@ibroof.com Web:			209 214									

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<b>ICA, INC.</b> P.O. Box 679 Warrington, PA 18976 215/918-0889 FAX 215/918-0890 E-mail: hedges1@aol.com Web:		98 129 194									
<b>IKO INDUSTRIES</b> 120 Hay Rd. Wilmington, DE 19809 302/764-3100 FAX 302/764-5852 E-mail: Web:		98 131 156 194									675
<b>IMPER ITALIA S.P.A.</b> Strada Lanzo 131 10148 Torino, ITALY 11-262-0941 FAX 11-262-1621 E-mail: Web:											675
<b>INNOVATIVE METALS CO., INC.</b> 2070 Steel Drive Tucker, GA 30084 770/908-1030 FAX 770/908-2264 E-mail: Web:									299		
<b>INTEC/PERMAGLAS</b> P.O. Box 2845 Port Arthur, TX 77643 800/231-4631 FAX 409/724-2348 E-mail: support@usintec.com Web:	66										
<b>INTERCONTINENTAL COATINGS CORP, (I-CON)</b> 16744 W. Park Circle Drive Chagrin Falls, OH 44023 440/543-3114 FAX: 440/543-3443 E-mail:							246 254				
<b>INTERNATIONAL DIAMOND SYSTEMS INC.</b> P.O. Box 351950 Toledo, OH 43635 419/382-0111 FAX 419/382-3275 E-mail:				222 230							
<b>IPS Insulated Panel Systems</b> P . O. Box 968 Stafford, TX 77497-0968 281/499-2605 FAX 281/499-3363 E-mail: Web:									301		



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<b>JOHNS MANVILLE INT'L, INC.</b> Roofing Systems Group P.O. Box 5108 Denver, CO 80217 303/978-2000 FAX 303/978-3904 E-mail:	67	101 131 159 195	209 215	223 230							
<b>KARNAK CORPORATION</b> 330 Central Avenue Clark, NJ 07066 732/388-0300 800/526-4236 FAX 732/388-9422 E-mail: Web: www.karnakcorp.com	68										
<b>KOPPERS INDUSTRIES INC.</b> 436 Seventh Avenue Pittsburgh, PA 15219 800/558-2706 FAX: 412/227-2002 E-mail Web: www.koppers.com	69										675
<b>MALARKEY ROOFING CO.</b> P.O. Box 17217 Portland, OR 97217-0217 503/283-1191 OR 800/545-1191 FAX: E-mail: Web:	70	103 132 162 196									
<b>MBCI/NCI</b> P.O. Box 38217 Houston, TX 77238 281/445-8555 FAX 281/445-1791 E-mail www.mbc.com Web:										301	
<b>MBTECHNOLOGY CORPORATION</b> 188 South Teilman Ave Fresno, CA 93706 800/621-9281 FAX 209/233-4607 E-mail: Web:											675
<b>MCELROY METAL CO.</b> 1500 Hamilton Road Bossier City, LA 71111 318/747-8000 FAX 318/747-8029 E-mail: Web:										308	
<b>MERCHANT &amp; EVANS INC.</b> 100 Connecticut Drive Burlington, NJ 08016 609/387-3033 FAX 609/387-4838 E-mail Web:										308	

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<b>METAL SALES MFG CORP</b> 7800 State Rd. 60 Sellersburg, IN 47172 812/246-0819 FAX 812/246-0829 E-mail: pserv@aye.net Web: www.mtlsales.com									310		
<b>MFM BUILDING PRODUCTS CORP.</b> P.O. Box 340 520 Orange St. Coshocton, OH 43812 7404/622-2645 800/882-7663 E-mail: mfm@coshocton.com Web:	77										
<b>MONSEY BAKOR</b> 336 Cold Stream Road Kimberton, PA 19442 800/523-0268 FAX 610/933-4598 E-mail: monsey-bakor.com Web:		105 163 199									
<b>MULE HIDE PRODUCTS CO., INC.</b> 2924 Wyetta Drive Beloit, WI 53511 608/365-3111 FAX: E-mail: Web:			209 215	224 231	234 236						
<b>NATIONAL COATINGS CORP.</b> 1201 Calle Suerte Camarillo, CA 93012 805/388-7112 FAX 805/388-8140 E-mail: nationalcoatings.com Web:								265 276			
<b>NEOGARD, DIV JONES BLAIR</b> 6900 Maple Avenue P.O. Box 35288 Dallas, TX 75235 800/321-6588 FAX 214/357-7532 E-mail: neogard@neogard.org Web:								265			
<b>NORTH CAROLINA FOAM IND.</b> 1515 Carter St. P.O. Box 1528 Mount Airy, NC 27030 336/789-9161 FAX 336/789-9586 E-mail: Web site: www.ncfi.com								277			
<b>OLYMPIC RUBBER ROOFING SYSTEMS INC.</b> P.O. Box 091082 Milwaukee, WI 53209 800/552-5393 414/442-3117 FAX: E-mail:				224 231							

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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	TPO	OTHER PRE-FABRICATED	SPRAY POLYURETHANE FOAM-BASED SYSTEM	METAL ROOF PANELS	WARRANTIES	INCOMPLETE
<b>PERFORMANCE ROOF SYSTEMS</b> 4821 Chelsea Ave. Kansas City, MO 64130 816/921-0221 FAX 816/921-5540 E-mail: prshunt@aol.com Web:		109 133 200									676
<b>PETERSEN ALUMINUM</b> 1005 Tonne Rd. Elk Grove Village, IL 60007 800/323-1960 FAX 800/722-7150 E-mail: www.pac-clad.com										311	
<b>PLASTIC COATINGS CORP.</b> P.O. Box 1068 St. Albans, WV 25177 304/755-9151 FAX 304/755-0229 E-mail: Web:									267		
<b>POLYDYNE</b> 260 Grell Lane Johnson Creek, WI 53038 800/225-7659 FAX 414/648-5647 E-mail: Web:									267		
<b>POLYGLASS USA</b> 150 Lyon Drive Fernley, NV 89408 702/575-6007 FAX 702/575-2314 E-mail: otto@polyglass.com Web:		108 135 166 201									676
<b>POLYTHANE SYSTEMS, INC.</b> P.O. Box 1452 Spring, TX 77383-6450 281/350-9000 FAX 281/288-6450 E-mail: ridgestock@aol.com Web:									269 277		
<b>PROTECTIVE COATINGS INC.</b> 1620 Birchwood Avenue Fort Wayne, IN 46803 800/992-8299 FAX: 219/422-7147 E-mail: Web:				225 231							
<b>QUANTUM COATING</b> 9200 Latty Avenue St. Louis, MO 63042 800/624-4995 FAX: 314/524-6522 E-mail: Web:									269		

# Index to Roof Coverings

	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	TPO	OTHER PRE-FABRICATED	SPRAY POLYURETHANE FOAM-BASED SYSTEM	METAL ROOF PANELS	WARRANTIES	INCOMPLETE
<b>ROOFING PRODUCTS INTERNATIONAL</b> 57460 Dewitt St. Elkhart, IN 46517 800/628-2957 219/293-9096 FAX 219/294-3450 E-mail: Web: www.roofingproductsint.com				226 232							
<b>REPUBLIC POWDERED METALS</b> 3735 Green Road Beachwood, OH 44122 800/551-7081 FAX: 888/742-1759 E-mail: Web:					238 293						
<b>SARNAFIL INC.</b> 100 Dan Road Canton, MA 02021 800/451-2504 FAX: E-mail: Web:			210 216								
<b>SEAMAN CORPORATION</b> FiberTite Roofing Systems 1000 Venture Blvd. Wooster, OH 44691 800/927-8578 FAX: 800/649-2737 E-mail:							247 256				
<b>SIPLAST INC.</b> 1111 Hwy. 67 South Arkadelphia, AR 71923 870/246-8094 FAX: E-mail: kersey@siplast.com Web:		11 167 202									
<b>SOPREMA, INC.</b> 310 Quadral Drive Wadsworth, OH 44281 330/334-0066 800/356-3521 FAX 330/334-4289 E-mail: Web:		113 171									
<b>SOUTHWESTERN PETROLEUM CORPORATION (SWEPCO)</b> 534 No. Main St. P.O. Box 961005 Fort Worth, TX 76161-0005 817/332-2336 800/877-9372 FAX 817/877-4047 E-mail: swepcousa.com	78										
<b>STEELOX ROOF SYSTEMS</b> P.O. Box 8181 Mason, OH 45040-8181 513/573-5200 FAX 513/573-5511 E-mail: Web:									313		

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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	TPO	OTHER PRE-FABRICATED	SPRAY POLYURETHANE FOAM-BASED SYSTEM	METAL ROOF PANELS	WARRANTIES	INCOMPLETE
<b>STEVENS ROOFING SYSTEMS</b> J.P.S. Elastomerics Corp. 9 Sullivan Road Holyoke, MA 01040-2800 800/621-ROOF FAX 413/552-1198 E-mail: info@stvroof.com						235 237	241 243				
<b>SWD URETHANE COMPANY</b> 222 South Date St. Mesa, AZ 85210 480/969-8413 800/828-1394 FAX 480/461-6926 E-mail: whip@swdurethane.com Web: www.swdurethane.com								271 277			
<b>TAMKO ROOFING PRODUCTS, INC.</b> 220 West 4th Street PO Box 1404 Joplin, MO 64802 417/624-6644 FAX 417/624-8935 E-mail: Web: www.tamko.com		117 137 179 202									
<b>TEXAS REFINERY CORP.</b> One Refinery Place P.O. Box 711 Ft. Worth, TX 76101 817/332-1161 FAX 817/332-2340 E-mail Web: www.texasrefinery.com		119 138 204									
<b>TEXSA, S.A.</b> Poligono Can Peglegri San Andreu de la Barca, Spain 34-3-6820770 FAX 34-3-6820752 E-mail: Web:		119 138 181 204									
<b>TREMCO INC.</b> 3735 Green Rd. P.O. Box 228069 Beachwood, OH 44122-8069 216/292-5000 FAX: 216/766-5629 Web: www.tremcoroofing.com	79	119 181				235 237	238 239				
<b>TRI-PLY</b> P.O. Box 2685 Port Arthur, TX 77643 800/331-3007 FAX 409/727-0771 E-mail: Web:	80										
<b>UCSC, LTD.</b> 1208 N. Grand Roswell, NM 88201 505/623-9726 FAX 505/623-1908 E-mail: ucscurethane.com Web:								272 277			

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	BUILT-UP ROOFING	MODIFIED BITUMEN	PVC	EPDM	CSPE/PIB	TPO	OTHER PRE-FABRICATED	SPRAY POLYURETHANE FOAM-BASED SYSTEM	METAL ROOF PANELS	WARRANTIES	INCOMPLETE
<b>UNIFLEX, INDUSTRIAL DIV. OF KOOL SEAL, INC.</b> 1499 Enterprise Parkway Twinsburg, OH 44087 216/425-4717 FAX 216/425-9778 E-mail: Web:											
<b>UNIROOF CORPORATION</b> P.O. Box 160133 Altamonte Springs, FL 32716-0133 407/869-5110 FAX: E-mail: Web:											676
<b>UNITED COATINGS</b> 19011 E Cataldo Greenacres, WA 99016 509/926-7143 FAX 509/928-1116 E-mail: Web:								273			
<b>UNITED STEEL DECK INC.</b> 475 Springfield Avenue P.O. Box 662 Summit, NJ 07902-0662 908/277-1617 FAX 908/277-1619 E-mail: heagler@ix.netcom.com									314		
<b>U.S. INTEC INC.</b> P.O. Box 2845 Port Arthur, TX 77643 800/624-6832 (Tech Hotline) 800/231-4631 (US) 800/392-4216 (TX) E-mail:		120 139 182									
<b>VERSICO INCORPORATED</b> 3485 Fortuna Drive Akron, OH 44312 216/644-6700 800/992-7663 FAX 216/644-2613 E-mail: Web:				227 232			248 257				
<b>VINCENT METAL GOODS</b> P.O. Box 360 Minneapolis, MN 55440 612/717-9000 FAX 612/717-7122 E-mail: Web:									316		
<b>W P HICKMAN SYSTEMS INC.</b> 30700 Solon Industrial Parkway Solon, OH 44139 440/248-7760 FAX 440/248-6524 E-mail: wphickman@wphickman.com Web:	82				235 237						676

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# Built-up Roofing

		ALLIEDSIGNAL										
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), (metric [39 5/8-in. wide])		6 YES DISTRIBUTORS, DIRECT YES SEE ALLIEDSIGNAL COMM. ROOFING SYSTEMS MANUAL 800/221-6490 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 POLYMOP MODIFIED ASPHALT POLYMOP GLASS FIBER BASE SHEET POLYMOP GLASS FIBER FELT										
8.	SPECIFICATION NUMBER	RP-40	RP-41	RP-40-5	RP-41-5	RP-60	RP-61	RP-60-5	RP-61-5	RP-50-TC	RP-51-TC	PM-50
9.	HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
10.	DECK TYPE											
	Nailable	X		X		X		X		X		X
	Insulated		X		X		X		X		X	
	Nonnailable		X		X		X		X		X	
11.	SLOPE REQUIREMENTS (range in inches)	0 – 1/2	0 – 1/2	0 – 1/2	0 – 1/2	0 – 1/8	0 – 1/8	0 – 1/8	0 – 1/8	1/4	1/4	1/4 - 3
	NUMBER OF PLIES											
12A.	Total Plies	4	4	5	5	4	4	5	5	4	4	4
12B.	Base Sheet	1		1		1		1		1		1
12C.	Interply(ies)	3	4	4	5	3	4	4	5	3	4	3
12D.	Cap Sheet											
13.	TYPES OF FELT											
	Glass Fiber					X	X	X	X	X	X	X
	Organic	X	X	X	X	X	X	X	X			
	Asbestos											
	Polyester											
	Other											
14.	INTERPLY ADHESIVE											
	Asphalt											
	Modified Asphalt											X
	Coal Tar	X	X	X	X	X	X	X	X	X	X	
	Elastomeric Adhesive											
15A.	SURFACING - AGGREGATE											
	Gravel (lbs./ft <sup>2</sup> )	4	4	4	4	4	4	4	4	4	4	4
	Slag (lbs./ft <sup>2</sup> )	3	3	3	3	3	3	3	3	3	3	3
	Crushed Rock (lbs./ft <sup>2</sup> )											
15B.	SURFACING - SMOOTH											
	Asphalt											
	Coal Tar											
	Emulsion/Cutback											
	Aluminum Coating											
	Vinyl/Vinyl Coating											
15C.	SURFACING - OTHER											
	Mineral Granules											
	Cap Sheet											
	Other	X	X	X	X	X	X	X	X			
16.	WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )											
	Aggregate	6.0	6.0	6.5	6.5	6.0	6.0	6.5	6.5	6.0	6.0	6.0
	Smooth											
	Cap Sheet											
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	1987	1987	1987	1987	1991	1991	1991	1991			1998
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 <sup>-6</sup> /°F @ 0°F to -30°F) -MD											
	-XD											
C	Thermal Base Shock (not < 100°F) -MD											
	-XD											
20.	SEE APPENDIX IF CHECKED	X	X	X	X	X	X	X	X	X	X	



## Built-up Roofing

PM-51	PM-50 PM	PM-51 PM	PM-50 PM-5	PM-51 PM-5
HOT	HOT	HOT	HOT	HOT
	X		X	
X		X		X
X		X		X
1/4 - 3	1/4 - 3	1/4 - 3	1/4 - 3	1/4 - 3
4	3	4	5	5
4	1	4	1	5
	4	4	4	5
X	X	X	X	X
X	X	X	X	X
4	4	4	4	4
3	3	3	3	3
6.0	6.0	6.0	6.5	6.5
NONE	NONE	NONE	NONE	NONE
1998	1998	1998	1998	1998

## BARRETT COMPANY, THE

3

YES

DISTRIBUTORS, DIRECT

YES

SEE BARRETT MANUAL

SALES OFFICE

POLY-FELT 165 VP POLYESTER ASTM D-5665-97A, TYPE II, (metric)

POLY-FELT 265 VP POLYESTER ASTM D-5665-97A, TYPE II, (metric)

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 ASTM D-5665-97-A, TYPE IV (metric)

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
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
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
1	2	3	4	1	2	3	4	2	3	4	2	3
1	2	3	4	1	2	3	4	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	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
3	3	3	3		3	3	3	3	3	3	3	3
	10	10	10		10	10	10	10	10	10	10	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	X	X	X	X	X	X	X	X	X	X	X
4.0	4.0	4.25	4.50		4.0	4.25	4.50	4.15	4.50	4.85	4.10	4.45
0.70	1.0	1.25	1.50	0.75	1.0	1.25	1.50	1.15	1.50	1.85	1.10	1.45
1.40	1.85	2.10	2.35	1.60	1.85	2.10	2.35	2.0	2.35	2.70	1.95	2.30
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
1984	1984	1984	1985	1985	1984	1984	1982	1982	1983	1983	1984	1984
		> 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

# Built-up Roofing

		BARRETT COMPANY, 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), (metric [39 5/8-in. wide])		3 YES DISTRIBUTORS, DIRECT YES SEE BARRETT MANUAL SALES OFFICE POLY-FELT 165 VP POLYESTER ASTM D 5665-97A, TYPE II (metric) POLY-FELT 265 VP POLYESTER ASTM D 5665-97A, TYPE II (metric) 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 ASTM D 5665-97A, TYPE IV, (metric) RAM-FLASH 327HDR NEOPRENE (NONE) RAM HYPALON FLASHING (NONE) RAM 306, RAM 309 (D 5147)										
8.	SPECIFICATION NUMBER	KLB 100-4M	K312 2F	K312 3F	K312 4F	K312 2P	K312 3P	K312 4P	T-3. 1P	T-3. 2P	T-3. 3P	T-3. 4P
9.	HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
10.	DECK TYPE											
	Nailable	X	X	X	X	X	X	X	X	X	X	X
	Insulated	X	X	X	X	X	X	X	X	X	X	X
	Nonnailable	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 – 6	0 – 6	0 – 6	1 – 6	1/8 – 6	1/8 – 6	1/8 – 6
	NUMBER OF PLIES											
12A.	Total Plies	4	2	3	4	2	3	4	1	2	3	4
12B.	Base Sheet											
12C.	Interply(ies)	4	2	3	4	2	3	4	1	2	3	4
12D.	Cap Sheet											
13.	TYPES OF FELT											
	Glass Fiber	X	X	X	X							
	Organic											
	Asbestos											
	Polyester	X				X	X	X	X	X	X	X
	Other											
14.	INTERPLY ADHESIVE											
	Asphalt								X	X	X	X
	Modified Asphalt											
	Coal Tar											
	Elastomeric Adhesive	X	X	X	X	X	X	X				
15A.	SURFACING - AGGREGATE											
	Gravel (lbs./ft <sup>2</sup> )	4	4	4	4	4	4	4		4	4	4
	Slag (lbs./ft <sup>2</sup> )	3	3	3	3	3	3	3		3	3	3
	Crushed Rock (lbs./ft <sup>2</sup> )	10	10	10	10	10	10	10		10	10	10
15B.	SURFACING - SMOOTH											
	Asphalt								X	X	X	X
	Coal Tar											
	Emulsion/Cutback	X	X	X	X	X	X	X	X	X	X	X
	Aluminum Coating	X	X	X	X	X	X	X	X	X	X	X
	Vinyl/Vinyl Coating	X	X	X	X	X	X	X	X	X	X	X
15C.	SURFACING - OTHER											
	Mineral Granules	X	X	X	X	X	X	X	X	X	X	X
	Cap Sheet	X	X	X	X	X	X	X	X	X	X	X
	Other	X	X	X	X	X	X	X	X	X	X	X
16.	WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )											
	Aggregate	4.80	4.15	4.50	4.90	4.0	4.25	4.50		4.25	4.50	4.50
	Smooth	1.80	1.15	1.50	1.90	1.0	1.25	1.50	0.75	1.25	1.50	1.50
	Cap Sheet	2.65	2.0	2.35	2.75	1.85	2.10	2.35	1.60	2.10	2.35	2.35
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	1984	1985	1985	1985	1985	1985	1985	1985	1983	1985	1983
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 <sup>-6</sup> /°F @ 0°F to -30°F) -MD											
	-XD											
C	Thermal Base Shock (not < 100°F) -MD											
	-XD											
20.	SEE APPENDIX IF CHECKED	X	X	X	X	X	X	X	X	X	X	X

CP-50 3P	CP-50 2P	CP-80 2P	CP-80 3P	CP-80 3 G.BS
COLD	COLD	COLD	COLD	COLD
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 - 6	1/8 - 6
3	2	2	3	3
3	2	2	3	3
				X
X	X	X	X	
X	X			
		X	X	X
4	4	4	4	4
3	3	3	3	3
10	10	10	10	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
4.50	4.15	4.15	4.50	6.0
1.50	1.15	1.15	1.50	2.0
2.35	2.00	2.00	2.35	2.85
NONE	NONE	NONE	NONE	NONE
1978	1978	1985	1985	1978
> 200			> 200	> 200
> 200			> 200	> 200
X	X	X	X	X

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
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
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
4	4	4	4	3	3	4	4	4	4	4	4	4
1	1	1	1	1		1	1	1	1			
3	3	3	3	2	3	3	3	3	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
4	4	4	4	4	4							4
3	3	3	3	3	3							3
						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							5.80
						1.50	1.50	1.60	1.60	1.70	1.70	
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
1980	1980	1980	1980	1980	1962	1980	1980	1980	1980	1962	1962	1983
X	X	X	X	X	X	X	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

		CELOTEX CORP.										
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), (metric [39 5/8-in. wide])		7 YES DISTRIBUTORS, DIRECT YES SEE CELOTEX BUR & MB RFG SYS MANUAL REGIONAL OFFICES, SALES/A. HARRINGTON, TECH. 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	AGS-4- C-G	G/A-3- W-S	G/A-3- W-M	G/A-4- W-M	AGS-4- W-M	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
9.	HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
10.	DECK TYPE											
	Nailable		X	X	X	X					X	X
	Insulated	X					X	X	X	X		
	Nonnailable	X					X	X	X	X		
11.	SLOPE REQUIREMENTS (range in inches)	0-3	0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-3	0-3
	NUMBER OF PLIES											
12A.	Total Plies	4	3	3	4	4	4	4	4	4	4	4
12B.	Base Sheet		1	1	1	1	1	1	1	1	1	1
12C.	Interply(ies)	4	2	1	2	2	2	2	2	2	2	2
12D.	Cap Sheet			1	1	1	1	1	1	1	1	1
13.	TYPES OF FELT											
	Glass Fiber	X	X	X	X	X	X	X	X	X	X	X
	Organic											
	Asbestos											
	Polyester											
	Other										X	X
14.	INTERPLY ADHESIVE											
	Asphalt	X	X	X	X	X	X	X	X	X	X	X
	Modified Asphalt											
	Coal Tar											
	Elastomeric Adhesive											
15A.	SURFACING - AGGREGATE											
	Gravel (lbs./ft <sup>2</sup> )	4	4	4	4	4					4	4
	Slaq (lbs./ft <sup>2</sup> )	3	3	3	3	3					3	3
	Crushed Rock (lbs./ft <sup>2</sup> )											
15B.	SURFACING - SMOOTH											
	Asphalt											
	Coal Tar											
	Emulsion/Cutback		X				X				X	X
	Aluminum Coating		X				X					
	Vinyl/Vinyl Coating		X				X				X	X
15C.	SURFACING - OTHER											
	Mineral Granules											
	Cap Sheet			X	X	X	X	X	X	X	X	X
	Other											
16.	WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )											
	Aggregate	5.80										
	Smooth		1.70				1.70					
	Cap Sheet			0.90	1.30	1.30	1.20	1.20	1.30	1.30	1.20	1.20
17.	RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	W	W	W	W	W	W	W	W	NONE	NONE
18.	YEAR OF FIRST COMMERCIAL USE	1983	1980	1983	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	X	X	X	X	X	X	X	X	X	X	X
	-XD	X	X	X	X	X	X	X	X	X	X	X
B	Thermal Expansion (not > 40x10 <sup>-6</sup> /°F @ 0°F to -30°F) -MD											
	-XD											
C	Thermal Base Shock (not < 100°F) -MD											
	-XD											
20.	SEE APPENDIX IF CHECKED	X		X		X		X		X		X

## Built-up Roofing

[illegible]

# Built-up Roofing

		CERTAINTED ROOFING PRODUCTS GROUP										
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), (metric [39 5/8-in. wide])		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 BUFFER SHEET (D 249) ALL WEATHER EMPIRE BASE SHEET (D 2626) NO.15 PERFORATED FELT (D 226, TYPE I) FLEXIGLAS PREMIUM CAP 960 (D 3909) FLEXIGLAS BASE SHEET (D 4601, TYPE II)										
8.	SPECIFICATION NUMBER	G-C-04	G-N-04	G-C-B4	G-N-B4	G-C-P4	G-C-B3	G-N-B3	G-C-P3	M-C-04	M-N-04	M-C-B4
9.	HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT/CA
10.	DECK TYPE											
	Nailable		X		X			X			X	
	Insulated	X	X	X	X	X	X	X	X	X	X	X
	Nonnailable	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	0-6	0-6	0-6
	NUMBER OF PLIES											
12A.	Total Plies	4	4	4	4	4	3	3	3	4	4	4
12B.	Base Sheet	1	1	1	1		1	1		1	1	1
12C.	Interply(ies)	3	3	3	3	4	2	2	3	2	2	2
12D.	Cap Sheet									1	1	1
13.	TYPES OF FELT											
	Glass Fiber			X	X	X	X	X	X	X	X	X
	Organic	X	X							X	X	
	Asbestos											
	Polyester											
	Other											
14.	INTERPLY ADHESIVE											
	Asphalt	X	X	X	X	X	X	X	X	X	X	X
	Modified Asphalt											
	Coal Tar											
	Elastomeric Adhesive											X
15A.	SURFACING - AGGREGATE											
	Gravel (lbs./ft <sup>2</sup> )	4	4	4	4	4	4	4	4			
	Slaq (lbs./ft <sup>2</sup> )	3	3	3	3	3	3	3	3			
	Crushed Rock(lbs./ft <sup>2</sup> )											
15B.	SURFACING - SMOOTH											
	Asphalt											
	Coal Tar											
	Emulsion/Cutback											
	Aluminum Coating											
	Vinyl/Vinyl Coating											
15C.	SURFACING - OTHER											
	Mineral Granules											
	Cap Sheet									X	X	X
	Other											
16.	WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )											
	Aggregate	6.0	6.0	6.0	6.0	6.0	5.70	5.50	5.60			
	Smooth									2.40	2.30	2.30
	Cap Sheet											
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											
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 <sup>-6</sup> /°F @0°F to -30°F) -MD											
	-XD											
C	Thermal Base Shock (not < 100°F) -MD											
	-XD											
20.	SEE APPENDIX IF CHECKED											

## Built-up Roofing

M-N-B4	M-C-B3	M-N-B3	M-C-B5	M-N-B5	SR-C-B3	SR-N-B3	S-C-B4	S-N-B4	S-C-B3	S-N-B3
HOT/CA	HOT/CA	HOT/CA	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	
0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6
4	3	3	5	5	3	3	4	4	3	3
1	1	1	1	1	1	1	1	1	1	1
2	1	1	3	3	2	2	3	3	2	2
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						
					1.90	1.70	1.80	1.60	1.50	1.30
2.10	1.80	1.70	2.40	2.21						
NONE	1	1	NONE	NONE	1&2	1&2	NONE	NONE	NONE	NONE

# Built-up Roofing

		ECOLOGY ROOF SYSTEMS										
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), (metric [39 5/8-in. wide])		6 YES DIRECT YES SEE ECOLOGY ROOF SYSTEMS COMMERCIAL ROOFING SYSTEMS MANUAL 800/535-3833 EXT. 14 ERS #400 PLY SHEET (D2178, TYPE IV) ERS #400-6 PLYI SHHET (D2178, TYPE VI) ERS #401 BASE SHEET (D4601, TYPE II) ERS #402 ERS #403 VENTED BASE SHEET (D4601, TYPE II)										
8. SPECIFICATION NUMBER		1000-3 IN-M	1000-3 IN-C	1000-3 IN-G	1000-3 ND-M	1000-3 ND-C	1000-3 ND-G	1000-3 CON-M	1000-3 COC-C	1000-3 CON-G	1000-3 LWT-M	1000-3 LWT-C
9. HOT AND/OR COLD APPLIED		HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
10. DECK TYPE												
Nailable					X	X	X				X	X
Insulated		X	X	X				X	X	X		
Nonnailable												
11. SLOPE REQUIREMENTS (range in inches)		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2
12A. NUMBER OF PLIES												
12B. Total Plies		3	3	3	3	3	3	3	3	3	3	3
12C. Base Sheet		1	1	1	1	1	1	1	1	1	1	1
12D. Interply(ies)		2	2	2	2	2	2	2	2	2	2	2
12E. Cap Sheet												
13. TYPES OF FELT												
Glass Fiber		X	X	X	X	X	X	X	X	X	X	X
Organic												
Asbestos												
Polyester												
Other												
14. INTERPLY ADHESIVE												
Asphalt		X	X	X	X	X	X	X	X	X	X	X
Modified Asphalt		X	X	X	X	X	X	X	X	X	X	X
Coal Tar												
Elastomeric Adhesive												
15A. SURFACING - AGGREGATE												
Gravel (lbs./ft <sup>2</sup> )		4	4	4	4	4	4	4	4	4	4	4
Slaq (lbs./ft <sup>2</sup> )		3	3	3	3	3	3	3	3	3	3	3
Crushed Rock (lbs./ft <sup>2</sup> )												
15B. SURFACING - SMOOTH												
Asphalt												
Coal Tar												
Emulsion/Cutback												
Aluminum Coating												
Vinyl/Vinyl Coating												
15C. SURFACING - OTHER												
Mineral Granules												
Cap Sheet												
Other												
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )												
Aggregate		5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
Smooth												
Cap Sheet												
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		1988	1988	1988	1988	1988	1988	1988	1988	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 <sup>-6</sup> /°F @ 0°F to -30°F) -MD												
-XD												
C Thermal Base Shock (not < 100°F) -MD												
-XD												
20. SEE APPENDIX IF CHECKED												



## Built-up Roofing

1000-3 LWT-G	1000-4 IN-M	1000-4 IN-C	1000-4 IN-G	1000-4 ND-M	1000-4 ND-C	1000-4 ND-G	1000-4 CON-M	1000-4 CON-C	1000-4 CON-G	1000-4 LWT-M	1000-4 LWT-C	1000-4 LWT-G
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			
0 - 2	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2	0 - 2
3	4	4	4	4	4	4	4	4	4	4	4	4
1	1	1	1	1	1	1	1	1	1	1	1	1
2	3	3	3	3	3	3	3	3	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	X	X	X	X	X
4	4	4	4	4	4	4	4	4	4	4	4	4
3	3	3	3	3	3	3	3	3	3	3	3	3
5.7	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
1988	1988	1988	1988	1988	1988	1988	1988	1988	1988	1988	1988	1988

# Built-up Roofing

		FIELDS COMPANY, LLC										
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 FIELDS BUR MANUAL										
6.	FOR SALES/TECHNICAL INFORMATION:	T. VANDERLINDA 800/627-4098										
7.	FELTS DATA: TRADE NAME (applicable ASTM standard), (metric [39 5/8-in. wide])	FIELDS F50 POLYSHIELD (D 4601, D 2178)					FIELDS P79 POLYTEX 2					
		FIELDS F52 GLASBASE 2 (D 4601)					FIELDS P72 POLYROOF 2					
		FIELDS F54 GLASPLY4 (D 2178, TYPE IV)					FIELDS P74 POLYWEB					
		FIELDS F55 POLYSHIELD 2 (D 4601, D 2178)					FIELDS P75 POLYWEB					
		FIELDS F56 GLASPLY6 (D 2178, TYPE VI)					FIELDS P76 POLYWEB					
		FIELDS F58 GLASCAP (D 3609)					FIELDS P77 POLYTEX					
		FIELDS M60 RUBRPOLY (D 4601, D 2178)					FIELDS P78 POLYTEX					
		FIELDS M62 RUBRGLAS (D4601, D 2178)					FIELDS G360 GLASWEB					
		FIELDS M64 RUBRPOLY2 (D 4601, D 2178)					FIELDS G362 GLASWEB					
		FIELDS M66 RUBRGLAS2 (D 4601, D 2178)					FIELDS G60 GLASWEB					
		FIELDS M68 RUBRCAP (D 5147)					FIELDS G62 GLASWEB					
		FIELDS P70 POLYROOF										
8.	SPECIFICATION NUMBER	HAW-315-MC	HAW-325-MC	HAW-335-MC	HAC-315-MC	HAC-325-MC	HAC-335-MC	HAI-X25-MC	HAI-X35-MC	HAI-X45-MC	HAI-315-MC	HAI-325-MC
		HAW-317-MC	HAW-327-MC	HAW-337-MC	HAC-317-MC	HAC-327-MC	HAC-337-MC	HAI-X27-MC	HAI-X37-MC	HAI-X47-MC	HAI-317-MC	HAI-327-MC
9.	HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
10.	DECK TYPE											
	Nailable	X	X	X								
	Insulated							X	X	X	X	X
	Nonnailable				X	X	X					
11.	11. SLOPE REQUIREMENTS (range in inches)	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	1/4 – 3	1/4 – 3
	NUMBER OF PLIES											
12A.	Total Plies	3	4	5	3	4	5	3	4	5	3	4
12B.	Base Sheet	1	1	1	1	1	1	1	1	1	1	1
12C.	Interply(ies)	1	2	3	1	2	3	2	3	4	1	2
12D.	Cap Sheet	1	1	1	1	1	1	1	1	1	1	1
13.	TYPES OF FELT											
	Glass Fiber	X	X	X	X	X	X	X	X	X	X	X
	Organic											
	Asbestos											
	Polyester											
	Other											
14.	INTERPLY ADHESIVE											
	Asphalt	X	X	X	X	X	X	X	X	X	X	X
	Modified Asphalt											
	Coal Tar											
	Elastomeric Adhesive											
15A.	SURFACING - AGGREGATE											
	Gravel (lbs./ft <sup>2</sup> )											
	Slag (lbs./ft <sup>2</sup> )											
	Crushed Rock (lbs./ft <sup>2</sup> )											
15B.	SURFACING - SMOOTH											
	Asphalt											
	Coal Tar											
	Emulsion/Cutback											
	Aluminum Coating											
	Vinyl/Vinyl Coating											
15C.	SURFACING - OTHER											
	Mineral Granules											
	Cap Sheet	X	X	X	X	X	X	X	X	X	X	X
	Other											
16.	WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )											
	Aggregate											
	Smooth											
	Cap Sheet	1.60	2.0	2.30	1.80	2.20	2.50	1.70	2.10	2.45	1.45	1.85
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	1988	1988	1988	1988	1988	1988	1988	1988	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 <sup>-6</sup> /°F @ 0°F to -30°F) -MD											
	-XD											
C	Thermal Base Shock (not < 100°F) -MD											
	-XD											
20.	SEE APPENDIX IF CHECKED											

## Built-up Roofing

[illegible]

# Built-up Roofing

		FIELDS COMPANY, LLC										
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 FIELDS BUR MANUAL										
6.	FOR SALES/TECHNICAL INFORMATION:	T. VANDERLINDA 800/627-4098										
7.	FELTS DATA: TRADE NAME (applicable ASTM standard), (metric [39 5/8-in. wide])	<div> <div> FIELDS F50 POLYSHIELD (D 4601, D 2178)  FIELDS F52 GLASBASE 2 (D 4601)  FIELDS F54 GLASPLY4 (D 2178, TYPE IV)  FIELDS F55 POLYSHIELD 2 (D 4601, D 2178)  FIELDS F56 GLASPLY6 (D 2178, TYPE VI)  FIELDS F58 GLASCAP (D 3609)  FIELDS M60 RUBRPOLY (D 4601, D 2178)  FIELDS M62 RUBRGLAS (D4601, D 2178)  FIELDS M64 RUBRPOLY2 (D 4601, D 2178)  FIELDS M66 RUBRGLAS2 (D 4601, D 2178)  FIELDS M68 RUBRCAP (D 5147)  FIELDS P70 POLYROOF </div> <div> FIELDS P79 POLYTEX 2  FIELDS P72 POLYROOF 2  FIELDS P74 POLYWEB  FIELDS P75 POLYWEB  FIELDS P76 POLYWEB  FIELDS P77 POLYTEX  FIELDS P78 POLYTEX  FIELDS G360 GLASWEB  FIELDS G362 GLASWEB  FIELDS G60 GLASWEB  FIELDS G62 GLASWEB </div> </div>										
8.	SPECIFICATION NUMBER	AAW-325 RC	AAW-315 RC	AAW-329 RC	AAW-315 MC	AAW-X43 RC	AAW-335 RC	AAW-329 RC	AAW-325 MC	AAI-X33 RC	AAI-325 RC	AAI-315 MC
9.	HOT AND/OR COLD APPLIED	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD
10.	DECK TYPE											
	Nailable	X	X	X			X		X			
	Insulated				X	X		X		X	X	X
	Nonnailable											
11.	11. SLOPE REQUIREMENTS (range in inches)	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	1/4 – 3	1/4 – 3
	NUMBER OF PLIES											
12A.	Total Plies	3	2	3	3	4	4	3	4	3	3	3
12B.	Base Sheet	1	1	1	1	0	1	1	1	0	1	1
12C.	Interply(ies)	2	2	2	1	4	3	2	2	3	2	1
12D.	Cap Sheet				1				1			1
13.	TYPES OF FELT											
	Glass Fiber	X	X	X	X	X	X	X	X	X	X	X
	Organic											
	Asbestos											
	Polyester			X				X				
	Other											
14.	INTERPLY ADHESIVE											
	Asphalt	X	X	X	X	X	X	X	X	X	X	X
	Modified Asphalt											
	Coal Tar											
	Elastomeric Adhesive											
15A.	SURFACING - AGGREGATE											
	Gravel (lbs./ft <sup>2</sup> )											
	Slaq (lbs./ft <sup>2</sup> )											
	Crushed Rock (lbs./ft <sup>2</sup> )											
15B.	SURFACING - SMOOTH											
	Asphalt											
	Coal Tar											
	Emulsion/Cutback	X	X	X		X	X	X		X	X	
	Aluminum Coating	X	X	X		X	X	X		X	X	
	Vinyl/Vinyl Coating											
15C.	SURFACING - OTHER											
	Mineral Granules											
	Cap Sheet				X				X			X
	Other											
16.	WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )											
	Aggregate											
	Smooth	1.1	1.25	1.2		1.85	1.4	1.55		1.6	1.3	
	Cap Sheet				1.75				2.05			1.25
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	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 <sup>-6</sup> /°F @ 0°F to -30°F) -MD -XD											
C	Thermal Base Shock (not < 100°F) -MD -XD											
20.	SEE APPENDIX IF CHECKED											

## FIRESTONE BUILDING PRODUCTS

6

YES  
DISTRIBUTOORS

YES

SEE FIRESTONE BUR TECHNICAL MANUAL  
REGIONAL COORDINATOR

FIRESTONE PLY IV (ASTM D 1581)

FIRESTONE PLY IV (ASTM D2178 TYPE VI)

MB BASE SHEET (ASTM D4601 TYPE II)

SBS FLASHING (ASTM D6164 TYPE I)

SBS VENTING BASE (NONE)

[illegible][illegible]

## Built-up Roofing

		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), (metric [39 5/8-in. wide])	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) GAFGLAS FLEXPPLY6 (D 2178, TYPE VI & IV) GAFGLAS #80 ULTIMA BASE SHEET (D 4601, TYPE II)										
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
9.	HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
10.	DECK TYPE											
	Nailable											
	Insulated		X		X		X		X		X	
	Nonnailable	X		X		X		X		X		X
11.	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
	NUMBER OF PLIES											
12A.	Total Plies	4	4	4	4	4	4	4	4	3	3	3
12B.	Base Sheet					1	1	1	1			1
12C.	Interply(ies)	4	4	4	4	3	3	3	3	3	3	2
12D.	Cap Sheet											
13.	TYPES OF FELT											
	Glass Fiber	X	X	X	X	X	X	X	X	X	X	X
	Organic											
	Asbestos											
	Polyester											
	Other											
14.	INTERPLY ADHESIVE											
	Asphalt	X	X	X	X	X	X	X	X	X	X	X
	Modified Asphalt	X	X	X	X	X	X	X	X	X	X	X
	Coal Tar											
	Elastomeric Adhesive											
15A.	SURFACING - AGGREGATE											
	Gravel (lbs./ft <sup>2</sup> )	4	4			4	4			4	4	4
	Slag (lbs./ft <sup>2</sup> )	3	3			3	3			3	3	3
	Crushed Rock (lbs./ft <sup>2</sup> )	4	4			4	4			4	4	4
15B.	SURFACING - SMOOTH											
	Asphalt			X	X			X	X			
	Coal Tar											
	Emulsion/Cutback			X	X			X	X			
	Aluminum Coating			X	X			X	X			
	Vinyl/Vinyl Coating											
15C.	SURFACING - OTHER											
	Mineral Granules											
	Cap Sheet											
	Other											
16.	WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )											
	Aggregate	6.0	6.0			6.0	6.0			6.0	6.0	6.0
	Smooth			2.0	2.0			2.0	2.0			
	Cap Sheet											
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	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 <sup>-6</sup> /°F @ 0°F to -30°F) -MD											
	-XD											
C	Thermal Base Shock (not < 100°F) -MD											
	-XD											
20.	SEE APPENDIX IF CHECKED											

## Built-up Roofing

I-B-3-G	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	HOT
											X	X	X	X	X	X		
X		X		X		X		X		X							X	
	X		X		X		X		X									X
0-3	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	3	4	4	4	4	3	3	4	4	3	3	4	3	5	5
1			1	1			1	1			1	1	1	1	1	1	1	1
2	3	3	2	2	3	3	2	2	2	2	3	3	2	2	2	1	3	3
					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
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								X		X				
					X	X	X	X	X	X					X	X	X	X
6.0											6.0		6.0					
	2.0	2.0	2.0	2.0								2.0		2.0				
					2.0	2.0	2.0	2.0	2.0	2.0					2.0	2.0	3.0	3.0
NONE	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	1974

# Built-up Roofing

		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), (metric [39 5/8-in. wide])		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) GAFGLAS FLEXPPLY6 (D 2178, TYPE VI & IV) GAFGLAS #80 ULTIMA BASE SHEET (D 4601, TYPE II)				
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					
	Nailable	X	X	X		
	Insulated				X	
	Nonnailable					X
11.	11. SLOPE REQUIREMENTS (range in inches)	0 – 3	0 – 6	0 – 6	0 – 6	0 – 6
	NUMBER OF PLIES					
12A.	Total Plies	5	5	5	5	5
12B.	Base Sheet	1	1	1		
12C.	Interply(ies)	4	4	3	4	4
12D.	Cap Sheet			1	1	1
13.	TYPES OF FELT					
	Glass Fiber	X	X	X	X	X
	Organic					
	Asbestos					
	Polyester					
	Other					
14.	INTERPLY ADHESIVE					
	Asphalt	X	X	X	X	X
	Modified Asphalt	X	X	X	X	X
	Coal Tar					
	Elastomeric Adhesive					
15A.	SURFACING - AGGREGATE					
	Gravel (lbs./ft <sup>2</sup> )	4				
	Slag (lbs./ft <sup>2</sup> )	3				
	Crushed Rock (lbs./ft <sup>2</sup> )	4				
15B.	SURFACING - SMOOTH					
	Asphalt		X			
	Coal Tar					
	Emulsion/Cutback		X			
	Aluminum Coating		X			
	Vinyl/Vinyl Coating					
15C.	SURFACING - OTHER					
	Mineral Granules					
	Cap Sheet			X	X	X
	Other					
16.	WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )					
	Aggregate	6.0				
	Smooth		2.0			
	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 <sup>-6</sup> /°F @ 0°F to -30°F) -MD					
	-XD					
C	Thermal Base Shock (not < 100°F) -MD					
	-XD					
20.	SEE APPENDIX IF CHECKED					



# Built-up Roofing

## HENRY COMPANY

18  
YES  
DISTRIBUTORS  
NO  
CONTACT MANUFACTURER  
J. HOLLERAN / S. LEONARD  
HENRY 604 (D 4601, TYPE II)  
HENRY 605 TYPE (ASTM D 3909)  
HENRY 607 (D 4601, TYPE II)  
HENRY MODIFIED PLUS NP 180/S (ASTM D6164-97 TYPE I; GRADE S)  
HENRY MODIFIED PLUS NP 180m (ASTM D6164-97 TYPE I, GRADE G)  
HENRY 195 POLYESTER  
HENRY 196 POLYESTER  
HENRY 600 RUFTAC

H3-NGC- MR	H4-NGC- MR	H3-IGC- MR	H4-IGC- MR	H3-IGC- GC/GN	H4-1GC- GV/GN	H3-NPE- MR	H3-1PE- MR	H3-NPE- GV/GN	H3-1PE- GV/GN
COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD	COLD
X	X			X	X	X		X	
		X	X				X		X
		X	X				X		X
1/8" - 3"	0 - 3	1/8" - 3"	0 - 3	1/8" - 3"	1/8" - 3"	1/8" - 3"	1/8" - 3"	1/8" - 3"	1/8" - 3"
3	4	3	4	3	4	3	3	3	3
1	1			1	1	1	1	1	1
2	3	3	4	2	3	2	2	2	2
X	X	X	X	X	X				
						X	X	X	X
X	X	X	X	X	X	X	X	X	X
				400	400			400	400
				300	300			300	300
				400	400			400	400
X	X	X	X	X	X	X	X	X	X
X	X	X	X			X	X		
X	X	X	X						
				X	X			X	X
				578	616			547	509
196	234	215	252			169	132		
1984	1984	1984	1984	1984	1984	1989	1989	1989	1989

## Built-up Roofing

		INTEC/PERMAGLAS								
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), (metric [39 5/8-in. wide])		6 YES DISTRIBUTORS YES SEE BUILT-UP ROOFING SYSTEMS MANUAL 800/624-6832 COMBINATION 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)								
8. SPECIFICATION NUMBER		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
9. HOT AND/OR COLD APPLIED		HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
10. DECK TYPE										
Nailable		X	X					X		X
Insulated				X	X	X	X		X	
Nonnailable										
11. SLOPE REQUIREMENTS (range in inches)		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
12A. NUMBER OF PLIES										
12B. Total Plies		5	4	4	5	4	5	4	4	4
12C. Base Sheet		1	1		1		1	1		1
12D. Interply(ies)		3	2	4	4	4	4	3	3	3
12E. Cap Sheet		1	1						1	
13. TYPES OF FELT										
Glass Fiber		X	X	X	X	X	X	X	X	X
Organic										
Asbestos										
Polyester										
Other										
14. INTERPLY ADHESIVE										
Asphalt		X	X	X	X	X	X	X	X	X
Modified Asphalt										
Coal Tar										
Elastomeric Adhesive										
15A. SURFACING - AGGREGATE										
Gravel (lbs./ft <sup>2</sup> )						4	4	4		
Slaq (lbs./ft <sup>2</sup> )						3	3	3		
Crushed Rock (lbs./ft <sup>2</sup> )						4	4	4		
15B. SURFACING - SMOOTH										
Asphalt										
Coal Tar										
Emulsion/Cutback										
Aluminum Coating				X	X					X
Vinyl/Vinyl Coating										
15C. SURFACING - OTHER										
Mineral Granules										
Cap Sheet		X	X						X	
Other										
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )										
Aggregate						6.0	6.0	6.0		
Smooth				2.0	2.0					2.0
Cap Sheet		2.0	2.0						2.0	
17. RESTRICTED REGIONS (refer to manufacturer's literature)		NONE			NONE	NONE	NONE	NONE		
18. YEAR OF FIRST COMMERCIAL USE		1976	1976	1976	1976	1976	1976	1976	1976	1976
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 <sup>-6</sup> /°F @ 0°F to -30°F) -MD										
-XD										
C Thermal Base Shock (not < 100°F) -MD										
-XD										
20. SEE APPENDIX IF CHECKED										

# Built-up Roofing

## JOHNS MANVILLE INTERNATIONAL, INC.

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)

5GNS	4GIS	4GNS	3GIS	3GNS	4GIG	3GIG	5GNG	4GNG	3GNG	5GIC	5GNC	4GIC	4GNC	3GIC	3GNC	5GLG	4GLG	3GLG
HOT	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				
0-6	0-6	0-6	0-6	0-6	0-3	0-3	0-3	0-3	0-3	1/4-6	1/4-6	1/4-6	1/4-6	1/4-6	1/4-6	0-3	0-3	0-3
5	4	4	3	3	4	3	5	4	3	5	5	4	4	3	3	5	4	3
1		1		1			1	1	1		1		1		1	1	1	1
4	4	3	3	2	4	3	4	3	2	4	3	3	2	2	1	4	3	2
										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
					4	4	4	4	4							4	4	4
					3	3	3	3	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			
					6.30	6.0	6.90	6.60	6.30							6.9	6.3	6
1.80	1.40	1.60	1.10	1.30						2.40	2.40	2.0	2.20	2.0	1.80			
1978	1976	1978	1980	2,3 1980	1978	1978	1978	1978	2,3 1980	1978	1978	1978	2,3 1978	3 1978	3 1980	1978	1978	2,3 1978
	404 351	357 343	310 331	288 247	404 351	310 331		357 343	288 247									

## Built-up Roofing

		KARNAK 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), (metric [39 5/8-in. wide])		7 NO DISTRIBUTORS NO SEE KARNAK SPECIFICATIONS 800/526-4236 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	AR SYSTEM
9. HOT AND/OR COLD APPLIED		COLD	COLD	COLD	COLD	COLD
10. DECK TYPE						
Nailable		X	X	X	X	X
Insulated		X	X	X	X	X
Nonnailable		X	X	X	X	X
11. SLOPE REQUIREMENTS (range in inches)		0 - 6	0 - 6	0 - 6	0 - 6	0 - 6
12A. NUMBER OF PLIES						
12A. Total Plies		1	2	3	4	1
12B. Base Sheet		1	2	1	1	1
12C. Interply(ies)				2	3	
12D. Cap Sheet						
13. TYPES OF FELT						
Glass Fiber						
Organic						
Asbestos						
Polyester		X	X	X	X	X
Other						
14. INTERPLY ADHESIVE						
Asphalt		X	X	X	X	
Modified Asphalt		X	X	X	X	
Coal Tar						
Elastomeric Adhesive		X	X	X	X	X
15A. SURFACING - AGGREGATE						
Gravel (lbs./ft <sup>2</sup> )		4	4	4	4	
Slaq (lbs./ft <sup>2</sup> )		3	3	3	3	
Crushed Rock (lbs./ft <sup>2</sup> )						
15B. SURFACING - SMOOTH						
Asphalt		X	X	X	X	X
Coal Tar						
Emulsion/Cutback		X	X	X	X	
Aluminum Coating		X	X	X	X	X
Vinyl/Vinyl Coating						
15C. SURFACING - OTHER						
Mineral Granules		X	X	X	X	X
Cap Sheet						
Other		X	X	X	X	X
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )						
Aggregate		1.13	1.32	1.53	1.75	1.11
Smooth		0.63	0.72	0.93	1.15	0.61
Cap Sheet						
17. RESTRICTED REGIONS (refer to manufacturer's literature)		NONE	NONE	NONE	NONE	NONE
18. YEAR OF FIRST COMMERCIAL USE		1965	1965	1965	1965	1972
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 <sup>-6</sup> /°F @ 0°F to -30°F) -MD -XD						
C Thermal Base Shock (not < 100°F) -MD -XD						
20. SEE APPENDIX IF CHECKED						

# Built-up Roofing

## 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	1R-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
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
	1		1		1	1		1		1			1		1	
4	3	4	3	4	3	4	4	4	4	3	3	3	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
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

		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 M. MALARKEY										
7.	FELTS DATA: TRADE NAME (applicable ASTM standard), (metric [39 5/8-in. wide])	<div> <div> #515 STANDARD BASE (D 4601)  #501 PREMIUM 1 SBS BASE (D 4601)  #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) </div> <div> #625 PARAGON SBS MINERAL (D 6163)  #650 PANOPLY SBS MINERAL (D 6163)  #159 APP 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-XBX	S3-BBX
9.	HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT/CLD	HOT/CLD
10.	DECK TYPE											
	Nailable		X	X		X	X	X	X			X
	Insulated	X	X	X	X	X	X	X	X	X	X	X
	Nonnailable	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
	NUMBER OF PLIES											
12A.	Total Plies	3	3	3	4	4	4	5	5	3	3	3
12B.	Base Sheet		1	1		1	1	1	1			1
12C.	Interply(ies)	2	1	1	3	2	2	3	3	3	3	2
12D.	Cap Sheet	1	1	1	1	1	1	1	1			
13.	TYPES OF FELT											
	Glass Fiber	X	X	X	X	X	X	X	X	X	X	X
	Organic											
	Asbestos											
	Polyester											
	Other											
14.	INTERPLY ADHESIVE											
	Asphalt	X	X	X	X	X	X	X	X	X	X	X
	Modified Asphalt	X	X	X	X	X	X	X	X	X	X	X
	Coal Tar											
	Elastomeric Adhesive										X	X
15A.	SURFACING - AGGREGATE											
	Gravel (lbs./ft <sup>2</sup> )											
	Slag (lbs./ft <sup>2</sup> )											
	Crushed Rock (lbs./ft <sup>2</sup> )											
15B.	SURFACING - SMOOTH											
	Asphalt											
	Coal Tar											
	Emulsion/Cutback									X	X	X
	Aluminum Coating											
	Vinyl/Vinyl Coating											
15C.	SURFACING - OTHER											
	Mineral Granules											
	Cap Sheet	X	X	X	X	X	X	X	X			
	Other											
16.	WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )											
	Aggregate											
	Smooth									1.32	1.89	1.64
	Cap Sheet	1.75	1.67	1.69	2.01	2.05	2.25	2.41	2.61			
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
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 <sup>-6</sup> /°F @ 0°F to -30°F) -MD											
	-XD											
C	Thermal Base Shock (not < 100°F) -MD											
	-XD											
20.	SEE APPENDIX IF CHECKED											

## Built-up Roofing

S3-XEX	S3-BEX	S4-BBX	G3-XHX G3-XIX	G4-XHX G4-XIX	G3-BHX G3-BIX	G4-BHX G4-BIX	S4-BEX	S4-EEX	S4-AHX S4-AIX	S4-BHX S4-BIX	G3-BBX	G3-EEX	G4-BBX	M2-CXB	M2-DXB	M2-EXB	M3-BHB M3-BIB	M3-BBB
HOT/CLD	HOT/CLD	HOT/CLD	HOT	HOT	HOT	HOT	HOT/CLD	HOT/CLD	HOT	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD	HOT/CLD	HOT	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
0-6	0-6	0-6	0-3	0-3	0-3	0-3	0-6	0-6	0-6	0-6	0-3	0-3	0-3	0-3	0-3	0-3	0-3	0-3
3	3	4	3	4	3	4	4	4	4	4	3	3	4	2	2	2	3	3
	1	1			1	1	1	1		1	1	1	1	1	1	1	1	1
3	2	3	3	4	2	3	3	3	4	3	2	2	3				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
			4	4	4	4					4	4	4					
X	X	X					X	X	X	X								
														X	X	X	X	X
2.49	2.04	2.19	5.68	6.04	5.62	5.98					6.00	6.60	6.55					
2,3	2,3	NONE	NONE	NONE	NONE	NONE	2.79	2.99	1.60	1.62	2,3	NONE	NONE	1.99	2.27	2.02	1.93	2.12

# Built-up Roofing

		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 M. MALARKEY										
7.	FELTS DATA: TRADE NAME (applicable ASTM standard), (metric [39 5/8-in. wide])	<div style="display: flex; justify-content: space-between;"> <div> #515 STANDARD BASE (D 4601)  #501 PREMIUM 1 SBS BASE (D 4601)  #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) </div> <div> #625 PARAGON SBS MINERAL (D 6163)  #650 PANOPLY SBS MINERAL (D 6163)  #159 APP 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-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	M3-FHB M3-FIB
9.	HOT AND/OR COLD APPLIED	HOT/CLD	HOT/CLD	HOT	HOT/CLD	HOT/CLD	HOT	HOT	HOT	HOT/CLD	HOT/CLD	HOT
10.	DECK TYPE											
	Nailable	X	X	X	X	X				X	X	
	Insulated	X	X	X	X	X	X	X	X	X	X	X
	Nonnailable	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
	NUMBER OF PLIES											
12A.	Total Plies	3	3	3	3	3	3	3	3	4	4	3
12B.	Base Sheet	1	1	1	1	1	1	1	1	1	1	1
12C.	Interply(ies)	1	1	1	1	1	1	1	1	2	2	1
12D.	Cap Sheet	1	1	1	1	1	1	1	1	1	1	1
13.	TYPES OF FELT											
	Glass Fiber	X	X	X	X	X	X	X	X	X	X	X
	Organic											
	Asbestos											
	Polyester											
	Other											
14.	INTERPLY ADHESIVE											
	Asphalt	X	X	X	X	X	X	X	X	X	X	X
	Modified Asphalt	X	X	X	X	X	X	X	X	X	X	X
	Coal Tar											
	Elastomeric Adhesive	X	X		X	X				X	X	
15A.	SURFACING - AGGREGATE											
	Gravel (lbs./ft <sup>2</sup> )											
	Slaq (lbs./ft <sup>2</sup> )											
	Crushed Rock (lbs./ft <sup>2</sup> )											
15B.	SURFACING - SMOOTH											
	Asphalt											
	Coal Tar											
	Emulsion/Cutback											
	Aluminum Coating											
	Vinyl/Vinyl Coating											
15C.	SURFACING - OTHER											
	Mineral Granules											
	Cap Sheet	X	X	X	X	X	X	X	X	X	X	X
	Other											
16.	WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )											
	Aggregate											
	Smooth											
	Cap Sheet	2.29	2.57	2.12	2.32	2.52	2.01	2.45	2.40	2.29	2.67	2.01
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											
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 <sup>-6</sup> /°F @ 0°F to -30°F) -MD											
	-XD											
C	Thermal Base Shock (not < 100°F) -MD											
	-XD											
20.	SEE APPENDIX IF CHECKED											



## Built-up Roofing

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	M3-EBC	M3-EEC	M3-FHC M3-FIC	M3-FBC	M3-FCC	M3-FDC	M3-FEC	M4-BHC M4-BIC
HOT	HOT	HOT	HOT	HOT	HOT/CLD	HOT/CLD	HOT/CLD	HOT	HOT/CLD	HOT	HOT/CLD	HOT/CLD	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
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	0-3
4	4	4	5	5	2	2	2	3	3	3	3	3	3	3	3	3	3	4
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	3	3				1	1	1	1	1	1	1	1	1	1	2
1	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
2.37	2.75	3.15	2.61	2.85	1.99	2.27	2.02	1.91	2.12	2.13	2.32	2.52	2.01	2.20	2.37	2.65	2.40	2.04
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

# Built-up Roofing

		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 M. MALARKEY										
7.	FELTS DATA: TRADE NAME (applicable ASTM standard), (metric [39 5/8-in. wide])	<div style="display: flex; justify-content: space-between;"> <div> #515 STANDARD BASE (D 4601)  #501 PREMIUM 1 SBS BASE (D 4601)  #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) </div> <div> #625 PARAGON SBS MINERAL (D 6163)  #650 PANOPLY SBS MINERAL (D 6163)  #159 APP 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	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
9.	HOT AND/OR COLD APPLIED	HOT/CLD	HOT	HOT/CLD	HOT	HOT	HOT	HOT	HOT/CLD	HOT/CLD	HOT	HOT
10.	DECK TYPE											
	Nailable	X	X	X				X	X	X		
	Insulated	X	X	X	X	X	X	X	X	X	X	X
	Nonnailable	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
	NUMBER OF PLIES											
12A.	Total Plies	4	4	4	4	4	4	5	5	5	5	5
12B.	Base Sheet	1	1	1	1	1	1	1	1	1	1	1
12C.	Interply(ies)	2	2	2	2	2	2	3	3	3	3	3
12D.	Cap Sheet	1	1	1	1	1	1	1	1	1	1	1
13.	TYPES OF FELT											
	Glass Fiber	X	X	X	X	X	X	X	X	X	X	X
	Organic											
	Asbestos											
	Polyester											
	Other											
14.	INTERPLY ADHESIVE											
	Asphalt	X	X	X	X	X	X	X	X	X	X	X
	Modified Asphalt	X	X	X	X	X	X	X	X	X	X	X
	Coal Tar											
	Elastomeric Adhesive	X		X					X	X		
15A.	SURFACING - AGGREGATE											
	Gravel (lbs./ft <sup>2</sup> )											
	Slaq (lbs./ft <sup>2</sup> )											
	Crushed Rock (lbs./ft <sup>2</sup> )											
15B.	SURFACING - SMOOTH											
	Asphalt											
	Coal Tar											
	Emulsion/Cutback											
	Aluminum Coating											
	Vinyl/Vinyl Coating											
15C.	SURFACING - OTHER											
	Mineral Granules											
	Cap Sheet	X	X	X	X	X	X	X	X	X	X	X
	Other											
16.	WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )											
	Aggregate											
	Smooth											
	Cap Sheet	2.67	2.49	2.87	2.37	2.75	3.15	2.61	3.22	3.42	2.59	3.30
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											
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 <sup>-6</sup> /°F @ 0°F to -30°F) -MD											
	-XD											
C	Thermal Base Shock (not < 100°F) -MD											
	-XD											
20.	SEE APPENDIX IF CHECKED											

## Built-up Roofing

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
HOT/CLD	HOT/CLD	HOT/CLD	HOT	HOT/CLD	HOT	HOT/CLD	HOT/CLD	HOT	HOT	HOT	HOT	HOT/CLD	HOT	HOT/CLD	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
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	0-3
2	2	2	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	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	1	1	2	2	2	2	2	2	2	3
1	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
2.17	2.45	2.20	2.11	2.30	2.31	2.50	2.70	2.19	2.38	2.58	2.47	2.85	2.67	3.05	2.55	2.93	3.33	3.03
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

# Built-up Roofing

		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 M. MALARKEY										
7.	FELTS DATA: TRADE NAME (applicable ASTM standard), (metric [39 5/8-in. wide])	<div style="display: flex; justify-content: space-between;"> <div> #515 STANDARD BASE (D 4601)  #501 PREMIUM 1 SBS BASE (D 4601)  #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) </div> <div> #625 PARAGON SBS MINERAL (D 6163)  #650 PANOPLY SBS MINERAL (D 6163)  #159 APP 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-EBD	M5-FHD M5-FID	M5-FBD	M4-BHD M4-BID	M4-BBD	M4-EHD M4-EID	M4-EBD	M4-FHD M4-FID	M4-FBD	M4-FED	M5-EHD M5-EID
9.	HOT AND/OR COLD APPLIED	HOT/CLD	HOT	HOT	HOT	HOT/CLD	HOT	HOT/CLD	HOT	HOT	HOT	HOT
10.	DECK TYPE											
	Nailable	X			X	X	X	X				
	Insulated	X	X	X	X	X	X	X	X	X	X	X
	Nonnailable	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
	NUMBER OF PLIES											
12A.	Total Plies	5	5	5	4	4	4	4	4	4	4	5
12B.	Base Sheet	1	1	1	1	1	1	1	1	1	1	1
12C.	Interply(ies)	3	3	2	2	2	2	2	2	2	2	3
12D.	Cap Sheet	1	1	1	1	1	1	1	1	1	1	1
13.	TYPES OF FELT											
	Glass Fiber	X	X	X	X	X	X	X	X	X	X	X
	Organic											
	Asbestos											
	Polyester											
	Other											
14.	INTERPLY ADHESIVE											
	Asphalt	X	X	X	X	X	X	X	X	X	X	X
	Modified Asphalt	X	X	X	X	X	X	X	X	X	X	X
	Coal Tar											
	Elastomeric Adhesive	X				X		X				
15A.	SURFACING - AGGREGATE											
	Gravel (lbs./ft <sup>2</sup> )											
	Slaq (lbs./ft <sup>2</sup> )											
	Crushed Rock (lbs./ft <sup>2</sup> )											
15B.	SURFACING - SMOOTH											
	Asphalt											
	Coal Tar											
	Emulsion/Cutback											
	Aluminum Coating											
	Vinyl/Vinyl Coating											
15C.	SURFACING - OTHER											
	Mineral Granules											
	Cap Sheet	X	X	X	X	X	X	X	X	X	X	X
	Other											
16.	WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )											
	Aggregate											
	Smooth											
	Cap Sheet	3.60	2.91	3.48	2.47	2.85	2.67	3.05	2.55	2.93	3.33	3.03
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											
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 <sup>-6</sup> /°F @ 0°F to -30°F) -MD											
	-XD											
C	Thermal Base Shock (not < 100°F) -MD											
	-XD											
20.	SEE APPENDIX IF CHECKED											

## Built-up Roofing

M5-EBD	M5-FHD M5-FID	M5-FBD	F2-BXG	F2-EXG	F3-BHG F3-BIG	F3-BBG	F3-EHG F3-EIG
HOT/CLD	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
0-3	0-3	0-3	0-3	NONE	NONE	NONE	NONE
5	5	5	2	2	3	3	3
1	1	1	1	1	1	1	1
3	3	2			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
3.60	2.91	3.48	1.55	1.75	1.91	2.10	2.11
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

## MFM BUILDING PRODUCTS CORP.

1  
YES  
DISTRIBUTORS/DIRECT  
NO  
NONE  
STEVE FOSTER/WES SIMPSON  
DURAPLY IV (D 3178, TYPE IV)  
DURABASE (NONE)  
POLYPLY (NONE)

43-GAW	43-GSW	43-GAC	44-GSC	52-PAW	52-PSW	52-PSC	52-PAC
HOT	HOT	HOT	HOT	HOT	HOT	HOT	HOT
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
4	4	3	4	3	3	2	2
1	1			1			
3	3	3	4	2	2	2	2
X	X	X	X				
				X	X	X	X
X	X	X	X	X	X	X	X
4		4		4			4
	X		X				
	X		X		X	X	
6.0	2.0	6.0	2.0	5.0	2.0	2.0	6.0
1976	1976	1976	1976	1982	1982	1982	1982
343	343	293	382				
257	257	241	333				
23.5	23.5	18.8	21.7				
27.9	27.9	16.8	21.3				
687	687	840	866				
523	523	840	883				

## Built-up Roofing

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), (metric [39 5/8-in. wide])		<b>SOUTHWESTERN PETROLEUM</b>  NO DIRECT NO SEE COLD PROCESS BUR SYSTEM 301 APPLICATION GUIDE R. KLEINTOP ASPHALT ROLL ROOFING (D 2626)	
8. SPECIFICATION NUMBER		COLD PRO- CESS BUR 301 SYSTEM	
9. HOT AND/OR COLD APPLIED		COLD	
10. DECK TYPE			
Nailable		X	
Insulated		X	
Nonnailable		X	
11. SLOPE REQUIREMENTS (range in inches)		1/4 & UP	
NUMBER OF PLIES			
12A. Total Plies		3	
12B. Base Sheet			
12C. Interply(ies)		3	
12D. Cap Sheet			
13. TYPES OF FELT			
Glass Fiber			
Organic		X	
Asbestos			
Polyester			
Other			
14. INTERPLY ADHESIVE			
Asphalt		X	
Modified Asphalt			
Coal Tar			
Elastomeric Adhesive			
15A. SURFACING - AGGREGATE			
Gravel (lbs./ft <sup>2</sup> )		4-6	
Slaq (lbs./ft <sup>2</sup> )			
Crushed Rock(lbs./ft <sup>2</sup> )			
15B. SURFACING - SMOOTH			
Asphalt		X	
Coal Tar			
Emulsion/Cutback		X	
Aluminum Coating		X	
Vinyl/Vinyl Coating			
15C. SURFACING - OTHER			
Mineral Granules		X	
Cap Sheet			
Other			
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )			
Aggregate		6.7	
Smooth		1.5	
Cap Sheet			
17. RESTRICTED REGIONS (refer to manufacturer's literature)		NONE	
18. YEAR OF FIRST COMMERCIAL USE		1971	
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 <sup>-6</sup> /°F @0°F to -30°F) -MD			
-XD			
C Thermal Base Shock (not < 100°F) -MD			
-XD			
20. SEE APPENDIX IF CHECKED			

## Built-up Roofing

### TAMKO ROOFING

27  
YES  
DISTRIBUTORS  
NO  
SEE TAMKO COMMERCIAL ROOFING MANUAL  
DISTRICT OFFICE/TECHNICAL SERVICE  
TYPE 43 BASE (D 2626)  
TAM CAP (3909), (METRIC)  
VAPOR CHAN (D 4897 TYPE II) (METRIC)  
GLASS-BASE (D 4601 TYPE II) (METRIC)  
TAM-GLASS PREMIUM (D 2178, TYPE VI) (METRIC)  
TAM-PLY IV (D 2178 TYPE IV) (METRIC)  
BASE-N-PLY (D4601 TYPE II) (METRIC)

501 601	502 602	503 603	504 604	505 605	507 607	512 612	514 614	515 615	516 616
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	0-1 1/2	0-3	0-3	0-1
3	4	4	3	4	5	4	4	4	4
3	3	4	3	4	4	1	1	1	1
	1				1	1	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
4		4					4	4	
3		3					3	3	
			X	X					X
			X	X					X
	X				X	X			
6.0		6.0					6.0	7.0	
			1.50	1.50					1.50
	2.0				2.1	2.0			
NONE	NONE	NONE	YES	NONE	NONE	NONE	NONE	NONE	NONE

### TREMCO, INC.

18  
YES  
DIRECT  
YES  
SEE TREMCO REP  
SALES OFFICE/TECHNICAL DEPT.  
BURMASTIC COMPOSITE PLY SHEET (NONE)  
BURMASTIC GLASS PLY SHEET (D 4601, TYPE II)  
THERMGLASS ROOFING PLY (D 2178, TYPE VI)  
POLYTHERM PLY SHEET (NONE)

BURMAS- TIC 100	BURMAS- TIC 100	BURMAS- TIC 200	BURMAS- TIC 200	THERM 100	BURMAS- TIC 100	BURMAS- TIC 100	BURMAS- TIC 200
COLD	COLD	COLD	COLD	HOT	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
1/8-4	1/8-4	1/8-4	1/8-4	1/8-3	1/8-4	1/8-4	1/8-4
3	3	3	3	3	3	3	3
X	X			X	X	X	
		X	X				X
X	X	X	X		X	X	X
				X			
	4.0		4.0			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
	5.70		5.70			5.70	
2.30		2.30		1.80	2.30		2.30
NONE 1978	NONE 1978	NONE 1986	NONE 1986	NONE 1982	NONE 1978	NONE 1978	NONE 1986
330 295	330 295	390 400	390 400	255 240	330 295	330 295	390 400

## Built-up Roofing

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), (metric [39 5/8-in. wide])		TREMCO, INC.  18 YES DIRECT YES SEE TREMCO REP SALES OFFICE/TECHNICAL DEPT. BURMASTIC COMPOSITE PLY SHEET (NONE) BURMASTIC GLASS PLY SHEET(D 4601, TYPE II) THERMGLASS ROOFING PLY (D 2178, TYPE VI) POLYTHERM PLY SHEET (NONE)				
8. SPECIFICATION NUMBER		BURMAS- TIC 200	THERM 100	THERM 100	THERM 200	THERM 200
9. HOT AND/OR COLD APPLIED		COLD	HOT	HOT	HOT	HOT
10. DECK TYPE						
Nailable		X	X	X	X	X
Insulated		X	X	X	X	X
Nonnailable		X	X	X	X	X
11. SLOPE REQUIREMENTS (range in inches)		1/8 – 4	1/8 – 3	1/8 – 3	1/8 – 3	1/8 – 3
NUMBER OF PLIES						
12A. Total Plies		3	3	3	3	3
12B. Base Sheet						
12C. Interply(ies)						
12D. Cap Sheet						
13. TYPES OF FELT						
Glass Fiber			X	X		
Organic						
Asbestos						
Polyester		X			X	X
Other						
14. INTERPLY ADHESIVE						
Asphalt						
Modified Asphalt		X				
Coal Tar						
Elastomeric Adhesive			X	X	X	X
15A. SURFACING - AGGREGATE						
Gravel (lbs./ft <sup>2</sup> )		4.0		4.0		4.0
Slag (lbs./ft <sup>2</sup> )						
Crushed Rock(lbs./ft <sup>2</sup> )						
15B. SURFACING - SMOOTH						
Asphalt						
Coal Tar						
Emulsion/Cutback			X		X	
Aluminum Coating			X		X	
Vinyl/Vinyl Coating			X		X	
15C. SURFACING - OTHER						
Mineral Granules			X		X	
Cap Sheet						
Other			X		X	
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )						
Aggregate		5.70		5.20		5.0
Smooth			1.80		1.60	
Cap Sheet						
17. RESTRICTED REGIONS (refer to manufacturer's literature)		NONE	NONE	NONE	NONE	NONE
18. YEAR OF FIRST COMMERCIAL USE		1986	1982	1982	1983	1983
19. TEST RESULTS PER NBS BSS #55						
MD = MACHINE DIRECTION XD = CROSS DIRECTION						
A Tensile Strength (>200 lb/in @ 0°F) -MD		390	255	255	265	265
-XD		400	240	240	225	225
B Thermal Expansion (not > 40x10 <sup>-6</sup> /°F @ 0°F to -30°F) -MD						
-XD						
C Thermal Base Shock (not < 100°F) -MD						
-XD						
20. SEE APPENDIX IF CHECKED						

<b>TRI-PLY</b> 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)			
I-5-4P-M	I-4-4P-G	I-4-4P-S	I-4-3P
HOT	HOT	HOT	HOT
X	X	X	X
0-6	0-3	0-6	0-6
5	4	4	4
4	4	4	3
1			1
X	X	X	X
X	X	X	X
4	3		
		X	
		X	
		X	
X			X
NONE 1985	NONE 1985	NONE 1985	NONE 1985



# Built-up Roofing

## TRI-PLY

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)

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

# Built-up Roofing

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), (metric [39 5/8-in. wide])		<b>W.P. HICKMAN</b>  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) WEATHER PLY (NONE) POLYESTER PLY(NONE) PREMIUM PLY (ASTM D 2178, TYPE VI) PIKA PLY CAP SHEET HICKMAN PREMIUM CAP HK TARRED FELT (D 227)									
8. SPECIFICATION NUMBER	BUR PLUS GLASS/POLY- ESTER	BUR PLUS GLASS/POLY- ESTER	BUR PLUS PIKA PLY CAP SHEET	BUR PLUS 505	TAR PLUS	PERFORM- ANCE PLY MS + MS/FR	WEATHER PLY MA+MA/FR	PIKA PLY CAP SHEET	BUR PLUS GLASS	BUR PLUS GLASS	BUR PLUS POLY- ESTER
9. HOT AND/OR COLD APPLIED	HOT	HOT	HOT	HOT	HOT	COLD	COLD	COLD	HOT	HOT	HOT
10. DECK TYPE											
Nailable	X	X	X	X	X	X	X	X	X	X	X
Insulated	X	X	X	X	X	X	X	X	X	X	X
Nonnailable	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	0 - 1/2	0 - 1/2	1/8 - 4	1/8 - 4	1/8 - 4	1/8 - 3	1/8 - 3	1/8 - 3
12A. Total Plies	4	4	3	4	4	3	3	3	3	3	3
12B. Base Sheet	1	1		1							
12C. Interply(ies)	3	3	2	3	4	2	2	2	3	3	3
12D. Cap Sheet			1			1	1	1			
13. TYPES OF FELT											
Glass Fiber	X	X	X	X	X	X	X	X	X	X	
Organic				X	X						
Asbestos											
Polyester	X	X	X	X	X	X	X	X			X
Other											
14. INTERPLY ADHESIVE											
Asphalt	X	X	X	X					X	X	X
Modified Asphalt	X	X	X						X	X	X
Coal Tar				X	X						
Elastomeric Adhesive						X	X	X			
15A. SURFACING - AGGREGATE											
Gravel (lbs./ft <sup>2</sup> )		4		4	4					4	
Slaq (lbs./ft <sup>2</sup> )											
Crushed Rock (lbs./ft <sup>2</sup> )											
15B. SURFACING - SMOOTH											
Asphalt											
Coal Tar											
Emulsion/Cutback	X								X		X
Aluminum Coating	X								X		X
Vinyl/Vinyl Coating	X								X		X
15C. SURFACING - OTHER											
Mineral Granules											
Cap Sheet			X	X		X	X	X			
Other											
16. WEIGHT, INCLUDING PLIES (approx. lbs./ft <sup>2</sup> )											
Aggregate		5.25		6.0	6.0					5.25	
Smooth	1.90								1.85		1.80
Cap Sheet			1.85			2.25	2.25	2.50			
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	1994	1985	1985	1995	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
-XD									245	245	255
B Thermal Expansion (not > 40x10 <sup>-6</sup> /°F @ 0°F to -30°F) -MD											
-XD											
C Thermal Base Shock (not < 100°F) -MD											
-XD											
20. SEE APPENDIX IF CHECKED											

## Built-up Roofing

BUR PLUS POLY- ESTER	M.-PLY GLASS	M.-PLY GLASS	PERFORM- ANCE PLY MS+MS/FR	WEATHER PLY MA+MA/FR	M.-PLY COMBI- NATION	M.-PLY COMBI- NATION
HOT	COLD	COLD	HOT	HOT	COLD	COLD
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 - 4	1/8 - 4	1/8 - 3	1/8 - 3	1/8 - 4	1/8 - 4
3	3	3	3	3	4	4
3	3	3	2	2	1	1
			1	1	3	3
	X	X	X	X	X	X
X			X	X	X	X
X			X	X		
X		X	X	X	X	X
	X					
4		4				4
	X				X	
	X				X	
	X				X	
	X				X	
			X	X		
	X				X	
5.25		5.75				5.80
	2.35				2.40	
			1.85	1.85		
NONE 1985	NONE 1985	NONE 1985	NONE 1985	NONE 1995	NONE 1985	NONE 1985
275 255	335 300	335 300				

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	ALLIED SIGNAL INC.	ALLIED SIGNAL INC.	ALLIED SIGNAL INC.	ALLIED SIGNAL INC.	ALLIED SIGNAL INC.	AMERICAN LUBRICANTS
2.	PRODUCT NAME	MILLENNIUM BASE SHEET	MILLENNIUM SMOOTH MOP	MILLENNIUM GMC	SPM MILLENNIUM	GPM MILLENNIUM	TIFFANY
3.	PRODUCT DESCRIPTION						
	Type of Modifier	TARDYNE	TARDYNE	TARDYNE	TARDYNE	TARDYNE	APP
	Thickness (mils)	80	120	150	120	150	157
	Top Surface	SMOOTH	SMOOTH	MINERAL	SMOOTH	MINERAL	MODIFIED BITUMEN
	Reinforcing Material	FIBERGLASS	FIBERGLASS	FIBERGLASS	POLYESTER / SCRIM	POLYESTER / SCRIM	NON-WOVEN POLYESTER
	Colors	BLACK	BLACK	GRAY / BLACK / LIGHT BEIGE			BLACK
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	0.53	0.75	0.87			0.87
4.	KINDS OF FIELD SURFACING REQUIRED	CAP SHEET	CAP SHEET	NONE	CAP SHEET	NONE	NONE
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	HOT MOP HEAT WELD COLD	HOT MOP HEAT WELD COLD	HOT MOP HEAT WELD COLD	HOT /MOP COLD	HOT / MOP COLD	TORCH
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
	Partially Adhered (method)						
	Fully Adhered (method)	HOT MOP/COLD	HOT MOP/COLD	HOT MOP/COLD	X	X	TORCH
	Protected Roof Membrane Assembly	X	X	X	X	X	
8.	MINIMUM SLOPE REQUIRED	NONE	NONE	NONE	NONE	NONE	POS DRAIN
9.	ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)						
	Glass Fiber	X	X	X	X	X	O
	Mineral Fiber						O
	Polystyrene						O
	Cellular Glass	X	X	X	X	X	O
	Phenolic	O	O	O	O	O	O
	Fiberboard	X	X	X	X	X	O
	Perlite	X	X	X	X	X	O
	Polyisocyanurate	O	O	O	O	O	O
	Polythane	O	O	O	O	O	O
	Gypsum	O	O	O	O	O	O
	Concrete	X	X	X	X	X	X
	Wood Plank	O	O	O	O	O	O
	Plywood	O	O	O	O	O	O
	Existing Built-up Membrane	O	O	O	O	O	X O
10.	RESTRICTED REGIONS (refer to manufacturer's literature)						NONE
11.	WORKABLE TEMPERATURE RANGE (degrees F)	30 - 100	30 - 100	30 - 100	30 -100	30 - 100	0 – 120
12.	FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIALS
13.	FLASHING METHOD	MILLENNIUM MASTIC	MILLENNIUM MASTIC	MILLENNIUM MASTIC	MILLENNIUM MASTIC	MILLENNIUM MASTIC	TORCH
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)				NO	NO	NO
15.	COUNTRY OF:						
	Origin	USA	USA	USA	USA	USA	USA
	Manufacture	USA	USA	USA	USA	USA	USA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA						
	Within USA	1994	1994	1994	1994	1994	1981
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA						NONE
	Within USA						MILLIONS
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS. DIRECT	DISTRS. DIRECT	DISTRS. DIRECT	DISTRS. DIRECT	DISTRS. DIRECT	DIRECT
19.	NUMBER OF REGIONAL LOCATIONS	6	6	6	6	6	
20.	LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	NO
21.	FOR SALES INFORMATION, CONTACT:	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	R. G. READ 937/222-2851
22.	FOR TECHNICAL INFORMATION, CONTACT:	TECHINCAL SERVICES	TECHINCAL SERVICES	TECHINCAL SERVICES	TECHINCAL SERVICES	TECHINCAL SERVICES	R. G. READ 937/222-2851
23.	SEE APPENDIX IF CHECKED						

## Modified Bitumen Part 1 - General Information

[illegible]

## Modified Bitumen Part 1 - General Information

1. COMPANY NAME	BITEC INC.	BITEC INC.	BITEC INC.	BITEC INC.	BITEC INC.	BITEC INC.
2. PRODUCT NAME	SPM-4H/250	SPS-3H	COMPABASE PS-2H	COMPABASE FS-2H	COMPAFLASH BFS-2H	COMPABASE FS-2H-FR
3. PRODUCT DESCRIPTION						
Type of Modifier	SBS	SBS	SBS	SBS	SBS	SBS
Thickness (mils)	160	120	80	80	80	80
Top Surface	GRANULES	MODIFIED BITUMEN	MODIFIED BITUMEN	MODIFIED BITUMEN	MODIFIED BITUMEN	MODIFIED BITUMEN
Reinforcing Material	SPUNBOND POLYESTER 250	SPUNBOND POLYESTER	SPUNBOND POLYESTER	NON-WOVEN FIBERGLASS	SPUNBOND POLYESTER	NON-WOVEN FIBERGLASS MAT
Colors	VARIOUS	MODIFIED	BLACK	BLACK	BLACK	BLACK
Installed Weight (lbs./ft <sup>2</sup> without ballast)	1.08	0.73	0.47	0.47	0.47	0.47
4. KINDS OF FIELD SURFACING REQUIRED	NONE	COATING OR ASPHALT AND GRAVEL	SPM OR SFM SHEETS	SPM OR SFM SHEETS	ROOF COATING	SFM SHEETS
5. USE IN						
New Roofing	X	X	X	X	X	X
Reroofing	X	X	X	X	X	X
FIELD LAP JOINT METHOD	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	HOT MOP OR COLD ADHESIVE
7. TYPES OF ROOF SYSTEMS:						
Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
Partially Adhered (method)						
Fully Adhered (method)	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES
Protected Roof Membrane Assembly						
8. MINIMUM SLOPE REQUIRED	POS DRAIN		POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)						
Glass Fiber	O	O	O	O		O
Mineral Fiber	O	O	O	O		O
Polystyrene	O	O	O	O		O
Cellular Glass	O	O	O	O		O
Phenolic	O	O	O	O		O
Fiberboard	O	O	O	O		O
Perlite	O	O	O	O		O
Polyisocyanurate	O	O	O	O		O
Polythane	O	O	O	O		O
Gypsum	O	O	O	O		O
Concrete	O	O	O	O	X	O
Wood Plank	O	O	O	O		O
Plywood	O	O	O	O	X	O
Existing Built-up Membrane	O	O	O	O	X	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	30 – 130	30 – 130	30 – 130	30 – 130	30 – 130	30 – 130
12. FLASHING MATERIAL	SAME MATERIAL OR SPM-4.5T	SAME MATERIAL OR SPM-4.5T			SAME MATERIAL	
13. FLASHING METHOD	HOT MOP OR TORCH	HOT MOP OR TORCH			HOT MOP OR COLD ADHESIVE	
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO
15. COUNTRY OF:						
Origin	ITALY	ITALY	ITALY	ITALY	ITALY	ITALY
Manufacture	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE						
Outside USA	1978	1978	1978	1978	1978	1978
Within USA			1988	1988	1989	1988
17. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
Outside USA	23000				1800	
Within USA	> 20,000	>575,000	>3,500	>11,000	2300	8000
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	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:	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
23. SEE APPENDIX IF CHECKED						

## Modified Bitumen Part 1 - General Information

BITEC INC.	BITEC INC.	BITEC INC.	BITEC INC.	BITEC INC.	CELOTEX CORP.	CELOTEX CORP.	CERTAINTEED ROOFING PRODS GROUP	CERTAINTEED ROOFING PRODS GROUP	CERTAINTEED ROOFING PRODS GROUP
SFM-3.5H-FR	SFM-4H-FR	FS-2H PLUS	FS-25	FS-40	CELOTEX APP 4/S CAP SHEET	CELOTEX APP 4/M CAP SHEET	FLINTLASTIC STA PLUS 5.0	FLINTLASTIC GTA	GTA BLACK DIAMOND AND WHITE DIAMOND
SBS	SBS	SBS	SBS	SBS	APP	APP	APP	APP	APP
140	160	88	40	60	157	157	200	180	160
GRANULES	GRANULES	MODIFIED BITUMEN	MODIFIED BITUMEN	MODIFIED BITUMEN	SMOOTH	GRANULAR	ALUMINUM	GRANULE	FINE CERAMIC PARTICLES
NON-WOVEN FIBERGLASS MAT	NON-WOVEN FIBERGLASS	NON-WOVEN FIBERGLASS	NON-WOVEN FIBERGLASS	NON-WOVEN FIBERGLASS	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER
VARIOUS	VARIOUS	BLACK	BLACK	BLACK	BLACK	BLACK OR WHITE	BLACK	WHITE / BLACK / BROWN / TAN/	BLACK DIAMOND / WHITE
1.00	1.05	0.6	0.25	0.4	1.03	1.13	1	1.05	0.95
NONE	NONE	SPM OR SPM SHEETS	SPM OR SPM SHEETS	SPM OR SPM S HEETS	COATINGS / EMULSIONS	NONE	REFLECTIVE COATING	NONE	NONE
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
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	TORCH	TORCH	TORCH	TORCH	TORCH
MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	TORCH	TORCH	TORCH	TORCH	TORCH
POS DRAIN	POS DRAIN				POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
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	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	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	X O	X O	X O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
30 – 130	30 – 130	30 – 130	30 – 130	30 – 130	30 – 120	30 – 120	30 – 130	30 – 130	30 – 130
SAME MATERIAL	SAME MATERIAL				SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
HOT MOP	HOT MOP				TORCH	TORCH	TORCH	TORCH	TORCH
NO	NO	NO	NO	NO	NO	NO	NONE	NO	NO
ITALY USA	ITALY USA	ITALY USA	ITALY USA	ITALY USA	USA	USA	USA USA	ITALY USA	UK USA
1978 1989	1978 1989	1978 1988	1978 1988	1978 1988	1965 1983	1963 1983	1997	1978 1986	1987
58000	52000	>58,000	>58,000	>58,000				MILLIONS	MILLIONS
DISTRIBUTORS 6 YES	DISTRIBUTORS 6 YES	DISTRIBUTORS 6 YES	DISTRIBUTORS 6 YES	DISTRIBUTORS 6 YES	DISTRS,DIRECT 6 YES	DISTRS,DIRECT 6 YES	DISTRIBUTORS 2 YES	DISTRIBUTORS 2 YES	DISTRIBUTORS 2 YES
800/535-8597	800/535-8597	800/535-8597	800/535-8597	800/535-8597	REG. OFFICE 800/CELOTEX	REG. OFFICE 800/CELOTEX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
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	REG. OFFICE 800/CELOTEX	REG. OFFICE 800/CELOTEX	972/580-5600	972/580-5600	972/580-5600
					X	X	X	X	X

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	CERTAINTED ROOFING PRODS GROUP	CERTAINTED ROOFING PRODS GROUP	CERTAINTED ROOFING PRODS GROUP	CERTAINTED ROOFING PRODS GROUP	CERTAINTED ROOFING PRODS GROUP	CERTAINTED ROOFING PRODS GROUP
2.	PRODUCT NAME	FLINTLASTIC GTA-FR	FLINTLASTIC GTS	FLINTLASTIC GMS	FLINTLASTIC GMS PREMIUM	FLINTLASTIC FR-P	FLINTLASTIC FR-P PREMIUM
3.	PRODUCT DESCRIPTION						
	Type of Modifier	APP	SBS	SBS	SBS	SBS	SBS
	Thickness (mils)	180	180	160	180	160	180
	Top Surface	GRANULE	GRANULE	GRANULE	GRANULE	GRANULE	GRANULE
	Reinforcing Material	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER
	Colors	WHITE	WHITE	WHITE / BLACK / BROWN / TAN /	WHITE	WHITE	WHITE
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	1.05	1.22	1.00	1.05	1.08	1.05
4.	KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	TORCH	TORCH	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
	Partially Adhered (method)						
	Fully Adhered (method)	TORCH	TORCH	MOP/COLD ADH	MOP/COLD ADH	MOP/COLD ADH	MOP/COLD ADH
	Protected Roof Membrane Assembly						
8.	MINIMUM SLOPE REQUIRED	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)						
	Glass Fiber	O	O	O	O	O	O
	Mineral Fiber	O	O	O	O	O	O
	Polystyrene	O	O	O	O	O	O
	Cellular Glass	O	O	O	O	O	O
	Phenolic	O	O	O	O	O	O
	Fiberboard	O	O	O	O	O	O
	Perlite	O	O	O	O	O	O
	Polyisocyanurate	O	O	O	O	O	O
	Polythane	O	O	O	O	O	O
	Gypsum	O	O	O	O	O	O
	Concrete	O	O	O	O	O	O
	Wood Plank	O	O	O	O	O	O
	Plywood	O	O	O	O	O	O
	Existing Built-up 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)	30 – 130	30 – 130	30 – 130	30 – 130	30 – 130	30 – 130
12.	FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
13.	FLASHING METHOD	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)	NO	NO	NO	NO	NO	NO
15.	COUNTRY OF:						
	Origin	USA	ITALY	ITALY	USA	USA	USA
	Manufacture	USA	USA	USA	USA	USA	USA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA		1978	1972			
	Within USA	1996	1986	1980	1989	1989	1989
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA		>100,000 MILLIONS	>100,000 MILLIONS			
	Within USA				200000		
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19.	NUMBER OF REGIONAL LOCATIONS	2	2	2	2	2	2
20.	LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21.	FOR SALES INFORMATION, CONTACT:	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
22.	FOR TECHNICAL INFORMATION, CONTACT:						
		972/580-5600	972/580-5600	972/580-5600	972/580-5600	972/580-5600	972/580-5600
23.	SEE APPENDIX IF CHECKED	X	X	X	X	X	X



## Modified Bitumen Part 1 - General Information

CERTAINTEED ROOFING PRODS GROUP	CERTAINTEED ROOFING PRODS GROUP	CERTAINTEED ROOFING PRODS GROUP	CERTAINTEED ROOFING PRODS GROUP	CERTAINTEED ROOFING PRODS GROUP	CERTAINTEED ROOFING PRODS GROUP	CERTAINTEED ROOFING PRODS GROUP	CERTAINTEED ROOFING PRODS GROUP	DANOSA CARIBBEAN INC.	DANOSA CARIBBEAN INC.
FLINTLASTIC FR PG	FLINTLASTIC FR BASE SHEET	FLINTLASTIC FR CAP	POLY SMS BASE SHEET	BLACK DIAMOND BASE SHEET	FLEXIGLAS BASE SHEET	FLEXIGLAS PREMIUM CAP 960	FLINTLASTIC STA	ESTERDAN RM	GLASDAN AL-80
SBS	SBS	SBS	SBS	SBS	SBS	SBS	APP	SBS	SBS
180	92	140	120	50		160	160	140	140
GRANULE	GRANULE	GRANULE	SAND	GRANULE	SAND	GRANULES	ALUMINUM	MINERAL GRANULES	ALUMINUM
POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	FIBERGLASS	FIBERGLASS	POLYESTER	POLYESTER	GLASS FIBER
WHITE	VARIOUS	VARIOUS	BLACK	BLACK	BLACK	WHITE	BLACK	WHITE / OTHER	ALUMINUM
1.00	0.60	0.90	.045	.038	0.30	0.90	0.90	0.83	0.77
NONE	CAP SHEET	NONE	CAP SHEET	CAP SHEET	CAP SHEET	NONE	REFLECTIVE COATING	NONE	NONE
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
HOT MOP OR COLD ADHESIVE	MECHANICAL, HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	MECHANICAL, HOT MOP OR COLD ADHESIVE	SELF-ADHESIVE	MECHANICAL, HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	TORCH	HOT MOP OR TORCH	TORCH
	MOP/CLD ADH		MECH/MOP/CLD AD		MECH.				
MOP/COLD ADH	MOP/COLD ADH	MOP/COLD ADH	MOP/COLD ADH	SELF-ADHERED	MOP/CLD ADHS	MOP/CLD ADH	TORCH	MOP OR TORCH	MOP OR TORCH
POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN		POS DRAIN	DEAD LEVEL	DEAD LEVEL
O	X	O	X	X	X	O	O	X	X
O	X	O	X	X	X	O	O	X	X
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	X O	X O
O	X	O	X	X	X	O	O	X O	X O
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	O	O
O	X	O	X	X	X	O	O	O	O
X O	X	X O	X	O	X O	X O	X O	O	O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
30 – 130	30 – 130	30 – 130	30 – 130	30 – 130	30 – 130	30 – 130	30 – 130	14 – 120	14 – 120
SAME MATERIAL	ANY SBS CAP SHEET	SAME MATERIAL	ANY SBS CAP SHEET	FLINTLASTIC STA, GTA, GMS	ANY FLINTLASTIC CAP SHEET	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL OR GLASDANAL-80	SAME MATERIAL OR ESTERDAN RM
HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	TORCH, MOP OR COLD ADHESIVE	TORCH, MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	TORCH	HOT MOP OR TORCH	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	ITALY USA	PUERTO RICO PUERTO RICO	PUERTO RICO PUERTO RICO
1989	1989	1989	1989	1989	1990	1997	1978 1980	1979	1979
MILLIONS	100000	100000	40000	50000			1,200,000 MILLIONS	MILLIONS THOUSANDS	MILLIONS THOUSANDS
DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRSDIRECT	DISTRSDIRECT
2	2	2	2	2	2	2	2	2	2
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	EAST: 927/580-5604 WEST: 510/606-7434	W. RIVERA	W. RIVERA
972/580-5600	972/580-5600	972/580-5600	972/580-5600	972/580-5600	972/580-5600	972/580-5600	972/580-5600	F. ROMERO	F. ROMERO
X	X	X	X	X	X	X	X		

## Modified Bitumen Part 1 - General Information

1. COMPANY NAME	DANOSA CARIBBEAN INC.	DANOSA CARIBBEAN INC.	DANOSA CARIBBEAN INC.	DANOSA CARIBBEAN INC.	DANOSA CARIBBEAN INC.	DANOSA CARIBBEAN INC.
2. PRODUCT NAME	GLASDAN R-36	GLASDAN AL-80-3	GLASDAN RM	GLASDAN RM-5	ESTERDAN RM-5	ESTERDAN RM-PLUS
3. PRODUCT DESCRIPTION						
Type of Modifier	SBS	SBS	SBS	SBS	SBS	SBS
Thickness (mils)	140	120	140	173	177	197
Top Surface	BITUMEN	ALUMINUM	MINERAL GRANULES	MINERAL GRANULES	MINERAL GRANULES	MINERAL GRANULES
Reinforcing Material	SMOOTH	GLASS FIBER	GLASS FIBER	GLASS FIBER	POLYESTER	POLYESTER
Colors	BLACK	ALUMINUM	WHITE / OTHER	WHITE / OTHER	WHITE / OTHER	WHITE / OTHER
Installed Weight (lbs./ft <sup>2</sup> without ballast)	0.77	0.72	0.83	1.05	1.07	1.19
4. KINDS OF FIELD SURFACING REQUIRED	COATING BALALST	NONE	NONE	NONE	NONE	NONE
5. USE IN						
New Roofing	X	X	X	X	X	X
Reroofing	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HOT MOP OR TORCH	TORCH	HOT MOP OR TORCH	HOT MOP OR TORCH	HOT MOP OR TORCH	HOT MOP OR TORCH
7. TYPES OF ROOF SYSTEMS:						
Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
Partially Adhered (method)						
Fully Adhered (method)	MOP OR TORCH	MOP OR TORCH	MOP OR TORCH	MOP OR TORCH	MOP OR TORCH	MOP OR TORCH
Protected Roof Membrane Assembly						
8. MINIMUM SLOPE REQUIRED	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)						
Glass Fiber	X	X	X	X	X	X
Mineral Fiber	X	X	X	X	X	X
Polystyrene	O	O	O	O	O	O
Cellular Glass	X O	X O	X O	X	X O	X O
Phenolic	X O	X O	X O	O	X O	X O
Fiberboard	O	O	O	O	O	O
Perlite	O	O	O	X	O	X O
Polyisocyanurate	O	O	O	O	O	O
Polythane	O	O	O	O	O	O
Gypsum	O	O	O	O	O	O
Concrete	X	X	X	X	X	X
Wood Plank	X O		X O	X O	X O	X O
Plywood	X O		X O	X O	X O	X O
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)	14 – 120	14 – 120	14 – 120	14 – 120	14 – 120	14 – 120
12. FLASHING MATERIAL	GLASD AL-80 OR ESTERDAN RM	SAME MATERIAL OR ESTERDAN RM	SAME MATERIAL OR GLASDANAL-80	SAME MATERIAL OR ESTERDAN RM	SAME MATERIAL OR GLASDANAL-80	SAME MATERIAL OR GLASDANAL-80
13. FLASHING METHOD	HOT MOP OR TORCH	HOT MOP OR TORCH	HOT MOP OR 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
15. COUNTRY OF:						
Origin	PUERTO RICO	PUERTO RICO	PUERTO RICO	PUERTO RICO	PUERTO RICO	PUERTO RICO
Manufacture	PUERTO RICO	PUERTO RICO	PUERTO RICO	PUERTO RICO	PUERTO RICO	PUERTO RICO
16. YEAR OF FIRST COMMERCIAL USE						
Outside USA						
Within USA	1979	1988	1988	1988	1985	1995
17. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
Outside USA	MILLIONS THOUSANDS	MILLIONS THOUSANDS	MILLIONS THOUSANDS	MILLIONS THOUSANDS	MILLIONS THOUSANDS	
Within USA						
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	2	2	2	2	2	2
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	W. RIVERA	W. RIVERA	W. RIVERA	W. RIVERA	W. RIVERA	W. RIVERA
22. FOR TECHNICAL INFORMATION, CONTACT:	F. ROMERO	F. ROMERO	F. ROMERO	F. ROMERO	F. ROMERO	F. ROMERO
23. SEE APPENDIX IF CHECKED						

## Modified Bitumen Part 1 - General Information

DERMABIT WATERPROOFING INDUSTRIES	DERMABIT WATERPROOFING INDUSTRIES	DERMABIT WATERPROOFING INDUSTRIES	DERMABIT WATERPROOFING INDUSTRIES	DIBITEN	DIBITEN	DIBITEN	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS
DERMABIT 4170 SMOOTH	DERMABIT 4170 GRANULE	ELASPHALT 4170 SMOOTH	ELASPHALT 4170 GRANULE	DIBITEN POLY/4	DIBITEN POLY/4.5 GRANULAR	DIBITEN POLY/5	ERS - 501	ERS - 503	ERS - 502
APP	APP	SBS	SBS	APP	APP	APP	SBS/SEBS	SBS/SEBS	SBS/SEBS
160	160	160	160	160	180	200	130	135	160
SMOOTH	GRANULE	SMOOTH	GRANULE	MODIFIED BITUMEN	SLATE FLAKES	MODIFIED BITUMEN	SMOOTH	SMOOTH	GRANULES
POLYESTER	POLYESTER	POLYESTER	POLYESTER	NON-WOVEN POLYESTER	NON-WOVEN POLYESTER	NON-WOVEN POLYESTER	POLYESTER	POLYESTER	POLYESTER
BLACK	VARIOUS	BLACK	VARIOUS	BLACK	VARIOUS	BLACK	BLACK	BLACK	UNLIMITED
0.88	0.95	0.88	0.95	0.90	1.05	1.10	90	100	100
NONE	NONE	COATING	NONE	NONE	NONE	NONE	GRAVEL / GRANULES	GRAVEL / GRANULES	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 TORCH	HOT MOP OR TORCH	TORCH	TORCH	TORCH	HOT/COLD	HOT / COLD	HOT/ COLD
							4	4	
TORCH	TORCH	MOP OR TORCH	MOP OR TORCH	TORCH	TORCH	TORCH	X	X	X
DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
O	O	O	O	O	O	O	X	X	X
O	O	O	O	O	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
O	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	X	X	X
O	O	O	O	O	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	X	X O	X O	O	O	O	O	O	O
X	X	X	X	X O	X O	X O	X O	X O	X O
O	O	X O	X O	O	O	O	X O	X O	X O
O	O	X O	X O	O	O	O	X O	X O	X O
X	X	X	X	X O	X O	X O	O	O	O
NONE	NONE	NONE	NONE	SEE SPECS	SEE SPECS	SEE SPECS	NONE	NONE	NONE
20 – 140	20 – 140	0 – 120	0 – 120	40 – 120	40 – 120	40 – 120	40 - 100	40 - 100	40 - 100
SAME MATERIAL OR GRANULATED	SAME MATERIAL	SAME MATERIAL OR GRANULATED	SAME MATERIAL OR GRANULATED	SAME MATERIAL	DIBITEN POLY/4	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
TORCH	TORCH	TORCH OR MOP	TORCH OR MOP	TORCH	TORCH	TORCH	HOT MOP / MODIFIED BITUMEN	HOT MOP / MODIFIED BITUMEN	HOT MOP / MODIFIED BITUMEN
NO	NO	NO	NO	NO	NO	NO	YES	YES	YES
SA/ITALY	SA/ITALY	SA/ITALY	SA/ITALY	ITALY	ITALY	ITALY	USA	USA	USA
SA/ITALY	SA/ITALY	SA/ITALY	SA/ITALY	USA	USA	USA	USA	USA	USA
1976	1976	1976	1976	1968	1968	1968			
1987	1987	1987	1987	1978	1978	1978	1988	1988	1988
3.5 MILLION 200,000	1.5 MILLION 100,000	200,000	300,000	10.7 MILLION 4.6 MILLION	900,000 1.3 MILLION	100,000 200,000			
DISTRIBUTORS 1	DISTRIBUTORS 1	DISTRIBUTORS 1	DISTRIBUTORS 1	DISTRIBUTORS 9	DISTRIBUTORS 9	DISTRIBUTORS 9	DIRECT 6	DIRECT 6	DIRECT 6
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
G. JERMSTAD	G. JERMSTAD	G. JERMSTAD	G. JERMSTAD	R. BIANCHI	DISTRICT OFFICE	DISTRICT OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE
G. JERMSTAD	G. JERMSTAD	G. JERMSTAD	G. JERMSTAD	D. CARL	D. CARL	D. CARL	TECHNICAL SERVICE	TECHNICAL SERVICE	TECHNICAL SERVICE
X	X	X	X	X	X	X			

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS
2.	PRODUCT NAME	ERS - 504	ERS - 505	ERS - 507	ERS - 600	ERS - 601	ERS - 602
3.	PRODUCT DESCRIPTION						
	Type of Modifier	SBS/SEBS	SBS/SEBS	SBS/SEBS	APP	APP	SBS/SEBS
	Thickness (mils)	160	120	115	160	180	160
	Top Surface	GRANULES	GRANULES	GRANULES	SMOOTH	GRANULES	SMOOTH
	Reinforcing Material	POLYESTER	FIBERGLASS	FIBERGLASS	POLYESTER	POLYESTER	POLYESTER / FIBERGLASS
	Colors	UNLIMITED	UNLIMITED	UNLIMITED	BLACK	WHITE	BLACK
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	110	90	85	90	112	105
4.	KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	GRAVEL / GRANULES	NONE	GRAVEL / GRANULES
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	HOT / COLD	HOT / COLD	HOT / COLD	TORCH	TORCH	TORCH
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						4
	Partially Adhered (method)						
	Fully Adhered (method)	X	X	X	X	X	X
	Protected Roof Membrane Assembly						
8.	MINIMUM SLOPE REQUIRED	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)						
	Glass Fiber	X	X	X		X	X
	Mineral Fiber	X	X	X		X	X
	Polystyrene	O	O	O		O	O
	Cellular Glass	O	O	O		O	O
	Phenolic	O	O	O		O	O
	Fiberboard	X	X	X		X	X
	Perlite	X	X	X		X	X
	Polyisocyanurate	O	O	O		O	O
	Polythane	O	O	O		O	O
	Gypsum	O	O	O		O	O
	Concrete	X O	X O	X O		X O	X O
	Wood Plank	X O	X O	X O		X O	X O
	Plywood	X O	X O	X O		X O	X O
	Existing Built-up Membrane	O	O	O		O	O
10.	RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE		NONE	NONE
11.	WORKABLE TEMPERATURE RANGE (degrees F)	40 - 100	40 - 100	40 - 100		40 - 100	40 - 100
12.	FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL		SAME MATERIAL	SAME MATERIAL
13.	FLASHING METHOD	HOT MOP / MODIFIED BITUMEN	HOT MOP / MODIFIED BITUMEN	HOT MOP / MODIFIED BITUMEN		MODIFIED BITUMEN	MODIFIED BITUMEN
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES		YES	YES
15.	COUNTRY OF:						
	Origin	USA	USA	USA		USA	USA
	Manufacture	USA	USA	USA		USA	USA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA						
	Within USA	1988	1988	1988		1988	1988
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA						
	Within USA						
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DIRECT	DIRECT		DIRECT	DIRECT
19.	NUMBER OF REGIONAL LOCATIONS	6	6	6		6	6
20.	LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES		YES	YES
21.	FOR SALES INFORMATION, CONTACT:	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE		REGIONAL OFFICE	REGIONAL OFFICE
22.	FOR TECHNICAL INFORMATION, CONTACT:	TECHNICAL SERVICE	TECHNICAL SERVICE	TECHNICAL SERVICE		TECHNICAL SERVICE	TECHNICAL SERVICE
23.	SEE APPENDIX IF CHECKED						

## Modified Bitumen Part 1 - General Information

ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.	FIRESTONE BUILDING PRODUCTS CO.
ERS - 603	ERS - 604	ERS - 605	ERS - 607	ERS - 703	ERS - 601 FR	APP160	APP170	APP180	APP180 FR
SBS/SEBS 170 GRANULE	SBS/SEBS 170 GRANULE	SBS/SEBS 45 SMOOTH	APP 80 GRANULE	SBS/SEBS 150 ALUMINUM SHEET FIBERGLASS	APP 180 GRANULES	APP 150 SMOOTH	APP 165 SMOOTH	APP 170 GRANULES	APP 170 GRANULES
POLYESTER / FIBERGLASS	POLYESTER / FIBERGLASS	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER
UNLIMITED	UNLIMITED	BLACK	WHITE	ALUMINUM / GOLD / COPPER	WHITE	BLACK	BLACK	VARIOUS	VARIOUS
115	115	80	80	101	112	0.82	0.90	1.02	1.06
NONE	NONE	GRAVEL / GRANULES	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
TORCH	TORCH	HOT / COLD	TORCH	HOT / TORCH	TORCH	TORCH	TORCH	TORCH	TORCH
		4							
X	X	X	X	X	X	TORCH X	TORCH X	TORCH X	TORCH X
POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
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
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
X O	X O	X O	X O	X O	X O	X	X	X	X
X O	X O	X O	X O	X O	X O	O	O	O	
X O	X O	X O	X O	X O	X O	O	O	O	O
O	O	O	O	O	O	X	X	X	X
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
40 - 1 00	40 - 100	40 - 100	40 - 100	40 - 100	40 - 100	0 - 130	0 - 130	0 - 130	0 - 130
SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
MODIFIED BITUMEN	MODIFIED BITUMEN	HOT MOP / MODIFIED BITUMEN	MODIFIED BITUMEN	HOT MOP / MODIFIED BITUMEN	MODIFIED BITUMEN	TORCH	TORCH	TORCH	TORCH
YES	YES	YES	YES	YES	YES	NO	NO	NO	NO
USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	ITALY USA	ITALY USA	USA USA	USA USA
1988	1988	1988	1988	1988	1988	1965 1980	1965 1980	1989	1993
DIRECT 6 YES	DIRECT 6 YES	DIRECT 6 YES	DIRECT 6 YES	DIRECT 6 YES	DIRECT 6 YES	MILLIONS MILLIONS	MILLIONS MILLIONS	MILLIONS MILLIONS	THOUSANDS
REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	DISTRS,DIRECT 5 YES	DISTRS,DIRECT 5 YES	DISTRS,DIRECT 5 YES	DISTRS,DIRECT 5 YES
TECHNICAL SERVICE	TECHNICAL SERVICE	TECHNICAL SERVICE	TECHNICAL SERVICE	TECHNICAL SERVICE	TECHNICAL SERVICE	800/428-4442	800/428-4442	800/428-4442	800/428-4442
						800/428-4511	800/428-4511	800/428-4511	800/428-4511

## 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.
2.	PRODUCT NAME	SBS BASE SHEET	SBS PREMIUM BASE SHEET	SBS SMOOTH	SBS	SBS FR	SBS PREMIUM
3.	PRODUCT DESCRIPTION						
	Type of Modifier	SBS	SBS	SBS	SBS	SBS	SBS
	Thickness (mils)	90	90	145	150	150	160
	Top Surface	SMOOTH	SMOOTH	SMOOTH	GRANULES	GRANULES	GRANULES
	Reinforcing Material	FIBERGLASS	FIBERGLASS MAT/SCRIM	POLYESTER	POLYESTER	POLYESTER	POLYESTER
	Colors	BLACK	BLACK	BLACK	VARIOUS	VARIOUS	VARIOUS
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	0.54	0.55	0.86	0.91	0.91	1.01
4.	KINDS OF FIELD SURFACING REQUIRED	SBS CAP	SBS CAP	FLOOD COAT / GRAVEL	NONE	NONE	NONE
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	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
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
	Partially Adhered (method)	HOT MOP	HOT MOP				
	Fully Adhered (method)	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES	MOP OR ADHES
	Protected Roof Membrane Assembly	X	X	X	X	X	X
8.	MINIMUM SLOPE REQUIRED			POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
9.	ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)						
	Glass Fiber	X	X	O	O	O	O
	Mineral Fiber	X	X	O	O	O	O
	Polystyrene	O	O	O	O	O	O
	Cellular Glass	O	O	O	O	O	O
	Phenolic	O	O	O	O	O	O
	Fiberboard	X	X	O	O	O	O
	Perlite	X	X	O	O	O	O
	Polyisocyanurate	X O	O	O	O	O	O
	Polythane	O	O	O	O	O	O
	Gypsum	O	O	O	O	O	O
	Concrete	X	X	O	O	O	O
	Wood Plank	O	O	O	O	O	O
	Plywood	O	O	O	O	O	O
	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)	30 – 100	30 – 100	30 – 130	30 – 130	30 – 130	30 – 130
12.	FLASHING MATERIAL	SBS FLASHING	SBS FLASHING	SBS FLASHING	SBS FLASHING	SBS FLASHINGQ	SBS FLASHING
13.	FLASHING METHOD	HOT MOP	HOT MOP	HOT MOP	HOT MOP	HOT MOP	HOT MOP
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO
15.	COUNTRY OF:						
	Origin	USA	USA	USA	USA	USA	USA
	Manufacture	USA	USA	USA	USA	USA	USA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA			1965	1965		
	Within USA	1990	1993	1991	1989	1994	1991
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA						
	Within USA	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
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:	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
23.	SEE APPENDIX IF CHECKED						

## Modified Bitumen Part 1 - General Information

[illegible]

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.
2.	PRODUCT NAME	RUBEROID TORCH 1	RUBEROID MOP PLUS	RUBEROID MOP FR	RUBEROID MOP (GRANULE)	RUBEROID MOP 170 FR	RUBEROID 20
3.	PRODUCT DESCRIPTION						
	Type of Modifier	APP	SBS	SBS	SBS	SBS	SBS
	Thickness (mils)	177	197	160	160	160	82
	Top Surface	GRANULES	GRANULES	GRANULES	GRANULES	GRANULES	SMOOTH
	Reinforcing Material	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	FIBERGLASS
	Colors	BLACK / WHITE / BURNT SIENNA	WHITE / BLACK	WHITE / BLACK	WHITE / BLACK	WHITE / BLACK	BLACK
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	1.02	0.9	0.9	0.9	1.05	0.65
4.	KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	NONE	CAP SHEET
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	TORCH	HOT MOP OR COLD	HOT MOP OR COLD	HOT MOP OR COLD	HOT MOP OR COLD	HOT MOP OR COLD
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
	Partially Adhered (method)	TORCH	HOT MOP	HOT MOP	HOT MOP	HOT MOP	HOT MOP
	Fully Adhered (method)	TORCH	HOT MOP/COLD	HOT MOP/COLD	HOT MOP/COLD	HOT MOP/COLD	HOT MOP/COLD
	Protected Roof Membrane Assembly	X	X	X	X	X	X
8.	MINIMUM SLOPE REQUIRED	MUST DRAIN	MUST DRAIN	MUST DRAIN	MUST DRAIN	MUST DRAIN	MUST DRAIN
9.	ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)						
	Glass Fiber	O	O	O	O	O	O
	Mineral Fiber	O	O	O	O	O	O
	Polystyrene	O				O	
	Cellular Glass	O	O	O	O	O	O
	Phenolic	O	O	O	O	O	O
	Fiberboard	O	O	O	O	O	X
	Perlite	O	O	O	O	O	X
	Polyisocyanurate	O	O	O	O	O	O
	Polythane	O	O	O	O	O	O
	Gypsum	O	O	O	O	O	O
	Concrete	X O	O	O	O	O	O
	Wood Plank	O	O	O	O	O	O
	Plywood	O	O	O	O	O	O
	Existing Built-up Membrane	X O	O	O	O	O	O
10.	RESTRICTED REGIONS (refer to manufacturer's literature)	CONTACT GAF	CONTACT GAF	CONTACT GAF	CONTACT GAF	CONTACT GAF	CONTACT GAF
11.	WORKABLE TEMPERATURE RANGE (degrees F)	40 – 100	40 - 100	40 - 100	40 - 100	40 - 100	40 - 100
12.	FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
13.	FLASHING METHOD	TORCH	HOT MOP OR MOD BIT FLASHING CEMENT	HOT MOP OR MOD BIT FLASHING CEMENT	HOT MOP OR MOD BIT FLASHING CEMENT	HOT MOP OR MOD BIT FLASHING CEMENT	HOT MOP OR MOD BIT FLASHING CEMENT
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	NO	NO
15.	COUNTRY OF:						
	Origin	USA	USA	USA	USA	USA	USA
	Manufacture	USA	USA	USA	USA	USA	USA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA						
	Within USA	1997	1988	1989	1986	1989	1992
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA						
	Within USA						
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	5	5	5	5	5	5
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:	TECH SERVICE 800/766-3411	TECH SERVICE 800/766-3411	TECH SERVICE 800/766-3411	TECH SERVICE 800/766-3411	TECH SERVICE 800/766-3411	TECH SERVICE 800/766-3411
23.	SEE APPENDIX IF CHECKED						



## Modified Bitumen Part 1 - General Information

GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.
RUBEROID 30	RUBEROID 30 FR	RUBEROID MOP (SMOOTH)	RUBEROID SBS HW (SMOOTH)	RUBEROID SBS HW (GRANULE)	RUBEROID SBS HW (FR)	RUBEROID SBS HW (PLUS)	RUBEROID SBS HW (PLUS FR)	MODIFIED BASE SHEET	MODIFIED CAP SHEET 601+
SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS
130	130	160							140
GRANULES	GRANULES	SMOOTH	SMOOTH	GRANULES	GRANULES	GRANULES	GRANULES	SMOOTH	GRANULES
FIBERGLASS	FIBERGLASS	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	FIBERGLASS	FIBERGLASS
WHITE / BLACK	WHITE / BLACK	BLACK	BLACK	WHITE / BLACK	WHITE / BLACK	WHITE / BLACK	WHITE / BLACK	BLACK	WHITE
0.92	0.92	0.9							0.9
NONE	NONE	CAP SHEET	CAP SHEET	NONE	NONE	NONE	NONE	CAP SHEET	NONE
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
HOT MOP OR COLD	HOT MOP OR COLD	HOT MOP OR COLD	TORCH	TORCH	TORCH	TORCH	TORCH	HOT MOP OR COLD	HOT MOP OR COLD
HOT MOP	HOT MOP	HOT MOP	TORCH	TORCH	TORCH	TORCH	TORCH	HOT MOP	HOT MOP
HOT MOP/COLD	HOT MOP/COLD	HOT MOP/COLD	TORCH	TORCH	TORCH	TORCH	TORCH	HOT MOP/COLD	HOT MOP/COLD
X	X	X	X	X	X	X	X	X	X
MUST DRAIN	MUST DRAIN	MUST DRAIN	MUST DRAIN	MUST DRAIN	MUST DRAIN	MUST DRAIN	MUST DRAIN	MUST DRAIN	MUST DRAIN
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	X	O	O	O	O	O	X	O
O	O	X	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	X	X	X	O
O	O	X	X	X	X	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	X	X	X	X	X	X	O
CONTACT GAF	CONTACT GAF	CONTACT GAF	CONTACT GAF	CONTACT GAF	CONTACT GAF	CONTACT GAF	CONTACT GAF	CONTACT GAF	CONTACT GAF
40 - 100	40 - 100	40 - 100	40 - 100	40 - 100	40 - 100	40 - 100	40 - 100	40 - 100	40 - 100
SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
HOT MOP OR FLASHING CEMENT	HOT MOP OR FLASHING CEMENT	HOT MOP OR MOD BIT FLASHING CEMENT	TORCH	TORCH	TORCH	TORCH	TORCH	HOT MOP OR MOD BIT FLASHING CEMENT	HOT MOP OR MOD BIT FLASHING CEMENT
NO	NO	YES	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
1992	1992	1986	1997	1997	1997	1997	1997	1996	1997
DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT
5	5	5	5	5	5	5	5	5	5
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE
TECH SERVICE 800/766-3411	TECH SERVICE 800/766-3411	TECH SERVICE 800/766-3411	TECH SERVICE 800/766-3411	TECH SERVICE 800/766-3411	TECH SERVICE 800/766-3411	TECH SERVICE 800/766-3411	TECH SERVICE 800/766-3411	TECH SERVICE 800/766-3411	TECH SERVICE 800/766-3411

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	GAF MATERIALS CORP.	ICA, INC.	ICA, INC.	ICA, INC.	IKO INDUSTRIES	IKO INDUSTRIES
2.	PRODUCT NAME	ULTRACLAD SBS	ICA PREMIUM APP SMOOTH	ICA PREMIUM APP MINERAL	ICA PREMIUM APP SLATE	ARMOURPLAST CLASSIC	ARMOURPLAST GRANULAR
3.	PRODUCT DESCRIPTION						
	Type of Modifier	SBS	APP	APP	APP	APP	APP
	Thickness (mils)	145	160	180	180	150	157
	Top Surface	FOIL FACE	SMOOTH	MINERAL GRANULES	SLATE FLAKES	MOD BIT	GRANULAR
	Reinforcing Material	FIBERGLASS	NON-WOVEN POLYESTER	NON-WOVEN POLYESTER	NON-WOVEN POLYESTER	180-GRAM POLYESTER	180-GRAM POLYESTER
	Colors	COPPER / ALUMINUM	BLACK	VARIOUS	VARIOUS	BLACK	VARIOUS
	Installed Weight (lbs./ft <sup>2</sup> without ballast)		0.9	1.05	1.05	0.80	0.88
4.	KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	ROOF COAT GRANULES / GRAVEL	NONE
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	HOT MOP OR HEAT WELD	TORCH	TORCH	TORCH	TORCH	TORCH
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
	Partially Adhered (method)					TORCH	TORCH
	Fully Adhered (method)	HOT MOP/TORCH	COLD ADHES TORCH	COLD ADHES TORCH	COLD ADHES TORCH	TORCH	TORCH
	Protected Roof Membrane Assembly						
8.	MINIMUM SLOPE REQUIRED	MUST DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	1/4" OR P. DRAIN	1/4" OR P. DRAIN
9.	ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)						
	Glass Fiber	O	O	O	O	O	O
	Mineral Fiber	O	O	O	O	O	O
	Polystyrene	O	O	O	O	O	O
	Cellular Glass	O	O	O	O	O	O
	Phenolic	O	O	O	O	O	O
	Fiberboard	O	O	O	O	O	O
	Perlite	O	O	O	O	O	O
	Polyisocyanurate	O	O	O	O	O	O
	Polythane	O	O	O	O	O	O
	Gypsum	O	O	O	O	O	O
	Concrete	O	X	X	X	X	X
	Wood Plank	O	O	O	O	O	O
	Plywood	O	O	O	O	O	O
	Existing Built-up Membrane	O	O	O	O	X	X
10.	RESTRICTED REGIONS (refer to manufacturer's literature)	CONTACT GAF	SEE SPECS	SEE SPECS	SEE SPECS	NONE	NONE
11.	WORKABLE TEMPERATURE RANGE (degrees F)	40 - 100	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
13.	FLASHING METHOD	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	NONE	YES	YES	YES	NO	NO
15.	COUNTRY OF:						
	Origin		USA	USA	USA	USA/BELGIUM	USA/BELGIUM
	Manufacture	USA	USA	USA	USA	CANADA	CANADA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA					1979	1979
	Within USA	1997	1997	1997	1997	1988	1988
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA						
	Within USA						
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DISTR,DIRECT	DISTR,DIRECT	DISTR,DIRECT	DISTR,DIRECT	DISTRIBUTORS	DISTRIBUTORS
19.	NUMBER OF REGIONAL LOCATIONS	5	4	4	4		
20.	LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21.	FOR SALES INFORMATION, CONTACT:	REGIONAL OFFICE	800/352-7002	800/352-7002	800/352-7002	800/323-7171	800/323-7171
22.	FOR TECHNICAL INFORMATION, CONTACT:	TECHNICAL SERVICES	800/352-7002	800/352-7002	800/352-7002	800/323-7171	800/323-7171
23.	SEE APPENDIX IF CHECKED						

## Modified Bitumen Part 1 - General Information

IKO INDUSTRIES	IKO INDUSTRIES	IKO INDUSTRIES	IKO INDUSTRIES	IKO INDUSTRIES	IKO INDUSTRIES	IKO INDUSTRIES	IKO INDUSTRIES	IKO INDUSTRIES	IKO INDUSTRIES
MODIFLEX MP-180-CAP	MODIFLEX MP-250-CAP	TORCHFLEX TP-180-CAP	TORCHFLEX TP-250-CAP	TORCHFLEX TP-250-CAP/5	MODIFLEX MF-95-SS- BASE	MODIFLEX MF-95-FS-BASE	MODIFLEX MP-180-FS-BASE	MODIFLEX MP-180-SS-BASE	TORCHFLEX TF-95-FF-BASE
SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS
138	165	157	157	197	87	87	87	87	118
GRANULAR	GRANULAR	GRANULAR	GRANULAR	GRANULAR	SAND	SAND	SAND	SAND	FILM
180-GRAM POLYESTER	250-GRAM POLYESTER	180-GRAM POLYESTER	250-GRAM POLYESTER	250-GRAM POLYESTER	90-GRAM FIBERGLASS	90-GRAM FIBERGLASS	180-GRAM POLYESTER	180-GRAM POLYESTER	90-GRAM FIBERGLASS
VARIOUS	VARIOUS	VARIOUS	VARIOUS	VARIOUS	BLACK	BLACK	BLACK	BLACK	BLACK
0.79	0.96	0.97	0.97	1.19	0.53	0.52	0.51	0.51	0.74
NONE	NONE	NONE	NONE	NONE	MODIFLEX CAP	TORCHFLEX CAP	TORCHFLEX CAP	MODIFLEX CAP	TORCHFLEX CAP
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	TORCH	TORCH	TORCH	HOT MOP OR COLD ADHESIVE	HOT MOP TORCH	HOT MOP TORCH	HOT MOP OR COLD ADHESIVE	TORCH
		TORCH	TORCH	TORCH					
		TORCH	TORCH	TORCH	MOP OR ADHES.	MOP, TORCH	MOP, TORCH	MOP OR ADHES.	TORCH
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" OR P. DRAIN	1/4" OR P. DRAIN	1/4" OR P. DRAIN	1/4" OR P. DRAIN	1/4" OR P. DRAIN
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	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	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	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	X	X	X
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	35 -120	0 - 120	0 - 120	35 - 120	0 - 120
SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	TORCH	TORCH	TORCH	HOT MOP OR ADHESIVE	HOT MOP OR ADHESIVE	HOT MOP OR ADHESIVE	HOT MOP OR ADHESIVE	TORCH
NO	NO	NO	NO	NO	NONE	NONE	NONE	NONE	NONE
USA CANADA	USA CANADA	USA CANADA	USA CANADA	CANADA/ USA CANADA/USA	CANADA/ USA CANADA/USA	CANADA/ USA CANADA/USA	CANADA/ USA CANADA/USA	CANADA/ USA CANADA/USA	CANADA/USA CANADA/USA
DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
YES	YES	YES	YES	YES	YES	YES	YES	YES	NO
800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171
800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	IKO INDUSTRIES	IKO INDUSTRIES	IKO INDUSTRIES	IKO INDUSTRIES	IKO INDUSTRIES	IKO INDUSTRIES
2.	PRODUCT NAME	TORCHFLEX TF-95-FF- BASE (22)	TORCHFLEX TP-180-FF-BASE	ARMOURBOND 95	ARMOURBOND 180	ARMOUR BRIDGE/PONT	ARMOURGARD ICE & WATER
3.	PRODUCT DESCRIPTION						
	Type of Modifier	SBS	SBS	SBS	SBS	SBS	SBS
	Thickness (mils)	87	118	98	118	217	71
	Top Surface	FILM	FILM	FILM	FILM	GRANULAR	SAND
	Reinforcing Material	90-GRAM FIBERGLASS	180-GRAM FIBERGLASS	90-GRAM FIBERGLASS	180-GRAM POLYESTER	180-GRAM POLYESTER	59-GRAM FIBERGLASS
	Colors	BLACK	BLACK	BLACK	BLACK	BLACK	GRAY GREEN
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	0.54	0.71	0.58	0.69	1.33	0.38
4.	KINDS OF FIELD SURFACING REQUIRED	TORCHFLEX CAP	TORCHFLEX CAP	ARMOURPLAST T-FLEX CAP	ARMOURPLAST MOP / TORCH CAP	NONE	SHINGLES MOD / TORCH CAP
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	TORCH	TORCH	TORCH	TORCH	TORCH	SELF-ADHERE
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
	Partially Adhered (method)						
	Fully Adhered (method)	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH
	Protected Roof Membrane Assembly						
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" OR P. DRAIN
9.	ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)						
	Glass Fiber	X	X	O	O	O	O
	Mineral Fiber	X	X	O	O	O	O
	Polystyrene	O	O	O	O	O	O
	Cellular Glass	O	O	O	O	O	O
	Phenolic	O	O	O	O	O	O
	Fiberboard	O	O	O	O	O	O
	Perlite	O	O	O	O	O	O
	Polyisocyanurate	O	O	O	O	O	O
	Polythane	O	O	O	O	O	O
	Gypsum	O	O	O	O	O	O
	Concrete	X	X	X	X	O	X O
	Wood Plank	O	O	O	O	O	O
	Plywood	O	O	X	X		X O
	Existing Built-up Membrane	X	X	O	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	40 - 120	40 - 120	40 - 120	40 - 120
12.	FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
13.	FLASHING METHOD	TORCH	TORCH	SELF-ADHERE	SELF-ADHERE	TORCH	SELF-ADHERE
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	NONE	NONE	NONE	NONE	NONE	NONE
15.	COUNTRY OF:						
	Origin	CANADA/USA	CANADA/USA	CANADA/USA	CANADA/USA	CANADA/USA	CANADA
	Manufacture	CANADA/USA	CANADA/USA	CANADA/USA	CANADA/USA	CANADA/USA	CANADA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA						
	Within USA						
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA						
	Within USA						
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19.	NUMBER OF REGIONAL LOCATIONS						
20.	LICENSED APPLICATOR AGREEMENT (yes/no)	NO	NO	NO	NO	NO	NO
21.	FOR SALES INFORMATION, CONTACT:	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171
22.	FOR TECHNICAL INFORMATION, CONTACT:	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171	800/323-7171
23.	SEE APPENDIX IF CHECKED						

## Modified Bitumen Part 1 - General Information

IKO INDUSTRIES	IKO INDUSTRIES	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.
ARMOUR TREAD 15	MF-95-CAP	DYNAKAP	DYNAKAP FR	DYNAGLAS	DYNAPLY	DYNAGLAS FR	DYNALASTIC 250	DYNALASTIC 180	DYNALASTIC 180 FR
SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS
275	138	160	160	150	125	150	158	150	150
GRANULES	GRANULES	GRANULE	GRANULE	GRANULE	SAND	GRANULE	GRANULE	GRANULE	GRANULE
FIBERGLASS	FIBERGLASS	FIBERGLASS & POLYESTER	FIBERGLASS & POLYESTER	FIBERGLASS	FIBERGLASS & POLYESTER	FIBERGLASS	POLYESTER	POLYESTER	POLYESTER
CHARCOAL GRAY	VARIOUS	WHITE / BLACK	WHITE / BLACK	WHITE / BLACK	BLACK	WHITE / BLACK	WHITE / BLACK	WHITE / BLACK	WHITE / BLACK
191	923	1.10	1.10	0.88	0.78	0.88	0.96	0.88	0.88
NONE		NONE	NONE	NONE	ASPHALT AND GRAVEL	NONE	NONE	NONE	NONE
X		X	X	X	X	X	X	X	X
X		X	X	X	X	X	X	X	X
N/A		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	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE
		HOT OR COLD	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
		1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"
		X	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
		X	X	X	X	X	X	X	X
		X	X	X	X	X	X	X	X
		O	O	O	O	O	O	O	O
		O	O	O	O	O	O	O	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
		O	O	O	O	O	O	O	O
		NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
		40 - 120	40 - 120	40 - 120	40 - 120	40 - 120	40 - 120	40 - 120	40 - 120
		DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX
		HOT MOP OR MEMBRANE FLASH CEMENT	HOT MOP OR MEMBRANE FLASH CEMENT	HOT MOP OR MEMBRANE FLASH CEMENT	HOT MOP OR MEMBRANE FLASH CEMENT	HOT MOP OR MEMBRANE FLASH CEMENT	HOT MOP OR MEMBRANE FLASH CEMENT	HOT MOP OR MEMBRANE FLASH CEMENT	HOT MOP OR MEMBRANE FLASH CEMENT
		NO	NO	NO	NO	NO	NO	NO	NO
CANADA CANADA	CANADA CANADA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA	USA USA
		1983	1986	1987	1987	1988	1995	1993	1994
		MILLIONS	MILLIONS	MILLIONS	100,000	MILLIONS	10,000	THOUSANDS	THOUSANDS
DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
NO	NO	5 YES	5 YES	5 YES	5 YES	5 YES	5 YES	5 YES	5 YES
800/323-7171	800/323-7171	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE
800/323-7171	800/323-7171	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES

## Modified Bitumen Part 1 - General Information

1. COMPANY NAME	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.
2. PRODUCT NAME	DYNAGLAS 30 FR	DYNABASE	DYNALASTIC 180 S	DYNALASTIC 250 FR	DYNAMAX	DYNAMAX FR
3. PRODUCT DESCRIPTION						
Type of Modifier	SBS	SBS	SBS	SBS	SBS	SBS
Thickness (mils)	130	100	118	160	160	160
Top Surface	GRANULE	GRANULE	GRANULE	GRANULE	GRANULE	GRANULE
Reinforcing Material	FIBERGLASS	FIBERGLASS	POLYESTER	POLYESTER	FIBERGLASS POLYESTER	FIBERGLASS POLYESTER
Colors	WHITE / BLACK	BLACK	BLACK	WHITE / BLACK	WHITE / BLACK	WHITE / BLACK
Installed Weight (lbs./ft <sup>2</sup> without ballast)	0.78	0.58	0.8	1.06	1.16	1.16
KINDS OF FIELD SURFACING REQUIRED	NONE	CAP SHEET	CAP SHEET	NONE	NONE	NONE
5. USE IN						
New Roofing	X	X	X	X	X	X
Reroofing	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	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	HOT MOP OR COLD ADHESIVE
7. TYPES OF ROOF SYSTEMS:						
Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
Partially Adhered (method)						
Fully Adhered (method)	HOT OR COLD	HOT OR COLD	HOT OR COLD	HOT OR COLD	HOT OR COLD	HOT OR COLD
Protected Roof Membrane Assembly	X				X	
8. MINIMUM SLOPE REQUIRED	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)						
Glass Fiber	X	X	X	X	X	X
Mineral Fiber	O	O	O	O	O	O
Polystyrene	O	O	O	O	O	O
Cellular Glass	O	O	O	O	O	O
Phenolic						
Fiberboard	X	X	X	X	X	X
Perlite	X	X	X	X	X	X
Polyisocyanurate	O	O	O	O	O	O
Polythane	O	O	O	O	O	O
Gypsum	X	X	X	X	X	X
Concrete	X	X	X	X	X	X
Wood Plank	X	X	X	X	X	X
Plywood	X	X	X	X	X	X
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)	40 - 120	40 - 120	40 - 120	40 - 120	40 - 120	40 - 120
12. FLASHING MATERIAL	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX	DYNAFLEX
13. FLASHING METHOD	HOT MOP OR COLD FLASHING CEMENT	HOT MOP OR MEMBRANE FLASH CEMENT	HOT MOP OR MEMBRANE FLASH CEMENT	HOT MOP OR MEMBRANE FLASH CEMENT	HOT MOP OR MEMBRANE FLASH CEMENT	HOT MOP OR MEMBRANE FLASH CEMENT
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO
15. COUNTRY OF:						
Origin	USA	USA	USA	USA	USA	USA
Manufacture	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE						
Outside USA						
Within USA	1993	1987	1979	1996	1995	1995
17. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
Outside USA						
Within USA	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
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	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
23. SEE APPENDIX IF CHECKED						

## Modified Bitumen Part 1 - General Information

JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	JOHNS MANVILLE INTERNATIONAL INC.	MALARKEY ROOFING CO.
APPEX 4S	TRICOR-M FR	TRICOR	BICOR	APPEX 4.5M	APPEX 4.5M FR	DYNAWELD CAP FR	DYNAWELD BASE	DYNACLAD	APP 159
APP	APP	APP	APP	APP	APP	SBS	SBS	SBS	APP
160	180	160	160	160	160	160	120	160	159
SMOOTH	MINERAL	SMOOTH	SMOOTH	MINERAL	MINERAL	GRANULES	SAND	METAL FOIL	SMOOTH
POLYESTER	LAMINATED GLASS FIBER / POLYESTER	LAMINATED GLASS FIBER / POLYESTER	FIBERGLASS	POLYESTER	POLYESTER	GLASS	GLASS	GLASS SCRIM	FIBERGLASS
BLACK	GRAY / WHITE	BLACK	BLACK	GRAY / WHITE	GRAY / WHITE	WHITE / BLACK	BLACK	ALUMINUM COPPER	BLACK
0.90	1.0	0.95	0.95	1.05	1.12				
ALUMINUM	NONE	ALUMINUM	ALUMINUM	NONE	NONE	NONE	ASPHALT GRAVEL	NONE	EMULSION / GRANULE / ALUMINUM
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH
10	10								
TORCH	TORCH	TORCH/COLD	TORCH/COLD	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH
X	X	X	X	X	X				
POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	1/8"	1/8"	1/8"	TO DRAIN
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	O	
O	O	O	O	O	O	O	O	O	X
O	O	O	O	O	O	X	X	X O	X
O	O	O	O	O	O	O	O	O	X O
						O	O	O	X O
O	X O	X O	X O	O	O	X	O	O	X
X IO	O	O	O	X O	X O	X	X O	X O	X
O	O	O	O	O	O	O	O	O	X
O	O	O	O	O	O	O	O	O	X
X IO	X O	X O	X O	X O	X O	X	X	X O	X O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
40 - 120	40 - 120	40 - 120	40 - 120	40 - 120	40 - 120	40 - 120	40 - 120	40 - 120	20
SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL OR APPEX 45	SAME MATERIAL OR APPEX 45	SAME MATERIAL OR DYNACLAD	DYNAWELD CAP FR OR DYNACLAD	SAME MATERIAL	SAME MATERIAL
TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	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
1967 1979	1994	1994	1994	1994	1994	1999	1999	1995	1961 1961
83,400,000 8,000,000				THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	
DISTRIBUTORS 5 YES	DISTRIBUTORS 5 YES	DISTRIBUTORS 8 YES	DISTRIBUTORS 8 YES	DISTRIBUTORS 8 YES	DISTRIBUTORS 8 YES	DISTRIBUTORS 8 YES	DISTRIBUTORS 8 YES	DISTRIBUTORS 8 YES	DISTRIBUTORS 100+ YES
REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	G MALARKEY
GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	J DECHANDT M MALARKEY

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.
2.	PRODUCT NAME	APP 160 SMOOTH	APP 161 MINERAL	APP 162 MINERAL	PREMIUM SBS 601	PARAGON SBS 625	PANOPLY SBS 650
3.	PRODUCT DESCRIPTION						
	Type of Modifier	APP	APP	APP	SBS	SBS	SBS
	Thickness (mils)	160	160	160	120	125	150
	Top Surface	SMOOTH	GRANULE	GRANULE	GRANULE	GRANULE	GRANULE
	Reinforcing Material	POLYESTER	POLYESTER	POLYESTER	POLYGLASS	FIBERGLASS	FIBERGLASS
	Colors	BLACK	WHITE	WHITE	WHITE / BLACK / VARIOUS	WHITE / BLACK / VARIOUS	WHITE / BLACK / VARIOUS
	Installed Weight (lbs./ft <sup>2</sup> without ballast)						
4.	KINDS OF FIELD SURFACING REQUIRED	EMULSION / GRANULE / ALUMINUM	NONE	NONE	NONE	NONE	NONE
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	TORCH	TORCH	TORCH	HOT / COLD	HOT / COLD	HOT / COLD
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )	10	10				
	Partially Adhered (method)						
	Fully Adhered (method)	TORCH	TORCH	TORCH	HOT/COLD	HOT/COLD	HOT/COLD
	Protected Roof Membrane Assembly	X	X	X	X	X	X
8.	MINIMUM SLOPE REQUIRED	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)						
	Glass Fiber	X	X	X	X	X	X
	Mineral Fiber	X	X	X	X	X	X
	Polystyrene	X O	X O	X O	X O	X O	X O
	Cellular Glass	O	O	O	O	O	O
	Phenolic						
	Fiberboard	X	X	X	X	X	X
	Perlite	X	X	X	X	X	X
	Polyisocyanurate	X O	X O	X O	X O	X O	X O
	Polythane	X O	X O	X O	X O	X O	X O
	Gypsum	X	X	X	X	X	X
	Concrete	X	X	X	X	X	X
	Wood Plank	X	X	X	X	X	X
	Plywood	X	X	X	X	X O	X
	Existing Built-up Membrane	X O	X O	X O	X O	X	X O
10.	RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11.	WORKABLE TEMPERATURE RANGE (degrees F)	20	20	20			
12.	FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
13.	FLASHING METHOD	TORCH	TORCH	TORCH	HOT / COLD	HOT / COLD	HOT / COLD
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NONE
15.	COUNTRY OF:						
	Origin	USA	USA	USA	USA	USA	USA
	Manufacture	USA	USA	USA	USA	USA	USA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA	1960	1960	1960	1982		
	Within USA	1990	1990	1990	1982	1993	1992
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA						
	Within USA						
18.	METHODS OF DISTRIBUTION (distributors and/or 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
21.	FOR SALES INFORMATION, CONTACT:	G MALARKEY	G MALARKEY	G MALARKEY	G MALARKEY	G MALARKEY	G. MALARKEY
22.	FOR TECHNICAL INFORMATION, CONTACT:	J DECHANDT M. MALARKEY	J DECHANDT M. MALARKEY	J DECHANDT M. MALARKEY	J DECHANDT M. MALARKEY	J DECHANDT M. MALARKEY	J DECHANDT M MALARKEY
23.	SEE APPENDIX IF CHECKED						



## Modified Bitumen Part 1 - General Information

MONSEY BAKOR DIV OF HENRY CO.	MONSEY BAKOR DIV OF HENRY CO.	MONSEY BAKOR DIV OF HENRY CO.	MONSEY BAKOR DIV OF HENRY CO.	MONSEY BAKOR DIV OF HENRY CO.	MONSEY BAKOR DIV OF HENRY CO.	MONSEY BAKOR DIV OF HENRY CO.	MONSEY BAKOR DIV OF HENRY CO.	MONSEY BAKOR DIV OF HENRY CO.	MONSEY BAKOR DIV OF HENRY CO.
MODIFIED PLUS G100 S/S	MODIFIED PLUS G100 P/S	MODIFIED PLUS G100 P/P	MODIFIED PLUS NP 180 S/S	MODIFIED PLUS NP 180 P/P	MODIFIED PLUS NP 180 P/S	MODIFIED PLUS G100gMFR	MODIFIED PLUS 170 MOP GRANULE	MODIFIED PLUS 170 TORCH GRANULE	MODIFIED PLUS NP 180gM
SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS
80	80	88	90	90	90	148	160	160	160
SMOOTH	SMOOTH	SMOOTH	SMOOTH	SMOOTH	SMOOTH	GRANULE	GRANULE	GRANULE	GRANULE
NON-WOVEN GLASS	NON-WOVEN GLASS	NON-WOVEN GLASS	NON-WOVEN POLYESTER	NON-WOVEN POLYESTER	NON-WOVEN POLYESTER	NON-WOVEN GLASS	NON-WOVEN POLYESTER	NON-WOVEN POLYESTER	NON-WOVEN POLYESTER
						WHITE/BLACK GRAY/BROWN	WHITE/BLACK GRAY/BROWN	WHITE/BLACK GRAY/BROWN	WHITE/BLACK GRAY/BROWN
0.57	0.57	0.57	0.57	0.77	0.57	1.15	1.06	1.06	1.04
GRANULE SHEET	GRANULE SHEET	GRANULE SHEET	GRANULE SHEET	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
MOP OR COLD ADHESIVE	HOT MOP	TORCH	MOP OR COLD ADHESIVE	TORCH	HOT MOP	MOP OR COLD ADHESIVE	MOP OR COLD ADHESIVE	TORCH	MOP OR COLD ADHESIVE
MOP/COLD ADH	HOT MOP	TORCH	MOP. COLD ADHES	TORCH	HOT MOP	MOP/COLD ADH	MOP/COLD ADHES	TORCH	MOP/COLD ADH
POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
X	X	X	X	X	X	X	X	X	X
X	X	X	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
X	X	X	X	O	X	X	X	X	X
X	X	X	X	O	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
X O	X O	X O	X O	X	X O	X O	X O	X O	X 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	X	X	X
O	O	O	O	O	O	O	O	O	O
SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS
20 – 115	20 – 115	20 – 115	20 – 115	20 – 115	20 – 115	20 – 115	20 – 115	20 – 115	20 – 115
						SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
						MOP OR COLD ADHESIVE	MOP OR COLD ADHESIVE	TORCH	MOP OR COLD ADHESIVE
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
GERMANY CANADA	GERMANY CANADA	GERMANY CANADA	GERMANY CANADA	GERMANY CANADA	CANADA CANADA	GERMANY CANADA	GERMANY CANADA	GERMANY CANADA	GERMANY CANADA
1971 1985	1971 1985	1971 1985	1971 1988	1971 1988	1981 1985	1992	1990 1990	1990 1990	1971 1988
MILLIONS THOUSANDS	MILLIONS THOUSANDS	MILLIONS THOUSANDS	MILLIONS THOUSANDS	MILLIONS THOUSANDS	MILLIONS THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	MILLIONS THOUSANDS
DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
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	W. MULLEN 800/523-0268	W. MULLEN 800/523-0268	W. MULLEN 800/523-0268
S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182
X	X	X	X	X	X	X	X	X	X

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	MONSEY BAKOR DIV OF HENRY CO.	MONSEY BAKOR DIV OF HENRY CO.	MONSEY BAKOR DIV OF HENRY CO.	MONSEY BAKOR DIV OF HENRY CO.	MONSEY BAKOR DIV OF HENRY CO.	MONSEY BAKOR DIV OF HENRY CO.
2.	PRODUCT NAME	MODIFIED PLUS NP 180gT	MODIFIED PLUS NP 180gM FR	MODIFIED PLUS NP 180gT FR	MODIFIED PLUS NP 250gM	MODIFIED PLUS NP 250gT	MODIFIED PLUS NP 250gM FR
3.	PRODUCT DESCRIPTION						
	Type of Modifier	SBS	SBS	SBS	SBS	SBS	SBS
	Thickness (mils)	160	160	160	160	160	160
	Top Surface	GRANULE	GRANULE	GRANULE	GRANULE	GRANULE	GRANULE
	Reinforcing Material	NON-WOVEN POLYESTER	NON-WOVEN POLYESTER	NON-WOVEN POLYESTER	NON-WOVEN POLYESTER	NON-WOVEN POLYESTER	NON-WOVEN POLYESTER
	Colors	WHITE/BLACK GRAY/BROWN	WHITE/BLACK GRAY/BROWN	WHITE/BLACK GRAY/BROWN	WHITE/BLACK GRAY/BROWN	WHITE/BLACK GRAY/BROWN	WHITE/BLACK GRAY/BROWN
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	1.04	1.04	1.25	1.06	1.06	1.25
4.	KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	TORCH	MOP OR COLD ADHESIVE	TORCH	HOT MOP OR COLD ADHESIVE	TORCH	MOP OR COLD ADHESIVE
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
	Partially Adhered (method)						
	Fully Adhered (method)	TORCH	MOP/COLD ADH	TORCH	MOP/COLD ADH	TORCH	MOP/COLD ADH
	Protected Roof Membrane Assembly						
8.	MINIMUM SLOPE REQUIRED	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)						
	Glass Fiber	X	X	X	X	X	X
	Mineral Fiber	X	X	X	X	X	X
	Polystyrene	O	O	O	O	O	O
	Cellular Glass	O	O	O	O	O	O
	Phenolic						
	Fiberboard	X	X	X	X	X	X
	Perlite	X	X	X	X	X	X
	Polyisocyanurate	O	O	O	O	O	O
	Polythane	O	O	O	O	O	O
	Gypsum	X	X	X	X	X	X
	Concrete	O	O	O	O	O	O
	Wood Plank	O	O	O	O	O	O
	Plywood	X	X	X	X	X	X
	Existing Built-up Membrane	O	O	O	O	O	O
10.	RESTRICTED REGIONS (refer to manufacturer's literature)	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS
11.	WORKABLE TEMPERATURE RANGE (degrees F)	20 – 115	20 – 115	20 – 115	20 – 115	20 – 115	20 – 115
12.	FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
13.	FLASHING METHOD	TORCH	MOP OR COLD ADHESIVE	TORCH	MOP OR COLD ADHESIVE	TORCH	MOP OR COLD ADHESIVE
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO
15.	COUNTRY OF:						
	Origin	GERMANY	GERMANY	GERMANY	GERMANY	GERMANY	GERMANY
	Manufacture	CANADA	CANADA	CANADA	CANADA	CANADA	CANADA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA	1971			1971	1971	
	Within USA	1988	1992	1992	1988	1988	1992
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA	MILLIONS			MILLIONS	MILLIONS	
	Within USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19.	NUMBER OF REGIONAL LOCATIONS						
20.	LICENSED APPLICATOR AGREEMENT (yes/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
22.	FOR TECHNICAL INFORMATION, CONTACT:	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182
23.	SEE APPENDIX IF CHECKED	X	X	X	X	X	X

## Modified Bitumen Part 1 - General Information

MONSEY BAKOR DIV OF HENRY CO.	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 NP 250gT FR	DERBIGUM-XPS	DERBICOLOR XPS	DERBIGUM XPS FR	DERBICOLOR XPS FR	DERBIGUM GP	DERBICOLOR GP	DERBICOLOR GP	DERBIGUM GP FR	DERBICOLOR GP FR
SBS	APP	APP	APP	APP	APP	APP	APP	APP	APP
160	160	160	160	180	150	180	180	160	180
GRANULE	MODIFIED BITUMEN	SLATE	MODIFIED BITUMEN	SLATE	MODIFIED BITUMEN	SLATE	SLATE	MODIFIED BITUMEN	SLATE
NON-WOVEN POLYESTER	FIBRGLS LAMIN & POLYESTER SCRIM	FIBRGLS LAMIN & POLYESTER SCRIM	FIBRGLS LAMIN & POLYESTER SCRIM	FIBRGLS LAMIN & POLYESTER SCRIM	FIBERGLASS MAT & POLYESTER SCRIM	FIBERGLASS MAT & POLYESTER SCRIM	FIBERGLASS MAT & POLYESTER SCRIM	FIBERGLASS MAT & POLYESTER SCRIM	FIBERGLASS MAT & POLYESTER SCRIM
WHITE/BLACK GRAY/BROWN	BLACK	VARIOUS	BLACK	VARIOUS	BLACK	VARIOUS	VARIOUS	BLACK	VARIOUS
1.25	0.95	1.08	0.95	1.08	.93	1.06	1.06	.93	1.06
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
TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH
TORCH	TRCH OR MASTIC	TRCH OR MASTIC	TRCH OR MASTIC	TRCH OR MASTIC	TRCH OR MASTIC	TRCH OR MASTIC	TRCH OR MASTIC	TRCH OR MASTIC	TRCH OR MASTIC
	X		X		X			X	
POS DRAIN	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
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					
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
O	X	O	X O	O	X	O	O	X O	O
O	O	O	O	O	O	O	O	O	O
X	O	O	O	O	O	O	O	O	O
O	X O	X O	X O	X O	X O	X O	X O	X O	X O
SEE SPECS	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
20 – 115	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120
SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
TORCH	TORCH OR MASTIC	TORCH OR MASTIC	TORCH OR MASTIC	TORCH OR MASTIC	TORCH OR MASTIC	TORCH OR MASTIC	TORCH OR MASTIC	TORCH OR MASTIC	TORCH OR MASTIC
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
1992	1993	1993	1994	1994	1993	1993	1993	1994	1994
THOUSANDS									
DISTRIBUTORS	DISTR/DIRECT	DISTR/DIRECT	DISTR/DIRECT	DISTR/DIRECT	DISTR/DIRECT	DISTR/DIRECT	DISTR/DIRECT	DISTR/DIRECT	DISTR/DIRECT
NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
W. MULLEN 800/523-0268	CUST SERVICE 800/727-9872	CUST SERVICE 800/727-9872	CUST SERVICE 800/727-9872	CUST SERVICE 800/727-9872	CUST SERVICE 800/727-9872	CUST SERVICE 800/727-9872	CUST SERVICE 800/727-9872	CUST SERVICE 800/727-9872	CUST SERVICE 800/727-9872
S. LEONARD 972/494-5182	K. HUNT 800/727-9872	K. HUNT 800/727-9872	K. HUNT 800/727-9872	K. HUNT 800/727-9872	K. HUNT 800/727-9872	K. HUNT 800/727-9872	K. HUNT 800/727-9872	K. HUNT 800/727-9872	K. HUNT 800/727-9872
X	X	X	X	X	X	X	X	X	X

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA
2.	PRODUCT NAME	BITUTAK MB	BITUTAK MB MINERAL	POLYFLEX	POLYFLEX 5	POLYBOND	POLYBOND G
3.	PRODUCT DESCRIPTION						
	Type of Modifier	APP	APP	APP	APP	APP	APP
	Thickness (mils)	152	160	160	200	160	180
	Top Surface	SMOOTH	GRANULES	SMOOTH	SMOOTH	SMOOTH	MINERAL
	Reinforcing Material	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER
	Colors	BLACK	BLACK, WHITE, WEATHER	BLACK	BLACK	BLACK	VARIOUS
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	0.89	1.02	0.90	1.10	0.90	1.05
4.	KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
	Partially Adhered (method)						
	Fully Adhered (method)	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH
	Protected Roof Membrane Assembly			X	X	X	X
8.	MINIMUM SLOPE REQUIRED	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)						
	Glass Fiber	O	O	O	O	O	O
	Mineral Fiber	O	O	O	O	O	O
	Polystyrene	O	O	O	O	O	O
	Cellular Glass	O	O	O	O	O	O
	Phenolic	O	O	O	O	O	O
	Fiberboard	O	O	O	O	O	O
	Perlite	O	O	O	O	O	O
	Polyisocyanurate	O	O	O	O	O	O
	Polythane	O	O	O	O	O	O
	Gypsum	O	O	O	O	O	O
	Concrete	X	X	X O	X O	X O	X O
	Wood Plank	O	O	O	O	O	O
	Plywood	O	O	O	O	O	O
	Existing Built-up Membrane	O	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)	14- 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
13.	FLASHING METHOD	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	YES	YES	YES	YES
15.	COUNTRY OF:						
	Origin	USA	USA	ITALY	ITALY	ITALY	ITALY
	Manufacture	USA	USA	USA	USA	USA	USA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA			1961	1961	1961	1961
	Within USA	1997	1997	1991	1991	1991	1991
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA			100 MILLION 3 MILLION	100 MILLION 1 MILLION	80 MILLION 200,000	10 MILLION 50,000
	Within USA						
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19.	NUMBER OF REGIONAL LOCATIONS	1	1	1	1	1	1
20.	LICENSED APPLICATOR AGREEMENT (yes/no)	NO	NO	YES	YES	YES	YES
21.	FOR SALES INFORMATION, CONTACT:	D QUNADT 888/663-2488	D QUNADT 888/663-2488	800/222-9782	800/222-9782	800/222-9782	800/222-9782
22.	FOR TECHNICAL INFORMATION, CONTACT:	K HUNT 888/663-2488	K HUNT 888/663-2488	800/222-9782	800/222-9782	800/222-9782	800/222-9782
23.	SEE APPENDIX IF CHECKED	X	X				

## Modified Bitumen Part 1 - General Information

POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA
POLYFLEX G	POLYFLEX G-FR	DIAMOND BLACK	DUFLEX	DUFLEX 5	DUFLEX G	INSULROOFING	INSULROOFING GRANULAR	INSULBASE	ELASTOSHIELD TS4
APP 180	APP 180	APP 160	APP 160	APP 200	APP 180	APP 160	APP 160	APP 80	SBS 180
MINERAL	MINERAL	MINERAL	SMOOTH	SMOOTH	MINERAL	1/2" INSULATION SMOOTH	1/2" INSULATION SMOOTH	1/2" INSULATION SMOOTH	MINERAL
POLYESTER	POLYESTER	POLYESTER	POLYESTER, FIBERGLASS	POLYESTER, FIBERGLASS	POLYESTER, FIBERGLAS	POLYESTER	POLYESTER	POLYESTER	POLYESTER
VARIOUS	VARIOUS	BLACK	BLACK	BLACK	VARIOUS	BLACK	BLACK	BLACK	VARIOUS
1.05	1.10	0.90	0.90	1.10	1.05	1.30	1.40	1.00	1.05
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
TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	HOT/
						TORCH	TORCH	TORCH	
TORCH	TORCH	TORCH	TORCH	TORCH	TORCH				HOT/TORCH
X	X	X	X	X	X	X	X	X	X
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	X	X	X	O
O	O	O	O	O	O	X	X	X	O
O	O	O	O	O	O	X	X	X	O
O	O	O	O	O	O	X	X	X	O
O	O	O	O	O	O	X	X	X	O
O	O	O	O	O	O	X	X	X	O
O	O	O	O	O	O	X	X	X	O
O	O	O	O	O	O	X	X	X	O
O	O	O	O	O	O	X	X	X	O
O	O	O	O	O	O	X	X	X	O
X O	X O	X O	X O	X O	X O	X	X	X	O
O	O	O	O	O	O	X	X	X	O
O	O	O	O	O	O	X	X	X	O
X O	X O	X O	X O	X O	X O	X	X	X	O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120
POLYFLEX	SAME MATERIAL	POLYFLEX	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	POLYFLEX	POLYFLEX	POLYFLEX	SAME MATERIAL
TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	TORCH	HOT
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
ITALY USA	ITALY USA	ITALY USA	ITALY USA	ITALY USA	ITALY USA	ITALY USA	ITALY USA	ITALY USA	ITALY USA
1961 1991	1961 1991	1961 1991	1961 1991	1961 1991	1961 1991	1961 1991	1961 1991	1961 1991	1961 1991
MILLIONS MILLIONS	THOUSANDS	MILLIONS THOUSANDS	MILLIONS THOUSANDS	MILLIONS THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS THOUSANDS	THOUSANDS THOUSANDS
DISTRIBUTORS 1 YES	DISTRIBUTORS 1 YES	DISTRIBUTORS 1 YES	DISTRIBUTORS 1 YES	DISTRIBUTORS 1 YES	DISTRIBUTORS 1 YES	DISTRIBUTORS 1 YES	DISTRIBUTORS 1 YES	DISTRIBUTORS 1 YES	DISTRIBUTORS 1 YES
800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782
800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA	POLYGLASS USA
2.	PRODUCT NAME	ELASTOFLEX S6	ELASTOFLEX GS-6	ELASTOFLEX G S6-FR	ELASTOBASE	ELASTOFLEX V	ELASTOFLEX VG
3.	PRODUCT DESCRIPTION						
	Type of Modifier	SBS	SBS	SBS	SBS	SBS	SBS
	Thickness (mils)	120	140	140	80	120	140
	Top Surface	SMOOTH	MINERAL	MINERAL	SMOOTH	SMOOTH	MINERAL
	Reinforcing Material	POLYESTER	POLYESTER	POLYESTER	FIBERGLASS	FIBERGLASS	FIBERGLASS
	Colors	BLACK	VARIOUS	VARIOUS	BLACK	BLACK	VARIOUS
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	.80	.85	.85	.80	.80	.90
4.	KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	HOT	HOT	HOT	HOT / COLD / MECHANICAL	HOT	HOT
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
	Partially Adhered (method)				MECHANICAL		
	Fully Adhered (method)	HOT	HOT	HOT	HOT/COLD	HOT	HOT
	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
9.	ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)						
	Glass Fiber	O	O	O	X	O	O
	Mineral Fiber	O	O	O	X	O	O
	Polystyrene	O	O	O	X	O	O
	Cellular Glass	O	O	O	X	O	O
	Phenolic	O	O	O	X	O	O
	Fiberboard	O	O	O	X	O	O
	Perlite	O	O	O	X	O	O
	Polyisocyanurate	O	O	O	X	O	O
	Polythane	O	O	O	X	O	O
	Gypsum	O	O	O	X	O	O
	Concrete	O	O	O	X	O	O
	Wood Plank	O	O	O	X	O	O
	Plywood	O	O	O	X	O	O
	Existing Built-up Membrane	O	O	O	X	O	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
12.	FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
13.	FLASHING METHOD	HOT	HOT	HOT	HOT / COLD	HOT	HOT
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15.	COUNTRY OF:						
	Origin	ITALY	ITALY	ITALY	ITALY	ITALY	ITALY
	Manufacture	USA	USA	USA	USA	USA	USA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA	1961	1961	1961	1961	1961	1961
	Within USA	1991	1991	1991	1991	1991	1991
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
	Within USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19.	NUMBER OF REGIONAL LOCATIONS	1	1	1	1	1	1
20.	LICENSED APPLICATOR AGREEMENT (yes/no)	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
22.	FOR TECHNICAL INFORMATION, CONTACT:	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782	800/222-9782
23.	SEE APPENDIX IF CHECKED						

## Modified Bitumen Part 1 - General Information

POLYGLASS USA	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.
ELASTOFLEX VG-FR	PARADIENE 20	PARADIENE 20 HT	PARADIENE 20 PR	PARADIENE 20 EG	PARADIENE 30	PARADIENE 30 HT	PARADIENE 40 FR	PARAFOR 50 LT	VERAL (ALUM FACED)
SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS
140	91	91	91	118	130	130	150	180	138
MINERAL	PLAIN	PLAIN	PLAIN	PLAIN	MINERAL	MINERAL	MINERAL	MINERAL	ALUMINUM
FIBERGLASS	GLASS MAT	GLASS MAT, GLASS SCRIM	POLYESTER/ GLASS SCRIM	GLASS MAT / GLASS SCRIM	GLASS MAT	GLASS MAT / GLASS SCDRIM	GLASS MAT / GLASS SCRIM	POLYESTER / GLASS SCRIM	GLASS MAT / GLASS SCRIM
VARIOUS	BLACK	BLACK	BLACK	BLACK	VARIOUS	VARIOUS	VARIOUS	VARIOUS	ALUMINUM
.90	0.62	0.62	0.60	0.84	0.90	0.90	1.15	1.41	0.92
NONE	PARADIENE 30	PARADIENE 30	PARADIENE 30	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	HOT MOP / PA-311 ADHESIVE	HOT MOP / PA-311 ADHESIVE	HOT MOP / PA-311 ADHESIVE	HOT MOP / PA-311 ADHESIVE	HOT MOP / PA-311 ADHESIVE	HOT MOP / PA-311 ADHESIVE	HOT MOP / PA-311 ADHESIVE	HOT MOP / TORCH / PA-311 ADHESIVE	HOT MOP OR TORCH
	MOP/PA-311 ADH	MOP/PA-311 ADH	MOP/PA-311 ADH	MOP/PA-311 ADH				MOP/TOR/PA-311 AD	
HOT	MOP/PA-311 ADH	MOP/PA-311 ADH	MOP/PA-311 ADH	MOP/PA-311 ADH	MOP/PA-311 ADH	MOP/PA-311 ADH	MOP/PA-311 ADH	MOP/TOR/PA-311 AD	MOP OR TORCH
X	X	X	X	X	X	X	X	X	
POS DRAIN	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	1/4"	1/2"	1/2"
O	X	X	X	X	X	X	X	X	X
O	X	X	X	X	X	X	X	X	X
O	O	O	O	O	O	O	O	O	O
O	X O	X O	X O	X O	X O	X O	X O	X O	X O
O	O	O	O	O	O	O	O	O	O
O	X	X	X	X	X	X	X	X	X
O	X	X	X	X	X	X	X	X	X
O	X	X	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	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		NONE	
40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120
SAME MATERIAL					VERAL	VERAL	VERAL	SAME MATERIAL / VERAL	SAME MATERIAL
HOT					TORCH	TORCH	TORCH	TORCH	TORCH
YES	NO	NO	NO		NO	NO	NO	NO	NO
ITALY USA	FRANCE USA	FRANCE USA	FRANCE USA	USA USA	FRANCE USA	FRANCE USA	FRANCE USA	FRANCE USA	FRANCE USA
1961 1991	1968 1979				1968 1979				
THOUSANDS THOUSANDS									
DISTRIBUTORS 1 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
800/222-9782	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070
800/222-9782	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070
	X	X	X	X	X	X	X	X	X

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.
2.	PRODUCT NAME	VERAL (COPPER)	VERAL (STAINLESS STEEL)	PARADIENE 20 HV	PARADIENE 20 TG	PARADIENE 20 HT TG	PARADIENE 20 PR TG
3.	PRODUCT DESCRIPTION						
	Type of Modifier	SBS	SBS	SBS	SBS	SBS	SBS
	Thickness (mils)	138	138	119	110	110	110
	Top Surface	COPPER	STAINLESS STEEL	PLAIN	PLAIN	PLAIN	PLAIN
	Reinforcing Material	GLASS MAT / GLASS SCRIM	GLASS MAT / GLASS SCRIM	GLASS MAT	GLASS MAT	GLASS MAT / GLASS SCRIM	POLYESTER / GLASS SCRIM
	Colors	COPPER	STAIN/STEEL	BLACK	BLACK	BLACK	BLACK
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	1.09	1.05	0.90	0.76	0.76	0.95
4.	KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	PARADIENE 30	PARADIENE 30TG	PARADIENE 30TG	PARADIENE 30TG
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	HOT MOP OR TORCH	HOT MOP OR TORCH	HOT MOP / PA-311 ADHESIVE	TORCH	TORCH	TORCH
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
	Partially Adhered (method)			MOP/PA-311 ADH	TORCH	TORCH	TORCH
	Fully Adhered (method)	MOP OR TORCH	MOP OR TORCH	MOP/PA-311 ADH	TORCH	TORCH	TORCH
	Protected Roof Membrane Assembly				X	X	X
8.	MINIMUM SLOPE REQUIRED	1/2 "	1/2 "	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL
9.	ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)						
	Glass Fiber	X	X	X	O	O	O
	Mineral Fiber	X	X	X	O	O	O
	Polystyrene	O	O	O	O	O	O
	Cellular Glass	X O	X O	O	O	O	O
	Phenolic	O	O	O	O	O	O
	Fiberboard	X	X	X	O	O	O
	Perlite	X	X	X	O	O	O
	Polyisocyanurate	X	X	X	X	X	X
	Polythane	O	O	O	O	O	O
	Gypsum	O	O	O	O	O	O
	Concrete	O	O	O	X O	X O	X O
	Wood Plank	O	O	O	X O	X O	X O
	Plywood	O	O	O	O	O	O
	Existing Built-up Membrane	O	O	O	O	O	O
10.	RESTRICTED REGIONS (refer to manufacturer's literature)					NONE	
11.	WORKABLE TEMPERATURE RANGE (degrees F)	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	40 – 120
12.	FLASHING MATERIAL	SAME MATERIAL	SAME MATERIAL				
13.	FLASHING METHOD	TORCH	TORCH				
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO		NO	NO	NO
15.	COUNTRY OF:						
	Origin	FRANCE	FRANCE	USA	USA	USA	USA
	Manufacture	USA	FRANCE	USA	USA	USA	USA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA						
	Within USA						
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA						
	Within USA						
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT
19.	NUMBER OF REGIONAL LOCATIONS	9	9	9	9	9	9
20.	LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21.	FOR SALES INFORMATION, CONTACT:	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070
22.	FOR TECHNICAL INFORMATION, CONTACT:	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070
23.	SEE APPENDIX IF CHECKED	X	X	X	X	X	X



## Modified Bitumen Part 1 - General Information

SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SIPLAST, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.
PARADIENE 20 EG TG	PARADIENE 20 HV TG	PARADIENE 30 TG	PARADIENE 30 HT TG	SOPRALENE 180	SOPRALENE FLAM 180	SOPRALENE GR	SOPRALENE FLAM 180 GR	SOPRALENE 250	SOPRALENE FLAM 250
SBS 138	SBS 138	SBS 150	SBS 150	SBS 120	SBS 120	SBS 160	SBS 160	SBS 160	SBS 160
PLAIN	PLAIN	MINERAL	MINERAL	SAND	PLASTIC FILM	CERAMIC GRANULES	CERAMIC GRANULES	SAND	PLASTIC FILM
GLASS MAT / GLASS SCRIM	GLASS MAT	GLASS MAT	GLASS MAT / GLASS SCRIM	NONWOVEN	NONWOVEN	NONWOVEN	NONWOVEN	NONWOVEN	NONWOVEN
BLACK	BLACK	VARIOUS	VARIOUS	BLACK	BLACK	VARIOUS	VARIOUS	BLACK	BLACK
0.96	0.96	1.10	1.10	0.75	0.73	0.98	0.99	1.01	0.99
PARADIENE 30TG	PARADIENE 30TG	NONE	NONE	SOPRALENE OR ELASTOPHENE CAP SHEET	SOPRALENE OR ELASTOPHENE CAP SHEET	NONE	NONE	SOPRALENE OR ELASTOPHENE CAP SHEET	SOPRALENE OR ELASTOPHENE CAP SHEET
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
TORCH	TORCH	TORCH	TORCH	HOT MOP OR COLD ADHESIVE	HEAT FUSED	HOT MOP OR COLD ADHESIVE	HEAT FUSED	HOT MOP OR COLD ADHESIVE	HEAT FUSED
TORCH	TORCH	TORCH	TORCH	MOP OR ADHES	HEAT FUSED	MOP OR ADHES	HEAT FUSED	MOP OR ADHES	HEAT FUSED
X	X	X	X	X	X	X	X	X	X
DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	1/8:12	DEAD LEVEL	1/8:12	DEAD LEVEL	1/8:12	DEAD LEVEL
O	O	O	O	X O	X O	O	O	X O	O
O	O	O	O	X O	X O	O	O	X O	X
O	O	O	O	O	O	O	O	O	X
O	O	O	O	X O	X O	O	O	X O	X
O	O	O	O	O	O	O	O	O	O
O	O	O	O	X O	X O	O	O	X O	O
O	O	O	O	X O	X O	O	O	X O	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	X O	X O	O	X O	X O	X
X O	X O	X O	X O	X O	X O	O	O	X O	X
X O	X O	X 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
40 – 120	40 – 120	NONE 40 – 120	NONE 40 – 120	NONE 35 – 120	NONE 35 – 120	NONE 35 – 120	NONE 35 – 120	NONE 35 – 120	NONE 0 - 120
		VERAL	VERAL	SAME MATERIAL OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE
		TORCH	TORCH	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED
NO	NO	NO	NO	YES	YES	YES	YES	YES	YES
USA USA	USA USA	USA USA	USA USA	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN
				1975 1984	1975 1984	1975 1984	1975 1984	1975 1984	1975 1984
				MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS
DIRECT 9 YES	DIRECT 9 YES	DIRECT 9 YES	DIRECT 9 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
J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070	J. MOLLENHOFF 972/869-0070	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521
K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070	K. WOLFORD 972/869-0070	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055
X	X	X	X						

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.
2.	PRODUCT NAME	SOPRALENE 250 GR	SOPRALENE FLAM 250 GR	SOPRALENE 350	SOPRALENE 350 GR	ELASTOPHENE	ELASTOPHENE FLAM
3.	PRODUCT DESCRIPTION						
	Type of Modifier	SBS	SBS	SBS	SBS	SBS	SBS
	Thickness (mils)	160	160	160	200	90	120
	Top Surface	CERAMIC GRANULES	CERAMIC GRANULES	SAND	CERAMIC GRANULES	SAND	PLASTIC FILM
	Reinforcing Material	NONWOVEN	NONWOVEN	NONWOVEN	NONWOVEN	FIBERGLASS	FIBERGLASS
	Colors	VARIOUS	VARIOUS	BLACK	VARIOUS	BLACK	BLACK
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	0.98	1.13	0.97	1.32	0.57	0.79
4.	KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	SOPRALENE OR ELASTOPHENE CAP SHEET	NONE	ELASTOPHENE, SOPRALENE GRANULE	ELASTOPHENE, SOPRALENE GRANULE
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	HOT MOP OR COLD ADHESIVE	HEAT FUSED	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HEAT FUSED
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
	Partially Adhered (method)						
	Fully Adhered (method)	MOP OR ADHESIVE	HEAT FUSED	MOP OR ADHESIVE	HOP OR ADHESIVE	MOP OR ADHESIVE	HEAT FUSED
	Protected Roof Membrane Assembly	X	X	X	X		X
8.	MINIMUM SLOPE REQUIRED	1/8:12	DEAD LEVEL	1/8:12	1/8:12	1/8:12	DEAD LEVEL
9.	ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)						
	Glass Fiber	X O	O	X O	X O	X O	O
	Mineral Fiber	X O	X O	X O	X O	X O	X O
	Polystyrene	X O	X O	O	X O	O	O
	Cellular Glass	X O	X O	X O	X O	X O	X O
	Phenolic	O					
	Fiberboard	X O	O	X O	O	X O	O
	Perlite	X O	X O	X O	X O	X O	X O
	Polyisocyanurate	O	O	O	O	O	O
	Polythane	O	O	O	O	O	O
	Gypsum	X O	X O	X O	X O	X O	X O
	Concrete	X O	X O	X O	X O	X O	X O
	Wood Plank	O	O	O	O	O	O
	Plywood	O	O	O	O	O	O
	Existing Built-up Membrane	O	O	O	O	O	X O
10.	RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11.	WORKABLE TEMPERATURE RANGE (degrees F)	35 – 120	0 - 120	35 – 120	35 - 120	35 – 120	35 – 120
12.	FLASHING MATERIAL	SAME MATERIAL OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SOPRALENE OR FOIL MEMBRANE
13.	FLASHING METHOD	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED, HOT MOP OR COLD ADHESIVE
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15.	COUNTRY OF:						
	Origin	USA	USA	USA	USA	USA	USA
	Manufacture	USA, FR, CAN	USA, FR, CAN	USA, FR, CAN	USA, FR, CAN	USA, FR, CAN	USA, FR, CAN
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA	1975	1975	1975	1975	1975	1975
	Within USA	1984	1984	1984	1984	1984	1984
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA						
	Within USA	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
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 MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521
22.	FOR TECHNICAL INFORMATION, CONTACT:	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055
23.	SEE APPENDIX IF CHECKED						

## Modified Bitumen Part 1 - General Information

SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.
ELASTOPHENE GR	SOPRALENE 280 FR GR	SOPRALENE FLAM 180 FR GR	SOPRALENE 250 FR GR	ELASTOPHENE FLAM 250 FR GR	ELASTOPHENE FLAM GR	ELASTOPHENE PS	ELASTOPHENE 180	ELASTOPHENE 180 PS	ELASTOPHENE FLAM FR GR
SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS
136	160	160	160	160	145	90	90	90	145
CERAMIC GRANULES	CERAMIC GRANULES	CERAMIC GRANULES	CERAMIC GRANULES	CERAMIC GRANULES	CERAMIC GRANULES	PLASTIC FILM	SAND	SAND	CERAMIC GRANULES
FIBERGLASS	NONWOVEN	NONWOVEN	NONWOVEN	NONWOVEN	FIBERGLASS	FIBERGLASS	NONWOVEN	NONWOVEN	FIBERGLASS
VARIOUS	VARIOUS	VARIOUS	VARIOUS	VARIOUS	VARIOUS	BLACK	BLACK	BLACK	VARIOUS
0.90	0.98	0.99	0.98	0.98	0.60	0.60	0.55	0.53	0.96
NONE	NONE	NONE	NONE	NONE	NONE	ELASTOPHENE, SOPRALENE GRANULE	ELASTOPHENE, SOPRALENE GRANULE	ELASTOPHENE, SOPRALENE GRANULE	NONE
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HEAT FUSED	MOP OR COLD ADHESIVE	HEAT FUSED	HEAT FUSED	HOT MOP OR COLD ADHESIVE	MOP OR COLD ADHESIVE	MOP OR COLD ADHESIVE	HEAT FUSED
MOP OR ADHESIVE	MOP OR ADHESIVE	HEAT FUSED	MOP OR ADHESIVE	HEAT FUSED	HEAT FUSED	MOP OR ADHESIVE	MOP OR ADHESIVE	MOP OR TORCH	HEAT FUSED
	X	X	X	X	X				
1/8:12	1/8:12	DEAD LEVEL	1/8:12	DEAD LEVEL	DEAD LEVEL	1/8:12	1/8:12	1/8:12	1/8:12
O	O	O	X O	X O	O	O	X O	O	O
O	O	O	X O	X O	O	X O	X O	X O	O
O	O	O	X O	X O	O	O	O	O	O
O	O	O	X O	X O	O	X O	X O	X O	O
O	O	O	O	O	O				
O	O	O	X O	X O	O	O	O	X O	O
O	O	O	X O	X O	O	X O	X 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	X	X O	X O	O	X O	X O	X O	O
O	O	O	X O	X O	O	X O	X 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
X	O	O	O	O	X O	X O	O	O	O
NONE 0 - 120	NONE 35 - 120	NONE 35 - 120	NONE 35 - 120	NONE 0 - 120	NONE 0 - 120	NONE 0 - 120	NONE 0 - 120	NONE 0 - 120	NONE 0 - 120
SOPRALENE OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SOPRALENE OR FOIL MEMBRANE	SOPRALENE OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SOPRALENE OR FOIL MEMBRANE
HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN
1975 1984	1975 1984	1975 1984	1975 1984	1975 1984	1975 1984	1975 1984	1975 1984	1975 1984	1975 1984
MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS
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 YES	DISTRS,DIRECT 5 YES	DISTRS,DIRECT 5 YES	DISTRS,DIRECT 5 YES
SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521
TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.
2.	PRODUCT NAME	ELASTOPHENE FR GR	SOPRALAST 50 TV ALU	SOPRALAST TV COPPER	SOPRALAST 50 TV INOX	SOPRAFIX (F) (H) (S) (T)	SOPRALENE 350 PS
3.	PRODUCT DESCRIPTION						
	Type of Modifier	SBS	SBS	SBS	SBS	SBS	SBS
	Thickness (mils)	136	160	140	160	120	120
	Top Surface	CERAMIC GRANULES	ALUMINUM	COPPER	STAINLESS	PLASTIC FILM	PLASTIC FILM
	Reinforcing Material	FIBERGLASS	GLASS GRID	GLASS GRID	GLASS GRID	NONWOVEN	NONWOVEN
	Colors	VARIOUS	ALUMINUM	COPPER	STAINLESS	BLACK	BLACK
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	0.90	0.92	0.93	1.15	0.73	1.06
4.	KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	NONE	NONE	SOPRALENE OR ELASTOPHENE CAP SHEET	SOPRALENE OR ELASTOPHENE CAP SHEET
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	HOT MOP OR COLD ADHESIVE	HEAT FUSED	HEAT FUSED	HEAT FUSED	HEAT FUSED	HOT MOP OR COLD ADHESIVE
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
	Partially Adhered (method)						
	Fully Adhered (method)	MOP OR ADHESIVE	HEAT FUSED	HEAT FUSED	HEAT FUSED	MECH. ATTACHED	MOP OR ADHESIVE
	Protected Roof Membrane Assembly						X
8.	MINIMUM SLOPE REQUIRED	1/8:12	1/2"	1/2"	1/2"	1/8:12	1/8:12
9.	ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)						
	Glass Fiber	O	O	O	O	X O	X O
	Mineral Fiber	O	O	O	O	X O	X O
	Polystyrene	O	O	O	O	O	O
	Cellular Glass	O	O	O	O	X O	X O
	Phenolic						
	Fiberboard	O	O	O	O	X O	X O
	Perlite	O	O	O	O	X O	X O
	Polyisocyanurate	O	O	O	O	O	O
	Polythane	O	O	O	O	O	O
	Gypsum	O	O	O	O	X O	X O
	Concrete	O	O	O	O	X O	X O
	Wood Plank	O	O	O	O	X O	O
	Plywood	O	O	O	O	X O	O
	Existing Built-up Membrane	O	O	O	O	X O	O
10.	RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11.	WORKABLE TEMPERATURE RANGE (degrees F)	0 - 120	35 - 120	0 - 120	0 - 120	0 - 120	0 - 120
12.	FLASHING MATERIAL	SOPRALENE OR FOIL MEMBRANE	SAME MATERIAL OR FOIL MEMBRANE	SAME MATERIAL	SAME MATERIAL	SOPRALENE OR FOIL MEMBRANE	SOPRALENE OR FOIL MEMBRANE
13.	FLASHING METHOD	HEAT FUSED	HEAT FUSED OR COLD ADHESIVE	HEAT FUSED OR COLD ADHESIVE	HEAT FUSED OR COLD ADHESIVE	HEAT FUSED	HEAT FUSED OR COLD ADHESIVE
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15.	COUNTRY OF:						
	Origin	USA	USA	USA	USA	USA	USA
	Manufacture	USA, FR, CAN	USA, FR, CAN	USA, FR, CAN	USA, FR, CAN	USA, FR, CAN	USA, FR, CAN
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA	1975	1975	1975	1975	1975	1975
	Within USA	1984	1984	1984	1984	1984	1984
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA						
	Within USA	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
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 MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521
22.	FOR TECHNICAL INFORMATION, CONTACT:	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0055	TECH MGR 330/334-0066	TECH MGR 330/334-0066	TECH MGR 330/334-0066
23.	SEE APPENDIX IF CHECKED						

## Modified Bitumen Part 1 - General Information

SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	SOPREMA, INC.	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS
SOPRALENE 180 SP 3.5mm	ELASTOPHENE 3.0mm	LASTOBOND	COLPHENE GR	COLDPHENE FR GR	COLDPHENE HR GR	COLDPHENE HR-FR GR	SOPRAFIX (X)	AWAPLAN PREMIUM	AWAPLAN 170
SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS
140	120	108	140	140	140	140	160	155	154
SAND/PLASTIC FILM	SAND	SAND	CERAMIC GRANULES	CERAMIC GRANULES	CERAMIC GRANULES	CERAMIC GRANULES	PLASTIC FILM	GRANULE	GRANULE
NONWOVEN	FIBERGLASS	FIBERGLASS	FIBERGLASS	FIBERGLASS	GLASS GRID	GLASS GRID	NONWOVEN	POLYESTER	POLYESTER
BLACK	BLACK	BLACK	VARIOUS	VARIOUS	VARIOUS	VARIOUS	BLACK	VARIOUS	VARIOUS
0.80	0.79	0.60	0.90	0.90	0.90	0.90	0.97	1.04	0.99
	SOPRALENE OR ELASTOPHENE CAP SHEET	SHINGLES OR TILE	NONE	NONE	NONE	NONE	SOPRALENE OR ELASTOPHENE CAP SHEET	NONE	NONE
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
HEAT FUSED	HOT MOP OR COLD ADHESIVE	SELF ADHESIVE	SELF ADHESIVE	SELF ADHESIVE	SELF ADHESIVE	SELF ADHESIVE	HEAT FUSED	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE
HEAT FUSED	HOT MOP	SELF ADHESIVE	SELF ADHESIVE	SELF ADHESIVE	SELF ADHESIVE	SELF ADHESIVE	MECH. ATTACHED	HOT MOP/COLD	HOT MOP/COLD
DEAD LEVEL	1/8:12	1/8:12	1/8:12	1/8:12	1/8:12	1/8:12	1/8:12	POS DRAIN	POS DRAIN
O	O	O	O	O	O	O	X O	X	X
X O	X O	O	O	O	O	O	X O	X	X
O	O	X	O	X	X	X	O	O	O
X O	X O	O	O	O	O	O	X O	X	X
		O	O	O	O	O			
O	O	O	O	O	O	O	X O	X	X
X O	X O	O	O	O	O	O	X O	X	X
O	O	O	O	O	O	O	O	O	O
O	O	O	O	O	O	O	O		
X O	X O	X	X	X	X	X	X O	X	X
X O	X O	O	O	O	O	O	X O	O	O
O	O	O	O	O	O	O	X O	X	X
O	O	O	O	O	O	O	X O	X	X
O	O	O	O	O	O	O	X O	X	X
NONE 0 - 120	NONE 35 - 120	NONE 40 - 120	NONE 40 - 120	NONE 40 - 120	NONE 40 - 120	NONE 40 - 120	NONE 40 - 120	NONE	NONE
SOPRALENE OR FOIL MEMBRANE	SOPRALENE OR FOIL MEMBRANE	SOPRALENE OR FOIL MEMBRANE	SOPRALENE OR FOIL MEMBRANE	SOPRALENE OR FOIL MEMBRANE	SOPRALENE OR FOIL MEMBRANE	SOPRALENE OR FOIL MEMBRANE	SOPRALENE OR FOIL MEMBRANE	SAME MATERIAL OR VERSA-FLASH	SAME MATERIAL OR VERSA-FLASH
HEAT FUSED OR COLD ADHESIVE	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED, HOT MOP OR COLD ADHESIVE	HEAT FUSED	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE
YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	USA USA, FR, CAN	W GERMANY USA	W GERMANY USA
1975 1984	1975 1984	1975 1984	1975 1984	1975 1984	1975 1984	1975 1984	1975 1984	1970 1978	1986
MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS		
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 YES	DISTRS,DIRECT 5 YES	DISTRIBUTORS 27 YES	DISTRIBUTORS 27 YES
SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	SALES MGR 800/356-3521	DIST OFFICE	DIST OFFICE
TECH MGR 330/334-0066	TECH MGR 330/334-0066	TECH MGR 330/334-0066	TECH MGR 330/334-0066	TECH MGR 330/334-0066	TECH MGR 330/334-0066	TECH MGR 330/334-0066	TECH MGR 330/334-0066	TECH SERVICE 800/641-4691	TECH SERVICE 800/641-4691
								X	X

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS
2.	PRODUCT NAME	AWAPLAN PREMIUM FR	AWAPLAN 170 FR	AWAPLAN VERSA- SMOOTH	AWAPLAN HEAT WELDING	VERSA-FLEX	SPEEDWELD APP GRANULATED
3.	PRODUCT DESCRIPTION						
	Type of Modifier	SBS	SBS	SBS	SBS	SBS	APP
	Thickness (mils)	155	154	160	185	115	160
	Top Surface	GRANULE	GRANULE	SMOOTH	GRANULE	SMOOTH	GRANULE
	Reinforcing Material	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER
	Colors	VARIOUS	VARIOUS	BLACK	VARIOUS	BLACK	WHITE / BLACK
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	1.04	0.99	1.0	1.04	0.76	1.05
4.	KINDS OF FIELD SURFACING REQUIRED	NONE	NONE	AWAPLAN, COATING, GRAVEL	NONE	AWAPLAN, GRAVEL	NONE
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	HOT MOP	HOT MOP	HOT MOP OR TORCH	TORCH	HOTMOP OR COLD ADHESIVE	TORCH
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
	Partially Adhered (method)						
	Fully Adhered (method)	HOT MOP	HOT MOP	MOP/TORCH/ADHS	TORCH	HOT MOP/COLD	TORCH
	Protected Roof Membrane Assembly						
8.	MINIMUM SLOPE REQUIRED	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)						
	Glass Fiber	X	X	X	X	X	X
	Mineral Fiber	X	X	X	X	X	X
	Polystyrene	O	O	O	O	O	O
	Cellular Glass	X	X	X	X	X	X
	Phenolic						X
	Fiberboard	X	X	X	X	X	X
	Perlite	X	X	X	X	X	X
	Polyisocyanurate	O	O	O	O	O	O
	Polythane						
	Gypsum	X	X	X	X	X	X
	Concrete	O	O	O	O	O	O
	Wood Plank	X	X	X	X	X	X
	Plywood	X	X	X	X	X	X
	Existing Built-up Membrane	X	X	X	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	SAME MATERIAL OR VERSA-FLASH	SAME MATERIAL OR VERSA-FLASH	SAME MATERIAL OR VERSA-FLASH	SAME MATERIAL	AWAFLEX 170, AWAPREMIUM VERSA-FLASH	SAME MATERIAL
13.	FLASHING METHOD	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR TORCH	HOT MOP OR TORCH	HOT MOP OR COLD ADHESIVE	TORCH
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	NO	NO	NO	NO	NO	NO
15.	COUNTRY OF:						
	Origin	W GERMANY	W GERMANY	W GERMANY	W GERMANY	USA	USA
	Manufacture	USA	USA	USA	USA	USA	USA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA						
	Within USA	1988	1991	1986	1981	1997	1995
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA						
	Within USA						
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19.	NUMBER OF REGIONAL LOCATIONS	27	27	27	27	27	27
20.	LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21.	FOR SALES INFORMATION, CONTACT:	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE	DIST OFFICE
22.	FOR TECHNICAL INFORMATION, CONTACT:	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
23.	SEE APPENDIX IF CHECKED	X	X	X	X		

## Modified Bitumen Part 1 - General Information

TAMKO ROOFING PRODUCTS	TEXAS REFINERY CORP.	TEXSA, SA	TEXSA, SA	TEXSA, SA	TEXSA, SA	TEXSA, SA	TEXSA, SA	TEXSA, SA	TREMCO INC.
SPEEDWELD APP SMOOTH	MIGHTYPLATE	MIN TEXAL-15 FP-S	TEXAL-10 FV 3MM	MIN MOFLEX-20 FP-S	TEXSELF	MINERAL M.P. 5KG FM	TEXSELF AL 45	TEXSELF FP	POWERPLY HE FR
APP	APP	APP	SBS	SBS	SBS	SBS	SBS	SBS	SBS
160	157	158	120	158	60	158	80	80	175
SMOOTH	MODIFIED BITUMEN	MINERAL GRANULE	SMOOTH	MINERAL GRANULE	POLYETHYLENE	MINERAL GRANULE	ALUMINUM	SMOOTH	GRANULE
POLYESTER	NONWOVEN	NONWOVEN	FIBERGLASS	NONWOVEN	NONE	COMPOSITE:	NONE	NONWOVEN	POLYESTER
BLACK	BLACK	GRAY / GREEN / RED	BLACK	GRAY / GREEN / RED	BLACK	GRAY / GREEN / RED	ALUMINUM	BLACK	VARIOUS
0.90	0.88	1.02	0.74	1.02	0.36	1.02	0.43	0.48	1.05
SPEEDWELD SP OR COLD COATING	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
TORCH	TORCH	TORCH	TORCH	TORCH	SELF-ADHESIVE	TORCH	SELF-ADHESIVE	SELF-ADHESIVE	HOT MOP OR COLD ADHESIVE
		TORCH	TORCH	TORCH		MECHANICAL			
TORCH	TORCH	TORCH	TORCH	TORCH	SELF-ADHERING	TORCH	SELF-ADHERING	SELF-ADHERING	HOT OR COLD
POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	TO DRAIN			TO DRAIN	POS. DRAINAGE
X	O					O			X
X	O	X	X	X	X	O	X	X	
O	O	O	O	O	O	O	O	O	
X	O		X	X	X	O	X	X	
X	O	X	X	X	X	O	X	X	
X	O	X	X	X	X	O	X	X	X
X	O	X	X	X	X	O	X	X	X
O	O	X	X	X	X	O	X	X	O
	O	X	X	X	X	O	X	X	O
X	O	X	X	X	O	O	O	O	O
O	X O	X	X	X	X	X	X	X	X
X	O		O	O	X	O	X	X	O
X	O		O	O	X	O	X	X	O
X	X O	X	X	X	X	X	X	X	O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
	0 - 120	40 - 120	40 - 120	40 - 120	50 - 120	40 - 120	50 - 120	50 - 120	35 - 120
SPEEDWELD APP GRAN OR SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL OR ANY SBS CAP SHEET	SAME MATERIAL	SELF-ADHESIVE TEXSELF CAP SHEET	ANY SBS CAP SHEET	SELF-ADHESIVE TEXSELF CAP SHEET	SELF-ADHESIVE TEXSELF CAP SHEET	SAME, CSPE, OR COMPATIBLE MATERIAL
TORCH	TORCH	TORCH	TORCH	TORCH	SELF-ADHERING	TORCH	SELF-ADHERING	SELF-ADHERING	HOT MOP OR COLD ADHESIVE
NO	NO	NO	NO	NO	NO	NO	NO	NO	YES
USA	USA	SPAIN	SPAIN	SPAIN	SPAIN	SPAIN	SPAIN	SPAIN	USA
USA	USA	SPAIN	SPAIN	SPAIN	SPAIN	SPAIN	SPAIN	SPAIN	USA
		1985	1991	1991	1986	1994	1994	1996	
1995	1981								
		THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS				
	MILLIONS								
DISTRIBUTORS	DIRECT	DISTRs,DIRECT	DISTRs,DIRECT	DISTRs,DIRECT	DISTRs,DIRECT	DISTRs,DIRECT	DISTRs,DIRECT	DISTRs,DIRECT	DIRECT
27									14
YES	YES								YES
DIST OFFICE	J. MC GEE	CUST SERVICE	CUST SERVICE	CUST SERVICE	CUST SERVICE	CUST SERVICE	CUST SERVICE	CUST SERVICE	SALES OFFICE
TECH SERVICE	J. MC GEE	TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH SERVICE	TECH DEPT
800/641-4691									

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	TREMCO INC.	TREMCO INC.	TREMCO INC.	U.S. INTEC, INC.	U.S. INTEC, INC.	U.S. INTEC, INC.
2.	PRODUCT NAME	POWERPLY PREMIUM FR	POWERPLY PREMIUM SMOOTH	POWERPLY STANDARD FR	INTEC SP4	INTEC GBSP4	INTEC GBSP4FR
3.	PRODUCT DESCRIPTION						
	Type of Modifier	SBS/SEBS/SIS	SBS/SEBS	SBS	APP	APP	APP
	Thickness (mils)	150	80	120	160	160	160
	Top Surface	GRANULE	SMOOTH	GRANULE	MODIFIED BITUMEN	GRANULES	GRANULES
	Reinforcing Material	POLYESTER / FIBERGLASS	POLYESTER / FIBERGLASS	FIBERGLASS	POLYESTER	POLYESTER	POLYESTER
	Colors	VARIOUS	BLACK	WHITE/VARIOUS	BLACK	VARIOUS	VARIOUS
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	0.94	0.46	0.88	0.88	1.05	1.05
4.	KINDS OF FIELD SURFACING REQUIRED	NONE	EMULSION OR GRAVEL	NONE	ROOF COATING, GRANULE GRAVEL	NONE	NONE
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	TORCH	TORCH	TORCH
7.	TYPES OF ROOF SYSTEMS:						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )						
	Partially Adhered (method)						
	Fully Adhered (method)	HOT OR COLD	HOT OR COLD	HOT OR COLD	TORCH	TORCH	TORCH
	Protected Roof Membrane Assembly						
8.	MINIMUM SLOPE REQUIRED	POS. DRAINAGE	POS. DRAINAGE	POS. DRAINAGE	POS DRAIN	POS DRAIN	POS DRAIN
9.	ACCEPTABLE SUBSTRATES (X=direct application permitted) (O=overlayment required in some/all circumstances)						
	Glass Fiber	X	X	X	O	O	O
	Mineral Fiber				O	O	O
	Polystyrene				O	O	O
	Cellular Glass				O	O	O
	Phenolic						
	Fiberboard	X	X	X			
	Perlite	X	X	X	O	O	O
	Polyisocyanurate	O	O	O	O	O	O
	Polythane	O	O	O	O	O	O
	Gypsum	O	O	O	O	O	O
	Concrete	X	X	X	X O	X O	X O
	Wood Plank	O	O	O	O	O	O
	Plywood	O	O	O	O	O	O
	Existing Built-up Membrane	O	O	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)	35 - 120	35 - 120	35 - 120	40 - 120	40 - 120	40 - 120
12.	FLASHING MATERIAL	SAME, CSPE, OR COMPATIBLE MATERIAL	SAME, CSPE, OR COMPATIBLE MATERIAL	SAME, CSPE, OR COMPATIBLE MATERIAL	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL
13.	FLASHING METHOD	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	HOT MOP OR COLD ADHESIVE	TORCH	TORCH	TORCH
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15.	COUNTRY OF:						
	Origin	USA	USA	USA	ITALY	ITALY	ITALY
	Manufacture	USA	USA	USA	USA	USA	USA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA				1961	1976	1976
	Within USA				1978	1983	1991
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA						
	Within USA						
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DIRECT	DIRECT	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19.	NUMBER OF REGIONAL LOCATIONS	14	14	14	9	9	9
20.	LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21.	FOR SALES INFORMATION, CONTACT:	SALES OFFICE	SALES OFFICE	SALES OFFICE	800/231-4631	800/231-4631	800/231-4631
22.	FOR TECHNICAL INFORMATION, CONTACT:	TECH DEPT	TECH DEPT	TECH DEPT	800/624-6832	800/624-6832	800/624-6832
23.	SEE APPENDIX IF CHECKED						



## 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 GBSP 250 FR	INTEC/FLEX M	INTEC/FLEX 190	INTEC/FLEX FR4.5	INTEC/FLEX S	INTEC/FLEX FR3 HS	INTEC/FLEX 190 FR	INTEC/FLEX 250 FR	INTEC/FLEX G4 CAP	FLEXBASE 60 FR
APP	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS	SBS
177	160	160	180	138	150	160	177	160	80
GRANULES	GRANULES	GRANULES	GRANULES	SMOOTH	GRANULES	GRANULES	GRANULES	GRANULES	SMOOTH
POLYESTER	POLYESTER	POLYESTER	FIBERGLASS	POLYESTER	GLASS MAT GLASS SCRIM	POLYESTER	POLYESTER COMPOSITE	FIBERGLASS	FIBERGLASS
VARIOUS	VARIOUS	VARIOUS	VARIOUS		VARIOUS	VARIOUS	VARIOUS	VARIOUS	
1.1	1.05	0.95	1.05	0.85	0.93	0.98	0.98	0.98	0.40
NONE	NONE	NONE	NONE	CAP SHEET / MOP / GRAVEL	NONE	NONE	NONE	NONE	CAP SHEET / MOP / GRAVEL
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
TORCH	MOP / ADHESIVE	MOP / ADHESIVE	MOP / ADHESIVE	MOP / ADHESIVE	MOP / ADHESIVE	MOP / ADHESIVE	MOP / ADHESIVE	MOP / ADHESIVE	MOP / ADHESIVE
TORCH	HOT MOP	HOT MOP	HOT MOP	MOP/ADHES	MOP/ADHES	MOP/ADHES	MOP/ADHES	MOP/ADHES	MOP/MECH FAS
POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
O	O	O	O	X O	X	X	X	X	X
O	O	O	O	X O	X	X	X	X	X
O	O	O	O	O	O	O	O	O	O
O	O	O	O	X O	X O	X O	X O	X O	X O
O									
O	O	O	O	X	X	X	X	X	X
O	O	O	O	X	X	X	X	X	X
O	O	O	O	X O	X O	O	O	O	X O
O	O	O	O	X O	X O	O	O	O	X O
O	O	O	O	X O	X O	O	O	O	X O
O	O	O	O	X O	X O	O	O	O	X O
O	O	O	O	X O	X O	O	O	O	X O
O	O	O	O	X O	X O	O	O	O	X O
O	O	O	O	X O	X O	O	O	O	X O
NONE 40 – 120	SEE SPECS 40 – 120	SEE SPECS 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	MOP / CEMENT	MOP / CEMENT	MOP / CEMENT	MOP / CEMENT	MOP / CEMENT	MOP / CEMENT	MOP / CEMENT	MOP / CEMENT	MOP / CEMENT
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
1990 1990	1985 1985	1985 1985	1985 1985	1985 1985	1985 1985	1990 1990	1990 1990	1985 1985	1988 1988
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
800/231-4631	800/231-4631	800/231-4631	800/231-4631	800/231-4631	800/231-4631	800/231-4631	800/231-4631	800/231-4631	800/231-4631
800/624-6832	800/624-6832	800/624-6832	800/231-6832	800/624-6832	800/624-6832	800/624-6832	800/624-6832	800/624-6832	800/624-6832

## Modified Bitumen Part 1 - General Information

1.	COMPANY NAME	U.S. INTEC, INC.	U.S. IINTEC, INC.	U.S. INTEC, INC.	U.S. INTEC, INC..	U.S. INTEC, INC..
2.	PRODUCT NAME	INTEC MODIFIED BASE PLUS	FLAME FREE 160 S	FLAME FREE BASE	FLAME FREE 160	FLAME FREE 180 FR
3.	PRODUCT DESCRIPTION					
	Type of Modifier	SBS	APP	APP	APP	APP
	Thickness (mils)	95				
	Top Surface	SMOOTH	SMOOTH	SMOOTH	GRANULE	GRANULE
	Reinforcing Material	FIBERGLASS	POLYESTER GLASS	POLYESTER GLASS	POLYESTER / GLASS	POLYESTER / GLASS
	Colors		N/A	N/A	BLACK /WHITE	BLACK /WHITE
	Installed Weight (lbs./ft <sup>2</sup> without ballast)	0.54				
4.	KINDS OF FIELD SURFACING REQUIRED	CAP SHEET / MOP GRAVEL			NA	NA
5.	USE IN					
	New Roofing	X	X	X	X	X
	Reroofing	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	MOP / ADHESIVE	COLD ADHESIVE	COLD ADHESIVE	COLD ADHESIVE	COLD ADHESIVE
7.	TYPES OF ROOF SYSTEMS:					
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )					
	Partially Adhered (method)					
	Fully Adhered (method)	MOP/MECH FAS	X	X	X	X
	Protected Roof Membrane Assembly		X	X	X	X
8.	MINIMUM SLOPE REQUIRED	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN	POS DRAIN
9.	ACCEPTABLE SUBSTRATES					
	(X=direct application permitted) (O=overlayment required in some/all circumstances)					
	Glass Fiber	X	O	O	O	O
	Mineral Fiber	X	O	O	O	O
	Polystyrene	O	O	O	O	O
	Cellular Glass	X O	O	O	O	O
	Phenolic					
	Fiberboard	X				
	Perlite	X				
	Polyisocyanurate	X O	O	O	O	O
	Polythane	X O	O	O	O	O
	Gypsum	X O	O	O	O	O
	Concrete	X O	X O	X O	X O	X O
	Wood Plank	X O	O	O	O	O
	Plywood	X O	O	O	O	O
	Existing Built-up Membrane	X O	O	O	O	O
10.	RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE
11.	WORKABLE TEMPERATURE RANGE (degrees F)	40 – 120	40 - 120	40 - 120	40 - 120	40 - 120
12.	FLASHING MATERIAL	SAME MATERIAL	N/A	N/A	SAME MATERIAL	SAME MATERIAL
13.	FLASHING METHOD	MOP / CEMENT	COLD ADHESIVE	COLD ADHESIVE	COLD ADHESIVE	COLD ADHESIVE
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES
15.	COUNTRY OF:					
	Origin	USA	USA	USA	USA	USA
	Manufacture	USA	USA	USA	USA	USA
16.	YEAR OF FIRST COMMERCIAL USE					
	Outside USA	1989				
	Within USA	1989	1999	1999	1999	1999
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )					
	Outside USA					
	Within USA					
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19.	NUMBER OF REGIONAL LOCATIONS	9	5	5	5	5
20.	LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES
21.	FOR SALES INFORMATION, CONTACT:	800/231-4631	800/365-7353 EXT. 3000	800/365-7353 EXT. 3000	800/365-7353 EXT. 3000	800/365-7353 EXT. 3000
22.	FOR TECHNICAL INFORMATION, CONTACT:	800/624-6832	800/624-6832	800/624-6832	800/624-6832	800/624-6832
23.	SEE APPENDIX IF CHECKED					

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## APP Modified Bitumen Part 2: Test Results

1. COMPANY NAME	AMERICAN LUBRICANTS, INC.	BITEC INC.
2. PRODUCT NAME	TIFFANY	MDA
3. PRODUCT DESCRIPTION		
Reinforcing	POLYESTER	POLYESTER
Top surface	SMOOTH	GRANULE
4. COMPLIES WITH:		
ASTM D 6222-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		X
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		
ASTM D 6223-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Material Using Polymer and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS		
Thickness (min., mils) Grade S	Type I: 140; Type II: 150	157
Thickness (min., mils) Grade G	Type I: 160; Type II: 170	160
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 70; Type II: 80	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 85; Type II: 100	110
Bottom coating thickness (min., mils)	Type I: 30; Type II: 40	80
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Thickness (min., mils) Grade S	140	
Thickness (min., mils) Grade G	160	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	75	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	90	
Bottom coating thickness (min., mils)	40	
6A. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS		
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 50; Type II: 80	60.5
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	Type I: 23; Type II: 40	35
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 60; Type II: 90	180
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	Type I: 10; Type II: 15	64
Elongation at 5% of max. load at 73.4 ±3.6 F, MD and XMD, % min.	Type I: 30; Type II: 50	42.5
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 70; Type II: 80	102
Low temperature flexibility, before and after heat conditioning, F, max.	+32	+7
Dimensional stability, % change, max.	1	≤1
High temperature stability, F min.	230	250
Granule embedment, Grade G only, max. loss, grams	2	<2
Water absorption, % max.	3.2	0.43
Moisture content, % max.	1	<0.27
Low temperature unrolling, F max.	41	PASS
6B. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 65; Type II: 100	
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	3	
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 150; Type II: 200	
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	3	
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 120; Type II: 180	
Low temperature flexibility, before and after heat conditioning, F, max.	+32	
Dimensional stability, % change, max.	1	
High temperature stability, F min.	230	
Granule embedment, Grade G only, max. loss, grams	2	
Water absorption, % max.	3.2	
Moisture content, % max.	1	
Low temperature unrolling, F max.	41	
7. SEE APPENDIX IF CHECKED		

## APP Modified Bitumen Part 2: Test Results

[illegible]

## APP Modified Bitumen Part 2: Test Results

1. COMPANY NAME		CERTAINTEED ROOFING PRODUCTS	CERTAINTEED ROOFING PRODUCTS
2. PRODUCT NAME		FLINTASTIC GTA	FLINTASTIC GTA-FR
3. PRODUCT DESCRIPTION			
Reinforcing		POLYESTER	POLYESTER
Top surface		GRANULE	GRANULE
4. COMPLIES WITH:			
ASTM D 6222-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
ASTM D 6223-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Material Using Polymer and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S	Type I: 140; Type II: 150		
Thickness (min., mils) Grade G	Type I: 160; Type II: 170	180	180
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 70; Type II: 80		
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 85; Type II: 100	105	105
Bottom coating thickness (min., mils)	Type I: 30; Type II: 40	60	60
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S	140		
Thickness (min., mils) Grade G	160		
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	75		
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	90		
Bottom coating thickness (min., mils)	40		
6A. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 50; Type II: 80	106 / 92	106 / 92
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	Type I: 23; Type II: 40	57 / 62	57 / 62
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 60; Type II: 90	133 / 116	133 / 116
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	Type I: 10; Type II: 15	20 / 22	20 / 22
Elongation at 5% of max. load at 73.4 ±3.6 F, MD and XMD, % min.	Type I: 30; Type II: 50	62 / 65	62 / 65
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 70; Type II: 80	100	100
Low temperature flexibility, before and after heat conditioning, F, max.	+32	+8	+8
Dimensional stability, % change, max.	1	0.5	0.5
High temperature stability, F min.	230	250	250
Granule embedment, Grade G only, max. loss, grams	2	1.0	1.0
Water absorption, % max.	3.2	>.01	>.01
Moisture content, % max.	1	>.01	>.01
Low temperature unrolling, F max.	41	30	30
6B. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 65; Type II: 100		
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	3		
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 150; Type II: 200		
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	3		
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 120; Type II: 180		
Low temperature flexibility, before and after heat conditioning, F, max.	+32		
Dimensional stability, % change, max.	1		
High temperature stability, F min.	230		
Granule embedment, Grade G only, max. loss, grams	2		
Water absorption, % max.	3.2		
Moisture content, % max.	1		
Low temperature unrolling, F max.	41		
7. SEE APPENDIX IF CHECKED			

## APP Modified Bitumen Part 2: Test Results

[illegible]

## APP Modified Bitumen Part 2: Test Results

1. COMPANY NAME		FIRESTONE BUILDINGS PRODS. CO.	FIRESTONE BUILDINGS PRODS. CO.
2. PRODUCT NAME		APP 160	APP 170
3. PRODUCT DESCRIPTION			
Reinforcing		POLYESTER	POLYESTER
Top surface		SMOOTH	SMOOTH
4. COMPLIES WITH:			
ASTM D 6222-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
ASTM D 6223-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Material Using Polymer and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S	Type I: 140; Type II: 150	150	165
Thickness (min., mils) Grade G	Type I: 160; Type II: 170		
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 70; Type II: 80		
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 85; Type II: 100		
Bottom coating thickness (min., mils)	Type I: 30; Type II: 40		
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S	140		
Thickness (min., mils) Grade G	160		
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	75		
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	90		
Bottom coating thickness (min., mils)	40		
6A. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 50; Type II: 80		
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	Type I: 23; Type II: 40		
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 60; Type II: 90	115	115
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	Type I: 10; Type II: 15	30	30
Elongation at 5% of max. load at 73.4 ±3.6 F, MD and XMD, % min.	Type I: 30; Type II: 50		
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 70; Type II: 80	80	80
Low temperature flexibility, before and after heat conditioning, F, max.	+32	+15	+15
Dimensional stability, % change, max.	1	0.5	0.4
High temperature stability, F min.	230		
Granule embedment, Grade G only, max. loss, grams	2		
Water absorption, % max.	3.2		
Moisture content, % max.	1		
Low temperature unrolling, F max.	41		
6B. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 65; Type II: 100		
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	3		
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 150; Type II: 200		
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	3		
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 120; Type II: 180		
Low temperature flexibility, before and after heat conditioning, F, max.	+32		
Dimensional stability, % change, max.	1		
High temperature stability, F min.	230		
Granule embedment, Grade G only, max. loss, grams	2		
Water absorption, % max.	3.2		
Moisture content, % max.	1		
Low temperature unrolling, F max.	41		
7. SEE APPENDIX IF CHECKED			



## APP Modified Bitumen Part 2: Test Results

[illegible]

## APP Modified Bitumen Part 2: Test Results

1. COMPANY NAME		ICA, INC.	ICA, INC.
2. PRODUCT NAME		ICA PREMIUM APP MINERAL	ICA PREMIUM APP SLATE
3. PRODUCT DESCRIPTION			
Reinforcing		POLYESTER	POLYESTER
Top surface		GRANULE	GRANULE
4. COMPLIES WITH:			
ASTM D 6222-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)		X	
Type II, Grade S (smooth surfaced)			
ASTM D 6223-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Material Using Polymer and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S	Type I: 140; Type II: 150		
Thickness (min., mils) Grade G	Type I: 160; Type II: 170	180	180
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 70; Type II: 80		
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 85; Type II: 100	105	105
Bottom coating thickness (min., mils)	Type I: 30; Type II: 40	60	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S	140		
Thickness (min., mils) Grade G	160		
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	75		
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	90		
Bottom coating thickness (min., mils)	40		
6A. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 50; Type II: 80	85 / 85	85
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	Type I: 23; Type II: 40	45	45
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 60; Type II: 90	120	120
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	Type I: 10; Type II: 15	40	40
Elongation at 5% of max. load at 73.4 ±3.6 F, MD and XMD, % min.	Type I: 30; Type II: 50	50	50
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 70; Type II: 80	120	120
Low temperature flexibility, before and after heat conditioning, F, max.	+32	+25	+25
Dimensional stability, % change, max.	1	0.5	0.5
High temperature stability, F min.	230	275	275
Granule embedment, Grade G only, max. loss, grams	2	2	2
Water absorption, % max.	3.2	3	3
Moisture content, % max.	1	1	1
Low temperature unrolling, F max.	41	41	41
6B. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 65; Type II: 100		
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	3		
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 150; Type II: 200		
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	3		
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 120; Type II: 180		
Low temperature flexibility, before and after heat conditioning, F, max.	+32		
Dimensional stability, % change, max.	1		
High temperature stability, F min.	230		
Granule embedment, Grade G only, max. loss, grams	2		
Water absorption, % max.	3.2		
Moisture content, % max.	1		
Low temperature unrolling, F max.	41		
7. SEE APPENDIX IF CHECKED			

## APP Modified Bitumen Part 2: Test Results

IKO INDUSTRIES INC.	IKO INDUSTRIES INC.	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL
ARMOURPLAST GRANULAR	ARMOURPLAST CLASSIC	APPEX 4S	TRICOR M-FR	TRICOR S	BICOR S	APPEX 4.5M	APPEX 4.5M FR
POLYESTER GRANULE	POLYESTER SMOOTH	POLYESTER SMOOTH	COMBINATION GRANULE	COMBINATION SMOOTH	COMBINATION SMOOTH	POLYESTER GRANULE	POLYESTER GRANULE
						X	X
			X				
				X	X		
	160	160					
160						160	160
		75					
						90	90
		80				80	80
				160	160		
			180				
				75	75		
			90				
			90	80	80		
		60				60	60
		25				25	25
74	74	121				105	106
50	50	42				38	38
		35				35	35
106	106	149				143	141
+26	+26	+21				+21	+23
		0.9				0.9	0.6
		230				230	230
						2	2
0.5	0.5	0.7				1.8	2.2
0.1	0.1	0.15				0.15	0.10
		40				40	40
			150	150	100		
			3	3	3		
			300	300	200		
			4.7	4.7	3.5		
			260	260	163		
			+23	+23	+23		
			0	0	0		
			240	240	240		
			2				
			1.3	1.3	1.3		
			0.05	0.05	0.05		
			40	40	40		

## APP Modified Bitumen Part 2: Test Results

1. COMPANY NAME	JOHNS MANVILLE INTERNATIONAL	MALARKEY ROOFING CO.
2. PRODUCT NAME	BICOR M FR	APP 159 SMOOTH
3. PRODUCT DESCRIPTION Reinforcing Top surface	COMPOSITE GRANULE	FIBERGLASS SMOOTH
4. COMPLIES WITH: ASTM D 6222-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA) Type I, Grade G (granule surfaced) Type I, Grade S (smooth surfaced) Type II, Grade G (granule surfaced) Type II, Grade S (smooth surfaced)  ASTM D 6223-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Material Using Polymer and Glass Fiber Reinforcements</i> (indicate type and grade, or NA) Type I, Grade G (granule surfaced) Type I, Grade S (smooth surfaced) Type II, Grade G (granule surfaced) Type II, Grade S (smooth surfaced)		
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS		
Thickness (min., mils) Grade S	Type I: 140; Type II: 150	80
Thickness (min., mils) Grade G	Type I: 160; Type II: 170	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 70; Type II: 80	45
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 85; Type II: 100	
Bottom coating thickness (min., mils)	Type I: 30; Type II: 40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Thickness (min., mils) Grade S	140	
Thickness (min., mils) Grade G	160	180
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	75	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	90	90
Bottom coating thickness (min., mils)	40	80
6A. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS		
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 50; Type II: 80	75
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	Type I: 23; Type II: 40	
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 60; Type II: 90	
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	Type I: 10; Type II: 15	
Elongation at 5% of max. load at 73.4 ±3.6 F, MD and XMD, % min.	Type I: 30; Type II: 50	
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 70; Type II: 80	
Low temperature flexibility, before and after heat conditioning, F, max.	+32	-15
Dimensional stability, % change, max.	1	
High temperature stability, F min.	230	
Granule embedment, Grade G only, max. loss, grams	2	
Water absorption, % max.	3.2	
Moisture content, % max.	1	
Low temperature unrolling, F max.	41	
6B. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 65; Type II: 100	100
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	3	3
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 150; Type II: 200	200
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	3	3
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 120; Type II: 180	180
Low temperature flexibility, before and after heat conditioning, F, max.	+32	+23
Dimensional stability, % change, max.	1	0
High temperature stability, F min.	230	240
Granule embedment, Grade G only, max. loss, grams	2	2
Water absorption, % max.	3.2	1.3
Moisture content, % max.	1	0.05
Low temperature unrolling, F max.	41	40
7. SEE APPENDIX IF CHECKED		

## APP Modified Bitumen Part 2: Test Results

MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	MALARKEY ROOFING CO.	PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.
APP 160 SMOOTH	APP 161 MINERAL	APP 162 MINERAL	BITUTAK MB	BITUTAK MB MINERAL	DERBIGUM XPS FR	DERBICOLOR XPS FR	DERBICOLOR GP-FR
POLYESTER SMOOTH	POLYESTER GRANULE	POLYESTER GRANULE	POLYESTER SMOOTH	POLYESTER GRANULE	COMBINATION SMOOTH	COMBINATION GRANULE	COMBINATION GRANULE
				X			
			X				
							X
						X	
					X		
157			150				
	177	177		168			
90			89				
	105	105		100			
			45	40			
					160		
						180	180
					96		
						110	110
					110	70	70
70	70	70	80 / 80	80 / 81			
50	50	50	50 / 50	50 / 50			
			120	120			
			30	20			
			50	50			
			110	110			
-15	-15	-15	+18	+18			
			0.5	0			
			275	275			
	1.1		1.5	1.5			
			3	3			
			1	1			
			41	41			
					100	100	65
					5	5	4.5
					220	210	150
					5	5	4
					180	200	120
					+23	+23	+23
					0.05	0.05	0.05
					275	275	275
						1.5	1.5
					3.2	3.2	32
					1	1	1
					41	41	41

## APP Modified Bitumen Part 2: Test Results

1. COMPANY NAME		PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.
2. PRODUCT NAME		DERBIGUM GP	DERBIGUM GP-FR
3. PRODUCT DESCRIPTION			
Reinforcing		COMBINATION	COMBINATION
Top surface		SMOOTH	SMOOTH
4. COMPLIES WITH:			
ASTM D 6222-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
ASTM D 6223-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Material Using Polymer and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)	X	X	
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S	Type I: 140; Type II: 150		
Thickness (min., mils) Grade G	Type I: 160; Type II: 170		
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 70; Type II: 80		
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 85; Type II: 100		
Bottom coating thickness (min., mils)	Type I: 30; Type II: 40		
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S	140	150	150
Thickness (min., mils) Grade G	160		
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	75	92	92
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	90		
Bottom coating thickness (min., mils)	40	110	110
6A. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 50; Type II: 80		
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	Type I: 23; Type II: 40		
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 60; Type II: 90		
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	Type I: 10; Type II: 15		
Elongation at 5% of max. load at 73.4 ±3.6 F, MD and XMD, % min.	Type I: 30; Type II: 50		
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 70; Type II: 80		
Low temperature flexibility, before and after heat conditioning, F, max.	+32		
Dimensional stability, % change, max.	1		
High temperature stability, F min.	230		
Granule embedment, Grade G only, max. loss, grams	2		
Water absorption, % max.	3.2		
Moisture content, % max.	1		
Low temperature unrolling, F max.	41		
6B. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 65; Type II: 100	75	75
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	3	4.5	4.5
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 150; Type II: 200	150	150
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	3	4	4
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 120; Type II: 180	120	120
Low temperature flexibility, before and after heat conditioning, F, max.	+32	+23	+23
Dimensional stability, % change, max.	1	0.05	0.05
High temperature stability, F min.	230	275	275
Granule embedment, Grade G only, max. loss, grams	2		
Water absorption, % max.	3.2	32	32
Moisture content, % max.	1	1	1
Low temperature unrolling, F max.	41	41	41
7. SEE APPENDIX IF CHECKED			

## APP Modified Bitumen Part 2: Test Results

PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.	PERFORMANCE ROOF SYSTEMS INC.	POLYGLASS USA, INC.	POLYGLASS USA, NC.	POLYGLASS USA, NC.	POLYGLASS USA, NC.	POLYGLASS USA, NC.
DERBIGUM XPS	DERBICOLOR XPS	DERBICOLOR GP	POLYBOND	POLYBOND G	POLYFLEX	POLYFLEX 5	POLYFLEX G
COMBINATION SMOOTH	COMBINATION GRANULE	COMBINATION GRANULE	POLYESTER SMOOTH	POLYESTER GRANULE	POLYESTER SMOOTH	POLYESTER SMOOTH	POLYESTER GRANULE
			X		X	X	X
		X		X			
	X						
X							
			160		160	200	
				180			180
			81		83	102	
				95			97
160							
	180	180					
96							
	110	110					
110	70	70					
			50	50	65	65	65
			23	23	35	35	35
			100	100	100	100	100
			8	8	10	10	10
			30	30	40	40	40
			75	75	90	90	80
			+32	+32	+32	+32	+22
			0.5	0.5	0.5	0.5	0.5
			248	248	248	248	248
				≤2	NA	NA	2
			≤3	≤3	3	3	3
			0.1	0.1	1	1	0.1
			41	41	41	41	41
100	100	65					
5	5	4.5					
220	210	150					
5	5	4					
180	20	120					
+23	+23	+23					
0.05	0.05	0.05					
275	275	275					
	1.5	1.5					
32	32	32					
1	1	1					
41	41	41					

## APP Modified Bitumen Part 2: Test Results

1. COMPANY NAME	POLYGLASS USA, NC.	POLYGLASS USA, NC.
2. PRODUCT NAME	POLYFLEX G-FR	DIAMOND BLACK
3. PRODUCT DESCRIPTION		
Reinforcing	POLYESTER	POLYESTER
Top surface	GRANULE	GRANULE
4. COMPLIES WITH:		
ASTM D 6222-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)	X	X
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		
ASTM D 6223-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Material Using Polymer and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS		
Thickness (min., mils) Grade S	Type I: 140; Type II: 150	
Thickness (min., mils) Grade G	Type I: 160; Type II: 170	180
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 70; Type II: 80	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 85; Type II: 100	97
Bottom coating thickness (min., mils)	Type I: 30; Type II: 40	87
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Thickness (min., mils) Grade S	140	
Thickness (min., mils) Grade G	160	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	75	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	90	
Bottom coating thickness (min., mils)	40	
6A. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS		
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 50; Type II: 80	65
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	Type I: 23; Type II: 40	35
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 60; Type II: 90	100
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	Type I: 10; Type II: 15	10
Elongation at 5% of max. load at 73.4 ±3.6 F, MD and XMD, % min.	Type I: 30; Type II: 50	40
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 70; Type II: 80	80
Low temperature flexibility, before and after heat conditioning, F, max.	+32	+22
Dimensional stability, % change, max.	1	0.5
High temperature stability, F min.	230	248
Granule embedment, Grade G only, max. loss, grams	2	2
Water absorption, % max.	3.2	3
Moisture content, % max.	1	0.1
Low temperature unrolling, F max.	41	41
6B. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 65; Type II: 100	
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	3	
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 150; Type II: 200	
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	3	
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 120; Type II: 180	
Low temperature flexibility, before and after heat conditioning, F, max.	+32	
Dimensional stability, % change, max.	1	
High temperature stability, F min.	230	
Granule embedment, Grade G only, max. loss, grams	2	
Water absorption, % max.	3.2	
Moisture content, % max.	1	
Low temperature unrolling, F max.	41	
7. SEE APPENDIX IF CHECKED		



## APP Modified Bitumen Part 2: Test Results

POLYGLASS USA, NC.	POLYGLASS USA, NC.	POLYGLASS USA, NC.	POLYGLASS USA, NC.	POLYGLASS USA, NC.	POLYGLASS USA, NC.	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS
DUFLEX	DUFLEX 5	DUFLEX G	INSULROOFING	INSULROOFING GRANULAR	INSULBASE	SPEEDWELD APP GRANULATED	SPEEDWELD APP SMOOTH
COMBINATION SMOOTH	COMBINATION SMOOTH	COMBINATION GRANULE	POLYESTER SMOOTH	POLYESTER SMOOTH	POLYESTER SMOOTH	POLYESTER GRANULE	POLYESTER SMOOTH
						X	
							X
		X					
X	X						
			160	160	80		160
						170	
							>80
						>85	
						>40	>40
160	200						
83	102	180					
		97					
						>80	>80
						>40	>40
			100	100	60	>90	>90
			10	10	2	>15	>15
						>50	>50
			80	80	70	>80	>80
			+22	+22	+32	<32	<32
			0.5	0.5	0.01	<1	<1
						230	230
						<2	<2
						<3.2	<3.2
			0.1	0.1	0.1	<1	<1
						<41	<41
65	65	65					
30	30	30					
100	100	100					
8	8	8					
120	120	120					
+22	+22	+22					
0.5	0.5	0.5					
245	248	248					
NA	NA	2					
3	3	3					
0.1	0.1	0.1					
41	41	41					

## APP Modified Bitumen Part 2: Test Results

1. COMPANY NAME	TEXAS REFINERY CORP.	TEXSA S.A.
2. PRODUCT NAME	MIGHTYPLATE	MIN TEXAL-15 FP-S
3. PRODUCT DESCRIPTION		
Reinforcing	POLYESTER	POLYESTER
Top surface	SMOOTH	GRANULE
4. COMPLIES WITH:		
ASTM D 6222-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		
ASTM D 6223-98 <i>Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Material Using Polymer and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS		
Thickness (min., mils) Grade S	Type I: 140; Type II: 150	157
Thickness (min., mils) Grade G	Type I: 160; Type II: 170	158
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 70; Type II: 80	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 85; Type II: 100	
Bottom coating thickness (min., mils)	Type I: 30; Type II: 40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Thickness (min., mils) Grade S	140	
Thickness (min., mils) Grade G	160	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	75	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	90	
Bottom coating thickness (min., mils)	40	
6A. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS		
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 50; Type II: 80	
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	Type I: 23; Type II: 40	
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 60; Type II: 90	180
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	Type I: 10; Type II: 15	45
Elongation at 5% of max. load at 73.4 ±3.6 F, MD and XMD, % min.	Type I: 30; Type II: 50	
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 70; Type II: 80	100
Low temperature flexibility, before and after heat conditioning, F, max.	+32	+10
Dimensional stability, % change, max.	1	0.5
High temperature stability, F min.	230	
Granule embedment, Grade G only, max. loss, grams	2	
Water absorption, % max.	3.2	0.2
Moisture content, % max.	1	0.1
Low temperature unrolling, F max.	41	
6B. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Maximum load at 73.4 ±3.6 F MD and XMD, before and after heat conditioning, lbf/in., min.	Type I: 65; Type II: 100	
Elongation at 73.4 ±3.6 MD and XMD, before and after heat conditioning, at max. load, % min.	3	
Maximum load at 0 ±3.6 F MD and XMD, lbf/in., min.	Type I: 150; Type II: 200	
Elongation at 0 ±3.6 F MD and XMD, at max. load, % min.	3	
Tear strength at 73.4 ±3.6 F, lbf, min	Type I: 120; Type II: 180	
Low temperature flexibility, before and after heat conditioning, F, max.	+32	
Dimensional stability, % change, max.	1	
High temperature stability, F min.	230	
Granule embedment, Grade G only, max. loss, grams	2	
Water absorption, % max.	3.2	
Moisture content, % max.	1	
Low temperature unrolling, F max.	41	
7. SEE APPENDIX IF CHECKED		

## APP Modified Bitumen Part 2: Test Results

U S INTEC, INC.	US 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 SP-4	INTEC GBSP-4	INTEC GBSP-4 FR	INTEC GBSP- 250-FR	FLAME FREE 160S	FLAME FREE BASE	FLAME FREE 160	FLAME FREE 180 FR
POLYESTER SMOOTH	POLYESTER GRANULE	POLYESTER GRANULE	POLYESTER GRANULE	POLY/GLAS SMOOTH	POLY/GLASS SMOOTH	POLY/GLASS GRANULE	POLY/GLASS GRANULE
					X		
	X	X					
X			X			X	X
				X			
140							
	160	160	170				
70							
	85	85	100				
30	30	30	40				
				140	70		
						160	160
				75	80		
						90	90
				40	NA	40	40
50	50	50	80				
40	40	40	40				
70	70	70	90				
15	15	15	15				
30	30	30	50				
70	70	70	80				
23	23	23	23				
1.0	1.0	1.0	1.0				
230	230	230	230				
2	2	2	1.2				
3.2	3.2	3.2	3.2				
1.0	1.0	1.0	1.0				
41	41	41	41				
				125	85	125	130
				3	5	3	3
				230	165	230	220
				3	4	3	3
				203	120	203	230
				3	3	3	3
				0.3	0.1	0.2	0.2
				230	230	230	230
				2	2	1.2	1.2
				3.2	3.2	3.2	3.2
				1.0	1.1	1	1
				41	41	41	41

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		ALLIED SIGNAL, INC.	
2. PRODUCT NAME		MILLENNIUM BASE SHEET	MILLENNIUM SMOOTH
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		FIBERGLASS	FIBERGLASS
Top surface (indicate granule or smooth)		SMOOTH	SMOOTH
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 70; Type II: 80			
Thickness (min., mils) Grade G Type I: 110; Type II: 130			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 45; Type II: 50			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 60; Type II: 75			
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S 80		80	120
Thickness (min., mils) Grade G Type I: 95; Type II: 105			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S 45		54	84
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 65; Type II: 75			
Bottom coating thickness (min., mils)		40	40
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 85; Type II: 115			
Thickness (min., mils) Grade G 130			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 54; Type II: 70			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 75; Type II: 90			
Bottom coating thickness (min., mils)		40	
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 125			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 80			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 2; Type II: 4			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 26; Type II: 75			
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 9; Type II: 30			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 65; Type II: 90			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 0.5			
Compound stability at 225 F no failures			
Granule embedment, Grade G only, max., grams 2			
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 150		93	94
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning Type I: 1; Type II: 2		2.8	3.2
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 30; Type II: 80		72	72
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 2; Type II: 4		2.9	3.3
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 3; Type II: 40			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 3; Type II: 20			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 35; Type II: 110		104	104
Low temperature flexibility, before and after heat conditioning, F, max. 0		-60	-60
Dimensional stability, % max. 0.5		0.1	0.1
Compound stability at 215 F no failures		220	220
Granule embedment, Grade G only, max. grams 2			
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 100			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning 20			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 50; Type II: 100			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 35; Type II: 50			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning Type I: 38; Type II: 60			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 55; Type II: 70			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 1			
Compound stability at 215 F no failures			
Granule embedment, Grade G only, max. grams 2			
7. SEE APPENDIX IF CHECKED			

## SBS Modified Bitumen Part 2: Test Results

ALLIED SIGNAL, INC.			BITEC INC.				
MILLENIU GMC	MILLENIU SPM	MILLENIU GPM	MDS	SPM-4.5T	SPM-3.5H	SFM-3.5H	SPM-4H
FIBERGLASS GRANULE	POLY/SCRIM SMOOTH	POLY/SCRIM	POLYESTER GRANULE	POLYESTER GRANULE	POLYESTER GRANULE	FIBERGLASS GRANULE	POLYESTER GRANULE
						X N/A N/A N/A	
			X N/A N/A N/A	X N/A N/A N/A	X N/A N/A N/A		X N/A N/A N/A
	120	150					
	85	100					
	40	40					
150 100						140	
40						100 70	
			160	180	140		160
			108 55	123 61	100 50		108 80
	103 31 71 36	103 31 77 36					
	124 -60 0.5 220	124 -60 0.5 220					
95 3.3 81 4.5						88.5 2.7 57.5 3.9 48.9 34.5 126 0 0.06 no failures <2	
105 -60 0.1 220							
			76.7 22.1 60.4 57.1 60.4 84.5 0 ≤1 no failures <2	76.7 22.1 60.4 57.1 60.4 84.5 0 ≤1 no failures <2	76.7 22.1 60.4 57.4 60.4 84.5 0 ≤1 no failures <2		76.7 22.1 60.4 57.4 60.4 84.5 0 ≤1 no failures <2

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		BITEC, INC.	
2. PRODUCT NAME		SPM-4H/250	SPS-3H
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		POLYESTER	POLYESTER
Top surface (indicate granule or smooth)		GRANULE	SMOOTH
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)		X	X
Type I, Grade S (smooth surfaced)		N/A	N/A
Type II, Grade G (granule surfaced)		N/A	N/A
Type II, Grade S (smooth surfaced)		N/A	N/A
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 70; Type II: 80			
Thickness (min., mils) Grade G Type I: 110; Type II: 130			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 45; Type II: 50			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 60; Type II: 75			
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S 80			
Thickness (min., mils) Grade G Type I: 95; Type II: 105			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S 45			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 65; Type II: 75			
Bottom coating thickness (min., mils)		40	
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 85; Type II: 115			120
Thickness (min., mils) Grade G 130		160	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 54; Type II: 70			73
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 75; Type II: 90		108	
Bottom coating thickness (min., mils)		40	60
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 125			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 80			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 2; Type II: 4			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 26; Type II: 75			
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 9; Type II: 30			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 65; Type II: 90			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 0.5			
Compound stability at 225 F no failures			
Granule embedment, Grade G only, max., grams 2			
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 150			
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 30; Type II: 80			
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning Type I: 2; Type II: 4			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 3; Type II: 40			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 3; Type II: 20			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 35; Type II: 110			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 0.5			
Compound stability at 215 F no failures			
Granule embedment, Grade G only, max. grams 2			
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 100		76.7	76.7
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning 20		22.1	22.1
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 50; Type II: 100		60.4	60.4
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 35; Type II: 50		57.4	57.4
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning Type I: 38; Type II: 60		60.4	60.4
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 55; Type II: 70		84.5	84.5
Low temperature flexibility, before and after heat conditioning, F, max. 0		0	0
Dimensional stability, % max. 1		≤1	≤1
Compound stability at 215 F no failures		no failures	no failures
Granule embedment, Grade G only, max. grams 2		<2	<2
7. SEE APPENDIX IF CHECKED			

## SBS Modified Bitumen Part 2: Test Results

[illegible]

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME	BITEC, INC.	CERTAINTED
2. PRODUCT NAME	FS-40	FLINTASTIC GMS PREMIUM
3. PRODUCT DESCRIPTION		
Reinforcing (indicate polyester or combination)	FIBERGLASS	POLYESTER
Top surface (indicate granule or smooth)	GRANULE	GRANULE
COMPLIES WITH:		
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		X
Type II, Grade S (smooth surfaced)		
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Thickness (min., mils) Grade S	Type I: 70; Type II: 80	
Thickness (min., mils) Grade G	Type I: 110; Type II: 130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 45; Type II: 50	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 60; Type II: 75	
Bottom coating thickness (heat welding application products min., mils)	40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS		
Thickness (min., mils) Grade S	80	
Thickness (min., mils) Grade G	Type I: 95; Type II: 105	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	45	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 65; Type II: 75	
Bottom coating thickness (min., mils)	40	
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS		
Thickness (min., mils) Grade S	Type I: 85; Type II: 115	
Thickness (min., mils) Grade G	130	180
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 54; Type II: 70	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 75; Type II: 90	105
Bottom coating thickness (min., mils)	40	60
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 75; Type II: 125	
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 1; Type II: 2	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 75; Type II: 80	
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 2; Type II: 4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured	Type I: 26; Type II: 75	
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning	Type I: 9; Type II: 30	
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 65; Type II: 90	
Low temperature flexibility, before and after heat conditioning, F, max.	0	
Dimensional stability, % max.	0.5	
Compound stability at 225 F	no failures	
Granule embedment, Grade G only, max., grams	2	
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS		
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 70; Type II: 150	
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning	Type I: 1; Type II: 2	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 30; Type II: 80	
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning	Type I: 2; Type II: 4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured	Type I: 3; Type II: 40	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning	Type I: 3; Type II: 20	
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 35; Type II: 110	
Low temperature flexibility, before and after heat conditioning, F, max.	0	
Dimensional stability, % max.	0.5	
Compound stability at 215 F	no failures	
Granule embedment, Grade G only, max. grams	2	
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS		
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 70; Type II: 100	134
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning	20	56
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 50; Type II: 100	94
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 35; Type II: 50	79
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning	Type I: 38; Type II: 60	83
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 55; Type II: 70	126
Low temperature flexibility, before and after heat conditioning, F, max.	0	-15
Dimensional stability, % max.	1	0.5
Compound stability at 215 F	no failures	250
Granule embedment, Grade G only, max. grams	2	2.0
7. SEE APPENDIX IF CHECKED		



## SBS Modified Bitumen Part 2: Test Results

CERTAINTED ROOFING PRODUCTS GROUP							
FLINTASTIC FR-P	FLINTLASTIC FR-P PREMIUM	FLEX-I-GLAS FR BASE SHEET	FLINTASTIC FR CAP	POLY SMS BASE SHEET	BLACK DIAMOND BASE SHEET	FLEXIGLAS BASE SHEET	FLEXIGLAS PREMIUM CAP 960
POLYESTER GRANULE	POLYESTER GRANULE	FIBERGLASS SMOOTH	FIBERGLASS SMOOTH	POLYESTER SMOOTH	FIBERGLASS GRANULE	FIBERGLASS SMOOTH	FIBERGLASS GRANULE
		X	X				X
X							
	X						
		92	140		50	80	160
		60	90		40	30	100
		60	60		20	30	60
172	180			90			
105	105			45			
60	60			40			
		90	90		55	55	55
		1.5	1.5		1.5	1.5	3
		65	66		49	49	88
		2.5	2.5		3	3	5
		5	5		5	5	50
		5	5		5	5	40
		50	50		40	40	130
		-15	-15		-20	-8	-5
		0.1	0.1		0.1	0.1	0.1
		250	250		250	250	250
					1.0		1.8
103	134			103			
48	56			48			
70	94			70			
64	79			64			
70	83			70			
100	126			108			
-15				100			
0.5	0.5			-15			
250	250			0.5			
2.0	2.0			250			

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		CERTAINT EED	
2. PRODUCT NAME		FLINTLASTIC GTS	FLINTASTIC GMS
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		POLYESTER	POLYESTER
Top surface (indicate granule or smooth)		GRANULE	GRANULE
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			X
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)		X	
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 70; Type II: 80			
Thickness (min., mils) Grade G Type I: 110; Type II: 130			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 45; Type II: 50			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 60; Type II: 75			
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S 80			
Thickness (min., mils) Grade G Type I: 95; Type II: 105			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S 45			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 65; Type II: 75			
Bottom coating thickness (min., mils)		40	
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 85; Type II: 115			
Thickness (min., mils) Grade G 130		180	160
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 54; Type II: 70			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 75; Type II: 90		112	100
Bottom coating thickness (min., mils)		40	60
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 125			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 80			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 2; Type II: 4			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 26; Type II: 75			
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 9; Type II: 30			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 65; Type II: 90			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 0.5			
Compound stability at 225 F no failures			
Granule embedment, Grade G only, max., grams 2			
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 150			
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 30; Type II: 80			
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning Type I: 2; Type II: 4			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 3; Type II: 40			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 3; Type II: 20			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 35; Type II: 110			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 0.5			
Compound stability at 215 F no failures			
Granule embedment, Grade G only, max. grams 2			
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 100		134	103
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning 20		56	48
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 50; Type II: 100		94	70
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 35; Type II: 50		79	74
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning Type I: 38; Type II: 60		83	70
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 55; Type II: 70		110	100
Low temperature flexibility, before and after heat conditioning, F, max. 0		-15	-15
Dimensional stability, % max. 1		0.5	0.5
Compound stability at 215 F no failures		250	250
Granule embedment, Grade G only, max. grams 2		2.0	2.0
7. SEE APPENDIX IF CHECKED			

## SBS Modified Bitumen Part 2: Test Results

[illegible]

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME	DANOSA	DERMABIT
2. PRODUCT NAME	ESTERDAN RM-PLUS	ELASPHALT 4170 SMOOTH
3. PRODUCT DESCRIPTION		
Reinforcing (indicate polyester or combination)	POLYESTER	POLYESTER
Top surface (indicate granule or smooth)	GRANULE	SMOOTH
COMPLIES WITH:		
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		X
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Thickness (min., mils) Grade S	Type I: 70; Type II: 80	
Thickness (min., mils) Grade G	Type I: 110; Type II: 130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 45; Type II: 50	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 60; Type II: 75	
Bottom coating thickness (heat welding application products min., mils)	40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS		
Thickness (min., mils) Grade S	80	
Thickness (min., mils) Grade G	Type I: 95; Type II: 105	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	45	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 65; Type II: 75	
Bottom coating thickness (min., mils)	40	
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS		
Thickness (min., mils) Grade S	Type I: 85; Type II: 115	160
Thickness (min., mils) Grade G	130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 54; Type II: 70	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 75; Type II: 90	96
Bottom coating thickness (min., mils)	40	
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 75; Type II: 125	
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 1; Type II: 2	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 75; Type II: 80	
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 2; Type II: 4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured	Type I: 26; Type II: 75	
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning	Type I: 9; Type II: 30	
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 65; Type II: 90	
Low temperature flexibility, before and after heat conditioning, F, max.	0	
Dimensional stability, % max.	0.5	
Compound stability at 225 F	no failures	
Granule embedment, Grade G only, max., grams	2	
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS		
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 70; Type II: 150	
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning	Type I: 1; Type II: 2	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 30; Type II: 80	
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning	Type I: 2; Type II: 4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured	Type I: 3; Type II: 40	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning	Type I: 3; Type II: 20	
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 35; Type II: 110	
Low temperature flexibility, before and after heat conditioning, F, max.	0	
Dimensional stability, % max.	0.5	
Compound stability at 215 F	no failures	
Granule embedment, Grade G only, max. grams	2	
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS		
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 70; Type II: 100	70
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning	20	20
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 50; Type II: 100	50
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 35; Type II: 50	35
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning	Type I: 38; Type II: 60	38
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 55; Type II: 70	55
Low temperature flexibility, before and after heat conditioning, F, max.	0	0
Dimensional stability, % max.	1	1
Compound stability at 215 F	no failures	no failures
Granule embedment, Grade G only, max. grams	2	2.0
7. SEE APPENDIX IF CHECKED		

## SBS Modified Bitumen Part 2: Test Results

DERMABIT	ECOLOGY ROOF SYSTEMS						
ELASPHALT 4170 GRANULE	ERS 501	ERS 502	EPS 503	ERS 504	ERS 505	ERS 507	ERS 602
POLYESTER GRANULE	POLYESTER SMOOTH	POLYESTER GRANULE	POLYESTER SMOOTH	POLYESTER GRANULE	FIBERGLASS GRANULE	FIBERGLASS GRANULE	POLY/GLASS SMOOTH
X				X			
			X				X
					X	X	
		X					
	X						
			135				135
			85	160			85
			40	85			40
				40			
					120		
					78	115	
						73	
					40	40	
160	130						
	78	160					
		78					
	40	40					
			128	128			128
			28	28			28
			96	96			96
			8	8			8
			86	86			86
			38	38			38
			120	120			120
			0	0			0
			0.7	0.7			0.7
			no failures	no failures			no failures
					155	150	
					3	3	
					90	90	
					6	6	
					42	42	
					24	24	
					115	115	
					0	0	
					0.6	0.6	
					no failures	no failures	
						4	
70	109.25	109.25					
20	22	22					
50	110	110					
35	58	58					
55	74	74					
38	148	148					
55	0	0					
0	1	1					
no failures	no failures	no failures					
2		4					

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		ECOLOGY ROOF SYSTEMS	
2. PRODUCT NAME		ERS 603	ERS 604
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		POLY/GLASS	POLY/GLASS
Top surface (indicate granule or smooth)		GRANULE	GRANULE
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)		X	X
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 70; Type II: 80			
Thickness (min., mils) Grade G Type I: 110; Type II: 130		160	160
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 45; Type II: 50			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 60; Type II: 75		85	85
Bottom coating thickness (heat welding application products min., mils)		40	40
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S		80	
Thickness (min., mils) Grade G Type I: 95; Type II: 105			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		45	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 65; Type II: 75			
Bottom coating thickness (min., mils)		40	
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 85; Type II: 115			
Thickness (min., mils) Grade G		130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 54; Type II: 70			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 75; Type II: 90			
Bottom coating thickness (min., mils)		40	
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 125		128	128
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning Type I: 1; Type II: 2		28	28
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 80		96	96
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 2; Type II: 4		8	8
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 26; Type II: 75		86	86
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 9; Type II: 30		38	38
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 65; Type II: 90		120	120
Low temperature flexibility, before and after heat conditioning, F, max.		0	0
Dimensional stability, % max.		0.5	0.7
Compound stability at 225 F		no failures	no failures
Granule embedment, Grade G only, max., grams		2	4
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 150			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 30; Type II: 80			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 2; Type II: 4			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 3; Type II: 40			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 3; Type II: 20			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 35; Type II: 110			
Low temperature flexibility, before and after heat conditioning, F, max.		0	
Dimensional stability, % max.		0.5	
Compound stability at 215 F		no failures	
Granule embedment, Grade G only, max. grams		2	
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 100			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning		20	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 50; Type II: 100			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 35; Type II: 50			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning Type I: 38; Type II: 60			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 55; Type II: 70			
Low temperature flexibility, before and after heat conditioning, F, max.		0	
Dimensional stability, % max.		1	
Compound stability at 215 F		no failures	
Granule embedment, Grade G only, max. grams		2	
7. SEE APPENDIX IF CHECKED			

## SBS Modified Bitumen Part 2: Test Results

ECOLOGY	FIRESTONE BUILDING PRODUCTS						
ERS 703	SBS BASE SHEET	SBS PREMIUM BASE SHEET	SBS SMOOTH	SBS	SBS FR	SBS PREMIUM	SBS PREMIUM FR
FIBERGLASS	FIBERGLASS	FIBERGLASS	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER
ALUMINUM	SMOOTH	SMOOTH	SMOOTH	GRANULE	GRANULE	GRANULE	GRANULE
X							
90	90						
150	54	54					
73							
40							
			145				
				150	150	160	160
			86	91	91	101	101
160	70	70					
2	1	1					
90	30	30					
4	2	2					
42							
20							
110	35	35					
0	0	0					
0.5	0.5	0.5					
no failures	>225	>225					
			70	70	70	100	100
			30	30	30	20	20
			50	50	50	70	70
			35	35	35	50	50
			55	55	55	70	70
			0	0	0	0	0
			1	1	1	1	1
			225	225	225	225	225
					2	2	2

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		FIRESTONE	
2. PRODUCT NAME		SBS TORCH	SBS FLASHING
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		POLYESTER	POLYESTER
Top surface (indicate granule or smooth)		GRANULE	GRANULE
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S		Type I: 70; Type II: 80	
Thickness (min., mils) Grade G		Type I: 110; Type II: 130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		Type I: 45; Type II: 50	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 60; Type II: 75	
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S		80	
Thickness (min., mils) Grade G		Type I: 95; Type II: 105	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		45	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 65; Type II: 75	
Bottom coating thickness (min., mils)		40	
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S		Type I: 85; Type II: 115	
Thickness (min., mils) Grade G		130	150
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		Type I: 54; Type II: 70	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 75; Type II: 90	93
Bottom coating thickness (min., mils)		40	40
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 75; Type II: 125	
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 1; Type II: 2	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 75; Type II: 80	
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 2; Type II: 4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured		Type I: 26; Type II: 75	
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning		Type I: 9; Type II: 30	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 65; Type II: 90	
Low temperature flexibility, before and after heat conditioning, F, max.		0	
Dimensional stability, % max.		0.5	
Compound stability at 225 F		no failures	
Granule embedment, Grade G only, max., grams		2	
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 70; Type II: 150	
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning		Type I: 1; Type II: 2	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 30; Type II: 80	
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning		Type I: 2; Type II: 4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured		Type I: 3; Type II: 40	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning		Type I: 3; Type II: 20	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 35; Type II: 110	
Low temperature flexibility, before and after heat conditioning, F, max.		0	
Dimensional stability, % max.		0.5	
Compound stability at 215 F		no failures	
Granule embedment, Grade G only, max. grams		2	
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 70; Type II: 100	70
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning		20	20
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 50; Type II: 100	50
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 35; Type II: 50	35
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning		Type I: 38; Type II: 60	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 55; Type II: 70	55
Low temperature flexibility, before and after heat conditioning, F, max.		0	0
Dimensional stability, % max.		1	1
Compound stability at 215 F		no failures	225
Granule embedment, Grade G only, max. grams		2	2
7. SEE APPENDIX IF CHECKED			



## SBS Modified Bitumen Part 2: Test Results

[illegible]

# SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		GAF MATERIALS CORP	
2. PRODUCT NAME		RUBEROID 30	RUBEROID 30 FR
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		FIBERGLASS	FIBERGLASS
Top surface (indicate granule or smooth)		GRANULE	GRANULE
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)		X	X
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 70; Type II: 80			
Thickness (min., mils) Grade G Type I: 110; Type II: 130			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 45; Type II: 50			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 60; Type II: 75			
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S 80			
Thickness (min., mils) Grade G Type I: 95; Type II: 105		160	130
Net mass per unit area (min., lbs./100 sq. ft.) Grade S 45			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 65; Type II: 75		65	65
Bottom coating thickness (min., mils)		40	NA
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 85; Type II: 115			
Thickness (min., mils) Grade G 130			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 54; Type II: 70			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 75; Type II: 90			
Bottom coating thickness (min., mils)		40	
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 125			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 80			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 2; Type II: 4			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 26; Type II: 75			
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 9; Type II: 30			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 65; Type II: 90			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 0.5			
Compound stability at 225 F no failures			
Granule embedment, Grade G only, max., grams 2			
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 150		70	70
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning Type I: 1; Type II: 2		2	2
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 30; Type II: 80		40	40
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning Type I: 2; Type II: 4		2	2
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 3; Type II: 40		3	3
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 3; Type II: 20		3	3
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 35; Type II: 110		40	40
Low temperature flexibility, before and after heat conditioning, F, max. 0		0	0
Dimensional stability, % max. 0.5		0.5	0.5
Compound stability at 215 F no failures		215	215
Granule embedment, Grade G only, max. grams 2		2	2
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 100			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning 20			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 50; Type II: 100			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 35; Type II: 50			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning Type I: 38; Type II: 60			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 55; Type II: 70			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 1			
Compound stability at 215 F no failures			
Granule embedment, Grade G only, max. grams 2			
7. SEE APPENDIX IF CHECKED			

## SBS Modified Bitumen Part 2: Test Results

GAF MATERIALS CORP.							
RUBEROID MOP (SMOOTH)	RUBERIOD SBS HW (SMOOTH)	RUBEROID SBS HW (GRANULES)	RUBEROID SBS HW (FR)	RUBEROID SBS HW (PLUS)	RUBEROID SBS HW (PLUS FR)	MODIFIED BASE SHEET	MODIFIED CAP SHEET 601+
POLYESTER SMOOTH	POLYESTER SMOOTH	POLYESTER GRANULE	POLYESTER GRANULE	POLYESTER GRANULE	POLYESTER GRANULE	FIBERGLASS SMOOTH	FIBERGLASS GRANULE
						X	X
X	X	X	X	X	X		
						18.9	
						80	
							130
						45	
							65
						NA	NA
140	149						
54	54	145	145	145	145		
		75	75	90	90		
40	40	40	40	40	40		
					4		
						70	70
						1	2
						30	40
						1	2
						3	3
						3	3
						35	40
						0	0
						0.5	0.5
						215	215
						NA	2
70	70	70	70	100	100		
20	20	20	20	20	20		
50	50	50	50	70	70		
40	40	40	40	50	50		
40	40	40	40	60	60		
70	70	70	70	70	70		
0	0	0	0	0	0		
1.0	1.0	1.0	1.0	1.0	1.0		
215	215	215	215	215	215		
NA	NA	2	2	2	2		

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME	GAF	IKO IND.
2. PRODUCT NAME	ULTRA CLAD SBS	MODIFLEX MP-180-CAP
3. PRODUCT DESCRIPTION		
Reinforcing (indicate polyester or combination)	FIBERGLASS	POLYESTER
Top surface (indicate granule or smooth)	FOIL	GRANULE
COMPLIES WITH:		
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)	X	
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		X
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Thickness (min., mils) Grade S	Type I: 70; Type II: 80	
Thickness (min., mils) Grade G	Type I: 110; Type II: 130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 45; Type II: 50	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 60; Type II: 75	
Bottom coating thickness (heat welding application products min., mils)	40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS		
Thickness (min., mils) Grade S	80	
Thickness (min., mils) Grade G	Type I: 95; Type II: 105	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	45	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 65; Type II: 75	
Bottom coating thickness (min., mils)	40	NA
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS		
Thickness (min., mils) Grade S	Type I: 85; Type II: 115	
Thickness (min., mils) Grade G	130	138
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 54; Type II: 70	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 75; Type II: 90	88
Bottom coating thickness (min., mils)	40	
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 75; Type II: 125	125
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 1; Type II: 2	2
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 75; Type II: 80	80
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 2; Type II: 4	4
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured	Type I: 26; Type II: 75	75
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning	Type I: 9; Type II: 30	30
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 65; Type II: 90	90
Low temperature flexibility, before and after heat conditioning, F, max.	0	0
Dimensional stability, % max.	0.5	0.5
Compound stability at 225 F	no failures	225
Granule embedment, Grade G only, max., grams	2	NA
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS		
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 70; Type II: 150	
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning	Type I: 1; Type II: 2	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 30; Type II: 80	
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning	Type I: 2; Type II: 4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured	Type I: 3; Type II: 40	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning	Type I: 3; Type II: 20	
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 35; Type II: 110	
Low temperature flexibility, before and after heat conditioning, F, max.	0	
Dimensional stability, % max.	0.5	
Compound stability at 215 F	no failures	
Granule embedment, Grade G only, max. grams	2	
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS		
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 70; Type II: 100	
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning	20	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 50; Type II: 100	70
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 35; Type II: 50	50
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning	Type I: 38; Type II: 60	
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 55; Type II: 70	85
Low temperature flexibility, before and after heat conditioning, F, max.	0	-5
Dimensional stability, % max.	1	0.35
Compound stability at 215 F	no failures	no failures
Granule embedment, Grade G only, max. grams	2	0.4
7. SEE APPENDIX IF CHECKED		

## SBS Modified Bitumen Part 2: Test Results

[illegible]

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		IKO INDUSTRIES INC.	
2. PRODUCT NAME		TORCHFLEX TF-95-FF-BASE	TORCHFLEX TF-95-FF-BASE (22)
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		FIBERGLASS	FIBERGLASS
Top surface (indicate granule or smooth)		SMOOTH	SMOOTH
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)		X	X
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 70; Type II: 80			
Thickness (min., mils) Grade G Type I: 110; Type II: 130			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 45; Type II: 50			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 60; Type II: 75			
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S 80		118	87
Thickness (min., mils) Grade G Type I: 95; Type II: 105			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S 45		79	56
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 65; Type II: 75			
Bottom coating thickness (min., mils)		40	
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 85; Type II: 115			
Thickness (min., mils) Grade G 130			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 54; Type II: 70			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 75; Type II: 90			
Bottom coating thickness (min., mils)		40	
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 125			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 80			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 2; Type II: 4			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 26; Type II: 75			
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 9; Type II: 30			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 65; Type II: 90			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 0.5			
Compound stability at 225 F no failures			
Granule embedment, Grade G only, max., grams 2			
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 150			
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 30; Type II: 80		55	55
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 2; Type II: 4		4	4
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 3; Type II: 40			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 3; Type II: 20			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 35; Type II: 110		73	
Low temperature flexibility, before and after heat conditioning, F, max. 0		-22	-22
Dimensional stability, % max. 0.5		0.0	
Compound stability at 215 F no failures		no failures	
Granule embedment, Grade G only, max. grams 2			
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 100			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning 20			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 50; Type II: 100			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 35; Type II: 50			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning Type I: 38; Type II: 60			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 55; Type II: 70			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 1			
Compound stability at 215 F no failures			
Granule embedment, Grade G only, max. grams 2			
7. SEE APPENDIX IF CHECKED			

## SBS Modified Bitumen Part 2: Test Results

IKO INDUSTRIES, INC.					JOHNS MANVILLE INTERNATIONAL INC.		
TORCHFLEX TP-180-FF-BASE	ARMOUR BOND 95	ARMOUR BOND 180	ARMOUR BRIDGE/PONT	ARMOUR GARD ICE & WATER	DYNAGLAS	DYNAPLY	DYNAGLAS FR
POLYESTER SMOOTH	FIBERGLASS SMOOTH	POLYESTER SMOOTH	POLYESTER GRANULE	FIBERGLASS SAND	FIBERGLASS GRANULE	COMBINATION GRANULE	FIBERGLASS GRANULE
						X	
	X				X		X
X		X					
						125	
						87	
118	98			63	150		150
75	63			37	90		100
		118					
		75	217				
			144				
						125	
						4	
						80	
						6	
						75	
						125	
						125	
						-10	
						0.2	
						no failures	
					95		95
					4		4
74	55			45	58		55
	4			4	5		5
					8		8
					5		5
75	73				100		100
-15	-22			-22	-10		-10
0.5	0.0			0.0	0.2		0.2
no failures	no failures			212	no failures		no failures
					2		2
70		74	74				
50							
		75	85				
-5		-15	-4				
0.35		0.5	0.5				
no failures		no failures	no failures				
			0.4				

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		JOHNS MANVILLE	
2. PRODUCT NAME		DYNALASTIC 250	DYNALASTIC 180
3. PRODUCT DESCRIPTION		POLYESTER	POLYESTER
Reinforcing (indicate polyester or combination)		GRANULE	GRANULE
Top surface (indicate granule or smooth)			
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			X
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)		X	
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 70; Type II: 80			
Thickness (min., mils) Grade G Type I: 110; Type II: 130			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 45; Type II: 50			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 60; Type II: 75			
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S 80			
Thickness (min., mils) Grade G Type I: 95; Type II: 105			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S 45			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 65; Type II: 75			
Bottom coating thickness (min., mils)		40	
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 85; Type II: 115			
Thickness (min., mils) Grade G 130		160	150
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 54; Type II: 70			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 75; Type II: 90		100	100
Bottom coating thickness (min., mils)		40	
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 125			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 80			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 2; Type II: 4			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 26; Type II: 75			
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 9; Type II: 30			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 65; Type II: 90			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 0.5			
Compound stability at 225 F no failures			
Granule embedment, Grade G only, max., grams 2			
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 150			
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 30; Type II: 80			
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning Type I: 2; Type II: 4			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 3; Type II: 40			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 3; Type II: 20			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 35; Type II: 110			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 0.5			
Compound stability at 215 F no failures			
Granule embedment, Grade G only, max. grams 2			
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 100		115	80
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning 20		45	35
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 50; Type II: 100		125	54
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 35; Type II: 50		94	57
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning Type I: 38; Type II: 60		60	40
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 55; Type II: 70		120	80
Low temperature flexibility, before and after heat conditioning, F, max. 0		-10	-10
Dimensional stability, % max. 1		0.7	0.7
≤1 Compound stability at 215 F no failures		no failures	no failures
Granule embedment, Grade G only, max. grams 2		2	2
7. SEE APPENDIX IF CHECKED			



## SBS Modified Bitumen Part 2: Test Results

JOHNS MANVILLE INTERNATIONAL							
DYNALASTIC 180 FR	DYNAGLAS 30 FR	DYNABASE	DYNALASTIC 180S	DYNALASTIC 250 FR	DYNAMAX	DYNAMAX FR	DYNAKAP
POLYESTER GRANULE	FIBERGLASS GRANULE	FIBERGLASS GRANULE	POLYESTER GRANULE	POLYESTER GRANULE	COMBINATION GRANULE	COMBINATION GRANULE	COMBINATION GRANULE
X			X				
	X						
		X					
				X			
					160	180	160
					99	115	115
	130	100					
	90	50					
150			118	160			
85			90	100			
					300	300	150
					4	4	4
					308	308	81
					7	7	5
					100	100	75
					50	50	30
					350	350	125
					-20	-15	-10
					0.2	0.2	0.2
					no failures	no failures	no failures
					2	2	2
	85	70					
	3	4					
	50	41					
	5	5					
	6	6					
	4	4					
	90	90					
	-10	-10					
	0.2	0.2					
	no failures	no failures					
	2						
80			80	15			
35			35	45			
50			54	125			
48			57	90			
40			40	60			
80			80	120			
-10			-10	-10			
0.7			0.7	0.7			
no failures			no failures	no failures			
2				2			

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		MANVILLE	MALARKEY
2. PRODUCT NAME		DYNAKAP FR	PREMIUM SBS 601
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		COMBINATION	COMBINATION
Top surface (indicate granule or smooth)		GRANULE	GRANULE
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S	Type I: 70; Type II: 80		
Thickness (min., mils) Grade G	Type I: 110; Type II: 130	160	120
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 45; Type II: 50		
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 60; Type II: 75	115	102
Bottom coating thickness (heat welding application products min., mils)	40		
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S	80		
Thickness (min., mils) Grade G	Type I: 95; Type II: 105		
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	45		
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 65; Type II: 75		
Bottom coating thickness (min., mils)	40		
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S	Type I: 85; Type II: 115		
Thickness (min., mils) Grade G	130		
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 54; Type II: 70		
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 75; Type II: 90		
Bottom coating thickness (min., mils)	40		
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 75; Type II: 125	150	100
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 1; Type II: 2	4	4
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 75; Type II: 80	81	
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 2; Type II: 4	5	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured	Type I: 26; Type II: 75	75	
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning	Type I: 9; Type II: 30	30	
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 65; Type II: 90	125	90
Low temperature flexibility, before and after heat conditioning, F, max.	0	-10	
Dimensional stability, % max.	0.5	0.2	
Compound stability at 225 F	no failures	no failures	
Granule embedment, Grade G only, max., grams	2	2	0.5
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 70; Type II: 150		
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 1; Type II: 2		
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 30; Type II: 80		
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 2; Type II: 4		
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured	Type I: 3; Type II: 40		
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning	Type I: 3; Type II: 20		
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 35; Type II: 110		
Low temperature flexibility, before and after heat conditioning, F, max.	0		
Dimensional stability, % max.	0.5		
Compound stability at 215 F	no failures		
Granule embedment, Grade G only, max. grams	2		
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 70; Type II: 100		
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning	20		
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 50; Type II: 100		
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 35; Type II: 50		
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning	Type I: 38; Type II: 60		
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 55; Type II: 70		
Low temperature flexibility, before and after heat conditioning, F, max.	0		
Dimensional stability, % max.	1		
Compound stability at 215 F	no failures		
Granule embedment, Grade G only, max. grams	2		
7. SEE APPENDIX IF CHECKED			

## SBS Modified Bitumen Part 2: Test Results

MALARKEY		MONSEY BAKOR - DIV. OF HENRY CO.					
PARAGON SBS 625	PANOPLY SBS 650	G100 s/s	G 100 p/s	G 100 p/p	NP 180 s/s	NP 180 p/p	NP 180 p/s
FIBERGLASS GRANULE	FIBERGLASS GRANULE	GLASS SMOOTH	GLASS SMOOTH	GLASS SMOOTH	POLYESTER SMOOTH	POLYESTER SMOOTH	POLYESTER SMOOTH
X		X	X	X			
					X	X	X
125	150	80	91	87		120	
102	120	51	56	57		77	
						40	
					87		90
					92	200	52
110	200	127	132	150			
65	105	4	4.2	4.2			
4	4	51	44	41			
		2.9	3	3.2			
		83	90	98			
		-15	-10	0			
		0.1	0.7	.13			
0.5	0.5	pass	pass	pass			
					88	88	90
					37	37	40
					68	68	73
					60	60	51
					88	88	80
					-10	-10	-10
					.48	.24	.93
					pass	pass	pass

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		MONSEY BAKOR DIVISION	
2. PRODUCT NAME		G 100gMFR	170 MOP GRANULE
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		GLASS	POLYESTER
Top surface (indicate granule or smooth)		GRANULE	GRANULE
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)		X	
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			X
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S		Type I: 70; Type II: 80	
Thickness (min., mils) Grade G		Type I: 110; Type II: 130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		Type I: 45; Type II: 50	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 60; Type II: 75	
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S		80	
Thickness (min., mils) Grade G		Type I: 95; Type II: 105	157
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		45	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 65; Type II: 75	114
Bottom coating thickness (min., mils)		40	40
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S		Type I: 85; Type II: 115	
Thickness (min., mils) Grade G		130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		Type I: 54; Type II: 70	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 75; Type II: 90	
Bottom coating thickness (min., mils)		40	
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 75; Type II: 125	
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 1; Type II: 2	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 75; Type II: 80	
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 2; Type II: 4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured		Type I: 26; Type II: 75	
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning		Type I: 9; Type II: 30	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 65; Type II: 90	
Low temperature flexibility, before and after heat conditioning, F, max.		0	
Dimensional stability, % max.		0.5	
Compound stability at 225 F		no failures	
Granule embedment, Grade G only, max., grams		2	
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 70; Type II: 150	102
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning		Type I: 1; Type II: 2	5.0
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 30; Type II: 80	53
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning		Type I: 2; Type II: 4	19.5
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured		Type I: 3; Type II: 40	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning		Type I: 3; Type II: 20	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 35; Type II: 110	93
Low temperature flexibility, before and after heat conditioning, F, max.		0	0
Dimensional stability, % max.		0.5	0.06
Compound stability at 215 F		no failures	pass
Granule embedment, Grade G only, max. grams		2	0.27
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 70; Type II: 100	116
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning		20	28
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 50; Type II: 100	61
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 35; Type II: 50	55
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning		Type I: 38; Type II: 60	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 55; Type II: 70	87
Low temperature flexibility, before and after heat conditioning, F, max.		0	-10
Dimensional stability, % max.		1	.34
Compound stability at 215 F		no failures	pass
Granule embedment, Grade G only, max. grams		2	2.0
7. SEE APPENDIX IF CHECKED			

## SBS Modified Bitumen Part 2: Test Results

[illegible]

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME	MONSEY	POLYGLASS
2. PRODUCT NAME	NP 250gT FR	ELASTOSHIELD TS 4
3. PRODUCT DESCRIPTION		
Reinforcing (indicate polyester or combination)	POLYESTER	POLYESTER
Top surface (indicate granule or smooth)	GRANULE	GRANULE
COMPLIES WITH:		
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)		
Type II, Grade S (smooth surfaced)		
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)		
Type I, Grade G (granule surfaced)		X
Type I, Grade S (smooth surfaced)		
Type II, Grade G (granule surfaced)	X	
Type II, Grade S (smooth surfaced)		
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Thickness (min., mils) Grade S	Type I: 70; Type II: 80	
Thickness (min., mils) Grade G	Type I: 110; Type II: 130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 45; Type II: 50	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 60; Type II: 75	
Bottom coating thickness (heat welding application products min., mils)	40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS		
Thickness (min., mils) Grade S	80	
Thickness (min., mils) Grade G	Type I: 95; Type II: 105	151
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	45	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 65; Type II: 75	99
Bottom coating thickness (min., mils)	40	40
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS		
Thickness (min., mils) Grade S	Type I: 85; Type II: 115	
Thickness (min., mils) Grade G	130	180
Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 54; Type II: 70	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 75; Type II: 90	
Bottom coating thickness (min., mils)	40	100
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 75; Type II: 125	
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 1; Type II: 2	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 75; Type II: 80	
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 2; Type II: 4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured	Type I: 26; Type II: 75	
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning	Type I: 9; Type II: 30	
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 65; Type II: 90	
Low temperature flexibility, before and after heat conditioning, F, max.	0	
Dimensional stability, % max.	0.5	
Compound stability at 225 F	no failures	
Granule embedment, Grade G only, max., grams	2	
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS		
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 70; Type II: 150	
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning	Type I: 1; Type II: 2	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 30; Type II: 80	
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning	Type I: 2; Type II: 4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured	Type I: 3; Type II: 40	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning	Type I: 3; Type II: 20	
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 35; Type II: 110	
Low temperature flexibility, before and after heat conditioning, F, max.	0	
Dimensional stability, % max.	0.5	
Compound stability at 215 F	no failures	
Granule embedment, Grade G only, max. grams	2	
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS		
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 70; Type II: 100	100
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning	20	44
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 50; Type II: 100	83
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 35; Type II: 50	75
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning	Type I: 38; Type II: 60	50
Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 55; Type II: 70	121
Low temperature flexibility, before and after heat conditioning, F, max.	0	0
Dimensional stability, % max.	1	0.9
Compound stability at 215 F	no failures	pass
Granule embedment, Grade G only, max. grams	2	0.13
7. SEE APPENDIX IF CHECKED		

## SBS Modified Bitumen Part 2: Test Results

POLGLASS USA							SIPLAST, INC.
Elastoflex S 6	Elastoflex GS 6	Elastoflex GS 6-FR	Elastobase	Elastoflex V	Elastoflex VG	Elastoflex VG-FR	Paradiene 20
Polyester Smooth	Polyester Granule	Polyester Granule	Fiberglass Smooth	Fiberglass Smooth	Fiberglass Granule	Fiberglass Granule	Fiberglass Smooth
			X	X	X	X	
X	X	X					
			80	120			91
			81	71	140	140	58
					83	83	
120							
81	140	140					
	83	83					
			80	90	90	90	70
			2.5	3	3	3	3
			40	45	45	45	30
			2.5	3	3	3	3
			20	30	30	30	
			3.0	3.0	3.0	3.0	
			70	75	75	75	40
			0	0	0	0	-5
			0.5	0.5	0.5	0.5	0.1
			no failures	no failures	no failures 2	no failures 2	no failures
80	80	80					
25	25	25					
60	60	60					
40	40	40					
45	45	45					
80	80	80					
0	0	0					
0.5	0.5	0.5					
no failures	no failures	no failures					
	2	2					

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		SIPLAST, INC.	
2. PRODUCT NAME		PARADIENE 20 HT	PARADIENE 20 PR
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		FIBERGLASS	COMBINATION
Top surface (indicate granule or smooth)		SMOOTH	SMOOTH
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S		Type I: 70; Type II: 80	91
Thickness (min., mils) Grade G		Type I: 110; Type II: 130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		Type I: 45; Type II: 50	55
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 60; Type II: 75	
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S		80	91
Thickness (min., mils) Grade G		Type I: 95; Type II: 105	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		45	58
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 65; Type II: 75	
Bottom coating thickness (min., mils)		40	
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S		Type I: 85; Type II: 115	
Thickness (min., mils) Grade G		130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		Type I: 54; Type II: 70	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 75; Type II: 90	
Bottom coating thickness (min., mils)		40	
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 75; Type II: 125	150
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 1; Type II: 2	4
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 75; Type II: 80	80
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 2; Type II: 4	5
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured		Type I: 26; Type II: 75	
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning		Type I: 9; Type II: 30	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 65; Type II: 90	120
Low temperature flexibility, before and after heat conditioning, F, max.		0	-5
Dimensional stability, % max.		0.5	0.2
Compound stability at 225 F		no failures	no failures
Granule embedment, Grade G only, max., grams		2	
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 70; Type II: 150	150
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning		Type I: 1; Type II: 2	4
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 30; Type II: 80	80
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning		Type I: 2; Type II: 4	5
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured		Type I: 3; Type II: 40	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning		Type I: 3; Type II: 20	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 35; Type II: 110	120
Low temperature flexibility, before and after heat conditioning, F, max.		0	-5
Dimensional stability, % max.		0.5	0.1
Compound stability at 215 F		no failures	no failures
Granule embedment, Grade G only, max. grams		2	
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 70; Type II: 100	
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning		20	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 50; Type II: 100	
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 35; Type II: 50	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning		Type I: 38; Type II: 60	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 55; Type II: 70	
Low temperature flexibility, before and after heat conditioning, F, max.		0	
Dimensional stability, % max.		1	
Compound stability at 215 F		no failures	
Granule embedment, Grade G only, max. grams		2	
7. SEE APPENDIX IF CHECKED			



## SBS Modified Bitumen Part 2: Test Results

[illegible]

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		SIPLAST, INC.	
2. PRODUCT NAME		PARADIENE 20 HV	PARADIENE 20 TG
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		FIBERGLASS	FIBERGLASS
Top surface (indicate granule or smooth)		SMOOTH	SMOOTH
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 70; Type II: 80			
Thickness (min., mils) Grade G Type I: 110; Type II: 130			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 45; Type II: 50			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 60; Type II: 75			
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S 80		119	110
Thickness (min., mils) Grade G Type I: 95; Type II: 105			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S 45			69
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 65; Type II: 75			
Bottom coating thickness (min., mils)		40	70
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 85; Type II: 115			
Thickness (min., mils) Grade G 130			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 54; Type II: 70			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 75; Type II: 90			
Bottom coating thickness (min., mils)		40	
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 125			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 80			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 2; Type II: 4			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 26; Type II: 75			
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 9; Type II: 30			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 65; Type II: 90			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 0.5			
Compound stability at 225 F no failures			
Granule embedment, Grade G only, max., grams 2			
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 150		75	75
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning Type I: 1; Type II: 2		3	3
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 30; Type II: 80		30	30
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning Type I: 2; Type II: 4		3	3
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 3; Type II: 40			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 3; Type II: 20			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 35; Type II: 110		40	40
Low temperature flexibility, before and after heat conditioning, F, max. 0		-5	-5
Dimensional stability, % max. 0.5		0.1	0.1
Compound stability at 215 F no failures		no failures	no failures
Granule embedment, Grade G only, max. grams 2			
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 100			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning 20			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 50; Type II: 100			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 35; Type II: 50			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning Type I: 38; Type II: 60			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 55; Type II: 70			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 1			
Compound stability at 215 F no failures			
Granule embedment, Grade G only, max. grams 2			
7. SEE APPENDIX IF CHECKED			

## SBS Modified Bitumen Part 2: Test Results

SIPLAST, INC.						SOPREMA, INC.	
PARADIENE 20 HT TG	PARADIENE 20 PR TG	PARADIENE 20 EG TG	PARADIENE 20 HV TG	PARADIENE 30 TG	PARADIENE 20 HT TG	SOPRALENE 180	SOPRALENE FLAM 180
FIBERGLASS SMOOTH	COMBINATION SMOOTH	FIBERGLASS SMOOTH	FIBERGLASS SMOOTH	FIBERGLASS GRANULE	FIBERGLASS GRANULE	POLYESTER SMOOTH	POLYESTER SMOOTH
						X	X
	110						
	63						
	70						
110		138	138	150	150		
69		87	87	99	99		
70		90	90	70	70		
						120	120
						76	72
							40
	150						
	4						
	80						
	5						
	120						
	0						
	0.2						
	no failures						
150		150	75	75	150		
4		4	3	3	3		
80		80	30	30	80		
5		5	3	3	3		
120		120	40	40	120		
-5		0	0	-5	-5		
0.1		0.1	0.1	0.1	0.1		
no failures		no failures	no failures	no failures	no failures		
				1.5	1.5		
						85	85
						22	22
						65	65
						50	50
						87	87
						-5	-5
						0.5	0.5
						250	250

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		SOPREMA, INC.	
2. PRODUCT NAME		SOPRALENE 180 GR	SOPRALENE FLAM 180 GR
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		POLYESTER	POLYESTER
Top surface (indicate granule or smooth)		GRANULE	GRANULE
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)		X	X
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 70; Type II: 80			
Thickness (min., mils) Grade G Type I: 110; Type II: 130			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 45; Type II: 50			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 60; Type II: 75			
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S 80			
Thickness (min., mils) Grade G Type I: 95; Type II: 105			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S 45			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 65; Type II: 75			
Bottom coating thickness (min., mils)		40	
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 85; Type II: 115			
Thickness (min., mils) Grade G 130		160	160
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 54; Type II: 70			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 75; Type II: 90		99	101
Bottom coating thickness (min., mils)		40	40
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf./in. Type I: 75; Type II: 125			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 80			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 2; Type II: 4			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 26; Type II: 75			
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 9; Type II: 30			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 65; Type II: 90			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 0.5			
Compound stability at 225 F no failures			
Granule embedment, Grade G only, max., grams 2			
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf./in. Type I: 70; Type II: 150			
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 30; Type II: 80			
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning Type I: 2; Type II: 4			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 3; Type II: 40			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 3; Type II: 20			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 35; Type II: 110			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 0.5			
Compound stability at 215 F no failures			
Granule embedment, Grade G only, max. grams 2			
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf./in. Type I: 70; Type II: 100		85	85
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning 20		22	22
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 50; Type II: 100		65	65
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 35; Type II: 50		50	50
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning Type I: 38; Type II: 60			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 55; Type II: 70		87	87
Low temperature flexibility, before and after heat conditioning, F, max. 0		-5	-5
Dimensional stability, % max. 1		0.5	0.5
Compound stability at 215 F no failures		250	250
Granule embedment, Grade G only, max. grams 2		2	2
7. SEE APPENDIX IF CHECKED			

## SBS Modified Bitumen Part 2: Test Results

SOPREMA, INC.							
SOPRALENE 250	SOPRALENE FLAM 250	SOPRALENE 250 GR	SOPRALENE FLAM 250 GR	SOPRALENE 250	SOPRALENE 350 GR	ELASTOPHENE	ELASTOPHENE FLAM
POLYESTER SMOOTH	POLYESTER SMOOTH	POLYESTER GRANULE	POLYESTER GRANULE	POLYESTER SMOOTH	POLYESTER GRANULE	GLASS SMOOTH	GLASS SMOOTH
						X	X
X	X	X	X	X	X		
						90	120
						60	78
							40
160	120	160	160	160	200		
101	98	101	99	99	125		
	40		40	40	40		
						91	91
						4	4
						41	41
						4	4
						73	73
						-5	-5
						0	0
						250	250
115	115	115	115	150	150		
28	28	28	28	35	35		
100	100	100	100	130	130		
55	55	55	55	53	53		
125	125	125	125	160	160		
-5	-5	-5	-5	-5	-5		
0.3	0.3	0.3	0.3	0.2	0.2		
250	250	250	250	250	250		
		1	1		1		

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		SOPREMA, INC.	
2. PRODUCT NAME		ELASTOPHENE GR	SOPRALENE 180 FR GR
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		GLASS	POLYESTER
Top surface (indicate granule or smooth)		GRANULE	GRANULE
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)		X	
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			X
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S		Type I: 70; Type II: 80	
Thickness (min., mils) Grade G		Type I: 110; Type II: 130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		Type I: 45; Type II: 50	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 60; Type II: 75	
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S		80	
Thickness (min., mils) Grade G		Type I: 95; Type II: 105	136
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		45	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 65; Type II: 75	85
Bottom coating thickness (min., mils)		40	
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S		Type I: 85; Type II: 115	
Thickness (min., mils) Grade G		130	160
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		Type I: 54; Type II: 70	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 75; Type II: 90	101
Bottom coating thickness (min., mils)		40	
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 75; Type II: 125	
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 1; Type II: 2	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 75; Type II: 80	
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 2; Type II: 4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured		Type I: 26; Type II: 75	
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning		Type I: 9; Type II: 30	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 65; Type II: 90	
Low temperature flexibility, before and after heat conditioning, F, max.		0	
Dimensional stability, % max.		0.5	
Compound stability at 225 F		no failures	
Granule embedment, Grade G only, max., grams		2	
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 70; Type II: 150	91
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning		Type I: 1; Type II: 2	4
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 30; Type II: 80	41
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning		Type I: 2; Type II: 4	4
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured		Type I: 3; Type II: 40	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning		Type I: 3; Type II: 20	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 35; Type II: 110	73
Low temperature flexibility, before and after heat conditioning, F, max.		0	-5
Dimensional stability, % max.		0.5	0
Compound stability at 215 F		no failures	250
Granule embedment, Grade G only, max. grams		2	1
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 70; Type II: 100	85
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning		20	22
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 50; Type II: 100	65
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 35; Type II: 50	50
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning		Type I: 38; Type II: 60	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 55; Type II: 70	87
Low temperature flexibility, before and after heat conditioning, F, max.		0	-5
Dimensional stability, % max.		1	0.5
Compound stability at 215 F		no failures	250
Granule embedment, Grade G only, max. grams		2	1
7. SEE APPENDIX IF CHECKED			

## SBS Modified Bitumen Part 2: Test Results

[illegible]

## SBS Modified Bitumen Part 2: Test Results

		SOPREMA INC.	
2.	PRODUCT NAME	ELASTOPHENE FR GR	SOPRALAST 50 TV ALU
3.	PRODUCT DESCRIPTION		
	Reinforcing (indicate polyester or combination)	GLASS	GLASS
	Top surface (indicate granule or smooth)	GRANULE	ALUMINUM
4A.	COMPLIES WITH:		
	ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)		
	Type I, Grade G (granule surfaced)		
	Type I, Grade S (smooth surfaced)		
	Type II, Grade G (granule surfaced)		
	Type II, Grade S (smooth surfaced)		
4B.	ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)		
	Type I, Grade G (granule surfaced)	X	
	Type I, Grade S (smooth surfaced)		
	Type II, Grade G (granule surfaced)		
	Type II, Grade S (smooth surfaced)		
4C.	ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)		
	Type I, Grade G (granule surfaced)		
	Type I, Grade S (smooth surfaced)		
	Type II, Grade G (granule surfaced)		
	Type II, Grade S (smooth surfaced)		
5A.	DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
	Thickness (min., mils) Grade S	Type I: 70; Type II: 80	
	Thickness (min., mils) Grade G	Type I: 110; Type II: 130	
	Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 45; Type II: 50	
	Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 60; Type II: 75	
	Bottom coating thickness (heat welding application products min., mils)	40	
5B.	DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS		
	Thickness (min., mils) Grade S	80	
	Thickness (min., mils) Grade G	Type I: 95; Type II: 105	136
	Net mass per unit area (min., lbs./100 sq. ft.) Grade S	45	
	Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 65; Type II: 75	88
	Bottom coating thickness (min., mils)	40	40
5C.	DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS		
	Thickness (min., mils) Grade S	Type I: 85; Type II: 115	
	Thickness (min., mils) Grade G	130	
	Net mass per unit area (min., lbs./100 sq. ft.) Grade S	Type I: 54; Type II: 70	
	Net mass per unit area (min., lbs./100 sq. ft.) Grade G	Type I: 75; Type II: 90	
	Bottom coating thickness (min., mils)	40	
6A.	PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS		
	Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 75; Type II: 125	
	Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 1; Type II: 2	
	Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 75; Type II: 80	
	Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 2; Type II: 4	
	Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured	Type I: 26; Type II: 75	
	Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning	Type I: 9; Type II: 30	
	Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 65; Type II: 90	
	Low temperature flexibility, before and after heat conditioning, F, max.	0	
	Dimensional stability, % max.	0.5	
	Compound stability at 225 F	no failures	
	Granule embedment, Grade G only, max., grams	2	
6B.	PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS		
	Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 70; Type II: 150	91
	Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning	Type I: 1; Type II: 2	4
	Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 30; Type II: 80	41
	Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning	Type I: 2; Type II: 4	4
	Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured	Type I: 3; Type II: 40	
	Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning	Type I: 3; Type II: 20	
	Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 35; Type II: 110	73
	Low temperature flexibility, before and after heat conditioning, F, max.	0	-5
	Dimensional stability, % max.	0.5	0
	Compound stability at 215 F	no failures	250
	Granule embedment, Grade G only, max. grams	2	1
6C.	PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS		
	Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 70; Type II: 100	
	Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning	20	
	Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.	Type I: 50; Type II: 100	
	Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning	Type I: 35; Type II: 50	
	Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning	Type I: 38; Type II: 60	
	Tear strength at 73.4 ± 3.6 F, lbf, min.	Type I: 55; Type II: 70	
	Low temperature flexibility, before and after heat conditioning, F, max.	0	
	Dimensional stability, % max.	1	
	Compound stability at 215 F	no failures	
	Granule embedment, Grade G only, max. grams	2	
7.	SEE APPENDIX IF CHECKED		



## SBS Modified Bitumen Part 2: Test Results

SOPREMA, INC.							
SOPRALAST TV COPPER	SOPRALAST 50 TVI NOX	SOPRAFX (F) (H) (S) (T)	SOPRALENE 250 PS	SOPRALENE 180 SP 3.5mm	ELASTOPHENE 3.0mm	LASTOBOND	COLPHENE GR
FIBERGLASS COPPER	GLASS STAINLESS	POLYESTER SMOOTH	POLYESTER SMOOTH	POLYESTER SMOOTH	GLASS SMOOTH	GLASS SMOOTH	GLASS GRANULE
					X		
		X		X			
			X				
140	148				120	68	140
87	95				90	38	83
40	40						
		120	120	140			
		73	72	86			
		40	40	40			
175	175				91	91	91
8	8				4	4	4
134	134				41	41	41
9.6	9.6				4	4	4
130	130				73	73	73
-15	-15				-5	-5	-5
0.1	0.1				0	0	0
					250		1
		85	150	85			
		22	35	22			
		65	130	65			
		50	53	50			
		87	160	87			
		-5	-5	-5			
		0.5	0.2	0.5			
		250	250	250			

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		SOPREMA, INC.	
2. PRODUCT NAME		COLPHENE FR GR	COLPHENE HR GR
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		GLASS	GLASS
Top surface (indicate granule or smooth)		GRANULE	GRANULE
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S		Type I: 70; Type II: 80	
Thickness (min., mils) Grade G		Type I: 110; Type II: 130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		Type I: 45; Type II: 50	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 60; Type II: 75	
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S		80	
Thickness (min., mils) Grade G		Type I: 95; Type II: 105	140
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		45	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 65; Type II: 75	83
Bottom coating thickness (min., mils)		40	85
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S		Type I: 85; Type II: 115	
Thickness (min., mils) Grade G		130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		Type I: 54; Type II: 70	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 75; Type II: 90	
Bottom coating thickness (min., mils)		40	
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 75; Type II: 125	
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 1; Type II: 2	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 75; Type II: 80	
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 2; Type II: 4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured		Type I: 26; Type II: 75	
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning		Type I: 9; Type II: 30	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 65; Type II: 90	
Low temperature flexibility, before and after heat conditioning, F, max.		0	
Dimensional stability, % max.		0.5	
Compound stability at 225 F		no failures	
Granule embedment, Grade G only, max., grams		2	
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 70; Type II: 150	91
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning		Type I: 1; Type II: 2	4
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 30; Type II: 80	41
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning		Type I: 2; Type II: 4	4
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured		Type I: 3; Type II: 40	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning		Type I: 3; Type II: 20	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 35; Type II: 110	73
Low temperature flexibility, before and after heat conditioning, F, max.		0	-5
Dimensional stability, % max.		0.5	0
Compound stability at 215 F		no failures	
Granule embedment, Grade G only, max. grams		2	1
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 70; Type II: 100	
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning		20	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 50; Type II: 100	
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 35; Type II: 50	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning		Type I: 38; Type II: 60	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 55; Type II: 70	
Low temperature flexibility, before and after heat conditioning, F, max.		0	
Dimensional stability, % max.		1	
Compound stability at 215 F		no failures	
Granule embedment, Grade G only, max. grams		2	
7. SEE APPENDIX IF CHECKED			

## SBS Modified Bitumen Part 2: Test Results

SOPREMA, INC.		TAMKO ROOFING PRODUCTS INC.					
COLPHENE HR FR GR	SOPRAFIX (X)	AWAPLAN PREMIUM	AWAPLAN 170	AWAPLAN PREMIUM FR	AWAPLAN 170 FR	AWAPLAN VERSA-SMOOTH	AWAPLAN HEAT WELDING
FIBERGLASS GRANULE	POLYESTER SMOOTH	POLYESTER GRANULE	POLYESTER GRANULE	POLYESTER GRANULE	POLYESTER GRANULE	POLYESTER SMOOTH	POLYESTER GRANULE
			X		X		
	X	X		X		X	X
140							
85							
	160	155				160	
	112		154	155	154	98	185
		100	96	100	96		
	40	>40	>40	>40	>40	>40	>40
175							
10							
130							
8							
130							
-5							
0							
1							
	115	>100	>90	>100	>90	>70	>100
	25	>20	>20	>20	>20	>20	>20
	100	>100	>50	>100	>50	>50	>100
	55	>50	>35	>50	>35	>35	>50
		>60	>38	>60	>38	>38	>60
	125	>70	>55	>70	>55	>55	>70
	-5	<0	<0	<0	<0	<0	<0
	0.3	<1	<1	<1	<1	<1	<1
	250	no failures	no failures	no failues	no failues	no failures	no failues
	1	<2	<2	<2	<2	<2	<2

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		TAMKO	
2. PRODUCT NAME		VERSA-FLEX	VERSA-BASE
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		POLYESTER	FIBERGLASS
Top surface (indicate granule or smooth)		SMOOTH	SMOOTH
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			X
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)		X	
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S		Type I: 70; Type II: 80	
Thickness (min., mils) Grade G		Type I: 110; Type II: 130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		Type I: 45; Type II: 50	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 60; Type II: 75	
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S		80	
Thickness (min., mils) Grade G		Type I: 95; Type II: 105	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		45	92
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 65; Type II: 75	
Bottom coating thickness (min., mils)		40	
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S		Type I: 85; Type II: 115	
Thickness (min., mils) Grade G		130	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S		Type I: 54; Type II: 70	
Net mass per unit area (min., lbs./100 sq. ft.) Grade G		Type I: 75; Type II: 90	
Bottom coating thickness (min., mils)		40	>40
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 75; Type II: 125	
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 1; Type II: 2	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 75; Type II: 80	
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 2; Type II: 4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured		Type I: 26; Type II: 75	
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning		Type I: 9; Type II: 30	
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 65; Type II: 90	
Low temperature flexibility, before and after heat conditioning, F, max.		0	
Dimensional stability, % max.		0.5	
Compound stability at 225 F		no failures	
Granule embedment, Grade G only, max., grams		2	
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 70; Type II: 150	>70
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning		Type I: 1; Type II: 2	>1
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 30; Type II: 80	>30
Elongation at 73.4 ± 3.6 F MD and XMD, min., at max. load, before and after heat conditioning		Type I: 2; Type II: 4	>2
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured		Type I: 3; Type II: 40	>3
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning		Type I: 3; Type II: 20	>3
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 35; Type II: 110	>35
Low temperature flexibility, before and after heat conditioning, F, max.		0	<0
Dimensional stability, % max.		0.5	<0.5
Compound stability at 215 F		no failures	no failures
Granule embedment, Grade G only, max. grams		2	<2
6C. PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 70; Type II: 100	>70
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning		20	>20
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in.		Type I: 50; Type II: 100	>100
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning		Type I: 35; Type II: 50	>50
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning		Type I: 38; Type II: 60	>60
Tear strength at 73.4 ± 3.6 F, lbf, min.		Type I: 55; Type II: 70	>70
Low temperature flexibility, before and after heat conditioning, F, max.		0	<0
Dimensional stability, % max.		1	<1
Compound stability at 215 F		no failures	no failures
Granule embedment, Grade G only, max. grams		2	<2
7. SEE APPENDIX IF CHECKED			

## SBS Modified Bitumen Part 2: Test Results

TEXSA, S.A.				TREMCO INC.			
TEXAL-10 FV 3MM	MIN MOFLEX-20 FP-S	TEXSELF	MINERAL MP 5KG FM	POWERPLY STANDARD FR	POWERPLY HE FR	POWERPLY PREMIUM FR	POWERPLY PREMIUM SMOOTH
FIBERGLASS SMOOTH	POLYESTER GRANULE		COMPOSITE GRANULE	FIBERGLASS GRANULE	POLYESTER GRANULE	COMBINATION GRANULES	COMBINATION SMOOTH
						X	X
				X			
					X		
			158			150	80
			102			93.4	46.1
			40			50	
120				120			
51				88			
40				50			
	158				175		
	68				104		
	40				78.8		
						240.9	235.2
			217			3.3	4.0
			50			276	219.9
						6.7	7.2
			120			379	
			+5			-22	416.7
			0			0	-16.6
			239			no failures	no failures
						0.4	
				91			
58				2.85			
0				76			
				7.7			
+23				104			
0				-4			
				0			
250				no failures			
				1.5			
					92		
					27.4		
	159	159			73.6		
	45	45			55.1		
					88.8		
	+5	+5			-4		
	0.5	0.5			0		
	250	212			no failures		
					1.7		

## SBS Modified Bitumen Part 2: Test Results

1. COMPANY NAME		U S INTEC	
2. PRODUCT NAME		INTEC/FLEX FR 3 HS	INTEC/FLEX 190 FR
3. PRODUCT DESCRIPTION			
Reinforcing (indicate polyester or combination)		FIBERGLASS	POLYESTER
Top surface (indicate granule or smooth)		GRANULE	GRANULE
COMPLIES WITH:			
4A. ASTM D 6162-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)		X	
Type II, Grade S (smooth surfaced)			
4B. ASTM D 6163-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Bituminous Materials Using Glass Fiber Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
4C. ASTM D 6164-97 <i>Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements</i> (indicate type and grade, or NA)			
Type I, Grade G (granule surfaced)			X
Type I, Grade S (smooth surfaced)			
Type II, Grade G (granule surfaced)			
Type II, Grade S (smooth surfaced)			
5A. DIMENSIONS AND MASSES OF SHEET MATERIALS: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 70; Type II: 80			
Thickness (min., mils) Grade G Type I: 110; Type II: 130			
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 45; Type II: 50			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 60; Type II: 75			
Bottom coating thickness (heat welding application products min., mils)		40	
5B. DIMENSIONS AND MASSES OF SHEET MATERIALS: GLASS FIBER REINFORCEMENTS			
Thickness (min., mils) Grade S 80			
Thickness (min., mils) Grade G Type I: 95; Type II: 105		140	
Net mass per unit area (min., lbs./100 sq. ft.) Grade S 45			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 65; Type II: 75		75	
Bottom coating thickness (min., mils)		40	
5C. DIMENSIONS AND MASSES OF SHEET MATERIALS: POLYESTER REINFORCEMENTS			
Thickness (min., mils) Grade S Type I: 85; Type II: 115			
Thickness (min., mils) Grade G 130			145
Net mass per unit area (min., lbs./100 sq. ft.) Grade S Type I: 54; Type II: 70			
Net mass per unit area (min., lbs./100 sq. ft.) Grade G Type I: 75; Type II: 90			75
Bottom coating thickness (min., mils)		40	40
6A. PHYSICAL PROPERTIES: COMBINATION OF POLYESTER AND GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 125			
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning Type I: 1; Type II: 2			
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 75; Type II: 80			
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 2; Type II: 4			
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 26; Type II: 75			
Elongation at 5% max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 9; Type II: 30			
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 65; Type II: 90			
Low temperature flexibility, before and after heat conditioning, F, max. 0			
Dimensional stability, % max. 0.5			
Compound stability at 225 F no failures			
Granule embedment, Grade G only, max., grams 2			
6B. PHYSICAL PROPERTIES: GLASS FIBER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 150		150	
Elongation at 0 ± 3.6 F, MD and XMD, min., at max. load, before and after heat conditioning Type I: 1; Type II: 2		2	
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 30; Type II: 80		80	
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 2; Type II: 4		4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., as manufactured Type I: 3; Type II: 40		4	
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., after heat conditioning Type I: 3; Type II: 20		20	
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 35; Type II: 110		110	
Low temperature flexibility, before and after heat conditioning, F, max. 0		0	
Dimensional stability, % max. 0.5		0.5	
Compound stability at 215 F no failures		215	
Granule embedment, Grade G only, max. grams 2		2	
6.C PHYSICAL PROPERTIES: POLYESTER REINFORCEMENTS			
Maximum load at 0 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 70; Type II: 100			70
Elongation at 0 ± 3.6 F, MD and XMD, % min., at max. load, before and after heat conditioning 20			20
Maximum load at 73.4 ± 3.6 F MD and XMD, min., before and after heat conditioning, lbf/in. Type I: 50; Type II: 100			50
Elongation at 73.4 ± 3.6 F MD and XMD, % min., at max. load, before and after heat conditioning Type I: 35; Type II: 50			40
Elongation at 5% of max. load 73.4 ± 3.6 F, MD and XMD, % min., before and after heat conditioning Type I: 38; Type II: 60			40
Tear strength at 73.4 ± 3.6 F, lbf, min. Type I: 55; Type II: 70			70
Low temperature flexibility, before and after heat conditioning, F, max. 0			0
Dimensional stability, % max. 1			1.0
Compound stability at 215 F no failures			215
Granule embedment, Grade G only, max. grams 2			2
7. SEE APPENDIX IF CHECKED			

## SBS Modified Bitumen Part 2: Test Results

[illegible]

## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET

COMPANY NAME **ALLIED SIGNAL, INC.**

NEW/REPLACEMENT NON-NAILABLE					
M-100-MN-NN	2	BLACK ARMOR-ORGANIC	MILLENNIUM GMC		
M-120-MP-NN	3	2 BLACK ARMOR TC GLASS	MILLENNIUM GMC		
M-140-MP-NN	3	BLACK ARMOR ORGANIC	MILLENNIUM BASE	MILLENNIUM GMC	
M-145-MP-NN	3	MILLENNIUM BASE	MILLENNIUM SMOOTH	MILLENNIUM GMC	
M-150-MP-NN	2	NONE	MILLENNIUM SMOOTH	MILLENNIUM GMC	
M-160-MP-NN	4	3 BLACK ARMOR TC GLASS	MILLENNIUM GMC		
M-100-C-NN	2	MILLENNIUM BASE	MILLENNIUM BMC		
M-140-C-NN	3	MILLENNIUM BASE	MILLENNIUM BASE	MILLENNIUM GMC	
M-145-C-NN	3	MILLENNIUM BASE	MILLENNIUM SMOOTH MOP	MILLENNIUM GMC	
M-150-C-NN	2	NONE	MILLENNIUM SMOOTH MOP	MILLENNIUM GMC	
M-100-MP-N	2	BLACK ARMOR ORGANIC	MILLENNIUM GMC		
M-120-MP-NN	4	BLACK ARMOR ORGANIC BASE & 2 BLACK ARMOR TC GLASS IV	MILLENNIUM GMC		
M-140-MP-N	3	BLACK ARMOR ORGANIC BASE	MILLENNIUM BASE SHEET	MILLENNIUM GMC	
M-145-MP-NN	3	MILLENNIUM BASE SHEET	MILLENNIUM SMOOTH	MILLENNIUM GMC	
M-160-MP-NN	5	BLACK ARMOR BASE & 3 BLACK ARMOR TC GLASS	MILLENNIUM GMC		
M-100-C-N	2	MILLENNIUM BASE SHEET	MILLENNIUM GMC		
M-140-C-N	3	MILLENNIUM BSE SHEET	MILLENNIUM BASE SHEET	MILLENNIUM GMC	
M-145-C-N	3	MILLENNIUM BASE SHEET	MILLENNIUM SMOOTH MOP	MILLENNIUM GMC	
I-100-MA-NN	2	BLACK ARMOR BASE SHEET	INFINITEE 30 GMC		
I-105-PM-NN	2	POLYMOP BASE SHEET	INFINITEE 30 GMC		
I-120-MA-NN	3	2 BLK ARMOR TYPE IV GLASS	INFINITEE 30 GMC		
I-125-PM-NN	3	2 POLYMOP PLY TYPE IV	INFINITEE 30 GMC		
I-130-MA-NN	2	NONE	INFINITEE 20 SM	INFINITEE 30 GMC	
I-135-PM-NN	2	NONE	INFINITEE 20 SM	INFINITEE 30 GMC	
I-140-MA-NN	3	BLACK ARMOR BASE SHEET	INFINITEE 20 SM		
I-145-PM-NN	3	POLYMOP BASE SHEET	INFINITEE 20 SM		
I-160-MA-NN	4	3 BLK ARMOR TYPE IV GLASS	INFINITEE 30 GMC		
I-165-PM-NN	4	3 POLYMOP TYPE IV	INFINITEE 30 GMC		
I-100-C-NN	2	BLACK ARMOR BASE	INFINITEE 30 GMC		
I-105-C-NN	2	POLYMOP BASE SHEET	INFINITEE 30 GMC		
I-140-C-NN	3	BLACK ARMOR BSE	POLYMOP BASE SHEET	INFINITEE 30 GMC	
I-145-C-NN	3	POLYMOP BASE SHEET	POLYMOP BASE SHEET	INFINITEE 30 GMC	
I-150-C-NN	3	BLACK ARMOR BASE SHEET	INFINITEE 20 SM	INFINITEE 30 GMC	
I-145-T-NN	3	BLACK ARMOR BASE SHEET	INFINITEE ST	INFINITEE GTC	
NEW/REPLACEMENT NAILABLE					
I-100-MA-N	2	BLACK ARMOR BASE SHEET	INFINITEE 30 GMC		
I-105-PM-N	2	POLYMOP BASE SHEET	INFINITEE 30 GMC		
I-120-MA-N	4	BLACK ARMOR BASE SHEET & 2 BLK ARMOR TYPE IV GLASS	INFINITEE 30 GMC		
I-125-PM-N	4	POLYMOP BASE SHEET & 2 POLY MOP PLY IV	INFINITEE 30 GMC		
I-140-MA-N	3	BLACK ARMOR BASE SHEET	INFINITEE 20 SM	INFINITEE 30 GMC	
I-145-PM-N	3	POLY MOP BASE SHEET	INFINITEE 20 SM	INFINITEE 30 GMC	
I-160-MA-N	5	BLACK ARMOR BASE SHEET & 3 BLACK ARMOR TYPE IV GLASS	INFINITEE 30 GMC		
I-165-PM-N	5	POLYMOP BASE SHEET & 3 POLYMOP PLY IV	INFINITEE 30 GMC		
I-100-C-N	2	BLACK ARMOR BASE SHEET	INFINITEE 30 GMC		
I-105-C-N	2	POLYNOIP BASE SHEET	INFINITEE 30 GMC		
I-140-C-N	3	BLACK ARMOR BASE SHEET	POLY MOP BASE SHEET	INFINITEE 30 GMC	
I-145-C-N	3	POLYMOP BSAE SHEET	POLYMOP BSAE SHEET	INFINITEE 30 GMC	
I-150-C-N	3	BLACK ARMOR BASE SHEET	INFINITEE 20 SM	INFINITEE 30 GMC	
I-100-T-N	2	BLACK ARMOR BASE SHEET	INFINITEE GTC		
I-140-T-N	3	BLACK ARMOR BASE SHEET	INFINITEE ST	INFINITEE GTC	
NEW/REPLACEMENT INSULATED					
M-100-MN-NN	2	BLACK ARMOR-ORGANIC	MILLENNIUM GMC		
M-120-MP-NN	3	2 BLACK ARMOR TC GLASS	MILLENNIUM GMC		
M-140-MP-NN	3	BLACK ARMOR ORGANIC	MILLENNIUM BASE	MILLENNIUM GMC	
M-145-MP-NN	3	MILLENNIUM BASE	MILLENNIUM SMOOTH	MILLENNIUM GMC	
M-150-MP-NN	2	NONE	MILLENNIUM SMOOTH	MILLENNIUM GMC	
M-160-MP-NN	4	3 BLACK ARMOR TC GLASS	MILLENNIUM GMC		
M-100-C-NN	2	MILLENNIUM BASE	MILLENNIUM BMC		
M-140-C-NN	3	MILLENNIUM BASE	MILLENNIUM BASE	MILLENNIUM GMC	
M-145-C-NN	3	MILLENNIUM BASE	MILLENNIUM SMOOTH MOP	MILLENNIUM GMC	
M-150-C-NN	2	NONE	MILLENNIUM SMOOTH MOP	MILLENNIUM GMC	
I-100-MA-NN	2	BLACK ARMOR BASE SHEET	INFINITEE 30 GMC		
I-105-PM-NN	2	POLYMOP BASE SHEET	INFINITEE 30 GMC		
I-120-MA-NN	3	2 BLK ARMOR TYPE IV GLASS	INFINITEE 30 GMC		
I-125-PM-NN	3	2 POLYMOP PLY TYPE IV	INFINITEE 30 GMC		
I-130-MA-NN	2	NONE	INFINITEE 20 SM	INFINITEE 30 GMC	



## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET
I-135-PM-NN	2	NONE	INFINITEE 20 SM	INFINITEE 30 GMC	
I-140-MA-NN	3	BLACK ARMOR BASE SHEET	INFINITEE 20 SM		
I-145-PM-NN	3	POLYMOP BASE SHEET	INFINITEE 20 SM		
I-160-MA-NN	4	3 BLK ARMOR TYPE IV GLASS	INFINITEE 30 GMC		
I-165-PM-NN	4	3 POLYMOP TYPE IV	INFINITEE 30 GMC		
I-100-C-NN	2	BLACK ARMOR BASE	INFINITEE 30 GMC		
I-105-C-NN	2	POLYMOP BASE SHEET	INFINITEE 30 GMC		
I-140-C-NN	3	BLACK ARMOR BSE	POLYMOP BASE SHEET	INFINITEE 30 GMC	
I-145-C-NN	3	POLYMOP BASE SHEET	POLYMOP BASE SHEET	INFINITEE 30 GMC	
I-150-C-NN	3	BLACK ARMOR BASE SHEET	INFINITEE 20 SM	INFINITEE 30 GMC	
I-145-T-NN	3	BLACK ARMOR BASE SHEET	INFINITEE ST	INFINITEE GTC	
RECOVER EXISTING ROOF					
n/a					
RECOVER EXISTING ROOF INSULATION ADDED					
n/a					

COMPANY NAME **BITEC INC.**

NEW / REPLACEMENT NON-NAIABLE					
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 W/COATING		
APS-4T.1.15	3	BETA BASE	FA-2T	APS-4T W/COATING	
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 OR FS-2H	SPS-3H	SPS-3H GRAVEL
APS-4T.1.20	3	BETA BASE	APS-4T	APS-4T W/COATING	
APS-4T.1.20	3	NONE	FA-2T	APS-4T	APS-4T W/COATING
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-4T	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 NAIABLE					
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 W/COATING		
APS-4T.2.15	3	BETA BASE	FA-2T	APS-4T W/COATING	
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 W/COATING	

COMPANY NAME **BITEC INC. (continued)**

## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET
NEW / REPLACEMENT NAILABLE					
APS-4T.2.20	3	NONE	FA-2T	APS-4T	APS-4TW/COATING
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-4T	APM-4.5T	
APM4.5T.2.20	3	NONE	FA-2T	APS-4T	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 Non-nailable				
RECOVER EXISTING ROOF	See New Replacement, Nailable and Non-nailable				
RECOVER EXISTING ROOF INSULATION ADDED	See New Replacement, Nailable and Non-nailable				

COMPANY NAME **CELOTEX CORP.**

NEW / REPLACEMENT NON-NAILABLE					
SBS-4-C-M	4	D 4601 TYPE II BASE SHEET & 2 TYPE VI PLY SHEETS	SBS 250 CAP SHEET		
SBS-3-C-M	3	D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS	SBS 250 CAP SHEET		
SBS-2-C-M	2	D 4601 TYPE II BASE SHEET	SBS 250 CAP SHEET		
SBS-DP-4-C-M	4	D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS	SBS DUAL PLY FR BASE SHEET	SBS DUAL PLY FR CAP SHEET	
SBS-DP-3-C-M	3	D 4601 TYPE II BASE SHEET	SBS DUAL PLY FR BASE SHEET	SBS DUAL PLY FR CAP SHEET	
SBS-DP-2-C-M	2		SBS DUAL PLY FR BASE SHEET	SBS DUAL PLY FR CAP SHEET	
APP-4-C-M	4	D 4601 TYPE II BASE SHEET & 2 TYPE VI PLY SHEETS	APP 4M CAP SHEET		
APP-4-C-S	4	D 4601 TYPE II BASE SHEET & 2 TYPE VI PLY SHEETS	APP 4S CAP SHEET		
APP-3-C-M	3	D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS	APP 4M CAP SHEET		
APP-3-C-S	3	D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS	APP 4S CAP SHEET		
APP-2-C-M	2	D 4601 TYPE II BASE SHEET	APP 4M CAP SHEET		
APP-2-C-S	2	D 4601 TYPE II BASE SHEET	APP 4S CAP SHEET		
NEW / REPLACEMENT NAILABLE					
SBS-4-W-M	4	D 4601 TYPE II BASE SHEET & 2 TYPE VI PLY SHEETS	SBS 250 CAP SHEET		
SBS-3-W-M	3	D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS	SBS 250 CAP SHEET		
SBS-2-W-M	2	D 4601 TYPE II BASE SHEET	SBS 250 CAP SHEET		
SBS-DP-4-W-M	4	D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS	SBS DUAL PLY FR BASE SHEET	SBS DUAL PLY FR CAP SHEET	
SBS-DP-3-W-M	3	D 4601 TYPE II BASE SHEET	SBS DUAL PLY FR BASE SHEET	SBS DUAL PLY FR CAP SHEET	
SBS-DP-2-W-M	2		SBS DUAL PLY FR BASE SHEET	SBS DUAL PLY FR CAP SHEET	
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 DUAL PLY FR BASE SHEET	SBS DUAL PLY FR CAP SHEET	
SBS-DP-H+2-W-M	3	HYDRO-STOP VAP. BARRIER	SBS DUAL PLY FR BASE SHEET	SBS DUAL PLY FR CAP SHEET	

## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD 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		
<b>NEW / REPLACEMENT INSULATED</b>					
SBS-4-C-M	4	D 4601 TYPE II BASE SHEET & 2 TYPE VI PLY SHEETS	SBS 250 CAP SHEET		
SBS-3-C-M	3	D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS	SBS 250 CAP SHEET		
SBS-2-C-M	2	D 4601 TYPE II BASE SHEET	SBS 250 CAP SHEET		
SBS-DP-4-C-M	4	D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS	SBS DUAL PLY FR BASE SHEET	SBS DUAL PLY FR CAP SHEET	
SBS-DP-3-C-M	3	D 4601 TYPE II BASE SHEET	SBS DUAL PLY FR BASE SHEET	SBS DUAL PLY FR CAP SHEET	
SBS-DP-2-C-M	2	D 4601 TYPE II BASE SHEET	SBS DUAL PLY FR BASE SHEET	SBS DUAL PLY FR CAP SHEET	
APP-4-C-M	4	D 4601 TYPE II BASE SHEET & 2 TYPE VI PLY SHEETS	APP 4M CAP SHEET		
APP-4-C-S	4	D 4601 TYPE II BASE SHEET & 2 TYPE VI PLY SHEETS	APP 4S CAP SHEET		
APP-3-C-M	3	D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS	APP 4M CAP SHEET		
APP-3-C-S	3	D 4601 TYPE II BASE SHEET & 1 TYPE VI PLY SHEETS	APP 4S CAP SHEET		
APP-2-C-M	2	D 4601 TYPE II BASE SHEET	APP 4M CAP SHEET		
APP-2-C-S	2	D 4601 TYPE II BASE SHEET	APP 4S CAP SHEET		
RECOVER EXISTING ROOF      See New / Replacement Insulated INSULATION ADDED					

### Company Name CERTAINTED ROOFING PRODUCTS GROUP

NEW / REPLACEMENT NON-NAILABLE					
STA-C-B2	2	GLASBASE	-	FLINTLASTIC STA	
STA-C-B3	3	-	FLEXIGLAS BASE	FLINTLASTIC STA	FLINTLASTIC STA
STA-C-B4	4	-	FLEXIGLAS BASE	FLINTGLAS PLY IV (2 PLIES)	FLINTLASTIC STA
GTA-C-B2	2	GLASBASE	-	FLINTLASTIC GTA	-
GTA-C-B3	3	-	FLEXIGLAS BASE	FLINTLASTIC STA	FLINTLASTIC GTA
GTA-C-B4	4	-	FLEXIGLAS BASE	FLINTGLAS PLY IV (2 PLIES)	FLINTLASTIC GTA
GTAFR-C-B2	2	GLASBASE	-	FLINTLASTIC GTA-FR	-
GTAFR-C-B3	3	-	FLEXIGLAS BASE	FLINTLASTIC STA	FLINTLASTIC GTA-FR
GTAFR-C-B4	4	-	FLEXIGLAS BASE	FLINTGLAS PLY IV (2 PLIES)	FLINTLASTIC GTA-FR
GMS-C-B2	2	GLASBASE	-	FLINTLASTIC GMS	-
GMS-C-B3	3	-	FLEXIGLAS BASE	FLINTGLAS PLY IV	FLINTLASTIC GMS
GMS-C-B4	4	-	FLEXIGLAS BASE	FLINTGLAS PLY IV (2 PLIES)	FLINTLASTIC GMS
FRP-C-B2	2	GLASBASE	-	FLINTLASTIC FR-P	-
FRP-C-B3	3	-	FLEXIGLAS BASE	FLINTLASTIC PLY IV	FLINTLASTIC FR-P
FRP-C-B4	4	-	FLEXIGLAS BASE	FLINTLASTIC PLY IV (2 PLIES)	FLINTLASTIC FR-P
GTS-C-B2	2	GLASBASE	-	FLINTLASTIC GTS	-
GTS-C-B3	3	-	FLEXIGLAS BASE	FLINTGLAS PLY IV	FLINTLASTIC GTS
GTS-C-B4	4	-	FLEXIGLAS BASE	FLINTGLAS PLY IV (2 PLIES)	FLINTLASTIC GTS
FRBC-C-B2	2	-	FLEXIGLAS FR BASE	FLINTLASTIC FR CAP	-
FRBC-C-B3	3	-	FLEXIGLAS FR BASE	FLEXIGLAS FR BASE	FLINTLASTIC FR CAP
FRBC-C-B4	4	-	FLEXIGLAS FR BASE	FLINTGLAS PLY IV (2 PLIES)	FLINTLASTIC FR CAP
<b>NEW / REPLACEMENT NAILABLE</b>					
STA-N-B2	2	GLASBASE	-	FLINTLASTIC STA	
STA-N-B3	3	-	FLEXIGLAS BASE	FLINTLASTIC STA	FLINTLASTIC STA
STA-N-B4	4	-	FLEXIGLAS BASE	FLINTGLAS PLY IV (2 PLIES)	FLINTLASTIC STA
GTA-N-B2	2	GLASBASE	-	FLINTLASTIC GTA	-
GTA-N-B3	3	-	FLEXIGLAS BASE	FLINTLASTIC STA	FLINTLASTIC GTA
GTA-N-B4	4	-	FLEXIGLAS BASE	FLINTGLAS PLY IV (2 PLIES)	FLINTLASTIC GTA

### Company Name CERTAINTED ROOFING PRODUCTS GROUP (continued)

NEW / REPLACEMENT NAILABLE (contd)					
GTAFR-N-B2	2	GLASBASE	-	FLINTLASTIC GTA-FR	-

## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET
GTAFR-N-B3	3	-	FLEXIGLAS BASE	FLINTLASTIC STA	FLINTLASTIC GTA-FR
GTAFR-N-B4	4	-	FLEXIGLAS BASE	FLINTGLAS PLY IV (2 PLIES)	FLINTLASTIC GTA-FR
GMS-N-B2	2	GLASBASE	-	FLINTLASTIC GMS	-
GMS-N-B3	3	-	FLEXIGLAS BASE	FLINTGLAS PLY IV	FLINTLASTIC GMS
GMS-N-B4	4	-	FLEXIGLAS BASE	FLINTGLAS PLY IV (2 PLIES)	FLINTLASTIC GMS
FRP-N-B2	2	GLASBASE	-	FLINTLASTIC FR-P	-
FRP-N-B3	3	-	FLEXIGLAS BASE	FLINTLASTIC PLY IV	FLINTLASTIC FR-P
FRP-N-B4	4	-	FLEXIGLAS BASE	FLINTLASTIC PLY IV (2 PLIES)	FLINTLASTIC FR-P
GTS-N-B2	2	GLASBASE	-	FLINTLASTIC GTS	-
GTS-N-B3	3	-	FLEXIGLAS BASE	FLINTGLAS PLY IV	FLINTLASTIC GTS
GTS-N-B4	4	-	FLEXIGLAS BASE	FLINTGLAS PLY IV (2 PLIES)	FLINTLASTIC GTS
FRBC-N-B3	3	GLASBASE	-	FLEXIGLAS FR BASE	FLINTLASTIC FR CAP
FRBC-N-B4	4	-	FLEXIGLAS FR BASE	FLINTGLAS PLY IV (2 PLIES)	FLINTLASTIC FR CAP
<b>NEW / REPLACEMENT INSULATED</b> See description of the following specs under New / Replacement Nailable and Non-Nailable					
STA-N-B2/IN	GMS-C-B2/IC				
STA-N-B3/IN	GMS-C-B3/IC				
STA-N-B4/IN	GMS-C-B4/IC				
STA-C-B2/IC	FRP-N-B2/IN				
STA-C-B3/IC	FRP-N-B3/IN				
STA-C-B4/IC	FRP-N-B4/IN				
GTA-N-B2/IN	FRP-C-B2/IC				
GTA-N-B3/IN	FRP-C-B3/IC				
GTA-N-B4/IN	FRP-C-B4/IC				
GTA-C-B2/IC	GTS-N-B2/IN	& (All New/Replacement Specs /IS)			
GTA-C-B3/IC	GTS-N-B3/IN				
GTA-C-B4/IC	GTS-N-B4/IN				
GTAFR-N-B2/IN	GTS-C-B2/IC				
GTAFR-N-B3/IN	GTS-C-B3/IC				
GTAFR-N-B4/IN	GTS-C-B4/IC				
GTAFR-C-B2/IC	FRBC-N-B3/IN				
GTAFR-C-B3/IC	FRBC-N-B4/IN				
GTAFR-C-B4/IC	FRBC-C-B2/IN				
GMS-N-B2/IN	FRBC-C-B3/IN				
GMS-N-B3/IN	FRBC-C-B4/IN				
GMS-N-B4/IN					
<b>RECOVER EXISTING ROOF</b> See description of the following specs under New / Replacement Nailable and Non-Nailable					
STA-N-B2/RN	GMS-N-B2/RN	FRBC-N-B3/RN			
STA-N-B3/RN	GMS-N-B3/RN	FRBC-N-B4/RN			
STA-N-B4/RN	GMS-N-B4/RN	FRBC-C-B2/RC			
STA-C-B2/RC	GMS-C-B2/RC	FRBC-C-B3/RC			
STA-C-B3/RC	GMS-C-B3/RC	FRBC-C-B4/RC			
STA-C-B4/RC	GMS-C-B4/RC				
GTA-N-B2/RN	FRP-N-B2/RN				
GTA-N-B3/RN	FRP-N-B3/RN				
GTA-N-B4/RN	FRP-N-B4/RN				
GTA-C-B2/RC	FRP-C-B2/RC				
GTA-C-B3/RC	FRP-C-B3/RC				
GTA-C-B4/RC	FRP-C-B4/RC				
GTAFR-N-B2/RN	GTS-N-B2/RN				
GTAFR-N-B3/RN	GTS-N-B3/RN				
GTAFR-N-B4/RN	GTS-N-B4/RN				
GTAFR-C-B2/RC	GTS-C-B2/RC				
GTAFR-C-B3/RC	GTS-C-B3/RC				
GTAFR-C-B4/RC	GTS-C-B4/RC				
<b>RECOVER EXISTING ROOF INSULATION ADDED</b> (All New/Replacement Specs /R)					

## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER 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 <b>DANOSA CARIBBEAN, INC.</b>					
NEW / REPLACEMENT NON-NAILABLE					
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 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-35	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		
NEW / REPLACEMENT INSULATED					
1-ID	3	BASEDAN II	ESTERDAN R-35	ESTERDAN RM	
4-ID	3	BASEDAN II	GLASDAN R-36	ESTERDAN RM	
RECOVER EXISTING ROOF					
1-ID	3	BASEDAN II	ESTERDAN R-36	ESTERDAN RM	
4-ID	3	BASEDAN II	GLASDAN R-36	ESTERDAN RM	
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	

Company Name **DIBITEN**

NEW / REPLACEMENT NON-NAILABLE					
403	1	NONE	POLY/4		
453	1	NONE	POLY/4.5 GRANULAR		
403-2	2	NONE	POLY/4	POLY/4	
453-2	2	NONE	POLY/4	POLY/4.5 GRANULAR	
503	2	NONE	POLY/4		
NEW / REPLACEMENT NAILABLE					
401	2	APPROVED	POLY/4		
451	2	APPROVED	POLY/4.5 GRANULAR		
401-2	3	APPROVED	POLY/4	POLY/4	
451-2	3	APPROVED	POLY/4	POLY/4.5 GRANULAR	
501	2	APPROVED	POLY/5		
NEW / REPLACEMENT INSULATED					
402	2	FIBERGLASS	POLY/4		
152	2	FIBERGLASS	POLY/4.5 GRANULAR		
404	2	FIBERGLASS	POLY/4		
454	2	FIBERGLASS	POLY/4.5 GRANULAR		
402-2	3	FIBERGLASS	POLY/4	POLY/4	
452-2	3	FIBERGLASS	POLY/4	POLY/4.5 GRANULAR	
404-2	3	FIBERGLASS	POLY/4	POLY/4	
454-2	3	FIBERGLASS	POLY/4	POLY/4.5 GRANULAR	
502	2	FIBERGLASS	POLY/5		
504	2	FIBERGLASS	POLY/5		
RECOVER EXISTING ROOF					
R 405	2	FIBERGLASS	POLY/4		
R 455	2	FIBERGLASS	POLY/4.5 GRANULAR		
R 406	2	FIBERGLASS	POLY/4		
R 456	2	FIBERGLASS	POLY/4.5 GRANULAR		
R 505	2	FIBERGLASS	POLY/5		
R 506	2	FIBERGLASS	POLY/5		

## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> 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 (continued)**

RECOVER EXISTING ROOF INSULATION ADDED					
402	2	FIBERGLASS	POLYL/4		
452	2	FIBERGLASS	POLY/4.5 GRANULAR		
404	2	FIBERGLASS	POLY/4		
454	2	FIBERGLASS	POLY/4.5 GRANULAR		
402-2	3	FIBERGLASS	POLY/4	POLY/4	
452-2	3	FIBERGLASS	POLY/4	POLY/4.5 GRANULAR	
404-2	3	FIBERGLASS	POLY/4	POLY/4	
454-2	3	FIBERGLASS	POLY/4	POLY/4.5 GRANULAR	
502	2	FIBERGLASS	POLY/5		
504	2	FIBERGLASS	POLY/5		

Company Name **ECOLOGY ROOF SYSTEMS**

NEW / REPLACEMENT NON-NAILABLE					
2000-2-CON-M	2	ERS 401	ANY ERS 500 SERIES	ANY ERS 500,600 OR 700 SERIES	
2000-2-CON-C	2	ERS 401	ANY ERS 500 SERIES	ANY ERS 500,600 OR 700 SERIES	
2000-2-CON-G	2	ERS 401	ANY ERS 500 SERIES	ANY ERS 500,600 OR 700 SERIES	
2000-3-CON-M	3	ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES
2000-3-CON-C	3	ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES
2000-3-CON-G	3	ERS 401	ANY ERS 500 SERIES	ANY ERS 500 S0	ANY ERS 500, 600 OR 700 SERIES
2002-2-CON-M			ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2002-2-CON- C			ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2002-2-CON-G			ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
3000-2-CON-M		ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	
3000-2-CON-C		ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	
3000-2-CON-G		ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	
3000-3-CON-M	3	ERS 401	ANY ERS 400, 500 SERIES	ANY ERS 400, 500 SERIES	
3000-3-CON-C	3	ERS 401	ANY ERS 400, 500 SERIES	ANY ERS 400, 500 SERIES	
3000-3-CON-G	3	ERS 401	ANY ERS 400, 500 SERIES	ANY ERS 400, 500 SERIES	
NEW / REPLACEMENT NAILABLE					
2000-2-ND-M	2	ERS 401	ANY ERS 300 SERIES	ANY ERS 500,600 OR 700 SERIES	
2000-2-ND-C	2	ERS 401	ANY ERS 300 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2000-2-ND-G	2	ERS 401	ANY ERS 300 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2000-2-ND-M	2	ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES
2000-3-ND-C		ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES
2000-3-ND-G		ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	ANY ERS 500, 600, OR 700 SERIES
2002-2-ND-M		ERS 401	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2002-2-ND-C		ERS 401	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2002-2-ND-G	2		ANY ERS 500 SERIES	ANY 505, 507	
2002-2-ND-M	3		ANY ERS 500 SERIES	ANY ERS 600 SERIES	
3000-2-ND-C	3		ANY ERS 500 SERIES	ANY ERS 600 SERIES	
3000-3-ND-G	3		ANY ERS 500 SERIES	ANY ERS 600 SERIES	
3000-3-ND-M	3	ERS 400, 401	ANY ERS 500, 600 SERIES	ANY ERS 500, 600 SERIES	ANY ERS 600, 700 SERIES
3000-3-ND-C	3	ERS 400, 401	ANY ERS 500, 600 SERIES	ANY ERS 500, 600 SERIES	ANY ERS 600, 700 SERIES
3000-3-ND-G	3	ERS 400, 401	ANY ERS 500, 600 SERIES	ANY ERS 500, 600 SERIES	ANY ERS 600, 700 SERIES
NEW / REPLACEMENT INSULATED					
2000-2-IN-M	2	ERS 400	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2000-2-IN-C	2	ERS 400	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2000-2-IN-G	2	ERS 400	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2000-3-IN-M	3	ERS 400	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2000-3-IN-C	3	ERS 400	ANY ERS 500 SERIES	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES
2000-3-IN-G	3	ERS 400	ANY ERS 500 SERIES	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES
2002-2-IN-M			ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2002-2-IN-C			ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2002-2-IN-G			ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
3000-2-IN-M		ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES
3000-2-IN-C		ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES
3000-2-IN-G		ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES
3000-3-IN-M	3	ERS 400, 400-6, 401	ANY ERS 500, 600 SERIES	ANY ERS 500, 600 SERIES	ANY ERS 600, 700 SERIES
3000-3-IN-C	3	ERS 400, 400-6, 401	ANY ERS 500, 600 SERIES	ANY ERS 500, 600 SERIES	ANY ERS 600, 700 SERIES
3000-3-IN-G	3	ERS 400, 400-6, 401	ANY ERS 500, 600 SERIES	ANY ERS 500, 600 SERIES	ANY ERS 600, 700 SERIES
RECOVER EXISTING ROOF					

## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET

RECOVER EXISTING ROOF INSULATION ADDED					
2000-2-IN-M	2	ERS 401	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2000-2-IN-C	2	ERS 401	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2000-2-IN-G	2	ERS 401	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2000-3-IN-M	3	ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES
2000-3-IN-C	3	ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES
2000-3-IN-G	3	ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES
2002-2-IN-M			ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2002-2-IN-C			ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
2002-2-IN-G			ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES	
3000-2-IN-M		ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	ANY ERS 500, 600 OR 700 SERIES
3000-2-IN-C		ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	
3000-2-IN-G		ERS 401	ANY ERS 500 SERIES	ANY ERS 500 SERIES	
3000-3-IN-M	3	ERS 400, 400-6, 401	ANY ERS 500, 600 SERIES	ANY ERS 500, 600 SERIES	ANY ERS 600, 700 SERIES
3000-3-IN-C	3	ERS 400, 400-6, 401	ANY ERS 500, 600 SERIES	ANY ERS 500, 600 SERIES	ANY ERS 600, 700 SERIES
3000-3-IN-G	3	ERS 400, 400-6, 401	ANY ERS 500, 600 SERIES	ANY ERS 500, 600 SERIES	ANY ERS 600, 700 SERIES

Company Name **FIRESTONE BUILDING PRODUCTS**

NEW / REPLACEMENT NON-NAILABLE					
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		FLOOD COAT
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	
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-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	
C-P-46-42-M	2	-	SBS GLASS TORCH BASE	SBS GLASS FR TORCH	
C-P-46-41-M	2	-	SBS GLASS TORCH BASE	SBS FR TORCH	
C-P-45-42-M	2	-	SBS POLY TORCH BASE	SBS GLASS FR TORCH	
C-P-45-41-M		-	SBS POLY TORCH BASE	SBS FR TORCH	
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		FLOOD COAT
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		

## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET

Company Name **FIRESTONE BUILDING PRODUCTS (continued)**

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	
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	
W-M-46-42-M	2	MB BASE SHEET	SBS GLASS TORCH BASE	SBS GLASS FR TORCH	
W-M-46-41-M	2	MB BASE SHEET	SBS GLASS TORCH BASE	SBS FR TORCH	
W-M-45-42-M	2	MB BASE SHEET	SBS POLY TORCH BASE	SBS GLASS FR TORCH	
W-M-45-41-M	2	MB BASE SHEET	SBS POLY TORCH BASEQ	SBS FR TORCH	
<b>NEW / REPLACEMENT INSULATED</b>					
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	
I-46-42-M	2		SBS GLASS TORCH BASE	SBS GLASS FR TORCH	
I-46-41-M	2		SBS GLASS TORCH BASE	SBS FR TORCH	
I-45-42-M	2		SBS POLY TORCH BASE	SBS GLASS FR TORCH	
I-45-41-M	2		SBS POLY TORCH BASE	SBS FR TORCH	
<b>RECOVER EXISTING ROOF</b>					
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	
<b>RECOVER EXISTING ROOF INSULATION ADDED</b>					
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 **GAF MATERIALS CORPORATION**

<b>NEW / REPLACEMENT NON-NAILABLE</b>					
NN-0-1-TS	1	NONE	RUBEROID TORCH (SMOOTH)		
NN-1-1-TG	2	GAFGLAS 75 BASE SHEET	RUBEROID TORCH (GRANULE)		
NN-1-1-MG	2	GAFGLAS 75 BASE SHEET	RUBEROID MOP (GRANULE)		
NN-1-1-MGFR	2	GAFGLAS 75 BASE SHEET	RUBEROID 170 FR		
NN-1-1-MSG	2	GAFGLAS 75 BASE SHEET	RUBEROID MOP SMOOTH (GRAVEL)		
<b>NEW / REPLACEMENT NON-NAILABLE (contd)</b>					



## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER 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
NN-1-1-TS	2	GAFGAS 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	GAFGAS 75 BASE SHEET	RUBEROID TORCH		
NN-1-2-20/30	3	GAFGAS 75 BASE SHEET	RUBEROID 20	RUBEROID 30	
NN-1-2-20/30 FR	3	GAFGAS 75 BASE SHEET	RUBEROID 20	RUBEROID 30 FR	
NEW / REPLACEMENT NAILABLE					
N-1-1-TG	2	GAFGAS 75 BASE SHEET	RUBEROID TORCH (GRANULE)		
N-1-1-MG	2	GAFGAS 75 BASE SHEET	RUBEROID MOP (GRANULE)		
N-1-1-TS	2	GAFGAS 75 BASE SHEET	RUBEROID TORCH (SMOOTH)		
N-1-1-TSC	2	GAFGAS 75 BASE SHEET	RUBEROID TORCH (SMOOTH)		
N-1-1-M170FR	2	GAFGAS 75 BASE SHEET	RUBEROID MOP 170 FR		
N-1-1-MG	3	GAFGAS 75 BASE SHEET	RUBEROID MOP (GRANULE)		
N-1-2-MGP	3	GAFGAS 75 BASE SHEET	RUBEROID MOP (SMOOTH)	RUBEROID MOP PLUS	
N-1-2-MGPFR	3	GAFGAS 75 BASE SHEET	RUBEROID MOP (SMOOTH)	RUBEROID MOP FR	
N-1-2-TGP	3	STRATAVENT	RUBEROID TORCH SMOOTH	RUBEROID TORCH PLUS	
N-1-2-TGPFR	3	STRATAVENT	RUBEROID TORCH SMOOTH	RUBEROID TORCH FR	
N-2-1-MGP	3	GAFGAS 75 BASE SHEET AND 1 PLY 4 OR PLY 6	RUBEROID MOP PLUS		
N-2-1-MGPFR	3	GAFGAS STRATAVENT AND 1 PLY 4 OR PLY 6	RUBEROID MOP FR		
N-2-1-TGP	3	GAFGAS STRATAVENT AND GAFGAS PLY 6	RUBEROID TORCH PLUS		
N-2-1-TGPFR	3	GAFGAS STRATAVENT AND GAFGAS PLY 6	RUBEROID TORCH FR		
N-2-(20/P6)-1-M6P	3	GAFGAS PLY 6	RUBEROID 20	RUBEROID MOP PLUS	
N-2-(20/P6)-1-M6PFR	3	GAFGAS PLY 6	RUBEROID 20	RUBEROID MOP FR	
N-3-1-MGP	4	GAFGAS STRATAVENT AND 2 PLY 4 OR PLY 6	RUBEROID MOP PLUS		
N-3-1-MGPFR	4	GAFGAS STRATAVENT AND 2 PLY 4 OR PLY 6	RUBEROID MOP FR		
N-3-1-TGP	4	GAFGAS STRATAVENT AND 2 GAFGAS PLY 6	RUBEROID TORCH PLUS		
N-3-1-TGPFR	4	GAFGAS STRATAVENT AND 2 GAFGAS PLY 6	RUBEROID TORCH FR		
N-1-2-20/30	3	GAFGAS 75 BASE SHEET OR 1 PLY 4 OR PLY 6	RUBEROID 20	RUBEROID 30	
N-1-2-20/30 FR	3	GAFGAS 75 BASE SHEET OR 1 PLY 4 OR PLY 6	RUBEROID 20	RUBEROID 30 FR	
N-1-2-20/MG	3	GAFGAS STRATAVENT BASE SHEET	RUBEROID 20	RUBEROID MOP (GRANULE)	
N-1-2-20/MGP	3	GAFGAS STRATAVENT BASE SHEET	RUBEROID 20	RUBEROID MOP PLUS	
N-1-2-20/MGPFR	3	GAFGAS STRATAVENT BASE SHEET	RUBEROID 20	RUBEROID MOP FR	
NEW / REPLACEMENT INSULATED					
I-1-1-TG	2	GAFGAS 75 BASE SHEET	RUBEROID TORCH (GRANULE)		
I-2-1-TG	3	2 GAFGAS PLY 4 OR 6	RUBEROID TORCH (GRANULE)		
I-1-2-TGPFR	3	GAFGAS 75 BASE SHEET	RUBEROID TORCH	RUBEROID TORCH FR	
I-2-1-TGPFR	3	GAFGAS 75 BASE SHEET AND 1 PLY 4 OR PLY 6	RUBEROID TORCH FR		
I-2-1-MGPFR	3	GAFGAS 75 BASE SHEET AND 1 PLY 4 OR PLY 6	RUBEROID MOP FR		
I-0-2-20-MGPFR	2	NONE	RUBEROID 20 (SMOOTH)	RUBEROID MOP FR	
I-3-1-TGPFR	4	3 GAFGAS PLY 4 OR 6	RUBEROID TORCH FR		
I-3-1-MGPFR	4	3 GAFGAS PLY 4 OR 6	RUBEROID MOP FR		
I-1-2-20-MGP	3	GAFGAS 75 BASE SHEET	RUBEROID MOP 20	RUBEROID MOP PLUS	
I-1-2-MGPFR	3	GAFGAS 75 BASE SHEET	RUBEROID MOP (SMOOTH)	RUBEROID MOP FR	
I-1-1-TSC	2	GAFGAS 75 BASE SHEET	RUBEROID TORCH (SMOOTH)		
I-2-1-TGP	3	2 GAFGAS PLY 6	RUBEROID TORCH PLUS		
I-1-2-TGP	3	GAFGAS 75 BASE SHEET	RUBEROID TORCH PLUS		
I-0-2-MGP	2	NONE	RUBEROID MOP 20	RUBEROID MOP PLUS	
I-1-2-20/30	3	GAFGAS 75 BASE SHEET	RUBEROID 20	RUBEROID 30	
I-1-2-20/30 FR	3	GAFGAS 75 BASE SHEET	RUBEROID 20	RUBEROID 30 FR	
I-0-2-20/30	2	NONE	RUBEROID 20	RUBEROID 30	
I-0-2-20/30 FR	2	NONE	RUBEROID 20	RUBEROID 30 FR	
I-1-2-20/MG	3	GAFGAS 75 BASE SHEET	RUBEROID 20	RUBEROID MOP (GRANULE)	
I-1-2-20/MGP	3	GAFGAS 75 BASE SHEET	RUBEROID 20	RUBEROID MOP PLUS	
I-1-2-20/MGPFR	3	GAFGAS 75 BASE SHEET	RUBEROID 20	RUBEROID MOP FR	
I-1-1-MGFR	2	GAFGAS BASE SHEET	RUBEROID MOP 170FR		
I-1-1-MGP	2	GAFGAS BASE SHEET	RUBEROID MOP PLUS		
I-2-1-MG	3	GAFGAS PLY 4 OR 6	RUBEROID MOP (GRANULE)		
I-2-1-MGFR	3	GAFGAS PLY 4 OR 6	RUBEROID MOP 170FR		

COMPANY

GAF MATERIALS CORPORATION (continued)

NEW / REPLACEMENT					
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## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET
INSULATED (contd)					
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	
RECOVER EXISTING ROOF					
R-1-1-TG	2	GAFGLAS 75 BASE SHEET	RUBEROID TORCH		
R-1-1-MG	2	GAFGLAS 75 BASE SHEET	RUBEROID MOP		
R-1-1-MSG	2	GAFGLAS STRATAVENT	RUBEROID MOP SMOOTH (GRAVEL)		
R-1-1-TS	2	GAFGLAS 75 BASE SHEET	RUBEROID TORCH		
R11M6FR	2	GAFGLAS STRATAVENT	RUBEROID MOP 170FR		
R-0-1-TG	1	NONE	RUBEROID TORCH		
R-0-1-TS	1	NONE	RUBEROID TORCH		
R-1-1-TSC	2	GAFGLAS 75 BASE SHEET	RUBEROID TORCH		

Company Name **ICA, INC.**

NEW / REPLACEMENT NON-NAILEABLE					
PS1-NN	1	NONE	ICA PREMIUM APP SMOOTH		
PS2-NN	2	NONE	ICA PREMIUM APP SMOOTH	ICA PREMIUM APP SMOOTH	
PM1-NN	1	NONE	ICA PREMIUM APP MINERAL OR SLATE	-	
PM2-NN	2	NONE	ICA PREMIUM APP SMOOTH	ICA PREMIUM APP MINERAL OR SLATE	
NEW / REPLACEMENT NAILEABLE					
PS1-N	1	ICA FIBERGLASS 62 BASE SHEET	ICA PREMIUM APP SMOOTH		
PS2-N	2	ICA FIBERGLASS 62 BASE SHEET	ICA PREMIUM APP SMOOTH	ICA PREMIUM APP SMOOTH	
PM1-N	1	ICA FIBERGLASS 62 BASE SHEET	ICA PREMIUM APP MINERAL OR SLATE	-	
PM2-N	2	ICA FIBERGLASS 62 BASE SHEET	ICA PREMIUM APP SMOOTH	ICA PREMIUM APP MINERAL OR SLATE	
NEW / REPLACEMENT INSULATED					
PS1-NI	1	ICA FIBERGLASS 62 BASE SHEET	ICA PREMIUM APP SMOOTH		
PS2-NI	2	ICA FIBERGLASS 62 BASE SHEET	ICA PREMIUM APP SMOOTH	ICA PREMIUM APP SMOOTH	
PM1-NI	1	ICA FIBERGLASS 62 BASE SHEET	ICA PREMIUM APP MINERAL	-	
PM2-NI	2	ICA FIBERGLASS 62 BASE SHEET	ICA PREMIUM APP SMOOTH	ICA PREMIUM APP MINERAL OR SLATE	
PS1-NNI	1	ICA FIBERGLASS 62 BASE SHEET	ICA PREMIUM APP SMOOTH	-	
PS2-NNI	2	ICA FIBERGLASS 62 BASE SHEET	ICA PREMIUM APP SMOOTH	ICA PREMIUM APP SMOOTH	
PM1-NNI	1	ICA FIBERGLASS 62 BASE SHEET	ICA PREMIUM APP MINERAL	-	
PM2-NNI	2	ICA FIBERGLASS 62 BASE SHEET	ICA PREMIUM APP SMOOTH	ICA PREMIUM APP MINERAL OR SLATE	
RECOVER EXISTING ROOF	See New / Replacement: Nailable and Non-nailable				
RECOVER EXISTING ROOF INSULATION ADDED	See New / Replacement Insulated				

Company Name **IKO INDUSTRIES INC.**

NEW / REPLACEMENT NON-NAILEABLE					
IKO #5	2	IKO GLASS BASE OR IKO ORGANIC BASE	IKO ARMOURPLAST OR IKO MODIFLEX OR IKO TORCHFLEX		
NEW / REPLACEMENT NAILEABLE		OR IKO ORGANIC BASE	OR IKO MODIFLEX		
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 & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
MANUFACTURER'S SPECIFICATION NO.			FIRST SHEET	SECOND SHEET	THIRD SHEET
RECOVER EXISTING ROOF INSULATED ADDED					
IKO #2	2	IKO GLASS BASE OR IKO ORGANIC BASE	IKO ARMOURPLAST OR IKO MODIFLEX OR IKO TORCHFLEX		

Company Name **JOHNS MANVILLE INTERNATIONAL, INC.**

NEW / REPLACEMENT NON-AVAILABLE					
2CID	2	GLASPLY PREMIER	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR		
2CID	2	GLASBASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR		
2CID	2	NONE	DYNABASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	
2CID-C	2	GLASBASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR		
2CID-C	2	NONE	DYNABASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	
2CIG	2	GLASPLY PREMIER OR GLASBASE	DYNAPLY OR DYNAKAP		
2CIG	2	NONE	DYNABASE	DYNAPLY OR DYNAKAP	
2FID	2	GLASPLY IV OR GLASBASE	DYNAGLAS 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		
2PID	2	PP 28 GLASBASE	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR		
2PID	2	NONE	DYNALASTIC 180S DYNABASE, DYNAPLY	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR	
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	TRICOR, BICOR, OR APPEX SERIES		
2CBN-W/2PBN-W	2	GLASBASE, PP28	TRICOR M, TRICOR M FR, OR APPEX SERIES		
3CBS-W/3PBS-W	3	GLASBASE, PP28	JOHNS MANVILLE APP BASE	TRICOR, BICOR, OR APPEX SERIES	
3CBN-W/3PBN-W	3	GLASBASE, PP28	JOHNS MANVILLE APP BASE	TRICOR M, TRICOR M FR OR APPEX SERIES	
2F10	2		DYNAWELD BASE	DYNAWELD CAP FR	
3F10 (HW)	3		DYNAWELD BASE	DYNAWELD BASE	DYNAWELD CAP FR
3F10 (A1T) HW	3	TWO GLASS PLY	DYNAWELD CAP FR		
4F10 (HW) A1T	4	THREE GLASS PLY PREMIER IV	DYNAWELD CAP FR		
NEW / REPLACEMENT AVAILABLE					
2CND	2	VENTSULATION OR PP 28GLASBASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR		
2CND	2	NONE	DYNABASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	
2CND-C	2	VENTSULATION OR PP 28 GLASBASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR		
2CND-C	2	NONE	DYNABASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	
2CNG	2	VENTSULATION OR PP 28 GLASBASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR		
2CNG	2	NONE	DYNABASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	
2FND	2	VENTSULATION OR PP 28 GLASBASE	DYNAGLAS OR DYNAGLAS FR		
2FND	2	NONE	DYNABASE	DYNAGLAS, DYNAGLAS 30FR, OR DYNAGLAS FR	

## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> 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 **JOHNS MANVILLE INTERNATIONAL, INC. (continued)**

2FND-C	2	VENTSULATION OR PP 28 GLASBASE	DYNAGLAS OR DYNAGLAS FR		
2PND	2	VENTSULATION OR PP 28 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 PP 28 GLASBASE	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR		
3CND	3	VENTSULATION OR PP 28 GLASBASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR		
3CLD	3	VENTSULATION	DYNABASE	DYNAKAP, DYNAKAP FR, DYNAMAX, OR DYNAMAX FR	
3FND	3	VENTSULATION OR PP 28 GLASBASE	DYNAGLAS OR DYNAGLAS FR		
3FLD	3	VENTSULATION	DYNABASE	DYNAGLAS, DYNAGLAS 30 FR, OR DYNAGLAS FR	
3PND	3	VENTSULATION OR	DYNALASTIC 180, DYNALASTIC 180 FR,		
3PLD	3	VENTSULATION	DYNALASTIC 180S	DYNALASTIC 180, DYNALASTIC 180 FR, DYNALASTIC 250, OR DYNALASTIC 250 FR	
2CNS-W/2PNS-W	2	GLASBASE, PP28	TRICOR, BICOR, OR APPEX SERIES		
2CNS-W/2PNS-W	2	NONE	JOHNS MANVILLE APP BASE	TRICOR, BICOR, OR APPEX SERIES	
2CNN-W/2PNN-W	2	GLASBASE, PP28	CLASSIC SERIES, TRICOR M, TRICOR M FR, OR APPEX SERIES		
2CNN-W/2PNN-W	2	NONE	JOHNS MANVILLE APP BASE	TRICOR M, TRICOR M FR OR APPEX SERIES	
3CNS-W/3PNS-W	3	GLASBASE, PP28	JOHNS MANVILLE APP BASE	TRICOR, BICOR, OR APPEX SERIES	
3CNS-W/3PNS-W	3	NONE	JOHNS MANVILLE APP BASE	APPEX SERIES	TRICOR, BICOR OR APPEX SERIES
3CNN-W/3PNN-W	3	GLASBASE, PP28	JOHNS MANVILLE APP BASE	CLASSIC SERIES, TRICOR M, TRICOR M FR, OR APPEX SERIES	
3CNN-W/3PNN-W	3	NONE	JOHNS MANVILLE APP BASE	APPEX SERIES	TRICOR M, TRICOR MFR, OR APPEX SERIES
3FLD (HW)	3	PP28, GLASBASE, OR VENTSULATION	DYNAWELD BASE	DYNAWELD CAP FR	
NEW / REPLACEMENT INSULATED					
1CIN-W/1PIS-W	1	NONE	TRICOR, BICOR, OR APPEX SERIES		
1CIN-W/1PIN-W	1	NONE	TRICOR M, TRICOR M FR, OR APPEX SERIES		
2CIS-W/2PIS-W	2	GLASBASE, PP28	TRICOR, BICOR, OR APPEX SERIES		
2CIS-W/2PIS-W	2	NONE	JOHNS MANVILLE APP BASE	TRICOR M, TRICOR M FR OR APPEX SERIES	
2CIN-W/2PIN-W	2	GLASBASE, PP28	TRICOR M, TRICOR M FR, OR APPEX SERIES		
2CIN-W/2PIN-W	2	NONE	JOHNS MANVILLE APP BASE	TRICOR M, TRICOR M FR OR APPEX SERIES	
3CIS-W/3PIS-W	3	GLASBASE, PP28	JOHNS MANVILLE APP BASE	TRICOR, BICOR, OR APPEX SERIES	
3CIS-W/3PIS-W	3	NONE	JOHNS MANVILLE APP BASE	APPEX SERIES	TRICOR, BICOR APPEX SERIES
3CIN-W/3PIN-W	3	GLASBASE, PP28	JOHNS MANVILLE APP BASE	TRICOR M, TRICOR M FR OR APPEX SERIES	
3CIN-W/3PIN-W	3	NONE	JOHNS MANVILLE APP BASE	APPEX SERIES	TRICOR M, TRICOR MFR, OR APPEX SERIES
RECOVER EXISTING ROOF INSULATION ADDED	See New / Replacement, Non-nailable and Insulated				

Company Name **MALARKEY ROOFING COMPANY**

NEW / REPLACEMENT NON-NAILABLE					
M2-CXB	2		#602 ARCTIC SHIELD		#601 PREMIUM MINERAL
M2-DXB	2		#603 SUPERBASE		#601 PREMIUM MINERAL
M2-EXB	2		#605 PANOPLY		#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

## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER 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
M3-EHB	3		#605 PANOPLY	#500 PREMIUM	#601 PREMIUM MINERAL
M3-EIB	3		#605 PANOPLY	#506 SUPER 6	#601 PREMIUM MINERAL
M3-EBB	3		#605 PANOPLY	#501 PREMIUM I	#601 PREMIUM MINERAL
M3-EEB	3		#605 PANOPLY	#605 PANOPLY	#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 PANOPLY	#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 PANOPLY	#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 PANOPLY	#601 PREMIUM 1 MINERAL
M5-EIB	5		#501 PREMIUM I	#506 SUPER 6	#601 PREMIUM 1 MINERAL
M5-EHB	5		#605 PANOPLY	#500 PREMIUM	#601 PREMIUM 1 MINERAL
M5-BIB	5		#605 PANOPLY	#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 PANOPLY		#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 PANOPLY	#500 PREMIUM	#625 PARAGON MINERAL
M3-EIC	3		#605 PANOPLY	#506 SUPER 6	#625 PARAGON MINERAL
M3-EBC	3		#605 PANOPLY	#501 PREMIUM I	#625 PARAGON MINERAL
M3-EEC	3		#605 PANOPLY	#605 PANOPLY	#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 PANOPLY	#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 PANOPLY	#500 PREMIUM	#625 PARAGON MINERAL
M4-EIC	4		#605 PANOPLY	#506 SUPER 6	#625 PARAGON MINERAL
M4-EBC	4		#605 PANOPLY	#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 PANOPLY	#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 PANOPLY	#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 PANOPLY MINERAL
M2-DXD	2		#603 SUPERBASE		#650 PANOPLY MINERAL
M2-EXD	2		#605 PANOPLY		#650 PANOPLY MINERAL
M3-BHD	3		#501 PREMIUM I	#500 PREMIUM	#650 PANOPLY MINERAL
M3-BID	3		#501 PREMIUM I	#506 SUPER 6	#650 PANOPLY MINERAL
M3-BBD	3		#501 PREMIUM I	#501 PREMIUM I	#650 PANOPLY MINERAL
M3-EHD	3		#605 PANOPLY	#500 PREMIUM	#650 PANOPLY MINERAL
M3-EID	3		#605 PANOPLY	#506 SUPER 6	#650 PANOPLY MINERAL
M3-EBD	3		#605 PANOPLY	#501 PREMIUM I	#650 PANOPLY MINERAL
M3-EED	3		#605 PANOPLY	#605 PANOPLY	#650 PANOPLY MINERAL
M3-FHD	3		#1000 ESHAVENT	#500 PREMIUM	#650 PANOPLY MINERAL
M3-FID	3		#1000 ESHAVENT	#506 SUPER 6	#650 PANOPLY MINERAL
M3-FBD	3		#1000 ESHAVENT	#501 PREMIUM I	#650 PANOPLY MINERAL
M3-FED	3		#1000 ESHAVENT	#605 PANOPLY	#650 PANOPLY MINERAL
M4-BHD	4		#501 PREMIUM I	#500 PREMIUM	#650 PANOPLY MINERAL
M4-BID	4		#501 PREMIUM I	#506 SUPER 6	#650 PANOPLY MINERAL
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

Company Name

**MALARKEY ROOFING COMPANY (continued)**

## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER 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
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
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 NAILABLE** See description of the following specs under New / Replacement Non-Nailable

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
F2-BXG	F2-EXG	F3-BHG
F3-BIG	F3-BBG	F3-EHG
F3-EIG	F3-EBG	
N3-BHB	N3-BIB	

**NEW / REPLACEMENT INSULATED** See description of the following specs under New / Replacement Non-Nailable

M2-CXB	M2-DXB	M2-EXB
M3-BHB	M5-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
F3-BHG	F3-BIG	F3-BBG
F3-EHG	F3-EIG	F3-EBG

**RECOVER EXISTING ROOF** See description of the following specs under New / Replacement Non-Nailable

M3-BBB	M3-BCB	
M3-EHB	M3-EIB	M3-BDB
M3-EEB	M3-FHB	M3-EBB
M3-FBB	M3-FEB	M3-FIB
M4-BIB	M4-BBB	M4-BHB
M4-FHB	M4-FIB	M4-EBB
M4-FEB	M5-BHB	M4-FBB
M5-RHB	M5-EIB	M5-BIB
M3-BIC	M3-BBC	M3-BHC
M3-EIC	M3-EBC	M3-EHC
M3-FHC	M3-FIC	N3-EEC
M3-FCC	M3-FDC	M3-FBC
M4-BHC	M4-BIC	M3-FEC
M4-EHC	M4-EIC	M4-BBC
M4-FHC	M4-FIC	M4-EBC

## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER 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
M4-FEC	M5-BHC	M4-FBC			
M5-BBC	M5-EBC	M5-BIC			
M5-FIC	M5-FBC	M5-FHC			
M3-BID	M3-BBD	M3-BHD			
M3-EID	M3-EBD	M3-EHD			
M3-FHD	M3-FID	M3-EED			
M3-FED	M4-BHD	M3-FBD			
M4-BBD	M4-EHD	M4-BID			
M4-EBD	M4-FHD	M4-EID			
ME-FBD	M4-FED	M4-FID			
M5-EID	M5-EBD	M5-EHD			
M5-FID	M5-FBD	M5-FHD			
M4-BBE	M4-EBE	F3-BHG			
F3-BIG	F3-BBG	F3-EHG			
F3-EIG	F3-EBG				
M3-BHB	MS-BIB				
RECOVER					
EXISTING ROOF	See description of the following specs under New / Replacement Non-Nailable				
INSULATED ADDED					
M2-CXB	M3-FIE	M3-BBB			
M3-BHB	M2-DXB	M3-EHB			
M3-BCB	MS-BIB	M3-EEB			
M3-EIB	M3-BDB	M3-FBB			
M3-FHB	M3-EBB	M4-BIB			
M3-FEB	M3-FIB	M4-EHB			
M4-BBB	M4-BHB	M5-EHB			
M5-BHB	M4-EBB	M2-DXC			
M5-BIB	M5-EIB	M3-BIC			
M2-EXC	M2-CXC	M3-EIC			
M3-BBC	M3-BHC	M3-FHC			
M3-EBC	M3-EHC	M3-FCC			
M3-FIC	M3-EEC	M4-BHC			
M3-FDC	M3-FBC	M4-EHC			
M4-BIC	M3-FEC	M4-FHC			
M4-EIC	M4-BBC	M4-FEC			
M4-FIC	M4-EBC	M5-BBC			
M5-BHC	M4-FBC	M5-FIC			
M5-EBC	M5-BIC	M2-DXD			
M5-FBC	M5-FHC	M3-BID			
M2-EXD	M2-CXD	M3-EID			
M3-BBD	M3-BHD	M3-FHD			
M3-EBD	M3-EHD	M3-FED			
M3-FID	M3-EED	M4-BBD			
M4-BHD	M3-FBD	M4-EBD			
M4-EHD	M4-BID	M4-FBD			
M4-FHD	M4-EID	M4-EID			
M4-FED	M4-FID	M5-FID			
M4-EBD	M4-EHD	F2-BXG			
M5-FBD	M5-FHD	F3-BIG			
F2-EXG	F3-BHG	F3-EIG			
F3-BBG	F3-EHG				
F3-EBG	M2-EXB				

Company Name **MONSEY BAKOR DIVISION OF HENRY CO.**

New / Replacement NON-NAILABLE	2	G100s/s[p/s] OR NP180s/s[p/s][p/p] COATED GLASS BASE	G100gM[MFR] OR NP180gM[MFR] or NP250gM[MFR] or NP250gT4[TFR]		
CDU/PMR 2004					
CDU 2004	2		NP180gM[MFR] or NP180gT[TFR] or NP250gM[MFR] or NP250gT4[TFR]		
NEW / REPLACEMENT NAILABLE	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					
WDU/PMR 2005	2	COATED GLASS BASE	NP180gM[MFR] or NP180gT[TFR] or NP250gM[MFR] or NP250gT4[TFR]		
NEW / REPLACEMENT INSULATED	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					

Company Name **MONSEY BAKOR DIVISION OF HENRY CO. (continued)**

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]	
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## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
MANUFACTURER'S SPECIFICATION NO.			FIRST SHEET	SECOND SHEET	THIRD SHEET
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]		

Company Name **PERFORMANCE ROOF SYSTEMS, INC.**

NEW / REPLACEMENT NON-AVAILABLE					
NNC	2	APPROVED BASE SHEET	BITUTAK MB OR MB MINERAL	OPTIONAL	OPTIONAL
NEW / REPLACEMENT AVAILABLE					
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	DERBIGUM-XPS/DERBICOLOR-XPS	
1N2G-()	3	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP	DERBIGUM-GP/DERBICOLOR-GP	
2N2X-()	4	GLASS FIBER	DERBIGUM-XPS/DERBICOLOR-XPS	DERBIGUM-XPS/DERBICOLOR-XPS	
2N2G-()	4	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP	DERBIGUM-GP/DERBICOLOR-GP	
ND	2	APPROVED BASE SHEET	BITUTAK MB OR MB MINERAL	OPTIONAL	OPTIONAL
NEW / REPLACEMENT INSULATED					
1I1X-()	2	GLASS FIBER	DERBIGUM-XPS/DERBICOLOR-XPS		
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	DERBIGUM-XPS/DERBICOLOR-XPS	
1I2G-()	3	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP	DERBIGUM-GP/DERBICOLOR-GP	
2I2X-()	4	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP	DERBIGUM-XPS/DERBICOLOR-XPS	
2I2G-()	4	GLASS FIBER	DERBIGUM-GP/DERBICOLOR-GP	DERBIGUM-GP/DERBICOLOR-GP	
0I2X-()	2	NONE	DERBIGUM-XPS/DERBICOLOR-XPS		
0I2G-()	2	NONE	DERBIGUM-GP/DERBICOLOR-GP		
INS	2	APPROVED BASE SHEET	BITUTAK MB OR MB MINERAL	OPTIONAL	OPTIONAL
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		
RCV	2				
RECOVER EXISTING ROOF INSULATION ADDED	See New / Replacement Insulated				



## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> 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 **POLYGLASS USA, INC.**

NEW / REPLACEMENT NON-NAILABLE					
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	
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 Non-Nailable				
RECOVER EXISTING ROOF INSULATION ADDED	See New / Replacement, Nailable and Non-Nailable				

Company Name **SIPLAST INC**

NEW / REPLACEMENT NON-NAILABLE					
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 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	
5000PSA	2	PARAGLAS	PARAFOR 50		

## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> 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 (continued)**

NEW / REPLACEMENT NAAILABLE (contd)					
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		
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		
RECOVER EXSITING 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 **TAMKO ROOFING PRODUCTS INC.**

NEW / REPLACEMENT NAAILABLE					
111	2	VAPOR CHAN	AWAPLAN PREMIUM		
112	2	43 BASE/BASE-N-PLY	AWAPLAN PREMIUM		
113	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)	AWAPLAN PREMIUM	
114	3	43 BASE/BASE-N-PLY	GLASS PLY (NONMODIFIED)	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	GLASS PLY (NONMODIFIED)	AWAPLAN HEAT WELD	
114HW	3	43 BASE/BASE-N-PLY	GLASS PLY (NONMODIFIED)	AWAPLAN HEAT WELD	
111FR	2	VAPOR CHAN	AWAPLAN PREMIUM FR		
112FR	2	VAPOR CHAN	AWAPLAN PREMIUM FR		
113FR	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)	AWAPLAN PREMIUM FR	
114FR	3	GLASS BASE	GLASS PLY (NONMODIFIED)	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)	AWAPLAN 170	
211C	2	VAPOR CHAN	AWAPLAN 170		
212C	2	43 BASE/BASE-N-PLY	AWAPLAN 170		
211FR	2	VAPOR CHAN	AWAPLAN 170 FR		
212FR	2	GLASS BASE	AWAPLAN 170 FR		
745	3	VAPOR CHAN	AWAPLAN VERSA SMOOTH	VERSA CAP FR	
1013	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)	AWAFLEX	
1014	3	BASE-N-PLY	GLASS PLY (NONMODIFIED)	AWAFLEX	
1111	2	VAPOR CHAN	SPEEDWELD GRANULATED		
1112	2	GLASS BASE	SPEEDWELD GRANUALTED		
1211	2	VAPOR CHAN	SPEEDWELD SMOOTH		
1212	2	GLASS BASE	SPEEDWELD SMOOTH		
1312	2	BASE-N-PLY	AWAPLAN VERSA FLEX		
1013FR	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)		
1014FR	3	BASE-N-PLY	GLASS PLY (NONMODIFIED)		
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		

NEW / REPLACEMENT					
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## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> MODIFIED BITUMEN SHEET	NAME(S) OF MODIFIED BITUMEN SHEET(S) USED IN MEMBRANE		
			FIRST SHEET	SECOND SHEET	THIRD SHEET
INSULATED (contd)					
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
201	2	GLASS BASE	AWAPLAN 170		
203	2	NONE	AWAPLAN VERSA SMOOTH	AWAPLAN 170	
202	3	2 TAMKO PLY SHEETS	AWAPLAN 170		
204	2	AWAPLAN VERSA FLEX	AWAPLAN 170		
207	2	NONE	VERSA BASE	AWAPLAN 170	
208	4	3 TAMKO PLY SHEETS	AWAPLAN 170		
209	3	NONE	TAM-GLASS PREMIUM (NONMOD)	VERSA BASE	AWAPLAN 170
201FR	2	GLASS BASE	AWAPLAN 170 FR		
203FR	2	NONE	AWAPLAN VERSA SMOOTH	AWAPLAN 170 FR	
204FR	2	AWAPLAN VERSA FLEX	AWAPLAN 170 FR		
207FR	2	NONE	VERSA BASE	AWAPLAN 170 FR	
208FR	4	3 TAMKO PLY SHEETS	AWAPLAN 170 FR		
209FR	3	NONE	TAM-GLASS PREMIUM (NONMOD)	VERSA BASE	AWAPLAN 170 FR
244	2	NONE	AWAPLAN VERSA-SMOOTH	TAM-CAP	
701	2	NONE	VERSA BASE	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	
1001 FR	2	BASE-N-PLY	AWAFLEX FR		
1002 FR	3	2 TAMKO PLY SHEETS	AWAFLEX 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		
1304	2	AWAPLAN VERSA FLEX	AWAPLAN VERSA FLEX		
1343	3	AWAPLAN VERSA FLEX	2 TAMKO PLY SHEETS		
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	
RECOVER EXISTING ROOF					
236FR	3	VAPOR CHAN	GLASS PLY (NONMODIFIED)	AWAPLAN 170 FR	
1134	2	VAPOR CHAN	SPEEDWELD GRANUALTED		
1234	2	VAPOR CHAN	SPEEDWELD SMOOTH		
RECOVER EXISTING ROOF INSULATION ADDED	See New / Replacement, Insulated				

## Modified Bitumen Part 3: Modified Bitumen Specifications

TYPE OF ROOF INSTALLATION & SUBSTRATE	TOTAL NUMBER OF PLIES IN MEMBRANE ASSEMBLY	BASE SHEET DESCRIPTION <b>IF OTHER THAN</b> 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 **TEXAS REFINERY CORP.**

NEW / REPLACEMENT NON-NAILABLE					
N-101	3	TYPE II GLASBASE	MIGHTYPLATE	MIGHTYPLATE	
N-102	3	APPROVED	MIGHTYPLATE	MIGHTYPLATE	
NEW / REPLACEMENT NAILABLE					
N-301	3	TYPE II GLASBASE	MIGHTYPLATE	MIGHTYPLATE	
N-302	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	
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 NON-NAILABLE					
	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 NAILABLE					
	1		MINERAL M.P. 5KG FM		
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	

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## PVC Part 1: General Information

1. COMPANY NAME	DURADEK	FIRESTONE BUILDING PRODUCTS	FIRESTONE BUILDING PRODUCTS	FLEX MEMBRANE INTERNATIONAL	FLEX MEMBRANE INTERNATIONAL
2. PRODUCT NAME	ULTRA	ULTRAPLY 0.45	ULTRAPLY 0.6	FLEX MF/F 50	FLEX MF/R 60
3. PRODUCT DESCRIPTION					
Reinforcement	POLYESTER 10	POLYESTER	POLYESTER	REINF POLY.	REINF POLY.
Colors		WHITE	WHITE	WHITE / OFF WHITE	WHITE / OFF WHITE
Installed Weight (lbs./ft <sup>2</sup> w/o ballast)	0.40	0.30 NOM	0.40 NOM	0.35	0.45
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE
5. USE IN:					
New Roofing	X	X	X	X	X
Reroofing	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HEAT WELD	HEAT WELD	HEAT WELD	HOT AIR WELD	HOT AIR WELD
7. TYPES OF ROOF SYSTEMS					
Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )		10 LBS.	10 LBS.	10 MIN.	10 MIN.
Partially Adhered (method)		MECH. FAST.	MECH. FAST.	MECH. FAST.	MECH. FAST.
Fully Adhered (method)	ADHESIVE	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.
Protected Roof Membrane Assembly		X	X		
8. MINIMUM SLOPE REQUIRED	POSITIVE DRAIN	POSITIVE DRAIN	POSITIVE DRAIN	DEAD LEVEL	DEAD LEVEL
9. ACCEPTABLE SUBSTRATES					
(X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)					
Glass Fiber		O	O	S O	S O
Mineral Fiber		O	O	S O	S O
Polystyrene		O	O	S O	S O
Cellular Glass		O	O	S O	S O
Phenolic					
Fiberboard		X	X	X	X
Perlite				X O	X O
Polyisocyanurate		X	X	X	X
Polyurethane				O	O
Gypsum		O	O	X O	X O
Concrete	X	O	O	S O	S O
Wood Plank		O	O	S O	S O
Plywood	X	O	O	X O	X S
Existing Built-Up Membrane		O	O	S O	S O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	30 - 100	0 - 120	0 - 120	0 - 120	0 - 120
12. FLASHING MATERIAL	PVC MEMBRANE PVC METAL	ULTRAPLY CTD / METAL / REINFORCED MEMBRANE	ULTRAPLY CTD / METAL / REINFORCED MEMBRANE	ROOF MEMBRANE / CTD METAL	ROOF MEMBRANE / CTD METAL
13. FLASHING METHOD	HEAT WELD	HEAT WELD	HEAT WELD	HEAT WELD OR ADHESIVE	HEAT WELD OR ADHESIVE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES
15. COUNTRY OF:					
Origin	USA	USA	USA	USA	USA
Manufacture	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE					
Outside USA	1974	1992			
Within USA	1976	1986	1994	1988	1988
17. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )					
Outside USA	THOUSANDS	THOUSANDS	THOUSANDS		
Within USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTR. DIRECT	DISTR. DIRECT	DISTR. DIRECT	DIRECT	DIRECT
19. NUMBER OF REGIONAL LOCATIONS	12	5	5	4	4
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:				J. DOYLE 610/286-7788	J. DOYLE 610/286-7788
	800/338-3568	800/428-4442	800/428-4442		
22. FOR TECHNICAL INFORMATION, CONTACT:				M GIANGIACOMO 610/286-7788	M GIANGIACOMO 610/286-7788
	800/338-3568	800/428-4511	800/428-4511		
23. SEE APPENDIX IF CHECKED					

## PVC Part 1: General Information

GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.
EVERGUARD EGSR-40	EVERGUARD EGSR-45	EVERGUARD EGSR-50	EVERGUARD EGSR-60	EVERGUARD EGSR-80	EVERGUARD EGFB-40	EVERGUARD EGFB-45	EVERGUARD EGFB-50	EVERGUARD EGFB-60	EVERGUARD EGFB-80
POLYESTER WHITE / GRAY / CUSTOM	POLYESTER WHITE / GRAY / CUSTOM	POLYESTER WHITE / GRAY / CUSTOM	POLYESTER WHITE / GRAY / CUSTOM	POLYESTER WHITE / GRAY / CUSTOM	POLY/FLEECE BK WHITE / GRAY / CUSTOM	POLY/FLEECE BK WHITE / GRAY / CUSTOM	POLY/FLEECE BK WHITE / GRAY / CUSTOM	POLY/FLEECE BK WHITE / GRAY / CUSTOM	POLY/FLEECE BK WHITE / GRAY / CUSTOM
0.26	0.29	0.32	0.38	0.51	0.30	0.33	0.36	0.43	0.55
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
HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD
10	10	10	10	10	10	10	10	10	10
MECH. FAST. ADHESIVE	MECH. FAST. ADHESIVE	MECH. FAST. ADHESIVE	MECH. FAST. ADHESIVE	MECH. FAST. ADHESIVE	MECH. FAST. ADHES/ASPHALT	MECH. FAST. ADHES/ASPHALT	MECH. FAST. ADHES/ASPHALT	MECH. FAST. ADHES/ASPHALT	MECH. FAST. ADHES/ASPHALT
X	X	X	X	X	X	X	X	X	X
PER CODE	PER CODE	PER CODE	PER CODE	PER CODE	PER CODE	PER CODE	PER CODE	PER CODE	PER CODE
X	X	X	X	X	O	O	O	O	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 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
0 -120	0 - 120	0 - 120	0 - 120	0 - 120	0 - 120	0 - 120	0 - 120	0 - 120	0 - 120
REINFORCED MEMBRANE COATED METAL	REINFORCED MEMBRANE COATED METAL	REINFORCED MEMBRANE COATED METAL	REINFORCED MEMBRANE COATED METAL	REINFORCED MEMBRANE COATED METAL	REINFORCED MEMBRANE COATED METAL	REINFORCED MEMBRANE COATED METAL	REINFORCED MEMBRANE COATED METAL	REINFORCED MEMBRANE COATED METAL	REINFORCED MEMBRANE COATED METAL
HOT AIR WELD OR ADHESIVE	HOT AIR WELD OR ADHESIVE	HOT AIR WELD OR ADHESIVE	HOT AIR WELD OR ADHESIVE	HOT AIR WELD OR ADHESIVE	HOT AIR WELD OR ADHESIVE	HOT AIR WELD OR ADHESIVE	HOT AIR WELD OR ADHESIVE	HOT AIR WELD OR ADHESIVE	HOT AIR WELD OR ADHESIVE
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
1988	1988	1988	1988	1988	1990	1990	1990	1990	1990
MILLIONS+	MILLIONS+	MILLIONS+	MILLIONS+	MILLIONS+	MILLIONS+	MILLIONS+	MILLIONS+	MILLIONS+	MILLIONS+
DIST/DIRECT	DIST/DIRECT	DIST/DIRECT	DIST/DIRECT	DIST/DIRECT	DIST/DIRECT	DIST/DIRECT	DIST/DIRECT	DIST/DIRECT	DIST/DIRECT
4	4	4	4	4	4	4	4	4	4
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE
TECHNICAL SERVICES	TECHNICAL SERVICES	TECHNICAL SERVICES	TECHNICAL SERVICES	TECHNICAL SERVICES	TECHNICAL SERVICES	TECHNICAL SERVICES	TECHNICAL SERVICES	TECHNICAL SERVICES	TECHNICAL SERVICES

## PVC Part 1: General Information

1. COMPANY NAME	GENFLEX ROOFING SYSTEMS	GLENFLEX ROOFING SYSTEMS	GLENFLEX ROOFING SYSTEMS	GLENFLEX ROOFING SYSTEMS	GLENFLEX ROOFING SYSTEMS
2. PRODUCT NAME	GENFLEX RM.048	GENFLEX RM .060	GENFLEX RMT .080	GENFLEX RM-C .048	GENFLEX RM-C .060
3. PRODUCT DESCRIPTION	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER
Reinforcement					
Colors	WHITE / GRAY / TAN	WHITE / GRAY / TAN	WHITE	WHITE / GRAY / TAN	WHITE / GRAY / TAN
Installed Weight (lbs./ft <sup>2</sup> w/o ballast)	0.30	0.40	0.51	0.30	0.30
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE
5. USE IN:					
New Roofing	X	X	X	X	X
Reroofing	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HOIT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD
7. TYPES OF ROOF SYSTEMS					
Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )					
Partially Adhered (method)	MECH. FAST.	MECH. FAST.	MECH. FAST.	MECH. FAST.	MECH. FAST.
Fully Adhered (method)	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.
Protected Roof Membrane Assembly					
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)					
Glass Fiber	X	X	X	X	X
Mineral Fiber	X	X	X	X	X
Polystyrene	S	S	S	S	S
Cellular Glass	X	X	X	X	X
Phenolic					
Fiberboard	X	X	X	X	X
Perlite	X	X	X	X	X
Polyisocyanurate	X	X	X	X	X
Polyurethane					
Gypsum	X	X	X	X	X
Concrete	O	O	O	O	O
Wood Plank	O	O	O	O	O
Plywood	O	O	O	O	O
Existing Built-Up Membrane	O	O	O	O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS
11. WORKABLE TEMPERATURE RANGE (degrees F)	0 – 140	0 – 140		0 – 140	0 – 140
12. FLASHING MATERIAL	PVC MEMBRANE OR PVC-COATED MATERIAL	PVC MEMBRANE OR PVC-COATED MATERIAL	PVC MEMBRANE OR PVC-COATED MATERIAL	PVC MEMBRANE OR PVC-COATED MATERIAL	PVC MEMBRANE OR PVC-COATED MATERIAL
13. FLASHING METHOD	SOLVENT ADHESIVE OR HOT AIR WELD	SOLVENT ADHESIVE OR HOT AIR WELD	SOLVENT ADHESIVE OR HOT AIR WELD	SOLVENT ADHESIVE OR HOT AIR WELD	SOLVENT ADHESIVE OR HOT AIR WELD
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES
15. COUNTRY OF:					
Origin	USA	USA	USA	USA	USA
Manufacture	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE					
Outside USA	1983	1983			
Within USA	1980	1980	1989	1995	1995
17. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )					
Outside USA					
Within USA	MILLIONS	MILLIONS	THOUSANDS	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	8	8	8	8	8
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	SALES OFFICE 800/443-4272	SALES OFFICE 800/443-4272	SALES OFFICE 800/443-4272	SALES OFFICE 800/443-4272	SALES OFFICE 800/443-4272
22. FOR TECHNICAL INFORMATION, CONTACT:	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
23. SEE APPENDIX IF CHECKED					



## PVC Part 1: General Information

IB ROOF SYSTEMS	IB ROOF SYSTEMS	IB ROOF SYSTEMS	IB ROOF SYSTEMS	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	MULE-HIDE PRODUCTS CO., INC.
IB SINGLE-PLY	INSULATED BLANKET	SINGLE-PLY 60 MIL.	SINGLE-PLY 80 MIL..	ULTRAGARD V250	ULTRAGARD V260	ULTRAGARD SR 50	ULTRAGARD SR 60	ULTRAGARD SR80	MH 50
POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER
WHITE / TAN / GRAY / BLUE	WHITE / TAN / GRAY / BLUE	WHITE	WHIE	BLACK	BLACK	WHITE	WHITE	WHITE	WHITE
0.33	0.33	0.41	0.55	0.42	0.44	0.42	0.44	0.58	0.42
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
HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR	HOT AIR	HOT AIR	HOT AIR	HOT AIR	HEAT WELD
BALLASTED	BALLASTED	BALLASTED	BALLASTED						
MECH. FAST.	MECH. FAST.	MECH. FAST.	MECH. FAST.	MECH. FAST.	MECH. FAST.	MECH. FAST.	MECH. FAST.	MECH. FAST.	MECH. FAST.
CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.
NONE	NONE	NONE	NONE						NONE
X	X	X	X	O	O	O	O	O	O
S	S	S	S	S O	S O	S O	S O	S O	S O
X S	X S	X S	X S	S O	S O	S O	S O	S O	S O
S	X	S	S	S O	S O	S O	S O	S O	S O
X	X	X	X						
X S	X S	X S	X S	X	X	X	X	X	X
X	X	X	X	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 O	X O	X O	X O	X O	X O
X S	X S	X S	X S	S O	S O	S O	S O	S O	S O
S	S	S	S	S O	S O	S O	S O	S O	S O
S	S	S	S	X S	X S	X S	X S	X S	X S
S	S	S	S	S O	S O	S O	S O	S O	S O
NONE	NONE	NONE	NONE	SEE SPECS	SEE SPECS	SEE SPECS	SEE SPECS	SEE MFR	SEE SPECS
0-120	0-120	0-120	0-120	0 – 120	0 – 120	0 – 120	0 – 120	0 – 120	0 – 120
IB MEMBRANE CPA CLAD METAL PREFABRICATED FLASHING	IB MEMBRANE CPA CLAD METAL PREFABRICATED FLASHING	IB MEMBRANE CPA CLAD METAL PREFABRICATED FLASHING	IB MEMBRANE CPA CLAD METAL PREFABRICATED FLASHING	PVC-COATED METAL / REINFORCED MEMBRANE	PVC-COATED METAL / REINFORCED MEMBRANE	PVC-COATED METAL / REINFORCED MEMBRANE	PVC-COATED METAL / REINFORCED MEMBRANE	PVC-COATED METAL / REINFORCED MEMBRANE	PVC-COATED METAL / REINFORCED MEMBRANE
HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD	ADHESIVE AND HOT AIR	ADHESIVE AND HOT AIR	ADHESIVE AND HOT AIR	ADHESIVE AND HOT AIR	ADHESIVE AND HOT AIR	ADHESIVE OR HOT WELD
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
USA USA & CANADA	USA USA & CANADA	USA USA & CANADA	USA USA & CANADA	USA	USA	USA	USA	USA	USA
1987 1979	1987 1979			1994	1994	1989	1986	1990	1989
THOUSANDS MILLIONS	THOUSANDS MILLIONS	THOUSANDS MILLIONS	THOUSANDS MILLIONS	THOUSANDS	THOUSANDS	THOUSANDS THOUSANDS	THOUSANDS THOUSANDS	THOUSANDS THOUSANDS	THOUSANDS
DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DISTRIBUTORS
5	5	5	5	4	4	4	4	4	12
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
800/426-1626	800/426-1626	800/426-1626	800/426-1626	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	800/786-1492
800/426-1626	800/426-1626	800/426-1626	800/426-1626	M. REW	M. REW	M. REW	M. REW	M. REW	800/786-1492

## PVC Part 1: General Information

1.	COMPANY NAME	MULE-HIDE PRODUCTS CO., INC.	MULE-HIDE PRODUCTS CO., INC.	MULE-HIDE PRODUCTS CO., INC.	SARNAFIL, INC.	SARNAFIL, INC.
2.	PRODUCT NAME	MH 60	PEM .040	PEM 060	SARNAFIL G 410	SARNAFIL S 327
3.	PRODUCT DESCRIPTION					
	Reinforcement	POLYESTER	POLYESTER	POLYESTER	FIBERGLASS	POLYESTER
	Colors	WHITE	WHITE	WHITE	ASSORTED	ASSORTED
	Installed Weight (lbs./ft <sup>2</sup> w/o ballast)	0.44	0.30 NOM	0.40 NOM	0.33	0.33
4.	COATING REQUIRED	NONE	NONE	NONE	NONE	NONE
5.	USE IN:					
	New Roofing	X	X	X	X	X
	Reroofing	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	HEAT WELD	HEAT WELD	HEAT WELD	HOT AIR WELD	HOT AIR WELD
7.	TYPES OF ROOF SYSTEMS					
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )					
	Partially Adhered (method)	MECH. FAST.	MECH. FAST.	MECH. FAST.		MECH. FAST.
	Fully Adhered (method)	CONT. ADHES.			CONT. ADHES.	
	Protected Roof Membrane Assembly					
8.	MINIMUM SLOPE REQUIRED	NONE			NONE	NONE
9.	ACCEPTABLE SUBSTRATES					
	(X=direct application permitted)					
	(S=separator sheet required)					
	(O=overlayment required in some or all circumstances)					
	Glass Fiber	O	O	O	O	O
	Mineral Fiber	S O	O	O	O	O
	Polystyrene	S O	O	O	O	S
	Cellular Glass	S O	O	O	O	O
	Phenolic					
	Fiberboard	X	X	X	X	X
	Perlite	X O	X	X	O	O
	Polyisocyanurate	X	X	X	X	X
	Polyurethane	X	X	X	X	X
	Gypsum	X O	X O	X O	O	S O
	Concrete	S O	S O	S O	X O	S O
	Wood Plank	S O	S O	S O	O	S O
	Plywood	X S	X S	X S	X O	X S O
	Existing Built-Up Membrane	S O	S O	S O	O	S O
10.	RESTRICTED REGIONS (refer to manufacturer's literature)	SEE SPECS	NONE	NONE	NONE	NONE
11.	WORKABLE TEMPERATURE RANGE (degrees F)	0 – 120	0 – 120	0 – 120	0 – 120	0 – 120
12.	FLASHING MATERIAL	PVC-COATED METAL / REINFORCED MEMBRANE	REINFORCED MEMBRANE COATED METAL	REINFORCED MEMBRANE COATED METAL	G410, G459 CLAD METAL	G410, G459, S327 OR CLAD METAL
13.	FLASHING METHOD	ADHESIVE OR HOT WELT	ADHESIVE OR HOT WELT	ADHESIVE OR HOT WELT	ADHESIVE AND HEAT WELD	ADHESIVE AND HEAT WELD
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES
15.	COUNTRY OF:					
	Origin		USA	USA	SWITZERLAND	SWITZERLAND
	Manufacture	USA	USA	USA	USA	USA
16.	YEAR OF FIRST COMMERCIAL USE					
	Outside USA				1964	1964
	Within USA	1986	1986	1986	1975	1978
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )					
	Outside USA				THOUSANDS	THOUSANDS
	Within USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DIRECT	DIRECT
19.	NUMBER OF REGIONAL LOCATIONS	12	15	15	6	6
20.	LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES
21.	FOR SALES INFORMATION, CONTACT:	800/786-1492	800/786-1492	800/786-1492	SALES DEPT.	SALES DEPT.
22.	FOR TECHNICAL INFORMATION, CONTACT:	800/786-1492	800/786-1492	800/786-1492	TECH. DEPT.	TECH. DEPT.
23.	SEE APPENDIX IF CHECKED				X	X

## PVC Part 1: General Information

SARNAFIL, INC.
SARNAFIL G 476
FIBERGLASS
ORANGE
0.33
NONE
X
X
HOT AIR WELD
X
NONE
O
O
S
X
X
S O
S O
S O
O
NONE
0 – 120
G410, G459, S327 OR CLAD METAL
ADHESIVE AND HEAT WELD
YES
SWITZERLAND USA
1964 1981
THOUSANDS THOUSANDS
DIRECT
6
YES
SALES DEPT.
TECH. DEPT.
X

## PVC Part 2: Test Results

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

1. COMPANY NAME		DURADEK	FIRESTONE BUILDING PRODUCTS	FIRESTONE BUILDING PRODUCTS	FLEX MEMBRANE INTERNATIONAL	FLEX MEMBRAN INTERNATIONAL	GAF MATERIALS CORP.
2. PRODUCT NAME		ULTRA	ULTRAPLY .045	ULTRAPLY .060	FLEX MF/R 50	FLEX MF/R 60	EVERGUARD EGSR-40
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	0.06	0.045	0.060	0.050	0.060	0.040
5. TENSILE STRENGTH AT BREAK (min. psi) TYPE I; TYPE II; GRADE 1							
Machine Direction	1500	NA	NA	NA	NA	NA	
Cross-Machine Direction	1500	NA	NA	NA	NA	NA	
6. BREAKING STRENGTH (min. lbf/in.) TYPE II, GRADE 2; TYPE III	200	250	450	250	> 230	> 250	305
7. ELONGATION AT BREAK (min. %) TYPE I; TYPE II; GRADE 1							
Machine Direction	250		NA	NA	NA	NA	
Cross-Machine Direction	220	NA	NA	NA	NA	NA	
TYPE II, GRADE 2; TYPE III							
Machine Direction	15*		30	30	> 20	> 20	25
Cross-Machine Direction	15*		30	30	> 20	> 20	25
8. SEAM STRENGTH (min. % of tensile or breaking strength)	75.0	75.0	75.0	75.0	> 80	> 80	>95
9. RETENTION OF PROPERTIES AFTER HEAT AGING (min. % of original)							
Tensile Strength TYPE I; TYPE II, GRADE 1	80.0	NA			NA	NA	
Breaking Strength (min. lbf/in.)	80.0		80	80	> 80	> 80	>95
Elongation at Break (min. %) TYPE I; TYPE II; GRADE 1	80.0	96	80	80	90	90	>95
10. TEAR RESISTANCE (min. lbf) TYPE I; TYPE II, GRADE 1	10.0	NA			NA	NA	
11. TEARING STRENGTH (min. lbf) TYPE II, GRADE 2; TYPE III	45.0	50	150	80	> 50	> 50	155
12. LOW TEMPERATURE BEND	pass	PASS	PASS	PASS	PASS	PASS	PASS
13. ACCELERATED WEATHERING TEST							
Cracking (7X magnification)	none	NONE	NONE	NONE	NONE	NONE	NONE
Discoloration (by observation)	negligible	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE
Crazing (7X magnification)	none	NONE	NONE	NONE	NONE	NONE	NONE
14. LINEAR DIMENSIONAL CHANGE (max. %)							
TYPE I	3.0	NA	NA	NA	NA	NA	
TYPE II	0.1	NA	NA	NA	NA	NA	
TYPE III	0.5	0.3	0.3	0.3	< 0.2	< 0.2	0.5
15. CHANGE IN WEIGHT AFTER IMMERSION IN WATER (max %)	±3.0	2	PASS	PASS	< 0.2	< 0.2	1.4
16. SEE 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

GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GENFLEX ROOFING SYSTEMS
EVERGUARD EGSR-45	EVERGUARD EGSR-50	EVERGUARD EGSR-60	EVERGUARD EGSR-80	EVERGUARD EGFB-40	EVERGUARD EGFB-45	EVERGUARD EGFB-50	EVERGUARD EGFB-60	EVERGUARD EGFB-80	GENFLEX RM .048
III	III	III	III	III	III	III	III	III	III
0.045	0.050	0.060	0.080	0.055	0.060	0.065	0.075	0.095	0.048
									NA
									NA
320	332	363	416	428	428	442	435	501	210
									NA
									NA
25	25	40	40	40	40	40	40	40	15
25	25	40	40	35	35	35	35	40	15
>95	>95	>95	>95	>95	>95	>95	>95	>95	>75.0
									NA
>95	>95	>95	>95	>95	>95	>95	>95	>95	
>95	>95	>95	>95	>95	>95	>95	>95	>95	>95
									NA
124	107	97	109	135	135	152	119	89	50
PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
NEGLIGIBLE	NEGLIGIBLE	NEBLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
									NA
									NA
0.5	0.5	0.5	0.5	0.5	0.5	0.3	0.2	0.1	<0.1
0.9	1.1	0.7	0.6	1.4	0.9	1.1	0.7	0.6	+3.0

## PVC Part 2: Test Results

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

1. COMPANY NAME		GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	IB ROOF SYSTEMS	IB ROOF SYSTEMS
2. PRODUCT NAME		GENFLEX RM .060	GENFLEX RM-T .080	GENFLEX RM-C .048	GENFLEX RM-C .060	IB SINGLE-PLY	INSULATED BLANKET
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	0.060	0.080	0.048	0.060	0.050	0.050
5. TENSILE STRENGTH AT BREAK (min. psi) TYPE I; TYPE II; GRADE 1							
Machine Direction	1500	NA	NA	NA	NA		
Cross-Machine Direction	1500	NA	NA	NA	NA		
6. BREAKING STRENGTH (min. lbf/in.) TYPE II, GRADE 2; TYPE III	200	210	300	210	210	300	300
7. ELONGATION AT BREAK (min. %) TYPE I; TYPE II; GRADE 1							
Machine Direction	250	NA	NA	NA	NA		
Cross-Machine Direction	220	NA	NA	NA	NA		
TYPE II, GRADE 2; TYPE III							
Machine Direction	15*	15	35	15	15	15	15
Cross-Machine Direction	15*	15	40	15	15	15	15
8. SEAM STRENGTH (min. % of tensile or breaking strength)	75.0	>75.0	> 90.0	>75.0	>75.0		
9. RETENTION OF PROPERTIES AFTER HEAT AGING (min. % of original)							
Tensile Strength TYPE I; TYPE II, GRADE 1	80.0	NA	NA	NA	NA		
Breaking Strength (min. lbf/in.)	80.0		80.0			90	90
Elongation at Break (min. %) TYPE I; TYPE II; GRADE 1	80.0	>95	80.0	>95	>95	90	90
10. TEAR RESISTANCE (min. lbf) TYPE I; TYPE II, GRADE 1	10.0	NA	NA	NA	NA		
11. TEARING STRENGTH (min. lbf) TYPE II, GRADE 2; TYPE III	45.0	50	100	50	50	50	50
12. LOW TEMPERATURE BEND	pass	PASS	PASS	PASS	PASS	-40	-40
13. ACCELERATED WEATHERING TEST							
Cracking (7X magnification)	none	NONE	NONE	NONE	NONE	NONE	NONE
Discoloration (by observation)	negligible	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE
Crazing (7X magnification)	none	NONE	NONE	NONE	NONE	NONE	NONE
14. LINEAR DIMENSIONAL CHANGE (max. %)							
TYPE I	3.0	NA	NA	NA	NA		
TYPE II	0.1	NA	NA	NA	NA		
TYPE III	0.5	<0.1	.3	<0.1	<0.1	0.5	0.5
15. CHANGE IN WEIGHT AFTER IMMERSION IN WATER (max %)	±3.0	+3.0	+1.0	+3.0	+3.0	±2.0	±2.0
16. SEE 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

IB ROOF SYSTEMS	IB ROOF SYSTEMS	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	MULE-HIDE PRODUCTS CO., INC.	MULE-HIDE PRODUCTS CO., INC.	MULE-HIDE PRODUCTS CO., INC.
I B 60 MIL.	IB 80 MIL.	ULTRAGARD V 250	ULTRAGARD V 260	ULTRAGARD SR 50	ULTRAGARD SR 60	ULTRAGARD SR 80	MH - 50	MH - 60	PEM .040
III	III	III	III	III	III	III	III	III	III
0.060	0.080	0.047	0.054	0.047	0.054	0.072	0.050	0.060	0.040
		NA	NA	NA	NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA	NA	NA	NA
340	400	412	396	412	396	420	412	396	> 250
		NA	NA	NA	NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA	NA	NA	NA
60	130	32	32	32	32	33	32	32	30
40	90	33	34	33	34	37	33	34	30
		101	103	101	103	129	101	103	75.0
		NA	NA	NA	NA	NA	NA	NA	
90	95	107	91	107	91	99	107	91	80
92	96	125	127	125	127	223	125	127	80
		NA	NA	NA	NA	NA	NA	NA	
68	73	69	53	69	53	74	69	53	80
PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
		NA	NA	NA	NA	NA	NA	NA	NA
		NA	NA	NA	NA	NA	NA	NA	NA
0.5	0.5	0.14	0.12	0.14	0.12	0.14	<0.2	<0.2	<0.3
0.24	0.18	1.73	1.46	1.73	1.46	1.71	< +3.0	< +3.0	PASS

## 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.	SARNAFIL INC.	SARNAFIL INC.	SARNAFIL INC.
2.	PRODUCT NAME	PEM .060	SARNAFIL G 410	SARNAFIL S 327	SARNAFIL G 476
3.	TYPE I (unreinforced sheet)	III	II 1	III	II 1
	TYPE II (unreinforced sheet)				
	GRADE 1 (containing fibers)				
	GRADE 2 (containing fabrics)				
	TYPE III (reinforced sheet containing fibers of fabrics)				
4.	OVERALL THICKNESS (min. in.)	0.045	0.060	0.048	0.048
5.	TENSILE STRENGTH AT BREAK (min. psi) TYPE I; TYPE II; GRADE 1				
	Machine Direction	1500	NA	1600	NA
	Cross-Machine Direction	1500	NA	1600	NA
6.	BREAKING STRENGTH (min. lbf/in.) TYPE II, GRADE 2; TYPE III	200	> 250	NA	230
7.	ELONGATION AT BREAK (min. %) TYPE I; TYPE II; GRADE 1				
	Machine Direction	250	NA	270	NA
	Cross-Machine Direction	220	NA	250	NA
	TYPE II, GRADE 2; TYPE III				
	Machine Direction	15*	30	NA	20
	Cross-Machine Direction	15*	30	NA	20
8.	SEAM STRENGTH (min. % of tensile or breaking strength)	75.0	75.0	>80	>85
9.	RETENTION OF PROPERTIES AFTER HEAT AGING (min. % of original)				
	Tensile Strength TYPE I; TYPE II, GRADE 1	80.0		95	NA
	Breaking Strength (min. lbf/in.)	80.0	80	NA	95
	Elongation at Break (min. %) TYPE I; TYPE II; GRADE 1	80.0	80	90	90
10.	TEAR RESISTANCE (min. lbf) TYPE I; TYPE II, GRADE 1	10.0		14	NA
11.	TEARING STRENGTH (min. lbf) TYPE II, GRADE 2; TYPE III	45.0	80	NA	50
12.	LOW TEMPERATURE BEND	pass	PASS	PASS	PASS
13.	ACCELERATED WEATHERING TEST				
	Cracking (7X magnification)	none	NONE	NONE	NONE
	Discoloration (by observation)	negligible	NEGLIGIBLE	NEGLIGIBLE	NEGLIGIBLE
	Crazing (7X magnification)	none	NONE	NONE	NONE
14.	LINEAR DIMENSIONAL CHANGE (max. %)				
	TYPE I	3.0	NA	NA	NA
	TYPE II	0.1	NA	0.02	NA
	TYPE III	0.5	<0.3	NA	0.1
15.	CHANGE IN WEIGHT AFTER IMMERSION IN WATER (max %)	±3.0	PASS	2.5	2.5
16.	SEE APPENDIX IF CHECKED			X	X

NA=not applicable

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



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## EPDM Part 1: General Information

1. COMPANY NAME	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.
2. PRODUCT NAME	SURE-SEAL EPDM	SURE-SEAL FR EODM	SURE-SEAL FR PLUS EPDM	SURE-SEAL HTM EPDM	BRITE-PLY	SURE-SEAL REINFORCED EPDM
3. PRODUCT DESCRIPTION Reinforcement	NONE	NONE	NONE	YES	NONE	YES
Colors	BLACK	BLACK	BLACK	BLACK	WHITE ON BLACK	BLACK
Installed Weight (lbs./ft <sup>2</sup> w/o ballast)	0.28	0.31	0.35	0.32	0.35	0.30
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN New Roofing	X	X	X	X	X	X
Reroofing	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	TAPE OR CONTACT ADHESIVE	TAPE OR CONTACT ADHESIVE	TAPE OR CONTACT ADHESIVE	TAPE OR CONTACT ADHESIVE	CONTACT ADHESIVE	TAPE OR CONTACT ADHESIVE
7. TYPES OF ROOF SYSTEMS Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )	10	10	10	10	10	10
Partially Adhered (method)				MECH. FAST.		MECH. FAST.
Fully Adhered (method)	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.
Protected Roof Membrane Assembly	X	X	X			X
8. MINIMUM SLOPE REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
Glass Fiber	X O	X O	X O	X O	X O	X O
Mineral Fiber	X O	X O	X O	X O	O	X O
Polystyrene	X O	X O	X O	X O	X O	X O
Cellular Glass	X	X	X	X	X	X
Phenolic						
Fiberboard	X	X	X	X	X	X
Perlite	X O	X O	X O	X O	O	X O
Polyisocyanurate	X	X	X	X	X	X
Polyurethane	X	X	X	X	X	X
Gypsum	X O	X O	X O	X O	X O	X O
Concrete	X O	X O	X O	X O	X O	X O
Wood Plankl	X O	X O	X O	X O	X O	X O
Plywood	X O	X O	X O	X O	X O	X O
Existing Built-up 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	-49 TO 180	-49 TO 180	-49 TO 180	-49 TO 180
12. FLASHING MATERIAL	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM
13. FLASHING METHOD	ADHESIVE	ADHESIVE	ADHESIVE	ADHESIVE	ADHESIVE	ADHESIVE
14. 14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF: Origin	USA	USA	USA	USA	USA	USA
Manufacture	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE Outside USA	1963	1983	1983	1998	1977	1986
Within USA	1963	1983	1983	1998	1977	1986
17. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> ) Outside USA						
Within USA	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
19. NUMBER OF REGIONAL LOCATIONS	70	70	70	70	70	70
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT: C. KUHL	717/245-7000	717/245-7000	717/245-7000	717/245-7000	717/245-7000	717/245-7000
22. FOR TECHNICAL INFORMATION, CONTACT: S. IBRAHIM	717/245-7000	717/245-7000	717/245-7000	717/245-7000	717/245-7000	717/245-7000
23. SEE APPENDIX IF CHECKED						

## EPDM Part 1: General Information

CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.
SURE-SEAL FR REINFORCED EPDM	SURE-SEAL REINFORCED EXTRA EPDM	SURE-SEAL FLEECEBACK EPDM	BRITE-PLY FLEECEACK EPDM	CELO I .045	CELO I .060	CELO I .060	CELO I .045 REINFORCED	CELO I .045 REINFORCED	CELO I .060 REINFORCED
YES	YES	YES	YES	NONE	NONE	NONE	POLYESTER	POLYESTER	POLYESTER
BLACK 0.30	BLACK 0.35	BLACK 0.32	WHITE ON BLACK 0.32	BLACK 0.27	BLACK 0.36	WHITE ON BLACK 0.36	BLACK 0.27	WHITE ON BLACK 0.27	BLACK 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	CONTACT ADHESIVE	CONT ADHES & SEALANT OR SEAM TAPE	CONT ADHES & SEALANT OR SEAM TAPE	CONT ADHES & SEALANT OR SEAM TAPE	CONT ADHES & SEALANT OR SEAM TAPE	CONT ADHES & SEALANT OR SEAM TAPE	CONT ADHES & SEALANT OR SEAM TAPE
10	10								
MECH. FAST.	MECH. FAST.								
CONT. ADHES.	CONT. ADHES.	URETHANE ADHES	URETHANE ADHES						
X	X								
NONE	NONE	NONE	NONE	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
X O	X O	X O	X O	X			X	X	X
X O	X O	O	O	X			X	X	X
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 O	X O	O	O	X			X	X	X
X	X	X	X	X	X	X	X	X	X
X O	X O	X O	X O	X	X	X	X	X	X
X O	X O	X O	X O	X	X	X	X	X	X
X O	X O	X O	X O	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
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
-49 TO 180	-49 TO 180	-49 TO 180	-49 TO 180						
UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED WHITE EPDM	UNCURED EPDM	UNCURED WHITE EPDM	UNCURED EPDM
ADHESIVE	ADHESIVE	ADHESIVE	ADHESIVE	CONT ADHESIVE OR SELF-FLASH TAPE	CONT ADHESIVE OR SELF-FLASH TAPE	CONT ADHESIVE OR SELF-FLASH TAPE	CONT ADHESIVE OR SELF-FLASH TAPE	CONT ADHESIVE OR SELF-FLASH TAPE	CONT ADHESIVE 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
1986	1986								
1986	1986	1985	1985	1965	1965	1965	1965	1965	1965
MILLIONS	MILLIONS	MILLIONS	MILLIONS						
DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT
70	70	70	70	6	6	6	6	6	6
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
C. KUHL 717/245-7000	C. KUHL 717/245-7000	C. KUHL 717/245-7000	C. KUHL 717/245-7000	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE
S. IBRAHIM 717/245-7000	S. IBRAHIM 717/245-7000	S. IBRAHIM 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 CORP.	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS
2. PRODUCT NAME	CELO I .060 FR	ERSYSTEMS RUBBER ROOF .060 BLACK	ERSYSTEM RUBBER ROOF .045 BLACK	ERSYSTEMS RUBBER ROOF .060 BLACK FR	ERSYSTEMS RUBBER ROOF .045 BLACK	ERSYSTEMS REINFORCED-90 .045 BLACK
3. PRODUCT DESCRIPTION Reinforcement	NONE	NONE	NONE	NONE	NONE	WOVEN POLY INSERT
Colors	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
Installed Weight (lbs./ft <sup>2</sup> w/o ballast)	0.36	0.35	0.25	0.35	0.25	0.30
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN New Roofing	X	X	X	X	X	X
Reroofing	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	CONT ADHES & SEALANT OR SEAM TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE
7. TYPES OF ROOF SYSTEMS Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )		10 MIN	10 MIN	10 MIN	10 MIN	10 MIN
Partially Adhered (method)		PLATE BONDED	PLATE BONDED	PLATE BONDED	PLATE BONDED	MECH. FAST.
Fully Adhered (method)		CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.
Protected Roof Membrane Assembly		X	X	X	X	X
8. MINIMUM SLOPE REQUIRED	1/4"	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)						
Glass Fiber	X	O	O	O	O	O
Mineral Fiber	X	O	O	O	O	O
Polystyrene	X	O	O	O	O	O
Cellular Glass	X	O	O	O	O	O
Phenolic		O	O	O	O	O
Fiberboard	X	X	X	X	X	X
Perlite	X	O	O	O	O	O
Polyisocyanurate	X	X	X	X	X	X
Polyurethane		O	O	O	O	O
Gypsum		O	O	O	O	O
Concrete		O	O	O	O	O
Wood Plankl	X	O	O	O	O	O
Plywood	X	O	O	O	O	O
Existing Built-up Membrane	X	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 – 120	0 – 120	0 – 120	0 – 120	0 – 120
12. FLASHING MATERIAL	UNCURED WHITE EPDM	UNCURED EPDM OR NEOPRENE	UNCURED EPDM OR NEOPRENE	UNCURED EPDM OR NEOPRENE	UNCURED EPDM OR NEOPRENE	UNCURED EPDM OR NEOPRENE
13. FLASHING METHOD	CONTACT ADHESIVE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE
14. 14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF: Origin	USA	USA	USA	USA	USA	USA
Manufacture	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE Outside USA						
Within USA	1965	1965	1965	1965	1965	1989
17. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> ) Outside USA						
Within USA		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
19. NUMBER OF REGIONAL LOCATIONS	6	14	14	14	14	14
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	REGIONAL OFFICE	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747
22. FOR TECHNICAL INFORMATION, CONTACT:	REGIONAL OFFICE	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747
23. SEE APPENDIX IF CHECKED						

# EPDM Part 1: General Information

ERSYSTEMS	FIRESTONE BUILDING PRODUCTS	FIRESTONE BUILDING PRODUCTS	FIRESTONE BUILDING PRODUCTS	FIRESTONE BUILDING PRODUCTS	FIRESTONE BUILDING PRODUCTS	FIRESTONE BUILDING PRODUCTS	FIRESTONE BUILDING PRODUCTS	FIRESTONE BUILDING PRODUCTS	FIRESTONE BUILDING PRODUCTS
ERSYSTEMS REINFORCED-90 .060 BLACK	RUBBERGARD .045	RUBBERGARD .060	RUBBERGARD .045 FR	RUBBERGARD .060 FR	RUBBERGARD .090	RUBBERGARD .045 REINFORCED	RUBBERGARD .060 REINFORCED	RUBBERGARD 0.45 LSFR	RUBBERGARD 0.060 LSFR
WOVEN POLY INSERT BLACK	NONE	NONE	NONE	NONE	NONE	POLYESTER	POLYESTER	NONE	NONE
0.40	0.28	0.38	0.32	0.43	0.64	0.28	0.38	0.28	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
CONTACT ADHESIVE OR TAPE	SEAM TAPE	SEAM TAPE	SEAM TAPE	SEAM TAPE	SEAM TAPE W/ FLASHING STRIP OVERLAY	SEAM TAPE	SEAM TAPE	SEAM TAPE	SEAM TAPE
10 MIN	10 MIN	10 MIN	10 MIN	10 MIN		10 MIN	10 MIN	10	10
MECH. FAST.	BATTENS	BATTENS	BATTENS	BATTENS		BATTENS	BATTENS	BATTENS	BATTENS
CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.
X	X	X	X	X		X	X	X	X
DEAD LEVEL	POS. DRAIN	POS. DRAIN	POS. DRAIN	POS. DRAIN	POS. DRAIN	POS. DRAIN	POS. DRAIN	POS. DRAIN	POS. DRAIN
O	X O	X O	X O	X O	X O	X O	X O	X O	X O
O	X O	X O	X O	X O	X O	X O	X O	X O	X O
O	X O	X O	X O	X O	X O	X O	X O	X O	X O
O	X	X	X	X	X	X O	X	X	X
O									
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	X	X	X	X	X	X	X	X	X
O	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
O	X O	X O	X O	X O	X O	X O	X O	X O	X O
O	X O	X O	X O	X O	X O	X O	X O	X O	X O
O	X O	X O	X O	X O	X O	X O	X O	X O	X O
O	X O	X	X O	X O	X O	X O	X O	X O	X O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
0-120	0-100	0-100	0-100	0-100	0-100	0-100	0-100	0-100	0-100
UNCURED EPDM OR NEOPRENE	EPDM / QUICKSEAM FLASHING	EPDM / QUICKSEAM FLASHING	EPDM / QUICKSEAM FLASHING	EPDM / QUICKSEAM FLASHING	EPDM / QUICKSEAM FLASHING	EPDM / QUICKSEAM FLASHING	EPDM / QUICKSEAM FLASHING	EPDM / QUICKSEAM FLASHING	EPDM / QUICKSEAM FLASHING
CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE / TAPE	CONTACT ADHESIVE / TAPE	CONTACT ADHESIVE / TAPE	CONTACT ADHESIVE / TAPE	CONTACT ADHESIVE / TAPE	CONTACT ADHESIVE / TAPE	CONTACT ADHESIVE / TAPE	CONTACT ADHESIVE / TAPE	CONTACT ADHESIVE / 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
				1990	1990	1990	1990	1994	1994
1989	1982	1982	1985	1985	1982	1990	1990	1994	1994
	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
THOUSANDS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	THOUSANDS	THOUSANDS	THOUSANDS	MILLIONS	MILLIONS
DISTRs,DIRECT	DISTRs,DIRECT	DISTRs,DIRECT	DISTRs,DIRECT	DISTRs,DIRECT	DISTRs,DIRECT	DISTRs,DIRECT	DISTRs,DIRECT	DISTRs,DIRECT	DISTRs,DIRECT
14	5	5	5	5	5	5	5	5	5
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
T. LEONARD 800/403-7747	800/428-4442	800/428-4442	800/428-4442	800/428-4442	800/428-4442	800/428-4442	800/428-4442	800/428-4442	800/428-4442
J. LEONARD 800/403-7747	800/428-4511	800/428-4511	800/428-4511	800/428-4511	800/428-4511	800/428-4511	800/428-4511	800/428-4511	800/428-4511
					X				

## EPDM Part 1: General Information

1.	COMPANY NAME	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	INTERNATIONAL DIAMOND SYSTEMS, INC.
2.	PRODUCT NAME	GENFLEX .045 BLACK	GENFLEX .060 BLACK	GENFLEX FRM .045 BLACK	GENFLEX FRM 0.60 BLACK	GENFLEX AFR .060 BLACK	INTERNATIONAL BLACK EPDM .045
3.	PRODUCT DESCRIPTION						
	Reinforcement	NONE	NONE	YES	YES	NONE	NONE
	Colors	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
	Installed Weight (lbs./ft <sup>2</sup> w/o ballast)	0.28	0.38	0.28	0.38	0.38	0.30
4.	COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	TAPE	TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE
7.	TYPES OF ROOF SYSTEMS						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )	10	10	10	10	10	
	Partially Adhered (method)	MECH. FAST.	MECH. FAST.	MECH. FAST.	MECH. FAST.	MECH. FAST.	
	Fully Adhered (method)	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	
	Protected Roof Membrane Assembly	X	X	X	X	X	
8.	MINIMUM SLOPE REQUIRED	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL	DEAD LEVEL
9.	ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
	Glass Fiber	X	X	X	X	X	X
	Mineral Fiber	X	X	X	X	X	X
	Polystyrene	O	O	O	O	O	O
	Cellular Glass	X	X	X	X	X	X
	Phenolic						
	Fiberboard	X	X	X	X	X	X
	Perlite	X	X	X	X	X	O
	Polyisocyanurate	X	X	X	X	X	X
	Polyurethane	X	X	X	X	X	X
	Gypsum	X	X	X	X	X	X
	Concrete	O	O	O	O	O	S
	Wood Plankl	O	O	O	O	O	S
	Plywood	O	O	O	O	O	X
	Existing Built-up Membrane	O	O	O	O	O	S
10.	RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11.	WORKABLE TEMPERATURE RANGE (degrees F)	0 – 100	0 – 100	0 – 100	0 – 100	0 – 100	40 – 120
12.	FLASHING MATERIAL	UNCURED EPDM	EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM
13.	FLASHING METHOD	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE
14.	14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15.	COUNTRY OF:						
	Origin	USA	USA	USA	USA	USA	USA
	Manufacture	USA	USA	USA	USA	USA	USA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA						1982
	Within USA	1979	1979	1989	1989	1994	1982
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA						
	Within USA	MILLIONS	MILLIONS	THOUSANDS	THOUSANDS	MILLIONS	MILLIONS
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTR, DIRECT
19.	NUMBER OF REGIONAL LOCATIONS	8	8	8	8	8	40
20.	LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21.	FOR SALES INFORMATION, CONTACT:	SALES 800/443-4272	SALES 800/443-4272	SALES 800/443-4272	SALES 800/443-4272	SALES 800/443-4272	J. DIAS S. HALL
22.	FOR TECHNICAL INFORMATION, CONTACT:	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	A. HONSBERGER 419/382-0111
23.	SEE APPENDIX IF CHECKED						

## EPDM Part 1: General Information

INTERNATIONAL DIAMOND SYSTEMS, INC.	INTERNATIONAL DIAMOND SYSTEMS, INC.	INTERNATIONAL DIAMOND SYSTEMS, INC.	INTERNATIONAL DIAMOND SYSTEMS, INC.	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL
INTERNATIONAL BLACK .060	INTERNATIONAL FIRE RETARDANT .060	INTERNATIONAL REINFORCED .045	INTERNATIONAL REINFORCED .060	SPM 45 BLACK	SPM 45R BLACK	SPM 60 BLACK	SPM 60R BLACK	SP 60 FR BLACK	SPM 60 W WHITE
NONE	NONE	SCRIM	SCRIM	NONE	POLYESTER	NONE	POLYESTER	NONE	NONE
BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	WHITE
0.40	0.50	0.40	0.50	0.29	0.30	0.38	0.39	0.39	0.41
NONE	NONE	SCRIM	SCRIM	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
CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONT ADHESIVE & SEALANT OR TAPE	CONT ADHESIVE & SEALANT OR TAPE	CONT ADHESIVE & SEALANT OR TAPE	CONT ADHESIVE & SEALANT OR TAPE	CONT ADHESIVE & SEALANT OR TAPE	CONT ADHESIVE & SEALANT OR TAPE
				10 MIN	10 MIN	10 MIN	10 MIN		
					MECH. FAST. ADHESIVE	MECH. FAST. ADHESIVE	MECH. FAST. ADHESIVE	MECH. FAST. ADHESIVE	MECH. FAST. ADHESIVE
DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	NONE	NONE	NONE	NONE	NONE	NONE
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
X	X	X	X	O	O	O	O	O	O
X	X	X	X	X	X	X	X	X	X
O	O	O	O	X	X	X O	X O	X O	X O
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X O	X O	O	O	O	O
S	S	S	S	X O	X O	X O	X O	X O	X O
S	S	S	S	X O	X O	X O	X O	X O	X O
X	X	X	X	X O	X O	X O	X O	X O	X O
S	S	S	S	O	O	O	O	O	O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
40 – 120	40 – 120	40 – 120	40 – 120	25 – 160	25 – 160	25 – 160	25 – 160	25 – 160	25 – 160
UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED 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
CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPR
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	1982	1982	1982						
1982	1982	1982	1982	1979	1993	1979	1993	1983	1983
MILLIONS	MILLIONS	THOUSANDS	THOUSANDS	MILLIONS	THOUSANDS	MILLIONS	THOUSANDS	MILLIONS	MILLIONS
DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT
40	40	40	40	5	5	5	5	5	5
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
J. DIAS S. HALL	J. DIAS S. HALL	J. DIAS S. HALL	J. DIAS S. HALL	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE	REGIONAL OFFICE
A. HONSBERGER 419/382-0111	A. HONSBERGER 419/382-0111	A. HONSBERGER 419/382-0111	A. HONSBERGER 419/382-0111	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES	GUARANTEE SERVICES

## EPDM Part 1: General Information

1.	COMPANY NAME	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 RFG. SYSTEMS
2.	PRODUCT NAME	M-H EPDM .045	M-H EPDM .060	M-H REINFORCED 0.45	M-H REINFORCED .060	M-H W/B .060	WATERSHIELD .045 .060
3.	PRODUCT DESCRIPTION						
	Reinforcement	NONE	NONE	YES	YES	NONE	NONE
	Colors	BLACK	BLACK	BLACK	BLACK	WHITE/BLACK	BLACK
	Installed Weight (lbs./ft <sup>2</sup> w/o ballast)	0.30	0.40	0.30	0.40	0.40	0.26
4.	COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5.	USE IN						
	New Roofing	X	X	X	X	X	X
	Reroofing	X	X	X	X	X	X
6.	FIELD LAP JOINT METHOD	CONT ADHESIVE & SEALANT OR TAPE	CONT ADHESIVE & SEALANT OR TAPE	CONTACT ADHESIVE AND TAPE	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONT ADHESIVE & SEALANT OR SEAM TAPE
7.	TYPES OF ROOF SYSTEMS						
	Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )	10	10	10	10		10 MIN
	Partially Adhered (method)			MECH. FAST.	MECH. FAST.	MECH. FAST.	
	Fully Adhered (method)	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	
	Protected Roof Membrane Assembly	X	X				X
8.	MINIMUM SLOPE REQUIRED	NONE	NONE	NONE	NONE	NONE	DEAD LEVEL
9.	ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
	Glass Fiber	O	O	O	O		O
	Mineral Fiber	O	O	O	O		O
	Polystyrene	X O	X O	X O	X O	O	O
	Cellular Glass	X O	X O	X O	X O	X	O
	Phenolic						X
	Fiberboard	X	X	X	X	X	X
	Perlite	X O	X O	X O	X O	O	X O
	Polyisocyanurate	X	X	X	X	X	X O
	Polyurethane	X	X	X	X	X O	X O
	Gypsum	X O	X O	X O	X O	X O	O
	Concrete	X O	X O	X O	X O	X O	X O
	Wood Plankl	X O	X O	X O	X O	X O	X O
	Plywood	X O	X O	X O	X O	X O	X O
	Existing Built-up Membrane						O
10.	RESTRICTED REGIONS (refer to manufacturer's literature)	NONE	NONE	NONE	NONE	NONE	NONE
11.	WORKABLE TEMPERATURE RANGE (degrees F)	-49 – 180	-49 – 180	-49 – 180	-49 – 180	-49 – 180	0 – 110
12.	FLASHING MATERIAL	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED OR CURED EPDM	UNCURED EPDM
13.	FLASHING METHOD	CONTACT ADHESIVE OR FLASHING TAPE	CONTACT ADHESIVE OR FLASHING TAPE	CONTACT ADHESIVE OR FLASHING TAPE	CONTACT ADHESIVE OR FLASHING TAPE	CONTACT ADHESIVE	CONT ADHESIVE OR SELF-FLASH TAPE
14.	14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15.	COUNTRY OF:						
	Origin	USA	USA	USA	USA	USA	USA
	Manufacture	USA	USA	USA	USA	USA	USA
16.	YEAR OF FIRST COMMERCIAL USE						
	Outside USA	1986	1986				
	Within USA	1963	1963	1986	1986	1986	1981
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
	Outside USA						
	Within USA	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	THOUSANDS
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRS, DIRECT
19.	NUMBER OF REGIONAL LOCATIONS	12	12	12	12	12	
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	L. PUNZEL 608/365-3111	L. PUNZEL 608/365-3111	L. PUNZEL 608/365-3111	E. GRINWALD 414/442-3117
22.	FOR TECHNICAL INFORMATION, CONTACT:	T. MCFARLAND 608/365-3111	T. MCFARLAND 608/365-3111	T. MCFARLAND 608/365-3111	T. MCFARLAND 608/365-3111	T. MCFARLAND 608/365-3111	800/552-5393
23.	SEE APPENDIX IF CHECKED						



## EPDM Part 1: General Information

OLYMPIC RUBBER RFG SYSTEMS WATERGUARD .060	OLYMPIC RUBBER RFG SYSTEMS WATERGUARD MR	PROTECTIVE COATINGS, INC. PRO SHIELD BLACK	PROTECTIVE COATINGS, INC. PRO SHIELD BLACK	PROTECTIVE COATINGS, INC. PRO SHIELD BLACK	PROTECTIVE COATINGS, INC. PRO SHIELD WHITE	PROTECTIVE COATINGS, INC. PRO SHIELD WHITE	PROTECTIVE COATINGS, INC. PRO SHIELD WHITE	PROTECTIVE COATINGS, INC. PRO SHIELD WHITE	PROTECTIVE COATINGS, INC. PRO SHIELD WHITE - FIRE RETARDANT
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
BLACK	BLACK	BLACK	BLACK	BLACK	WHITE	WHITE	WHITE	WHITE / FIRE RETARDANT	WHITE / FIRE RETARDANT
0.36	0.36	0.40	0.50	0.60	0.40	0.50	0.60	0.40	0.60
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
CONT ADHESIVE & SEALANT OR SEAM TAPE	CONT ADHESIVE & SEALANT OR SEAM TAPE	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT	CONTACT ADHESIVE AND SEALANT
		10	10	10	10	10	10		
CONT. ADHES.	CONT. ADHES.	PLATE BONDED CONT. CEMENT	PLATE BONDED CONT. CEMENT	PLATE BONDED CONT. CEMENT	PLATE BONDED CONT. CEMENT	PLATE BONDED CONT. CEMENT	PLATE BONDED CONT. CEMENT	PLATE BONDED CONT. CEMENT	PLATE BONDED CONT. CEMENT
		X	X	X					
DEAD LEVEL		DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL		
O		X O	X O	X O	X O	X O	X O	X O	X O
O		X O	X O	X O	X O	X O	X O	X O	X O
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	X	X O	X O	X	X O	X O	X O	X O	X O
O		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
O		X O	X O	X O	X O	X O	X O	X O	X O
O		X O	X O	X O	X O	X O	X O	X O	X O
O		X O	X O	X O	X O	X O	X O	X O	X O
X O	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
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
0 – 110	0 – 110	0 – 120	0 – 120	0 – 120	0 – 160	0 – 160	0 – 160	0 – 160	0 – 160
UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM METAL	UNCURED EPDM METAL
CONT ADHESIVE OR SELF-FLASH TAPE	CONT ADHESIVE OR SELF-FLASH TAPE	CONTACT ADHESIVE & SEALANT	CONTACT ADHESIVE & SEALANT	CONTACT ADHESIVE & SEALANT	CONTACT ADHESIVE & SEALANT	CONTACT ADHESIVE & SEALANT	CONTACT ADHESIVE & SEALANT	CONTACT ADHESIVE & SEALANT	CONTACT ADHESIVE & SEALANT
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	1982	1982					
1981	1986	1965	1965	1965	1965	1965	1965	1982	1982
THOUSANDS	THOUSANDS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	MILLIONS	1,000,000	1,000,000
DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT	DISTRS,DIRECT
		10	10	10	10	10	10	10	10
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
E. GRINWALD 414/442-3117	E. GRINWALD 414/442-3117	SALES MANAGER	SALES MANAGER	SALES MANAGER	SALES MANAGER	SALES MANAGER	SALES MANAGER	SALES MANAGER	SALES MANAGER
800/552-5393	800/552-5393	MURRELL	MURRELL	MURRELL	MURRELL	MURRELL	MURRELL	MURRELL	MURRELL

## EPDM Part 1: General Information

1. COMPANY NAME	ROOFING PRODUCTS INTERNATIONAL	ROOFING PRODUCTS INTERNATIONAL	ROOFING PRODUCTS INTERNATIONAL	ROOFING PRODUCTS INTERNATIONAL	ROOFING PRODUCTS INTERNATIONAL	ROOFING PRODUCTS INTERNATIONAL
2. PRODUCT NAME	RPE EPDM BLACK .045	RPI EPDM BLACK .060	RPI EPDM BLACK .045	RPI EPDM BLACK .060	RPI EPDM WHITE .045	RPI EPDM WHITE .060
3. PRODUCT DESCRIPTION Reinforcement	NONE	NONE	POLYESTER	POLYESTER	NONE	NONE
Colors	BLACK	BLACK	BLACK	BLACK	WHITE	WHITE
Installed Weight (lbs./ft <sup>2</sup> w/o ballast)	0.28	0.38			0.30	0.40
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN New Roofing	X	X	X	X	X	X
Reroofing	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	CONT ADHESIVE & SEALANT OR TAPE	CONT ADHESIVE & SEALANT OR TAPE	CONT ADHESIVE & SEALANT OR TAPE	CONT ADHESIVE & SEALANT OR TAPE	CONT ADHESIVE & SEALANT OR TAPE	CONT ADHESIVE & SEALANT OR TAPE
7. TYPES OF ROOF SYSTEMS Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )	10	10	10	10	10	10
Partially Adhered (method)	BATTEN	BATTEN	PLATES	PLATES	BATTEN	BATTEN
Fully Adhered (method)	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.
Protected Roof Membrane Assembly	X	X	X	X	X	X
8. MINIMUM SLOPE REQUIRED	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
Glass Fiber	O	O	O	O	O	O
Mineral Fiber	O	O	O	O	O	O
Polystyrene	O	O	O	O	O	O
Cellular Glass	O	O	O	O	O	O
Phenolic	O	O	O	O	O	O
Fiberboard	X	X	X	X	X	X
Perlite	O	O	O	O	O	O
Polyisocyanurate	X O	X O	X O	X O	X O	X O
Polyurethane	O	O	O	O	O	O
Gypsum	X O	X O	X O	X O	X O	X O
Concrete	X O	X O	X O	X O	X O	X O
Wood Plank	O	O	O	O	O	O
Plywood	X O	X O	X O	X O	X O	X O
Existing Built-up Membrane	S O	S O	S O	S O	S O	S 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	40 & ABOVE	40 & ABOVE	40 & ABOVE	40 & ABOVE
12. FLASHING MATERIAL	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM	UNCURED EPDM
13. FLASHING METHOD	CONTACT ADHESIVE	CONTACT ADHESIVE	CONTACT ADHESIVE	CONTACT ADHESIVE	CONTACT ADHESIVE	CONTACT ADHESIVE
14. 14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF: Origin	USA	USA	USA	USA	USA	USA
Manufacture	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE Outside USA						
Within USA	1965	1965	1965	1965	1965	1965
17. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> ) Outside USA						
Within USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	75	75	75	75	75	75
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	800/628-2957	800/628-2957	800/628-2957
22. FOR TECHNICAL INFORMATION, CONTACT:	800/628-2957	800/628-2957	800/628-2957	800/628-2957	800/628-2957	800/628-2957
23. SEE APPENDIX IF CHECKED						

## EPDM Part 1: General Information

ROOFING PRODUCTS INTERNATIONAL	ROOFING PRODUCTS INTERNATIONAL	VERSICO INC.	VERSICO INC.	VERSICO INC.	VERSICO INC.	VERSICO INC.	VERSICO INC.	VERSICO INC.	VERSICO INC.
RPI EPDM FR BLACK .045	RPI EPDM FR BLACK .060	VERSIGARD EPDM .045	VERSIGARD EPDM .050	VERSIGARD EPDM .060	VERSIGARD PE EPDM .050	VERSIGARD II FR EPDM .060	VERSIGARD REINFORCED EPDM .045	VERSIGARD II FR REINFORCED	VERSIGARD I WHITE
NONE	NONE	NONE	NONE	NONE	NONE	NONE	YES	YES	NONE
BLACK 0.30	BLACK 0.40	BLACK 0.28	BLACK 0.31	BLACK 0.38	BLACK 0.31	BLACK 0.40	BLACK 0.30	BLACK 0.30	WHITE ON BLACK 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
CONT ADHESIVE & SEALANT OR TAPE	CONT ADHESIVE & SEALANT OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE OR TAPE	METAL RAIL ASSEMBLY	CONTACT ADHESIVE OR TAPE	CONTACT ADHESIVE	CONT ADHESIVE & SEALANT OR TAPE	CONT ADHESIVE & SEALANT OR TAPE
10	10	10 – 15	10 – 15	10 – 15		10 – 15	10 – 15	10 – 15	
BATTEN	BATTEN	BATTENS	BATTENS	BATTENS	METAL RAIL ASSY.		MECH. FAST.	MECH. FAST.	
CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.		CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.
X	X	X	X	X		X			
LEVEL	LEVEL	NONE	NONE	NONE	1/2" IN 12"	NONE	NONE	NONE	1/8"
O	O	X	X O	O		O	X O	X O	X O
O	O	X	X O	O		O	X O	X O	X O
O	O	X	X O	O	O	O		O	O
O	O	X	X O	X		X	X O	X O	X
O	O			O					
X	X	X	X	X	X	X	X	X	X
O	O	O	O		O	O	O	X O	O
X O	X O	X	X	X	X	X	X	X	X
O	O								
X O	X O	S	S	O		O	S O	S O	O
X O	X O	S		X O		X O	X O	X O	X O
O	O	S				O	O	O	O
X O	X O	S	X	X O		X O	X O	X O	X O
S O	S O	S	X S	X		O	X S	X S	O
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
40 & ABOVE	40 & ABOVE	-25 – 180	-25 – 180	-25 – 180	-25 – 180	-25 – 180	-25 – 180	-25 – 180	-25 – 180
UNCURED EPDM	UNCURED EPDM	EPDM UNCURED EPDM METAL	EPDM UNCURED EPDM METAL	EPDM UNCURED EPDM METAL	GALVALUME	EPDM UNCURED EPDM METAL	EPDM UNCURED EPDM METAL	EPDM UNCURED EPDM METAL	EPDM UNCURED EPDM METAL
CONTACT ADHESIVE	CONTACT ADHESIVE	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	CONTACT ADHESIVE
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	1986	1982					1977
1965	1965	1965	1986	1965	1986	1983	1986	1986	1977
THOUSANDS	THOUSANDS	MILLIONS	MILLIONS	MILLIONS	THOUSANDS	THOUSANDS	MILLIONS	THOUSANDS	THOUSANDS
DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
75	75	150	150	150	150	150	150	150	150
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
800/628-2957	800/628-2957	M. MCAULEY 800/992-7663	M. MCAULEY 800/992-7663	M. MCAULEY 800/992-7663	M. MCAULEY 800/992-7663	M. MCAULEY 800/992-7663	M. MCAULEY 800/992-7663	M. MCAULEY 800/992-7663	M. MCAULEY 800/992-7663
800/628-2957	800/628-2957	R. GIANGIULI 800/992-7663	R. GIANGIULI 800/992-7663	R. GIANGIULI 800/992-7663	R. GIANGIULI 800/992-7663	R. GIANGIULI 800/992-7663	R. GIANGIULI 800/992-7663	R. GIANGIULI 800/992-7663	R. GIANGIULI 800/992-7663

## EPDM Part 2: Test Results

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

1.	COMPANY NAME	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.
2.	PRODUCT NAME	SURE-SEAL EPDM	SURE-SEAL FR EPDM	SURE-SEAL FR PLUS EPDM	SURE-SEAL HTM EPDM	BRITE-PLY	SURE-SEAL REINFORCED 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	U	U	U	SR
5.	THICKNESS (min. in.)						
	Sheet Overall 0.039	0.045	0.060	0.060	0.045	0.060	0.045
	Coating Over Scrim Class SR 0.015	NA	NA	NA	NA	NA	0.015
6.	BREAKING STRENGTH (min. lbf) CLASS SR	90	NA	NA	NA	NA	180
7.	TENSILE STRENGTH (min. psi) CLASS U	1305	1630	1830	2000	1685	NA
8.	ELONGATION, ULTIMATE (min. %)						
	CLASS U 300	520	520	580	500	550	NA
	CLASS SR 250	NA	NA	NA	NA	NA	500
9.	TENSILE SET (max. %) CLASS U	10	5	5	5	7	NA
10.	TEAR RESISTANCE (min. lbf/in.) CLASS U	150	230	230	200	200	NA
11.	TEARING STRENGTH (min. lbf) CLASS SR	5	NA	NA	NA	NA	30
12.	BRITTLINESS POINT (max. F)	-49	-85	-85	-85	-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	NA	NA	NA	175
	Tensile Strength (min. psi) CLASS U 1205	1500	1500	1860	2100	1550	NA
	Elongation, Ultimate (min. %) 200	310	310	250	250	250	250
	Tear Resistance (min. lbf/in.) CLASS U 125	215	215	240	215	185	NA
	Linear Dimensional Change (max. %) ± 2	-0.4	-0.4	-0.6	-0.4	-0.5	-0.7
15.	WATER ABSORPTION (max. mass %) +8, -2	+2.0	+2.0	+2.0	+2.0	+3.6	+2.0
16.	FACTORY SEAM STRENGTH (min. lbf/in.) j1 or sheet failure	X	X	X	X	NA	NA
17.	WEATHER RESISTANCE (pass/fail) no cracks or crazing	PASS	PASS	PASS	PASS	PASS	PASS
18.	SEE APPENDIX IF CHECKED						

1.	COMPANY NAME	CARLISLE SYNTEC, INC.	CARLISLE SYNTEC, INC.	CARLISLE SYNTEC, INC.	CARLISLE SYNTEC, INC.	CELOTEX CORP.	CELOTEX CORP.
2.	PRODUCT NAME	SURE-SEAL FR REINFORCED EPDM	SURE-SEAL REINFORCED EXTRA EPDM	SURE-SEAL FLEECEBACK EPDM	BRITE-PLY FLEECEBACK EPDM	CELO I .045	CELO I .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)	SR	SR	FR	FR	U	U
5.	THICKNESS (min. in.)						
	Sheet Overall 0.039	0.045	0.066	0.100, 0.115	0.100, 0.115		
	Coating Over Scrim Class SR 0.015	0.015	0.020	0.045	0.045		
6.	BREAKING STRENGTH (min. lbf) CLASS SR	90	180	230	200	NA	NA
7.	TENSILE STRENGTH (min. psi) CLASS U	1305	NA	NA	NA	1500	1500
8.	ELONGATION, ULTIMATE (min. %)						
	CLASS U 300	NA	NA	NA	NA	350	350
	CLASS SR 250	500	500	520	520	NA	NA
9.	TENSILE SET (max. %) CLASS U	10	NA	NA	NA	10	10
10.	TEAR RESISTANCE (min. lbf/in.) CLASS U	150	NA	NA	NA	175	175
11.	TEARING STRENGTH (min. lbf) CLASS SR	5	30	60	45	NA	NA
12.	BRITTLINESS POINT (max. F)	-49	-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	175	220	200	200	NA	NA
	Tensile Strength (min. psi) CLASS U 1205	NA	NA	NA	NA	1450	1450
	Elongation, Ultimate (min. %) 200	250	250	310	250	225	225
	Tear Resistance (min. lbf/in.) CLASS U 125	NA	NA	NA	NA	150	150
	Linear Dimensional Change (max. %) ± 2	-0.7	-0.7	-0.7	-0.7	-0.3	-0.3
15.	WATER ABSORPTION (max. mass %) +8, -2	+2.0	+2.0	+2.0	+2.0	±1.0	±1.0
16.	FACTORY SEAM STRENGTH (min. lbf/in.) j1 or sheet failure	NA	NA	NA	NA	NA	NA
17.	WEATHER RESISTANCE (pass/fail) no cracks or crazing	PASS	PASS	PASS	PASS	NA	NA
18.	SEE APPENDIX IF CHECKED						

NA=not applicable

## EPDM Part 2: Test Results

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

CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS
CELO I .060	CELO I .045 REINFOCED	CELO I .045 REINFORCED	CELO I .060 REINFORCED	CELO I .060 FR	ERSYSTEMS RUBBER ROOF .060 BLACK	ERSYSTEMS RUBBER ROOF .045	ERSYSTEMS RUBBER ROOF .060 BLACK FR	ERSYSTEMS RUBBER ROOF .045 BLACK FR	ERSYSTEMS REINFORCED 90 .045 BLACK
					1	1	1	1	1
U	SR	SR	SR	U	U	U	U	U	SR
					0.055	0.040	0.055	0.040	0.045
					NA	NA	NA	NA	0.015
NA	100	100	100	NA	NA	NA	NA	NA	100
1500	NA	NA	NA	1500	1305	1305	1305	1305	NA
350	NA	NA	NA	350	300	300	300	300	NA
NA	400	400	400	NA	NA	NA	NA	NA	400
10	NA	NA	NA	10	10	10	10	10	NA
175	NA	NA	NA	175	150	150	150	150	NA
NA	35	35	35	NA	NA	NA	NA	NA	200
-75	-75	-75	-75	-75	-49	-49	-49	-49	-75
PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
NA	90	90	90	NA	NA	NA	NA	NA	90
1450	NA	NA	NA	1450	1205	1205	1205	1205	NA
225	250	250	250	225	200	200	200	200	250
150	NA	NA	NA	150	125	125	125	125	NA
-0.3	-0.3	-0.3	-0.3	-0.3	±2	±2	±2	±2	+1.0
±1.0	±1.0	±1.0	±1.0	±1.0	+8, -2	+8, -2	+8, -2	+8, -2	+1.0
NA	55	55	55	NA	X	X	X	X	50
NA	NA	NA	NA	NA	PASS	PASS	PASS	PASS	PASS

ERSYSTEMS	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	FIRESTONE BUILDING PRODUCTS CO	FIRESTONE BUILDING PRODUCTS CO
ERSYSTEMS REINFORCED 90 .060 BLACK	RUBBERGARD .045	RUBBERGARD .060	RUBBERGARD .045 FR	RUBBERGARD .060 FR	RUBBERGARD .090	RUBBERGARD .045 REINFORCED	RUBBERGARD .060 REINFORCED	RUBBERGRARD .045 LSFR	RUBBERGARD .060 LSFR
1	1	1	1	1	1	1	1	1	1
SR	U	U	U	U	U	SR	SR	U	U
0.060	0.045	0.060	0.045	0.060	0.090	0.045	0.060	0.045	0.045
NA	NA	NA	NA	NA	NA	0.015	0.015	NA	NA
	NA	NA	NA	NA	NA	90	90	NA	NA
NA	1305	1305	1305	1305	1305	NA	NA	1305	1305
NA	300	300	300	300	300	NA	NA	300	300
400	NA	NA	NA	NA	NA	250	250	NA	NA
NA	10	10	10	10	10	NA	NA	10	10
NA	150	150	150	150	150	NA	NA	150	150
200	NA	NA	NA	NA	NA	10	5	NA	NA
-75	-49	-49	-49	-49	-49	-49	-49	-49	-49
PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
90	NA	NA	NA	NA	NA	80	80	NA	NA
NA	1205	1205	1205	1205	1205	NA	NA	1205	1205
250	200	200	200	200	200	200	200	200	200
NA	125	125	125	125	125	NA	NA	125	125
+1.0	± 1	± 1	± 1	± 1	± 1	± 1	± 1	± 1	± 1
+1.0	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2
50	X	X	X	X	X	X	X	X	X
PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

## EPDM Part 2: Test Results

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

1. COMPANY NAME		GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	INTERNATIONAL DIAMONS SYSTEMS, INC.
2. PRODUCT NAME		GENFLEX .045 BLACK	GENFLEX .060 BLACK	GENFLEX FRM 0.45 BLACK	GENFLEX FRM .060 BLACK	GENFLEX AFR .060 BLACK	INTERNATIONAL BLACK EPDM .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	SR	SR	U	U
5. THICKNESS (min. in.)							
Sheet Overall 0.039		0.043	0.058	0.043	0.058	0.058	0.045
Coating Over Scrim Class SR 0.015		NA	NA	0.015	0.015	NA	NA
6. BREAKING STRENGTH (min. lbf) CLASS SR	90	NA	NA	90	90	NA	NA
7. TENSILE STRENGTH (min. psi) CLASS U	1305	1305	1500	NA	NA	1305	1305
8. ELONGATION, ULTIMATE (min. %)							
CLASS U 300		300	450	NA	NA	300	300
CLASS SR 250		NA	NA	300	300	NA	NA
9. TENSILE SET (max. %) CLASS U	10	10	10	NA	NA	10	5
10. TEAR RESISTANCE (min. lbf/in.) CLASS U	150	150	150	NA	NA	150	150
11. TEARING STRENGTH (min. lbf) CLASS SR	5	NA	NA	50	50	NA	NA
12. BRITTLINESS 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	NA	80	80	NA	NA
Tensile Strength (min. psi) CLASS U 1205		1500	1500	NA	NA	1500	1305
Elongation, Ultimate (min. %) 200		225	225	200	200	225	300
Tear Resistance (min. lbf/in.) CLASS U 125		230	230	NA	NA	230	150
Linear Dimensional Change (max. %) ± 2		+1.0	+1.0	+1.0	+1.0	+1.0	+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.)	≥1 or sheet failure	X	X	X	X	X	30
17. WEATHER RESISTANCE (pass/fail)	no cracks or crazing	PASS	PASS	PASS	PASS	PASS	PASS
18. SEE APPENDIX IF CHECKED							

1. COMPANY NAME		INTERNATIONAL DIAMOND SYSTEMS, INC.	INTERNATIONAL DIAMOND SYSTEMS, INC.	INTERNATIONAL DIAMOND SYSTEMS, INC.	INTERNATIONAL DIAMOND SYSTEMS, INC.	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL
2. PRODUCT NAME		INTERNATIONAL BLACK 0.06	INTERNATIONAL FIRE RETARDANT 0.06	INTERNATIONAL REINFORCED 0.045	INTERNATIONAL REINFORCED 0.06	SPM 45 BLACK	SPM 45 R 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	U	SR	SR	U	SR
5. THICKNESS (min. in.)							
Sheet Overall 0.039		0.060	0.060	0.040	0.058	0.043	0.040
Coating Over Scrim Class SR 0.015		NA	NA	0.015	0.015	NA	0.015
6. BREAKING STRENGTH (min. lbf) CLASS SR	90	NA	NA	90	90	NA	90
7. TENSILE STRENGTH (min. psi) CLASS U	1305	1305	1305	NA	NA	1650	NA
8. ELONGATION, ULTIMATE (min. %)							
CLASS U 300		300	300	NA	NA	450	NA
CLASS SR 250		NA	NA	250	250	NA	250
9. TENSILE SET (max. %) CLASS U	10	5	5	NA	NA	4	NA
10. TEAR RESISTANCE (min. lbf/in.) CLASS U	150	150	150	NA	NA	200	NA
11. TEARING STRENGTH (min. lbf) CLASS SR	5	NA	NA	10	10	NA	10
12. BRITTLINESS POINT (max. F)	-49	-49	-49	-49	-49	-72	-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	NA	80	80	NA	80
Tensile Strength (min. psi) CLASS U 1205		1305	1305	NA	NA	1650	NA
Elongation, Ultimate (min. %) 200		300	300	200	200	320	200
Tear Resistance (min. lbf/in.) CLASS U 125		150	150	NA	NA	182	NA
Linear Dimensional Change (max. %) ± 2		+2	+2	±2	±2	-0.50	± 2
15. WATER ABSORPTION (max. mass %) +8, -2		+8, -2	+8, -2	+8, -2	+8, -2	+1.7	+4.0
16. FACTORY SEAM STRENGTH (min. lbf/in.)	≥1 or sheet failure	30	30	X	X	X	X
17. WEATHER RESISTANCE (pass/fail)	no cracks or crazing	PASS	PASS	PASS	PASS	PASS	PASS
18. SEE APPENDIX IF CHECKED							

NA=not applicable

## EPDM Part 2: Test Results

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

JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	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 RFG SYSTEMS
SPM 60 BLACK	SPM 60 R BLACK	SP 60 FR BLACK	SPM 60W WHITE	M-H EPDM 0.45	M-H EPDM .060	M-H REINFORCED EPDM .045	M-H REINFORCED EPDM .060	M-H W/B EPDM .060	WATERSHIELD .045 0.06
1	1	1	1	1	1	1	1	1	1
U	SR	U	U	U	U	SR	SR	U	U
0.058	0.058	0.058	0.058	0.045	0.060	0.045	0.060	0.060	0.045
NA	0.025	NA	NA	NA	NA	NA	NA	NA	NA
NA	90	NA	NA	NA	NA	210	210	NA	NA
1485	NA	1470	1440	1405+	1405+	NA	NA	1405+	1305
470	NA	425	635	350+	350+	NA	NA	350+	300
NA	250	NA	NA	NA	NA	250+	250+	NA	NA
4	NA	3	2	10	10	NA	NA	10	<5
192	NA	201	211	175	175	NA	NA	175	150
NA	10	NA	NA	NA	NA	50	50	NA	NA
-72	-49	-64	-80	-75	-75	-75	-75	-75	
PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
NA	80	NA	NA	NA	NA	220	220	NA	NA
1750	NA	1510	1480	1205+	1205+	NA	NA	1205+	1205
285	200	300	390	250	250	250	250	250	200
182	NA	171	143	150	150	NA	NA	150	125
-0.50	± 2	-0.60	-1.50	± 2	± 2	± 2	± 2	± 2	± 2
+1.7	+4.0	+2.8	+7.4	+2	+2	+3.6	+3.6	+2	+8
X	X	X	X	X	X	X	X	X	X
PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

OLYMPIC RUBBER RFG SYSTEMS	OLYMPIC RUBBER RFG SYSTEMS	PROTECTIVE COATINGS, INC.	PROTECTIVE COATINGS, INC.	PROTECTIVE COATINGS INC.	PROTECTIVE COATINGS INC.	PROTECTIVE COATINGS INC.	PROTECTIVE COATINGS INC.	PROTECTIVE COATINGS INC.	PROTECTIVE COATINGS INC.
WATERGUARD .060	WATERGUARD MR	PRO SHIELD BLACK	PRO SHIELD BLACK	PRO SHIELD BLACK	PRO SHIELD WHITE	PRO SHIELD WHITE	PRO SHIELD WHITE	PRO SHIELD WHITE - FIRE RETARDANT	PRO SHIELD WHITE - FIRE RETARDANT
1	1	1	1	1	1	1	1	1	1
U	U	U	U	U	U	U	U	U	U
0.060	0.060	0.040	0.050	0.060	0.040	0.050	0.060	0.040	0.060
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1305	1305	1400	1400	1400	1400	1400	1400	1400	1400
300	300	300	300	300	300	300	300	300	300
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<5	<5	10	10	10	10	10	10	10	10
150	150	200	200	200	200	200	200	200	200
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		-70	-70	-70	-70	-70	-70	-70	-70
PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1205	1205	1205	1205	1205	1205	1205	1205	1205	1205
200	200	200	200	200	200	200	200	200	200
125	125	125	125	125	125	125	125	125	125
± 2	± 2	+2	+2	+2	+2	+2	+2	+2	+2
-2	-2	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2	+8, -2
X	X	X	X	X	X	X	X	X	X
PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

## EPDM Part 2: Test Results

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

1. COMPANY NAME		ROOFING PRODUCTS INTERNATIONAL	ROOFING PRODUCTS INTERNATIONAL	ROOFING PRODUCTS INTERNATIONAL	ROOFING PRODUCTS INTERNATIONAL	ROOFING PRODUCTS INTERNATIONAL	ROOFING PRODUCTS INTERNATIONAL
2. PRODUCT NAME		RPI EPDM BLACK .045	RPI EPDM BLACK .060	RPI EPDM BLACK .045	RPI EPDM BLACK .060	RPI EPDM WHITE .045	RPI EPDM WHITE .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	U	R	R	U	U
5. THICKNESS (min. in.)							
Sheet Overall	0.039	0.040	0.054			0.040	0.054
Coating Over Scrim Class SR	0.015	NA	NA			NA	NA
6. BREAKING STRENGTH (min. lbf) CLASS SR	90	NA	NA			NA	NA
7. TENSILE STRENGTH (min. psi) CLASS U	1305	1305	1305			1305	1305
8. ELONGATION, ULTIMATE (min. %)							
CLASS U	300	300	300			300	300
CLASS SR	250	NA	NA			NA	NA
9. TENSILE SET (max. %) CLASS U	10						
10. TEAR RESISTANCE (min. lbf/in.) CLASS U	150	150	150			125	125
11. TEARING STRENGTH (min. lbf) CLASS SR	5	NA	NA			NA	NA
12. BRITTLINESS POINT (max. F)	-49	-49	-49			-49	-49
13. OZONE RESISTANCE (pass/fail)	no cracks	PASS	PASS			PASS	PASS
14. HEAT AGING							
Breaking Strength (min. lbf) CLASS SR	80	NA	NA			NA	NA
Tensile Strength (min. psi) CLASS U	1205	1205	1205			1205	1205
Elongation, Ultimate (min. %)	200	200	200			200	200
Tear Resistance (min. lbf/in.) CLASS U	125	125	125			125	125
Linear Dimensional Change (max. %)	± 2	-2	-2			-2	-2
15. WATER ABSORPTION (max. mass %)	+8, -2	0.05	0.05			0.05	0.05
16. FACTORY SEAM STRENGTH (min. lbf/in.)	≥1 or sheet failure	X	X			X	X
17. WEATHER RESISTANCE (pass/fail)	no cracks or crazing	PASS	PASS			PASS	PASS
18. SEE APPENDIX IF CHECKED							

1. COMPANY NAME		ROOFING PRODUCTS INTERNATIONAL	ROOFING PRODUCTS INTERNATIONAL	VERSICO, INC.	VERSICO, INC.	VERSICO, INC.	VERSICO, INC.
2. PRODUCT NAME		RPI EPDM FR BLACK 0.045	RPI EPDM FR BLACK 0.060	VERSIGARD EPDM .045	VERSIGARD EPDM .050	VERSIGARD EPDM .060	VERSIGARD PE EPDM .050
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	U
5. THICKNESS (min. in.)							
Sheet Overall	0.039	0.040	0.054	0.040	0.045	0.054	0.045
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	NA	NA
7. TENSILE STRENGTH (min. psi) CLASS U	1305	1305	1305	1305	1305	1305	1305
8. ELONGATION, ULTIMATE (min. %)							
CLASS U	300	300	300	300	300	300	300
CLASS SR	250	NA	NA	NA	NA	NA	NA
9. TENSILE SET (max. %) CLASS U	10			10	10	10	10
10. TEAR RESISTANCE (min. lbf/in.) CLASS U	150	150	150	150	150	150	150
11. TEARING STRENGTH (min. lbf) CLASS SR	5	NA	NA	NA	NA	NA	NA
12. BRITTLINESS POINT (max. F)	-49	-49	-49	-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	NA	NA	NA	NA
Tensile Strength (min. psi) CLASS U	1205	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	125
Linear Dimensional Change (max. %)	± 2	-2	-2	± 2	± 2	± 2	± 2
15. WATER ABSORPTION (max. mass %)	+8, -2	0.05	0.05	+8, -2	+8, -2	+8, -2	+8, -2
16. FACTORY SEAM STRENGTH (min. lbf/in.)	≥1 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 APPENDIX IF CHECKED							

NA=not applicable



## EPDM Part 2: Test Results

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

VERSICO, INC.	VERSICO, INC.	VERSICO, INC.	VERSICO, INC.
VERSIGARD II	VERSIGARD	VERSIGARD II	VERSIGARD
1	1	1	1
U			U
	SR	SR	
0.054	0.045	0.045	0.054
NA	0.015	0.015	NA
NA	210	210	NA
1780	NA	NA	1305
495	NA	NA	300
NA	290	290	NA
0.10	NA	NA	10
215	NA	NA	150
NA	50	50	NA
-85	-75	-75	-75
PASS	PASS	PASS	PASS
NA	220	220	NA
1205	NA	NA	1200
200	200	200	200
125	NA	NA	125
± 2	-0.7	-0.7	+2
+8, -2	+4.0	+4.0	+4
X	X	X	X
PASS	PASS	PASS	PASS

## CSPE (Hypalon) Part 1: General Information

1. COMPANY NAME	BURKE INDUSTRIES	BURKE INDUSTRIES	BURKE INDUSTRIES	CONKLIN CO., INC.	MULE-HIDE PRODUCTS CO., INC.	STEVENS ROOFING SYSTEMS
2. PRODUCT NAME	BURKELINE M-358 MF	BURKELINE M-358 FA	BURKELINE M-350 VAC Q	HY-CROWN 45 MILS	M-H HYPALON 0.045	STEVENS HYPALON 0.045
3. PRODUCT DESCRIPTION						
Reinforcement	POLYESTER	POLYESTER	POLYESTER	POLYESTER	10 X 10 POLYESTER	10 X 10 POLYESTER
Color	VARIOUS	VARIOUS	VARIOUS	VARIOUS	WHITE	WHITE
Installed Weight (lbs./ft <sup>2</sup> w/o ballast)	0.32	0.32	0.32	0.32	0.29 MIN	0.29 MIN
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:						
New Roofing	X	X	X	X	X	X
Reroofing	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	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						
Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )	10	10	10	10	10	10
Partially Adhered (method)	MECH. FAST.		LOOSE LAID	MECH. FAST.	MECH. FAST.	MECH. FAST.
Fully Adhered (method)		CONT. ADHES.		CONT. ADHES.	CONT. ADHES.	CONT. ADHES.
Protected Roof Membrane Assembly	X	X	X	X		X
8. MINIMUM SLOPE REQUIRED	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	POS DRAIN	NONE	NONE
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some/all circumstances)						
Glass Fiber	X	X	X	X		X
Mineral Fiber	X	O	X	X	X	X
Polystyrene	S	O	S	S	X S O	X O
Cellular Glass	X	X	X	X	X	X O
Phenolic	X	X	X	X		X O
Fiberboard	X	X	X	X	X	X O
Perlite	X	O	X	X	X	X O
Polyisocyanurate	X	X	X	X	X	X
Polyurethane	X	X	X	X	X	X
Gypsum	X	X O	X	X	X	X
Concrete	O	X	X	O	X	X
Wood Plank	S	X O	X	X O	X	X
Plywood	S	X	X	X O	X	X
Existing Built-Up Membrane	O	O	X	O	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	-40 - 140	-40 - 140	-25 - 140	-25 - 140	-25 - 140
12. FLASHING MATERIAL	REINFORCED & UNREINFORCED CLAD METAL	REINFORCED & UNREINFORCED CLAD METAL	REINFORCED & UNREINFORCED CLAD METAL	REINFORCED & UNREINFORCED CLAD METAL	REINFORCED & UNREINFORCED HYPALON	REINFORCED & UNREINFORCED HYPALON
13. FLASHING METHOD	CONT ADHESIVE & SOLUTION OR HEAT WELD	CONT ADHESIVE & SOLUTION OR HEAT WELD	CONT ADHESIVE & SOLUTION OR HEAT WELD	CONT ADHESIVE & SOLUTION OR HEAT WELD	CONTACT ADHESIVE & HEAT WELD	CONTACT ADHESIVE & HEAT WELD
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF:						
Origin	USA	USA	USA	USA	USA	USA
Manufacture	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE						
Outside USA	1982	1982	1986			1977
Within USA	1976	1976	1986	1985	1978	1978
17. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
Outside USA						MILLIONS
Within USA	MILLIONS	MILLIONS	>100,000	>2,000,000	MILLIONS	MILLIONS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS.DIRECT	DISTRS.DIRECT	DISTRS.DIRECT	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS	54	54	54	5	12	200
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	B. ROADES	B. ROADES	B. ROADES	BLDG. PRODS. 800/888-8838	L. PUNZEL 608/365-3111	B. ABBOTT R. DUCLOS
22. FOR TECHNICAL INFORMATION, CONTACT:	B. ROADES 800/669-7010	B. ROADES 800/669-7010	B. ROADES 800/669-7010	PROD. SERVS. 800/888-8838	T. MCFARLAND 608/365-3111	TECH. DEPT. 800/621-ROOF
23. SEE APPENDIX IF CHECKED						

## CSPE (Hypalon) Part 1: General Information

STEVENS ROOFING SYSTEMS	TREMCO INC.
STEVENS HYPALON 0.06	TREMCO HP 4510
10 X 10 POLYESTER	10 X 10 WOVEN POLYESTER
WHITE	WHITE/BLACK
0.43 MIN	
NONE	NONE
X	X
X	X
HEAT WELD	CONTACT ADHESIVE OR HEAT WELD
10	10
MECH. FAST.	MECH. FAST.
CONT. ADHES.	CONT. ADHES.
X	X
NONE	1/4"
X	X
X	
X O	O
X O	O
X O	
X O	X
X O	O
X	X
X	X
X	O
X	O
X	O
X	O
X	O
X O	O
NONE	NONE
-25 – 140	
REINFORCED & UNREINFORCED HYPALON	REINFORCED HYPALON
CONTACT ADHESIVE & HEAT WELD	CONTACT ADHESIVE & HEAT WELD
YES	YES
USA	USA
USA	USA
1977	
1978	1981
THOUSANDS	
DISTRIBUTORS	DIRECT
200	18
YES	YES
B. ABBOTT R. DUCLOS	SALES OFFICE
TECH. DEPT. 800/621-ROOF	TECH. DEPT.

**CSPE (Hypalon) Part 2: Test Results**  
suggested values as specified in ASTM D 5019-96

Test description and

1. COMPANY NAME	BURKE INDUSTRIES	BURKE INDUSTRIES	BURKE INDUSTRIES	CONKLIN CO., INC.	MULE-HIDE PRODUCTS CO., INC.
2. PRODUCT NAME	BURKELINE M-358 MF	BURKELINE M-358 FA	BURKELINE M-358 VAC Q	HY-CROWN 45 MILS	M-H HYPALON 0.045
3. SHEET CONSTRUCTION					
Grade 1 (backed without fibers)					
Grade 2 (internally reinforced with fabric)	2	2	2	2	2

**PHYSICAL PROPERTIES OF SHEET**

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

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

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

NA=not applicable

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

**CSPE (Hypalon) Part 2: Test Results**  
suggested values as specified in ASTM D 5019-96

Test description and

STEVENS ROOFING SYSTEMS	STEVENS ROOFING SYSTEMS	TREMCO INC.
STEVENS HYPALON 0.045	STEVENS HYPALON 0.06	HP 4510
2	2	2

0.0405	.054	0.045
NA	NA	NA
280	280	225
NA	NA	NA
15	15	25
NA	NA	NA
110	110	225
PASS	PASS	PASS
NA	NA	NA
.1	.1	0.1
NA	NA	NA
10	10	10
NA	NA	NA
400	400	300
PASS	PASS	PASS
PASS	PASS	PASS

1000	1000	
300	300	
150	150	
PASS	PASS	
10	10	

## PIB (Polyisobutylene ) Part 1: General Information

1. COMPANY NAME	REPUBLIC POWDERED METALS	TREMCO INC.
2. PRODUCT NAME	REPUBLIC SINGLE- PLY SYSTEMS GEOFLEX	TREMFAS
3. PRODUCT DESCRIPTION		
Reinforcement	POLYESTER	POLYESTER
Color(s)	WHITE	WHITE
Installed Weight(lbs./ft <sup>2</sup> w/o ballast)	0.57	
4. COATING REQUIRED	NONE	NONE
5. USE IN:		
New Roofing	X	X
Reroofing	X	X
6. FIELD LAP JOINT METHOD	PEEL & STICK	SELF- ADHESIVE
7. TYPES OF ROOF SYSTEMS		
Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )	10	
Partially Adhered (method)	ASPH OR ADH	HOT OR COLD
Fully Adhered (method)	ADHESIVE	COLD ADHS.
Protected Roof Membrane Assembly	X	X
8. MINIMUM SLOPE REQUIRED	POS DRAIN	POS DRAIN
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)		
Glass Fiber	X	X
Mineral Fiber	X	X
Polystyrene	O	
Cellular Glass	X	X
Phenolic	X	
Fiberboard	X	X
Perlite	X	O
Polyisocyanurate	X O	X
Polyurethane	O	X
Gypsum	X O	O
Concrete	X O	O
Wood Plank	X O	O
Plywood	X O	O
Existing Built-up Membrane	X O	X O
10. RESTRICTED REGIONS (refer to manufacturer's)	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees)	40 – 100	20 – 100
12. FLASHING MATERIAL	REINFORCED AND UNREINFORCED PIB	REINFORCED AND UNREINFORCED PIB
13. FLASHING METHOD	SELF-SEAL AND CONTACT ADHESIVE	SELF-SEAL AND CONTACT ADHESIVE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES
15. COUNTRY OF:		
Origin	GERMANY	GERMANY
Manufacture	USA	USA
16. YEAR OF FIRST COMMERCIAL USE		
Outside USA	1950	1950
Within USA	1977	
17. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )		
Outside USA	MILLIONS	
Within USA	THOUSANDS	
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DIRECT
19. NUMBER OF REGIONAL LOCATIONS	6	18
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES
21. FOR SALES INFORMATION, CONTACT:	800/551-7081	SALES OFFICE
22. FOR TECHNICAL INFORMATION, CONTACT:	800/551-7081	TECH. DEPT.
23. SEE APPENDIX IF CHECKED		

## PIB (Polyisobutylene ) Part 2: Test Results

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

1. COMPANY NAME	REPUBLIC POWDERED METALS	TREMCO INC.
2. PRODUCT NAME	REPUBLIC SINGLE- PLY SYSTEMS GEOFLEX	TREMFAST

### PHYSICAL PROPERTIES OF SHEET

3. THICKNESS (min. in.)	0.087	0.100	0.120
4. BREAKING STRENGTH (min. lbf)	140	175	175
5. ELONGATION (min. %)	50	60	60
6. TEARING STRENGTH (min. lbf)	30	30	30
7. LOW TEMPERATURE BEND	pass	PASS	PASS
8. LINEAR DIMENSIONAL CHANGE (max. %)	1.0	0.5	0.5
9. FABRIC ADHESION (min. lbf/in.)	7	12	12
10. HYDROSTATIC RESISTANCE (min. psi)	175	200	200
11. OZONE RESISTANCE (no cracks)	pass	PASS	PASS
12. WEATHER RESISTANCE (no cracks or crazing)	pass	PASS	PASS

### PHYSICAL PROPERTIES OF THTE COATING PORTION ON THE WEATHER SIDE OF SHEET

13. TENSILE STRENGTH (min. psi)	600	700	
14. ELONGATION (min. %)	400	400	
15. TEAR RESISTANCE (min. lbf/in.)	100	100	
16. OZONE RESISTANCE (no cracks)	pass	PASS	
17. WATER ABSORPTION (max. mass %)	1.0	1.0	
18. SEE APPENDIX IF CHECKED			

NA=not applicable

## TPO Part 1: General Information

1. COMPANY NAME	FIRESTONE BUILDING PRODUCTS	FIRESTONE BUILDING PRODUCTS	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GENFLEX ROOFING SYSTEMS
2. PRODUCT NAME	ULTRA PLY 45 MIL	ULTRA PLY 60 MIL	EVERGUARD TPOSR-45	EVERGUARD TPOSR-60	.045 TPO
3. PRODUCT DESCRIPTION					
Reinforcement	POLY/SCRIM	POLY/SCRIM	POLYESTER	POLYESTER	POLYESTER
Color(s)	WHITE	WHITE	WHITE / BLACK	WHITE / BLACK	WHITE/BLACK/ GRAY
Installed Weight (lbs./ft <sup>2</sup> w/o ballast)	0.25	0.35	0.29	0.38	0.21
4. COATING REQUIRED	NONE	NONE	NONE	NONE	NONE
5. USE IN:					
New Roofing	X	X	X	X	X
Reroofing	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HEAT WELD	HEAT WELD	HOT AIR WELD	HOT AIR WELD	HOT AIR WELD
7. TYPES OF ROOF SYSTEMS					
Loose Laid/Ballasted (ballast: lbs./ft <sup>2</sup> )	10	10	10	10	10 - 15
Partially Adhered (method)	MECH FAST	MECH FAST	MECH FAST	MECH FAST	MECH FAST
Fully Adhered (method)	ADHESIVE	ADHESIVE	ADHESIVE	ADHESIVE	CONT ADHES
Protected Roof Membrane Assembly	N/A	N/A	X	X	X
8. MINIMUM SLOPE REQUIRED	1/4"	1/4"	PER CODE	PER CODE	LEVEL
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)					
Glass Fiber	O	O			O
Mineral Fiber	O	O			X
Polystyrene	X	X	X	X	O
Cellular Glass	X	X			X
Phenolic					
Fiberboard	X	X	X	X	X
Perlite	O	O			X
Polyisocyanurate	X	X	X	X	X
Polyurethane	O	O	X	X	X
Gypsum	X	X	X O	X O	X
Concrete	X	X	X O	X O	O
Wood Plank	X	X	X O	X O	O
Plywood	X	X	X O	X O	O
Existing Built-Up Membrane	O	O	X O	X O	O
10. RESTRICTED REGIONS (refer to manufacturer's literature)	N/A	N/A	NONE	NONE	NONE
11. WORKABLE TEMPERATURE RANGE (degrees F)	0 - 150	0 - 150	0 - 120	0 - 120	0 - 140
12. FLASHING MATERIAL			REINFORCED MEMBRANE COATED METAL	REINFORCED MEMBRANE COATED METAL	MEMBRANE OR COATED METAL
13. FLASHING METHOD	HEAT WELD OR TAPE	HEAT WELD OR TAPE	HOT AIR WELD OR ADHESIVE	HOT AIR WELD OR ADHESIVE	CONT ADHES OR HOT AIR WELD
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES
15. YEAR OF FIRST COMMERCIAL USE					
Outside USA	1978	1978			
Within USA	1998	1998	1998	1998	1995
16. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )					
Outside USA					
Within USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
17. MANUFACTURING PLANT LOCATION(S) (City, State)	HENDERSON, NV	HENDERSON, NV	HENDERSON, NV	HENDERSON, NV	JEANNETTE, PA
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DIST/DIRECT	DIST/DIRECT	DIST/DIRECT	DIST/DIRECT	DISTRIBUTORS
19. NUMBER OF REGIONAL LOCATIONS			4	4	8
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	PAUL OLIVERA 317/575-7186	PAUL OLIVERA 317/575-7186	REGIONAL OFFICE	REGIONAL OFFICE	800/443-4272
22. FOR TECHNICAL INFORMATION, CONTACT:	JEFF HENEGAR 317/575-7028	JEFF HENEGAR 317/575-7028	REGIONAL OFFICE	REGIONAL OFFICE	800/443-4272
23. SEE APPENDIX IF CHECKED					



## TPO Part 1: General Information

GENFLEX ROOFING SYSTEMS	STEVENS ROOFING SYSTEMS	STEVENS ROOFING SYSTEMS
.060 TPO	STEVENS EP 0.045	STEVENS EP 0.060
POLYESTER	10 X 10 POLY	10 X 10 POLY
WHITE/BLACK/ GRAY	BLACK/WHITE/ GRAY/OTHERS	BLACK/WHITE/ GRAY/OTHERS
0.29	0.21	0.3
NONE	NONE	NONE
X	X	X
X	X	X
HOT AIR WELD	HEAT WELD	HEAT WELD
10 -15	10	10
MECH FAST	MECH FAST	MECH FAST
CONT ADHES	CONT ADHES	CONT ADHES
X	X	X
LEVEL	NONE	NONE
O	X	X
X	X	X
O	X O	X O
X	X O	X O
X	X O	X O
X	X O	X O
X	X	X
X	X	X
X	X	X
O	X	X
O	X	X
O	X	X
O	X O	X O
NONE	NONE	NONE
0 - 140	-15 - 140	-15 - 140
MEMBRANE OR COATED METAL	REINFORCED & UNREINFORCED EP MEMBRANE	REINFORCED & UNREINFORCED EP MEMBRANE
CONT ADHES OR HOT AIR WELD	CONT ADHES AND HEAT WELD	CONT ADHES AND HEAT WELD
YES	YES	YES
1995	1992 1992	1992 1992
THOUSANDS	MILLIONS MILLIONS	MILLIONS MILLIONS
JEANNETTE, PA	WESTFIELD, NC	WESTFIELD, NC
DISTRIBUTORS	DIST/DIRECT'	DIST/DIRECT'
8	200	200
YES	YES	YES
800/443-4272	B. ABBOTT R. DUCLOS	B. ABBOTT R. DUCLOS
800/443-4272	800/621-ROOF	800/621-ROOF

## TPO Part 2: Test Results

Test description as specified in Draft ASTM Standard

1. COMPANY NAME		FIRESTONE BUILDING PRODUCTS	FIRESTONE BUILDING PRODUCTS	GAF MATERIALS CORP.	GAF MATERIALS CORP.
2. PRODUCT NAME		ULTRA PLY 45 MIL	ULTRA PLY 60 MIL	EVERGUARD TPOSR-45	EVERGUARD TPOSR-45
TYPE/CLASS					
3A. Type I (Sheets with internal fabric or scrim)					
Class P (polypropylene)		X	X	X	X
Class E (polyethylene)					
Class O (other olefinic materials)					
3B. Type II (Sheets with fibers incorporated into production process)					
Class P (polypropylene)					
Class E (polyethylene)					
Class O (other olefinic materials)					
4. PHYSICAL PROPERTIES					
Thickness:					
Overall, minimum, inches (ASTM D751)		0.041	0.054	0.045	0.060
Coating over scrim, minimum, inches (ASTM D751)	Type II: NA	0.018	0.024		
Tensile strength (ASM D412, Die C):					
Machine direction, minimum, psi	Type I: NA				
Cross direction, minimum, psi	Type I: NA				
Breaking strength, minimum, lbf	Type II: NA	350	350	250	250
Elongation, ultimate, minimum, % (ASTM D751, Grab Method)	Type I: NA				
Elongation at break, minimum, % (ASTM D751, Grab Method)	Type II: NA	25	25	20	20
Tensile set, maximum, % (ASTM D412, Method A, Die C)	Type I: NA				
Tear Strength, minimum, lbf/inch (ASTM D624, Die C)	Type I: NA				
Tear Strength, minimum, lbf (ASTM D751, Procedure B)	Type II: NA	120	120	80	80
Brittleness point, maximum °F (ASTM D2137)		-60	-60	-45	-45
Ozone resistance, no cracks (ASTM D1149)		PASS	PASS	PASS	PASS
Properties after heat aging (retained values) (ASTM D573):					
Tensile strength, % minimum	Type I: NA				
Breaking strength, % minimum	Type II: NA	90	90	>95	>95
Elongation, ultimate, % minimum	Type I: NA				
Elongation at break, % minimum	Type II: NA	90	90	>95	>95
Tear strength, % minimum	Type I: NA				
Tearing strength, % minimum	Type II: NA	90	90		
Weight change (mass), maximum %					
Linear dimensional change, maximum, % (ASTM D1204)		-0.10	-0.10	1.5	1.5
Water absorption, maximum, mass % (ASTM D471 for 166 hours at 158 °F)		0.6	0.6	2.5	2.5
Factory seam strength, minimum, lbf/inch (ASTM D751, Grab Method)		56	56		
Weather resistance (Practice G154 or G155):					
Visual inspection (Pass/Fail)		PASS	PASS		
Tensile strength, % minimum	Type I: NA				
Breaking strength, % minimum	Type II: NA				
Elongation, ultimate, % minimum	Type I: NA				
Elongation at break, minimum, %	Type II: NA				
5. SEE APPENDIX IF CHECKED					

NA=not applicable

## TPO Part 2: Test Results

Test description as specified in Draft ASTM Standard

GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	STEVENS ROOFING SYSTEMS	STEVENS ROOFING SYSTEMS
.045 TPO	.060 TPO	EP 0.045	EP 0.06
X	X	X	X
0.039	0.054	0.040	0.040
0.012	0.012	0.011	0.011
225	225	225	225
15	15	20	20
55	55	55	55
-40	-40	-40	-40
PASS	PASS	PASS	PASS
100	100	202.5	202.5
100	100	18	18
100	100	49.5	49.5
1	1		
±2	±2	.5	.5
±4	±4	2	2
75% OF SHEET STRENGTH	75% OF SHEET STRENGTH		
PASS	PASS	PASS	PASS
90	90		
90	90		

## Other Prefabricated Sheet-Applied Membranes Part 1: General Information

1. COMPANY NAME	BONDCOTE ROOFING SYSTEMS	BONDCOTE ROOFING SYSTEMS	BONDCOTE ROOFING SYSTEMS	BONDCOTE ROOFING SYSTEMS	CARLISLE SYNTec INC.	CARLISLE SYNTec INC.
2. PRODUCT NAME	BONDCOTE 350 SERIES	BONDCOTE 400 SERIES	BONDCOTE 500 SERIES	BONDCOTE FLEECEBOND 1000	SURE-WELD & GSO	SURE-SEAL POLYEPICHLOROHYDRIN
3. PRODUCT DESCRIPTION Reinforcement	18 X 12 POLYESTER	18 X 12 POLYESTER	18 X 12 POLYESTER	18 X 12 POLYESTER	POLYESTER	NONE
Color	WHITE	WHITE	WHITE	WHITE	WHITE, GRAY OR TAN ON BLACK	GRAY / BLACK
Installed Weight (lbs./ft <sup>2</sup> w/o ballast)	0.24	0.28	0.33	0.30	0.25	0.48
4. COATING REQUIRED:	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:						
New Roofing	X	X	X	X	X	X
Reroofing	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HEAT WELD	HEAT WELD	HEAT WELD	HEAT WELD	HEAT WELD	CONTACT ADHESIVE
7. TYPES OF ROOF SYSTEMS						
Loose Laid/Ballasted(ballast: lbs./ft <sup>2</sup> )	10	10	10	10		
Partially Adhered (method)	MECHANICALLY	MECHANICALLY	MECHANICALLY	MECHANICALLY	MECH. FAST.	
Fully Adhered(method)	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.
Protected Roof Membrane Assembly	X	X	X	X		
8. MINIMUM SLOPE REQUIRED (inches per foot)	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	1/4"
9. ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)						
Glass Fiber	X O	X O	X O	X		
Mineral Fiber	X O	X O	X O	X	O	O
Polystyrene	S O	S O	S O	X	O	O
Cellular Glass	X	X	X	X	X	X
Phenolic						
Fiberboard	X	X	X	X	X	X
Perlite	X	X	X	X	O	O
Polyisocyanurate	X	X	X	X	X	X
Polyurethane	X	X	X	X	X	X
Gypsum	X	X	X	X	O	X O
Concrete	O	O	O	X	O	X O
Wood Plank	O	O	O	X	O	X O
Plywood	O	O	O	X	O	X O
Existing Built-up Membrane	O	O	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 – 180	0 – 180	0 – 180	0 – 180	-25 – 140	-20 – 180
12. FLASHING MATERIAL	ROOF MEMB NBP-COATED METAL	ROOF MEMB NBP-COATED METAL	ROOF MEMB NBP-COATED METAL	ROOF MEMB NBP-COATED METAL	REINFORCED & UNREINFORCED MEMBRANE	UNCURED OR CURED EPDM & ECO/CO
13. FLASHING METHOD	HEAT WELD & CONTACT ADHESIVE	HEAT WELD & CONTACT ADHESIVE	HEAT WELD & CONTACT ADHESIVE	HEAT WELD & CONTACT ADHESIVE	HEAT WELD & CONTACT ADHESIVE	CONTACT ADHESIVE
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	NO
15. COUNTRY OF:						
Origin	USA	USA	USA	USA	USA	USA
Manufacture	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE						
Outside USA		1987				1977
Within USA	1977	1977	1995	1991	1991	1977
17. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
Outside USA						
Within USA	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	MILLIONS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DIRECT	DIRECT	DIRECT	DISTRs, DIRECT	DISTRs, DIRECT
19. NUMBER OF REGIONAL LOCATIONS	4	4	4	4	70	70
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	C. KUHL 717/245-7000	C. KUHL 717/245-7000
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	S. IBRAHIM 717/245-7000	S. IBRAHIM 717/245-7000
23. SEE APPENDIX IF CHECKED	X	X		X		

## Other Prefabricated Sheet-Applied Membranes Part 1: General Information

COOLEY ENGINEERED MEMBRANE	COOLEY ENGINEERED MEMBRANE	COOLEY ENGINEERED MEMBRANE	DURO-LAST INC.	DURO-LAST INC.	ECOLOGY ROOF SYSTEMS	ERSYSTEMS	ERSYSTEMS	FLEX MEMBRANE INTERNATIONAL	FLEX MEMBRANE INTERNATIONAL
C3	RAM	C3 - TPO	DURO-LAST 40 MIL	DURO-LAST 50 MIL	ERS 900	PERMAWELD FLEECE-BACKED	PERMAWELD	FLEX FB 100	FLEX FB ELVALOY
POLYESTER	WOVEN & NONWOVEN POLYESTER	POLYESTER	REINFORCED POLYESTER	REINFORCED POLYESTER	POLYESTER	CPA MEMBRANE REINFOR W/FLEECE BACK POLY FAB	CPA POLYESTER REINFORCED	REINFORCED POLYESTER W/ FLEECE BACKING	REINFORCED POLYESTER W/ FLEECE BACKING
	WHITE / TAN / GRAY	WHITE & BLACK	WHITE / TAN / GRAY	WHITE / TAN / GRAY GRAY	BLACK	WHITE	WHITE	WHITE / OFF-WHITE	WHITE / OFF-WHITE
	0.030 NOM.		0.25	0.30	0.40	0.4	0.33	0.44	0.35
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
HOT AIR	HOT AIR	HOT AIR	HEAT WELD	HEAT WELD	HEAT WELD	HEAT WELD OR SOLVENT WELD	HEAT WELD	HOT AIR WELD	HOT AIR WELD
10	10		10	10		10	10	10 MIN	10 MIN
MECHANICALLY	MECHANICALLY CONT. ADHES.		MECHANICALLY	MECHANICALLY	BITUMEN	MECH. FAST.	MECHANICALLY	MECH. FAST.	MECH. FAST.
X	X	X	X	X	X	HOT AS./CLD AD.	COLD ADHES	HOT AS./CLD AD.	HOT AS./CLD AD.
LEVEL	LEVEL	LEVEL	DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	X	X	X	X
X	X	X	X	X	O	X	X	X	X
O	O	X	X	X	O	X	X	X	O
X	O	X	S	S	O	X O	X O	X O	X
O	O	X	X	X	O	O	O	X	X
X	X		O	O	O	X	X		
X	X		X	X	O	X	X	X	X
O	O		X	X	O	X	X	X	X
X	X	X	X	X	O	X	X	X	X O
X	X	X	S	S	O	X	X	X	O
X	O	X	X	X	O	X	X	X	X O
O	O	X	X	X	O	X O	X O	X	X
X	O	X	X	X	O	X	X	X	X O
X	O	X	X	X	O	X	X	X	X O
O	O	X	S O	S O	O	S O	S O	X	X O
NONE	NONE	N/A	NONE	NONE	NONE	NONE	NONE	NONE	NONE
40 - 120	40 - 120	40 - 120	-30 - 120	-30 - 120	40 - 120	-30 - 160	-30 - 160	0 - 120	0 - 120
C3, RAM, C3-COATED METAL	C3, RAM, C3-COATED METAL	REINFORCED & NON- REINFORCED	SAME MATERIAL	SAME MATERIAL	SAME MATERIAL	ROOF MEMBRANE / COATED METAL	ROOF MEMBRANE / COATED METAL	ROOF MEMBRANE / COATED METAL	ROOF MEMBRANE / COATED METAL
HOT AIR	HOT AIR & BONDING ADHESIVE	HOT AIR / ADHESIVE	HEAT WELD	HEAT WELD	SELF ADHERED W/HEAT WELD	HEAT WELD OR WALL MASTIC	HEAT WELD OR WALL MASTIC	HOT AIR WELD OR ADHESIVE	HOT AIR WELD OR ADHESIVE
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
		1997							
1988	1990	1997	1978	1988	1+99	1994	1984	1988	1988
			THOUSANDS	THOUSANDS					
>1,000,000	>1,000,000		>1,000,000	THOUSANDS		THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
			DIRECT	DIRECT	DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DIRECT	DIRECT
10	10		4	4	20	14	14		4
YES	YES		YES	YES	YES	YES	YES	YES	YES
J. SMITH	J. SMITH	J. SMITH	SALES DEPT. 800/248-0280	SALES DEPT. 800/248-0280	E. NELSON	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747	J. DOYLE 610/286-7788	J. DOYLE 610/286-7788
T. SAILLANT	T. SAILLANT	T. SAILLANT	ENGR. DEPT. 800/248-0280	ENGR. DEPT. 800/248-0280	B. PFIEFER	J. LEONARD 800/403-7747	R. BAKER 800/403-7747	M GIANGIACOMO 610/286-7788	M GIANGIACOMO 610/286-7788
X	X	X				X			

# Other Prefabricated Sheet-Applied Membranes Part 1: General Information

1. COMPANY NAME	FLEX MEMBRANE INTERNATIONAL	GENFLEX ROOFING SYSTEMS	GENFLEX ROOFING SYSTEMS	INTERCONTINENTAL COATINGS CORP. (I-CON)	INTERCONTINENTAL COATINGS CORP. (I-CON)	INTERCONTINENTAL COATINGS CORP. (I-CON)
2. PRODUCT NAME	FLEX MF/R ELVALOY	GENFLEX .045 TPO	GENFLEX .060 TPO	ROOFTEC HA	ROOF TEC CA	SA ROOF TEC
3. PRODUCT DESCRIPTION Reinforcement	REINFORCED POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER
Color	WHITE / OFF-WHITE	WHITE / BLACK / GRAY	WHITE / BLACK / GRAY	BLACK	BLACK	BLACK
Installed Weight (lbs./ft <sup>2</sup> w/o ballast)	0.30	0.21	0.29	0.40	0.40	0.40
4. COATING REQUIRED:	NONE	NONE	NONE	NONE	NONE	NONE
5. USE IN:						
New Roofing	X	X	X	X	X	X
Reroofing	X	X	X	X	X	X
6. FIELD LAP JOINT METHOD	HOT AIR WELD	HEAT WELD	HEAT WELD	HEAT WELD	HEAT WELD	SELF-ADHERED
7. TYPES OF ROOF SYSTEMS						
Loose Laid/Ballasted(ballast: lbs./ft <sup>2</sup> )	10 MIN	10-15	10-15			
Partially Adhered (method)	MECH. FAST.	MECH. FAST.	MECH. FAST.			
Fully Adhered(method)	CONT. ADHES.	CONT. ADHES.	CONT. ADHES.	BITUMEN	CONT. ADHES.	SELF-ADHERED
Protected Roof Membrane Assembly	X	X	X	X	X	
8. MINIMUM SLOPE REQUIRED (inches per foot)	DEAD LEVEL	LEVEL	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)						
Glass Fiber	X	O	O	O	O	O
Mineral Fiber	X	X	X	O	O	O
Polystyrene	S O	O	O	O	O	O
Cellular Glass	X O	X	X	O	O	O
Phenolic				O	O	O
Fiberboard	X	X	X	O	O	O
Perlite	X O	X	X	O	O	O
Polyisocyanurate	X O	X	X	O	O	O
Polyurethane	X O	X	X	O	O	O
Gypsum	X O	X	X	O	O	O
Concrete	S	O	O	O	O	O
Wood Plank	O	O	O	O	O	O
Plywood	X O	O	O	O	O	O
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
11. WORKABLE TEMPERATURE RANGE (degrees F)	0 – 120	0 – 140	0 – 140	40 – 120	40 – 120	40 – 120
12. FLASHING MATERIAL	ROOF MEMBRANE / COATED METAL	MEMBRANE OR COATED METAL	MEMBRANE OR COATED METAL	H150 E, HYLOAD SAM, WS STRAP METHOD	HYLOAD WS STRAPPED METHOD	SAME MATRL STRAPPED METHOD
13. FLASHING METHOD	HOT AIR WELD OR ADHESIVE	CONT. ADHES. OR HOT AIR WELD	CONT. ADHES. OR HOT AIR WELD	SELF-ADHERING WITH HEAT WELD	SELF-ADHERING WITH HEAT WELD	SELF-ADHERING
14. PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES	YES	YES	YES	YES	YES
15. COUNTRY OF:						
Origin	USA	USA	USA	USA	USA	USA
Manufacture	USA	USA	USA	USA	USA	USA
16. YEAR OF FIRST COMMERCIAL USE						
Outside USA						
Within USA	1988	1995	1995	1969	1977	1985
17. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )						
Outside USA						
Within USA	THOUSANDS	THOUSANDS	THOUSANDS	> 1 MILLION	THOUSANDS	THOUSANDS
18. METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DISTRIBUTORS	DISTRIBUTORS	DIRECT	DIRECT	DIRECT
19. NUMBER OF REGIONAL LOCATIONS	4	8	8	20	20	20
20. LICENSED APPLICATOR AGREEMENT (yes/no)	YES	YES	YES	YES	YES	YES
21. FOR SALES INFORMATION, CONTACT:	J. DOYLE 610/286-7788	SALES DEPT. 800/443-4272	SALES DEPT. 800/443-4272	SALES DEPT. JOE NUSSBAUM	SALES DEPT. JOE NUSSBAUM	SALES DEPT. JOE NUSSBAUM
22. FOR TECHNICAL INFORMATION, CONTACT:	M GIANGIACOMO 610/286-7788	TECH. DEPT. 800/443-4272	TECH. DEPT. 800/443-4272	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.
23. SEE APPENDIX IF CHECKED				X	X	X

## Other Prefabricated Sheet-Applied Membranes Part 1: General Information

INTERCONTINENTAL COATINGS CORP. (I-CON)	INTERCONTINENTAL COATINGS CORP. (I-CON)	INTERCONTINENTAL COATINGS CORP. (I-CON)	INTERCONTINENTAL COATINGS CORP. (I-CON)	INTERCONTINENTAL COATINGS CORP. (I-CON)	INTERCONTINENTAL COATINGS CORP. (I-CON)	INTERCONTINENTAL COATINGS CORP. (I-CON)	INTERCONTINENTAL COATINGS CORP. (I-CON)	SEAMAN CORP.	SEAMAN CORP.
SA ROOFTEC WS	SA ROOFTEC BWS BVWS	SA ROOFTEC PM	ROOFTEC WHA	ROOFTEC WCA	SA ROOFTEC W	SA ROOFTEC W	SA ROOFTEC WWS	FIBERTITE FB	FIBERTITE
POLYESTER	POLYESTER		POLYESTER	POLYESTER	POLYESTER	POLYESTER	POLYESTER	REINFORCED POLYESTER W/ FLEECE BACKING	REINFORCED POLYESTER
BLACK	BLACK		WHITE		WHITE	WHITE	WHITE	LIGHT BEIGE	LIGHT BEIGE
0.50	0.50	0.70	0.40	0.40	0.40	0.40	0.40	< 0.28	< 0.25
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	SELF-ADHERED	SELF-ADHERED	HEAT WELD	HEAT WELD	HEAT WELD
									10 MIN
									BONDING ADHS.
SELF-ADHERED	X	SELF-ADHERED	BITUMEN	ADHESIVE	SELF-ADHERED	SELF-ADHERED	SELF-ADHERED	ADHESIVE	BONDING ADHS.
	X		X	X					X
DEAD LEVEL	DEAD LEVEL	DEAD LEVEL	1	1	1	1	1	NONE	NONE
O			O	O	O	O	O	X	X
O	O		O	O	O	O	O		X
O	O		O	O	O	O	O	O	X S O
O	O		O	O	O	O	O	O	X S O
O	O		O	O	O	O	O		X
O	X		O	O	O	O	O		X
O	O		O	O	O	O	O	O	X
O	X		O	O	O	O	O	X	X
O	O		O	O	O	O	O	X O	X
O	X	X O	O	O	O	O	O	X O	X O
O	X	X O	O	O	O	O	O	X O	S
O		X O	O	O	O	O	O	X O	S
O	O	X O	O	O	O	O	O	X O	X S O
O	X		O	O	O	O	O	X O	X S O
NONE	NONE		NONE	NONE	NONE	NONE	NONE	NONE	NONE
40 – 120	40 - 120		40 – 120	40 – 120	40 – 120	40 – 120	40 – 120	0 – 120	–30 – NO LIMIT
SAME MATRL STRAPPED METHOD	SAME MATERIAL	SAME MATRL STRAPPED METHOD	ALPSAM WS STRAPPED METHOD	ALPSAM WS STRAPPED METHOD	SAME MATRL STRAPPED METHOD	SAME MATRL STRAPPED METHOD	SAME MATRL STRAPPED METHOD	ROOF MEMBRANE COATED METAL	ROOF MEMBRANE COATED METAL
SELF-ADHERING WITH HEAT WELD	STRAPPED	SELF-ADHERING	SELF-ADHERING WITH HEAT WELD	SELF-ADHERING WITH HEAT WELD	SELF-ADHERING	SELF-ADHERING	SELF-ADHERING WITH HEAT WELD	HEAT WELD, WALL MASTIC OR ADHESIVE	HEAT WELD, WALL MASTIC OR ADHESIVE
YES	NO	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
1985	1989		1989	1989	1989	1989	1989	1995	1982
								1994	1978
THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS
DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	THOUSANDS	>1,000,000
20	20	20	20	20	20	20	20	DIRECT	DIRECT
YES	YES	YES	YES	YES	YES	YES	YES	20	20
SALES DEPT. JOE NUSSBAUM	SALES DEPT. JOE NUSSBAUM	SALES DEPT. JOE NUSSBAUM	SALES DEPT. JOE NUSSBAUM	SALES DEPT. JOE NUSSBAUM	SALES DEPT. JOE NUSSBAUM	SALES DEPT. JOE NUSSBAUM	SALES DEPT. JOE NUSSBAUM	YES	YES
TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	800/927-8578	800/927-8578
X	X	X	X	X	X	X	X	800/927-8578	800/927-8578
								X	X

## Other Prefabricated Sheet-Applied Membranes Part 1: General Information

1.	COMPANY NAME	VERSICO, INC.
2.	PRODUCT NAME	VERSIWELD PREMIER .045, .060
3.	PRODUCT DESCRIPTION Reinforcement	
	Color	GRAY, TAN WHITE ON BLACK
	Installed Weight (lbs./ft <sup>2</sup> w/o ballast)	0.22 - 0.32
4.	COATING REQUIRED:	NONE
5.	USE IN:	
	New Roofing	X
	Reroofing	X
6.	FIELD LAP JOINT METHOD	HEAT WELD
7.	TYPES OF ROOF SYSTEMS	
	Loose Laid/Ballasted(ballast: lbs./ft <sup>2</sup> )	10-15
	Partially Adhered (method)	MECH. FAST.
	Fully Adhered(method)	CONT. ADHES.
	Protected Roof Membrane Assembly	X
8.	MINIMUM SLOPE REQUIRED (inches per foot)	NONE
9.	ACCEPTABLE SUBSTRATES (X=direct application permitted) (S=separator sheet required) (O=overlayment required in some or all circumstances)	
	Glass Fiber	O
	Mineral Fiber	X
	Polystyrene	X
	Cellular Glass	X
	Phenolic	
	Fiberboard	X
	Perlite	X
	Polyisocyanurate	X
	Polyurethane	X
	Gypsum	X
	Concrete	O
	Wood Plank	O
	Plywood	O
	Existing Built-up Membrane	O
10.	RESTRICTED REGIONS (refer to manufacturer's literature)	NONE
11.	WORKABLE TEMPERATURE RANGE (degrees F)	-25 - 180
12.	FLASHING MATERIAL	VERSIWELD FLASHING OR COATED METAL
13.	FLASHING METHOD	CONTACT ADHESIVE & HEAT WELD
14.	PREFORMED ACCESSORIES AVAILABLE (yes/no)	YES
15.	COUNTRY OF:	
	Origin	USA
	Manufacture	USA
16.	YEAR OF FIRST COMMERCIAL USE	
	Outside USA	
	Within USA	
17.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )	
	Outside USA	
	Within USA	MILLIONS
18.	METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS
19.	NUMBER OF REGIONAL LOCATIONS	150
20.	LICENSED APPLICATOR AGREEMENT (yes/no)	YES
21.	FOR SALES INFORMATION, CONTACT:	M. MCAULEY 800/992-7663
22.	FOR TECHNICAL INFORMATION, CONTACT:	R. GIANGIULI 800/992-7663
23.	SEE APPENDIX IF CHECKED	



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## 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 350 SERIES	BONDCOTE 400 SERIES	BONDCOTE 500 SERIES	BONDCOTE FLEECEBOND 1000
3. PRODUCT DESCRIPTION		ACRYLONITRILE BUTADIENE POLYMER BLEND (NBP)	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	35 MILS	40 MILS	50 MILS	100 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	450 X 330 LBS. 7500 PSI	390 X 300 LBS. 6000 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	> 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 MAGNIFICATION	NO CRACKS, 7X MAGNIFICATION	NO CRACKS, 7X MAGNIFICATION	NO CRACKS, 7X MAGNIFICATION
14. RESISTANCE TO ACCELERATED WEATHERING	METHOD	FS191, METHOD 5804, CARBON ASTM G90 EMMAGUA	FS191, METHOD 5804, CARBON ASTM G90 EMMAGUA	FS191, METHOD 5804, CARBON ASTM G90 EMMAGUA	FS191, METHOD 5804, CARBON ASTM G90 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.	325 LBS.	290 LBS.
16. TEAR RESISTANCE	METHOD				
	RESULTS				
17. TEARING STRENGTH	METHOD	ASTM D 751 8 IN. X 10 IN. SAMPLE	ASTM D 751 8 IN. X 10 IN. SAMPLE	ASTM D 751 8 IN. X 10 IN. SAMPLE	ASTM D 751 8 IN. X 10 IN. SAMPLE
	RESULTS	120 X 110 LBS.	125 X 115 LBS.	130 X 120 LBS.	125 X 115 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 APPENDIX IF CHECKED		X	X		X

## Other Prefabricated Sheet-Applied Membranes Part 2: Test Results

CARLISLE SYNTEC INCORPORATED	CARLISLE SYNTEC INCORPORATED	COOLEY ENGINEERED MEMBRANE	COOLEY ENGINEERED MEMBRANE	COOLEY ENGINEERED MEMBRANE
SURE-WELD REINFORCED TPO	POLYEPICHLORHYDRIN ECO/CO	C3	RAM	C3-TPO
REINFORCED THERMOPLASTIC POLYOLEFIN MEMBRANE	NONREINFORCED POLYEPICHLOROHYDRIN	TRI-POLYMER ALLOY ELVALOY KEE	TRI-POLYMER ALLOY ELVALOY KEE	POLYPROPYLENE
ASTM D 751	ASTM D412	ASTM D 751	ASTM D 751	ASTM D 751
0.045 IN., 0.060 IN. ±10%	60 MIL	40 MILS	45 MILS	45
ASTM D 751	ASTM D 412	ASTM D 751, GRAB	ASTM D 751, GRAB	ASTM 7 751
340 LBF	1500 PSI (MIN)	300 X 300 LBS.	350 X 325 LBS.	300 X 300
HEAT WELD		ASTM D 638	ASTM D 638	HEAT WELD
RUPTURE OUTSIDE SEAM OVERLAP		90%	90%	
ASTM D 751 (FABRIC RUPTURE)	ASTM D 412	ASTM D 751	ASTM D 751	
25%	200% (MIN)	17% X 19%	40% X 30%	
ASTM D 2137	ASTM D 746	ASTM D 2136	ASTM D 2136	ASTM D 2136
-50 F	-20F (MIN)	-40 F, PASS	-40 F, PASS	-40 F
ASTM D 471 (7 DAYS @ 158 F)		ASTM D 750 7 DAYS @ 158 F	ASTM D 750 7 DAYS @ 158 F	ASTM D 471
2.0%		1% MAX.	1% MAX.	± 4%
ASTM D 573 (28 DAYS @ 240 F)	ASTM D 573,168 HRS @240F	ASTM D 3045	ASTM D 3045	
TENSILE -- 340 LBF TEAR -- 130 LBF	1500PSI (MIN) TENSILE 150% (MIN) ELONGATION	80% X 80%	80% X 80%	
ASTM D 1149 168 HOURS @ 100 mPa) NO CRACKS	ASTM D 1149, 100 PPHM @ 50% STRAIN 168 HOURS @ 140 F NO CRACKS	ASTM D 1149 PASS, NO CRACKS 7X MAGNIFICATION	ASTM D 1149 PASS, NO CRACKS 7X MAGNIFICATION	
ASTM G 26 (5040 KJ/M <sup>2</sup> , 176 F)		ASTM D 882, ASTM E 838	ASTM D882, ASTM E 838	
NO LOSS OF BREAKING OR TEARING STRENGTH, NO SURFACE CRACKS		PASS 2 MILLION LANGLEYS	PASS 2 MILLION LANGLEYS	
		FS 1018 METHOD 2031	FS 1018 METHOD 2031	
		280 LB.	280 LB.	
	ASTM D 624 (DIE C)	ASTM D 751	ASTM D 751	ASTM D 751
	150 LBF/IN (MIN)	100 LB. X 100 LB.	100 LB. X 100 LB.	100 X 100
ASTM D 751 TONGUE TEAR 130 LBF		ASTM D 751 100 X 100 LBS.	ASTM D 751 100 X 100 LBS.	
		CTM 028	CTM 028	
		-20 F, NO CRACKS	-20 F, NO CRACKS	
ASTM E 96 PROCEDURE B OR BW 0.05 PERMS	ASTM E 96, PROCEDURE B OR BW 0.040 PERMS	ASTM E 96 0.003 PERMS	ASTM E96 0.003 PERMS	
		ASTM D 1204 6 HOURS @ 176 F	ASTM 1204 6 HOURS @ 176 F	
		0.3%	0.3%	

## Other Prefabricated Sheet-Applied Membranes Part 2: Test Results

1. COMPANY NAME		DURO-LAST INC.	DURO-LAST INC.	ECOLOGY ROOF SYSTEMS	ERSYSTEMS
2. PRODUCT NAME		DURO-LAST 40 MIL	DURO-LAST 50 MIL	ERS 900	PERMAWELD FLEECE-BACKED
3. PRODUCT DESCRIPTION		PVC BLEND REINFORCED W/POLYESTER FABRIC	PVC BLEND REINFORCED W/POLYESTER FABRIC	POLYESTER REINFORCED KEE	CPA MEMBRANE REINFORCED W/POLYESTER FLEECE FABRIC
4. THICKNESS	METHOD	ASTM D 751	ASTM D 751	ASTM 2083	ASTM D 751
	RESULTS	40 MILS NOMINAL	50 MILS	60 MIL	40 MILS NOM.
5. TENSILE STRENGTH	METHOD	ASTM D 751, GRAB METHOD ASTM D 882	ASTM D 751, GRAB METHOD ASTM D 882	ASTM D 412	ASTM D 882 ASTM D 751
	RESULTS	435 X 350 LBS. 7200 PSI	450 X 380 LBS. 8780 PSI	1699 LBS. SQ. IN.	300 X 325 LBS. 8000 PSI
6. LAP JOINT METHOD	METHOD	ASTM D 751	ASTM D 751	HEAT WELD	ASTM D 751
	RESULTS	350 LBS. (MIN)	350 LBS. (MIN)		> 350 LBS.
7. ELONGATION AT BREAK	METHOD	ASTM D 751	ASTM D 751	ASTM D 412	ASTM D 751
	RESULTS	35%	35%	170%	35%
8. TENSILE SET	METHOD				
	RESULTS				
9. LOW TEMPERATURE FLEXIBILITY	METHOD	ASTM D 2136	ASTM D 2136	CGSB-37-6PS6M	ASTM D 2136
	RESULTS	-40 F, NO CRACKS	-40 F, NO CRACKS	PASS	-40 F, PASS
10. WATER ABSORPTION	METHOD				ASTM D 570 @ 70 F @ 122 F 48 HOURS
	RESULTS				1.4%
11. DIMENSIONAL STABILITY AFTER WATER ABSORPTION	METHOD	ASTM D 1204	ASTM D 1204		ASTM D 570
	RESULTS	<0.1% CHANGE	<0.1% CHANGE		NO CHANGE
12. HEATING AGING	METHOD	ASTM D 3045 7 DAYS @ 194 F	ASTM D-3045 7 DAYS @ 194 F		14 DAYS @ 175 F
	RESULTS	90% BREAKING STRENGTH 95% ELONGATION	85% BREAKING STRENGTH 90% ELONGATION		4,500,000 LANGLEYS OF TENSILE STRENGTH
13. OZONE RESISTANCE	METHOD	ASTM D 1149, 100 PPHM, 1/8", 104 F -- 7 DAYS	ASTM D 1149, 100 PPHM, 1/8", 104 F -- 7 DAYS		
	RESULTS	NO CRACKS, 7X MAGNIFICATION	NO CRACKS, 7X MAGNIFICATION		
14. RESISTANCE TO ACCELERATED WEATHERING	METHOD	FS 191,MET 5804, CARBON A ASTM E 838	FS 191,MET 5804, CARBON A ASTM E 838	CGSB-37-GP56M	ASTM D 2565 ASTM E 838
	RESULTS	NO CRACKING 6000 HRS > 7 MILLION LANGLEYS	NO CRACKING 6000 HRS > 7 MILLION LANGLEYS	PASS	20,000 HOURS 4.5 MILLION LANGLEYS
15. DYNAMIC IMPACTING (PUNCTURING)	METHOD	FS 1018, METHOD 2031	FS 1018, METHOD 2031	CBSB-37-GP56M	FS 101B, METHOD 2031
	RESULTS	350 LBS.	375 LBS.	PASS	225 LBS.
16. TEAR RESISTANCE	METHOD	ASTM D 751 TONGUE	ASTM D 751 TONGUE	ASTM D 624	ASTM D 751 8 IN X 8 IN SAMPLE
	RESULTS	130 X 110 LBS.	140 X 100 LBS.	330 LBS.	90 X 120 LBS.
17. TEARING STRENGTH	METHOD	ASTM D 751 TONGUE	ASTM D 751 TONGUE		ASTM D 751
	RESULTS	130 X 110 LBS.	140 X 100 LBS.		120 LBS.
18. LOW TEMPERATURE IMPACT	METHOD	ASTM D 2136, -40 F	ASTM D 2136, -40 F		ASTM D 2136, -30 F
	RESULTS	NO CRACKING	NO CRACKING		NO CRACK
19. PERMEABILITY	METHOD	ASTM E 96, PROCEUDRE BW ASTM E 96, WVT. PROC B, M, A	ASTM E 96, PROCEDURE BW ASTM E 96, WVT. PROC B, M, A	ASTM D 96, PROCEDURE A WATER VAPOR EMISSION	ASTM E 96, PROCEDURE A
	RESULTS	0.25 US PERMS 0.086 G/HR/MXM	0.22 PERMS 0.07 G/HR/MXM	0.136/GRAINS/IN SQ FT	0.2 US PERMS 1..39 G/MXM/24
20. DIMENSIONAL CHANGE AFTER STRESS RELAXATION	METHOD				ASTM D 1204
	RESULTS				0.2%
21. CONE PENETRATION	METHOD				
	RESULTS				
22. SEE APPENDIX IF CHECKED					X

## Other Prefabricated Sheet-Applied Membranes Part 2: Test Results

ERSYSTEMS PERMAWELD	FLEX MEMBRANE INT'L INC. FLEX FB 100	FLEX MEMBRANE INT'L INC. FLEX FB ELVALOY	FLEX MEMBRANE INT'L INC. FLEX MF/R ELVALOY	GENFLEX ROOFING SYSTEMS GENFLEX TPO .045
POLYESTER-REINFORCED CPA	POLYESTER REINFORCED WITH FLEECE, ELVALOY KEE	POLYESTER REINFORCED WITH FLEECE, ELVALOY KEE	POLYESTER REINFORCED WITH FLEECE, ELVALOY KEE	TPO THERMOPLASTIC OLEFIN
ASTM D 751	ASTM D 751	ASTM D 751	ASTM D 751, GRAB	ASTM D 751
40 MIL NOM. AND 48 MIL NOM.	100 MIL NOM.	45 MIL NOM.	40 MIL NOM.	0.045 IN
ASTM D 882 ASTM D 751	ASTM D 638, PSI	ASTM D 751, GRAB	ASTM D 751	ASTM D 751
315 X 325 LBS. 7450 PSI	MD 1844 TD 2111	> 340 LBS.	235 LBS.	225 LB./F
ASTM D 751	ASTM D 638	ASTM D 638	ASTM D 751	HEAT WELD
> 350 LBS.	> 90%	90 %	> 400 LBS.	
ASTM D 751	ASTM D 638, %	ASTM D 751	ASTM D 751	ASTM D 412 DIEC
35% X 35%	MD 183 TD 108	> 28%	> 28%	500% ULTIMATE
ASTM D 2136 -30 F	ASTM D 2136	ASTM D 2136	ASTM D 2136	ASTM D 2137
NO CRACKS	-40 F, PASS	-40 F, PASS	-40 F, PASS	-40 F, PASS
ASTM D 750 @ 70 F @ 122 F 48 HOURS	ASTM D 0573	ASTM D 570	ASTM D 570	ASTM D 471
> 1%	1.5 % MAX.	1.5% MAX.	1.5% MAX.	±2%
ASTM D 570				
NO CHANGE				
14 DAYS @ 175 F	ASTM D 0573	ASTM D 0573	ASTM D 3045	ASTM D 573
100% STRENGTH RETENTION, NO CRACKING, CRAZING, BLISTERING	90% STRENGTH RETENTION OF ORIGINAL	90% STRENGTH RETENTION OF ORIGINAL	90% STRENGTH RETENTION OF ORIGINAL	TENSILE STRENGTH 225 LB/F
	ASTM D 1149	ASTM D 1149	3 DAYS @ 100 PPHM -- 100 F AND 3 DAYS @ 300 PPHM -- 100 F	ASTM D 1149
	PASS, NO CRACKS 7 X MAGNIFICATION	PASS, NO CRACKS 7X MAGNIFICATION	NO CRACKING	PASS
ASTM D 2565 ASTM E 838	ASTM D 2565 (XENON ARC)	ASTM D 2565 (XENON ARC)	ASTM D 2565 (XENON ARC)	ASTM G 26
20,000 HOURS 4.5 MILLION LANGLEYS	10 M HRS., NO CHANGE	10 M HRS., NO CHANGE	10 M HRS., NO CHANGE	PASS
FS 101B, METHOD 2031	FS 101B, METHOD 2031	FS 101B, METHOD 2031	FS 101B, METHOD 2031	FTM 101C, METHOD 2031
250 LBS.	295 LBS.	260 LBS.	260 LBS.	200 LBS. MINIMUM
ASTAM D 751 8 IN. X 8 IN. SAMPLE	ASTM D 751	ASTM D 751	ASTM D 751	
90 X 120 LBS.	110 X 100 LBS.	100 X 100 LBS.	120 X 120 LBS.	
ASTM D 751 8 IN. X 8 IN. SAMPLE	ASTM D 751	ASTM D 751	ASTM D 751	ASTM D 751 PROCEDURE B
90 X 120	120 X 110 LBS.	100 X 100 LBS.	120 X 120 LBS.	55 LB./F
ASTM D 2136, -30 F	ASTM D 2136	ASTM D 2136	ASTM D 2136	ASTM D 2137
NO CRACK	-40 F, NO CRACKS	-40 F, NO CRACKS	-40 F, NO CRACKS	-40 F
ASTM E 96, PROCEDURE A	ASTM E 96 WATER VAPOR TRANSMISSION	ASTM E 96 WATER VAPOR TRANSMISSION	ASTM E 96 WATER VAPOR TRANSMISSION	ASTM 3 96
0.2 US PERMS	3.5/M <sup>2</sup> /DAY	3.5/M <sup>2</sup> /DAY	3.5/M <sup>2</sup> /DAY	12 PERMS
ASTM D 1204	ASTM D 1204	ASTM D 1204	ASTM D 1204	ASTM D 1204
0.2%	< 0.5%	< 0.5%	< 0.5%	±2%
			37-GP-54	
			PASS	
X				

## Other Prefabricated Sheet-Applied Membranes Part 2: Test Results

1. COMPANY NAME		GENFLEX ROOFING SYSTEMS	INTERCONTINENTAL COATINGS	INTERCONTINENTAL COATINGS	INTERCONTINENTAL COATINGS
2. PRODUCT NAME		GENFLEX TPO .060	ROOFTEC HA	ROOFTEC CA	SA ROOFTEC
3. PRODUCT DESCRIPTION		TPO THERMOPLASTIC OLEFIN	POLYESTER REINFORCED KEE	POLYESTER REINFORCED KEE	POLYESTER REINFORCED KEE
4. THICKNESS	METHOD	ASTM D 751	ASTM D 2083	ASTM D 2083	ASTM D 2083
	RESULTS	0.060 IN.	60 MIL	60 MIL	60 MIL
5. TENSILE STRENGTH	METHOD	ASTM D 751	ASTM D 412	ASTM D 412	ASTM D 412
	RESULTS	225 LB./F	1600 LB/SQ.IN	1600 LB/SQ.IN	1500 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 DIEC	ASTM D 412	ASTM D 412	ASTM D 412
	RESULTS	500% ULTIMATE	170%	170%	170%
8. TENSILE SET	METHOD				
	RESULTS				
9. LOW TEMPERATURE FLEXIBILITY	METHOD	ASTM D 2137	CGSB 37-GP56M	CGSB 37GP56M	CGSB 37GP56M
	RESULTS	-40 F, PASS	PASS	PASS	PASS
10. WATER ABSORPTION	METHOD	ASTM D 471			
	RESULTS	±2%			
11. DIMENSIONAL STABILITY AFTER WATER ABSORPTION	METHOD				
	RESULTS				
12. HEATING AGING	METHOD	ASTM D 573			
	RESULTS	TENSILE STRENGTH 225 LB/F			
13. OZONE RESISTANCE	METHOD	ASTM D 1149			
	RESULTS	PASS			
14. RESISTANCE TO ACCELERATED WEATHERING	METHOD	ASTM G 26	CGSB 37-GP56M	CGSB 37-GP56M	CGSB 37-GP56M
	RESULTS	PASS	PASS	PASS	PASS
15. DYNAMIC IMPACTING (PUNCTURING)	METHOD	FTM 101C, METHOD 2031	CGSB37 - GP56M	CGSB37 - GP56M	CGSB37 - GP56M
	RESULTS	200 LBS. MINIMUM	PASS	PASS	PASS
16. TEAR RESISTANCE	METHOD		ASTM D 624	ASTM D 624	ASTM D 624
	RESULTS		330 LBS.	330 LBS.	270 LBS.
17. TEARING STRENGTH	METHOD	ASTM D 751 PROCEDURE B			
	RESULTS	55 LB./F			
18. LOW TEMPERATURE IMPACT	METHOD	ASTM D 2137			
	RESULTS	-40 F			
19. PERMEABILITY	METHOD	ASTM E 96 12 PERMS	ASTM E 96 PROCEDURE A WATER VAPOR TRANSMISSION	ASTM E 96 PROCEDURE A WATER VAPOR TRANSMISSION	ASTM E 96 PROCEDURE A WATER VAPOR TRANSMISSION
	RESULTS		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	ASTM D 1204			
	RESULTS	±2%			
21. CONE PENETRATION	METHOD				
	RESULTS				
22. SEE APPENDIX IF CHECKED					

## Other Prefabricated Sheet-Applied Membranes Part 2: Test Results

INTERCONTINENTAL COATINGS	INTERCONTINENTAL COATINGS	INTERCONTINENTAL COATINGS	INTERCONTINENTAL COATINGS	INTERCONTINENTAL COATINGS
SA ROOFTEC WS	SA ROOFTEC BWS BVWS	SA ROOFTEC PM	ROOFTEC WHA	ROOFTEC WCA
POLYESTER REINFORCED KEE		POLYESTER REINFORCED KEE	POLYESTER REINFORCED KEE	POLYESTER REINFORCED KEE
ASTM D 2083	ASTM D 2083		ASTM D 2083	ASTM D 2083
75 MIL	75 MIL	70 MIL	60 MIL	60 MIL
ASTM D 412	ASTM D 412	ASTM D 412	ASTM D 412	ASTM D 412
1500 LB/SQ.IN	1500 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	ASTM D 412	ASTM D 412	ASTM D 412	ASTM D 412
170%	170%	170%	170%	170%
CGSB 37-GP56M	CGSB 37-GP56M	CGSB 37-GP56M	CGSB 37GP56M	CGSB 37-GP56M
PASS	PASS	PASS	PASS	PASS
CGSB 37-GP56M	CGSB 37-GP56M	CGSB 37-GP56M	CGSB37 - GP56M	CGSB37 - GP56M
PASS	PASS	PASS	PASS	PASS
CGSB37 - GP56M	CGSB 37-GP56M	CGSB 37-GP56M	CGSB37 - GP56M	CGSB37 - GP56M
PASS	PASS	PASS	PASS	PASS
ASTM D 624		ASTM D 624	ASTM D 624	ASTM D 624
165 LBS.		165 LBS.	330 LBS.	330 LBS.
ASTM E 96 PROCEDURE A	ASTM E 96, PROCEDURE A	ASTM E 96 PROCEDURE A	ASTM E 96 PROCEDURE A	ASTM E 96 PROCEDURE A
WATER VAPOR TRANSMISSION	WATER VAPOR TRANSMISSION	WATER VAPOR TRANSMISSION	WATER VAPOR TRANSMISSION	WATER VAPOR TRANSMISSION
0.136/GRAINS/IN. HG. SQ. FT.	0.136 GRAIN/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.

## Other Prefabricated Sheet-Applied Membranes Part 2: Test Results

1. COMPANY NAME		INTERCONTINENTAL COATINGS	INTERCONTINENTAL	SEAMAN CORP.	SEAMAN CORP.
2. PRODUCT NAME		SA ROOFTEC W	SA ROOFTEC WWS	FIBERTITE FB	FIBERTITE
3. PRODUCT DESCRIPTION		POLYESTER REINFORCED KEE	POLYESTER REINFORCED KEE	POLYESTER REINFORCED EIP W/FLEECE BACKING	POLYESTER REINFORCED EIP
4. THICKNESS	METHOD	ASTM D 2083	ASTM D 2083	ASTM D 751	ASTM D 751
	RESULTS	60 MIL	60 MIL	40 MIL	33 MILS NOM
5. TENSILE STRENGTH	METHOD	ASTM D 412	ASTM D 412	ASTM D 751 ASTM D 882	ASTM D 751, GRAB METHOD ASTM D 882
	RESULTS	1300 LB/SQ.IN	1500 LB/SQ.IN	375 X 300 LBS. 8500 PSI	450 LBS. X 450 LBS. 8500 PSI
6. LAP JOINT METHOD	METHOD	SELF-ADHERED	HEAT WELD	ASTM D 751	ASTM D 751
	RESULTS			> 400 LBS.	>400 LBS.
7. ELONGATION AT BREAK	METHOD	ASTM D412	ASTM D 412	ASTM D 751	ASTM D 751
	RESULTS	170%	170%	15% WARP X 15% FILL	20% WARP, 30% FILL
8. TENSILE SET	METHOD				
	RESULTS				
9. LOW TEMPERATURE FLEXIBILITY	METHOD	CGSB 37-GP56M	CGSB 37-GP56M	ASTM D 2146	ASTM D 2136
	RESULTS	PASS	PASS	-30 F, NO CRACKS	-30 F, NO CRACKS
10. WATER ABSORPTION	METHOD			ASTM D 471 14 DAYS @ 70 C	ASTM D 471 14 DAYS @ 70 C
	RESULTS			1%	1%
11. DIMENSIONAL STABILITY AFTER WATER ABSORPTION	METHOD				
	RESULTS				
12. HEATING AGING	METHOD			ASTM D 3045 (160 F/7 DAYS)	ASTM D 3045 7 DAYS @ 160 F
	RESULTS			>90% STRENGTH RETENTION	>90% STRENGTH RETENTION
13. OZONE RESISTANCE	METHOD			3 DAYS @ 100PPHM -- 100F AND 3 DAYS @ 300 PPHM -- 100 F	3 DAYS @ 100PPHM -- 100F AND 3 DAYS @ 300 PPHM -- 100 F
	RESULTS			NO CRACKING	NO CRACKING
14. RESISTANCE TO ACCELERATED WEATHERING	METHOD	CGSB37 - GP56M	CGSB37 - GP56M	ASTM D 2565	ASTM D 2565 ASTM E 838
	RESULTS	PASS	PASS	5,000 HOURS, NO CRACKING	5,000 HOURS, NO CRACKING 3 MILLION LANGLEYS
15. DYNAMIC IMPACTING (PUNCTURING)	METHOD	CGSB37 - GP56M	CGSB37 - GP56M	ASTM D 5635	ASTM D 5635
	RESULTS	PASS	PASS	20 JOULES	15 JOULES
16. TEAR RESISTANCE	METHOD	ASTM D 624	ASTM D 624	ASTM D 751 8 IN. X 10 IN. SAMPLE	ASTM D 751 8 IN. X 10 IN. SAMPLE
	RESULTS	165 LBS.	165 LBS.	50 X 50 LBS.	120 X 120
17. TEARING STRENGTH	METHOD			ASTM D 751 8 IN. X 10 IN. SAMPLE	ASTM D 751 8 IN. X 10 IN. SAMPLE
	RESULTS			50 X 50 LBS.	120 X 120
18. LOW TEMPERATURE IMPACT	METHOD			ASTM D 2136, -30 F	ASTM D 2136,-30 F
	RESULTS			NO CRACKING	NO CRACKING
19. PERMEABILITY	METHOD	ASTM E 96 PROCEDURE A WATER VAPOR TRANSMISSION	ASTM E 96 PROCEDURE A WATER VAPOR TRANSMISSION	ASTM E 96 PROCEDURE A WATER VAPOR TRANSMISSION	ASTM E 96, PROCEDURE A WATER VAPOR TRANSMISSION
	RESULTS	0.136/GRAINS/IN. HG. SQ. FT.	0.136/GRAINS/IN. HG. SQ. FT.	1.3 G/MXM/24H	1.3 G/MXM/24H
20. DIMENSIONAL CHANGE AFTER STRESS RELAXATION	METHOD			ASTM D 1204	37-GP-54M
	RESULTS			0.005	SHALL NOT CHANGE MORE
21. CONE PENETRATION	METHOD			37-GP-54M	37-GP-54M
	RESULTS			PASS	PASS
22. SEE APPENDIX IF CHECKED				X	X



## Other Prefabricated Sheet-Applied Membranes Part 2: Test Results

VERSICO INCORPORATED
VERSIWELD PREMIER
TPO THERMOPLASTIC OLEFIN
ASTM D 412
0.385 MM MIN
0.015 IN. MIN
ASTM 0751 GRAB METHOD
1 KN
225 LBF
HEAT WELD
ASTM D 751
25 TYPICAL
FABRIC ONLY
ASTM D 471
@ 70 C FOR 166 HOURS
+4, -4 ON EXPOSED SURFACE
ASTM D 573
AGE BREAKING STRENGTH
1-0 KN
225 LBF
ASTM D 1149
PASS
ASTM G26
0.70 W/M <sup>2</sup> - 80 C G.P.T.
PASS
FTM 101C
250 MIN - 300 TYPICAL LBF
ASTM D 751
PROCEDURE B
55N
300 LBF
ASTM E 96
0.05 PERMS TYPICAL
0.10 PERMS MAX
ASTM D1204 AT 212° F
+2, -2

# Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

1.	COMPANY NAME	ALDO PRODUCTS CO., INC.	ALDO PRODUCTS CO., INC.	ALDO PRODUCTS CO., INC.	ALDO PRODUCTS CO., INC.
2.	PRODUCT NAME	ALDOCOAT 374 BASE	ALDOCOAT 374 TOP	ALDOCOAT 384 BASE/TOP	ALDOCOAT 384 BASE/TOP
3A.	COATING DESCRIPTION				
	Acrylic	X	X		
	Butyl				
	Hypalon				
	Neoprene				
	Silicone				
	Urethane			X	X
	Vinyl				
	Modified Asphalt				
	Other (type)				
3B.	VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	YES	YES	YES	YES
3C.	COLORS AVAILABLE	GRAY	WHITE		ALUMINUM
4.	BASE COATING (Name of Product)	ALCOCOAT 374 GRAY		ALDOCOAT 384	
	TOP COATING (Name of Product)		ALDOCOAT 374 WHITE		ALDOCOAT 384
5.	NUMBER OF COATING APPLICATIONS REQUIRED				
	Base Coatings	1		1	
	Top Coatings		1		1
	Granules Required (yes, no or optional)			OPTIONAL	OPTIONAL
6.	REQUIRED DRY FILM THICKNESS: (mils)				
	Base Coating	13 – 15		13 – 15	
	Top Coating		13 – 15		13 – 15
7.	FILM CURE TIME				
	Base Coating	8 HOURS		6 HOURS	
	Top Coating		12 HOURS		8 HOURS
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)				
	Concrete Decks	X	X	X	X
	Plywood Decks	X	X	X	X
	Metal Decks	X	X	X	X
	Existing Spudded Built-up Roofing	P	P	P	P
	Other Coatings	X	X	X	X
10.	FLASHING MATERIAL (type or self-flashing)	SELF	SELF	SELF	SELF
11.	APPLICATION CONDITIONS				
	Recommended Ambient Air Temperature Range (degrees F)	40 – 85	40 – 85	40 – 85	40 – 85
	Maximum Permitted Wind Velocity Without Screen (mph)	10	10	10	10
	Maximum Permitted Wind Velocity With Wind Screen (mph)	15	15	15	15
12.	APPLICATION EQUIPMENT REQUIREMENTS				
	Single-Component Airless Spray	X	X	X	X
	Multi-Component Airless Spray				
	Other (roller, brush, etc.)	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH
13.	RESTRICTED REGIONS (yes/none)	NONE	NONE	NONE	NONE
14.	RESTRICTED BUILDING USES (yes/none)	YES	YES	NONE	NONE
15.	RECOMMENDED RECOATING SCHEDULE (years or none)	5	5	5	5
16.	PHYSICAL PROPERTIES OF THE COATING				
	Tensile Strength Per ASTM D 412 or Other (psi)	450	450	950	950
	Elongation Per ASTM D 412 or Other (%)	315	315	300	300
	Impact Resistance Per ASTM D 2794 or Other (inch lbs)	160	160	160	160
	Accelerated Weathering Per ASTM D 882 or Other (color change)			NO CHANGE	NO CHANGE
	Heat Aging Per ASTM D 573 or Other (%)				
	Water Absorption Per ASMT D 570 or Other (%)	0.5 MAX	0.5 MAX	0.3 MAX	0.3 MAX
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/ft <sup>3</sup> )	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
	Closed Cell Content Per ASTM D 2856 or Other (%)	90 MIN.	90 MIN.	90	90
19.	FOAM AVAILABLE FROM MANUFACTURER (yes/no)	NO	NO	NO	NO
20.	YEAR OF FIRST COMMERCIAL USE	1980	1980	1980	1980
21.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )	100,000	100,000	100,000	100,000
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		
25.	FOR SALES INFORMATION, CONTACT:	R. BRENK	R. BRENK	R. BRENK	R. BRENK
	FOR TECHNICAL INFORMATION, CONTACT:	W. KRAMER	W. KRAMER	W. KRAMER	W. KRAMER
26.	SEE APPENDIX IF CHECKED				

NA=not applicable

## Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

ANDEK CORP.	ANDEK CORP.	ANDEK CORP.	ANDEK CORP.	ANDEK CORP.	CONKLIN CO., INC.	CONKLIN CO., INC.	CONKLIN CO., INC.	CONKLIN CO., INC.
R.A.C.	R.A.C. OZ	POLAROOF NW	POLAROOF AC	POLAROOF FIREGARD	RAPID ROOF II BASE COAT	RAPID ROOF III TOP COAT	POLYTUFF II BASE COAT	POLYTUFF II TOP COAT
			X		X	X		
								X
X	X						X	
		ETHYLENE ELASTOMER		PVC				
NO	NO	YES	NO	NO	NO	NO	YES	YES
SILVER	SILVER	ANY COLOR	ANY COLOR	ANY COLOR	TAN	WHITE, TAN, GRAY	SILVER, GRAY	WHITE
R.A.C.	R.A.C. OZ	POLAROOF NW	POLAROOF AC	POLAROOF FIREGARD	RAPID ROOF III BASE COAT		POLYTUFF II BASE COAT	
R.A.C.	R.A.C. OZ	POLAROOF NW	POLAROOF AC	POLAROOF FIREGARD		RAPID ROOF III TOP COAT		POLYTUFF II TOP COAT
1	1	1	1	1	1		1	
1	1	1	1	1		1		1
NO	NO	NO	NO	NO		OPTIONAL	NO	NO
15	15	12	15	10	13		16.0	
15	15	12	15	10		12		4.0
8 HOURS	8 HOURS	14	2	1 HOUR	2 – 8 HOURS		2 – 4 HOURS	
8 HOURS	8 HOURS	16	1	1 HOUR		2 – 8 HOURS		30 MINS
NONE	NONE	NONE	2	1/4"	1/4"	1/4"	1/4"	1/4"
X	X	P	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	X	X	X	X	X	X	X	X
X	X	X	X	X				
SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF
30 – 100	20 – 100	0 – 90	45 – 90	45	50 – 100	50 – 100	40 – 100	40 – 100
10	10	10	10	10	15	15	15	15
15	15	15	15	15	25	25	25	25
X	X	X	X	X	X	X	X	X
ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER	ROLLER	ROLLER	ROLLER
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
NONE	NONE	YES	YES	NONE	YES	YES	NONE	NONE
10	10	10	10	10	10+	10+	10+	10+
620	1400	864	250	520	67	201	1400	1400
570	570	550	500	1000	377	262	630	630
210	630	280	120	140	160	160	160	160
NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE
NONE	NONE	NONE	NONE	NONE				
NONE	NONE	NONE	1.3%	2.5%				
YES	YES	NO	YES	YES	YES	YES	YES	YES
1	1	2	1	1	1	1	1	1
2.5 – 3.5	2.5 – 3.5	2.5 – 3.5	2.5 – 3.5	2.5 – 3.5	2.5 – 3.0	2.5 – 3.0	2.5 – 3.0	2.5 – 3.0
40 MIN.	40 MIN.	40 MIN.	40 MIN.	40 MIN.	40 MIN.	40 MIN.	40 MIN.	40 MIN.
90 MIN.	90 MIN.	90 MIN.	90 MIN.	40 MIN.	90 MIN.	90 MIN.	90 MIN.	90 MIN.
NO	NO	NO	NO	NO	NO	NO	NO	NO
1978	1988	1985	1996	1975	1994	1994	1982	1982
340,000	60,000	65,000	40,000	10,000	>1,000,000	>1,000,000	> 150,000	> 150,000
YES	YES	YES	YES	YES	NO	NO	NO	NO
DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
5	5	5	5	5	5	5	5	5
HARVEY LISS 800/800-2844	HARVEY LISS 800/800-2844	HARVEY LISS 800/800-2844	HARVEY LISS 800/800-2844	HARVEY LISS 800/800-2844	BUILD. PRODS. 800/888-8838	BUILD. PRODS. 800/888-8838	BUILD. PRODS. 800/888-8838	BUILD. PRODS. 800/888-8838
NEIL SHEARER 888/882-6335	NEIL SHEARER 888/882-6235	NEIL SHEARER 888/882-6235	NEIL SHEARER 888/882-6235	NEIL SHEARER 888/882-6235	BUILD. PRODS. 800/888-8838	BUILD. PRODS. 800/888-8838	BUILD. PRODS. 800/888-8838	BUILD. PRODS. 800/888-8838
						X	X	X

# Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

CONKLIN CO., INC.	1. COMPANY NAME	CONKLIN CO., INC.	DOW CORNING CORP.	ERSYSTEMS
BENCHMARK BASE COAT	2. PRODUCT NAME	BENCHMARK TOP COAT	DOW CORNING 3-5000 SILICONE ROOF COATING	ERATHANE 300 BASE
X	3A. COATING DESCRIPTION	X		
	Acrylic			
	Butyl			
	Hypalon			
	Neoprene			
	Silicone		X	
	Urethane			X
	Vinyl			
	Modified Asphalt			
	Other (type)			
YES	3B. VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	YES	NO	
BLUE	3C. COLORS AVAILABLE	WHITE, GRAY	DK GRAY, GRAY, WHITE, BEIGE	GRAY
BENCHMARK BASE COAT	4. BASE COATING (Name of Product)		SAME	ERATHANE 300 BASE
	TOP COATING (Name of Product)	BENCHMARK TOP COAT	SAME	EF
1	5. NUMBER OF COATING APPLICATIONS REQUIRED		1	1
	Base Coatings			
	Top Coatings	1		
	Granules Required (yes, no or optional)	OPTIONAL	OPTIONAL	
13.5	6. REQUIRED DRY FILM THICKNESS: (mils)			
	Base Coating		8 – 10	25
	Top Coating	13.5	7 – 10	
2 – 8 HOURS	7. FILM CURE TIME			
	Base Coating		2 – 6 HOURS	24 HRS @ 75F
	Top Coating	2 – 8 HOURS	2 – 6 HOURS	
1/4"	8. MINIMUM SLOPE REQUIRED (inches per foot)	1/4"	NO PONDING	1/8"
	9. REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required)			
P	Concrete Decks	P	P	X
P	Plywood Decks	P	X	X
X	Metal Decks	X	X	X
X	Existing Spudded Built-up Roofing	X	X	X
	Other Coatings		X	X
SELF	10. FLASHING MATERIAL (type or self-flashing)	SELF	SELF	SELF
50 – 100	11. APPLICATION CONDITIONS			
15	Recommended Ambient Air Temperature Range (degrees F)	50 – 100	>32	40+
25	Maximum Permitted Wind Velocity Without Screen (mph)	15	10	7
	Maximum Permitted Wind Velocity With Wind Screen (mph)	25	25	25
X	12. APPLICATION EQUIPMENT REQUIREMENTS			
	Single-Component Airless Spray	X	X	X
	Multi-Component Airless Spray			
ROLLER	Other (roller, brush, etc.)	ROLLER		
NONE	13. RESTRICTED REGIONS (yes/none)	NONE	NONE	NONE
NONE	14. RESTRICTED BUILDING USES (yes/none)	NONE	YES	YES
10+	15. RECOMMENDED RECOATING SCHEDULE (years or none)	10+	NONE	NONE
325	16. PHYSICAL PROPERTIES OF THE COATING			
375	Tensile Strength Per ASTM D 412 or Other (psi)	476	400	975
160	Elongation Per ASTM D 412 or Other (%)	118	150	825
NO CHANGE	Impact Resistance Per ASTM D 2794 or Other (inch lbs)	160		
	Accelerated Weathering Per ASTM D 882 or Other (color change)	NO CHANGE	NONE	NO CHANGE
	Heat Aging Per ASTM D 573 or Other (%)		NO CHANGE	
<12%	Water Absorption Per ASMT D 570 or Other (%)	<12%	0.31	
YES	17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)	YES	YES	YES
1	18. FOAM INSULATION REQUIREMENTS			
2.5 – 3.0	Minimum Thickness (inches)	1	1	1
40 MIN.	Nominal Density Per ASTM D 1622 or Other (lbs/ft <sup>3</sup> )	2.5 – 3.0	2.5	2.5
90 MIN.	Compressive Strength Per ASTM D 1621 or Other (psi)	40 MIN.	40	40
	Closed Cell Content Per ASTM D 2856 or Other (%)	90 MIN.	90	98
NO	19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)	NO	NO	YES
1991	20. YEAR OF FIRST COMMERCIAL USE	1991	1974	1993
>1,000,000	21. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )	>1,000,000	MILLIONS	THOUSANDS
NO	22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	NO	YES	YES
DISTRIBUTORS	23. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRIBUTORS	DIRECT	DISTR, DIRECT
5	24. NUMBER OF REGIONAL SERVICE LOCATIONS	5	7	14
BUILD. PRODS. 800/888-8838	25. FOR SALES INFORMATION, CONTACT:	BUILD. PRODS. 800/888-8838	PROD INFORM. 517/496-6000	J. LEONARD 800/403-7747
BUILD. PRODS. 800/888-8838	FOR TECHNICAL INFORMATION, CONTACT:	BUILD. PRODS. 800/888-8838	B. SWISHER 770/751-7979	J. LEONARD 800/403-7747
X	26. SEE APPENDIX IF CHECKED	X		

NA=not applicable

## Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.
ERATHANE 300	ERAGUARD 4000	ERATHANE 300	ERAGUARD 1000	ERATHANE 300 BASE	ERAKOTE	URECAP	URESIELD	URECAP
			X					
	X							
X		X		X	X	X	X	X
GRAY	GRAY AND WHITE	GRAY	WHITE AND CUSTOM	GRAY	WHITE AND CUSTOM	YES	YES	YES
	ERAGUARD 4000	ERATHANE 300	ERAGUARD 1000	ERATHANE 300 BASE		GRAY, BLACK, ALUMINUM	ALUMINUM	BLACK
RATHANE 3	ERAGUARD 4000	ERATHANE 300	ERAGUARD 1000		ERAKOTE	URECAP	URESIELD	SAME
						URECAP	URESIELD	URESIELD
	1	1	1	1		2	2	1
1	1	1	1		1	1	1	
OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL		NO	NO	NO	NO
	11	16	16 MIN.	25		22	22	22
10	11	16	16 MIN.		7	14	14	
	4 HRS @ 70F	12 HRS @ 75F	24 HRS @ 70F	24 HRS. @ 75F		12 HOURS	12 HOURS	12 HOURS
12 HRS @ 75F	4 HRS @ 70F	12 HRS @ 75F	24 HRS @ 70F		6 HRS. @ 75F	12 HOURS	12 HOURS	
1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/4"	1/4"	1/4"
X	X	X	X	X	X	P	P	P
X	X	X	X	X	X	P	P	P
X	X	X	X	X	X	P	P	P
X	P	X	X	X	X	X	X	X
X		X	X	X	X	P	P	P
SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF
40+	40+	40+	40+	40+	40+	40 – 100	40 – 100	40 – 100
7	5	7	7	7	7	15	15	15
25	25	25	25	25	25	25	25	25
X	X	X	X	X	X	X	X	X
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
YES	YES	YES	YES	YES	YES	YES	YES	YES
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
660	450	660	250	975	1500	2200	1600	1000
200	200	200	300	825	350	350	400	350
NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE			
YES	YES	YES	YES	YES	YES	YES	YES	YES
1	1	1	1	1	1	1	1	1
2.5	2.5	2.5	2.5	2.5	2.5	2.4 – 3.2	2.4 – 3.2	2.4 – 3.2
40	40	40 MIN.	40 MIN.	40 MIN.	40 MIN.	43 – 58	43 – 58	43 – 58
90	90	90	90	90	90	90 – 91	90 – 91	90 – 91
	YES	YES	YES	YES	YES	YES	YES	YES
1979	1981	1979	1982	1993	1979	1988	1974	1989
THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS	THOUSANDS			
YES	YES	YES	YES	YES	YES	NO	NO	NO
DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT
14	14	14	14	14	14	3	3	3
J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958
J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226
						X	X	X

# Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

GACO WESTERN INC. URESHIELD	GACO WESTERN INC. URECAP	1. COMPANY NAME	GACO WESTERN INC. URECAP	GACO WESTERN INC. A-5511
		2. PRODUCT NAME		
		3A. COATING DESCRIPTION		
		Acrylic		X
		Butyl		
		Hypalon		
		Neoprene		
		Silicone		
X	X	Urethane	X	
		Vinyl		
		Modified Asphalt		
		Other (type)		
YES	YES	3B. VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	YES	NO
ALUMINUM	BLACK	3C. COLORS AVAILABLE	GRAY, BLACK, ALUMINUM	GRAY
URECAP	SAME	4. BASE COATING (Name of Product)	URECAP	SAME
SAME	URECAP	TOP COATING (Name of Product)	SAME	A-5500
		5. NUMBER OF COATING APPLICATIONS REQUIRED		
	1	Base Coatings		2
1		Top Coatings	1	
NO	NO	Granules Required (yes, no or optional)	NO	NO
		6. REQUIRED DRY FILM THICKNESS: (mils)		
	22	Base Coating		22
10		Top Coating	14	
		7. FILM CURE TIME		
	12 HOURS	Base Coating		18 HOURS
12 HOURS		Top Coating	12 HOURS	
1/4"	1/4"	8. MINIMUM SLOPE REQUIRED (inches per foot)	1/4"	1/4"
		9. REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required)		
P	P	Concrete Decks	P	P
P	P	Plywood Decks	P	P
P	P	Metal Decks	P	P
X	X	Existing Spudded Built-up Roofing	X	X
P	P	Other Coatings	P	P
SELF	SELF	10. FLASHING MATERIAL (type or self-flashing)	SELF	SELF
		11. APPLICATION CONDITIONS		
40 – 100	40 – 100	Recommended Ambient Air Temperature Range (degrees F)	40 – 100	50 – 100
15	15	Maximum Permitted Wind Velocity Without Screen (mph)	15	15
25	25	Maximum Permitted Wind Velocity With Wind Screen (mph)	25	25
		12. APPLICATION EQUIPMENT REQUIREMENTS		
X	X	Single-Component Airless Spray	X	X
		Multi-Component Airless Spray		
		Other (roller, brush, etc.)		
NONE	NONE	13. RESTRICTED REGIONS (yes/none)	NONE	NONE
YES	YES	14. RESTRICTED BUILDING USES (yes/none)	YES	YES
NONE	NONE	15. RECOMMENDED RECOATING SCHEDULE (years or none)	NONE	NONE
		16. PHYSICAL PROPERTIES OF THE COATING		
1600	1000	Tensile Strength Per ASTM D 412 or Other (psi)	2200	225
400	350	Elongation Per ASTM D 412 or Other (%)	350	200
		Impact Resistance Per ASTM D 2794 or Other (inch lbs)		
		Accelerated Weathering Per ASTM D 882 or Other (color change)		
		Heat Aging Per ASTM D 573 or Other (%)		
		Water Absorption Per ASMT D 570 or Other (%)		
YES	YES	17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)	YES	YES
		18. FOAM INSULATION REQUIREMENTS		
1	1	Minimum Thickness (inches)	1	1
2.4 – 3.2	2.4 – 3.2	Nominal Density Per ASTM D 1622 or Other (lbs/ft³)	2.4 – 3.2	2.4 – 3.2
43 – 58	43 – 58	Compressive Strength Per ASTM D 1621 or Other (psi)	43 – 58	43 – 58
90 – 91	90 – 91	Closed Cell Content Per ASTM D 2856 or Other (%)	90 – 91	90 – 91
YES	YES	19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)	YES	YES
1974	1989	20. YEAR OF FIRST COMMERCIAL USE	1988	1978
		21. NUMBER OF SQUARES INSTALLED (100 ft²)		
NO	NO	22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	NO	NO
DISTR, DIRECT	DISTR, DIRECT	23. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTR, DIRECT	DISTR, DIRECT
3	3	24. NUMBER OF REGIONAL SERVICE LOCATIONS	3	3
J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226 X	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226 X	25. FOR SALES INFORMATION, CONTACT:  FOR TECHNICAL INFORMATION, CONTACT:	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226 X	J. FREEMESSER 800/869-0958 A. JENKINS 800/456-4226 X
		26. SEE APPENDIX IF CHECKED	X	X

NA=not applicable

## Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

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

# Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

GACO WESTERN INC. UB-7050	GACO WESTERN INC. URESIELD	GACO WESTERN INC. UB-7050	1. COMPANY NAME	GACO WESTERN INC. UA-6500
			2. PRODUCT NAME	
			3A. COATING DESCRIPTION	
			Acrylic	
			Butyl	
			Hypalon	
			Neoprene	
			Silicone	
X	X	X	Urethane	X
			Vinyl	
			Modified Asphalt	
			Other (type)	
YES	YES	YES	3B. VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	YES
OLIVE	ALUMINUM	OLIVE	3C. COLORS AVAILABLE	WHITE
SAME	UB-7050	SAME	4. BASE COATING (Name of Product)	UB-7050
URESIELD	SAME	UA-6500	TOP COATING (Name of Product)	SAME
			5. NUMBER OF COATING APPLICATIONS REQUIRED	
1		1	Base Coatings	
	1		Top Coatings	1
NO	NO	NO	Granules Required (yes, no or optional)	NO
			6. REQUIRED DRY FILM THICKNESS: (mils)	
22		22	Base Coating	
	10		Top Coating	10
			7. FILM CURE TIME	
0.50 HR		0.50 HR	Base Coating	
	12 HOURS		Top Coating	24 HOURS
1/4"	1/4"	1/4"	8. MINIMUM SLOPE REQUIRED (inches per foot)	1/4"
			9. REQUIREMENTS FOR USE OVER:	
			(X=direct application permitted) (P=primer required)	
			(T=thermal barrier required)	
			Concrete Decks	P
			Plywood Decks	P
			Metal Decks	P
X	X	X	Existing Spudded Built-up Roofing	X
			Other Coatings	P
SELF	SELF	SELF	10. FLASHING MATERIAL (type or self-flashing)	SELF
			11. APPLICATION CONDITIONS	
50 – 100	40 – 100	50 – 100	Recommended Ambient Air Temperature Range (degrees F)	40 – 100
15	15	15	Maximum Permitted Wind Velocity Without Screen (mph)	15
25	25	25	Maximum Permitted Wind Velocity With Wind Screen (mph)	25
			12. APPLICATION EQUIPMENT REQUIREMENTS	
	X		Single-Component Airless Spray	X
X		X	Multi-Component Airless Spray	X
			Other (roller, brush, etc.)	
NONE	NONE	NONE	13. RESTRICTED REGIONS (yes/none)	NONE
YES	YES	YES	14. RESTRICTED BUILDING USES (yes/none)	YES
NONE	NONE	NONE	15. RECOMMENDED RECOATING SCHEDULE (years or none)	NONE
			16. PHYSICAL PROPERTIES OF THE COATING	
2900	1600	2900	Tensile Strength Per ASTM D 412 or Other (psi)	2700
190	400	190	Elongation Per ASTM D 412 or Other (%)	250
			Impact Resistance Per ASTM D 2794 or Other (inch lbs)	
			Accelerated Weathering Per ASTM D 882 or Other (color change)	
			Heat Aging Per ASTM D 573 or Other (%)	
2.5		2.5	Water Absorption Per ASMT D 570 or Other (%)	2.8
YES	YES	YES	17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)	YES
			18. FOAM INSULATION REQUIREMENTS	
1	1	1	Minimum Thickness (inches)	1
2.4 – 3.2	2.4 – 3.2	2.4 – 3.2	Nominal Density Per ASTM D 1622 or Other (lbs/ft³)	2.4 – 3.2
43 – 58	43 – 58	43 – 58	Compressive Strength Per ASTM D 1621 or Other (psi)	43 – 58
90 – 91	90 – 91	90 – 91	Closed Cell Content Per ASTM D 2856 or Other (%)	90 – 91
YES	YES	YES	19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)	YES
1990	1974	1990	20. YEAR OF FIRST COMMERCIAL USE	1977
			21. NUMBER OF SQUARES INSTALLED (100 ft²)	
YES	NO	YES	22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	NO
DISTR, DIRECT	DISTR, DIRECT	DISTR, DIRECT	23. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTR, DIRECT
3	3	3	24. NUMBER OF REGIONAL SERVICE LOCATIONS	3
J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958	25. FOR SALES INFORMATION, CONTACT:	J. FREEMESSER 800/869-0958
A. JENKINS 800/456-4226	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226	FOR TECHNICAL INFORMATION, CONTACT:	A. JENKINS 800/456-4226
X	X	X	26. SEE APPENDIX IF CHECKED	X

NA=not applicable



## Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

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	G.E. SILICONES DIV OF GENERAL ELECTRIC	G.E. SILICONES DIV OF GENERAL ELECTRIC
UB-7050	A-5500	UB-64	U-66	APOC #252 SUN-WHITE ELASTOMERIC	GARDNER ELASTOMERIC ROOF COATING	APOC #337	SCM 3308 BASE COAT	SCM 3304 TOP COAT
				X	X			
				X			X	X
X	X	X	X					
						X		
YES	NO	YES	YES	YES	YES	YES	NO	NO
OLIVE	WHITE	GRAY	SIX STANDARD	WHITE, TAN, RED, GRAY	WHITE	BLACK	DARK GRAY	MEDIUM GRAY
SAME	UB-7050	SAME	UB-64	APOC #252 ROOF COATING	GARDNER WHITE ROOF PATCH	APOC #337		SCM3308 BASE COAT
A-5500	SAME	U-66	SAME	APOC #252 ROOF COATING	SAME	APOC #252	3304 TOP C	
1		2		1	1	1	1	
	1		1	1	2	1		1
NO	NO	NO	NO	NO	NO		YES	YES
22		22		8 – 10	10 – 12	10 – 12	10-12	
	9.5		10	8 – 10	10 – 12	8 – 10		10-12
0.50 HR		12 HOURS		4 – 6 HOURS	4 – 6 HOURS	4 – 6 HOURS	20 MINS.	
	18 HOURS		18 HOURS	4 – 6 HOURS	4 – 6 HOURS	4 – 6 HOURS		1 HR
1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/8"	1/8"
P	P	P	P	P	P	P		
P	P	P	P	P	T	T		
P	P	P	P	P				
X	X	X	X	X	P	P		
P	P	P	P	X	X	X	X	X
SELF	SELF	SELF	SELF	SELF	SELF			
50 – 100	50 – 100	40 – 100	40 – 100	50 – 100	50 – 90	60 – 100	40 MIN.	40 MIN.
15	15	15	15	10	10	15	10	10
25	25	25	25	15	15	15	15	15
	X	X	X	X	X	X		
X		X	X	X	X	X	X	X
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
YES	YES	YES	YES	NONE	NONE	NONE	YES	YES
NONE	NONE	NONE	NONE	5	5	5	NONE	NONE
2900	225	2600	1400	250 – 300	250 – 300	150	500 – 600	500 – 600
190	200	300	450	250 – 300	250 – 300	150 – 200	100 – 150	100 – 150
				NO CHANGE	NO CHANGE	NO CHANGE	NONE	NONE
							NONE	NONE
2.5		2.0	2.0	<20	<20	<20	0.5 MAX	0.5 MAX
YES	YES	YES	YES	YES	NO	YES	YES	YES
1	1	1	1				1	1
2.4 – 3.2	2.4 – 3.2	2.4 – 3.2	2.4 – 3.2				3.0	3.0
43 – 58	43 – 58	43 – 58	43 – 58				40 MIN.	40 MIN.
90 – 91	90 – 91	90 – 91	90 – 91				90 MIN.	90 MIN.
YES	YES	YES	YES	NO	NO	NO	NO	NO
1990	1978	1984	1972	1984	1985	1984	1973	1973
YES	NO	NO	NO	NO	NO	NO	1,000,000+	1,000,000+
							YES	YES
DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRS, DIRECT	DISTRS, DIRECT
3	3	3	3	13	13	13	7	7
J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958	T. HYER 800/237-1155	T. HYER 800/237-1155	T. HYER 800/237-1155	W. BILINSKI 770/662-1083	W. BILINSKI 770/662-1083
A. JENKINS 800/456-4226	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226	J. HUNTER 800/237-1155	J. HUNTER 800/237-1155	J. HUNTER 800/237-1155	J. LINDYBERG 518/233-2313	J. LINDYBERG 518/233-2313
X	X	X	X				X	X

# Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

G.E. SILICONES DIV OF GENERAL ELECTRIC	G.E. SILICONES DIV OF GENERAL ELECTRIC	NATIONAL COATINGS CORP.	NEOGARD, A DIVISION OF JONES-BLAIR CO.	1. COMPANY NAME
SCM 3408 BASE COAT	SCM 3404 TOP COAT	ACRYSHIELD	PERMATHANE II FR BASE COAT	2. PRODUCT NAME
		X		3A. COATING DESCRIPTION
				Acrylic
				Butyl
				Hypalon
				Neoprene
X	X		X	Silicone
				Urethane
				Vinyl
				Modified Asphalt
				Other (type)
NO	NO	NO		3B. VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)
DARK GRAY	MEDIUM GRAY	GRAY, OFF-WHITE, WHITE, CUSTOM	GRAY	3C. COLORS AVAILABLE
	SCM3408 BASE COAT	ACRYSHIELD	PERMATHANE II FR	4. BASE COATING (Name of Product)
SCM 3404 TOP COAT		ACRYSHIELD		TOP COATING (Name of Product)
		1	1-2	5. NUMBER OF COATING APPLICATIONS REQUIRED
		1		Base Coatings
		OPTIONAL		Top Coatings
				Granules Required (yes, no or optional)
10 – 12		12	26	6. REQUIRED DRY FILM THICKNESS: (mils)
	10 – 12	12		Base Coating
				Top Coating
.5 – 2 HOURS		2 – 8 HOURS	8-12 HOURS	7. FILM CURE TIME
	.5 – 2 HOURS	2 – 8 HOURS		Base Coating
				Top Coating
1/8"	1/8"	1/8"	NONE	8. MINIMUM SLOPE REQUIRED (inches per foot)
				9. REQUIREMENTS FOR USE OVER:
				(X=direct application permitted) (P=primer required)
				(T=thermal barrier required)
		P		Concrete Decks
		P		Plywood Decks
		X		Metal Decks
		P		Existing Spudded Built-up Roofing
X	X	X		Other Coatings
		SELF	SELF	10. FLASHING MATERIAL (type or self-flashing)
40 MIN.	40 MIN.	50 – 110	40 – 110	11. APPLICATION CONDITIONS
10	10	15	15	Recommended Ambient Air Temperature Range (degrees F)
15	15	25	25	Maximum Permitted Wind Velocity Without Screen (mph)
				Maximum Permitted Wind Velocity With Wind Screen (mph)
X	X	X	X	12. APPLICATION EQUIPMENT REQUIREMENTS
				Single-Component Airless Spray
X	X	ROLLER	X	Multi-Component Airless Spray
				Other (roller, brush, etc.)
NONE	NONE	NONE	NONE	13. RESTRICTED REGIONS (yes/none)
YES	YES	YES	YES	14. RESTRICTED BUILDING USES (yes/none)
NONE	NONE	10	10+	15. RECOMMENDED RECOATING SCHEDULE (years or none)
				16. PHYSICAL PROPERTIES OF THE COATING
200	200	646	1000	Tensile Strength Per ASTM D 412 or Other (psi)
400	400	402	375	Elongation Per ASTM D 412 or Other (%)
			160	Impact Resistance Per ASTM D 2794 or Other (inch lbs)
		NO CHANGE		Accelerated Weathering Per ASTM D 882 or Other (color change)
			N/A	Heat Aging Per ASTM D 573 or Other (%)
			<3	Water Absorption Per ASMT D 570 or Other (%)
YES	YES	YES	YES	17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)
				18. FOAM INSULATION REQUIREMENTS
1	1	1	1	Minimum Thickness (inches)
3.0	3.0	2.5 – 3.0	2.7 – 3.2	Nominal Density Per ASTM D 1622 or Other (lbs/ft <sup>3</sup> )
40 MIN.	40 MIN.	40	40	Compressive Strength Per ASTM D 1621 or Other (psi)
90 MIN.	90 MIN.	91	90	Closed Cell Content Per ASTM D 2856 or Other (%)
NO	NO	YES	NO	19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)
1995	1995	1981	1984	20. YEAR OF FIRST COMMERCIAL USE
25,000	25,000	100,000	> 100,000	21. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )
YES	YES	YES	YES	22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)
DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DIRECT	23. METHODS OF DISTRIBUTION (distributors and/or direct)
10	10	5	8	24. NUMBER OF REGIONAL SERVICE LOCATIONS
W. BILINSKI 770/662-1083	W.BILINSKI 770/662-1083	D. VARAIS 805/388-7112	ROOFING SALES 800/321-6588	25. FOR SALES INFORMATION, CONTACT:
J. LINDYBERG 518/233-2313	J. LINDYBERG 518/233-2313	TECHNICAL DEPT. 805/388-7112	TECHNICAL DEPT. 800/321-6588	FOR TECHNICAL INFORMATION, CONTACT:
X	X			26. SEE APPENDIX IF CHECKED

NA=not applicable

## Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

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.	NEOGARD, A DIVISION OF JONES-BLAIR CO.	NEOGARD, A DIVISION OF JONES-BLAIR CO.	NEOGARD, A DIVISION OF JONES-BLAIR CO.	PLASTIC COATINGS CORP.	PLASTIC COATINGS CORP.
PERMATHANE II FR TOP COAT	PERMATHANE FR BASE COAT	PERMATHANE FR TOP COAT	ELASTACRYL FR	SILICONE FR	PERMA-SIL TC FR	PERMA-SIL TC FR	JAXSAN 600	JAXSAN 601
			X				X	X
				X		X		
X	X	X			X			
	NO	NO	NO	NO	NO	NO	NO	NO
GRAY, WHITE, TAN	BLACK	GRAY, WHITE, TAN	GRAY, WHITE TAN	GRAY, WHITE, TAN	BLACK	GRAY, WHITE, TAN	WHITE, GRAY, SPECIAL COLORS	BRITE WHITE
	PERMAGARD FR		ELASTACRYL FR	SILICONE FR	PERMAGARD TC FR		JAXSAN 600	JAXSAN 601
PERMATHANE II FR		URETHANE R	ELASTACRYL FR	SILICONE FR		SILICONE FR	JAXSAN 600	JAXSAN 601
	2				1 – 2		1 OR 2	1 OR 2
1 OPTIONAL	OPTIONAL	2 OPTIONAL	2-3 OPTIONAL	2-3 OPTIONAL		1 OPTIONAL	OPTIONAL	OPTIONAL
	26				24		15 – 20	15 – 20
13		12	27	30		16	15 – 20	15 – 20
	8-12 HOURS				8-12 HOURS		1 – 3 HOURS	2 – 4 HOURS
8-12 HOURS		8-12 HOURS	8-12 HOURS	2-4 HOURS		2-4 HOURS	1 – 3 HOURS	2 – 4 HOURS
NONE	NONE	NONE	1/2"	1/2"	1/4"	1/4"	NONPONDING	NONPONDING
							P	P
							P	P
							P	P
							X	X
							X	X
SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF
40 – 110	40 – 110	40 – 110	60 – 110	40 – 110	40 – 110	40 – 110	50+	50+
15	15	15	15	15	15	15	15	15
25	25	25	25	25	25	25	25	25
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
YES	YES	YES	YES	YES	YES	YES	YES	YES
10+	NONE	10+	10+	10+	NONE	10+	10 +	10 +
1500	400	2500	125	350	275	350	375	375
360	500	450	300	200	500	200	200 +	200 +
160	160	160	160	160	160	160	98	98
	N/A	SLIGHT	SLIGHT	SLIGHT	N/A	SLIGHT	NO CHANGE	NO CHANGE
SLIGHT								
<3	4	4	20 MAX	<1	5	<1	9 MAX	9 MAX
YES	YES	YES	YES	YES	YES	YES	YES	
1	1	1	1	1	1	1	1	1
2.7 – 3.2	2.7 – 3.2	2.7 – 3.2	2.7 – 3.2	2.7 – 3.2	2.7 – 3.2	2.7 – 3.2	2.5 - 3.0	2.5 - 3.0
40	40	40	40	40	40	40		
90	90	90	90	90	90	90		
NO	NO	NO	NO	NO	NO	NO	NO	NO
1984	1979	1979	1976	1984	1985	1984	1967	1968
> 100,000	> 100,000	> 100,000	> 100,000	> 50,000	8,000	8,000	> 6 MILLION	> 6 MILLION
YES	YES	YES	YES	YES	YES	YES	NO	NO
DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DISTRS, DIRECT	DISTRS, DIRECT
8	8	8	8	8	8	8	10	10
ROOFING SALES 800/321-6588	ROOFING SALES 800/321-6588	ROOFING SALES 800/321-6588	ROOFING SALES 800/321-6588	ROOFING SALES 800/321-6588	ROOFING SALES 800/321-6588	ROOFING SALES 800/321-6588	L. WIDDECOMBE III	L. WIDDECOMBE III
TECHNICAL DEPT. 800/321-6588	TECHNICAL DEPT. 800/321-6588	TECHNICAL DEPT. 800/321-6588	TECHNICAL DEPT. 800/321-6588	TECHNICAL DEPT. 800/321-6588	TECHNICAL DEPT. 800/321-6588	TECHNICAL DEPT. 800/321-6588	G. WIDDECOMBE	G. WIDDECOMBE

## Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

PLASTIC COATINGS CORP.	POLYDYNE	POLYDYNE	POLYDYNE	POLYDYNE	1.
JAXSAN 607	AQUADYNE 50-0771	UREDYNE 30-8000	UREDYNE 30-0102	UREDYNE 30-8000	2.
					3A.
X					
		X	X	X	
	MOISTURE CURE				
NO		YES	YES	YES	3B.
WHITE, GRAY, SPECIAL COLORS	GRAY	AMBER	STRAW, GRAY	AMBER	3C.
JAXSAN 607	SAME	AQUADYNE 50-0771	SAME	UREDYNE 30-0102	4.
JAXSAN 607	UREDYNE 30-8000	SAME	UREDYNE 30-8000	UREDYNE 30-8000	
					5.
1	2		1		
1		1		1	
OPTIONAL					
					6.
15 – 20	18-24		18 – 24		
15 – 20		10-12		10 – 12	
					7.
1 – 4 HOURS	6 HOURS		4 HOURS		
1 – 4 HOURS		4 HOURS		4 HOURS	
NONPONDING	1/4"	1/4"	1/4"	1/4"	8.
					9.
P	P	P	P	P	
P					
X	P	P	P	P	
X					
X	P	P	P	P	
SELF	SELF	SELF	SELF	SELF	10.
					11.
50+	75	75	75	75	
15					
25					
					12.
X	X	X	X	X	
X					
NONE	NONE	NONE	NONE	NONE	13.
YES	NONE	NONE	NONE	NONE	14.
10 – 15					15.
					16.
320	450 – 600	2500	1700	2500	
240	300 – 400	500	300 – 350	500	
NO CHANGE					
10	D-471: 1.5	D-471: 1.5	1.5	1.5	
YES	YES	YES	YES	YES	17.
					18.
1	1	1	1	1	
2.5 - 3.0	2.5	2.5	2.5	2.5	
2.5	38	38	38	38	
	90	90	90	90	
NO	NO	NO	NO	NO	19.
1995	1986	1986	1986	1986	20.
>2 MILLION					21.
NO	NO	NO	NO	NO	22.
DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	23.
10	7	7	7	7	24.
L. WIDDECOMBE III	R. EWALD	R. EWALD	R. EWALD	R. EWALD	25.
G. WIDDECOMBE	T. MEYER	T. MEYER	T. MEYER	T. MEYER	
	R. EWALD	R. EWALD	R. EWALD	R. EWALD	
					26.

# Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

COMPANY NAME	POLYDYNE	POLYDYNE	POLYDYNE	POLYDYNE	POLYDYNE
PRODUCT NAME	UREDYNE 30-0750	ACRYDYNE 40-0226	AQUADYNE 50-0771	POLY SIL 20-0200	POLY PERM 60-0003
COATING DESCRIPTION					
Acrylic		X	X		
Butyl					X
Hypalon					
Neoprene					
Silicone				X	
Urethane	X				
Vinyl					
Modified Asphalt					
Other (type)					
VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)			NO	NO	YES
COLORS AVAILABLE	BURGUNDY	WHITE	GRAY	LIGHT/DARK GRAY. WHITE	BLACK
BASE COATING (Name of Product)	SAME	UREDYNE 30-0750	AQUADYNE 50-0771	POLY SIL 208	POLY PERM 60-0003
TOP COATING (Name of Product)	ACRYDYNE 40-0216	SAME	AQUADYNE 50-0771	POLY SIL 208	POLY PERM 60-0003
NUMBER OF COATING APPLICATIONS REQUIRED					
Base Coatings	1		1	1	1 – 2
Top Coatings		1	2	1	NA
Granules Required (yes, no or optional)				OPTIONAL	
REQUIRED DRY FILM THICKNESS: (mils)					
Base Coating	18 – 24		18 – 24	15	20+
Top Coating		10 – 14	18 – 24	10	
FILM CURE TIME					
Base Coating	2 – 4 MIN.		2 – 4 MIN.	1 HR	24 HOURS
Top Coating		4 1/2 HOURS	6 HOURS	1 HR	
MINIMUM SLOPE REQUIRED (inches per foot)	0	1"	1/4"	0	1" – 12"
REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required)					
Concrete Decks	P	P	P	P	X
Plywood Decks	P	P		P	X
Metal Decks	P	P	P	P	X
Existing Spudded Built-up Roofing	P	P		P	X
Other Coatings	P	P	P	P	X
FLASHING MATERIAL (type or self-flashing)	SELF	SELF	SELF	SELF	
APPLICATION CONDITIONS					
Recommended Ambient Air Temperature Range (degrees F)	70	70	70	75	70
Maximum Permitted Wind Velocity Without Screen (mph)				15	15
Maximum Permitted Wind Velocity With Wind Screen (mph)				30	30
APPLICATION EQUIPMENT REQUIREMENTS					
Single-Component Airless Spray		X	X	X	X
Multi-Component Airless Spray	X				
Other (roller, brush, etc.)					ROLLER, BRUSH
RESTRICTED REGIONS (yes/none)	NONE	NONE	NONE	NONE	NONE
RESTRICTED BUILDING USES (yes/none)	NONE	NONE	NONE	NONE	NONE
RECOMMENDED RECOATING SCHEDULE (years or none)					
PHYSICAL PROPERTIES OF THE COATING					
Tensile Strength Per ASTM D 412 or Other (psi)	3200±200	200	450 – 600	700	200
Elongation Per ASTM D 412 or Other (%)	125		300 – 400	150	180
Impact Resistance Per ASTM D 2794 or Other (inch lbs)	300 – 400	280			NA
Accelerated Weathering Per ASTM D 882 or Other (color change)				NA	NA
Heat Aging Per ASTM D 573 or Other (%)					NA
Water Absorption Per ASMT D 570 or Other (%)			D-471: 1.5	D-411:1.5	0.5%
UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)	YES	YES	YES	YES	NO
FOAM INSULATION REQUIREMENTS					
Minimum Thickness (inches)	1	1	1	1	1
Nominal Density Per ASTM D 1622 or Other (lbs/ft³)	2.5	2.5	2.5	2.5	2.5
Compressive Strength Per ASTM D 1621 or Other (psi)	50	50	40	40	40
Closed Cell Content Per ASTM D 2856 or Other (%)	90	90	40	90	90
FOAM AVAILABLE FROM MANUFACTURER (yes/no)	NO	NO	NO	NO	NO
YEAR OF FIRST COMMERCIAL USE	1986	1986	1986	1992	1992
NUMBER OF SQUARES INSTALLED (100 ft²)					
MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	NO	NO	NO	YES	YES
METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT
NUMBER OF REGIONAL SERVICE LOCATIONS	7	7	7	7	7
FOR SALES INFORMATION, CONTACT:	R. EWALD	R. EWALD	R. EWALD	R. EWALD	R. EWALD
FOR TECHNICAL INFORMATION, CONTACT:	T. MEYER R. EWALD	T. MEYER R. EWALD	T. MEYER R. EWALD	T. MEYER R. EWALD	T. MEYER R. EWALD
SEE APPENDIX IF CHECKED					

NA=not applicable

## Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

POLYTHANE SYSTEMS, INC.	POLYTHANE SYSTEMS INC.	POLYTHANE SYSTEMS, INC.	QUANTUM COATINGS, INC.	QUANTUM COATINGS, INC.	QUANTUM COATINGS, INC.	QUANTUM COATINGS, INC.	QUANTUM COATINGS, INC.	QUANTUM COATINGS, INC.
GE SILICONES	EVEREST ACRYLIC	EVEREST HIGH PERFORM ACRYLIC	FUTURA-THANE 5007	FUTURA-FLEX 550	FUTURA-THANE 5600	FUTURA-THANE 5650	FUTURA-THANE 5600	FUTURA-THANE 5625
	X	X						
X								
			X	X	X	X	X	X
NO	NO	NO	YES	YES	YES	YES	YES	YES
ANY COLOR	ANY COLOR	ANY COLOR	GRAY	WHITE, OTHER COLORS	BUFF	WHITE	BUFF	ALUMINUM
SCM3408	EVERCOAT 510	EVERCOAT 5410	SAME	FUTURA-THANE 5007	SAME	FUTURA-THANE 5600	SAME	FUTURA-THANE 5600
SCM3404	EVERCOAT 500	EVERCOAT 5400	FUTURA-THANE 550	SAME	FUTURA-THANE 5650	SAME	FUTURA-FLEX 5625	SAME
1	1	1	1		1 – 2		1 – 2	
1	1	1		1		1		1
YES	OPTIONAL	OPTIONAL	NO	NO	NO	NO	NO	NO
20	30	30	20 – 40		20 – 24		20 – 26	
				10		10 – 15		10 – 20
1 HR	1 HR	1 HR	<5 MINS @ 75F		1 – 3 HRS @ 75F		1 – 3 HRS @ 75F	
1 HR	1 HR	1 HR		6 – 8 HRS @ 75F		1 – 3 HRS @ 75F		1 – 3 HRS @ 75F
NO PONDING	NO PONDING	NO PONDING	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"
X	X	X	X P	X P	X P	X P	X P	X P
X	X	X	X P T	X P T	X P T	X P T	X P T	X P T
X	X	X	X P	X P	X P	X P	X P	X P
X	X	X	X P	X P	X P	X P	X P	X P
X	X	X	X P	X P	X P	X P	X P	X P
SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF
40 – 100	40 – 100	40 – 100	30 – 120	40 – 110	32 – 120	32 – 120	32 – 120	32 – 120
20	20	20	10	10	10	10	10	10
25	25	25	15	15	15	15	15	15
X	X	X		X	X	X	X	X
			X					
X	X	X		ROLLER, BRUSH	ROLLER	ROLLER	ROLLER, BRUSH	ROLLER, BRUSH
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
NONE	NONE	NONE	YES	YES	YES	YES	YES	YES
10 – 20	10 – 20	10 – 20	8 – 10	8 – 10	8 – 10	8 – 10	5 – 10	5 – 10
550	279	430	3200±50	2700±50	1225 ± 50	1800 ± 50	1225±50	850±50
150	502	912	300±25	275±25	310 ± 25	300 ± 25	310±25	300±25
			140		160		160	
NONE			NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE
			NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE
0.5 MAX		D 471, 8.62%	1.5	1.5	< 1.5	< 1.5	1.5 MAX	1.5 MAX
	YES	YES	YES	YES	YES	YES	YES	YES
1	1	1	1 – 1 1/2	1 – 1 1/2	1 1/2	1 1/2	1 – 1 1/2	1 – 1 1/2
2.7	2.7	2.7	2.5 – 3	2.5 – 3	3.0	3.0	2.5 – 3	2.5 – 3
40	40	40	40 MIN.	40 MIN.	45	45	40 MIN.	40 MIN.
90	90	90	90 MIN.	90 MIN.	90 MIN.	90 MIN.	90 MIN.	90 MIN.
YES	YES	YES	NO	NO	NO	NO	NO	NO
1972	1981	1989	1983	1979	1986	1986	1986	1986
			3 MILLION+	5 MILLION+	500,000 +	1 MILLION+	2 MILLION+	2.5 MILLION+
YES	YES	YES	YES	YES	YES	YES	YES	YES
DIRECT	DIRECT	DIRECT	DISTR, DIRECT	DISTR, DIRECT	DISTR, DIRECT	DISTR, DIRECT	DISTR, DIRECT	DISTR, DIRECT
9	9	9	5	5	5	5	5	5
R. STOCKDALE	M. CULLINS	M. CULLINS	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
R. STOCKDALE	M. CULLINS	M. CULLINS	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

# Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

1.	COMPANY NAME	QUANTUM COATINGS, INC.	QUANTUM COATINGS, INC.	QUANTUM COATINGS, INC.	QUANTUM COATINGS, INC.
2.	PRODUCT NAME	FUTURA-THANE 516	ELASTO-BOND 801	FUTURA-FLEX 550	ELASTO-BOND 820
3A.	COATING DESCRIPTION				
	Acrylic				
	Butyl		X		
	Hypalon				
	Neoprene				
	Silicone				X
	Urethane	X		X	
	Vinyl				
	Modified Asphalt				
	Other (type)				
3B.	VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	YES	YES	YES	NO
3C.	COLORS AVAILABLE	GRAY	BLACK, GRAY	WHITE, OTHER COLORS	DARK GRAY, LIGHT GRAY
4.	BASE COATING (Name of Product)	SAME	SAME	ELASTO-BOND 801 (BASE)	ELASTO-BOND 820
	TOP COATING (Name of Product)	SAME	FUTURA-FLEX 550	FUTURA-THANE 550 (TOP) OR SAME	ELASTO-BOND 820
5.	NUMBER OF COATING APPLICATIONS REQUIRED				
	Base Coatings	1 – 2	1 – 3		1
	Top Coatings			1	1
	Granules Required (yes, no or optional)	OPTIONAL	NO	NO	OPTIONAL
6.	REQUIRED DRY FILM THICKNESS: (mils)				
	Base Coating	30 – 40	20 – 35		10 – 12 1/2
	Top Coating			10 – 15	10 – 12 1/2
7.	FILM CURE TIME				
	Base Coating	6-12 HRS @ 75F	8-10 HRS @ 75F		3 – 4 HRS @ 75F
	Top Coating			6 – 8 HRS @ 75F	3 – 4 HRS @ 75F
8.	MINIMUM SLOPE REQUIRED (inches per foot)	1/8"	1/8"	1/8"	1/2"
9.	REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required)				
	Concrete Decks	X P	X P	X P	X P
	Plywood Decks	X P T	X P T	X P T	X P T
	Metal Decks	X P	X P	X P	X P
	Existing Spudded Built-up Roofing	X P	X P	X P	X P
	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 – 110	40 – 110	40 – 110	40 – 110
	Maximum Permitted Wind Velocity Without Screen (mph)	10	10	10	10
	Maximum Permitted Wind Velocity With Wind Screen (mph)	15	15	15	15
12.	APPLICATION EQUIPMENT REQUIREMENTS				
	Single-Component Airless Spray	X	X	X	X
	Multi-Component Airless Spray		X		
	Other (roller, brush, etc.)	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH
13.	RESTRICTED REGIONS (yes/none)	NONE	NONE	NONE	NONE
14.	RESTRICTED BUILDING USES (yes/none)	YES	NO	YES	YES
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)	500±100	375±25	2700±50	450-550
	Elongation Per ASTM D 412 or Other (%)	200±30	180±25	275±25	140±10
	Impact Resistance Per ASTM D 2794 or Other (inch lbs)				
	Accelerated Weathering Per ASTM D 882 or Other (color change)	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE
	Heat Aging Per ASTM D 573 or Other (%)	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE
	Water Absorption Per ASTM D 570 or Other (%)	1 MAX	0.5	1.5	0.5±0.1
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 1/2	1 – 1 1/2	1 – 1 1/2	1 – 1 1/2
	Nominal Density Per ASTM D 1622 or Other (lbs/ft³)	2.5 – 3	2.5 – 3	2.5 – 3	2.5 – 3
	Compressive Strength Per ASTM D 1621 or Other (psi)	40 MIN.	40 MIN.	40 MIN.	40 MIN.
	Closed Cell Content Per ASTM D 2856 or Other (%)	90 MIN.	90 MIN.	90 MIN.	90 MIN.
19.	FOAM AVAILABLE FROM MANUFACTURER (yes/no)	NO	NO	NO	NO
20.	YEAR OF FIRST COMMERCIAL USE	1988	1980	1979	1987
21.	NUMBER OF SQUARES INSTALLED (100 ft²)	600,000+	1 MILLION+	5 MILLION+	1.2 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:	B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100
	FOR TECHNICAL INFORMATION, CONTACT:	B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100	B. SCHENKE 314/521-4100
26.	SEE APPENDIX IF CHECKED				

NA=not applicable

## Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

QUANTUM COATINGS, INC.	QUANTUM COATINGS, INC.	QUANTUM COATINGS, INC.	QUANTUM COATINGS, INC.	QUANTUM COATINGS, INC.	QUANTUM COATINGS, INC.	QUANTUM COATINGS, INC.	SWD URETHANE COMPANY	SWD URETHANE COMPANY
ACRO-BOND 440	ACRO-BOND 442	ACRO-BOND 448	FUTURA-THANE 17060	FUTURA-FLEX 510	5615 BASE	5615 TOP	SWD 1929	SWD 1929 F
X	X	X					X	X
			X	X	X	X		
NO	NO	NO	YES	YES	YES	YES	NO	NO
LIGHT BLUE	WHITE	WHITE, GRAY OTHERS	ALUMINUM	BLACK	GRAY	ALUMINUM	WHITE, GRAY BUFF	WHITE, GRAY, BUFF
SAME	ACRO-BOND 440	SAME	FUTURA-FLEX 510	SAME	SAME	5615 BASE	SWD 1929	SWD 1929 F
ACRO-BOND 442	SAME	SAME	SAME	FUTURA-THANE 17060	5615 TOP		SAME	SAME
1		1		1 – 2	1 – 2		1	1
	1	1	1	1		1	1	1
NO	OPTIONAL	OPTIONAL	OPTIONAL	NO	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
15 – 18		15 – 18		20 – 60	20 – 40		15	36
	15 – 18	15 – 18	10 – 20			10 – 15	8	12
1 1/2 – 3 HOURS		1 1/2 – 3 HOURS		4 – 6 HOURS	6 – 8 HRS @ 75F		24 HOURS	24 HOURS
	1 1/2 – 3 HOURS	1 1/2 – 3 HOURS	6 – 8 HOURS			6 – 8 HRS @ 75F	24 HOURS	24 HOURS
1/2"	1/2"	1/2"	1/8"	1/8"	1/8"	1/8"	1/4"	1/4"
X P	X P	X P	X P	X P	X P	X P	P	P
X P T	X P T	X P	X P	X P	X P	X P	P	P
X P	X P	X P	X P	X P	X P	X P	P	P
X P	X P	X P	X P	X P	X P	X P	P	P
P	P	P	X P	X P	X P	X	P	P
SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF
50+	50+	50+	32 – 120	45 – 110	32 – 120	32 – 120	< 50	< 50
10	10	10	10	10	10	10	15	15
15	15	15	15	15	15	15	25	25
X	X	X	X	X	X	X		
ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH	ROLLER, BRUSH	X	X
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
YES	YES	YES	YES	YES	YES	YES	NONE	NONE
5 – 10	5 – 10	5 – 10	8 – 10	5 – 10	8 – 10	8 – 10	5	5
300	300	300	700	300			250	280
270	270	120	120	300	400	400	489	355
62	62							
NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE
NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE		
			1.5% MAX.	.75 MAX.			5	5
YES	YES	YES	YES	YES	YES	YES	YES	YES
1 – 1 1/2	1 – 1 1/2	1 – 1 1/2	1 – 1 1/2	1 – 1 1/2	1 – 1 1/2	1 – 1 1/2	1	1
2.5 – 3	2.5 – 3	2.5 – 3	2.5 – 3	2.5 – 3	2.5	2.5	2.5	2.5
40 MIN.	40 MIN.	40 MIN.	40 MIN.	40 MIN.	40	40	40	40
90 MIN.	90 MIN.	90 MIN.	90 MIN.	90 MIN.	90	90	<90	<90
NO	NO	NO	NO	NO	NO	NO	YES	YES
1979	1979	1988	1994	1990	1996	1996	1972	1972
2 MILLION+	2 MILLION+	1 MILLION+	100,000+	200,000+			MILLIONS	MILLIONS
YES	YES	YES	YES	YES	YES	YES	YES	YES
DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT
5	5	5	5	5	5	5	1	1
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	R. WHIPPLE 800/828-1394	R. WHIPPLE 800/828-1394
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	R. WHIPPLE 800/828-1394	R. WHIPPLE 800/828-1394



# Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

SWD URETHANE COMPANY	1.	COMPANY NAME	UCSC	UCSC	UCSC
1929 H	2.	PRODUCT NAME	DURASIL	DURASHIELD	DURATHANE
	3A.	COATING DESCRIPTION			
X		Acrylic		X	
		Butyl			
		Hypalon			
		Neoprene			
		Silicone	X		
		Urethane			X
		Vinyl			
		Modified Asphalt			
		Other (type)			
NO	3B.	VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	NO	YES	NO
WHITE, GRAY, BUFF	3C.	COLORS AVAILABLE	GRAY, WHITE	WHITE, TAN, CUSTOM	DARK GRAY
1929 H	4.	BASE COATING (Name of Product)	DURASIL BASE	DURASHIELD	DURATHANE
SAME		TOP COATING (Name of Product)	DURASIL TOP	DURASHIELD	DURATHANE, DURASHIELD
	5.	NUMBER OF COATING APPLICATIONS REQUIRED			
1		Base Coatings	1 – 2	2	2
1		Top Coatings	1 – 2	1 – 2	1
OPTIONAL		Granules Required (yes, no or optional)	OPTIONAL	OPTIONAL	OPTIONAL
	6.	REQUIRED DRY FILM THICKNESS: (mils)			
36		Base Coating	10 – 15	25	24
12		Top Coating	10 – 15	10	16
	7.	FILM CURE TIME			
24 HOURS		Base Coating	4 HOURS	4 – 8 HOURS	12 – 16 HOURS
24 HOURS		Top Coating	24 HOURS	12 HOURS	72 HOURS
1/4"	8.	MINIMUM SLOPE REQUIRED (inches per foot)	1/8"	1/8"	1/8"
	9.	REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required)			
		Concrete Decks	P	P	P
P		Plywood Decks	P	P	P
P		Metal Decks	X	X	X
P		Existing Spudded Built-up Roofing	X	X	X
P		Other Coatings	P	P	P
SELF	10.	FLASHING MATERIAL (type or self-flashing)	SELF	SELF	SELF
	11.	APPLICATION CONDITIONS			
<50		Recommended Ambient Air Temperature Range (degrees F)	50 – 100	50 – 100	50 – 100
15		Maximum Permitted Wind Velocity Without Screen (mph)	15	15	15
25		Maximum Permitted Wind Velocity With Wind Screen (mph)	25	25	25
	12.	APPLICATION EQUIPMENT REQUIREMENTS			
		Single-Component Airless Spray	X	X	X
		Multi-Component Airless Spray			
X		Other (roller, brush, etc.)			
NONE	13.	RESTRICTED REGIONS (yes/none)	NONE	NONE	NONE
	14.	RESTRICTED BUILDING USES (yes/none)	NONE	NONE	NONE
	15.	RECOMMENDED RECOATING SCHEDULE (years or none)	10 – 15	10 – 15	10 – 15
	16.	PHYSICAL PROPERTIES OF THE COATING			
		Tensile Strength Per ASTM D 412 or Other (psi)	600±50	425	425±25
		Elongation Per ASTM D 412 or Other (%)	150±25	315	300±50
		Impact Resistance Per ASTM D 2794 or Other (inch lbs)		>160	
		Accelerated Weathering Per ASTM D 882 or Other (color change)	NONE	10,000 HOURS	
		Heat Aging Per ASTM D 573 or Other (%)			
		Water Absorption Per ASMT D 570 or Other (%)	>0.1		2.4
YES	17.	UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)	YES	YES	YES
	18.	FOAM INSULATION REQUIREMENTS			
1		Minimum Thickness (inches)	1 – 2	1 – 2	1 – 2
2.5		Nominal Density Per ASTM D 1622 or Other (lbs/ft <sup>3</sup> )	2.5	2.5	2.5
40		Compressive Strength Per ASTM D 1621 or Other (psi)	40	40	40
<90		Closed Cell Content Per ASTM D 2856 or Other (%)	>90	> 90	> 90
YES	19.	FOAM AVAILABLE FROM MANUFACTURER (yes/no)	YES	YES	YES
1972	20.	YEAR OF FIRST COMMERCIAL USE	1981	1981	1981
MILLIONS	21.	NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )			
YES	22.	MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	YES	YES	YES
DISTR, DIRECT	23.	METHODS OF DISTRIBUTION (distributors and/or direct)	DIRECT	DIRECT	DIRECT
1	24.	NUMBER OF REGIONAL SERVICE LOCATIONS	9	9	9
R. WHIPPLE 800/828-1394	25.	FOR SALES INFORMATION, CONTACT:	L. WRIGHT 800/289-8272	L. WRIGHT 800/289-8272	L. WRIGHT 800/289-8272
R. WHIPPLE 800/828-1394		FOR TECHNICAL INFORMATION, CONTACT:	L. WRIGHT 800/289-8272	L. WRIGHT 800/289-8272	L. WRIGHT 800/289-8272
	26.	SEE APPENDIX IF CHECKED			

NA=not applicable

## Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS
DIATHON	DIATHON QUICK SET	DIATHON HIGH TENSILE	DIATHON SOLAR CURE	DIATHON 4500	ACRON 60	UNISIL 600	UNISIL	ELASTRON 858
X	X	X	X	X	X			X
						X	X	
NO	NO	NO	NO	NO	NO	NO	NO	YES
PEARL WHITE, MED GRAY, CUSTOM	PEARL WHITE, MED GRAY, CUSTOM	PEARL WHITE, MED GRAY, CUSTOM	WHITE	PEARL WHITE, MED GRAY, CUSTOM		LIGHT GRAY, GRAY, WHITE	LIGHT GRAY, WHITE, CUSTOM	GRAY, TAN
DIATHON	DIATHON QS	DIATHON HT	DIATHON SC	DIATHON 4500	ACRON 60	UNISIL 600	UN ISIL	SAME
DIATHON	DIATHON QS	DIATHON HT	DIATHON SC	DIATHON 4500	ACRON 60	UNISIL 600	UNISIL	DIATHON, ELASTUFF 102
1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1
OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
11 MIN.	11 MIN.	11 MIN.	11 MIN.	11 MIN.	11 MIN.	6 – 11 MIN.	6 – 11 MIN.	15 – 18
11	11 MIN.	11 MIN.	11 MIN.	11 MIN.	11 MIN.	11 MIN.	11 MIN.	7 – 9
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)	3 HRS (MED GRAY) 4 1/2 HRS (WHITE)	2 – 3 HOURS 2 – 3 HOURS	2 – 3 HOURS 2 – 3 HOURS	4 – 6 HOURS
1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2 "	1/2 "	1/2"
P	P				P	P	P	P
X	X				X	P	P	X
X	X	X	X	X	X	P	P	X
X	X				X			X
X	X				X	P	P	X
SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF	SELF
50 – 110	50 – 110				50 – 110	40 – 110	40 – 110	50 – 110
12	12	12	12	12	12	12	12	12
20	20	20	20	20	20	20	20	20
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
NONE	NONE				NONE	NONE	NONE	NONE
YES	YES	YES	YES	YES	YES	YES	YES	YES
5	5				5		5	5
250 – 440 280 – 320	250 – 440 280 – 320	425 475	250 300	240 145	200 180	650 150	650 150	300 75
NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	
	8%						0.1 MAX	
YES	YES	YES	YES	YES	YES	YES	YES	YES
1	1				1	1	1	1
2.5 – 3.0	2.5 – 3.0	2.5 – 3.0	2.5 – 3.0	2.5 – 3.0	2.5 – 3.0	2.5 – 3.0	2.5 – 3.0	2.5 – 3.0
40 MIN.	40 MIN.				40 MIN.	40 MIN.	40 MIN.	40
90 MIN.	90 MIN.				90 MIN.	90 MIN.	90 MIN.	90
NO	NO	NO	NO	NO	NO	NO	YES	NO
1971	1995	1993	1995	1986	1989	1994	1987	1965
5 MILLION				20 MILLION	50 MILLION	3 MILLION	20,000	500,000
NO	NO				NO	NO	NO	NO
DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT	DISTRs, DIRECT
8	8				8	8	4	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	B. MANN 800/541-4383	B. MANN 800/541-4383

# Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

UNITED COATINGS	UNITED COATINGS	1. COMPANY NAME	UNITED COATINGS	UNITED COATINGS
ELASTUFF 101	ELASTUFF 102	2. PRODUCT NAME	BERM 600	UNISEAL EPOXY SEALER
		3A. COATING DESCRIPTION		
		Acrylic	X	
		Butyl		
		Hypalon		
		Neoprene		
		Silicone		
X	X	Urethane		
		Vinyl		
		Modified Asphalt		
		Other (type)		EPOXY
NO	NO	3B. VAPOR RETARDER (yes, perm rating <1.0) (no, perm rating >1.0)	NO	NO
MEDIUM GRAY	IVORY WHITE, LIMITED CUSTOM	3C. COLORS AVAILABLE	LIGHT GRAY, TAN, CUSTOM	CLEAR, BLACK
SAME	ELASTUFF 101	4. BASE COATING (Name of Product)	BERM 500 DIATHION	
ELASTUFF 102	SAME	TOP COATING (Name of Product)	BERM 600	
		5. NUMBER OF COATING APPLICATIONS REQUIRED		
1		Base Coatings	1	
	1	Top Coatings	1	
NO	OPTIONAL	Granules Required (yes, no or optional)	OPTIONAL	
		6. REQUIRED DRY FILM THICKNESS: (mils)		
17		Base Coating	11 MIN.	1/2 – 2 MIN.
	7	Top Coating	11 MIN.	
		7. FILM CURE TIME		
6 – 8 HOURS		Base Coating	1 1/2 – 2 HOURS	8 HOURS
	8 – 12 HOURS	Top Coating	1 1/2 – 2 HOURS	
1/2"	1/2"	8. MINIMUM SLOPE REQUIRED (inches per foot)	1/2"	
		9. REQUIREMENTS FOR USE OVER: (X=direct application permitted) (P=primer required) (T=thermal barrier required)		
		Concrete Decks	X	
P	P	Plywood Decks	X	
P	P	Metal Decks	P	
		Existing Spudded Built-up Roofing	X	
X	X	Other Coatings	X	
SELF	SELF	10. FLASHING MATERIAL (type or self-flashing)	SELF	SELF
		11. APPLICATION CONDITIONS		
40 – 110	40 – 110	Recommended Ambient Air Temperature Range (degrees F)	50 – 110	50 – 110
12	12	Maximum Permitted Wind Velocity Without Screen (mph)	12	12
20	20	Maximum Permitted Wind Velocity With Wind Screen (mph)	20	20
		12. APPLICATION EQUIPMENT REQUIREMENTS		
X	X	Single-Component Airless Spray	X	X
		Multi-Component Airless Spray		
X	X	Other (roller, brush, etc.)	X	X
NONE	NONE	13. RESTRICTED REGIONS (yes/none)	NONE	NONE
YES	YES	14. RESTRICTED BUILDING USES (yes/none)	YES	YES
5	5	15. RECOMMENDED RECOATING SCHEDULE (years or none)	5	
		16. PHYSICAL PROPERTIES OF THE COATING		
1000	2500	Tensile Strength Per ASTM D 412 or Other (psi)	250	
500	400	Elongation Per ASTM D 412 or Other (%)	240	
		Impact Resistance Per ASTM D 2794 or Other (inch lbs)		
	NO CHANGE	Accelerated Weathering Per ASTM D 882 or Other (color change)	NO CHANGE	
		Heat Aging Per ASTM D 573 or Other (%)		
1.0 MAX	2.5 MAX	Water Absorption Per ASMT D 570 or Other (%)		
YES	YES	17. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)	YES	
		18. FOAM INSULATION REQUIREMENTS		
1	1	Minimum Thickness (inches)	1	
2.5 – 3.0	2.5 – 3.0	Nominal Density Per ASTM D 1622 or Other (lbs/ft³)	2.5 – 3.0	
40	40	Compressive Strength Per ASTM D 1621 or Other (psi)	40 MIN.	
90	90	Closed Cell Content Per ASTM D 2856 or Other (%)	90 MIN.	
NO	NO	19. FOAM AVAILABLE FROM MANUFACTURER (yes/no)	NO	
1989	1989	20. YEAR OF FIRST COMMERCIAL USE	1990	1995
3,000	5,000	21. NUMBER OF SQUARES INSTALLED (100 ft²)		
NO	NO	22. MANUFACTURER-QUALIFIED APPLICATOR REQUIRED (yes/no)	NO	NO
DISTRS, DIRECT	DISTRS, DIRECT	23. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT
4	4	24. NUMBER OF REGIONAL SERVICE LOCATIONS	8	8
B. MANN 800/541-4383	B. MANN 800/541-4383	25. FOR SALES INFORMATION, CONTACT:	B. MANN 800/541-4383	B. MANN 800/541-4383
B. MANN 800/541-4383	B. MANN 800/541-4383	FOR TECHNICAL INFORMATION, CONTACT:	B. MANN 800/541-4383	B. MANN 800/541-4383
		26. SEE APPENDIX IF CHECKED		

NA=not applicable

## Spray Polyurethane Foam-Based Systems; Protective Coatings - General Information

UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS
UNI-TILE EPOXY SEALER	ACRILEX 300 ACRYLIC PRIMER	UNIBASE ACRYLIC ADHES/PRIMER	ADHERE-IT EPDM PRIMER
	X	X	
			X
EPOXY NO	NO	NO	NO
CLEAR, BLACK	LIGHT GRAY	TRANSPARENT GREEN	CLEAR
1/2 – 2 MIN.	1/2 – 2 MIN.		
3 HOURS	1 – 24	1 – 2	1/2 – 1
			X
50 – 110	50 – 110	50 – 110	50 – 110
12	12	12	12
20	20	20	20
X	X	X	X
X	X	X	X
NONE	NONE	NONE	NONE
YES	YES	YES	YES
		1000	
		650	
1970	1993	1996	1995
NO	NO	NO	NO
DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT
8	8	8	8
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 Polyurethane Foam-Based Systems; Insulation - General Information

1. COMPANY NAME	ERSYSTEMS	ERSYSTEMS	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.
2. PRODUCT NAME	ER FOAM 2.5	ER FOAM 3.0	POLYFOAM 303 WINTER SPEED	POLYFOAM 303 REG. SPEED	POLYFOAM 303 SUMMER SPEED	POLYFOAM 275 WINTER SPEED
3. RECOMMENDED TYPES OF PROTECTIVE COVERINGS						
Acrylic	X	X	X	X	X	X
Butyl	X	X	X	X	X	X
Hypalon	X	X	X	X	X	X
Neoprene	X	X	X	X	X	X
Silicones	X	X	X	X	X	X
Urethanes	X	X	X	X	X	X
Vinyls	X	X	X	X	X	X
Modified Asphalts	X	X	X	X	X	X
Aggregate	X	X	X	X	X	X
4. SYSTEM COATING AVAILABLE FROM MANUFACTURER (yes/no)	YES	YES	YES	YES	YES	YES
5. REQUIRED APPLICATION CONDITIONS						
Ambient Air Temperature Ranges (degrees F)	40-50	40 – 50	40 – 55	55 – 80	80 – 120	50 – 70
Maximum Ambient Relative Humidity (%)	80-85	80 – 85	85	85	85	85
Maximum Allowable Wind Velocity Without Wind Screen (mph)	15	15	10	15	15	10
Maximum Allowable Wind Velocity With Wind Screen (mph)	25-30	25 – 30	20	25	25	20
6. PHYSICAL PROPERTIES OF THE FOAM						
Nominal Density Per ASTM D 1622 or Other (lbs/ft <sup>3</sup> )	2.5-2.65	3 – 3.2	3.0	3.0	3.0	2.75
Compressive Strength Per ASTM D 1621 or Other (psi)	35-45	50	52	52	52	42
Closed-Cell Content Per ASTM D 2856 or Other (%) min)	90	90	95	95	95	94
Thermal Resistance R-Value at: 1 inch	6.25	6.25	7	7	7	7
Thermal Resistance R-Value at: 2 inches	12.5	12.5	14	14	14	14
Thermal Resistance R-Value at: 3 inches	18.75	18.75	21	21	21	21
7. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)	YES	YES	YES	YES	YES	YES
8. YEAR OF FIRST COMMERCIAL USE	1996	1996	1986	1986	1986	1995
9. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )	THOUSANDS	THOUSANDS	11,500	16,000	5,700	14,400
10. MANUFACTURER-QUALIFIED APPLICATORS REQUIRED (yes/no)	NO	NO	YES	YES	YES	YES
11. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT
12. NUMBER OF REGIONAL SERVICE LOCATIONS	14	14	3	3	3	3
13. FOR SALES INFORMATION, CONTACT:	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958
FOR TECHNICAL INFORMATION, CONTACT:	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226
14. SEE APPENDIX IF CHECKED						

  

1. COMPANY NAME	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	GACO WESTERN INC.	NATIONAL COATINGS
2. PRODUCT NAME	POLYFOAM 251 WINTER SPEED	POLYFOAM 251 REG. SPEED	POLYFOAM 251 SUMMER SPEED	POLYFOAM 275 REG. SPEED	POLYFOAM 275 SUMMER SPEED	SPRAY FOAM
3. RECOMMENDED TYPES OF PROTECTIVE COVERINGS						
Acrylic	X	X	X	X	X	X
Butyl	X	X	X	X	X	
Hypalon	X	X	X	X	X	
Neoprene	X	X	X	X	X	
Silicones	X	X	X	X	X	
Urethanes	X	X	X	X	X	
Vinyls	X	X	X	X	X	
Modified Asphalts	X	X	X	X	X	
Aggregate	X	X	X	X	X	
4. SYSTEM COATING AVAILABLE FROM MANUFACTURER (yes/no)	YES	YES	YES	YES	YES	YES
5. REQUIRED APPLICATION CONDITIONS						
Ambient Air Temperature Ranges (degrees F)	40 – 55	55 – 80	80 – 120	70 – 90	90 – 120	50 – 110
Maximum Ambient Relative Humidity (%)	85	85	85	85	85	95
Maximum Allowable Wind Velocity Without Wind Screen (mph)	10	15	15	15	15	15
Maximum Allowable Wind Velocity With Wind Screen (mph)	20	25	25	25	25	25
6. PHYSICAL PROPERTIES OF THE FOAM						
Nominal Density Per ASTM D 1622 or Other (lbs/ft <sup>3</sup> )	2.5	2.5	2.5	2.75	2.75	2.5 – 3.0
Compressive Strength Per ASTM D 1621 or Other (psi)	44	44	44	42	42	42+
Closed-Cell Content Per ASTM D 2856 or Other (%) min)	95	95	95	94	94	91
Thermal Resistance R-Value at: 1 inch	7	7	7	7	7	7
Thermal Resistance R-Value at: 2 inches	14	14	14	14	14	14
Thermal Resistance R-Value at: 3 inches	21	21	21	21	21	21
7. UL 790 FLAMMABILITY CLASS A RATING IN ANY SYSTEM (yes/no)	YES	YES	YES	YES	YES	YES
8. YEAR OF FIRST COMMERCIAL USE	1986	1986	1986	1995	1995	1981
9. NUMBER OF SQUARES INSTALLED (100 ft <sup>2</sup> )	3,750	13,500	7,000	67,800	45,000	50,000
10. MANUFACTURER-QUALIFIED APPLICATORS REQUIRED (yes/no)	YES	YES	YES	YES	YES	YES
11. METHODS OF DISTRIBUTION (distributors and/or direct)	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DISTRS, DIRECT	DIRECT
12. NUMBER OF REGIONAL SERVICE LOCATIONS	3	3	3	3	3	5
13. FOR SALES INFORMATION, CONTACT:	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958	J. FREEMESSER 800/869-0958	D. VARVAIS 805/388-7112
FOR TECHNICAL INFORMATION, CONTACT:	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226	A. JENKINS 800/456-4226	TECH. DEPT 805/388-7112
14. SEE APPENDIX IF CHECKED						

NA=not applicable

## Spray Polyurethane Foam-Based Systems; Insulation - General Information

NO. CAROLINA FOAM INDUSTRIES	NO. CAROLINA FOAM INDUSTRIES	NO. CAROLINA FOAM INDUSTRIES	NO. CAROLINA FOAM ENTERPRISES	POLYTHANE SYSTEMS, INC.	POLYTHANE SYSTEMS, INC.	POLYTHANE SYSTEMS, INC.	PREMIUM POLYMERS	SWD URETHANE COMPANY	SWD URETHANE COMPANY
NCFI SYSTEM 591-25	NCFI SYSTEM 591-28	NCFI SYSTEM 692-2.5	NCFI SYSTEM 692-2.8	PSI-SH200-25	PSI-SH200-27	PSI-SH200-30	PREMIUM 241-30	SWD 525-2.0	SWD 525-2.5
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
NO	NO	NO	NO	YES	YES	YES	YES	YES	YES
50 MIN.	50 MIN.	50 MIN	50 MIN	50 – 110	50 – 110	50 – 110	40 – 95	55	55
78	78	78	78					80	80
15	15	15	15	10	10	10	15	15	15
25	25	25	25	20	20	20	20	25	25
2.7	3.0	2.7	3.0	2.5	2.7	3.0	3.0	1.8 – 2.1	2.3 – 2.6
35	45	35	45	40	45	50	47	25 – 30	35 – 40
90	90	90	90	90	90	90	95	90 – 95	90 – 95
6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.5	6.7	6.7
13.0	13.0	13.0	13.0	13.4	13.4	13.4	13	13.4	13.4
20.0	20.0	20.0	20.0	20.1	20.1	20.1	19.5	20.1	20.1
YES	YES	YES	YES	YES	YES	YES	YES	NO	YES
1991	1991	1992	1992	1981	1981	1981	1991	1972	1972
500,000	275,000	3,500	1,000	300,000	300,000	300,000		HUNDREDS	THOUSANDS
NO	NO	YES	YES	YES	YES	YES	YES	NO	NO
DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DISTR,DIRECT	DISTR,DIRECT	DISTR,DIRECT
1	1	1	1	15	15	15	9	1	1
S. RIDDLE 336/789-9161	S. RIDDLE 336/789-9161	S. RIDDLE 336/789-9161	S. RIDDLE 336/789-9161	R. STOCKDALE 713/350-9000	R. STOCKDALE 713/350-9000	R. STOCKDALE 713/350-9000	SALES 800/756-3626	R. WHIPPLE 800/828-1394	R. WHIPPLE 800/828-1394
C. TOLBERT 336/789-9161	C. TOLBERT 336/789-9161	C. TOLBERT 336/789-9161	C. TOLBERT 336/789-9161	R. STOCKDALE 713/350-9000	R. STOCKDALE 713/350-9000	R. STOCKDALE 713/350-9000	TECH. SERVICE 800/756-3626	R. WHIPPLE 800/828-1394	R. WHIPPLE 800/828-1394
X	X	X	X						

SWD URETHANE COMPANY	UCSC	UCSC	UCSC	UCSC	UCSC
SWD 525-3.0	UCSC 1.5	UCSC 1.7	UCSC 2.0	UCSC 2.5	UCSC 3.0
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
YES	YES	YES	YES	YES	YES
55	40 – 110	40 – 110	40 – 110	40 – 110	40 – 110
80	85	85	85	85	85
15	15	15	15	15	15
25	25	25	25	25	25
2.8 – 3.2	1.5	1.5	2.0	2.5	3.0
50 – 55	19	22	29	40	50
90 – 95	<90	<90	<90	<90	<90
6.7	6.25	6.25	6.25	6.25	6.25
13.4	12.5	12.5	12.5	12.5	12.5
20.1	18.75	18.75	18.75	18.75	18.75
YES	YES	YES	YES	YES	YES
1972	1981	1981	1981	1981	1981
THOUSANDS					
NO	YES	YES	YES	YES	YES
DISTR,DIRECT	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT
1	9	9	9	9	9
R. WHIPPLE 800/828-1394	L. WRIGHT 800/289-8272	L. WRIGHT 800/289-8272	L. WRIGHT 800/289-8272	L. WRIGHT 800/289-8272	L. WRIGHT 800/289-8272
R. WHIPPLE 800/828-1394	L. WRIGHT 800/289-8272	L. WRIGHT 800/289-8272	L. WRIGHT 800/289-8272	L. WRIGHT 800/289-8272	L. WRIGHT 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
4A.	PANEL CONFIGURATION		
	Panel Description		STANDING SEAM
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)		
	Stainless Steel (ga.)		
	Galvalume (ga.)	22, 24 / KYNAR, BARE	22, 24 / KYNAR, BARE
	Aluminized Steel (ga.)		
	Aluminum (ga.)	0.032, 0.040 / KYNAR	0.032 / KYNAR
	Copper (ga.)		16, 20
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	45	45
4D.	PANEL WIDTHS (in.)	16, 18	10, 12, 18, 24
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	1/4:12	2:12
	Solid Decking (required, optional, or not used)	OPTIONAL	OPTIONAL
	Underlayment (type or NA)	NA	30-LB. FELT
6.	PANEL PROFILE		
	Vertical Leg	X	X
	Trapezoidal		
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped		
	Crimped (45 degrees)	2.3 / F	
	Roll Formed (180 degrees)	2.3 / F	
	Double Roll Formed (two 180 degrees)	2.3 / F	
	Roll and Lock		
	Snap-on Cap		
	Snap Together		1-3/4 / F
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed	X	X
	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		
	Year of First Commercial Use	1993	1985
	Number of Squares Installed	50,000+	50,000+
	Licensed Applicator Agreement (yes/no)	YES	YES
	Method of Distribution (distributors, direct)	DIRECT	DIRECT
	Number of Regional Service Locations	40	40
	For Sales Information, Contact:	S. CORDOVA	S. CORDOVA
	For Technical Information, Contact:	J. DAHDAH	J. DAHDAH
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)	0/6.24 PSF	0 @ 6.24 PSF
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	0.013/6.24 PSF	0.0238 @ 6.24 PSF
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	UL-90	UL-90
16.	SEE APPENDIX IF CHECKED		

NA=not applicable

## Metal Roof Panels

AEP-SPAN	AEP-SPAN	AEP-SPAN	AEP-SPAN
STRUCTURAL BATTEN SEAM SN (SBS)	HIGH-SEAM (HS)	CAP-SEAM (CS)	BATTEN SEAM (BS)
YES	YES	YES	YES
YES	YES	YES	
STRUCTURAL BATTEN	STANDING SEAM	STANDING SEAM	BATTEN SEAM
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
22, 24 / KYNAR, BARE	22, 24 / KYNAR, BARE	22, 24 / KYNAR, BARE	22, 24 / KYNAR, BARE
0.032 / KYNAR	0.032, 0.040 / KYNAR	0.032 / KYNAR	0.032, 0.040 / KYNAR
16, 20	16, 20	16, 20	16, 20
45	45	45	45
10, 12, 18, 24	12, 20	12, 20	16, 24
2:12	3:12	3:12	3:12
OPTIONAL	REQUIRED	REQUIRED	REQUIRED
30-LB. FELT	30-LB. FELT	30-LB. FELT	30-LB. FELT
	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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
		1 / F	2 / N
2 / F	1-1/2 / N		
X	X	X	X
X	X	X	X
	X	X	
X	X	X	
1985	1980	1989	1978
50,000+	50,000+	25,000+	20,000+
YES	YES	YES	YES
DIRECT	DIRECT	DIRECT	DIRECT
40	40	40	40
S. CORDOVA	S. CORDOVA	S. CORDOVA	S. CORDOVA
J. DAHDAH	J. DAHDAH	J. DAHDAH	J. DAHDAH
0 @ 6.24 PSF	NONE	0 @ 6.34 PSF	NONE
0.059 @ 6.24 PSF	NONE	0.059 @ 6.24 PSF	NONE
UL-90	UL-90	UL-90	NONE



## Metal Roof Panels

1.	COMPANY NAME	AEP-SPAN	AEP-SPAN
2.	PRODUCT NAME	BERMUDA	SQUARE BATTEN (SB)
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)		
4A.	PANEL CONFIGURATION Panel Description	BERMUDA	STANDING SEAM
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES Thickneses / Finishes	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)		
	Stainless Steel (ga.)		
	Galvalume (ga.)	22, 24 / KYNAR, BARE	24 / KYNAR, BARE
	Aluminized Steel (ga.)		
	Aluminum (ga.)		
	Copper (ga.)		
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	30	45
4D.	PANEL WIDTHS (in.)	9.5	12
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	4:12	3:12
	Solid Decking (required, optional, or not used)	REQUIRED	REQUIRED
	Underlayment (type or NA)	40-LB. FELT	30-LB. FELT
6.	PANEL PROFILE		
	Vertical Leg		
	Trapezoidal		
	Batten		
	Other (specify)	HORIZONTAL	
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped		
	Crimped (45 degrees)		
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)		
	Roll and Lock	1 / N	1 / N
	Snap-on Cap		
	Snap Together		
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed	X	X
	CLIP, CONCEALED		
	Fixed Clip		
	Slip Clip	X	X
	Moveable Clip (designed allowable movement, inches)		
9.	SPECIALTY APPLICATIONS		
	Curved		
	Tapered		
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1975	1975
	Number of Squares Installed	5,000+	10,000+
	Licensed Applicator Agreement (yes/no)	YES	YES
	Method of Distribution (distributors, direct)	DIRECT	DIRECT
	Number of Regional Service Locations	40	40
	For Sales Information, Contact:	S. CORDOVA	S. CORDOVA
	For Technical Information, Contact:	J. DAHDAH	J. DAHDAH
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)	NONE	NONE
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE	NONE
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	NONE	NONE
16.	SEE APPENDIX IF CHECKED		

NA=not applicable

## Metal Roof Panels

AEP-SPAN	AMERICAN BUILDING ROOFING & ARCHITECTURAL PRODUCTS	AMERICAN BUILDING ROOFING & ARCHITECTURAL PRODUCTS	AMERICAN BUILDING ROOFING & ARCHITECTURAL PRODUCTS
STANDING SEAM (SS)	STANDING SEAM II PANELS	STANDING SEAM 360	LONG SPAN PANELS
	YES	YES	YES
	YES	YES	YES
STANDING SEAM	FIELD-LOCKED STANDING SEAM	FIELD FORMED STANDING SEAM	LAPPED SEAMS
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
24 / KYNAR, BARE	24, 22 / UNFINISHED, KYNAR 500	24, 22 / UNFINISHED, KYNAR 500	24, 26 / UNFINISHED, KYNAR 500
45	60	60	45
12	24	24	36
3:12	1/4: 12	1/4:12	1/2: 12
REQUIRED	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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
			1-1/4 / E
		3 / F	
1 / N			
	3 / F		
			X
X			
X	X	X	
	2/1/02	2/1/02	
1975	1977	1996	1973
10,000+			
YES	YES	YES	YES
DIRECT			
40			
S. CORDOVA	K. FISCHER	K. FISCHER	K. FISCHER
J. DAHDAH	J. SAVAGE	J. SAVAGE	J. SAVAGE
NONE	NONE	NONE	NONE
NONE	NONE	NONE	NONE
NONE	UL-90	UL-90, FM I-60, I-90, I-120	UL-90, FM I-150
	X	X	X

# Metal Roof Panels

1.	COMPANY NAME	AMERICAN BUILDING ROOFING & ARCHITECTURAL PRODUCTS	AMERICAN BUILDING ROOFING & ARCHITECTURAL PRODUCTS
2.	PRODUCT NAME	MANCARD FASCIA	LOC-SEAM PANEL
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	NO	YES
4A.	PANEL CONFIGURATION		
	Panel Description	FIELD LOCKED STANDING SEAM	FIELD-FORMED STANDING SEAM
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)		
	Stainless Steel (ga.)		
	Galvalume (ga.)	24 / UNFINISHED, KYNAR 500	22, 24 / UNFINISHED, KYNAR 500
	Aluminized Steel (ga.)		
	Aluminum (ga.)		
	Copper (ga.)		
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	30	64
4D.	PANEL WIDTHS (in.)	10, 18	12, 16
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	3:12	1/4:12
	Solid Decking (required, optional, or not used)	REQUIRED	OPTIONAL
	Underlayment (type or NA)	30-LB. FELT	
6.	PANEL PROFILE		
	Vertical Leg	X	X
	Trapezoidal		
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped		
	Crimped (45 degrees)		2, 3 / F
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)		
	Roll and Lock		
	Snap-on Cap		
	Snap Together	1 / F	
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip	X	X
	Slip Clip		X
	Moveable Clip (designed allowable movement, inches)		
9.	SPECIALTY APPLICATIONS		
	Curved		
	Tapered		
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1989	1989
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	YES	YES
	Method of Distribution (distributors, direct)		
	Number of Regional Service Locations		
	For Sales Information, Contact:	K. FISCHER	K. FISCHER
	For Technical Information, Contact:	J. SAVAGE	J. SAVAGE
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)	NONE	NO LEAKAGE @ 20 PSF
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE	0.009 SCFM/SF @ 20 PSF
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	NONE	UL-90
16.	SEE APPENDIX IF CHECKED	X	X

NA=not applicable

## Metal Roof Panels

AMERICAN BUILDING ROOFING & ARCHITECTURAL PRODUCTS	AMERICAN BUILDING ROOFING & ARCHITECTURAL PRODUCTS	AMERICAN BUILDING ROOFING & ARCHITECTURAL PRODUCTS	AMERICAN STEEL BUILDING CO., INC.
MULTI-RIB PANEL	LOC-SEAM 360	SEAM-LOC	EXPANDEK STANDING SEAM
YES	YES	YES	YES
YES	YES	YES	YES
LAPPED SEAM	FIELD FORMED STANDING SEAM	FIELD LOCKED STANDING SEAM	HINGE LOCKED STAIND SEAM
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
			23, 24, 26 / DEXSTAR 850, UNFINISHED
26, 24 / UNFINISHED, KYNAR 500	22, 24 / UNFINISHED, KYNAR 500	24 / UNFINISHED, KYNAR 500	22, 24, 26 / DEXSTAR 850, UNFINISHED
45	64	40	60
36	12, 16	12, 16, 18	18, 20, 24
1/2: 12	1/4:12	3:12	1/4:12
	OPTIONAL	OPTIONAL	NOT USED
			N/A
	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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
3/4 / E			
	2 / F		
		1.75 / F	3 / E
X			
		X	X
	X		X
	1.25		1
			WALLS AND FACADES
1985	1999	1999	1984
YES	YES	YES	NO
K. FISCHER	K. FISCHER	K. FISCHER	G. VEILLEUX
J. SAVAGE	J. SAVAGE	J. SAVAGE	S. HALVORSON
NONE	NONE	NONE	NONE
			NONE
NONE	NONE	NONE	NONE
			NONE
UL-90	UL-90, FM 1-60 to FM I-180	UL-90	UL-90
X			

# Metal Roof Panels

1.	COMPANY NAME	ARS INDUSTRIES	ARS INDUSTRIES
2.	PRODUCT NAME	SSB	SSC
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	YES	NO
4A.	PANEL CONFIGURATION		
	Panel Description	LOCK FORM BATTEN SEAM	SNAP-ON BATTEN
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)	22, 24, 26 / KYNAR 500, SILICONE POLYESTER, UNFINISHED	22, 24 / KYNAR 500, SILICONE POLYESTER, UNFINISHED
	Stainless Steel (ga.)	22, 24	26
	Galvalume (ga.)	22, 24, 26 / KYNAR 500, SILICONE POLYESTER, UNFINISHED	24, 26 / KYNAR 500, SILICONE POLYESTER, MILL
	Aluminized Steel (ga.)	22, 24	24, 26
	Aluminum (ga.)	0.032, 0.040 / KYNAR 500, SILICONE POLYESTER, ANODIZED	0.032 / KYNAR 500, SILICONE POLYESTER, ANODIZED
	Copper (ga.)	16, 20	16,20
	Terne Metal (ga.)	24	24, 26
	Zinc (ga.)	24	24, 26
4C.	MAXIMUM LENGTH (lf.)	60	60
4D.	PANEL WIDTHS (in.)	8, 12, 16, 18, 20, 24	12, 16, 18, 20, 24
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	1/4:12	3:12
	Solid Decking (required, optional, or not used)	OPTIONAL	REQUIRED
	Underlayment (type or NA)	30-LB. FELT OR EQUIVALENT	30-LB. FELT OR EQUIVALENT
6.	PANEL PROFILE		
	Vertical Leg	X	
	Trapezoidal		
	Batten	X	X
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	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	1 / F
	Snap Together	1-3/4 / F, E	
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed	X	
	CLIP, CONCEALED		
	Fixed Clip	X	
	Slip Clip	X	X
	Moveable Clip (designed allowable movement, inches)	1-1/2	
9.	SPECIALTY APPLICATIONS		
	Curved	X	X
	Tapered		X
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1984	1984
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	YES	YES
	Method of Distribution (distributors, direct)	YES	YES
	Number of Regional Service Locations		
	For Sales Information, Contact:	205/836-6777	205/836-6777
	For Technical Information, Contact:	205/836-6777	205/836-6777
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)	NO PENETRATION @ 20 PSF FOR 15 MINUTES	NONE
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	LEAKAGE AT SEAM NOT TO EXCEED 0.005 0.005 CFM PSF OF PANEL @ 10 PSF DIFFERENTIAL PRESSURE	NONE
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	UL-90	NONE
16.	SEE APPENDIX IF CHECKED		

NA=not applicable

## Metal Roof Panels

ARS INDUSTRIES	ARS INDUSTRIES	ARS INDUSTRIES	ATAS INTERNATIONAL, INC.
SS LB	SS 1.5	SS 2.5	MONARCH ROOF PANEL
YES	YES	YES	YES
NO	YES	YES	YES
BATTEN SEAM	LOCK FORM STANDING SEAM	SNAP-ON BATTEN	INTEGRAL STANDING AND BATTEN SEAM
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
22, 24 / KYNAR 500, SILICONE POLYESTER, UNFINISHED	22, 24 / KYNAR 500, SILICONE POLYESTER, UNFINISHED	22, 24 / KYNAR 500, SILICONE POLYESTER, UNFINISHED	22, 24 / KYNAR 500, UNFINISHED
24, 26	22, 24	24 26	
24, 26 / KYNAR 500, SILICON POLYESTER, MILL	22, 24, 26 / KYNAR, SILICON POLYESTER, MILL	24, 26 / KYNAR 500, SILICON POLYESTER, MILL	22, 24 / KYNAR 500, UNFINISHED
24, 26	22, 24	24, 26	
24, 26 / KYNAR 500, SILICON POLYESTER, ANODIZED	0.032, 0.040 / KYNAR 500, SILICON POLYESTER, ANODIZED	0.032, 0.040 / KYNAR 500, SILICON POLYESTER, ANODIZED	0.032, 0.040, 0.050 / KYNAR 500
16, 20		16, 20	16, 20
24		24	
24		24	
60	60	60	70
8, 12, 16, 18, 20, 24	8, 12, 16, 18, 20, 24	12, 16, 18	12, 16
3:12	1/4:12	1/4:12	2:12
REQUIRED	OPTIONAL	OPTIONAL	OPTIONAL
30-LB. FELT OR EQUIVALENT	30-LB. FELT OR EQUIVALENT	30-LB. FELT OR EQUIVALENT	30-LB. FELT
	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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
	1-1/2 / F, E		
	1-1/2 / F, E	2-1/2 / F, E	
1-1/2 / N		2-1/2	
			2, 2-1/2 / F
	X	X	X
X	1-1/2	2-1/2	
		X	
1984	1984	1984	1981
			>100,000
YES	YES	YES	NO
			DISTRIBUTORS
			2
205/836-6777	205/836-6777	205/836-6777	J. BUSH 610/395-8445
205/836-6777	205/836-6777	205/836-6777	J. BUSH 610/395-8445
NONE	NO PENETRATION @ 20 PSF FOR 15 MINUTES	NO PENETRATION @ 20 PSF FOR 15 MINUTES	NO LEAKAGE @ 10 PSF
NONE	LEAKAGE AT SEAM NOT TO EXCEED 0.005 CFM PSF OF PANEL @ 10 PSF DIFFERENTIAL PRESSURE	LEAKAGE AT SEAM NOT TO EXCEED 0.005 CFM PSF OF PANEL @ 10 PSF DIFFERENTIAL PRESSURE	0.13 CFM PER SQ FT @ 4.00 PSF
NONE	UL-90	UL-90	UL-90
			X

# Metal Roof Panels

1.	COMPANY NAME	ATAS INTERNATIONAL, INC.	ATAS INTERNATIONAL, INC.
2.	PRODUCT NAME	MULTI-PURPOSE PANEL	PC SNAP-ON SYSTEM
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	YES	NO
4A.	PANEL CONFIGURATION		
	Panel Description	STRUCTURAL STANDING AND BATTEN SEAM	SNAP-ON SEAM
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)	24 / KYNAR, UNFINISHED	24 / KYNAR 500, UNFINISHED
	Stainless Steel (ga.)		
	Galvalume (ga.)	24 / KYNAR 500, UNFINISHED	24 / KYNAR 500, UNFINISHED
	Aluminized Steel (ga.)		
	Aluminum (ga.)	0.032, 0.040 / KYNAR 500, ANODIZED	0.032, 0.040 / KYNAR 500, ANODIZED
	Copper (ga.)	16, 20	16, 20
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	40	65
4D.	PANEL WIDTHS (in.)	12, 16	12-5/8, 15-1/4
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	3:12	3:12
	Solid Decking (required, optional, or not used)	OPTIONAL	OPTIONAL
	Underlayment (type or NA)	30-LB. FELT	30-LB. FELT
6.	PANEL PROFILE		
	Vertical Leg		X
	Trapezoidal	X	
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped		
	Crimped (45 degrees)		
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)		
	Roll and Lock		
	Snap-on Cap		1-1/4 / N
	Snap Together	1-1/4 / N	
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed	X	
	CLIP, CONCEALED		
	Fixed Clip		X
	Slip Clip		
	Moveable Clip (designed allowable movement, inches)		
9.	SPECIALTY APPLICATIONS		
	Curved		X
	Tapered		X
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1977	1984
	Number of Squares Installed	>100,000	>100,000
	Licensed Applicator Agreement (yes/no)	NO	NO
	Method of Distribution (distributors, direct)	DISTRIBUTOIRES	DISTRIBUTORS
	Number of Regional Service Locations	2	2
	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 PENETRATION TEST RESULTS (results or none)	NO LEAKATE @ 9.75 PSF	NONE
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	0.11 CFM PER SQ FT @ 4.00 PSF	NONE
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	UL-90	UL-90
16.	SEE APPENDIX IF CHECKED	X	X

NA=not applicable

## Metal Roof Panels

ATAS INTERNATIONAL, INC.	ATAS INTERNATIONAL, INC.	ATAS INTERNATIONAL, INC.	ATAS INTERNATIONAL, INC.
PC SNAP-ON SYSTEM	METAFOR	DUTCH SEAM	FIELD LOCK SEAM
YES	YES	YES	YES
NO	YES	YES	YES
SNAP-ON BATTEN	CORRUGATED	STRUCTURAL STANDING SEAM	STANDING SEAM
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	
24 / KYNAR 500, UNFINISHED		22, 24 / KYNAR 500, UNFINISHED	22, 24
24 / KYNAR 500, UNFINISHED		22, 24 / KYNAR 500, UNFINISHED	
			0.032, 0.040
0.032, 0.040 / KYNAR 500, ANODIZED	0.032, 0.040 / KYNAR 500	0.032, 0.040 / KYNAR 500, ANODIZED	
16, 20		16, 20	
65	40	65	70
12-1/2, 16-1/2	12	11, 15, 1-1/4	14, 18
3:12	3:12	2:12	1/2:12
OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
30-LB. FELT	30-LB. FELT	30-LB. FELT	N/A
		X	X
	SQUARE CORRUGATIONS		
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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
			X
1-1/2 / N			
	5/8 / N	1-5/8 / F	
	X		
X			
		X	X
			X
X	X		
X		X	
1984	1981	1981	1999
>100,000	>100,000	>100,000	>100
NO	NO	NO	YES
DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS	DISTRIBUTORS
2	2	2	3
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	J. BUSH 610/395-8445	J. BUSH 610/395-8445
NONE	NONE	NO LEAKAGE @12.0 PSF (69 MPH)	
NONE	NONE	0.08 CFM/FE 2@ 1.57 PSF (25 MPH)	
	NONE	UL-90	UL-90
X	X	X	X



# Metal Roof Panels

1.	COMPANY NAME	BERRIDGE MANUFACTURING CO.	BERRIDGE MANUFACTURING CO.
2.	PRODUCT NAME	TEE-PANEL	HIGH SEAM TEE-PANEL
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	NO	YES
4A.	PANEL CONFIGURATION		
	Panel Description	SNAP-ON STANDING SEAM	SNAP-ON CAP STANDING SEAM
4B.	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 (ga.)		
	Copper (ga.)	16	16
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)		
4D.	PANEL WIDTHS (in.)	12-3/4	18-1/4
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	1:12	1:12
	Solid Decking (required, optional, or not used)	REQUIRED	REQUIRED
	Underlayment (type or NA)	30-LB. FELT OR EQUIVALENT	30-LB. FELT OR EQUIVALENT
6.	PANEL PROFILE		
	Vertical Leg	X	X
	Trapezoidal		
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped		
	Crimped (45 degrees)		
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)		
	Roll and Lock		
	Snap-on Cap	1 / F	1, 1-1/2 / F
	Snap Together		
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip		
	Slip Clip	X	X
	Moveable Clip (designed allowable movement, inches)		
9.	SPECIALTY APPLICATIONS		
	Curved	X	X
	Tapered	X	X
	Other	FREE-FORM COMPOUND CURVED	
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1969	1970
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	NO	NO
	Method of Distribution (distributors, direct)		
	Number of Regional Service Locations		
	For Sales Information, Contact:	D DOYLE 800/231-8127 G GILLUM 800/669-0	D DOYLE 800/231-8127 G GILLUM 800/669-0
	For Technical Information, Contact:	R MARKS 800/231-8127	R MARKS 800/231-8127
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)	NO LEAKAGE @ 6.24 PSF DIFFERENTIAL PRESSURE	NO LEAKAGE @ 6.24 PSF DIFFERENTIAL PRESSURE
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NO MEASURABLE INFILTRATION @ STATIC PRESSURE DIFFERENTIAL OF 1.57 PSF	NO MEASURABLE INFILTRATION @ STATIC PRESSURE DIFFERENTIAL OF 1.57 PSF
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	UL-90	UL-90
16.	SEE APPENDIX IF CHECKED	X	X

NA=not applicable

## Metal Roof Panels

BERRIDGE MANUFACTURING CO.	BERRIDGE MANUFACTURING CO.	BERRIDGE MANUFACTURING CO.	BERRIDGE MANUFACTURING CO.
BATTEN SEAM PANEL	ZEE-LOCK	DOUBLE-LOCK, DL-1, DL-1.5	CEE-LOCK PANEL
YES	YES	YES	YES
YES	YES	YES	YES
BATTEN STANDING SEAM	LOCK-FORMED STANDING SEAM	LOCK-FORMED STANDING SEAM	
THICKNESSES / FINISHES	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	24 / KYNAR 500, HYLAR 5000	24 / KYNAR 500, HYLAR 5000
16	16	16	16
			40
16	16	17, 18	16-1/2
1:12	1/2:12	1/2:12	1:12
OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
30-LB. FELT OR EQUIVALENT			30-LB. FELT OR EQUIVALENT
	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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
	2 / F		
		1, 1-1/2 / N	
1-3/4 / F			
			1-1/2 / F
X	X	X	X
1970	1989	1987	1989
NO	NO	NO	NO
D DOYLE 800/231-8127 G GILLUM 800/669-00	D DOYLE 800/231-8127 G GILLUM 800/669-00	D DOYLE 800/231-8127 G GILLUM 800/669-00	D DOYLE 800/231-8127 G GILLUM 800/669-00
R MARKS 800/231-8127	R MARKS 800/231-8127	R MARKS 800/231-8127	R MARKS 800/231-8127
NONE	NO LEAKAGE @ 20 PSF DIFFERENTIAL PRESSURE	NONE	NO LEAKAGE @ 20 PSF DIFFERENTIAL PRESSURE
NONE	NO MEASUREABLE INFILTRATION @ STATIC PRESSURE DIFFERENTIAL OF 6.24 PSF	NONE	NO MEASUREABLE INFILTRATION @ STATIC PRESSURE DIFFERENTIAL OF 6.24 PSF
UL-90	FM I-60, FM I-20 UL-90	NONE	UL-90
X	X	X	X

# Metal Roof Panels

1.	COMPANY NAME	BERRIDGE MANUFACTURING CO.	BERRIDGE MANUFACTURING CO.
2.	PRODUCT NAME	R-PANEL	M-PANEL
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	YES	YES
4A.	PANEL CONFIGURATION		
	Panel Description	CORRUGATED ROOF PANEL	CORRUGATED ROOF PANEL
4B.	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 (ga.)		
	Copper (ga.)		
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	40	40
4D.	PANEL WIDTHS (in.)	36	36
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	1:12	1:12
	Solid Decking (required, optional, or not used)	NOT USED	NOT USED
	Underlayment (type or NA)	NA	NA
6.	PANEL PROFILE		
	Vertical Leg		
	Trapezoidal	X	
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped	1-1/4 / E	3/4 / 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		
	Through-Fastened, Exposed	X	X
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip		
	Slip Clip	X	X
	Moveable Clip (designed allowable movement, inches)		
9.	SPECIALTY APPLICATIONS		
	Curved		
	Tapered		
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1989	1988
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	NO	NO
	Method of Distribution (distributors, direct)		
	Number of Regional Service Locations		
1009	For Sales Information, Contact:	D DOYLE 800/231-8127 G GILLUM 800/669-0	D DOYLE 800/231-8127 G GILLUM 800/669-0
	For Technical Information, Contact:	R MARKS 800/231-8127	R MARKS 800/231-8127
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)	NONE	NONE
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE	NONE
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	UL-90	NONE
16.	SEE APPENDIX IF CHECKED		

NA=not applicable

## Metal Roof Panels

BERRIDGE MANUFACTURING CO.	BERRIDGE MANUFACTURING CO.	BERRIDGE MANUFACTURING CO.	BUTLER ROOF DIVISION
BERMUDA ROOF	CURVED FLAT SEAM	S-TILE	MR-24
YES	YES	YES	YES
NO	NO	NO	YES
HORIZONTAL PLANK ROOF SYSTEM	CURVED FLAT SEAM	S-TILE	DOUBLE LOCK STANDING SEAM
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
24 / KYNAR 500, HYLAR 5000	24 / KYNAR 500, HYLAR 5000	24 / KYNAR 500, HYLAR 5000	22, 24 / KYNAR 500, HYLAR 5000
24 / KYNAR 500, HYLAR 5000	24 / KYNAR 500, HYLAR 5000	24 / KYNAR 500, HYLAR 5000	22, 24 / UNFINISHED
16			
40	40	40	60
	8	32-11/16	24
3:12	3:12	3:12	1/4:12
OPTIONAL	REQUIRED	OPTIONAL	NOT USED
30-LB. FELT OR EQUIVALENT	ICE/WATER GUARD	30-LB. FELT/ICE, WATER GUARD	NA
			X
HORIZONTAL PLANK		S-TILE	
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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
		E	
			2-3/4 / F
1 / F			
		X	
X			
	X		
			2-1/2
1991	1980	1993	1969
			> 1 BILLION
NO	YES	YES	YES
	DISTRIBUTORS, DIRECT	DISTRIBUTORS, DIRECT	
			6
D DOYLE 800/231-8127 G GILLUM 800/669-0	D DOYLE 800/231-8127 G GILLUM 800/669-0	D DOYLE 800/231-8127 G GILLUM 800/669-0	800/998-7663
R MARKS 800/231-8127	R MARKS 800/231-8127	R MARKS 800/231-8127	800/998-7663
NONE	NONE	NONE	NONE
NONE	NONE	NONE	NONE
UL-90	NONE	UL-90	FM I-60, FM I-90, FM I-120
			UL-90
X			X

# Metal Roof Panels

1.	COMPANY NAME	BUTLER ROOF DIVISION	BUTLER ROOF DIVISION
2.	PRODUCT NAME	VSR	CMR-24
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	YES	YES
4A.	PANEL CONFIGURATION		
	Panel Description	CRIMPED STANDING SEAM	DOUBLE LOCK STANDING SEAM
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)	22, 24 / KYNAR 500, HYLAR 5000	22, 24, / KYNAR 500, HYLAR 5000
	Stainless Steel (ga.)		
	Galvalume (ga.)	22, 24 / UNFINISHED	22, 24, / UNFINISHED
	Aluminized Steel (ga.)		
	Aluminum (ga.)		
	Copper (ga.)		
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	45	60
4D.	PANEL WIDTHS (in.)	16	24
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	1/2:12	1/4:12
	Solid Decking (required, optional, or not used)	OPTIONAL	REQUIRED
	Underlayment (type or NA)		
6.	PANEL PROFILE		
	Vertical Leg	X	
	Trapezoidal		X
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped		
	Crimped (45 degrees)	2 / F	
	Roll Formed (180 degrees)		2-3/4 / F
	Double Roll Formed (two 180 degrees)		
	Roll and Lock		
	Snap-on Cap		
	Snap Together		
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip	X	
	Slip Clip		
	Moveable Clip (designed allowable movement, inches)	2-1/2	2-1/2
9.	SPECIALTY APPLICATIONS		
	Curved		
	Tapered		
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1968	1974
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	YES	YES
	Method of Distribution (distributors, direct)		
	Number of Regional Service Locations	6	6
	For Sales Information, Contact:	800/998-7663	800/998-7663
	For Technical Information, Contact:	800/998-7663	800/998-7663
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)	NONE	NONE
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE	NONE
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	FM I-60, FM I-105, UL-90	FM I-60, FM I-90, FM I-120 UL-90
16.	SEE APPENDIX IF CHECKED	X	X

NA=not applicable

## Metal Roof Panels

BUTLER ROOF DIVISION	BUTLER ROOF DIVISION	BUTLER ROOF DIVISION	CURVELINE, INC.
BULTERIB II	GENESIS 360	GENESIS FASCIA	CURVELINE
NO	YES	YES	YES
YES	NO	NO	YES
ROLL FORMED MULTI-RIB THICKNESSES / FINISHES	DOUBLE LOCK STANDING SEAM THICKNESSES / FINISHES	INTERLOCKING THICKNESSES / FINISHES	CURVED TRAPEZOIDAL PANELS THICKNESSES / FINISHES
24, 26, 28 / KYNAR 500, HYLAR 5000	24 / KYNAR 500, HYLAR 5000	24 / KYNAR, HYLAR 5000	18, 26 / SILICON POLYESTER, CORRESTAN, DEXSTAR 850, KYNAR 500, UNFINISHED
			22, 26
24, 26, 28 / UNFINISHED	24 / UNFINISHED	24 / UNFINISHED	18, 26 / UNFINISHED
			18, 26 / UNFINISHED
			0.032, 0.040, 0.050 / UNFINISHED, ANODIZED
	24		
40	45	45	30
36	12, 16, 24	12, 16, 24	18, 24, 36, 40
1/2:12	1/2:12	3:12	1:12
NOT USED	REQUIRED	REQUIRED	NOT USED
NA			NA
	X	X	
X			X
			SNAP LOCK
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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1-1/2 / E		1 / N	
	1 / F		3/4, 1-1/2, 3, 4 / E
			3/4, 1-1/2, 3, 4 / E
			1-1/2, 3 / E
X			X
			X
	X	X	X
			X
			X
			X
			MITERED
1969	1987	1997	1985
YES	YES	YES	NO
6			
800/998-7663	800/998-7663	800/998-7663	T. HOLMAN. D. KLOCEK
800/998-7663	800/998-7663	800/998-7663	D. KLOCEK
			13.24 PSF/15 MIN = 0
			20 PSF = MAX 0.003 CFM/SQ FT
FM I-90 UL-90	UL-90	UL-90	NONE
	X	X	

# Metal Roof Panels

1.	COMPANY NAME	ENGLERT, INC.	ENGLERT, INC.
2.	PRODUCT NAME	SERIES 2500	SERIES 1000
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	YES	NO
4A.	PANEL CONFIGURATION		
	Panel Description	MECHANICAL SEAM	SNAP-LOCK
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)	22, 24 / KYNAR 550, HYLAR 5000, MILL	22, 24 / KYNAR 550, HYLAR 5000, MILL
	Stainless Steel (ga.)		
	Galvalume (ga.)	22, 24 / KYNAR 500, HYLAR 5000, MILL	22, 24 / KYNAR 500, HYLAR 5000, MILL
	Aluminized Steel (ga.)		
	Aluminum (ga.)	0.032, 0.040 / KYNAR 500, HYLAR 5000	0.032 / KYNAR 500, HYLAR 5000
	Copper (ga.)	16, 20	16
	Terne Metal (ga.)	26	
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	200	200
4D.	PANEL WIDTHS (in.)	12, 16, 18	12, 16, 20
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	1/4:12	3:12
	Solid Decking (required, optional, or not used)	OPTIONAL	REQUIRED
	Underlayment (type or NA)	30-LB. FELT	30-LB. FELT
6.	PANEL PROFILE		
	Vertical Leg	X	X
	Trapezoidal		
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped		
	Crimped (45 degrees)	2 / F	
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)		
	Roll and Lock		
	Snap-on Cap		
	Snap Together		1-1/2 / N
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip	X	X
	Slip Clip		
	Moveable Clip (designed allowable movement, inches)	X	
9.	SPECIALTY APPLICATIONS		
	Curved		
	Tapered		
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1993	1993
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	YES	NO
	Method of Distribution (distributors, direct)	DIRECT	DIRECT
	Number of Regional Service Locations	10	10
	For Sales Information, Contact:	K. CORCORAN	K. CORCORAN
	For Technical Information, Contact:	J. TRIPOD	J. TRIPOD
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)	15.1 PSF/15 MIN = 0	NONE
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	6.24 PSF/MAX .013 CFM/FT SQ	NONE
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	FM I-90, UL 90	UL-90
16.	SEE APPENDIX IF CHECKED		

NA=not applicable

## Metal Roof Panels

ENGLERT, INC.	ENGLERT, INC.	ENGLERT, INC.	FABRAL
SERIES 2000	SERIES 1100	SERIES 2400	SLIM SEAM
YES	YES	YES	YES
YES	NO	YES	YES
SNAP-LOCK	SNAP-LOCK	STANDING SEAM	INTEGRAL STANDING SEAM
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
22, 24 / KYNAR 550, HYLAR 5000, MILL	24, 26 / KYNAR 500, HYLAR 5000, MILL	22, 24 / KYNAR 500, HYLAR 5000, MILL	24 / KYNAR 500
22, 24 / KYNAR 500, HYLAR 5000, MILL	24, 26 / KYNAR 500, HYLAR 5000, MILL	22, 24 / KYNAR 500, HYLAR 5000, MILL	24 / KYNAR 500, UNPAINTED
0.032, 0.040 / KYNAR 500, HYLAR 5000	0.032 / KYNAR 500, HYLAR 5000	0.032, 0.040 / KYNAR 500, HYLAR 5000	0.032, 0.040 / KYNAR 500
16, 20		16, 20	16, 20
26			
200	200	200	40
12, 16, 18	16	12, 16, 18	12, 16
3:12	3:12	1/4:12	1:12
OPTIONAL	REQUIRED	OPTIONAL	OPTIONAL
30-LB. FELT	30-LB. FELT		30-LB. FELT
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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
		2 / N	
1-3/4 / F	1-1/4 / N		1-1/2 / F
X	X	X	X
		X	
			X
1991	1995	1990	1987
YES	NO	NO	NO
DIRECT	DIRECT	DIRECT	
10	10	10	
K. CORCORAN	K. CORCORAN	K. CORCORAN	L. REESE
J. TRIPOD	J. TRIPOD	J. TRIPOD	M. CROCHER, JR.
15.1 PSF/15 MIN = 0	NONE		NO PENETRATION UNDER 5 GAL-PER-HR SPARY @ 25 PSF PRESSURE DIFFERENTIAL
6.24 PSF/MAX .014 CFM/FT SQ	NONE		MAXIMUM OF 0.09 CU FT PER MINUTE PER SQ FT @ 1.57 PSF
UL-90	UL-90	UL-90	UL-90
			X



# Metal Roof Panels

1.	COMPANY NAME	FABRAL	FABRAL
2.	PRODUCT NAME	2-1/2 SSR	1-1/2 SSR
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	YES	YES
4A.	PANEL CONFIGURATION		
	Panel Description	STANDING SEAM ROOF PANEL	STANDING SEAM
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)	18, 20, 22, 24, 26 / UNFINISHED, S.P., KYNAR, VAP	24 / SUPRE ALURITE
	Stainless Steel (ga.)	18, 20, 22, 24, 26 / MILL	
	Galvalume (ga.)	18, 20, 22, 24, 26 / UNFINISHED, S.P., KYNAR, VAP	
	Aluminized Steel (ga.)	0.032, 0.04, 0.05 / PLAIN WITH STUCCO EMBOSSED, SP, KYNAR, WWO STUCCO EMB.	
	Aluminum (ga.)	16	
	Copper (ga.)		
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	42	40
4D.	PANEL WIDTHS (in.)	18	16
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	1/2:12	1:12
	Solid Decking (required, optional, or not used)	OPTIONAL	OPTIONAL
	Underlayment (type or NA)		
6.	PANEL PROFILE		
	Vertical Leg	X	X
	Trapezoidal		
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped		
	Crimped (45 degrees)		
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)		
	Roll and Lock		
	Snap-on Cap	2-1/2 / F	
	Snap Together		1-1/2 / F
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip		
	Slip Clip	X	X
	Moveable Clip (designed allowable movement, inches)		
9.	SPECIALTY APPLICATIONS		
	Curved		
	Tapered		
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1980	1987
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	NO	NO
	Method of Distribution (distributors, direct)		
	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 PENETRATION TEST RESULTS (results or none)	5 GAL/HR PER SQ FT PRESSURE DIFFERENTIAL 20 PSF 15 MINUTES WATER PENETRATION, NONE	NO PENETRATION AT 25 PSF
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	0.0 CU FT/MIN PER SQ FT W/20 PSF PRESSURE	0.09 @ 1.57 PSF
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	UL-90	UL-90
16.	SEE APPENDIX IF CHECKED	X	X

NA=not applicable

## Metal Roof Panels

FABRAL	FABRAL	FABRAL	FOLLANSBEE STEEL
STAND'N SEAM	3" SNAP-RIB-SSR	GRANDCURVE	TCS II
YES	NO	YES	YES
YES	YES	NO	NO
STRUCTURAL DOUBLE-LOCK STANDING SEAM	STANDING SEAM	SNAP-ON BATTEN SEAM	DOUBLE LOCK STANDING SEAM
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
22, 24 / KYNAR 500	24, 26 / SILICONIZED POLYESTER, KYNAR	22, 24 / KYNAR 500	
22 / KYNAR 500, UNPAINTED	24, 26 / SILICONIZED POLYESTER, KYNAR, PLAIN	22, 24 / KYNAR 500, UNPAINTED	
	24, 26 / PLAIN, S.P., KYNAR		
0.032, 0.040 / KYNAR 500		0.032, 0.040 / KYNAR 500	
16, 20		16, 20	
150	42		26, 28 / PREWEATHER WASH COAT ONLY
12, 16	24		35
			17, 21
1/2:12	1/2:12	1:12	3:12
OPTIONAL	NOT USED	REQUIRED	REQUIRED
30-LB. FELT	NA	30-LB. FELT	ROSIN SIZED PAPER
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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
2-1/2 / F			1 / N
	3 / F	1-3/4 , 2	
X		X	X
	2		X
		X	X
1987	1989	1997	1997
NO	NO	NO	NO
			DISTRIBUTORS
L. REESE	L. REESE	L. REESE	J. BONAR
M. CROUCHER, JR.	M. CROUCHER, JR.	M. CROUCHER, JR.	E. THOMAS
NO PENETRATION UNDER 5 GAL-PER-HR SPRAY @ 20 PSF DIFFERENTIAL	NONE		NONE
MAXIMUM OF 0.008 CU FT PER MIN PER SQ FT @ 20 PSF	NONE		NONE
UL-90	UL-60, UL-90		NONE
X	X	X	

# Metal Roof Panels

1.	COMPANY NAME	FOLLANSBEE STEEL	GALVAMET, INC.
2.	PRODUCT NAME	TERNE II	GALVALOK I
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	NO	YES
4A.	PANEL CONFIGURATION		
	Panel Description	DOUBLE LOCK STANDING SEAM	STANDING SEAM
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)		22, 24, 26 / BARE, MODIFIED POLYESTER, KYNAR 500
	Stainless Steel (ga.)		
	Galvalume (ga.)		
	Aluminized Steel (ga.)		
	Aluminum (ga.)		
	Copper (ga.)		
	Terne Metal (ga.)	28, 30 / ACRYLIC SHOP COAT	
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	35	45
4D.	PANEL WIDTHS (in.)	17, 21	12, 18, 24
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	3:12	1/4:12
	Solid Decking (required, optional, or not used)	REQUIRED	OPTIONAL
	Underlayment (type or NA)	ROSIN SIZED PAPER	RIGID BOARD, ISO, FLEXIBLE FIBERGLASS
6.	PANEL PROFILE		
	Vertical Leg	X	
	Trapezoidal		X
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped		
	Crimped (45 degrees)		
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)	1 / N	
	Roll and Lock		
	Snap-on Cap		
	Snap Together		3 / F
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip	X	X
	Slip Clip		X
	Moveable Clip (designed allowable movement, inches)	X	2-1/2
9.	SPECIALTY APPLICATIONS		
	Curved	X	
	Tapered		
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1998	1995
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	NO	
	Method of Distribution (distributors, direct)	DISTRIBUTORS	DIRECT
	Number of Regional Service Locations		22
	For Sales Information, Contact:	J. BONAR	J. GEORTNER
	For Technical Information, Contact:	E. THOMAS	J. GEORTNER
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)	NONE	NO LEAKAGE @ 4 PSF
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE	0.043 CFM; 0.029 CFM; 0.022 CFM @ 4 PSF
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	NONE	UL-90
16.	SEE APPENDIX IF CHECKED		

NA=not applicable

## Metal Roof Panels

GALVAMET INC.	GARLAND CO., INC, THE	INNOVATIVE METALS COMPANY, INC.	INNOVATIVE METALS COMPANY, INC.
GALVALOK II	R-MER LITE	SERIES 300 PANELS	SNAP-LOK STANDING SEAM
YES	YES	YES	YES
YES	NO	YES	YES
STANDING SEAM		STRUCTURAL STANDING SEAM	ARCHITECTURAL STANDING SEAM
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
22, 24, 26 / BARE, MODIFIED, POLYESTER, KYNAR 500			
		24 / UNFINISHED	
	30 / SILICONE MODIFIED POLYESTER FLUOROCARBON, PLASTISOL	22, 24 / KYNAR, UNFINISHED	22, 24 / KYNAR, UNFINISHED
		0.032, 0.040, 0.050 / KYNAR	0.032, 0.040 / KYNAR
		16, 20 / UNFINISHED	16, 20 / UNFINISHED
45	100	60	60
12, 18, 24	144	12, 16, 18	10, 12, 16, 18
1/4:12	1/4:12	1/2:12	1-1/2:12
OPTIONAL	REQUIRED	OPTIONAL	OPTIONAL
RIGID BOARD, ISO, FLEXIBLE FIBERGLASS		NA	30-LB. FELT
X		X	X
	FLAT SEAM	BATTEN OPTIONAL	
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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
	E		
3 / F			
		2-3/8 / F	
		2-3/8 / F	1-3/4 / F
	X		
2-1/2		X	X
	X	X	
	X	X	X
	X	FIELD ROLL	
1995	1980	1985	1991
	>100,000	100,000+	50,000+
	YES	YES	YES
DIRECT	DIRECT	DIRET	DIRECT
22		30	30
J. GEORTNER	D. SOKOL 800/321-9336	H.C. HOLLISTER	H.C. HOLLISTER
J. GEORTNER	M. HUBER 800/321-9336	G.R. JONES	G.R. JONES
NO LEAKAGE @ 4 PSF	NONE	0/20 PSF	0/20 PSF
0.043 CFM; 0.029 CFM; 0.022 CFM @ 4 PSF	NONE	.0036 SCFM/20 PSF	.0022 SCFM/20 PSF
UL-90	FM, UL I-60, UL I-90	UL-90, FM I-60, FM I-75, FM I-90 FM I-75, FM I-20, FM I-135	UL-90

# Metal Roof Panels

1.	COMPANY NAME	INNOVATIVE METALS COMPANY, INC.	INNOVATIVE METALS COMPANY, INC.
2.	PRODUCT NAME	PERM-LOC STANDING SEAM	SS PANEL SYSTEM
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	NO	NO
4A.	PANEL CONFIGURATION Panel Description	ARCHITECTURAL STANDING SEAM	ARCHITECTURAL STANDING SEAM
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES Thickneses / Finishes	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)		
	Stainless Steel (ga.)		
	Galvalume (ga.)	24 / KYNAR, UNFINISHED	24 / KYNAR, UNFINISHED
	Aluminized Steel (ga.)		
	Aluminum (ga.)	0.032 / KYNAR	0.032 / KYNAR
	Copper (ga.)	16, 20 / UNFINISHED	
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	45	45
4D.	PANEL WIDTHS (in.)	13, 21	14-1/2 , 22-1/2
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	3:12	3:12
	Solid Decking (required, optional, or not used)	REQUIRED	REQUIRED
	Underlayment (type or NA)	30-LB. FELT	30-LB. FELT
6.	PANEL PROFILE		
	Vertical Leg	X	X
	Trapezoidal		
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped		
	Crimped (45 degrees)		
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)		
	Roll and Lock		
	Snap-on Cap		1 / F
	Snap Together	7/8 / N	
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip		
	Slip Clip	X	X
	Moveable Clip (designed allowable movement, inches)		
9.	SPECIALTY APPLICATIONS		
	Curved	X	X
	Tapered	X	X
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1986	1981
	Number of Squares Installed	50,000+	50,000+
	Licensed Applicator Agreement (yes/no)	YES	YES
	Method of Distribution (distributors, direct)	DIRECT	DIRECT
	Number of Regional Service Locations	30	30
	For Sales Information, Contact:	H.C. HOLLISTER	H.C. HOLLISTER
	For Technical Information, Contact:	G.R. JONES	G.R. JONES
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)		0/20 PSF
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)		0/577/20 PSF
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	UL-90	UL-90
16.	SEE APPENDIX IF CHECKED		

NA=not applicable

## Metal Roof Panels

IPS INSULATED PANEL SYSTEMS	IPS INSULATED PANEL SYSTEMS	MBCI	MBCI
RWP ROOFING PANEL	SSP ROOFING PANEL	ULTRA-DEK 124	DOULBE-LOK 124
YES	YES	YES	YES
YES	YES	YES	YES
PRE-INSULATED ROLL-FORMED MULTI-RIB	PRE-INSULATED ROLL-FORMED	STANDING SEAM	STANDING SEAM
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
22, 24, 26 / KYNAR, SILICON POLYESTER	22, 24 / KYNAR 500, SILICON POLYESTER		
22, 24, 26 / KYNAR 500, SILICON POLYESTER UNFINISHED	22, 24, 26 / KYNAR 500, SILICON POLYESTER UNFINISHED	22, 24, 26 / BARE, SIGNATURE 200, 300 (PVDF), OR 300 METALLIC	22, 24, 26 / BARE, SIGNATURE 200, 300 (PVDF), OR 300 METALLIC
48	48	50 (STANDARD)	50 (STANDARD)
36	25	12, 18, 24	12, 18, 24
0.05	1/4:12	1/4:12	1/4:12
NOT USED	NOT USED	OPTIONAL	OPTIONAL
NA	NA		
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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1 -1/4			
	2-7/8 / E		3 / F
	2-7/8 / E	3 / F	
X			
	1/2	X X 2-1/2 (1-1/4 EACH DIRECTION)	X 2-1/2 (1-1/4 EACH DIRECTION)
X	X		
1981	1986	1983	1983
NO	NO	YES	YES
		DIRECT	DIRECT
		21	21
A. ANDREWS	A. ANDREWS	W. DICKINSON	W. DICKINSON
R. WILMER	R. WILMER	T. WOLFE	T. WOLFE
NO LEAKAGE @ 20 PSF DIFFERENTIAL PRESSURE	NO LEAKAGE @ 20 PSF DIFFERENTIAL PRESSURE	NO LEAKAGE @ 4 PSF	NO LEAKAGE @ 4 PSF
NO LEAKAGE @ 20 PSF DIFFERENTIAL PRESSURE	NO LEAKAGE @ 20 PSF DIFFERENTIAL PRESSURE	0.022 CFM/SQ FT @ 4 PSF	0.022 CFM/SQ FT @ 4 PSF
	UL-90	UL-90	UL-90

# Metal Roof Panels

1.	COMPANY NAME	MBCI	MBCI
2.	PRODUCT NAME	CRAFTSMAN SERIES HIGH BATTEN	CRAFTSMAN SERIES LARGE BATTEN
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	NO	NO
4A.	PANEL CONFIGURATION Panel Description	LOCK FORM SEPARATE BATTEN	LOCK FORM SEPARATE BATTEN
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES Thickneses / Finishes	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)		
	Stainless Steel (ga.)		
	Galvalume (ga.)	22, 24, 26 / BARE, COLOR BOND, SIGNATURE 200, 300 (PVDF), OR 300 METALLIC	22, 24, 26 / BARE, COLOR BOND, SIGNATURE 200, 300 (PVDF), OR 300 METALLIC
	Aluminized Steel (ga.)		
	Aluminum (ga.)		
	Copper (ga.)		
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	50 (STANDARD)	50 (STANDARD)
4D.	PANEL WIDTHS (in.)	12, 16-1/2	12, 16-1/2
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	3:12	3:12
	Solid Decking (required, optional, or not used)	REQUIRED	REQUIRED
	Underlayment (type or NA)	30-LB. FELT OR EQUIVALENT	30-LB. FELT OR EQUIVALENT
6.	PANEL PROFILE		
	Vertical Leg		
	Trapezoidal		
	Batten	X	X
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped		
	Crimped (45 degrees)		
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)		
	Roll and Lock		
	Snap-on Cap	2 / F	2 / F
	Snap Together		
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip		
	Slip Clip	X	X
	Moveable Clip (designed allowable movement, inches)		
9.	SPECIALTY APPLICATIONS		
	Curved		
	Tapered		
	Other	TRANSITION, ROOF TO FASCIA, MANSARD TO SOFFIT	TRANSITION, ROOF TO FASCIA, MANSARD TO SOFFIT
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1983	1983
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	NO	NO
	Method of Distribution (distributors, direct)	DIRECT	DIRECT
	Number of Regional Service Locations	21	21
	For Sales Information, Contact:	W. DICKINSON	W. DICKINSON
	For Technical Information, Contact:	T. WOLFE	T. WOLFE
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)	NO LEAKAGE @ 4 PSF	NONE
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	0.048 CFM/SQ FT @ 4 PSF; 0.045 CFM/SQ FT	NONE
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	UL-90	UL-90
16.	SEE APPENDIX IF CHECKED		

NA=not applicable

## Metal Roof Panels

MBCI	MBCI	MBCI	MBCI
CRAFTSMAN SERIES SMALL BATTEN	LOKSEAM	BATTENLOK	SLIMLINE
YES	YES	YES	YES
NO	YES	YES	NO
LOCK FORM SEPARATE BATTEN	STANDING SEAM	STANDING SEAM	1 X 16 INTERLOCKING ARCHITECTURAL
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
22, 24, 26 / BARE, COLOR BOND, SIGNATURE 200, 300 (PVDF), OR 300 METALLIC	22, 24, 26 / BARE, SIGNATURE 200, 300 (PVDF), OR 300 METALLIC	22, 24, 26 / BARE, SIGNATURE 200, 300 (PVDF), OR 300 METALLIC	24, 26, 29 / SMP, PVDF, SIGNATURE 200, 300, 300 METALLIC
50 (STANDRAD)	50 (STANDARD)	50 (STANDARD)	50
12, 16-1/2	12, 16, 18	12, 16	12, 16
3:12	3:12	1/4:12	3:12
REQUIRED	OPTIONAL	OPTIONAL	REQUIRED
30-LB. FELT OR EQUIVALENT	30-LB. FELT OR EQUIVALENT		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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
		2 / F	
1 / F			
	1-3/4 / F		1 / N
			X
	X	X	
X	X		
TRANSITION, ROOF TO FASCIA, MANSARD TO SOFFIT	TRANSITION, ROOF TO FASCIA, MANSARD TO SOFFIT		
1983	1991	1991	1989
NO	NO	YES	NO
DIRECT	DIRECT	DIRECT	DIRECT
21	21	21	21
W. DICKINSON	W. DICKINSON	W. DICKINSON	W. DICKINSON
T. WOLFE	T. WOLFE	T. WOLFE	T. WOLFE
NONE	NO LEAKAGE @ 1.57 PSF	NO LEAKAGE @ 1.57 PSF	NONE
NONE	0.0160 CFM/SQ FT @ 1.57 PSF	0.000 @ 1.57 PSF	NONE
UL-90	UL-90	UL-90	NONE



# Metal Roof Panels

1.	COMPANY NAME	MBCI	MBCI
2.	PRODUCT NAME	S-36	SUPERLOK
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	YES	YES
4A.	PANEL CONFIGURATION		
	Panel Description	1-1/2 X 12 X 36 EXPOSED	STANDING SEAM
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)		
	Stainless Steel (ga.)		
	Galvalume (ga.)	22, 24, 26, 29 / SMP, PVDF, BARE	22, 24, 26 / BARE, SIGNATURE 200
	Aluminized Steel (ga.)	SIGNATURE 200, 300, 300 METALLIC	300, METALLIC
	Aluminum (ga.)		
	Copper (ga.)		
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	55	50
4D.	PANEL WIDTHS (in.)	36	16, 12
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	1/2:12	1/2:12
	Solid Decking (required, optional, or not used)	OPTIONAL	OPTIONAL
	Underlayment (type or NA)	15-LB. FELT	
6.	PANEL PROFILE		
	Vertical Leg		X
	Trapezoidal		
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped		
	Crimped (45 degrees)	1/2 / F	
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)		
	Roll and Lock		2 / F
	Snap-on Cap		
	Snap Together		
8.	FASTENING METHOD		
	Through-Fastened, Exposed	X	
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip		X
	Slip Clip		X
	Moveable Clip (designed allowable movement, inches)		2" (1" EACH DIRECTION)
9.	SPECIALTY APPLICATIONS		
	Curved	X	
	Tapered		
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1991	1993
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	NO	YES
	Method of Distribution (distributors, direct)	DIRECT	DIRECT
	Number of Regional Service Locations	21	2
	For Sales Information, Contact:	W. DICKINSON	W. DICKINSON
	For Technical Information, Contact:	T. WOLFE	T. WOLFE
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)	NONE	NONE
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE	0.007 @ 6.24 PSF
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	UL-90	
16.	SEE APPENDIX IF CHECKED		

NA=not applicable

## Metal Roof Panels

MBCI	MBCI	MCELROY METAL INC.	MCELROY METAL INC.
PBR-36	7.2	MASTERLOK-90	MEDALLION I & II
YES	YES	YES	YES
YES	YES	YES	NO
1-1/4 X 12 X 36 EXPOSED	1-1/2 X 7.2 X 36	SNAP-ON STANDING SEAM	BATTEN CAP
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
24, 26, 29 / SMP, UNFINISHED			
26 / BARE, SMP, PVDF, SIGNATURE 200, 300	22, 24, 26, 29 / SIGNATURE 200, 300, 300 METALLIC	22, 24, 26 / KYNAR, UNFINISHED	22, 24 / KYNAR, UNFINISHED
56	55	50	40
36	36	12, 18, 24	12, 14, 16, 18, 20
1/2:12	1/2:12	1/4:12	0.133333333
OPTIONAL	OPTIONAL	OPTIONAL	REQUIRED
15-LB. FELT		30-LB. FELT	30-LB. FELT
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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1-1/4 / F			
			1, 1-1/2 / N
		3 / F	
X	X		
			X
		X	
		X	X
1977	1991	1986	1990
NO	NO	NO	NO
DIRECT	DIRECT	DISTRIBUTORS / DIRECT	DISTRIBUTORS / DIRECT
21	21	16	16
W. DICKINSON	W. DICKINSON	K. GIESEKE	K. GIESEKE
T. WOLFE	T. WOLFE	E. OSTEN	E. OSTEN
NONE	NO PENETRATION AT 12 PSF W/ 5 GAL/HR (8"/HR)	NO LEAKAGE	NO LEAKAGE
NONE	YES	0.02 @ 1.57 PSF	0.005 @ 1.57 PSF
UL-90	UL-90	UL-90	UL-90

## 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
4A.	PANEL CONFIGURATION	OVERLAPPING	OVERLAPPING
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)	18, 20 / KYNAR, UNFINISHED	
	Stainless Steel (ga.)		
	Galvalume (ga.)	22, 24, 26	22, 24, 26, 29 / KYNAR, SILICONIZED POLYESTER, UNFINISHED
	Aluminized Steel (ga.)		
	Aluminum (ga.)		0.024, 0.032 / MILL, STUCCO EMBOSSED
	Copper (ga.)		
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	40	49
4D.	PANEL WIDTHS (in.)	36	36
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	0.05	0.05
	Solid Decking (required, optional, or not used)	OPTIONAL	OPTIONAL
	Underlayment (type or NA)	30-LB. FELT	30-LB. FELT
6.	PANEL PROFILE		
	Vertical Leg		
	Trapezoidal	X	X
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	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		
	Through-Fastened, Exposed	X	X
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip		
	Slip Clip		
	Moveable Clip (designed allowable movement, inches)		
9.	SPECIALTY APPLICATIONS		
	Curved		
	Tapered		
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1990	1965
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	NO	NO
	Method of Distribution (distributors, direct)	DISTRIBUTORS / DIRECT	DISTRIBUTORS / DIRECT
	Number of Regional Service Locations	16	16
	For Sales Information, Contact:	K. GIESEKE	K. GIESEKE
	For Technical Information, Contact:	E. OSTEN	E. OSTEN
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)	NONE	NONE
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE	NONE
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	NONE	UL-90
16.	SEE APPENDIX IF CHECKED		

NA=not applicable

## Metal Roof Panels

MCELROY METAL INC.	MCELROY METAL INC.	MCELROY METAL INC.	MCELROY METAL INC.
MAX-RIB	MULTI-COR	M-COR	MEDALLION-LOK
YES	NO	NO	YES
YES	YES	YES	YES
OVERLAPPING	OVERLAPPING		
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
29 / KYNAR, UNFINISHED		29 / UNFINISHED	
22, 24, 26, 29 / KYNAR, SILICONIZED POLYESTER, UNFINISHED	22, 24, 26 / KYNAR, UNFINISHED	22, 24, 26, 29 / KYNAR, UNFINISHED	22, 24 / KYNAR 500, UNFINISHED
0.017, 0.024 / MILL, STUCCO EMBOSSED	0.024, 0.032 / MILL, STUCCO EMBOSSED	0.024, 0.032 / MILL, STUCCO EMBOSSED	
40	40	40	40
38	29-1/4, 32	34-3/4, 37-3/8	16, 18
0.091666667	0.05	0.091666667	0.133333333
OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
30-LB. FELT	30-LB. FELT.	30-LB. FELT	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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
3/4 / E		1/2 / E	
	7/8 / E		
			1-3/4 / F
X	X	X	
			X
1976	1976	1983	1993
NO	NO	NO	NO
DISTRIBUTORS / DIRECT	DISTRIBUTORS / DIRECT	DISTRIBUTORS / DIRECT	DISTRIBUTORS / DIRECT
16	16	16	16
K. GIESEKE	K. GIESEKE	K. GIESEKE	K. GIESEKE
E. OSTEN	E. OSTEN	E. OSTEN	E. OSTEN
NONE	NONE	NONE	NO LEAKAGE
NONE	NONE	NONE	.57 @ 1.57 PSF
NONE	NONE	NONE	UL-90

# Metal Roof Panels

1.	COMPANY NAME	MERCHANT & EVANS, INC.	MERCHANT & EVANS, INC.
2.	PRODUCT NAME	INTERLOCK-18	ZIP RIB
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	YES	YES
4A.	PANEL CONFIGURATION		
	Panel Description	INTERLOCKING	INTERLOCKING, MECHANICALLY SEAMED
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)	22, 24 / KYNAR 500	18, 20, 22, 24 / KYNAR 500
	Stainless Steel (ga.)		24 / MILL
	Galvalume (ga.)	22, 24 / KYNAR 500, MILL	18, 20, 22, 24 / KYNAR 500, MILL
	Aluminized Steel (ga.)	22, 24 / KYNAR 500, MILL	18, 20, 22, 24 / KYNAR 500, MILL
	Aluminum (ga.)	0.032, 0.040 / KYNAR 500, MILL, ANODIZED	0.032, 0.040, 0.050 / KYNAR 500, MILL, ANODIZED
	Copper (ga.)	16, 20 / MILL	16, 20 / MILL
	Terne Metal (ga.)		
	Zinc (ga.)		0.027 / MILL
4C.	MAXIMUM LENGTH (lf.)	60	105
4D.	PANEL WIDTHS (in.)	10, 18	12, 16
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	0.05	1/4:12
	Solid Decking (required, optional, or not used)	OPTIONAL	OPTIONAL
	Underlayment (type or NA)	NA	NA
6.	PANEL PROFILE		
	Vertical Leg	X	X
	Trapezoidal		
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped		
	Crimped (45 degrees)		
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)		
	Roll and Lock	2 / F	2-1/2 / F
	Snap-on Cap		
	Snap Together		
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip	X	X
	Slip Clip	X	X
	Moveable Clip (designed allowable movement, inches)	UNLIMITED	39483
9.	SPECIALTY APPLICATIONS		
	Curved		X
	Tapered	X	X
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1991	1964
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	NO	YES
	Method of Distribution (distributors, direct)		
	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 PENETRATION TEST RESULTS (results or none)	NO PENETRATION @ 15 PSF FOR 15 MINUTES	NO PENETRATION @ 15 PSF FOR 15 MINUTES
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	0.005 CFM/SQ FT @ 6.24 PSF DIFFERENTIAL	0.005 CFM/SQ FT @ 6.24 PSF DIFFERENTIAL
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	UL-90	UL-90
16.	SEE APPENDIX IF CHECKED	X	X

NA=not applicable

## Metal Roof Panels

MERCHANT & EVANS, INC.	MERCHANT & EVANS, INC.	MERCHANT & EVANS, INC.	MERCHANT & EVANS, INC.
B 1515 R	#114 R	# 305	# 306
YES	YES	YES	YES
NO	NO	NO	NO
BATTEN SEAM	INTEGRAL BATTEN SEAM	INTEGRAL STANDING SEAM	BATTEN SEAM
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
22, 24 / KYNAR 500	22, 24 / KYNAR 500	22, 24 / KYNAR 500	22, 24 / KYNAR 500
22, 24 / KYNAR 500	22, 24 / KYNAR 500	22, 24 / KYNAR 500	22, 24 / KYNAR 500, MILL
22, 24 / KYNAR 500	22, 24 / KYNAR 500	22, 24 / KYNAR 500	22, 24 / KYNAR 500
0.032, 0.040 / KYNAR 500, MILL, ANODIZED	0.032, 0.040 / 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	16, 20 / MILL
0.027 / MILL	0.027 / MILL	0.027 / MILL	0.027 / MILL
60	60	60	45
11, 15, 18, 22	9-3/4, 13, 17	12, 15-1/4, 19-1/4	10-1/8, 14, 17-1/2, 21-1/2, 22
2:12	0.091666667	0.091666667	0.091666667
REQUIRED	REQUIRED	REQUIRED	REQUIRED
30-LB. FELT OR EQUIVALENT	30-LB. FELT OR EQUIVALENT	30-LB. FELT OR EQUIVALENT	30-LB. FLET OR EQUIVALENT
		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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
1-1/2 / N			1, 1-1/4, 1-1/2, 2 / F
	1-1/4 / N	1-3/8 / F	
			X
X	X	X	
X			X
X			X
1971	1968	1984	1989
NO	NO	NO	NO
D. BROWN	D. BROWN	D. BROWN	D. BROWN
T. THOMPSON	T. THOMPSON	T. THOMPSON	T. THOMPSON
NONE	NONE	ATION @ 15 PSF	NO PENETRATION @ 15 PSF FOR 15 MINUTES
NONE	NONE	0 CFM @ 6.24 PSF	0 CFM @ 6.24 PSF
NONE	NONE	UL-90	UL-90

# Metal Roof Panels

1.	COMPANY NAME	MERCHANT & EVANS, INC.	METAL SALES MANUFACTURING CORP.
2.	PRODUCT NAME	DOME ROOF SYSTEM (BD 1520)	MAGNA-LOC
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	NO	YES
4A.	PANEL CONFIGURATION Panel Description	BATTEN SEAM	STANDING SEAM
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES Galvanized Steel (ga.)	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Stainless Steel (ga.)		
	Galvalume (ga.)		22, 24 / KYNAR 500 (PVF2), BARE
	Aluminized Steel (ga.)		
	Aluminum (ga.)	0.032, 0.040 / KYNAR 500, MILL, ANODIZED	
	Copper (ga.)	16, 20 / MILL	
	Terne Metal (ga.)		
	Zinc (ga.)	0.027 / MILL	
4C.	MAXIMUM LENGTH (lf.)	45	45
4D.	PANEL WIDTHS (in.)	UP TO 46-1/2	16, 18
5.	SYSTEMS REQUIREMENTS Minimum Slope (in. per ft.)	1/4:12	1/2:12
	Solid Decking (required, optional, or not used)	REQUIRED	OPTIONAL
	Underlayment (type or NA)	30-LB. FELT OR EQUIVALENT	
6.	PANEL PROFILE Vertical Leg		X
	Trapezoidal		
	Batten	X	
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & SEALANT  Overlapped	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
	Crimped (45 degrees)		2 / F
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)		
	Roll and Lock		
	Snap-on Cap	2 / N	
	Snap Together		
8.	FASTENING METHOD Through-Fastened, Exposed		
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip		
	Slip Clip	X	
	Moveable Clip (designed allowable movement, inches)		2
9.	SPECIALTY APPLICATIONS Curved	X	
	Tapered	X	
	Other	DOME	
10.	MANUFACTURER/PRODUCT DATA Year of First Commercial Use	1990	1998
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	NO	YES
	Method of Distribution (distributors, direct)		DIRECT
	Number of Regional Service Locations		12
	For Sales Information, Contact:	D. BROWN	D. CUNNINGHAM
	For Technical Information, Contact:	T. THOMPSON	D. KIRCHGESSNER
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)	NO PENETRATION @ 15 PSF FOR 15 MINUTES	NO LEAKAGE
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE	0.060 CFM/SQ FT
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	UL-90	FM, UL-90
16.	SEE APPENDIX IF CHECKED		

NA=not applicable

## Metal Roof Panels

METAL SALES MANUFACTURING CORP.	PETERSEN ALUMINUM CORP.	PETERSEN ALUMINUM CORP.	PETERSEN ALUMINUM CORP.
SEAM-LOC 24	INTEGRAL BATTEN	REDI-R00F STANDING SEAM	SNAP-ON STANDING SEAM
YES	YES	YES	YES
YES	NO	NO	NO
STANDING SEAM	BATTEN STANDING SEAM	STANDING SEAM	STANDING SEAM
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	24 / KYNAR 500	24 / KYNAR 500	24 / KYNAR 500
22, 24 / KYNAR 500 (PVF2), BARE			
	0.032 / KYNAR 500	0.032 / KYNAR 500	0.032 / KYNAR 500
45	45	45	45
24	11, 18, 19	12, 18, 20	12, 16, 18, 20
1/4:12	3:12	3:12	3:12
OPTIONAL	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; 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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
2-11/16 / F			
	1-1/2 / N		
		1-1/2 / N	
	X	X	X
2			
		X	X
			X
1979	1979	1990	1979
	> 100,000	> 100,000	> 100,000
YES	NO	NO	NO
DIRECT	DISTRIBUTORS, DIRECT	DISTRIBUTORS, DIRECT	DISTRIBUTORS, DIRECT
12	4	4	4
D. CUNNINGHAM	800/323-1960	800/323-1960	800/323-1960
D. KIRSCGESSNER	800/323-1960	800/323-1960	800/323-1960
NO LEAKAGE	NO LEAKAGE @ 12 PSF	NO LEAKAGE @ 12 PSF	NO LEAKAGE @ 12 PSF
0.060 CFM/SQ FT	0.008 CFM/SQ FT @ 1.57 PSF	0.004 CFM/SQ FT @ 1.57 PSF	0.006 CFM/SQ FT @ 1.57 PSF
UL-90	UL-90	UL-90	UL-90



# Metal Roof Panels

1.	COMPANY NAME	PETERSEN ALUMINUM CORP.	PETERSEN ALUMINUM CORP.
2.	PRODUCT NAME	HIGH SNAP-ON \ STANDING SEAM	INTEGRAL STANDING SEAM
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	NO	NO
4A.	PANEL CONFIGURATION Panel Description	STANDING SEAM	STANDING SEAM
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES Thickneses / Finishes	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)	24 / KYNAR 500	24 / KYNAR 500
	Stainless Steel (ga.)		
	Galvalume (ga.)		
	Aluminized Steel (ga.)		
	Aluminum (ga.)	0.032 / KYNAR 500	0.032 / KYNAR 500
	Copper (ga.)		
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	45	45
4D.	PANEL WIDTHS (in.)	11, 18, 19	11, 18, 19
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	3:12	3:12
	Solid Decking (required, optional, or not used)	REQUIRED	REQUIRED
	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 (inches) & 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
	Overlapped		
	Crimped (45 degrees)		
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)		
	Roll and Lock		1-1/2 / N
	Snap-on Cap	1-1/2 / N	
	Snap Together		
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed		
	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		
	Year of First Commercial Use	1979	1979
	Number of Squares Installed	> 100,000	> 100,000
	Licensed Applicator Agreement (yes/no)	NO	NO
	Method of Distribution (distributors, direct)	DISTRIBUTORS, DIRECT	DISTRIBUTORS, DIRECT
	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 PENETRATION TEST RESULTS (results or none)	NO LEAKAGE @ 12 PSF	NO LEAKAGE @ 12 PSF
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	0.005 CFM/SQ FT @ 1.57 PSF	0.02 CFM/SQ FT @ 1.57 PSF
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	UL-90	UL-90
16.	SEE APPENDIX IF CHECKED		

NA=not applicable

## Metal Roof Panels

PETERSEN ALUMINUM CORP.	PETERSEN ALUMINUM CORP.	PETERSEN ALUMINUM CORP.	STEELOX ROOF SYSTEMS
SNAP-ON BATTEN	REDI-ROOF BATTEN	SNAP-CLAD	LRX (STEELOX LOCK RIB)
YES	YES	YES	YES
NO	NO	YES	YES
BATTEN STANDING SEAM	BATTEN STANDING SEAM	STANDING SEAM	VERTICAL RIB STANDING SEAM
THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
24 / KYNAR 500	24 / KYNAR 500	22, 24 / KYNAR 500	
			22, 24 / 70% KYNAR, UNPAINTED
0.032 / KYNAR 500	0.032 / KYNAR 500	0.032 / KYNAR 500	
45	45	45	65
11, 12, 18	12	10, 12, 16, 18	16
3:12	3:12	2:12	1/4:12
REQUIRED	REQUIRED	OPTIONAL	OPTIONAL
30-LB. FELT	30-LB. FELT	30-LB. FELT	30-LB. FELT
	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	HEIGHT(S) (inches) / SEAM SEALANT: F= FACTORY APPLIED; E = FIELD APPLIED; N = NONE
			2 / F
1-1/2 / N	1-1/2 / N		
		1-3/4 / F	
			X
			X
X	X	X	X
			2
X	X		X
1979	1989	1993	1934
> 100,000	> 100,000	> 100,000	2 BILLION
NO	NO	NO	YES
DISTRIBUTORS, DIRECT	DISTRIBUTORS, DIRECT	DISTRIBUTORS, DIRECT	
4			
800/323-1960	800/323-1960	800/323-1960	T. COLBERT 513/573-5200
800/323-1960	800/323-1960	800/323-1960	M. ADE 513573-5200
NO LEAKAGE @ 12 PSF	NO LEAKAGE @ 12 PSF	NO LEAKAGE @ 12 PSF	NO INFILTRATION
0.02 CFM/SQ FT @ 1.57 PSF	0.03 CFM/SQ FT @ 1.57 PSF	0.04 CFM/SQ FT @ 1.57 PSF	0.012 CFM/SQ FT @ 6.24 PSF
UL-90	UL-90	UL-90	UL, CLASS 90, FM I-60, FM I-120

# Metal Roof Panels

1.	COMPANY NAME	STEELOX ROOF SYSTEMS	UNITED STEEL DECK, INC.
2.	PRODUCT NAME	SENTRY XTR	UNI-LOK
3.	ARCHITECTURAL APPLICATIONS (yes/no)	NO	YES
	STRUCTURAL APPLICATIONS (yes/no)	YES	YES
4A.	PANEL CONFIGURATION		
	Panel Description	STANDING SEAM	SNAP-TOGETHER STANDING SEAM
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)		22, 24, 26 / SILICONIZED POLYESTER, FLUOROCARBON, PLASTISOL
	Stainless Steel (ga.)		
	Galvalume (ga.)	22, 24 / 70% KYNAR, UNPAINTED	22, 24, 26 / UNFINISHED
	Aluminized Steel (ga.)		22, 24, 26 / UNFINISHED
	Aluminum (ga.)		
	Copper (ga.)		
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)		60
4D.	PANEL WIDTHS (in.)	24	24
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	1/2:12	1/4:12
	Solid Decking (required, optional, or not used)		OPTIONAL
	Underlayment (type or NA)		30-LB. FELT OR EQUIVALENT
6.	PANEL PROFILE		
	Vertical Leg		
	Trapezoidal	X	X
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped		
	Crimped (45 degrees)	F	
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)		
	Roll and Lock		
	Snap-on Cap		
	Snap Together		3 / F
8.	FASTENING METHOD		
	Through-Fastened, Exposed		
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip	X	X
	Slip Clip		X
	Moveable Clip (designed allowable movement, inches)	2	2
9.	SPECIALTY APPLICATIONS		
	Curved		
	Tapered		
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1997	1984
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	YES	NO
	Method of Distribution (distributors, direct)		
	Number of Regional Service Locations		
	For Sales Information, Contact:	T. COLBERT 513/573-5200	908/277-1617
	For Technical Information, Contact:	M. ADE 513/573-5200	J. MATTINGLY
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)		NONE
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)		NONE
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN		UL-90
16.	SEE APPENDIX IF CHECKED		

NA=not applicable

## Metal Roof Panels

UNITED STEEL DECK, INC.	UNITED STEEL DECK, INC.	UNITED STEEL DECK, INC.	UNITED STEEL DECK, INC.
UNILINE RP	UNIRIB C36	SS18 STANDING SEAM	UTILITY RIB
YES	YES	YES	YES
YES	YES	YES	YES
EXTERIOR EXPOSED FASTENER	EXTERIOR EXPOSED FASTENER	EXTERIOR EXPOSED FASTENER	EXTERIOR EXPOSED FASTENER
THICKNESSES / FINISHES	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	24, 26 / 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	40
36	36	18	30
1:12	1:12	1/2:12	3:12
OPTIONAL	OPTIONAL	OPTIONAL	OPTIONAL
30-LB. FELT OR EQUIVALENT	30-LB. FELT OR EQUIVALENT	30-LB. FELT OR EQUIVALENT	30-LB. FELT OR EQUIVALENT
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	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	9/16 / E
X	X	X	X
1978	1978	1987	1978
NO	NO	NO	NO
908/277-1617	908/277-1617	908/277-1617	908/277-1617
J. MATTINGLY	J. MATTINGLY	J. MATTINGLY	J. MATTINGLY
NONE	NO LEAKAGE @ 6.24 PSF	NONE	NONE
NONE	0.012 CFM/SQ FT @ 1.57 PSF	NONE	NONE
UL-90	NONE	NONE	NONE

# Metal Roof Panels

1.	COMPANY NAME	UNITED STEEL DECK, INC.	VINCENT METAL GOODS
2.	PRODUCT NAME	U230	COLORKLAD SYSTEM 1
3.	ARCHITECTURAL APPLICATIONS (yes/no)	YES	YES
	STRUCTURAL APPLICATIONS (yes/no)	YES	NO
4A.	PANEL CONFIGURATION		
	Panel Description	EXTERIOR EXPOSED FASTENER	SNAP SEAM STANDING SEAM
4B.	PANEL MATERIALS, THICKNESSES, AND FINISHES	THICKNESSES / FINISHES	THICKNESSES / FINISHES
	Galvanized Steel (ga.)	18, 20, 22, 24 / SILICONIZED POLYESTER FLUOROCARBON, PLASTISOL	24 / KYNAR 500, UNFINISHED
	Stainless Steel (ga.)		24 / UNFINISHED
	Galvalume (ga.)	22, 24 / UNFINISHED	
	Aluminized Steel (ga.)		
	Aluminum (ga.)	0.032, 0.04, 0.05 / UNFINISHED	0.032 / KYNAR 500
	Copper (ga.)		16
	Terne Metal (ga.)		
	Zinc (ga.)		
4C.	MAXIMUM LENGTH (lf.)	40	40
4D.	PANEL WIDTHS (in.)	30	12, 16, 18, 22
5.	SYSTEMS REQUIREMENTS		
	Minimum Slope (in. per ft.)	1:12	3:12
	Solid Decking (required, optional, or not used)	OPTIONAL	REQUIRED
	Underlayment (type or NA)	30-LB. FELT OR EQUIVALENT	30-LB. FELT OR EQUIVALENT
6.	PANEL PROFILE		
	Vertical Leg		X
	Trapezoidal	X	
	Batten		
	Other (specify)		
7.	SEAM PROCESSING: HEIGHT (inches) & 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
	Overlapped	2 / E	
	Crimped (45 degrees)		
	Roll Formed (180 degrees)		
	Double Roll Formed (two 180 degrees)		
	Roll and Lock		
	Snap-on Cap		1, 1-1/2 / E
	Snap Together		
8.	FASTENING METHOD		
	Through-Fastened, Exposed	X	
	Through-Fastened, Concealed		
	CLIP, CONCEALED		
	Fixed Clip		X
	Slip Clip		
	Moveable Clip (designed allowable movement, inches)		
9.	SPECIALTY APPLICATIONS		
	Curved		
	Tapered		X
	Other		
10.	MANUFACTURER/PRODUCT DATA		
	Year of First Commercial Use	1989	1970
	Number of Squares Installed		
	Licensed Applicator Agreement (yes/no)	NO	NO
	Method of Distribution (distributors, direct)		DISTRIBUTORS
	Number of Regional Service Locations		45
	For Sales Information, Contact:	908/277-1617	R. OEHRM 612/717-9000
	For Technical Information, Contact:	J. MATTINGLY	R. OEHRM 612/717-9000
11.	ASTM E331 WATER PENETRATION TEST RESULTS (results or none)	NONE	NONE
12.	ASTM E 1646 WATER PENETRATION TEST RESULTS (results or none)		
13.	ASTM E283 AIR INFILTRATION TEST RESULTS (results or none)	NONE	NONE
14.	ASTM E 1680 (AIR INFILTRATION TEST RESULTS (results or none)		
15.	FM/UL WIND UPLIFT RATINGS FOR ANY SPECIMEN	NONE	NONE
16.	SEE APPENDIX IF CHECKED		

NA=not applicable

## Appendix, Roof Coverings

### ALLIED SIGNAL

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

### AMERICAN BUILDING ROOFING AND ARCHITECTURAL PRODUCTS

All American Building Company's roof systems are available in a paragraph Premium 70 Plus paint finish, which as 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 INTERNATIONAL, INC.

Atas International, Inc. 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 International, Inc. 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 unoxidized 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, "manufactures" 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 and 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 unusual 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.

Elastomeric interply adhesive meets ASTM 6152-97.

### BERRIDGE MANUFACTURING CO.

Berridge Tee-Panel, High Seam Tee-Panel, 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.

### BITEC, INC.

Bitec Mineral Design MDA and MDS are APP and SBS pattern design products available in eight different designs with a variety of color combinations. MDA, an APP product, can be used when APM-4T is used for torch application. MDS, an SBS product, can be used when SPM-4H is used and may be applied with hot asphalt or SBS modified cold adhesive.

### BONDCOTE ROOFING SYSTEMS

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.

BondCote FleeceBond 1000 membrane combines the proven 350 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 fastened. 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.

Genesis7 360 is an architectural panel to be used primarily over wood or metal deck. It is a weathertight standing seam panel system utilizing a APittsburgh= double-lock seam. Genesis 360 can be installed on slopes as low as 1/2:12" with a weathertightness warranty offered. Clip spacing to 32". SMACNA details available.

## **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 AH+...≡). Refer to Celotex literature for details.

## **CERTAINTEED ROOFING PRODUCTS GROUP – COMMERICAL ROOFING**

Eastern Region: 843/744-7451

Central Region: 972/580-5604

Western Region: 510/606-7434

## **CONKLIN COMPANY, INC.**

Benchmark, Rapid Roof III and Polytuff II coating systems are recommended over spray foam systems. Only Benchmark is approved when applications require compliance with ICBO, Factory Mutual and Metro Dade County Florida. Additionally, Hy-Crown (CSPE) single-ply is ICBO recognized, FM approved and classified by Underwriters Laboratories. All products comply with EnergyStar Roof Products Program guidelines. For specific details contact Conklin Building Products Division.

## **COOLEY ENGINEERED MEMBRANES, INC.**

Fiberboard may be used for certain applications. Contact CEMI 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 Don Clark at 302/652-2740, Fax 302/652-0145.

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 a wide range of colors. All the Dibiten APP

products are torch applied. Dibiten modified bitumen membranes are well suited for most types of roofing and 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 303-978-2867 from outside these areas.

## **ERSYSTEMS**

ERSystems manufactures and distributes a complete line of elastomeric roof systems.

**Single Ply:** The single-ply systems include Permaweld CPA heat-welded and EPDM membrane roof systems, accessories, and sealants. PolyBond EPDM and Permaweld CPA Fleece Back Membranes have a non-woven polyester fleece backing making each ideal for cushioning irregular surfaces. PermaVac EPDM and CPA are vacuum adhesion methods of fastening single-ply membranes to an airtight substrate utilizing vacuum air vents and air distribution strips.

**The Metal Roof Restoration System** is designed to renew a metal roof - protect it from rusting, waterproof all seams, fasteners and roof penetrations without fabric or tapes, and restore the metallic finish for long term preservation. Available as a water-based acrylic system or polyurethane system.

**Spray-Applied Polyurethane Foam:** The ER Foam System consists of sprayed-in-place polyurethane foam used in conjunction with ERSystems elastomeric coatings. 2.7# and 3.0# roofing foam and 2.0# residential foam is available. ER Foam is typified with high density high compressive foam with good yield and smooth texture. Foam is protected for the UV and weather with acrylic elastomers (Eraguard 1000), polyurethane elastomers (Erathane 300), or silicone elastomers (Eraguard 4000).

## **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. (500) 286-7521, or Cedar City, Utah (435) 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.**

Gaco Western offers 16 different elastomeric coatings to suite the unique requirements of any roof.

GacoFlex specialty coatings include: A-62, a water-based acrylic/latex for foam, concrete and plywood roofs; H-25 hypalon for concrete and plywood roofing; S-1000; UA-60 aliphatic urethane; E-5325 rust inhibiting epoxy primer for metal roofs; UB-7050 fast-set urethane; UA-7000 aliphatic urethane. Gaco Western also offers specialty SPF: PolyFoam 251/303 which cures to heavy density rigid polyurethane insulation; PolyFoam 275 which cures to a medium density rigid insulation; PolyFoam 190 for use where ambient temperature is below 55F; PolyFoam 240 – two part SPF adheres insulation board and felt-backed single-ply to a variety of substrates.

## **G. E. SILICONES division of 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.

## **ICA, INC.**

ICA, Inc. provides roofing materials and systems to roofing contractors who have met specified criteria for financial and professional stability and integrity, and therefore, qualify to participate in ICA's building owner referral program. ICA roofing materials are manufactured to ICA's stringent



quality specifications and are available exclusively to ICA approved contractors. It is the goal of ICA to control both the level of material quality and installation workmanship in order to offer the highest possible quality roofing system to the building owner community.

### **IMPERITALIA 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.

### **INTERCONTINENTAL COATINGS CORP. (I-CON)**

Warranties for these products are currently being revised, contact manufacturer for information.

### **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 Koppers 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 – DIV OF THE HENRY CO.**

**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 dead 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.

For sales information, contact Walt Mullen at 610/933-8888 or 800/523-0268. For technical information in Canada, contact Don Taylor at 905/890-4800 or 800/387-9598, Fax 905/890-4866. For technical information in the United States, contact Skip Leonard at 972/484-4855. The website [www.henry.com](http://www.henry.com) can also be used to contact all of Henry's divisions.

### **NATIONAL COATINGS CORP.**

Acryshield complies with ASTM D 6083-97A, *Standard Specification For Liquid Applied Acrylic Coating Used in Roofing*. Acryflex complies with both ASTM C920-98,

*Standard Specification for Elastomeric Joint Sealants* and Federal Specification TT-S-00230C, Class A.

## **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 Roof Systems line of Derbigum APP and Permax SBS polymer modified bitumen roofing products and their application is provided in the Derbigum 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.

## **PLASTIC COATINGS CORPORATION**

Jaxsan products include Jaxsan 600, an acrylic elastomer fibered for extra toughness and to enhance film build potential without mudcracking. Jaxsan 607 is not fibered and may be applied by smaller spray pumps. Plastic Coatings Corp. offers five and ten year warranties. Foam primers and metal primers are also available for use in conjunction with SPF. Call 1-800-279-9151 for details.

## **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 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 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.

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 approved insulations and substrates provide the code 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 Roofing Systems are 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 28-in. and 56-in. conventional rolls, along with a variety of prefabricated, standard, and custom rolls up to 20-ft. X 102-ft. (2,040 square feet). FiberTite Roofing Systems are 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 of charge to authorized applicators by regional technical service representatives. For additional information, contact Seaman 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 28-in. and 56-in. conventional rolls, along with a variety of prefabricated, standard, and custom rolls

up to 20-ft. X 102-ft. (2,040 square feet). FiberTite roofing systems are 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. For additional information, contact Seaman Corporation at 800/927-8578.

## **SIPLAST**

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's Veral Aluminium Face, Veral Copper and Veral Stainless Steel SBS Modified Bitumens meet or exceed ASTM D 6298.

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.

## **TAMKO ROOFING PRODUCTS INC.**

Awaplan Preium was the first SBS modified asphalt polyester base roll roofing product 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 producec on a 180 gram-per-square-meter polyester mat. Awaplan VersaFlex, Awaflex, and Awaflex FR are Tamko's newest addition to the Awaplan family. Tamko produces a complete specifiication manual and technical literature for your use. For futher 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 minumum 1-in. rigid

insulation board. Be sure to install one-way moisture vents.

Cold weather application: Modified bitumen may be installed at 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 areas, (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 precaution 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 properly prepared. 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

*Low-Slope Roofing  
Materials Guide*

***2000***

*Rigid Board Insulation*

# Information on Section 2: Rigid Board Insulation

## General Information

Section 2: Rigid Board Insulation in the 2000 edition of NRCA's *Low-Slope Roofing Materials Guide* is divided into seven primary sections based on rigid board insulation product type. These primary sections are as follows:

- Expanded polystyrene
- Extruded polystyrene
- Cellular glass
- Wood fiberboard
- Perlite
- Polyisocyanurate
- Composite

A specific description of each particular rigid board insulation type and a general description of the specific information contained within each primary section are included at the conclusion of this General Information section.

An index of the manufacturers included in Section 2: Rigid Board Insulation and locations of their specific products within this section immediately follows this Rigid Board Insulation section.

## Expanded Polystyrene

Expanded polystyrene (EPS) insulation board is formed with a polystyrene polymer. The polymer is impregnated with a foaming agent which, when exposed to heat, creates an expanded, relatively uniform, closed-cell material that is resistant to heat flow and moisture penetration.

EPS is available in several different densities, several board sizes and a number of board thicknesses. EPS is also available in tapered thickness boards.

The material standard that applies to EPS is American Society for Testing and Materials (ASTM) C578, titled "Standard Specification for Preformed, Cellular Polystyrene Thermal Insulation."

Information on EPS is presented in the guide in the Expanded Polystyrene Roof Insulation Board section. Specific listing information included is as follows:

1. Company name
2. State
3. Product name
4. Density
5. Surface treatments
6. Available as tapered material
7. Year first used in commercial roofing system
8. Estimated percentage of thermal value retention

9. UL "P" design numbers, building code agency approved design numbers
10. Limitations and/or restrictions

Users of the guide who are interested in additional information regarding EPS are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

## Extruded Polystyrene

Extruded polystyrene (XPS) insulation board is formed with a polystyrene polymer. The blended polystyrene polymer is heated, put through an extrusion process and then exposed to normal atmospheric conditions so the material will expand. Closed cells are formed within the material during this expansion process. The extrusion process provides smooth, skin-like surfaces on the material.

XPS is available in several different densities, several different board sizes and a number of board thicknesses.

The material standard that applies to XPS is American Society for Testing and Materials (ASTM) C578, titled "Standard Specification for Preformed, Cellular Polystyrene Thermal Insulation."

Information on XPS is presented in the guide in the Extruded Polystyrene Roof Insulation Board section. Specific listing information included is as follows:

1. Company name
2. State
3. Product name
4. Density
5. Surface treatment
6. Available as tapered material
7. Year first used in commercial roofing systems
8. Meets applicable standards
9. Compressive strength
10. Water absorption
11. Flexural strength
12. Common available sizes
13. Common available thicknesses
14. Estimated percentage of thermal value retention
15. UL "P" design numbers; building code agency approved design numbers
16. Limitations and/or restrictions

Users of the guide who are interested in additional information regarding XPS are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

## Cellular Glass

Cellular glass insulation board is manufactured as a rigid insulating material composed of heat-fused, closed glass cells.

Cellular glass insulation board is available in several different board sizes and a number of board thicknesses. It is also available in tapered thickness boards.

The material standard that applies to cellular glass insulation board is American Society for Testing and Materials (ASTM) C552, titled "Standard Specification for Cellular Glass Thermal Insulation."

Information on cellular glass insulation board is presented in the guide in the Cellular Glass Roof Insulation Board section. Specific listing information included is as follows:

1. Company name
2. State
3. Product name
4. Surface treatment
5. Available as tapered material
6. Year first used in commercial roofing system
7. Meets applicable standards
8. Compressive strength
9. Water absorption
10. Flexural strength
11. Common available sizes
12. Common available thicknesses
13. Estimated percentage of thermal value retention
14. UL "P" design numbers; building code agency approved design numbers
15. Limitations and/or restrictions

Users of the guide who are interested in additional information regarding cellular glass insulation are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

## Wood Fiberboard

Wood fiberboard roof insulation is a rigid insulating material manufactured from wood or cane fibers and various binders.

Wood fiberboard insulation board is available in several densities, several different board sizes and a number of board thicknesses.

The material standard that applies to the wood fiberboard roof insulation is American Society for Testing and Materials (ASTM) C208, titled "Standard Specification for Cellulosic Fiber Insulating Board."

Information on wood fiberboard insulation board is presented in the guide in the Wood Fiberboard Roof Insulation Board section. Specific listing information included is as follows:

1. Company name
2. State
3. Product name
4. Surface treatment
5. Available as tapered material
6. Year first used in commercial roofing system
7. Meets applicable standards
8. Common available sizes
9. Common available thicknesses
10. Estimated percentage of thermal value retention
11. UL "P" design numbers; building code agency approved design numbers
12. Limitations and/or restrictions

Users of the guide who are interested in additional information regarding wood fiberboard insulation are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

## Perlite

Perlite board roof insulation is a rigid insulating material manufactured from expanded volcanic materials combined with organic fibers and binders. The top surface of perlite roof insulation generally is treated with an asphalt emulsion to minimize bitumen absorption.

Perlite insulation board is available in several different board sizes and a number of board thicknesses. It is also available in tapered thickness boards.

The material standard that applies to the perlite insulation board is American Society for Testing and Materials (ASTM) C728, titled "Standard Specification for Perlite Thermal Insulation Board."

Information on perlite insulation board is presented in the guide in the Perlite Roof Insulation Board section. Specific listing information included is as follows:

1. Company name
2. State
3. Product name
4. Surface treatment
5. Available as tapered material
6. Year first used in commercial roofing system
7. Meets applicable standards
8. Compressive strength
9. Water absorption
10. Flexural strength
11. Common available sizes
12. Common available thicknesses
13. Estimated percentage of thermal value retention

14. UL “P” design numbers; building code agency approved design numbers
15. Limitations and/or restrictions

Users of the guide who are interested in additional information regarding perlite insulation board are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

## Polyisocyanurate

Polyisocyanurate foam roof insulation board is manufactured as a closed cell rigid foam insulation. For rigid roof insulation, the polyisocyanurate foam material is typically sandwiched between asphalt-saturated organic or inorganic felt facers or inorganic glass fiber mat facers.

Polyisocyanurate roof insulation is available in several different board sizes and a number of board thicknesses. It is also available in tapered thickness boards.

The material standard that applies to polyisocyanurate insulation board is American Society for Testing and Materials (ASTM) C1289, titled “Standard Specification for Faced Rigid Polyisocyanurate Thermal Insulation Board.”

Information on polyisocyanurate insulation board is presented in the guide in the Polyisocyanurate Roof Insulation Board section in two parts: part 1: General Information and Part 2: Test Results.

Specific listing information included in Part 1: General Information is as follows:

1. Company name
2. State
3. Product name
4. Homogeneous or composite
5. Density
6. Composite components
7. Surface treatment
8. Available as tapered material
9. Year first used in commercial roofing system
10. Common available sizes
11. UL “P” design numbers; building code agency approved design numbers
12. Limitations and/or restrictions

In Part 2: Test Results, specific information included is as follows:

1. Company name
2. Product name
3. Product type, physical properties, minimum thermal resistance

Users of the guide who are interested in additional information regarding polyisocyanurate insulation board

are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*

## Composite

Composite insulation boards consist of multiple layers of insulation and/or a variety of other board materials, such as perlite, polyisocyanurate, fiberboard, plywood, or gypsum board that form a unified, bonded multi-layer component. Top and/or bottom surfaces may or may not be coated or impregnated with facer materials, such as foils, organic felts, glass fibers, and kraft paper.

Composite insulation board is available in several different board sizes and a number of board thicknesses.

Information on composite insulation board is presented in the guide in the Composite Roof Insulation Board section. Specific listing information included is as follows:

1. Company name
2. State
3. Product name
4. Composite components
5. Surface treatment
6. Available as tapered material
7. Year first used in commercial roofing system
8. Common available sizes
9. Common available thicknesses
10. Estimated percentage of thermal value retention
11. UL “P” design; building code agency approved design numbers
12. Limitations and/or restrictions

Users of the guide who are interested in additional information regarding composite insulation board are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*

# Index to Rigid Board Insulation

	EXPANDED POLYSTYRENE	EXTRUDED POLYSTYRENE	GLASS FIBER CELLULAR GLASS	WOOD FIBERBOARD	POLYISOCYANURATE	PERLITE	COMPOSITE	
<b>A F M R-CONTROL BUILDING SYSTEMS</b> P. O. Box 246 Excelsior, MN 55331 800/255-0176 FAX: E-mail: afm@r-control.com Web Site: www.r-cotrol.com	332	334						356
<b>ALLIEDSIGNAL INC. COMMERCIAL ROOFING SYSTEMS</b> 2000 Regency Parkway Suite 255 Cary, NC 27511-8507 919/461-0670 (NC) 800/221-6490 FAX 919/461-4720 E-mail: alliedroof@alliedsignal.com Web: www.alliedroof.com			340		342	344	346	351
<b>ARVRON INC.</b> 4720 Clay S.W. Grand Rapids, MI 49548 616/530-1888 FAX: E-mail: Web:	332							
<b>ATLAS ROOFING CORPORATION</b> 1775 The Exchange, Suite 160 Atlanta, GA 30339 770/933-4478 FAX 770/952-3170 E-mail: Web: www.atlasroofing.com							346	350
<b>BENCHMARK FOAM INC.</b> 3200 9th Ave., S.E. Watertown, SD 57201-9102 800/658-3444 FAX 605/886-8099 E-mail: getfoam@benchmarkfoam.com Web: www.benchmarkfoam.com	332							356
<b>BIG SKY INULATIONS INC.</b> 15 Arden Drive P.O. Box 838 Belgrade, MT 59714 406/388-4146 FAX: E-mail: Web:	332							357
<b>BMCA INSULATION PRODUCTS INC.</b> 300 N. Haven Avenue Ontario, CA 91761 800/858-8868 FAX 909/390-8764 E-mail: Web:							344	
<b>CARLISLE SYNTEC INCORPORATED</b> P.O. Box 7000 Carlisle, PA 17013 717/245-7000 FAX: E-mail: Web:	332	334			342		346	351
<b>CARPENTER INSULATION CO.</b> P. O. Box 27205 Richmond, VA 23261 800/288-3836 FAX: E-mail: Web:	332							357

	EXPANDED POLYSTYRENE	EXTRUDED POLYSTYRENE	GLASS FIBER CELLULAR GLASS	WOOD FIBERBOARD	POLYISOCYANURATE	PERLITE	COMPOSITE	
<b>CELOTEX CORP.</b> 4010 Boy Scout Blvd. Tampa, FL 33607 813/873-1700 FAX: E-mail: Web:						342	345	347
<b>DOW CHEMICAL COMPANY, THE</b> Fabricated Products Business Center 1605 Joseph Drive, Larkin 200 Building Midland, MI 48674 517/638-5225 FAX: E-mail: Web:			335					358
<b>FIRESTONE BUILDING PRODUCTS, INC.</b> 525 Congressional Blvd. Carmel, IN 46032-5607 800/428-4442 FAX: E-mail: Web:								347
<b>FOAM PLASICS OF NEW ENGLAND</b> Route 69 Prospect, CT 06712 203/758-6651 (CT) 800/237-3763 FAX 203/758-3162 E-mail: foamplastic@sprintmail.com Web:		332						
<b>GAF MATERIALS CORP.</b> 1361 Alps Road Wayne, NJ 07470 973/628-3000 FAX 973/628-3356 E-mail: Web:		332	356			343	345	347
<b>GEORGIA PACIFIC CORP.</b> 133 Peachtree St. NE P.O. Box 105624 Atlanta, GA 30348-5624 404/652-5547 800/879-7781 FAX 404/230-7845 E-mail: Web:						343		
<b>HUEBERT FIBERBOARD CO.</b> 1545 E Morgan Street, Box 167 Boonville, MO 65233 660/882-2704 FAX 660/882-2704 E-mail: Web:						343		
<b>INSUL-BOARD, INC.</b> 2120 Colonial Avenue P.O. Box 8103 Erie, PA 16505 814/833-7400 FAX 814/838-4774 E-mail: insul@erie.net		333						
<b>INSULATED BUILDING SYSTEMS, INC.</b> 9912 Georgetown Pike, Suite D2 Great Falls, VA 22066 703/757-0118 FAX 703/757-0119 E-mail: aol.com/insblgsys/ibs.htm		333						358



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	EXPANDED POLYSTYRENE	EXTRUDED POLYSTYRENE	GLASS FIBER	CELLULAR GLASS	WOOD FIBERBOARD	POLYISOCYANURATE	PERLITE	COMPOSITE
<b>INSULATION CORP. OF AMERICA</b> 2571 Mitchell Avenue Allentown, PA 18103 610/791-4200 FAX: E-mail: Web:	333							
<b>JOHNS MANVILLE INTERNATIONAL INC.</b> Roofing Systems Group P.O. Box 5108 Denver, CO 80217 303/978-2000 FAX 303/978-3904 E-mail: Web:			340			345	347	354
<b>KNAUF USA POLYSTYRENE</b> 2725 Henkle Drive Lebanon, OH 45036 513/922-6823 FAX 513/932-3506	333							
<b>KOPPERS INDUSTRIES INC.</b> Commercial Roofing Dept. 436 Seventh Avenue Pittsburgh, PA 15219-1800 800/558-2706 FAX: 412/227-2002 E-mail: Web: www.koppers.com					343	345	348	355
<b>LUCAS SALES CO., INC.</b> 10623 Baur Blvd. St. Louis, MO 63132 314/993-9610 FAX 314/993-4836 E-mail: Web:		336				345		
<b>OWENS CORNING</b> 275 Southwest Avenue Tallmadge, OH 44278 330/633-6735 FAX: E-mail: Web:		357						
<b>OWENS CORNING FALCON FOAM CORP.</b> 8240 Byron Center Road Byron Center, MI 49315 616/878-1588 FAX 616/878-0874 E-mail: Web:	333							
<b>PACEMAKER PLASTICS CO., INC.</b> 126 New Pace Road., P.O. Box 279 Newcomerstown, OH 43832 800/446-2188 FAX 740/498-4184 E-mail: pacemaker@tusco.net Web: www.pacemakerplastics.com	333							
<b>PITTSBURGH CORNING CORP.</b> 800 Presque Isle Drive Pittsburg, PA 15239 800/359-8433 FAX: 724/327-5890 E-mail: Web: www.foamglas/insulation.com				341				

	EXPANDED POLYSTYRENE	EXTRUDED POLYSTYRENE	GLASS FIBER	CELLULAR GLASS	WOOD FIBERBOARD	POLYISOCYANURATE	PERLITE	COMPOSITE
<b>PLYMOUTH FOAM INCORPORATED</b> 1800 Sunset Drive Plymouth, WI 53073 920/893-0535 FAX 920/892-4986 Web: www.plymouthfoam.com	333							
<b>POLY FOAM INC.</b> 116 Pine Street South Lester Prairie, MN 55354-0218 320/395-2551 FAXj: E-mail: Web:	333							
<b>POLYFOAM PACKERS CORP.</b> CONSTRUCTION PRODUCTS DIV. 3751 Sunset Ave. Waukegan, IL 60067 800/800-0359 847/263-0200 FAX 847/263-0350 E-mail:								358
<b>R-MAX INC.</b> 13524 Welch Road Dallas, TX 75244 972/387-4500 FAX: 972/387-4673 E-mail: Web: www.rminc.com							348	358
<b>T-CLEAR CORPORATION</b> P. O. Box 416 Hamilton, OH 45012 800/ 544-7398 or 513/870-9243 FAX 513/870-9606 E-mail: telesouth1.com Web:								358
<b>TEMPLE</b> P.O. Drawer N Diboll, TX 75941 409/829-1254800/231-6060 FAX: E-mail: gkeeling@temple.com Web: www.temple.com						343		
<b>TENNECO BUILDING PRODUCTS</b> 2907 Log Cabin Drive Smyrna, GA 30080-7013 800/241-4402 FAX 404/350-1489 E-mail: Web:		339						
<b>THERMCO INDUSTRIES INC.</b> 809 East 15th St., P.O. Box 49 Washington, IA 52353 800/247-7831 319/653-6216 FAX: E-mail: Web:	333							
<b>U.S. INTEC, INC.</b> 1361 Alps Road Wayne, NJ 07470 800/624-6832 FAX: 973/628-4167 E-mail: Web: www.usintec.com							349	355

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	EXPANDED POLYSTYRENE	EXTRUDED POLYSTYRENE	GLASS FIBER	CELLULAR GLASS	WOOD FIBERBOARD	PERLITE	POLYISOCYANURATE	COMPOSITE
WOOLLEY & COMPANY 6865 Mimms Drive Doraville, GA 30340 770/448-8473 FAX 770/448-3061	333							

	EXPANDED POLYSTYRENE	EXTRUDED POLYSTYRENE	GLASS FIBER	CELLULAR GLASS	WOOD FIBERBOARD	PERLITE	POLYISOCYANURATE	COMPOSITE

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# Expanded Polystyrene Roof Insulation Board

(Homogeneous Only)

1.	COMPANY NAME	AFM R-CONTROL BUILDING SYSTEMS	AFM R-CONTROL BUILDING SYSTEMS	AFM R-CONTROL BUILDING SYSTEMS	ARVRON INC.	BENCHMARK FOAM INC.
2.	STATE	MN	MN	MN	MI	SD
3.	PRODUCT NAME	AFM PERFORM	AFM CONTOUR TAPER TILE	AFM PERFORM PROTECT	STEER-O-CELL	PERMA-FOAM
4.	DENSITIES PER ASTM C 303 OR OTHER					
	1.00 lbs/ft <sup>2</sup>	X	X	X	X	X
	1.25 lbs/ft <sup>2</sup>	X	X	X	X	X
	1.50 lbs/ft <sup>2</sup>	X	X	X	X	X
	2.00 lbs/ft <sup>2</sup>	X	X	X	X	X
5.	SURFACE TREATMENTS					
	Roofing Felt	X	X			
	Foil Faced Kraft	X	X		X	
	Treated kraft					
	Kraft				X	
	Other	X	X	X		X
6.	AVAILABLE AS TAPERED MATERIAL					
	With Facer		YES		YES	YES
	Without Facer		YES		YES	YES
7.	YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1966	1966	1994	1978	1977
8.	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
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		ASTM C 578-87A RADCO 1165 P225, P701 P801, P803 P814, P815 P817 UL 1256 FM 4450
10.	LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX		
11.	SEE APPENDIX IF CHECKED	X	X	X		

1.	COMPANY NAME	BIG SKY INSULATIONS INC.	CARLISLE SYNTEC INC.	CARPENTER INSULATION COMPANY	FOAM PLASTICS OF NEW ENGLAND	GAF MATERIALS CORP.
2.	STATE	MT	PA	VA	CT	NJ
3.	PRODUCT NAME	SNOFOAM EPS	SURE-SEAL EPS	CARPENTER STYRODECK	DURAFOAM	EVERGARD EPS
4.	DENSITIES PER ASTM C-303 OR OTHER					
	1.00 lbs/ft <sup>2</sup>	X	X	X	X	X
	1.25 lbs/ft <sup>2</sup>	X	X	X	X	X
	1.50 lbs/ft <sup>2</sup>	X	X	X	X	X
	2.00 lbs/ft <sup>2</sup>	X	X	X	X	X
5.	SURFACE TREATMENTS					
	Roofing Felt	X		X		
	Foil Faced Kraft	X		X	X	
	Treated kraft			X	X	
	Kraft	X		X	X	
	Other		X	X	X	
6.	AVAILABLE AS TAPERED MATERIAL					
	With Facer	YES	NO	YES	YES	
	Without Facer	YES	YES	YES	YES	YES
7.	YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1977	1981	1977	1976	1,985
8.	ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION					
	(Assuming a continuous mean temperature @ 1 year differential and constant moisture content)	100	100	100	100	
	@ 5 years	100	100	100	100	
	@ 10 years	100	100	100	100	>90
9.	UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	SEE APPENDIX	BOCA 93-39 ICBO 3826 SBCCI 9457 DADE COUNTY: 97-1110 NEW YORK CITY	ASTM C 578-91	P225,P231 P234,P703 ICBO 3504 BOCA 79-06 HH-I-524-C ASTM C578-87a	CONTACT GAF
10.	LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX		
11.	SEE APPENDIX IF CHECKED	X	X	X		

For thermal conductance (C) and thermal resistance (R), see the expanded polystyrene material data sheet  
NA=not applicable

# Expanded Polystyrene Roof Insulation Board

(Homogeneous Only)

INSUL-BOARD INC.	INSULATED BUILDING SYSTEMS	INSULATED BUILDING SYSTEMS	INSULATION CORPORATION OF AMERICA	KNAUF USA POLYSTYRENE	OWENS CORNING FALCON FOAM CORP.	OWENS CORNING FALCON FOAM CORP.	OWENS CORNING FALCON FOAM CORP.	PACEMAKER PLASTICS CO., INC.
PA	VA	VA	PA	OH	MI	MI	CA	OH
INSUL-BOARD	AFM PERFORM	AFM CONTOUR TAPER TILE	ICA LITE ROOF INSULATION	EPS	FALCON FOAM	FALCON FOAM	FALCON FOAM	CHEMFOAM (PERFORM)
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
	X	X						
X	X	X			X	X		
X	X	X			X	X		
YES		YES	NO	NO	YES	YES		YES
YES		YES	YES	YES	YES	YES		YES
1978	1966	1966	1979	1970	1980	1980	1980	1975
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
P225, P701 P801, P803 P814, P815 P817 UL-13450 UL CO. NO. 458	SEE APPENDIX	SEE APPENDIX	ASTM C 578-92 NY-13B86,P211 P701,P801 P803, P814 P815, P817 BOCA 876-5 ICBO 1717 PA1349B UL 9702	UL R8997 FM 2W1A7.AM ASTM C 578-91	ICBO 4059, 3401 3504, 3530	UL R6705 ICBO 4059 FM J10T0A6 P211, P225 P701, P801 P803, P814 P815, P817 UL 458	UL 418415 ICBO 4059 P211, P225 P 701, P801 P803, P817 P815, P817 UL 458	SEE APPENDIX
								X

PLYMOUTH FOAM INC.	POLYFOAM INC.	POLYFOAM PACKERS CORP.	THERMCO INDUSTRIES IINC.	WOOLLEY & CO.
WI	MN	IL	IA	GA
POLYTEC	DRI-LITE	THERMOSAFE	THERMOC EPS	ACRASSPAN
X	X	X	X	X
X	X	X	X	X
X	X	X	X	X
X	X	X	X	X
X	X	X	X	
X	X	X	X	
		X		
X		X	X	
X	X	X		
YES	YES	YES		
YES	YES	YES	YES	YES
1978	1960	1990	1963	1976
100	100	100	100	100
100	100	100	100	100
100	100	100	100	100
	ICBO 4169 P225,P701 P801,P803 P814,P815 P817	UL R14213, CONSTR. NO 458 FM OV8A0.AC, FM OV8A1.AC FM OV8A2.AC CABO 236, 238, 384, 479 WISC. APPROVAL NO. 960041-I	ASTM C-578-92 UL 5287	
	SEE APPENDIX	SEE APPENDIX		
	X	X		

# Extruded Polystyrene Roof Insulation Board

(Homogeneous Only)

1.	COMPANY NAME	AFM R-CONTROL BUILDING SYSTEMS	AFM R-CONTROL BUILDING SYSTEMS	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.
2.	STATE	MN	MN	PA	PA	PA
3.	PRODUCT NAME	AFM CONTOUR TAPER TILE-X	AFM CONTOUR TAPER TILE-X	FOAMULAR THERMAPINK 18	FOAMULAR THERMAPINK 25	FOAMULAR THERMAPINK 40
4.	DENSITY PER ASTM C 303 OR OTHER (lbs/ft <sup>3</sup> )	1.8	1.4	1.3 MIN	1.6 MIN	1.8 MIN
5.	SURFACE TREATMENT					
	Top Surface	CONTINUOUS SKIN 1 SIDE TAPER ONE SIDE	CONTINUOUS SKIN 1 SIDE TAPER ONE SIDE	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN
	Bottom Surface	CONTINUOUS SKIN 1 SIDE TAPER ONE SIDE	CONTINUOUS SKIN 1 SIDE TAPER ONE SIDE	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN
6.	AVAILABLE AS TAPERED MATERIAL	YES	YES	NO	YES	NO
7.	YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1980	1980	1996	1996	1996
8.	MEETS APPLICABLE STANDARDS	ASTM C 578-95a TYPE IV	ASTM C 578-95a TYPE X	ASTM C 578-92 TYPE X HH1524C	ASTM C 578-92 TYPE IV	ASTM C 578-92 TYPE VI
9.	COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi)	25 MIN	15	18 MIN	25 MIN	40 MIN
10.	WATER ABSORPTION PER ASTM C 272 OR OTHER (% by volume)	0.15	0.20	<0.10	<0.10	<0.05
11.	FLEXURAL STRENGTH PER ASTM C 203 (psi)	100 LG,62 TR	100 LG,62 TR	60 MIN	70 MIN	115 MIN
12.	COMMON AVAILABLE SIZES					
	2' x 4'					
	3' x 4'					
	4' x 4'					
	4' x 8'	X	X	X	X	X
	OTHER	X (2'x 8')	X (2'x 8')			
	COMMON AVAILABLE THICKNESSES (C-VALUE, R-VALUE, WEIGHT/FT <sup>2</sup> )					
13.1	Thickness (inches)	1.0	1.0	1.0	1.0	
	Thermal Conductance (C) @40 F	0.18	0.18	0.185	0.185	
	Thermal Conductance (C) @75 F	0.20	0.20	0.20	0.20	
	Thermal Resistance (R) @40 F	5.56	5.56	5.4	5.4	
	Thermal Resistance (R) @75 F	5.0	5.0	5.0	5.0	
	Weight (lbs/ft <sup>2</sup> )			0.11	0.13	
13.2	Thickness (inches)	1.5	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	0.133
	Thermal Resistance (R) @40 F	8.13		8.1	8.1	8.1
	Thermal Resistance (R) @75 F	7.52	7.52	7.5	7.5	7.5
	Weight (lbs/ft <sup>2</sup> )			0.17	0.20	0.23
13.3	Thickness (inches)	2.0	2.0	2.0	2.0	2.0
	Thermal Conductance (C) @40 F	0.092		0.093	0.093	0.093
	Thermal Conductance (C) @75 F	0.10	0.10	0.1	0.1	0.1
	Thermal Resistance (R) @40 F	10.87		10.8	10.8	10.8
	Thermal Resistance (R) @75 F	10.0	10.0	10.0	10.0	10.0
	Weight (lbs/ft <sup>2</sup> )			0.23	0.27	0.30
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 <sup>2</sup> )					
13.5	Thickness (inches)	3.0	3.0	3.0	3.0	3.0
	Thermal Conductance (C) @40 F	0.061		0.062	0.062	0.062
	Thermal Conductance (C) @75 F	0.066	0.066	0.067	0.067	0.067
	Thermal Resistance (R) @40 F	16.39		16.2	16.2	16.2
	Thermal Resistance (R) @75 F	15.15	15.15	15.0	15.0	15.0
	Weight (lbs/ft <sup>2</sup> )			0.34	0.40	0.45
13.6	Thickness (inches)			4.0	4.0	
	Thermal Conductance (C) @40 F			0.046	0.046	
	Thermal Conductance (C) @75 F			0.05	0.05	
	Thermal Resistance (R) @40 F			21.6	21.6	
	Thermal Resistance (R) @75 F			20.0	20.0	
	Weight (lbs/ft <sup>2</sup> )			0.45	0.53	
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	95 95 90	95 95 90	95 95 90
15.	UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	SEE APPENDIX	SEE APPENDIX	ICBO 3826 BOCA 93-39 SBCCI 9457 DADE COUNTY: 97-1110 NEW YORK CITY	ICBO 3826 BOCA 93-39 SBCCI 9457 DADE COUNTY: 97-1110 NEW YORK CITY	ICBO 3826 BOCA 93-39 SBCCI 9457 DADE COUNTY: 97-1110 NEW YORK CITY
16.	LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
17.	SEE APPENDIX IF CHECKED	X	X	X	X	X

NA=not applicable

# Extruded Polystyrene Roof Insulation Board

(Homogeneous Only)

DOW CHEMICAL CO., THE	DOW CHEMICAL CO., THE	DOW CHEMICAL CO., THE	DOW CHEMICAL CO., THE	DOW CHEMICAL CO., THE	DOW CHEMICAL CO., THE	DOW CHEMICAL CO., THE	DOW CHEMICAL CO., THE	DOW CHEMICAL CO., THE
MI	MI	MI	MI	CANADA	CANADA	MI	CANADA	MI
STYROFOAM ROOFMATE BOARD	STYROFOAM PLAZAMATE	STYROFOAM DECKMATE	STYROFOAM DECKMATE PLUS	STYROFOAM DECKMATE	STYROFOAM DECKMATE 200	STYROFOAM RECOVERMATE	STYROFOAM ROOFMATE	STYROFOAM HIGHLOAD 100
1.8 MIN	2.2 MIN	1.35 MIN	1.6 MIN			2.0		3
CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN
CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN
YES	YES	YES	YES	YES	YES	NO	YES	YES
1971	1981	1995	1995	1990	1990	1994	1971	1981
ASTM C 578-92 TYPE VI	ASTM C 578-92 TYPE VII	ASTM C 578-92 TYPE X	ASTM C 578-92 TYPE IV	CAN/CGSB 51-20-M87 M87 TYPE 2	CAN/CGSB 51-20-M87 M87 TYPE 3		CAN/CGSB 51-20-M87	ASTM C 578-92 TYPE V
40 MIN	60 MIN	18 MIN	25 MIN	16 MIN	20 MIN	15 MIN	35 MIN	100 MIN
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	0.3 MAX
60 MIN	75 MIN	40 MIN	50 MIN	35 MIN	44 MIN		50 MIN	100 MIN
					X		X	
		X	X	X		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')			X (2' X 8')
1.5	1.5	2.0	2.0	1.0	1.0	0.5	1.0	2
0.123	0.123	0.093	0.093	0.185	0.185	0.212	0.185	0.093
0.133	0.133	0.10	0.10	0.20	0.20	0.2	0.20	0.10
8.1	8.1	10.8	10.8	5.4	5.4	4.7	5.4	10.8
7.5	7.5	10.0	10.0	5.0	5.0	4.7	5.0	10.0
0.23	0.28	0.25	0.27			0.08		0.50
2.0	2.0	2.5	2.5	1.5	1.5		1.5	3.0
0.093	0.093	0.074	0.074	0.123	0.123		0.123	0.062
0.10	0.10	0.08	0.08	0.133	0.133		0.133	0.067
10.8	10.8	13.5	13.5	8.1	8.1		8.1	16.2
10.0	10.0	12.5	12.5	7.5	7.5		7.5	15.0
0.30	0.37	0.31	0.33					0.75
2.5		3.0	3.0	2.0	2.0		2.0	
0.074		0.062	0.062	0.093	0.093		0.093	
0.08		0.067	0.067	0.10	0.10		0.10	
13.5		16.2	16.2	10.8	10.8		10.8	
12.5		15.0	15.0	10.0	10.0		10.0	
0.38		0.38	0.40					
3.0		1.0	1.0	2.5	2.5		2.5	
0.062		0.185	0.185	0.074	0.074		0.074	
0.067		0.2	0.2	0.08	0.08		0.08	
16.2		5.4	5.4	13.5	13.5		13.5	
15.0		5.0	5.0	12.5	12.5		12.5	
0.45		0.13	0.14					
3.5		4.0	4.0	3.0	3.0		3.0	
0.053		0.046	0.046	0.062	0.062		0.062	
0.057		0.050	0.050	0.067	0.067		0.067	
18.9		21.6	21.6	16.2	16.2		16.2	
17.5		20.0	20.0	15.0	15.0		15.0	
0.53		0.5	0.55					
4.0							4.0	
0.046							0.046	
0.05							0.050	
21.6							21.6	
20.0							20.0	
0.60								
>98	>98	98	98			100		>98
>96	>96	96	96			96		>96
>95	>95	95	95			94		>96
ICBO 2257 BOCA 95-33 SBCCI 9576B SEE APPENDIX	ICBO 2257 BOCA 95-33 SBCCI 9576B SEE APPENDIX	ICBO 2257 BOCA 95-33 SBCCI 9576B SEE APPENDIX	ICBO 2257 BOCA 95-33 SBCCI 9576B SEE APPENDIX			ICBO 2257 BOCA 95-33 SBCCI 9576B SEE APPENDIX		ICBO 2257 BOCA 95-33 SBCCI 9576B SEE APPENDIX
SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX			SEE APPENDIX		SEE APPENDIX
X	X	X	X			X		X

# Extruded Polystyrene Roof Insulation Board

(Homogeneous Only)

1.	COMPANY NAME	GAF MATERIALS CORP.	GAF MATERIALS CORP.	LUCAS SALES CO., INC.	LUCAS SALES CO., INC.	LUCAS SALES CO., INC.
2.	STATE	NJ	NJ	MO	MO	MO
3.	PRODUCT NAME	EVERGUARD XPS	EVERGUARD XPS FAN-FOLD	LUCAS LITE TAPERED	LUCAS LITE TAPERED	LUCAS LITE TAPERED
4.	DENSITY PER ASTM C 303 OR OTHER (lbs/ft <sup>3</sup> )	2	3.6	1.35 MIN	1.6 MIN	1.8 MIN
5.	SURFACE TREATMENT					
	Top Surface	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	PLASTIC CAP SHEET	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN
	Bottom Surface	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	PLASTIC CAP SHEET	SAW CUT SURFACE	SAW CUT SURFACE	SAW CUT SURFACE
6.	AVAILABLE AS TAPERED MATERIAL	YES	NO	YES	YES	YES
7.	YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1989	1987	1983	1983	1984
8.	MEETS APPLICABLE STANDARDS	ASTM C 578-92 TYPE IV TYPE VI		ASTM C 578-87a TYPE X	ASTM C 578-87a TYPE IV	ASTM C 578-87a TYPE VI
9.	COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi)	1-40 AVE	20 AVE.	15 MIN	25 MIN	40 MIN
10.	WATER ABSORPTION PER ASTM C 272 OR OTHER (% by volume)	0.1	0.4	<0.10	<0.10	<0.05
11.	FLEXURAL STRENGTH PER ASTM C 203 (psi)	50 MIN		60 MIN	100 MIN	115 MIN
12.	COMMON AVAILABLE SIZES					
	2' x 4'					
	3' x 4'					
	4' x 4'					
	4' x 8'	XPS		X	X	
	OTHER		X (4'X50')	X (2'x 8')	X (2'x 8')	X (2'x 8')
	COMMON AVAILABLE THICKNESSES (C-VALUE, R-VALUE, WEIGHT/FT <sup>2</sup> )					
13.1	Thickness (inches)	1	0.38	1.0	1.0	1.5
	Thermal Conductance (C) @40 F	0.185		0.185	0.185	0.123
	Thermal Conductance (C) @75 F	0.2		0.20	0.20	0.133
	Thermal Resistance (R) @40 F	5.41		5.4	5.4	8.1
	Thermal Resistance (R) @75 F	5		5.0	5.0	7.5
	Weight (lbs/ft <sup>2</sup> )	0.18		0.11	0.13	0.23
13.2	Thickness (inches)	1.5		1.5	1.5	2.0
	Thermal Conductance (C) @40 F	0.123		0.123	0.123	0.093
	Thermal Conductance (C) @75 F	0.133		0.133	0.133	0.10
	Thermal Resistance (R) @40 F	8.1		8.1	8.1	10.8
	Thermal Resistance (R) @75 F	7.5		7.5	7.5	10.0
	Weight (lbs/ft <sup>2</sup> )	0.26		0.165	0.20	0.30
13.3	Thickness (inches)	2		2.0	2.0	3.0
	Thermal Conductance (C) @40 F	0.093		0.093	0.093	0.062
	Thermal Conductance (C) @75 F	0.1		0.10	0.10	0.067
	Thermal Resistance (R) @40 F	10.8		10.8	10.8	16.2
	Thermal Resistance (R) @75 F	10		10.0	10.0	15.0
	Weight (lbs/ft <sup>2</sup> )	0.35		0.22	0.27	0.45
13.4	Thickness (inches)	2.5		3.0	3.0	
	Thermal Conductance (C) @40 F	0.074		0.062	0.062	
	Thermal Conductance (C) @75 F	0.08		0.067	0.067	
	Thermal Resistance (R) @40 F	13.5		16.2	16.2	
	Thermal Resistance (R) @75 F	12.5		15.0	15.0	
	Weight (lbs/ft <sup>2</sup> )	0.44		0.33	0.40	
13.5	Thickness (inches)	3				
	Thermal Conductance (C) @40 F	0.062				
	Thermal Conductance (C) @75 F	0.067				
	Thermal Resistance (R) @40 F	16.2				
	Thermal Resistance (R) @75 F	15				
	Weight (lbs/ft <sup>2</sup> )	0.53				
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 <sup>2</sup> )					
14.	ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION (assuming a continuous mean temperature @ 1 year differential and constant moisture content) @ 5 years @ 10 years					
		>90	>90	>95	>95	>95
				>90	>90	>90
15.	UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	CONTACT GAF	CONTACT GAF			
16.	LIMITATIONS AND/OR RESTRICTIONS			SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
17.	SEE APPENDIX IF CHECKED			X	X	X

NA=not applicable



# Extruded Polystyrene Roof Insulation Board

(Homogeneous Only)

LUCAS SALES CO., INC.	OWENS CORNING	OWENS CORNING	OWENS CORNING	OWENS CORNING	OWENS CORNING	OWENS CORNING	OWENS CORNING	OWENS CORNING
MO	OH	OH	OH	OH	OH	OH	OH	OH
LUCAS LITE TAPERED	FAOMULAR 150	FAOMULAR 250	FAOMULAR 400	FAOMULAR 404	FAOMULAR 404RB	FAOMULAR 600	FAOMULAR 604	FAOMULAR 604RB
2.2 MIN	1.30 MIN	1.6 MIN	1.8 MIN	1.8 MIN	1.8 MIN	2.2 MIN	2.2 MIN	2.2 MIN
CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CHANNELED	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CHANNELED
SAW CUT SURFACE	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN
YES	NO	NO	NO	NO	NO	NO	NO	NO
1984	1983	1983	1984	1984	1991	1984	1984	1991
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	ASTM C 578 TYPE VII
60 MIN	15 MIN	25 MIN	40 MIN	40 MIN	40 MIN	60 MIN	60 MIN	60 MIN
<0.05	<0.10	<0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
140 MIN	60 MIN	75 MIN	115 MIN	115 MIN	115 MIN	140 MIN	140 MIN	140 MIN
	X	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')	X (2'x 8')	X (2'x 8')	X (2'x 8')
1.5	1.0	0.5	1.0	1.5	1.5	1.5	1.5	1.5
0.123	0.185	0.370	0.19	0.123		0.123	0.123	
0.133	0.20	0.40	0.20	0.133	0.143	0.133	0.133	0.143
8.1	5.4	2.70	5.4	8.1		8.1	8.1	
7.5	5.0	2.50	5.0	7.5	7.0	7.5	7.5	7.0
0.28	0.11	0.07		0.23	0.21	0.28	0.28	0.26
2.0	1.5	1.0	1.5	2.0	2.0	2.0	2.0	2.0
0.093	0.123	0.185	0.123	0.093		0.093	0.93	
0.10	0.133	0.20	0.133	0.10	0.105	0.10	0.10	0.105
10.8	8.1	5.4	8.1	10.8		10.8	10.8	
10.0	7.5	5.0	7.5	10.0	9.5	10.0	10.0	9.5
0.37	0.17	0.13	0.23	0.30	0.29	0.37	0.37	0.35
3.0	2.0	1.5	2.0	2.5	3.0	2.5	2.5	3.0
0.062	0.093	0.123	0.093	0.074		0.074	0.074	
0.067	0.10	0.133	0.10	0.08	0.069	0.08	0.08	0.105
16.2	10.8	8.1	10.8	13.5		13.5	13.5	
15.0	10.0	7.5	10.0	12.5	14.5	12.5	12.5	14.5
0.55	0.23	0.20	0.30	0.38	0.44	0.46	0.46	0.54
	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 9727 SEE APPENDIX	ICBO 3628 BOCA 91-54 SBCCI PST & ESI 9727 SEE APPENDIX	ICBO 3628 BOCA 91-54 SBCCI PST & ESI 9727 SEE APPENDIX	ICBO 3628 BOCA 91-54 SBCCI PST & ESI 9727 SEE APPENDIX	ICBO 3628 BOCA 91-54 SBCCI PST & ESI 9727 SEE APPENDIX	ICBO 3628 BOCA 91-54 SBCCI PST & ESI 9727 SEE APPENDIX	ICBO 3628 BOCA 91-54 SBCCI PST & ESI 9727 SEE APPENDIX	ICBO 3628 BOCA 91-54 SBCCI PST & ESI 9727 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 Insulation Board

(Homogeneous Only)

1.	COMPANY NAME	OWENS CORNING	OWENS CORNING	OWENS CORNING	OWENS CORNING	OWENS CORNING
2.	STATE	OH	OH	OH	OH	OH
3.	PRODUCT NAME	FAOMULAR 1000	DURAPINK	DURAPINK FA	DURAPINK PLUS	THERMAPINK 18
4.	DENSITY PER ASTM C 303 OR OTHER (lbs/ft <sup>3</sup> )	3.0 MIN	1.6 MIN	1.6 MIN	1.5 MIN	1.3 MIN
5.	SURFACE TREATMENT					
	Top Surface	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	LAMINATED GLASS FIBER	CONTINUOUS EXTRUDED SKIN
	Bottom Surface	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	LAMINATED POLYETHYLENE	LAMINATED POLYETHYLENE	CONTINUOUS CLOSED-CELL EXTRUDED SKIN
6.	AVAILABLE AS TAPERED MATERIAL	NO	NO	NO	NO	NO
7.	YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1997	1993	1993	1994	1996
8.	MEETS APPLICABLE STANDARDS	ASTM C 578 TYPE V	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)	100 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					
	2' x 4'					
	3' x 4'					
	4' x 4'					
	4' x 8'		X	X	X	X
	OTHER	X (2'x 8')				
	COMMON AVAILABLE THICKNESSES (C-VALUE, R-VALUE, WEIGHT/FT <sup>2</sup> )					
13.1	Thickness (inches)	2	0.5	0.75	0.5	1.0
	Thermal Conductance (C) @40 F	0.093	0.37	0.25	0.37	0.185
	Thermal Conductance (C) @75 F	0.1	0.40	0.27	0.40	0.20
	Thermal Resistance (R) @40 F	10.8	2.70	4.05	2.70	5.4
	Thermal Resistance (R) @75 F	10	2.50	3.75	2.50	5.0
	Weight (lbs/ft <sup>2</sup> )	0.50	0.06	0.10	0.12	0.11
13.2	Thickness (inches)		0.75	1.0		1.5
	Thermal Conductance (C) @40 F		0.25	0.185		0.123
	Thermal Conductance (C) @75 F		0.27	0.20		0.133
	Thermal Resistance (R) @40 F		4.05	5.4		8.1
	Thermal Resistance (R) @75 F		3.75	5.0		7.5
	Weight (lbs/ft <sup>2</sup> )		0.10	0.13		0.17
13.3	Thickness (inches)		1.0	1.5		2.0
	Thermal Conductance (C) @40 F		0.185	0.123		0.093
	Thermal Conductance (C) @75 F		0.20	0.133		0.10
	Thermal Resistance (R) @40 F		5.4	8.1		10.8
	Thermal Resistance (R) @75 F		5.0	7.5		10.0
	Weight (lbs/ft <sup>2</sup> )		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 <sup>2</sup> )			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 <sup>2</sup> )					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 <sup>2</sup> )					
14.	ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION (assuming a continuous mean temperature @ 1 year differential and constant moisture content) @ 5 years	95	95	95	95	95
	@ 10 years	90	90	90	90	90
15.	UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	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 APPENDIX IF CHECKED	X	X	X	X	X

NA=not applicable

# Extruded Polystyrene Roof Insulation Board

(Homogeneous Only)

OWENS CORNING	OWENS CORNING	OWENS CORNING	TENNECO BUILDING PRODUCTS	TENNECO BUILDING PRODUCTS	TENNECO BUILDING PRODUCTS
OH	OH	OH	GA	GA	GA
THERMAPINK 25	THERMAPINK 40	THERMAPINK 60	AMOCOR PB-6	AMOCOR PLYGOOD PG38 & PB 39	AMOFOAM
1.6 MIN	1.8 MIN	2.2 MIN	3.6	3.6	2.0
CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	CONTINUOUS EXTRUDED SKIN	EXTRUDED CORE, PLASTIC CAPSHEETS	EXTRUDED CORE, PLASTIC CAPSHEETS	CONTINUOUS EXTRUDED SKIN
CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	CONTINUOUS CLOSED-CELL EXTRUDED SKIN	EXTRUDED CORE, PLASTIC CAPSHEETS	EXTRUDED CORE, PLASTIC CAPSHEETS	CONTINUOUS EXTRUDED SKIN
YES	YES	YES	NO	NO	YES
1996	1996	1996	1987	1988	1989
ASTM C 578 TYPE IV	ASTM C 578 TYPE VI	ASTM C 578 TYPE VII			ASTM C 578-92 TYPE IV TYPE VI
25 MIN	40 MIN	60 MIN	25 AVG.	25 AVG.	1"-40 AVG.
< 0.10	< 0.05	< 0.05	0.40	0.40	0.10
70 MIN	115 MIN	140 MIN			50 MIN
X	X			X	X
		X (2' X 8')	X (4' x 50')	X (4' x 9')	X (2' x 8')
1.0	1.5	1.5	0.38	0.38	1.0
0.185	0.123	0.123			0.185
0.20	0.133	0.133	0.67	0.67	0.20
5.4	8.1	8.1			5.41
5.0	7.5	7.5	1.5	1.5	5.0
0.13	0.23	0.28	0.11	0.11	0.17
1.5	2.0	2.0			1.5
0.123	0.093	0.093			0.123
0.133	0.10	0.10			0.133
8.1	10.8	10.8			8.1
7.5	10.0	10.0			7.5
0.20	0.30	0.37			0.25
2.0	3.0	3.0			2.0
0.093	0.062	0.062			0.093
0.10	0.067	0.067			0.10
10.8	16.2	16.2			10.8
10.0	15.0	15.0			10.0
0.27	0.45	0.55			0.33
3.0					2.5
0.062					0.074
0.067					0.08
16.2					13.5
15.0					12.5
0.40					0.42
4.0					3.0
0.046					0.062
0.05					0.067
21.6					16.2
20.0					15.0
0.53					0.50
95	95	95			
90	90	90	>90	>90	>90
SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	UL A184 ICBO 4280 BOCA 95-44 SBCCI 9855	UL A184 ICBO 4280 BOCA 95-44 SBCCI 9855	UL A183 ICBO 4280 BOCA 90-78 SBCCI 9855
SEE APPENDIX	SEE APPENDIX	SEE APPENDIX			
X	X	X	X	X	X

# Glass Fiber/Mineral Fiber Roof Insulation Board

1. COMPANY NAME	ALLIED SIGNAL	JOHNS MANVILLE INTERNATIONAL
2. STATE	NC	CO
3. PRODUCT NAME	ARMO-R GLAS	FIBER GLASS ROOF INSULATION
4. SURFACE TREATMENT Top Surface	GLASS ASPHALT & KRAFT CAP SHEET	GLASS ASPHALT & 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)	12	12
9. WATER ABSORPTION PER ASTM C 272 OTHER (% by volume)	10	10
10. FLEXURAL STRENGTH PER ASTM C 203 (psi)		
11. COMMON AVAILABLE SIZES		
2' x 4'		
3' x 4'		
4' x 4'	X	X
4' x 8'	X	X
Other		
COMMON AVAILABLE THICKNESSES (C-VALUE, R-VALUE, WEIGHT/ft <sup>2</sup> )		
12.1 Thickness (inches)	0.75	0.75
Thermal Conductance (C) @40 F		
Thermal Conduyctance (C) @75 F	0.36	0.36
Thermal Resistance (R) @40 F		
Thermal Resistance (R) @75 F	2.78	2.78
Weight (lbs/ft <sup>2</sup> )	0.98	0.78
12.2 Thickness (inches)	0.938	0.938
Thermal Conductance (C) @40 F		
Thermal Conduyctance (C) @75 F	0.27	0.27
Thermal Resistance (R) @40 F		
Thermal Resistance (R) @75 F	3.70	3.70
Weight (lbs/ft <sup>2</sup> )	1.03	0.94
12.3 Thickness (inches)	1.063	1.063
Thermal Conductance (C) @40 F		
Thermal Conduyctance (C) @75 F	0.24	0.24
Thermal Resistance (R) @40 F		
Thermal Resistance (R) @75 F	4.17	4.17
Weight (lbs/ft <sup>2</sup> )	1.06	0.94
12.4 Thickness (inches)	1.313	1.63
Thermal Conductance (C) @40 F		
Thermal Conduyctance (C) @75 F	0.19	0.15
Thermal Resistance (R) @40 F		
Thermal Resistance (R) @75 F	5.26	6.67
Weight (lbs/ft <sup>2</sup> )	1.30	1.32
12.5 Thickness (inches)	2.063	2.000
Thermal Conductance (C) @40 F		
Thermal Conduyctance (C) @75 F	0.12	0.13
Thermal Resistance (R) @40 F		
Thermal Resistance (R) @75 F	8.33	8.00
Weight (lbs/ft <sup>2</sup> )	1.70	1.59
12.6 Thickness (inches)	2.437	2.25
Thermal Conductance (C) @40 F		
Thermal Conduyctance (C) @75 F	0.10	0.11
Thermal Resistance (R) @40 F		
Thermal Resistance (R) @75 F	10.0	9.09
Weight (lbs/ft <sup>2</sup> )	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 APPENDIX IF CHECKED		X

NA=not applicable

# Cellular Glass Roof Insulation Board

1. COMPANY NAME	PITTSBURGH CORNING CORP.
2. STATE	PA
3. PRODUCT 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)	100
9. WATER ABSORPTION PER ASTM C 272 OR OTHER (psi)	0.2
10. FLEXURAL STRENGTH PER ASTM C 203 (psi)	80
11. COMMON AVAILABLE SIZES	
2' x 4'	X
3' x 4'	
4' x 4'	
4' x 8'	
Other	
COMMON AVAILABLE THICKNESSES (C=VALUE, R=VALUE, WEIGHT/FT2)	
12.1 Thickness (inches)	1.5
Thermal Conductance (C) @40 F	0.21
Thermal Conductance (C) @75 F	0.22
Thermal Resistance (R) @40 F	4.76
Thermal Resistance (R) @75 F	4.55
Weight (lbs/ft2)	0.94
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)	1.25
12.3 Thickness (inches)	3.0
Thermal Conductance (C) @40 F	0.103
Thermal Conductance (C) @75 F	0.11
Thermal Resistance (R) @40 F	9.71
Thermal Resistance (R) @75 F	9.09
Weight (lbs/ft2)	1.88
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	12.82
Thermal Resistance (R) @75 F	12.05
Weight (lbs/ft2)	2.5
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	100
differential and constant moisture content) @ 5 years	100
@ 10 years	100
14. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	P 227, P 259, P 508, P 701, P 717, P 801 P 819, NYCMEA 138 81-M, BSA 131-44-SM, LA APVL #RR22534
15. LIMITATIONS AND/OR RESTRICTIONS	
16. SEE APPENDIX IF CHECKED	

NA=not applicable

# Wood Fiberboard Roof Insulation Board

(Homogeneous Only)

1.	COMPANY NAME	ALLIED SIGNAL INC.	ALLIED SIGNAL INC.	CARLISLE SYNTEC INC.	CELOTEX CORP.	CELOTEX CORP.
2.	STATE	NC	NC	PA	FL	FL
3.	PRODUCT NAME	ARMOR BOARD REGULAR	ARMOR BOARD HIGH DENSITY	HP RECOVERY BOARD	REGULAR FIBERBOARD ROOF INSULATION	HIGH-DENSITY FIBERBOARD ROOF INSULATION
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	YES	YES
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 TYPE II, GRADE 2	LLLI535B ASTM C 208, TYPE II, GRADE 1	LLLI535B ASTM C 208, TYPE II, GRADE 1
8.	COMMON AVAILABLE SIZES					
	2' x 4'	X			X	
	3' x 4'					
	4' x 4'	X	X	X	X	X
	4' x 8'	X	X	X	X	X
	Other					
	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-209 or Other (psi)			12		
	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					
	Thermal Resistance (R) @75 F	1.39	1.3	1.25	1.39	1.3
	Weight (lbs/ft <sup>2</sup> )	0.70	0.80	0.65	0.70	0.80
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-209 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					
	Thermal Resistance (R) @75 F	2.78	2.5	2.5	2.78	2.5
	Weight (lbs/ft <sup>2</sup> )	1.4	1.6	1.4	1.4	1.6
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-209 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					
	Thermal Resistance (R) @75 F	4.17	3.8		4.17	3.8
	Weight (lbs/ft <sup>2</sup> )	2.1	2.4		2.1	2.4
9.4	Thickness (inches)	2.0			2.0	
	Water Absorption Per ASTM C-209 or Other (% by volume)					
	Transverse Strength ASTM C-209 or Other (psi)					
	Thermal Conductance (C) @40 F					
	Thermal Conductance (C) @75 F	0.18			0.18	
	Thermal Resistance (R) @40 F					
	Thermal Resistance (R) @75 F	5.56			5.56	
	Weight (lbs/ft <sup>2</sup> )	2.8			2.8	
9.5	Thickness (inches)					
	Water Absorption Per ASTM C-209 or Other (% by volume)					
	Transverse Strength ASTM C-209 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 <sup>2</sup> )					
9.6	Thickness (inches)					
	Water Absorption Per ASTM C-209 or Other (% by volume)					
	Transverse Strength ASTM C-209 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 <sup>2</sup> )					
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	100		100	100
	@ 10 years	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: 9457 DADE CTY 97-1110		
12.	LIMITATIONS AND/OR RESTRICTIONS					
13.	SEE APPENDIX IF CHECKED					

NA=not applicable

# Wood Fiberboard Roof Insulation Board

(Homogeneous Only)

GAF MATERIALS CORP.	GAF MATERIALS CORP.	GEORGIA PACIFIC CORP.	GEORGIA PACIFIC CORP.	HUEBERT FIBERBOARD CO.	HUEBERT FIBERBOARD CO.	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	TEMPLE
NJ	NJ	VA	VA	MO	MO	PA	PA	TX
GAFTEMP REGULAR FIBERBOARD	GAFTEMP HIGH DENSITY FIBERBOARD	HIGH DENSITY	REGULAR DENSITY	HFB	H.D. COATED	REGULAR FIBERBOARD	DENSE FIBERBOARD	FIBERBASE H.D.
SURFACE TREATMENT	SURFACE TREATMENT	ASPHALT EMULSION	ASPHALT EMULSION	NONE	ASPHALT EMULSION	ASPHALT EMULSION	ASPHALT EMULSION	ASPHALT COATED, OR UNCOATED
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	ASPHALT COATED, OR UNCOATED
NO	YES	NO	NO	NO	NO	NO	NO	NO
1928	1928	1986	1986	1961	1990	1986	1986	1982
LLLI535B ASTM C 208, ASTM C 209	LLLI535B ASTM C 208, ASTM C 209	ASTM C208-94, GRADE 2 ANSI/AHA 194.1-1985 TYPE IV, CLASS 1	ASTM C208-94, GRADE 1 ANSI/AHA 194.1-1985 TYPE VI	ASTM C 208 LLLI535B,CisC PS57-73	ASTM C 208 LLLI535B	LLLI535B ASTM C 208-94 GRADE 1	LLLI535B ASTM C 208-94 GRADE 2	ASTM C 208 ANSI/AHA A 194.1
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	0.5	0.5	0.5	0.5	0.5	0.5
		7 MAX	10 MAX	5 to 10	7 MAX	10 MAX	7 MAX	7 MAX
		14	7	7 MIN	12 MIN	7	14	14
0.72	0.77	0.78	0.78	0.72	0.72	0.78	0.78	0.758
1.39	1.3	1.25	1.25	1.39	1.39	1.25	1.28	1.32
0.70	0.80	0.67	0.65	0.75	0.81	0.65	0.67	0.75
1.0	1.0	1.0		0.75	0.75		0.75	0.781
		7 MAX		5 to 10	7 MAX		7 MAX	7 MAX
		30		12 MIN	18 MIN		24	25
0.36	0.40	0.36		0.48	0.48		0.48	0.50
2.78	2.5	0.28		1.1	1.1			
1.4	1.6	1.13		2.08	2.08		2.10	1.95
1.5	1.5			1.1	1.1		0.875	1.35
		0.75		1.0	1.0		1.0	
		7 MAX		5 to 10	7 MAX		7 MAX	
		24		14 MIN	24 MIN		30	
0.24	0.26	0.48		0.36	0.36		0.36	
4.17	3.8	2.1		2.78	2.78		2.78	
2.1	2.4	0.875		1.5	1.6		1.13	
2.0	2.0			1.5				
				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
								UL P517
		SEE APPENDIX		SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	
		X		X	X	X	X	X

# Perlite Roof Insulation Board

(Homogeneous Only)

1.	COMPANY NAME	ALLIED SIGNAL INC.	ALLIED SIGNAL INC.	BMCA INSULATION PRODUCTS INC.	BMCA INSULATION PRODUCTS INC.
2.	STATE	NC	NC	CA	CA
3.	PRODUCT NAME	ARMOR LITE	ARMOR LITE 1/2" RECOVERBOARD	PERMALITE ROOF INSULATION	1/2" RECOVER BOARD
4.	SURFACE TREATMENT				
	Top Surface	COATED	COATED	COATED	COATED
	Bottom Surface	NONE	NONE	NONE	NONE
5.	AVAILABLE AS TAPERED MATERIAL	YES	NO	YES	NO
6.	YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1962	1985	1962	1985
7.	MEETS APPLICABLE STANDARDS	HHI529b ASTM C 728-91	ASTMC 728-91	HHI529b ASTM C 728-91	ASTM C 728-91
8.	COMPRESSIVE STRENGTH PER ASTM D 1621 OR OTHER (psi)	35 NOM.	40 NOM.	35 NOM.	40 NOM.
9.	WATER ABSORPTION PER ASTM C 272 OR OTHER (% by volume)	1.2 NOM.	3.5 MAX.	1.5 MAX.	3.5 MAX.
10.	FLEXURAL STRENGTH PER ASTM C 203 (psi)	60 NOM.		60 NOM.	100 NOM.
11.	COMMON AVAILABLE SIZES				
	2' x 4'	X	X	X	X
	3' x 4'				
	4' x 4'	X	X	X	X
	4' x 8'				X
	Other				X
	COMMON AVAILABLE THICKNESSES (C-VALUE, R-VALUE, WEIGHT/FT <sup>2</sup> )				
12.1	Thickness (inches)	0.75	0.50	0.75	0.50
	Thermal Conductance (C) @40 F				
	Thermal Conductance (C) @75 F	0.48	0.72	0.48	0.72
	Thermal Resistance (R) @40 F				
	Thermal Resistance (R) @75 F	2.08	1.39	2.08	1.32
	Weight (lbs/ft <sup>2</sup> )	0.60	0.55	0.6	0.50
12.2	Thickness (inches)	1.0		1.0	
	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 <sup>2</sup> )	0.8		0.8	
12.3	Thickness (inches)	1.5		1.5	
	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 <sup>2</sup> )	1.2		1.2	
12.4	Thickness (inches)	2.0		2.0	
	Thermal Conductance (C) @40 F				
	Thermal Conductance (C) @75 F	0.18		0.18	
	Thermal Resistance (R) @40 F				
	Thermal Resistance (R) @75 F	5.56		5.56	
	Weight (lbs/ft <sup>2</sup> )	1.60		1.6	
12.5	Thickness (inches)	2.5		2.5	
	Thermal Conductance (C) @40 F				
	Thermal Conductance (C) @75 F	0.15		0.15	
	Thermal Resistance (R) @40 F				
	Thermal Resistance (R) @75 F	6.67		6.67	
	Weight (lbs/ft <sup>2</sup> )	2.0		2.0	
12.6	Thickness (inches)	3.0		3.0	
	Thermal Conductance (C) @40 F				
	Thermal Conductance (C) @75 F	0.12		0.12	
	Thermal Resistance (R) @40 F				
	Thermal Resistance (R) @75 F	8.33		8.33	
	Weight (lbs/ft <sup>2</sup> )	2.4		2.4	
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	100 100 100	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 APPENDIX IF CHECKED				

NA=not applicable



# Perlite Roof Insulation Board

(Homogeneous Only)

CELOTEX CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	KOPPERS INDUSTRIES IINC.	KOPPERS INDUSTRIES INC.	LUCAS SALES COMPANY INC.
FL	NJ	NJ	CO	CO	CO	PA	PA	MO
CELOTHERM PERLITE	GAFTEMP PERMALITE	1/2" RECOVER BOARD	NORD BOARD	FESCO BOARD	1/2" RETROFIT BOARD	PERLITE ROOF INSULATION	1/2" RECOVER BOARD	LUCAS TAPERED PERLITE
	COATED	COATED	MODIFIED APP ASPHALT			COATED	COATED	
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	SAW CUT SURFACE
YES	YES	NO	NO	YES	NO	YES	NO	YES
1958	1958	1985	1987	1958	1982	1962	1985	1974
HHI529b ASTM C 728-91	HHI529b ASTM C 728-91	ASTM C 728-91	ASTM C 728	ASTM C 728	ASTM C 728	HHI529b ASTM C 728-91	ASTM C 728-91	ASTM C 728-91
35	32	35 NOM	35	20 NOM.	35 NOM.	35 NOM.	40 NOM.	35
1.5	1.5	3.5 MAX.	3.5	1.5 MAX.	3.5 MAX.	1.5 MAX.	3.5 MAX.	1.5
40	40	1.0 NOM.	60 MIN.	40 MIN.	60 MIN.	60 NOM.	1.0 NOM.	40
X	X	X		X	X	X	X	X
X	X	X	X	X	X	X	X	X
		X			X		X	
		X			X		X	
0.75	0.75	0.50	0.50	0.75	0.5	0.75	0.50	0.75
0.48	0.48	0.72	0.76	0.48	0.76	0.48	0.72	0.48
2.08	2.08	1.39	1.32	2.08	1.32	2.08	1.32	2.08
0.6	0.6	0.50	0.8	0.6	0.46	0.6	0.50	0.6
1.0	1.0			1.0		1.0		1.0
0.36	0.36			0.36		0.36		0.36
2.78	2.78			2.78		2.78		2.78
0.8	0.98			0.8		0.8		0.08
1.5	1.5			1.5		1.5		1.5
0.24	0.24			0.24		0.24		0.24
4.17	4.17			4.17		4.17		4.17
1.2	1.2			1.2		1.2		1.2
2.0	2.0			2.0		2.0		2.0
0.18	0.18			0.18		0.18		0.18
5.56	5.56			5.56		5.56		5.56
1.6	1.6			1.6		1.6		1.6
	2.5			3.0		2.5		3.0
	0.15			0.12		0.15		0.12
	6.67			8.33		6.67		8.33
	2.0			2.4		2.0		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	100	100	100
	SEE APPENDIX							SEE APPENDIX
	SEE APPENDIX		SEE APPENDIX	SEE APPENDIX	SEE APPENDIX			SEE APPENDIX
	X		X	X	X			X

# Polyisocyanurate Roof Insulation Board Part 1: General Information

(Homogeneous and Composite Boards)

1. COMPANY NAME	ALLIED SIGNAL, INC.	ATLAS ROOFING CORP.	ATLAS ROOFING CORP.	ATLAS ROOFING CORP.	ATLAS ROOFING CORP.
2. STATE	NC	GA	GA	GA	GA
3. PRODUCT NAME	ARMOR-R PLUS	ACFOAM RECOVERBOARD	ACFOAM SUPREME	ACFOAM COMPOSITE	ACFOAM NAIL BASE INSULATION
4. HOMOGENEOUS OR COMPOSITE	HOMOGENOUS	HOMEGENEOUS	HOMOGENOUS	COMPOSITE	COMPOSITE
5. DENSITY PER ASTM D 1622 OR OTHER (homogeneous boards only) (lbs/ft <sup>3</sup> )	2.0 NOM.	1.8 NOM.	2.0 NOM.		
6. COMPOSITE COMPONENTS: POLYISOCYANURATE INSULATION AND					
Expanded Polystyrene					
Extruded Polystyrene					
Polyurethane					
Perlite				X	
Gypsum Board					
Fiber Board					
Plywood					
Other					OSB
7. SURFACE TREATMENT					
Top Surface	GLASS REINFORCED FELT	COATED GLASS	MULTILAYER FOIL	PERLITE INSULATION	OSB
Bottom Surface	GLASS REINFORCED FELT	COATED GLASS	MULTILAYER FOIL	FIBER REINFORCED FELT	FIBER REINFORCED FELT
8. AVAILABLE AS TAPERED MATERIAL (yes/no)	YES	NO	NO	YES	NO
9. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1987	1995	1988	1985	1985
10. COMMON AVAILABLE SIZES					
2' x 4'					
3' x 8'					
4' x 4'	X	X	X	X	
4' x 8'	X	X	X	X	X
Other (specify)					
11. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
12. LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
13. SEE APPENDIX IF CHECKED	X	X	X	X	X

1. COMPANY NAME	ATLAS ROOFING CORP.	ATLAS ROOFING CORP.	ATLAS ROOFING CORP.	ATLAS ROOFING CORP.	CARLISLE SYNTec INC.
2. STATE	GA	GA	GA	GA	PA
3. PRODUCT NAME	ACFOAM VENTED-R	ACFOAM-II	ACFOAM-III	GEMINI CRICKET	POLYISO HP
4. HOMOGENEOUS OR COMPOSITE	COMPOSITE	HOMOGENEOUS	HOMOGENEOUS	HOMOGENEOUS	HOMOGENOUS
5. DENSITY PER ASTM D 1622 OR OTHER (homogeneous boards only) (lbs/ft <sup>3</sup> )		2.0 NOM.	2.0 NOM.	2.0 NOM.	2.0 NOM.
6. COMPOSITE COMPONENTS: POLYISOCYANURATE INSULATION AND					
Expanded Polystyrene					
Extruded Polystyrene					
Polyurethane					
Perlite		PERLITE OSB			
Gypsum Board					
Fiber Board					
Plywood					
Other	OSB WITH VENT SPACERS				
7. SURFACE TREATMENT					
Top Surface	VENTED OSB	GLASS REINFORCED FELT	COATED GLASS	GLASS REINFORCED FELT	FIBROUS FELT
Bottom Surface	FIBER ELT REINFORCED FELT	GLASS REINFORCED FELT	COATED GLASS	GLASS REINFORCED FELT	FIBROUS FELT
8. AVAILABLE AS TAPERED MATERIAL (yes/no)	NO	YES	YES	YES	YES
9. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1991	1987	1995	1998	1985
10. COMMON AVAILABLE SIZES					
2' x 4'					
3' x 8'					
4' x 4'		X	X		X
4' x 8'	X	X	X		X
Other (specify)				PRECUT CRICKET	
11. UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	BOCA 93-39 ICBO 3826 SBCCI 9457 METRO-DADE, FL 97-1110
12. LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
13. SEE APPENDIX IF CHECKED	X	X	X	X	X

# Polyisocyanurate Roof Insulation Board Part 1: General Information

(Homogeneous and Composite Boards)

CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	FIRESTONE BUILDING PRODUCTS INC.	FIRESTONE BUILDING PRODUCTS, INC.	FIRESTONE BUILDING PRODUCTS INC
PA	PA	PA	FL	FL	FL	IN	IN	IN
POLYISO HP-N	POLYISO HP-W	POLYISO HP-H	HY-THERM COMPOSITE	HY-THERM NAIL-LINE	HY-THERM AP	ISO 95+ ISOCYANURATE	FIRESTONE NAILBASE	FIRESTONE COMPOSITE
HOMOGENOUS	HOMOGENOUS	HOMOGENOUS	COMPOSITE	COMPOSITE	HOMOGENOUS	HOMOGENOUS	COMPOSITE	COMPOSITE
2.0 NOM.	2.0 NOM.	2.0 NOM.			2.0 NOM.	2.0 NOM.		
								X
			X					X
								X
				ORIENTED STRAND BOARD			7/16-IN. OSB	1/2-IN STOCK
FIBROUS FELT	FIBROUS FELT	FIBROUS FELT	FIBERBOARD	OSB	GLASS REINFORCED FELT	GLASS REINFORCED ORGANIC MAT	ORIENTED STRAND BOARD	PERLITE OR WOOD FIBER
FIBROUS FELT	FIBROUS FELT	FIBROUS FELT	GLASS REINFORCED FELT	GLASS REINFORCED FELT	GLASS REINFORCED FELT	GLASS REINFORCED ORGANIC MAT	GLASS REINFORCED ORGANIC MAT	GLASS REINFORCED ORGANIC MAT
YES	YES	YES	NO	NO	YES	YES	NO	YES
1985	1985	1998				1980	1980	1980
X	X	X	X	X	X	X	X	X
X	X	X		X	X	X	X	X
						X		
BOCA 93-39 ICBO 3826 SBCCI 9457 METRO-DADE, FL 97-1110	BOCA 93-39 ICBO 3826 SBCCI 9457 METRO-DADE, FL 97-1110	BOCA 93-39 ICBO 3826 SBCCI 9457 METRO-DADE, FL 97-1110	ICBO 2602 BOCA 2603.0 SBCCI 2603 ASTM C 1289-95, TYPE IV	ASTM C 1289-95, TYPE V	ASTM C 1289-95, TYPE II	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

FIRESTONE BUILDING PRODUCTS INC	GAF MATERIALS CORP	GAF MATERIALS CORP	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	JOHNS MANVILLE INTERNATIONAL
IN	NJ	NJ	NJ	NJ	NJ	NJ	NJ	CO
FIRESTONE COMPOSITE	EVEGUARD ISO	GAFTEMP ISOTHERM R	GAFTEMP ISOTHERM RA	GAFTEM ISOTHERM RN	GAFTEMP COMPOSITE BOARD	GAFTEMP RA COMPOSITE BOARD	GAFTEMP RN COMPOSITE BOARD	ISO 1
COMPOSITE	HOMOGENOUS 2.0 NOM.	HOMOGENOUS	HOMOGENOUS	HOMOGENOUS	COMPOSITE	COMPOSITE	COMPOSITE	HOMOGENOUS 2.0 NOM.
X						X	X	
					X	X		
1/2-IN STOCK								
PERLITE OR WOOD FIBER	ORGANIC / INORGANIC NON- ASPHALT FELT	COMPOSITE FACER	GLASS FACER	GLASS FACER				FIBERGLASS REINFORCED FACER
GLASS R REINFORCED ORGANIC MAT	ORGANIC / INORGANIC NON- ASPHALT FELT	COMPOSITE FACER	GLASS FACER	GLASS FACER	COMPOSITE FACER	COMPOSITE FACER	COMPOSITE FACER	FIBERGLASS REINFORCED FACER
YES	YES	YES	YES	YES	YES	YES	YES	YES
1980	1985	1988	1992	1992	1988	1992	1992	1987
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
		X	X	X				
SEE APPENDIX	CONTACT GAF	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

# Polyisocyanurate Roof Insulation Board Part 1: General Information

(Homogeneous and Composite Boards)

1. COMPANY NAME	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL
2. STATE	ME	CO	ME	ME	ME
3. PRODUCT NAME	NAILBOARD	FESCO FOAM	E'NRG'Y 2	E'NRG'Y 2 COMPOSITE	E'NRG'Y 2 PLUS COMPOSITE
4. HOMOGENEOUS OR COMPOSITE	COMPOSITE	COMPOSITE	HOMOGENEOUS	COMPOSITE	COMPOSITE
5. DENSITY PER ASTM D 1622 OR OTHER (homogeneous boards only) (lbs/ft <sup>3</sup> )					
6. COMPOSITE COMPONENTS: POLYISOCYANURATE INSULATION AND					
Expanded Polystyrene					
Extruded Polystyrene					
Polyurethane					
Perlite		X		X	
Gypsum Board					
Fiber Board					X
Plywood					
Other	X				
7. SURFACE TREATMENT					
Top Surface	OSB	FIBERLASS REINFORCED FACER	GLASS REINFORCED FELT	PERLITE FELT	WOOD FIBERBOARD
Bottom Surface	GLASS REINFORCED FELT	PERLITE	GLASS REINFORCED FELT	PERLITE FELT	GLASS REINFORCED FELT
8. AVAILABLE AS TAPERED MATERIAL (yes/no)	NO	YES	YES	YES	YES
9. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM		1970	1983		
10. COMMON AVAILABLE SIZES					
2' x 4'					
3' x 8'					
4' x 4'		X	X	X	X
4' x 8'	X	X	X	X	X
Other (specify)	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 APPENDIX	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
12. LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
13. SEE APPENDIX IF CHECKED	X	X	X	X	X

1. COMPANY NAME	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	RMAX, INC.	RMAX, INC.	RMAX, INC.
2. STATE	PA	PA	TX	TX	TX
3. PRODUCT NAME	KOP-R ISOCYANURATE	KOP-R COMPOSITE	MULTI-MAX	MULTI-MAX FA	TAPERED THERMAROOF
4. HOMOGENEOUS OR COMPOSITE	HOMOGENOUS	COMPOSITE	HOMOGENOUS	HOMOGENOUS	HOMOGENOUS
5. DENSITY PER ASTM D 1622 OR OTHER (homogeneous boards only) (lbs/ft <sup>3</sup> )	2.0 NOM.		2	2.0	2.0
6. COMPOSITE COMPONENTS: POLYISOCYANURATE INSULATION AND					
Expanded Polystyrene					
Extruded Polystyrene					
Polyurethane					
Perlite		X			
Gypsum Board					
Fiber Board					
Plywood					
Other					
7. SURFACE TREATMENT					
Top Surface	GLASS REINFORCED FELT	PERLITE INSULATION	GLASS FIBER	GLASS FIBER	GLASS FIBER
Bottom Surface	GLASS REINFORCED FELT	FIBER REINFORCED RELT	GLASS FIBER	GLASS FIBER	GLASS FIBER
8. AVAILABLE AS TAPERED MATERIAL (yes/no)	YES		YES	NO	YES
9. YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1987	1985	1985	1988	1986
10. COMMON AVAILABLE SIZES					
2' x 4'					
3' x 8'					
4' x 4'	X	X		X	X
4' x 8'	X	X	X	X	
Other (specify)			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 APPENDIX
12. LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX	SEE APPENDIX
13. SEE APPENDIX IF CHECKED	X	X	X	X	X

# Polyisocyanurate Roof Insulation Board Part 1: General Information

(Homogeneous and Composite Boards)

RMAX, INC.	U.S. INTEC INC.
TX	NJ
THERMAROOF PLUS	USISO
HOMOGENOUS	HOMOGENOUS
2.0	2.0 NOM.
	X
GLASS FIBER ALUMINUM FOIL	GLASS REINFORCED FELT
GLAS FIBER ALUNINUM FOIL	GLASS REINFORCED FELT
NO	YES
1978	1987
X	X
X	X
X	X
SEE APPENDIX	
SEE APPENDIX	
X	

# Polyisocyanurate Roof Insulation Board Part 2: Test Results

Test description and suggested values as specified in ASTM C 1289-95

1.	COMPANY NAME	ALLIEDSIGNAL SIGNAL	ATLAS ROOFING CORP.	ATLAS ROOFING CORP.	ATLAS ROOFING CORP.	ATLAS ROOFING CORP.
2.	PRODUCT NAME	ARMOR-R PLUS	ACFOAM-II	ACFOAM-III	ACFOAM RECOVERBOARD	ACFOAM SUPREME
3.1	PRODUCT TYPE*					
	Type 1, Class 1 or Class 2					CLASS 1
	Type II	X	X	X	X	
	Type III					
	Type IV					
	Type V					
	Type VI					
3.2	PHYSICAL PROPERTY					
3.2.1	COMPRESSIVE STRENGTH (min., psi, nominal 1-in. core foam)	16	20	20	16	20
3.2.2	DIMENSIONAL STABILITY (nominal, 1-in. core foam)					
	Percent linear change, max. (-40°F)					
	Type I, Class 1; Types II-VI	2.0	< 2	< 2	< 2	< 2
	Type I, Class 2 (amb. RH 158°F)	1.5				
	Type I, Class 1	2.0				< 2
	Type II-VI	4.0	< 4	< 4	< 4	
	Type I, Class 2 (97% RH 200°F)	1.5				
	Type I, Class 1; Types II-VI	4.0				
	Type I, Class 2	1.5				
3.2.3	FLEXURAL STRENGTH (nominal, 1-in. core foam)					
	Modulus of rupture, psi, min.					
	Types I-V	40	40	40	40	40
	Type VI	50				
	Break load, lbf, min.					
	Type I	8				
	Types II-V	17	17	17	17	8
	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
	Types II, VI	1.5	< 1	< 1	< 1	
	Type IV	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	<1.0	0.3
	Types III-VI	NA				
3.3	MINIMUM THERMAL RESISTANCE @ 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	6.7	6.7	6.7	8.3
	1.5-inch product Type I, Class 1	10.8				
	1.5-inch product Type I, Class 2; Type II	11	11.1	11.1		
	1.5-inch product Type III	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				16.9
	2-inch product Type I, Class 2	15.8				
	2-inch product Type II	15.7	15.9	15.9		
	2-inch product Type III	12.5				
	2-inch product Type IV	12.4				
	2-inch product Type V	11.5				
	2-inch product Type VI	8.6				
	MINIMUM THERMAL RESISTANCE @ 75 ± 2°F MEAN TEMPERATURE					
	1-inch product Type I, Class 1	6.5				7.2
	1-inch product Type I, Class 2	7.2				
	1-inch product Type II	6.0	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				
	1.5-inch product Type V	6.5				
	2-inch product Type I, Class 1	13.0				15.2
	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				
	2-inch product Type V	10.5				
	2-inch product Type VI	7.5				
	MINIMUM THERMAL RESISTANCE @ 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	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	9.1	9.0		
	1.5-inch product Type III	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				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				
	2-inch product Type V	9.5				
	2-inch product Type VI	6.7				
4.	SEE APPENDIX IF CHECKED	X	X	X	X	X

\* See Introduction to insulation section for full descriptions of product types  
NA=not applicable

## Polyisocyanurate Roof Insulation Board Part 2: Test Results

Test description and suggested values as specified in ASTM C 1289-95

ATLAS ROOFING CORP.	ATLAS ROOFING CORP.	ATLAS ROOFING CORP.	ATLAS ROOFING CORP.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CARLISLE SYNTEC INC.	CELOTEX CORP.
ACFOAM COMPOSITE	ACFOAM NAIL- BASE INSULATION	ACFOAM VENTED-R	GEMINI CRICKET CRICKET	POLYISO HP	POLYISO HP-N	POLYISO HP-W	POLYISOO HP-H	HY-THERM COMPOSITE
X			X	X	X	X		
	X	X						X
20	20	20	20	16	16	16		16
< 2	< 2	< 2	< 2					2
< 4	< 4	< 4	< 4	2.0	2.0	2.0	2.0	4
< 4	< 4	< 4	< 4					4
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	< 1	< 1	< 1	1.5	1.5	1.5		
								2
			<1.0	1.0	1.0	1.0	1.0	
			6.7	6.6	6.6	6.6	6.6	
8.1				11.0	11.0	11.0	11.0	
	7.1							8
12.5				15.7	15.7	15.7	15.7	
	11.5	11.5						12.4
			6.0	6.0	6.0	6.0	6.0	
7.4				10.0	10.0	10.0	10.0	
	7.3							7.3
11.4				14.3	14.3	14.3	14.3	
	11.3	7.1						11.3
			5.4	5.4	5.4	5.4	5.4	
6.7				9.0	9.0	9.0	9.0	
	5.9							6.6
10.3				12.9	12.9	12.9	12.9	
	2.5	2.5						10.2
X	X	X	X	X	X	X		

# Polyisocyanurate Roof Insulation Board Part 2: Test Results

Test description and suggested values as specified in ASTM C 1289-95

1.	COMPANY NAME	CELOTEX CORP.	CELOTEX CORP.	FIRESTONE BUILDING PRODUCTS INC.	FIRESTONE BUILDING PRODUCTS INC.	FIRESTONE BUILDING PRODUCTS INC.
2.	PRODUCT NAME	HY-THERM NAIL-LINE	HY-THERM AP	ISO 95+ ISOCYANURATE	FIRESTONE COMPOSITE	FIRESTONE COMPOSITE
3.1	PRODUCT TYPE*					
	Type 1, Class 1 or Class 2					
	Type II		X	X		
	Type III				X	
	Type IV					X
	Type V	X				
	Type VI					
3.2	PHYSICAL PROPERTY					
3.2.1	COMPRESSIVE STRENGTH (min., psi, nominal 1-in. core foam)	16	16	20	20	20
3.2.2	DIMENSIONAL STABILITY (nominal, 1-in. core foam)					
	Percent linear change, max. (-40°F)					
	Type I, Class 1; Types II-VI	2.0	2	2.0	2	2
	Type I, Class 2 (amb. RH 158°F)	1.5				
	Type I, Class 1	2.0				
	Type II-VI	4.0	4	4.0	4	4
	Type I, Class 2 (97% RH 200°F)	1.5				
	Type I, Class 1; Types II-VI	4.0	4	4.0	4	4
	Type I, Class 2	1.5				
3.2.3	FLEXURAL STRENGTH (nominal, 1-in. core foam)					
	Modulus of rupture, psi, min.					
	Types I-V	40	40	40	40	40
	Type VI	50				
	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		1	
	Types II, VI	1.5	1.5	1.5		
	Type IV	2.0				2
3.2.6	WATER TRANSMISSION (perm., max., nominal 1-in. core surface)					
	Type I	0.3				
	Type II	1.0	1	1		
	Types III-VI	NA				
3.3	MINIMUM THERMAL RESISTANCE @ 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		11.0		
	1.5-inch product Type III	8.1			8.1	
	1.5-inch product Type IV	8.0				8
	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		
	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	11.5			
	2-inch product Type VI	8.6				
	MINIMUM THERMAL RESISTANCE @ 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		
	1.5-inch product Type I, Class 1	9.8				
	1.5-inch product Type I, Class 2; Type II	10.0		10.0		
	1.5-inch product Type III	7.4			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		
	2-inch product Type III	11.4			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				
	MINIMUM THERMAL RESISTANCE @ 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		
	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	
	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		
	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	9.5			
	2-inch product Type VI	6.7				
4.	SEE APPENDIX IF CHECKED			X	X	X

\* See Introduction to insulation section for full descriptions of product types  
NA=not applicable



## Polyisocyanurate Roof Insulation Board Part 2: Test Results

Test description and suggested values as specified in ASTM C 1289-95

FIRESTONE BUILDING PRODUCTS INC.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	JOHNS MANVILLE INTERNATIONAL
FIRESTONE NAILBASE	GAFTEMP ISOTHERM R	GAFTEMP ISOTHERM RA	GAFTEM ISOTHERM RN	EVERGUARD ISO	COMPOSITEBOARD	GAFTEMP RA COMPOSITE	GAFTEMP RN COMPOSITE	ULTRAGARD
	X	X	X	X		X	X	X
					X	X		
X								
20	20	20	20	16	20	20	20	20
2	2.0	2	2.0	2	2	2	2	< 2.0
4	2.0	2	2.0	2	2	2	2	< 4.0
4	4.0	4.0	4.0	2	4	4	4	< 4.0
40	40	40	40	40	40	40	40	> 40
17	17	17	17	8	17	17	17	> 17
500	500	500	500	500	500	500	500	> 500
1	1.5	1.5	1.5	1.0		1	1	< 1.5
					2	2		
	1.0	1.0	1.0	1.0				> 1.0
	6.6	6.6	6.6	6.6				> 6.6
	11.0	11.0	11.0	1.0				> 11.0
					8	8.1 8	8.1	
7.1								
	15.7	15.7	15.7	15.7				> 15.7
					12.4	12.5 12.4	12.5	
11.5								
	6.0	6.0	6.0	6.0				> 6.0
	10.0	10.0	10.0	10.0				> 10.0
					7.3	7.4 7.3	7.4	
6.5								
	14.3	14.3	14.3	14.3				> 14.3
					11.3	11.4 11.3	11.4	
10.5								
	5.4	5.4	5.4	5.4				> 5.4
	9	9	9	9				> 9.0
					6.6	6.7 6.6	6.7	
5.9								
	12.9	12.9	12.9	12.9				> 12.9
					10.2	10.3 10.2	10.3	
9.5								
X								X

# Polyisocyanurate Roof Insulation Board Part 2: Test Results

Test description and suggested values as specified in ASTM C 1289-95

1. COMPANY NAME		JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL
2. PRODUCT NAME		FESCO FOAM	E'NRGY' 2	E'NRGY 2 FF	E'NRGY 2 COMPOSITE	E'NRGY 2 PLUS
3.1 PRODUCT TYPE*						
Type 1, Class 1 or Class 2				X		
Type II			X			
Type III		X			X	
Type IV						X
Type V						
Type VI						
3.2 PHYSICAL PROPERTY						
3.2.1 COMPRESSIVE STRENGTH (min., psi, nominal 1-in. core foam)	16	16	20/25	20/25	20/25	20/25
3.2.2 DIMENSIONAL STABILITY (nominal, 1-in. core foam)						
Percent linear change, max. (-40°F)						
Type I, Class 1; Types II-VI	2.0	< 2.0	2	2	2	2
Type I, Class 2 (amb. RH 158°F)	1.5					
Type I, Class 1	2.0			2		
Type II-VI	4.0	< 4.0	2		2	2
Type I, Class 2 (97% RH 200°F)	1.5					
Type I, Class 1; Types II-VI	4.0	< 4.0	2	2	2	2
Type I, Class 2	1.5					
3.2.3 FLEXURAL STRENGTH (nominal, 1-in. core foam)						
Modulus of rupture, psi, min.						
Types I-V	40	> 40	40	40	40	40
Type VI	50					
Break load, lbf, min.						
Type I	8			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	500
3.2.5 WATER ABSORPTION (2H % by vol., max., nom. 1-in. core surface)						
Types I, III, V	1.0	< 1.0		1	1	
Types II, VI	1.5		1.5			
Type IV	2.0					2
3.2.6 WATER TRANSMISSION (perm., max., nominal 1-in. core surface)						
Type I	0.3			0.3		
Type II	1.0		1			
Types III-VI	NA					
3.3 MINIMUM THERMAL RESISTANCE @ 40 ± 2°F MEAN TEMPERATURE						
1-inch product Type I, Class 1	7.2			7.9		
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			11		
1.5-inch product Type I, Class 2; Type II	11		11			
1.5-inch product Type III	8.1	> 8.1			8	
1.5-inch product Type IV	8.0					8
1.5-inch product Type V	7.1					
2-inch product Type I, Class 1	14.3			15.7		
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					12.5
2-inch product Type V	11.5					
2-inch product Type VI	8.6					
MINIMUM THERMAL RESISTANCE @ 75 ± 2°F MEAN TEMPERATURE						
1-inch product Type I, Class 1	6.5			7.2		
1-inch product Type I, Class 2	7.2					
1-inch product Type II	6.0		6			
1.5-inch product Type I, Class 1	9.8			10.8		
1.5-inch product Type I, Class 2; Type II	10.0		10			
1.5-inch product Type III	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			14.4		
2-inch product Type I, Class 2	14.4					
2-inch product Type II	14.3		14.3			
2-inch product Type III	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					
MINIMUM THERMAL RESISTANCE @ 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		6.4			
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			
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			13		
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 APPENDIX IF CHECKED		X				

\* See Introduction to insulation section for full descriptions of product types  
NA=not applicable

## Polyisocyanurate Roof Insulation Board Part 2: Test Results

Test description and suggested values as specified in ASTM C 1289-95

JOHNS MANVILLE INTERNATIONAL	JOHNS MANVILLE INTERNATIONAL	KOPPERS INDUSTRIES INC.	KOPPERS INDUSTRIES INC.	RMAX, INC.	RMAX, INC.	RMAX, INC.	RMAX, INC.	U.S. INTEC
NAILBOARD	ENRG'Y 2 GYPSUM COMPOSITE	KOP-R ISOCYANURATE	KOP-R COMPOSITE	MULTI-MAX	MULTI-MAX FA	TAPERED THERMAROOF	THERMAROOF PLUS	USISO
							CLASS 1	
		X	X	X	X	X		X
X								
20/25	20/25	20	20	> 16	> 16	> 16	> 16	20
2	2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
							< 2.0	
2	2	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0		< 4.0
2	2		< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	
40			40	> 40	> 40	> 40	> 40	
							> 8	
17			17	> 17	> 17	> 17		
500	500		500	> 500	> 500	> 500	> 500	
1			< 1.0				1.0	
	1.5			< 1.5	< 1.5	< 1.5		<1.0
	1	1.0		> 1.0	> 1.0	> 1.0	<1.0	
8								
12.4								
		6.0						6
		10.0	7.4					10
7.3	7.4							
		14.3						14.3
			11.4					
11.4	12							
6.9								
10.3								
		X	X					

# Composite Roof Insulation Board

1.	COMPANY NAME	AFM R-CONTROL BUILDING SYSTEMS	AFM R-CONTROL BUILDING SYSTEMS	BENCHMARK FOAM INC.	BENCHMARK FOAM INC.	BENCHMARK FOAM INC.
2.	STATE	MN	MN	SD	SD	SD
3.	PRODUCT NAME	AFM PERFORM 1, 2 & 3	AFM CONTOUR TAPER TILE	PERMAFOAM COMPOSITE	ENERCEPT PANELS	PERMAFOAM COMOSITE
4.	COMPOSITE COMPONENTS					
	Expanded Polystyrene		X	X	X	X
	Extruded Polystyrene					
	Polyurethane					
	Polyisocyanurate					
	Perlite	X	X			X
	Gypsum Board				X	
	Fiber Board	X	X			
	Plywood	X	X	X	X	
	Other	X	X			
5.	SURFACE TREATMENT					
	Asphalt Roofing Felt					
	Foil Facer	X	X			
	Kraft Paper					
	Other	X	X			
6.	AVAILABLE AS TAPERED MATERIAL	NO	YES	YES	NO	YES
7.	YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1971	1966	1977	1982	1977
8.	COMMON AVAILABLE SIZES					
	2' x 4'	X	X	X		X
	3' x 4'					
	4' x 4'	X	X	X		X
	4' x 8'	X		X	X	X
	Other	X	X		4 x 12 OR 4 x 16	
	COMMON AVAILABLE THICKNESSES					
	WATER ABSORPTION, TRANSVERSE STRENGTH, C-VALUES, R-VALUES, PERCENT BY VOLUME					
9.1	Thickness (inches)	2.67	2.67	2.0	8.0	2.0
	Thermal Conductance (C) @75 F	0.103	0.103	0.10	0.033	0.10
	Thermal Resistance (R) @75 F	9.73	9.73	10.0	30.30	10.0
	Weight (lbs/ft <sup>2</sup> )	0.8	0.8			
9.2	Thickness (inches)	4.16	4.16	4.0	6.0	4.0
	Thermal Conductance (C) @75 F	0.065	0.065	0.06	0.045	0.05
	Thermal Resistance (R) @75 F	15.47	15.47	16.67	22.22	20.0
	Weight (lbs/ft <sup>2</sup> )	0.93	0.93			
9.3	Thickness (inches)	7.36	7.36	6.0		6.0
	Thermal Conductance (C) @75 F	0.036	0.036	0.04		0.04
	Thermal Resistance (R) @75 F	27.79	27.79	25.0		25.0
	Weight (lbs/ft <sup>2</sup> )	1.2	1.2			
9.4	Thickness (inches)	2.67	2.67	8.0		8.0
	Thermal Conductance (C) @75 F	0.093	0.093	0.03		0.03
	Thermal Resistance (R) @75 F	10.77	10.77	33.33		33.33
	Weight (lbs/ft <sup>2</sup> )	0.98	0.98			
9.5	Thickness (inches)	4.16	4.16			
	Thermal Conductance (C) @75 F	0.058	0.058			
	Thermal Resistance (R) @75 F	17.3	17.3			
	Weight (lbs/ft <sup>2</sup> )	1.23	1.23			
9.6	Thickness (inches)	7.36	7.36			
	Thermal Conductance (C) @75 F	0.032	0.032			
	Thermal Resistance (R) @75 F	31.21	31.21			
	Weight (lbs/ft <sup>2</sup> )	1.76	1.76			
10.	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
11.	UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)	SEE APPENDIX	SEE APPENDIX		ICBO 4246 HUD 1067 RADCO 1165	
12.	LIMITATIONS AND/OR RESTRICTIONS	SEE APPENDIX	SEE APPENDIX			
13.	SEE APPENDIX IF CHECKED	X	X			

NA=not applicable

# Composite Roof Insulation Board

BENCHMARK FOAM INC.	BIG SKY INSULATIONS INC.	BIG SKY INSULATIONS INC.	BIG SKY INSULATIONS INC.	CARPENTER INSULATION COMPANY	CARPENTER INSULATION COMPANY	CARPENTER INSULATION COMPANY	CARPENTER INSULATION COMPANY	CARPENTER INSULATION COMPANY
SD	MT	MT	MT	VA	VA	VA	VA	VA
PERMAFOAM COMPOSITE	EPS-PERLITE COMPOSITE	EPS-GYPSUM COMPOSITE	EPS-FIBERBOARD COMPOSITE	CARPENTER EPS / PLYWOOD	CARPENTER EPS / PERLITE	CARPENTER EPS / SYTROFOIL	CARPENTER EPS / GYPSUM	CARPENTER EPS / WAFERBOARD
X	X	X	X	X	X	X	X	X
	X	X			X			
X			X				X	
				X				
						X		X
						X		
						X		
YES	YES	YES	YES	YES	YES	YES	YES	YES
1977	1981	1981	1981	1977	1977	1977	1977	1977
X	X	X	X		X			
X	X		X	X	X	X	X	X
X	X	X	X	X		X	X	X
						X		
2.0	1.75	1.5	1.5	1.5	1.75	1.0	1.5	1.5
0.10	0.169	0.233	0.193	0.22	0.168	0.259	0.23	0.20
10.0	5.92	4.29	5.18	4.48	5.94	3.86	4.28	5.08
	0.769	1.062	0.753	1.5	0.68	0.085	2.18	1.5
4.0	2.25	2.0	2.0	2.0	2.25	2.0	2.0	2.0
0.06	0.127	0.161	0.14	0.156	0.126	0.129	0.16	0.14
16.67	7.87	6.21	7.14	6.40	7.86	7.75	6.21	7.0
	0.811	1.104	0.795	1.53	0.73	0.17	2.23	1.53
6.0	2.75	2.5	2.5	2.5	2.75	2.5	2.5	2.5
0.04	0.102	0.123	0.11	0.12	0.102	0.104	0.12	0.11
25.0	9.80	8.13	9.09	8.33	9.78	9.62	8.13	8.93
	0.853	1.146	0.837	1.57	0.77	0.22	2.27	1.57
8.0	3.25	3.0	3.0	3.0	3.25	3.0	3.0	3.0
0.03	0.085	0.099	0.091	0.097	0.085	0.086	0.099	0.092
33.33	11.76	10.10	10.99	10.35	11.71	11.63	10.06	10.85
	0.845	1.187	0.878	1.61	0.81	0.255	2.31	1.61
	3.75	3.5	3.5	3.5	3.75	3.5	3.5	3.5
	0.073	0.083	0.077	0.082	0.073	0.074	0.083	0.078
	13.70	12.05	12.99	12.18	13.63	13.51	11.98	12.77
	0.936	1.229	0.92	1.65	0.85	0.30	2.35	1.65
	4.25	4.0	4.0	4.0	4.25	4.0	4.0	4.0
	0.064	0.072	0.067	0.07	0.064	0.065	0.072	0.068
	15.63	13.89	14.93	14.11	15.55	15.38	13.90	14.70
	0.978	1.271	0.96	1.7	0.90	0.34	2.4	1.7
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

# Composite Roof Insulation Board

1.	COMPANY NAME	CARPENTER INSULATION COMPANY	DOW CHEMICAL COMPANY	INSULATED BUILDING SYSTEMS	INSULATED BUILDING SYSTEMS	POLYFOAM PACKERS CORP.
2.	STATE	VA	CANADA	VA	VA	IL
3.	PRODUCT NAME	CARPENTER EPS / WAFERBOARD	ROOFMATE CT	AFM PERFORM 1, 2 & 3	AFM CONTOUR TAPER TILE	THERMOSAFE PLUS WITH FIBERBOARD
4.	COMPOSITE COMPONENTS					
	Expanded Polystyrene	X		X	X	X
	Extruded Polystyrene		X			
	Polyurethane					
	Polyisocyanurate					
	Perlite			X	X	
	Gypsum Board					
	Fiber Board	X		X	X	X
	Plywood			X	X	
	Other			X	X	
5.	SURFACE TREATMENT					
	Asphalt Roofing Felt					X
	Foil Facer			X	X	X
	Kraft Paper					X
	Other		X	X	X	X
6.	AVAILABLE AS TAPERED MATERIAL	YES	NO	NO	YES	YES
7.	YEAR FIRST USED IN COMMERCIAL ROOFING SYSTEM	1977	1985	1971	1966	1990
8.	COMMON AVAILABLE SIZES					
	2' x 4'			X	X	X
	3' x 4'					X
	4' x 4'	X		X	X	X
	4' x 8'	X		X		X
	Other			X	X	X
	COMMON AVAILABLE THICKNESSES					
	WATER ABSORPTION, TRANSVERSE STRENGTH, C-VALUES, R-VALUES, PERCENT BY VOLUME					
9.1	Thickness (inches)	1.5		1.5	1.5	1.5
	Thermal Conductance (C) @75 F	0.19		0.193	0.193	0.174
	Thermal Resistance (R) @75 F	5.17		5.18	5.18	5.74
	Weight (lbs/ft <sup>2</sup> )	0.83		0.83	0.83	0.76
9.2	Thickness (inches)	2.0		2.0	2.0	2.5
	Thermal Conductance (C) @75 F	0.14		0.141	0.141	0.099
	Thermal Resistance (R) @75 F	7.10		7.09	7.09	10.09
	Weight (lbs/ft <sup>2</sup> )	0.88		0.85	0.85	0.93
9.3	Thickness (inches)	2.5		2.5	2.5	3.5
	Thermal Conductance (C) @75 F	0.11		0.111	0.111	0.069
	Thermal Resistance (R) @75 F	9.02		9.01	9.01	14.44
	Weight (lbs/ft <sup>2</sup> )	0.92		0.88	0.88	1.1
9.4	Thickness (inches)	3.0		3.0	3.0	4.5
	Thermal Conductance (C) @75 F	0.091		0.091	0.091	0.053
	Thermal Resistance (R) @75 F	10.95		10.99	10.99	18.79
	Weight (lbs/ft <sup>2</sup> )	0.96		0.92	0.92	1.27
9.5	Thickness (inches)	3.5		3.5	3.5	5.5
	Thermal Conductance (C) @75 F	0.078		0.078	0.078	0.043
	Thermal Resistance (R) @75 F	12.87		12.82	12.82	23.14
	Weight (lbs/ft <sup>2</sup> )	0.99		0.964	0.964	1.43
9.6	Thickness (inches)	4.0		4.0	4.0	6.5
	Thermal Conductance (C) @75 F	0.068		0.068	0.068	0.036
	Thermal Resistance (R) @75 F	14.80		14.71	14.71	27.49
	Weight (lbs/ft <sup>2</sup> )	1.04		1.0	1.0	1.6
10.	ESTIMATED PERCENTAGE OF THERMAL VALUE RETENTION					
	(assuming a continuous mean temperature @ 1 year differential and constant moisture content)	100		100	100	100
	@ 5 years	100		100	100	100
	@ 10 years	100		100	100	100
11.	UL "P" DESIGN NUMBERS; BUILDING CODE AGENCY APPROVED DESIGN NUMBERS; ICBO, BOCA, SBCCI (OTHERS)			SEE APPENDIX	SEE APPENDIX	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
13.	SEE APPENDIX IF CHECKED			X	X	X

NA=not applicable

# Composite Roof Insulation Board

POLYFOAM PACKERS CORP.	POLYFOAM PACKERS CORP.	T-CLEAR CORPORATION	T-CLEAR CORPORATION
IL	IL	OH	OH
THERMOESAFE PLUS WITH PERLITE	HERMOSAFE PLUS WITH FIBERBOARD AND PERLITE	LIGHTGUARD	HEAVYGUARD
X	X		
		X	X
X	X		
	X		
		CONCRETE	CONCRETE
X			
X			
X			
X		3/8" CONCRETE	15/16" CONCRETE
YES	YES	NO	NO
1990	1990	1976	1983
X	X	X	X
X	X		
X	X		
X	X		
X	X		
1.75	2.25	2	2.0
0.155	0.127	0	0.1
6.43	7.82	10	10
0.76	1.36	5	11
2.75	3.25	3	3
0.092	0.082	0	0.06
10.78	12.17	15	15
0.93	1.53	5	11
3.75	4.25		
0.066	0.06		
15.13	16.52		
1.1	1.7		
4.75	5.25		
0.051	0.048		
19.48	20.87		
1.27	1.87		
5.75	6.25		
0.042	0.04		
23.83	25.22		
1.43	2.03		
6.75	7.25		
0.035	0.034		
28.18	29.57		
1.6	2.2		
100	100	100	100
100	100	98	98
100	100	95	95
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	P 225, 229, 230, 235, 404, 505, 507, 714, 803, 904	P 225, 229, 230, 235, 404, 505, 507, 714, 803, 904
SEE APPENDIX	SEE APPENDIX	PMR INSULATION	PMR INSULATION
X	X		

## Appendix, Rigid Board Insulation

### AFM R-CONTROL BUILDING SYSTEMS

The following companies, included in the *Low-Slope 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 (111 W. Fireclay Ave., Murray, UT 84107, 801/265-3465); Advance Foam Plastics, Inc., Nevada (902 Kleppe Lane, Sparks, NV 89431 775/355-7655); Allied Foam Products, Inc. (1604 Athens Hwy/Box 2861, Gainesville, GA 30503, 770/536-7900); Big Sky Insulations, Inc., 15 Arden Drive, P.O. Box 838, Belgrade, MT 59714, 406/388-4146; Branch River Foam Plastics, Inc., 15 Thruber Blvd., Smithfield, RI 02917, 401/232-0270; Contour Products, Inc. Kansas City and Newton, Kansas (4001 Kaw Drive, Kansas City, KS 66102, 913/321-4114); Flexible Packaging, Co. (P.O. Box 4321, Bayamon, PR 00958, 787/786-8405 Insulated Building Systems, Inc., 326 McGhee Road, Winchester, VA 22603, 540/662-0882); Team Industries, Inc. (4580 Airwest Drive S.E., Grand Rapids, MI 49508, 616/698-2001; NPS Corporation (Industrial Drive/POB 348, Perryville, MO 63775, 573/547-8388); Pacemaker Plastics Co., Inc. (126 New Pace Rd. P.O. Box 279, Newcomerstown, OH 43832, 800/446-2188); Pacific Allied Products, Ltd. (Campbell Industrial Park, 91-102B Kaomi Loop, Kapolei, HI 96707, 808/682-2038); Poly Foam, Inc. (116 Pine Street So., Lester Prairie, MN 55354, 320/345-2351); 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., 2101 Kenmore Ave., Buffalo, NY 14207 (716/874-6474); Thermal Foams/Syracuse, Inc. (6173 South Bay Rd/Box 396, Cicero, NY 13039, 315/699-8734, 800/873-6267); Wisconsin EPS, (90 Trowbridge Drive/FOB 669, Fond Du Lac, WI 54935; 920/923-4146). 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 1999 UL Fire Resistance Directory: P211, P225, P230, P231, P238, P246, P250, P251, P254, P255, P261, P262, P410, P411, P508, P509, P510, P511, P513, P514, P515, P701, P710, P711, P713, P717, P801, P803, P814, P815, P817, P818, P902, P909, P912, P915, P919, P920, P921, P922, P923, 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 94-65, 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.

### 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 Perkić 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. Available in non-HCFC formulation.

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 THE highest R-value of all ACFoam products. Specifically designed for use with mechanically fastened and loose laid ballasted single-ply systems, ACFoam Supreme should not 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./ft.

ACFoam Nail Base Insulation provides a base for non-asphaltic 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

faced with glass-fiber reinforced facers and bonded to 7/16-in. APA-rated OSB.

Vented-R is a polyiso insulation, laminated to OSB, constructed with ventilation spaces to reduce 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. 96-0612.01; 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-II/ACFoam Composite, Nail Base and Vented-R): 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. ASTM C1289-95, Type II; C1289-95, Type V; C1289-95, Type I, Class I; C1289-95, Type III. Meets Can/CGSB Standards, CCMC No. 12464-L, CCMC No. 12423-L, and CCMC No. 12422-R.

## 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 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.

Thermapink 18/25/40; and Dow Dechmate, Plazamate and Recovermate; 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.

Polyisocyanurate HP, HP-H, 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 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, P701, P710, P713, P717, P719, P720, P722, P723, P724, P727, P728, P729, P730, P732, P734, P735, P739, P801, P814, P815, P818, P819, P823, P827, P828. UL 1256 Roof Deck constructions: 99, 120 and 123. FM approved FMRC Standard 4450/4470 for Class 1 Insulated Steel Deck Roofs.

## **THE DOW CHEMICAL COMPANY**

Blue Styrofoam Brand Roofmate Insulation, Blue Styrofoam Brand Plazamate Insulation, Blue Styrofoam Brand Square Edge Insulation, Blue Styrofoam Brand Tongue & Groove Insulation, Blue Styrofoam Brand Recovermate, Blue Styrofoam Brand Deckmate Insulation, Blue Styrofoam Brand 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 High Load 100 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 Roofing Recovery Board, Styrofoam brand Recovermate, and Styrofoam Deckmate and Deckmate Plus insulations are intended for use beneath loose-laid and ballasted or mechanically fastened sheet membranes in roof construction. Styrofoam brand insulations 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 should be shielded from the sunlight with an opaque, light-colored covering. Notice: Styrofoam brand insulation 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, P202, P203, P204, P206, P210, P211, P224, P225, P230, P232, P237, P238, P250, P254, P259, P263, P267, 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 tempera-

tures 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, 0827.

Mechanical Fasteners: GAF recommends the use of GAF TITE 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 cellulosic wood fiberboard insulation is produced in 1/2", 3/4" and 1" thick homogenous (non-laminated) panels and are available in sizes 4 x 8, 4 x 4 and, upon request, 2 x 4. High Density is produced in 1/2" and 1" thickness for adhered roof systems and Regular Density is produced in 1/2" for ballasted or mechanically fastened systems. High Density is FM approved for adhered roof systems for I-60 and I-90 wind uplift in FM report J.I. OV7A2.AM and is also available, upon request, UL classified.

Compliances: ASTM C-208-1994, Grade 1 (Regular Density) and Grand II (High Density). It should be noted that Georgia-Pacific High Density roof fiberboard insulation is produced under ASTM C-208-1994 (14# transverse strength), and not under ASTM C-208-1995 (12# transverse strength) which is

important for adhered roof systems and wind uplift design.

### **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.

### **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) GET-PINK.

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 Termapink 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 fastened 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. Durpink 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, SBCCI 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, J925, J941, J970. UL Construction number 458, and Wisconsin 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.

## **R-MAX, INC.**

**Thermarroof 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.

**Thermarroof 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.

## **TEMPLE**

**Fiber Base HD:** FM-approved roof insulation for I-60 and I-90 wind uplift rated systems as outlined in FM reports J.I. 2M3A2.AM and J.I. 1T6A2.AM. Approval under these reports includes 25/32" Fiber Base HD, effective June 1, 1999. FM allows Fiber Base HD wherever generic wood fiber insulation is specified. Fiber Base HD is available by special order as UL-classified product for the built-up roof covering material. See R11115(N) under TGFU 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 application instructions for specific recommendations. **Compliances:** Industry Standard ANSI/AHA A 194.1 and ASTM C208.

## **TENNECO BUILDING PRODUCTS**

Extruded Polystyrene Roofing Recover 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 Amofoam-CM (square edge), or Amofoam-SL (sidelap edge), Amofoam-DC (drainage channels). Amofoam available as 2 ft. x 8 ft. and 4 ft. x 8 ft. sizes. R-values and C-value for Amofoam are for Type IV. Underwriters Laboratories, Inc. Roof deck construction numbers: Amofoam-CM, SL, 1, 2, 3, 9, 14, 58, 87, 200.

Limitations and/or restrictions: Amocor-PB6, Amocor-Plygood-PG38, and Amocor Plygood-PG39 Roofing Recovery Boards are designed for use in mechanically fastened or loose-laid and ballasted single-ply roofing systems. Amofoam 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 Amofoam 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 Tenneco Building Products, 2907 Log Cabin Drive, Smyrna, GA 30080-7013.

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## Section 3

*Low-Slope Roofing  
Materials Guide*

***2000***

*Roof Fasteners*

## Information on Section 3: Roof Fasteners

### General Information

Section 3: Roof Fasteners in the 2000 edition of NRCA's *Low-Slope Roofing Materials Guide* provides a comprehensive listing of fastener products used in low-slope roofing. Such fasteners are typically used to attach rigid board insulation and/or single-ply membranes to structural roof deck substrates.

Information on roof fasteners is presented in the guide in four sections, based on the substrate into which fasteners will be attached. These four sections are as follows:

- Steel decks
- Wood decks
- Concrete decks
- Lightweight concrete, gypsum or cementitious wood fiber decks

An index of the manufacturers included in Section 3: Roof Fasteners and locations of their specific products within this section immediately follows this Roof Fasteners section.

### Roof Fastener Products: Steel Decks

Specific listing information on roof fastener products used for steel roof decks is as follows:

1. Company name
2. Product name
3. Country of manufacture
4. Used with
5. Material type
6. Coating type
7. Shank type
8. Point type
9. Method of attachment
10. Diameter, length, fastening range, penetration
11. Head shape
12. Head dimensions
13. Plates
14. Plate shape, dimensions and material
15. Installation equipment
16. Average pullout resistance
17. Meets FM approval requirements as a component of a Class I steel roof deck
18. Passes FM 4470 for corrosion resistance
19. Acceptable by the following codes
20. Warranty available from manufacturer

### Roof Fastener Products: Wood Decks

Specific listing information on roof fastener products used for wood roof decks is as follows:

1. Company name
2. Product name

3. Country of manufacture
4. Used with
5. Material type
6. Coating type
7. Shank type
8. Point type
9. Method of attachment
10. Diameter, length, fastening range, penetration
11. Head shape
12. Head dimensions
13. Plates
14. Plate shape, dimensions and material
15. Installation equipment
16. Average pullout resistance
17. Meets FM approval requirements as a component of a Class I wood roof deck
18. Acceptable by the following codes
19. Warranty available from manufacturer

### Roof Fastener Products: Concrete Decks

Specific listing information on roof fastener products used for concrete roof decks is as follows:

1. Company name
2. Product name
3. Country of manufacture
4. Used with
5. Material type
6. Coating type
7. Shank type
8. Point type
9. Method of attachment
10. Diameter, length, fastening range, penetration
11. Head shape
12. Head dimensions
13. Plates
14. Plate shape, dimensions and material
15. Installation equipment
16. Average pullout resistance
17. Meets FM approval requirements as a component of a Class I concrete roof deck
18. Acceptable by the following codes
19. Warranty available from manufacturer

### Roof Fastener Products: Lightweight Concrete, Gypsum or Cementitious Wood Fiber Decks

Specific listing information on roof fastener products used for lightweight concrete, gypsum or cementitious wood fiber roof decks is as follows:

1. Company name
2. Product name
3. Country of manufacture
4. Deck type
5. Used with
6. Material type
7. Coating type

8. Shank type
9. Point type
10. Method of attachment
11. Diameter, length, fastening range, penetration
12. Head shape
13. Head dimensions
14. Plates
15. Plate shape, dimensions and material
16. Installation equipment
17. Average pullout resistance
18. Acceptable by the following codes
19. Warranty available from manufacturer

## **Additional Information**

Users of the guide who are interested in additional information regarding roof fasteners are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

# Index to Roof Fasteners

	LTWT CONCRETE, GYPSUM, OR WOOD FIBER DECKS	CONCRETE DECKS	WOOD DECKS	STEEL DECKS
<b>BMCA INSULATION PRODUCTS INC.</b> 300 N. Haven Avenue Ontario, CA 91761 800/858-8868 FAX 909/390-8764 E-mail: Web:	376			
<b>CARLISLE SYNTEC INCORPORATED</b> 1285 Ritner Hwy. P.O. Box 7000 Carlisle, PA 17013 717/245-7000 FAX 717/245-7053 E-mail: Web:	376	402	434	452
<b>CELOTEX CORP.</b> 4010 Boy Scout Blvd. Tampa, FL 33607 813/873-4000 FAX: E-mail: Web:	378	403	435	454
<b>CONSTRUCTION FASTENERS INC.</b> DEKFAST PRODUCT GROUP Spring & Van Reed Box 6326 Wyomissing, PA 19610 610/376-5751 FAX 610/376-8551 E-mail: Web:	379	405	436	454
<b>DURO-LAST INC.</b> 525 Morley Drive Saginaw, MI 48601 800/248-0280 FAX 800/432-9331 E-mail: Web:	381	407	437	
<b>ES PRODUCTS INC.</b> 280 Franklin Street P.O. Box 810 Bristol, RI 02809 401/253-8600 FAX 401/253-8896 E-mail: Web:		407		455
<b>FIRESTONE BUILDING PRODUCTS</b> 525 Congressional Blvd. Carmel, IN 46032 800/428-4442 FAX 317/575-7100 E-mail: Web:	381	407	437	459
<b>GAF MATERIALS CORP.</b> 1361 Alps Road Wayne, NJ 07470 973/628-3000 FAX 973/628-3356 E-mail: Web:	382	408	438	460

	LTWT CONCRETE, GYPSUM, OR WOOD FIBER DECKS	CONCRETE DECKS	WOOD DECKS	STEEL DECKS
<b>HILTI INC.</b> P.O. Box 21148 Tulsa, OK 74121 800/879-8000 FAX 918/252-6988 E-mail: ushilti.com WebL	385	410	439	462
<b>ITW BUILDDEX</b> 1349 W. Bryn Mawr Ave. Itasca, IL 60143 800/284-5339 630/595-3500 FAX 630/595-6329 E-mail: Web:	386	411	441	463
<b>JOHNS MANVILLE INTERNATIONAL INC.</b> Roofing Systems Group P.O. Box 5108 Denver, CO 80217 303/978-2000 FAX 303/978-3904 E-mail: Web:	389	414	443	464
<b>NATIONAL NAIL CORP.</b> 2964 Clydon SW Grand Rapids, MI 49509 800/746-5659 FAX 616/531-5970 E-mail: Web:		415	443	
<b>OLYMPIC MANUFACTURING GROUP INC.</b> P.O. Box 508 153 Bowles Road Agawam, MA 01001 800/633-3800 or 413/789-0252 FAX 413/789-1069 E-mail: info@olyfast.com	391	417	443	465
<b>POWERS RAWL, POWERS FASTENERS, INC</b> New Rochelle, NY 10801 914/235-6300 FAX 914/576-6483 E-mail: Web: www.powers.com	393	418	445	467
<b>SENCO PRODUCTS</b> 8485 Broadwell Road Cincinnati, OH 45244 800/543-4596 FAX 800/543-3299 E-mail: Web: www.senco.com		420		
<b>SFS STADLER INC.</b> 5460 Wegman Drive Valley City, OH 44280 330/273-7171 or 800/648-6032 FAX 330/273-7181 E-mail: Web:	394	421	446	468

# Index to Roof Fasteners

	LTWT CONCRETE, GYPSUM, OR WOOD FIBER DECKS	CONCRETE DECKS	WOOD DECKS	STEEL DECKS
<b>SIMPLEX NAILS &amp; FASTENERS, INC.</b> 100 Petty Road, Suite A Lawrenceville, GA 30043-4813 800/622-3354 FAX 770/822-6822 E- Mail: technical@www.simplexnails.com Web:	424	448	469	
<b>TRI-PLY</b> P.O. Box 2685 Port Arthur, TX 77643 800/331-3007 FAX: 409/727-0771 E-mail:	399	449	471	

	LTWT CONCRETE, GYPSUM, OR WOOD FIBER DECKS	CONCRETE DECKS	WOOD DECKS	STEEL DECKS
<b>TRU-FAST CORPORATION</b> 02105 Williams County Road 12-C Bryan, OH 43506 800/443-9804 FAX 419/636-1784 E-mail: tru-fast@bright.net Web Site: trufast.com	399	431	449	471
<b>U.S. INTEC, INC.</b> 1361 Alps Road Wayne, NJ 07470 800/624-6832 (Tech Hotline) 800/231-4631 FAX:	401	433	451	472

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## Roof Fasteners: Steel Decks

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NA = not applicable

## Roof Fasteners: Steel Decks

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## Roof Fasteners: Steel Decks

NA = not applicable



## Roof Fasteners: Steel Decks

NA = not applicable

### Roof Fasteners: Steel Decks

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## Roof Fasteners: Steel Decks

NA = not applicable



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[illegible]

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[illegible]

NA = not applicable

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[illegible]

# Roof Fasteners: Steel Decks

1.	COMPANY NAME	OLYMPIC MANUFACTURING GROUP				OLYMPIC MANUFACTURING GROUP			
2.	PRODUCT NAME	OLYMPIC FASTENER HD #14 (C-STEEL)				OLYMPIC FASTENER HD #14 (S-STEEL)			
3.	COUNTRY OF MANUFACTURE	U.S.				U.S.			
4.	USED WITH:								
	Insulation Attachment	X				X			
	Built-Up Membranes	X				X			
	Single-Ply Membranes	X				X			
5.	MATERIAL TYPE	HARDENED CARBON STEEL				STAINLESS STEEL, SPECIAL 400-SERIES BLEND			
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			
9.	METHOD OF ATTACHMENT	THREADED				THREADED			
10.	SHANK DIAMETER (INCHES) / SHANK LENGTH (INCHES) / THICKNESS (INCHES) / DECK PENETRATION (INCHES)								
		0.190	1-1/4	3/4	3/4	0.201	1-1/4	3/4	3/4
		0.190	1-3/4	1-1/4	3/4	0.201	1-3/4	1-1/4	3/4
		0.190	2	1-1/2	3/4	0.201	2	1-1/2	3/4
		0.190	3	2-1/2	3/4	0.201	3	2-1/2	3/4
		0.190	4	3-1/2	3/4	0.201	4	3-1/2	3/4
		0.190	5	4-1/2	3/4	0.201	5	4-1/2	3/4
		0.190	6	5-1/2	3/4	0.201	6	5-1/2	3/4
		0.190	7	6-1/2	3/4	0.201	7	6-1/2	3/4
		0.190	8	7-1/2	3/4	0.201	8	7-1/2	3/4
		0.190	9	8-1/2	3/4	0.201	9	8-1/2	3/4
		0.190	10	9-1/2	3/4	0.201	10	9-1/2	3/4
		0.190	11	10-1/2	3/4	0.201	12	11-1/2	3/4
		0.190	12	11-1/2	3/4	0.201	14	13-1/2	3/4
		0.190	14	13-1/2	3/4	0.201	16	15-1/2	3/4
		0.190	16	15-1/2	3/4	0.201	17	16-1/2	3/4
		0.190	17	16-1/2	3/4	0.201	18	17-1/2	3/4
		0.190	18	17-1/2	3/4	0.201	20	19-1/2	3/4
		0.190	20	19-1/2	3/4	0.201	21	20-1/2	3/4
		0.190	21	20-1/2	3/4	0.201	21	20-1/2	3/4
		0.190	22	21-1/2	3/4	0.201	22	21-1/2	3/4
		0.190	24	23-1/2	3/4	0.201	24	23-1/2	3/4
11.	HEAD SHAPE	ROUND TRUSS, #3 PHILLIPS				ROUND TRUSS, #3 PHILLIPS			
12.	HEAD DIMENSIONS (inches)								
	Thickness	0.110				0.108			
	Diameter	0.435				0.435			
13.	PLATES								
	Required (yes/no)	YES				YES			
	Available From Manufacturer (yes/no)	YES				YES			
14.	PLATE SHAPE / DIMENSIONS (inches) / MATERIAL								
		ROUND	2	STEEL		ROUND	2	STAINLESS STEEL	
		ROUND	2	PLASTIC		ROUND	3	STAINLESS STEEL	
		ROUND	3	STEEL		ROUND	2	STEEL	
		ROUND	3	PLASTIC		ROUND	2	PLASTIC	
		ROUND	3-1/2	STEEL		ROUND	3	STEEL	
		ROUND	2	STAINLESS STEEL		ROUND	3	PLASTIC	
		ROUND	3	STAINLESS 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)					APPRC			
	Other								
16.	AVERAGE PULLOUT RESISTANCE (lbs.) (FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)								
	18 Gauge	585				585			
	20 Gauge	535				535			
	22 Gauge	505				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, UL, ICBO, METRO-DADE COUNTY				FM, UL, ICBO, METRO-DADE COUNTY			
20.	MANUFACTURER WARRANTY AVAILABLE (yes/no)	YES				YES			
21.	SEE APPENDIX IF CHECKED								

NA = not applicable

# Roof Fasteners: Steel Decks

POWERS FASTENERS, INC.				POWERS FASTENERS, INC.				POWERS FASTENERS, INC.			
POWER RAWL SPEED-LOCK TOGGLE				POWERS RAWL #12 DECK SCREW				POWERS RAWL #14 DECK SCREW			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
CARBON STEEL & STAINLESS STEEL				CASE HARDENED CARBON STEEL				CASE HARDENED CARBON STEEL			
PERMA-SEAL FLUOROPOLYME (on carbon steel bolt only)				PERMA-SEAL FLUOROPOLYMER				PERMA-SEAL FLUOROPOLYMER			
ANNULAR THREAD				SPIRAL THREAD				SPIRAL THREAD			
NA				DRILL TYPE				DRILL TYPE			
CLAMPING				THREADED				THREADED			
0.250	5	3-1/2	1-1/2	0.226	1-5/8	7/8	3/4	0.238	1-5/8	7/8	3/4
0.250	6	4-1/2	1-1/2	0.226	2-1/4	1-1/2	3/4	0.238	2-1/4	1-1/2	3/4
0.250	7	5-1/2	1-1/2	0.226	2-7/8	2-1/8	3/4	0.238	2-7/8	2-1/8	3/4
0.250	8	6-1/2	1-1/2	0.226	3-1/4	2-1/2	3/4	0.238	3-3/4	3	3/4
0.250	9	7-1/2	1-1/2	0.226	3-3/4	3	3/4	0.238	4-1/2	3-3/4	3/4
0.250	10	8-1/2	1-1/2	0.226	4-1/2	3-3/4	3/4	0.238	5	4-1/4	3/4
0.250	12	10-1/2	1-1/2	0.266	5	4-1/4	3/4	0.238	6	5-1/4	3/4
0.250	14	12-1/2	1-1/2	0.266	6	5-1/4	3/4	0.238	7	6-1/4	3/4
				0.266	7	6-1/4	3/4	0.238	8	7-1/4	3/4
				0.266	8	7-1/4	3/4	0.238	10	9-1/4	3/4
								0.238	12	11-1/4	3/4
PHILLIPS FLAT HEAD #3 RECESS				PHILLIPS TRUSS HEAD #3 RECESS WASHER / 1/4-IN HEX HEAD				PHILLIPS FLAT TRUSS HEAD #3 RECESS			
0.042				0.130 , 0.140				0.118			
0.426				0.448, 0.385				0.448			
YES				YES				YES			
YES				YES				YES			
ROUND	3	GALVALUME		ROUND BARBED	2	GALVALUME		ROUND BARBED	2	GALVALUME	
				ROUND	3	GALVALUME		ROUND	3	GALVALUME	
				ROUND	3	STAINLESS STEEL		ROUND	3	STAINLESS STEEL	
				ROUND	3	PLASTIC		ROUND	3	PLASTIC	
OPTIONAL				REQUIRED				REQUIRED			
OPTIONAL				STAND UP TOOL (OPTIONAL)				STAND UP TOOL (OPTIONAL)			
APPROPRIATE DRILL & BIT FOR DRILLING THROUGH DECK (REQUIRED)											
				725				735			
				655				630			
975				550				505			
YES				YES				YES			
YES				YES				YES			
FM				FM				FM			
YES				YES				YES			
X				X							



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[illegible]

NA = not applicable

## Roof Fasteners: Steel Decks

SFS STADLER INC.	SFS STADLER INC.	SFS STADLER INC.
ISOFAST IF2-C-M	ISOFAST IF-2-S	SYSTEM METAL ES
U.S.	SWITZERLAND	U.S.
X	X	X
X	X	
X	X	
CARBON STEEL	300 SERIES STAINLESS STEEL	HARDENED STEEL
TUFF-TITE II		TUFF TITE II
THREADED	THREADED	SPIRAL THREAD
SELF-DRILLING 2 FLUTE DRILL POINT	SELF-DRILLING 2 FLUTE DRILL POINT	SELF-DRILLING AND FLUTE DRILL POINT
THREADED	THREADED	THREADED
0.189    2-1/8    1-5/8    1/2	0.189    2    1-1/2    1/2	0.189    2    1-1/2    1/2
0.189    2-1/4    1-3/48    1/2	0.189    3-1/8    2-5/8    1/2	0.189    2-1/4    1-3/4    1/2
0.189    2-3/4    2-1/4    1/2	0.189    3-7/8    3-3/8    1/2	0.189    2-3/4    2-1/4    1/2
0.189    3-1/8    2-5/8    1/2	0.189    4-3/4    4-1/4    1/2	0.189    3-1/8    2-5/8    1/2
0.189    3-7/8    3-3/8    1/2	0.189    5-1/2    4-3/4    1/2	0.189    3-7/8    3-3/8    1/2
0.189    4-3/4    4-1/4    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    5-1/2    4-3/4    1/2
0.189    6-1/4    5-1/2    1/2		0.189    6-1/4    5-1/2    1/2
#2 POSI-DRIVE COUNTERSUNK	8mm HEX HEAD	8mm HEX HEAD
0.156	0.156	0.156
0.406	0.406	0.406
YES		YES
YES		YES
OVAL            3-1/4 X 1-5/8       GALVALUME	OVAL            3-1/4 X 1-5/8       GALVALUME	ROUND            3            GALVALUME
SQUARE          2-3/4 X 2-3/4       GALVALUME	SQUARE          2-3/4 X 2-3/4       GALVALUME	
DOMED COVEX    3-1/4 X 1-5/8       GALVALUME	DOMED COVEX    3-1/4 X 1-5/8       GALVALUME	
REQUIRED	REQUIRED	REQUIRED
REQUIRED	OPTIONAL	OPTIONAL
REQUIRED	OPTIONAL	OPTIONAL
--	--	--
552	552	552
505	451	451
YES	YES	YES
YES		YES
FM, METRO-DADE COUNTY	FM, METRO-DADE COUNTY	FM, METRO-DADE COUNTY
YES	YES	YES
X	X	X

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[illegible]

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[illegible]

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[illegible]

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[illegible]

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[illegible]

NA = not applicable

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[illegible]



## 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:											
	Insulation Attachment	X					X					
	Built-Up Membranes											
	Single-Ply Membranes	X					X					
5.	MATERIAL TYPE	CARBON STEEL					ZAMAC					
6.	COATING TYPE	EPOXY ELECTRODEPOSITION										
7.	SHANK TYPE	SINGLE LEAD, BUTTRESS THREAD					SPIRALTHREAD					
8.	POINT TYPE	MINI-DRILL POINT					PIERCE-POINT					
9.	METHOD OF ATTACHMENT	THREADED					THREADED					
10.	SHANK DIAMETER (inches) / SHANK LENGTH (inches) / FASTENING RANGE THICKNESS (inches) / PLYWOOD DECK PENETRATION (inches) / WOOD DECK PENETRATION (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											
	Required (yes/no)	YES					YES					
	Available From Manufacturer (yes/no)	YES					YES					
14.	PLATE SHAPE / DIMENSIONS (inches) / MATERIAL	SQUARE W/ROUNDED CORNER 2-7/8 GALVALUME					ROUND	2	GALVALUME			
		ROUND 2 GALVALUME					ROUND	3	GALVALUME			
		LOCKING 2 GALVALUME W/ 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.	MANUFACTURER WARRANTY AVAILABLE (yes/no)	YES					YES					
20.	SEE APPENDIX IF CHECKED											

NA = not applicable

## Roof Fasteners: Wood Decks

[illegible]

## Roof Fasteners: Wood Decks

1.	COMPANY NAME	CELOTEX CORPORATION					CELOTEX CORPORATION				
2.	PRODUCT NAME	ANCHORBOND #14					ANCHORBOND #15 HEAVY DUTY				
3.	COUNTRY OF MANUFACTURE	U.S.					U.S.				
4.	USED WITH:										
	Insulation Attachment	X					X				
	Built-Up Membranes	X					X				
	Single-Ply Membranes	X					X				
5.	MATERIAL TYPE	HARDENED CARBON STEEL					HARDENED CARBON STEEL				
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.	SHANK DIAMETER (inches) / SHANK LENGTH (inches) / FASTENING RANGE THICKNESS (inches) / PLYWOOD DECK PENETRATION (inches) / WOOD DECK PENETRATION (inches)										
		0.238	1-1/4	1/4	3/4	1	0.264	1-1/4	1/4	3/4	1
		0.238	1-5/8	5/8	3/4	1	0.264	2	1	3/4	1
		0.238	1-7/8	1-1/4	3/4	1	0.264	3	2	3/4	1
		0.238	2-7/8	1-7/8	3/4	1	0.264	4	3	3/4	1
		0.238	3-1/4	2-1/4	3/4	1	0.264	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

NA = not applicable

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[illegible]

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[illegible]

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[illegible]

NA = not applicable





# Roof Fasteners: Wood Decks

1.	COMPANY NAME	OLYMPIC MANUFACTURING GROUP	POWERS FASTENERS, INC.																																																																																																																																																																					
2.	PRODUCT NAME	OLYMPIC FASTENER HD #14 (S.STEEL)	POWERS RAWL #14 DECK SCREW																																																																																																																																																																					
3.	COUNTRY OF MANUFACTURE	U.S.	U.S.																																																																																																																																																																					
4.	USED WITH:																																																																																																																																																																							
	Insulation Attachment	X	X																																																																																																																																																																					
	Built-Up Membranes	X	X																																																																																																																																																																					
	Single-Ply Membranes	X	X																																																																																																																																																																					
5.	MATERIAL TYPE	STAINLESS STEEL, SPECIAL 400-SERIES BLEND	CASE HARDENED CARBON STEEL																																																																																																																																																																					
6.	COATING TYPE	CR-10 FLUOROCARBON	PERMA-SEAL FLUOROPOLYMER																																																																																																																																																																					
7.	SHANK TYPE	THREADED	SPIRAL THREAD																																																																																																																																																																					
8.	POINT TYPE	PINCH, SELF-DRILLING	DRILL TYPE																																																																																																																																																																					
9.	METHOD OF ATTACHMENT	THREADED	THREADED																																																																																																																																																																					
10.	SHANK DIAMETER (inches) / SHANK LENGTH (inches) / FASTENING RANGE THICKNESS (inches) / PLYWOOD DECK PENETRATION (inches) / WOOD DECK PENETRATION (inches)	<table border="1"> <tr><td>0.190</td><td>1-1/4</td><td>3/4</td><td>1/2</td><td>1</td></tr> <tr><td>0.190</td><td>1-3/4</td><td>1-1/4</td><td>1/2</td><td>1</td></tr> <tr><td>0.190</td><td>2</td><td>1-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.190</td><td>3</td><td>2-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.190</td><td>4</td><td>3-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.190</td><td>5</td><td>4-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.190</td><td>6</td><td>5-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.190</td><td>7</td><td>6-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.190</td><td>8</td><td>7-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.190</td><td>9</td><td>8-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.190</td><td>10</td><td>9-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.190</td><td>12</td><td>11-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.190</td><td>14</td><td>13-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.190</td><td>16</td><td>15-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.201</td><td>17</td><td>16-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.201</td><td>18</td><td>17-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.201</td><td>20</td><td>19-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.201</td><td>21</td><td>19-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.201</td><td>22</td><td>21-1/2</td><td>1/2</td><td>1</td></tr> <tr><td>0.201</td><td>24</td><td>23-1/2</td><td>1/2</td><td>1</td></tr> </table>	0.190	1-1/4	3/4	1/2	1	0.190	1-3/4	1-1/4	1/2	1	0.190	2	1-1/2	1/2	1	0.190	3	2-1/2	1/2	1	0.190	4	3-1/2	1/2	1	0.190	5	4-1/2	1/2	1	0.190	6	5-1/2	1/2	1	0.190	7	6-1/2	1/2	1	0.190	8	7-1/2	1/2	1	0.190	9	8-1/2	1/2	1	0.190	10	9-1/2	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	19-1/2	1/2	1	0.201	22	21-1/2	1/2	1	0.201	24	23-1/2	1/2	1	<table border="1"> <tr><td>0.238</td><td>1-5/8</td><td>1-3/8</td><td>1/4</td><td>--</td></tr> <tr><td>0.238</td><td>2-1/4</td><td>2-5/8</td><td>1/4</td><td>--</td></tr> <tr><td>0.238</td><td>2-7/8</td><td>3-1/2</td><td>1/4</td><td>--</td></tr> <tr><td>0.238</td><td>3-3/4</td><td>4</td><td>1/4</td><td>--</td></tr> <tr><td>0.238</td><td>4-1/2</td><td>4-1/4</td><td>1/4</td><td>--</td></tr> <tr><td>0.238</td><td>5</td><td>4-3/4</td><td>1/4</td><td>--</td></tr> <tr><td>0.238</td><td>6</td><td>5-3/4</td><td>1/4</td><td>--</td></tr> <tr><td>0.238</td><td>7</td><td>6-3/4</td><td>1/4</td><td>--</td></tr> <tr><td>0.238</td><td>8</td><td>7-3/4</td><td>1/4</td><td>--</td></tr> <tr><td>0.238</td><td>9</td><td>8-3/4</td><td>1/4</td><td>--</td></tr> <tr><td>0.238</td><td>10</td><td>9-3/4</td><td>1/4</td><td>--</td></tr> <tr><td>0.238</td><td>11</td><td>10-3/4</td><td>1/4</td><td>--</td></tr> <tr><td>0.238</td><td>12</td><td>11-3/4</td><td>1/4</td><td>--</td></tr> </table>	0.238	1-5/8	1-3/8	1/4	--	0.238	2-1/4	2-5/8	1/4	--	0.238	2-7/8	3-1/2	1/4	--	0.238	3-3/4	4	1/4	--	0.238	4-1/2	4-1/4	1/4	--	0.238	5	4-3/4	1/4	--	0.238	6	5-3/4	1/4	--	0.238	7	6-3/4	1/4	--	0.238	8	7-3/4	1/4	--	0.238	9	8-3/4	1/4	--	0.238	10	9-3/4	1/4	--	0.238	11	10-3/4	1/4	--	0.238	12	11-3/4	1/4	--
0.190	1-1/4	3/4	1/2	1																																																																																																																																																																				
0.190	1-3/4	1-1/4	1/2	1																																																																																																																																																																				
0.190	2	1-1/2	1/2	1																																																																																																																																																																				
0.190	3	2-1/2	1/2	1																																																																																																																																																																				
0.190	4	3-1/2	1/2	1																																																																																																																																																																				
0.190	5	4-1/2	1/2	1																																																																																																																																																																				
0.190	6	5-1/2	1/2	1																																																																																																																																																																				
0.190	7	6-1/2	1/2	1																																																																																																																																																																				
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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	19-1/2	1/2	1																																																																																																																																																																				
0.201	22	21-1/2	1/2	1																																																																																																																																																																				
0.201	24	23-1/2	1/2	1																																																																																																																																																																				
0.238	1-5/8	1-3/8	1/4	--																																																																																																																																																																				
0.238	2-1/4	2-5/8	1/4	--																																																																																																																																																																				
0.238	2-7/8	3-1/2	1/4	--																																																																																																																																																																				
0.238	3-3/4	4	1/4	--																																																																																																																																																																				
0.238	4-1/2	4-1/4	1/4	--																																																																																																																																																																				
0.238	5	4-3/4	1/4	--																																																																																																																																																																				
0.238	6	5-3/4	1/4	--																																																																																																																																																																				
0.238	7	6-3/4	1/4	--																																																																																																																																																																				
0.238	8	7-3/4	1/4	--																																																																																																																																																																				
0.238	9	8-3/4	1/4	--																																																																																																																																																																				
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0.238	11	10-3/4	1/4	--																																																																																																																																																																				
0.238	12	11-3/4	1/4	--																																																																																																																																																																				
11.	HEAD SHAPE	ROUND TRUSS, #3 PHILLIPS	PHILLIPS FLAT TRUSS HEAD #3 RECESS																																																																																																																																																																					
12.	HEAD DIMENSIONS (inches)																																																																																																																																																																							
	Thickness	0.110	0.118																																																																																																																																																																					
	Diameter	0.435	0.448																																																																																																																																																																					
13.	PLATES																																																																																																																																																																							
	Required (yes/no)	YES	YES																																																																																																																																																																					
	Available From Manufacturer (yes/no)	YES	YES																																																																																																																																																																					
14.	PLATE SHAPE / DIMENSIONS (inches) / MATERIAL	<table border="1"> <tr><td>ROUND</td><td>2</td><td>STAINLESS STEEL</td></tr> <tr><td>ROUND</td><td>3</td><td>STAINLESS STEEL</td></tr> <tr><td>ROUND</td><td>2</td><td>PLASTIC</td></tr> <tr><td>ROUND</td><td>2</td><td>PLASTIC</td></tr> <tr><td>ROUND</td><td>3</td><td>STEEL</td></tr> <tr><td>ROUND</td><td>3</td><td>PLASTIC</td></tr> <tr><td>ROUND</td><td>3-1/2</td><td>STEEL</td></tr> </table>	ROUND	2	STAINLESS STEEL	ROUND	3	STAINLESS STEEL	ROUND	2	PLASTIC	ROUND	2	PLASTIC	ROUND	3	STEEL	ROUND	3	PLASTIC	ROUND	3-1/2	STEEL	<table border="1"> <tr><td>ROUND BARBED</td><td>2</td><td>GALVALUME</td></tr> <tr><td>ROUND</td><td>3</td><td>GALVALUME</td></tr> <tr><td>ROUND</td><td>3</td><td>STAINLESS STEEL</td></tr> <tr><td>ROUND</td><td>3</td><td>PLASTIC</td></tr> </table>	ROUND BARBED	2	GALVALUME	ROUND	3	GALVALUME	ROUND	3	STAINLESS STEEL	ROUND	3	PLASTIC																																																																																																																																				
ROUND	2	STAINLESS STEEL																																																																																																																																																																						
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ROUND	3	STEEL																																																																																																																																																																						
ROUND	3	PLASTIC																																																																																																																																																																						
ROUND	3-1/2	STEEL																																																																																																																																																																						
ROUND BARBED	2	GALVALUME																																																																																																																																																																						
ROUND	3	GALVALUME																																																																																																																																																																						
ROUND	3	STAINLESS STEEL																																																																																																																																																																						
ROUND	3	PLASTIC																																																																																																																																																																						
15.	INSTALLATION EQUIPMENT																																																																																																																																																																							
	Screw Gun (optional/required)	REQUIRED	REQUIRED																																																																																																																																																																					
	Installation Tool With Screw Gun (optional/required)	OPTIONAL	STAND-UP TOOL (OPTIONAL)																																																																																																																																																																					
	Special Tool Needed (optional/required)																																																																																																																																																																							
	Other																																																																																																																																																																							
16.	AVERAGE PULLOUT RESISTANCE (lbs.) (FM TINIUS OLSEN PULLOUT RESISTANCE TESTS)																																																																																																																																																																							
	3/4-inch plywood	590	730																																																																																																																																																																					
	2-inch pine plank	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																																																																																																																																																																					
19.	MANUFACTURER WARRANTY AVAILABLE (yes/no)	YES	YES																																																																																																																																																																					
20.	SEE APPENDIX IF CHECKED	X																																																																																																																																																																						

NA = not applicable

## Roof Fasteners: Wood Decks

[illegible]

## Roof Fasteners: Wood Decks

[illegible]

NA = not applicable

## Roof Fasteners: Wood Decks

SFS STADLER INC.					SFS STADLER INC.					SFS STADLER INC.				
INSUL-FIXX #12-11					INSUL-FIXX #14-10					SYSTEM ESI #14-10				
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				
0.172	1-5/8	1-1/8	1/2	1	0.190	1-1/4	3/4	1/2	1	0.190	2	1	1/2	1
0.172	2-1/4	1-3/4	1/2	1	0.190	2	1-1/2	1/2	1	0.190	3	2	1/2	1
0.172	2-7/8	2-3/8	1/2	1	0.190	3	2-1/2	1/2	1	0.190	4	3	1/2	1
0.172	3-1/4	2-3/4	1/2	1	0.190	4	3-1/2	1/2	1	0.190	5	4	1/2	1
0.172	3-3/4	3-1/4	1/2	1	0.190	5	4-1/2	1/2	1	0.190	6	5	1/2	1
0.172	4-1/2	4	1/2	1	0.190	6	5-1/2	1/2	1	0.190	7	6	1/2	1
0.172	5	4-1/2	1/2	1	0.190	7	6-1/2	1/2	1	0.190	8	7	1/2	1
0.172	6	5-1/2	1/2	1	0.190	8	7-1/2	1/2	1	0.190	10	9	1/2	1
0.172	7	6-1/2	1/2	1	0.190	10	9-1/2	1/2	1	0.190	12	11	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					
					0.201	18	17-1/2	1/2	1					
					0.201	20	19-1/2	1/2	1					
					0.201	22	21-1/2	1/2	1					
					0.201	24	23-1/2	1/2	1					
					0.201	26	25-1/2	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				
ROUND	3	POLYETHYLENE			ROUND	3	POLYETHYLENE			ROUND	3	POLYETHYLENE		
ROUND	3	GALVALUME			ROUND	3	GALVALUME							
					ROUND	2	NYLON WITH GLASS							
					ROUND	2	GALVALUME							
REQUIRED					REQUIRED					REQUIRED				
										OPTIONAL				
										OPTIONAL				
630					691					691				
756					819					819				
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

[illegible]

NA = not applicable

## Roof Fasteners: Wood Decks

[illegible]

## Roof Fasteners: Wood Decks

[illegible]

NA = not applicable

## Roof Fasteners: Wood Decks

SIMPLEX					SIMPLEX					SIMPLEX				
ORIGINAL ROUND METAL CAP AG/B					ORIGINAL ROUND METAL CAP B/RL					ORIGINAL ROUND METAL CAP B/EGYD				
U.S.					U.S.					U.S.				
X					X					X				
X					X					X				
X					X					X				
CARBON STEEL					CARBON STEEL					CARBON STEEL				
BRIGHT FINISH					RUST-LOK					YELLOW DICHROMATE				
ANNULAR GROOVED					BARBED					BARBED				
DIAMOND					DIAMOND					DIAMOND				
THREADED FRICTION					FRICTION					FRICTION				
0.106	1/2	1/16	1/4	1/2	0.106	1/2	1/16	1/4	1/2	0.106	1/2	1/16	1/4	1/2
0.106	5/8	1/16	1/4	5/8	0.106	5/8	1/16	1/4	5/8	0.106	5/8	1/16	1/4	5/8
0.106	3/4	1/16	1/4	5/8	0.106	3/4	1/16	1/4	5/8	0.106	3/4	1/16	1/4	5/8
0.106	7/8	1/16	1/4	7/8	0.106	7/8	1/16	1/4	7/8	0.106	7/8	1/16	1/4	7/8
0.106	1	1/16	1/4	1	0.106	1	1/16	1/4	1	0.106	1	1/16	1/4	1
0.106	1-1/4	1/4	1/4	1	0.106	1-1/4	1/4	1/4	1	0.106	1-1/4	1/4	1/4	1
0.120	1-1/2	1/2	1/4	1	0.120	1-1/2	1/2	1/4	1	0.120	1-1/2	1/2	1/4	1
0.120	1-3/4	3/4	1/4	1	0.120	1-3/4	3/4	1/4	1	0.120	1-3/4	3/4	1/4	1
0.120	2	1	1/4	1	0.120	2	1	1/4	1	0.120	2	1	1/4	1
0.120	2-1/2	1-1/2	1/4	1	0.120	2-1/2	1-1/2	1/4	1	0.120	2-1/2	1-1/2	1/4	1
0.120	3	2	1/4	1	0.120	3	2	1/4	1	0.120	3	2	1/4	1



## Roof Fasteners: Wood Decks

[illegible]

NA = not applicable



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NA = not applicable



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NA = not applicable

## Roof Fasteners: Wood Decks

[illegible]

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[illegible]

NA = not applicable

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[illegible]



## Roof Fasteners: Concrete Decks

1.	COMPANY NAME	CARLISLE SYNTec	CARLISLE SYNTec INCORPORATED
2.	PRODUCT NAME	HP FASTENER	HP CONCRETE SPIKE
3.	COUNTRY OF MANUFACTURE	U.S.	U.S.
4.	USED WITH:		
	Insulation Attachment	X	X
	Built-Up Membranes		X
	Single-Ply 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.	SHANK DIAMETER (inches) / SHANK LENGTH (inches) / FASTENING RANGE THICKNESS (inches) / DECK PENETRATION (inches)		
			0.240 1-1/2 1/4 1-1/4
	0.180 1-3/4 1/2 1-1/4	0.240 2 3/4 1-1/4	
	0.180 2-1/4 1 1-1/4	0.240 2-1/2 1-1/4 1-1/4	
	0.180 2-3/4 1-1/2 1-1/4	0.240 3 1-3/4 1-1/4	
	0.180 3-1/4 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 12 10-3/4 1-1/4	
		0.240 12 10-3/4 1-1/4	
		0.240 12 10-3/4 1-1/4	
11.	HEAD SHAPE	WAFER	TRUSS
12.	HEAD DIMENSIONS (inches)		
	Thickness	0.150	0.110
	Diameter	0.430	0.440
13.	PLATES		
	Required (yes/no)	YES	YES
	Available From Manufacturer (yes/no)	YES	YES
14.	PLATE SHAPE / DIMENSIONS (inches) / MATERIAL		
	SQUARE W/ROUNDED CORNERS 2-7/8 GALVALUME	SQUARE W/ROUNDED CORNERS 2-7/8 GALVALUME	
	ROUND 2 PLASTIC	ROUND 2 GALVALUME	
	ROUND 2 GALVALUME	ROUND 2-3/8 GALVALUME	
	ROUND 3 PLASTIC		
15.	INSTALLATION EQUIPMENT		
	Screw Gun (optional/required)	REQUIRED	
	Installation Tool With Screw Gun (optional/required)		
	Special Tool Needed (optional/required)		SDS SPIKE HAMMER (OPTIONAL)
	Other		HAMMER (REQUIRED)
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 A CLASS I CONCRETE ROOF CONSTRUCTION (yes/no)	YES	YES
18.	ACCEPTED BY THE FOLLOWING CODES	FM	FM
19.	MANUFACTURER WARRANTY AVAILABLE (yes/no)	YES	YES
20.	SEE APPENDIX IF CHECKED		

NA = not applicable

## Roof Fasteners: Concrete Decks

[illegible]

## Roof Fasteners: Concrete Decks

[illegible]

NA = not applicable

## Roof Fasteners: Concrete Decks

## Roof Fasteners: Concrete Decks

NA = not applicable

## Roof Fasteners: Concrete Decks

## Roof Fasteners: Concrete Decks

NA = not applicable

## Roof Fasteners: Concrete Decks

[illegible]



## Roof Fasteners: Concrete Decks

[illegible]

NA = not applicable

## Roof Fasteners: Concrete Decks

[illegible]

## Roof Fasteners: Concrete Decks

1.	COMPANY NAME	OLYMPIC MANUFACTURING GROUP	OLYMPIC MANUFACTURING GROUP
2.	PRODUCT NAME	OLYMPIC FASTENER HD #14 (C. STEEL)	OLYMPIC CD-10
3.	COUNTRY OF MANUFACTURE	U.S.	U.S.
4.	USED WITH:		
	Insulation Attachment	X	X
	Built-Up Membranes	X	X
	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	SPLIT BULB
8.	POINT TYPE	PINCH, SELF-DRILLING OR TAPEX	DIAMOND STARTER POINT
9.	METHOD OF ATTACHMENT	THREADED	COMPRESSION
10.	SHANK DIAMETER (inches) / SHANK LENGTH (inches) / FASTENING RANGE THICKNESS (inches) / DECK PENETRATION (inches)		
		0.190 1-1/4 1/4 1	0.215 2 1 1
		0.190 1-3/4 3/4 1	0.215 2-1/2 1-1/2 1
		0.190 2 1 1	0.215 3 2 1
		0.190 3 2 1	0.215 3-1/2 2-1/2 1
		0.190 4 3 1	0.215 4 3 1
		0.190 5 4 1	0.215 4-1/2 3-1/2 1
		0.190 6 5 1	0.215 5 4 1
		0.190 7 6 1	0.215 5-1/2 4-1/2 1
		0.190 8 7 1	0.215 6 5 1
		0.190 9 8 1	0.215 7 6 1
		0.190 10 9 1	0.215 8 7 1
		0.190 11 10 1	0.215 9 8 1
		0.190 12 11 1	0.215 10 9 1
		0.190 14 13 1	0.215 12 11 1
		0.190 16 15 1	0.215 14 13 1
		0.190 17 16 1	
		0.190 18 17 1	
		0.190 20 19 1	
		0.190 21 20 1	
		0.190 22 21 1	
		0.190 24 23 1	
11.	HEAD SHAPE	ROUND TRUSS, #3 PHILLIPS	ROUND
12.	HEAD DIMENSIONS (inches)		
	Thickness	0.110	0.100
	Diameter	0.435	0.425
13.	PLATES		
	Required (yes/no)	YES	YES
	Available From Manufacturer (yes/no)	YES	YES
14.	PLATE SHAPE / DIMENSIONS (inches) / 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	
15.	INSTALLATION EQUIPMENT		
	Screw Gun (optional/required)	REQUIRED	
	Installation Tool With Screw Gun (optional/required)		
	Special Tool Needed (optional/required)	OPTIONAL	
	Other	HAMMER DRILL (REQUIRED)	HAMMER DRILL
16.	AVERAGE PULLOUT RESISTANCE (lbs.) (FM TINIUS OLSEN PULLOUT RESISTANCE TESTS) 3,000 PSI AGED 28 DAYS)		
		800	800
17.	MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A 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.	MANUFACTURER WARRANTY AVAILABLE (yes/no)	X	YES
20.	SEE APPENDIX IF CHECKED		

NA = not applicable

## Roof Fasteners: Concrete Decks

POWERS FASTENERS				POWERS FASTENERS				POWERS FASTENERS			
POWERS RAWL 3/16" SPIKE				POWERS RAWL 1/4" SPIKE				POWERS RAWL #14 DECK SCREW			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
HEAT TREADED CARBON STEEL				HEAT TREADED CARBON STEEL				CASE HARDENED CARBON STEEL			
PERMA-SEAL FLUOROPOLYMER				PERMA-SEAL FLUOROPOLYMER				PERMA-SEAL FLUOROPOLYMER			
NA				NA				SPIRAL THREAD			
NA				NA				DRILL TYPE			
PRE-EXPANDED SHANK COMPRESSION				PRE-EXPANDED SHANK COMPRESSION				THREADED			
0.190	1	1/8	7/8	0.240	1	1/8	7/8	0.238	1-5/8	1/8	1-1/2
0.190	1-1/4	3/8	7/8	0.240	1-1/4	3/8	7/8	0.238	2-1/4	3/4	1-1/2
0.190	1-1/2	1/4	1-1/4	0.240	1-1/2	1/4	1-1/4	0.238	2-7/8	1-3/8	1-1/2
0.190	2	3/4	1-1/4	0.240	2	3/4	1-1/4	0.238	3-3/4	2-1/4	1-1/2
0.190	2-1/2	1-1/4	1-1/4	0.240	2-1/2	1-1/4	1-1/4	0.238	4-1/2	3	1-1/2
0.190	3	1-3/4	1-1/4	0.240	3	1-3/4	1-1/4	0.238	5	3-1/2	1-1/2
0.190	3-1/2	2-1/4	1-1/4	0.240	3-1/2	2-1/4	1-1/4	0.238	6	4-1/2	1-1/2
0.190	4	2-3/4	1-1/4	0.240	4	2-3/4	1-1/4	0.238	7	5-1/2	1-1/2
0.190	4-1/2	3-1/4	1-1/4	0.240	4-1/2	3-1/4	1-1/4	0.238	8	6-1/2	1-1/2
0.190	5	3-3/4	1-1/4	0.240	5	3-3/4	1-1/4	0.238	10	8-1/2	1-1/2
0.190	5-1/2	4-1/4	1-1/4	0.240	5-1/2	4-1/4	1-1/4	0.238	12	10-1/2	1-1/2
0.190	6	4-3/4	1-1/4	0.240	6	4-3/4	1-1/4				
0.190	7	5-3/4	1-1/4	0.240	6-1/2	4-3/4	1-1/4				
0.190	8	6-3/4	1-1/4	0.240	7	5-3/4	1-1/4				
0.190	9	7-3/4	1-1/4	0.240	7-1/2	6-1/4	1-1/4				
0.190	10	8-3/4	1-1/4	0.240	8	6-3/4	1-1/4				
				0.240	9	7-3/4	1-1/4				
				0.240	10	8-3/4	1-1/4				
				0.240	11	9-3/4	1-1/4				
				0.240	12	10-3/4	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				
MUSHROOM				MUSHROOM				PHILLIPS FLAT TRUSS HEAD #3 RECESS			
0.110				0.110				0.118			
0.445				0.422				0.448			
YES				YES				YES			
YES				YES				YES			
ROUND BARBED	2	GALVALUME		ROUND BARBED	2	GALVALUME		ROUND BARBED	2	GALVALUME	
ROUND	3	GALVALUME		ROUND	3	GALVALUME		ROUND	3	GALVALUME	
ROUND	3	STAINLESS STEEL		ROUND BARBED	3	STAINLESS STEEL		ROUND	3	STAINLESS STEEL	
ROUND	3	PLASTIC		ROUND	3	PLASTIC		ROUND	3	PLASTIC	

## Roof Fasteners: Concrete Decks

[illegible]

NA = not applicable

## Roof Fasteners: Concrete Decks

[illegible]

## Roof Fasteners: Concrete Decks

1.	COMPANY NAME	SIMPLEX				SIMPLEX			
2.	PRODUCT NAME	ZNANCHOR DRIVE NAIL EGS-PIN				ZNANCHOR DRIVE NAIL SS-PIN			
3.	COUNTRY OF MANUFACTURE	U.S.				U.S.			
4.	USED WITH:								
	Insulation Attachment								
	Built-Up Membranes	X				X			
	Single-Ply Membranes	X				X			
5.	MATERIAL TYPE	ZINC (ZAMAK 7)				ZINC (ZAMAK 7)			
6.	COATING TYPE	ZINC				ZINC			
7.	SHANK TYPE	ELECTRO GALVANIZED CARBON STEEL				STAINLESS STEEL			
8.	POINT TYPE	BLUNT				BLUNT			
9.	METHOD OF ATTACHMENT	SLEEVE EXPANSION				SLEEVE EXPANSION			
10.	SHANK DIAMETER (inches) / SHANK LENGTH (inches) / FASTENING RANGE THICKNESS (inches) / DECK PENETRATION (inches)								
		1/4	3/4	1/4	1/2	1/4	3/4	1/4	1/2
		3/16	7/8	3/8	1/2	3/16	7/8	3/8	1/2
		1/4	1	1/8	7/8	1/4	1	1/8	7/8
		1/4	1-1/4	3/8	7/8	1/4	1-1/4	3/8	7/8
		1/4	1-1/2	5/8	7/8	1/4	1-1/2	5/8	7/8
		1/4	2	1-1/8	7/8	1/4	2	1-1/8	7/8
11.	HEAD SHAPE	MUSHROOM				MUSHROOM			
12.	HEAD DIMENSIONS (inches)								
	Thickness	0.125				0.125			
	Diameter	0.550				0.550			
13.	PLATES								
	Required (yes/no)	NO				NO			
	Available From Manufacturer (yes/no)	YES				YES			
14.	PLATE SHAPE / DIMENSIONS (inches) / MATERIAL	PARABOLIC	2	GALVALUME		PARABOLIC	2	GALVALUME	
		PARABOLIC	3	GALVALUME		PARABOLIC	3	GALVALUME	
15.	INSTALLATION EQUIPMENT								
	Screw Gun (optional/required)	NA				NA			
	Installation Tool With Screw Gun (optional/required)	NA				NA			
	Special Tool Needed (optional/required)	TERMINATION BARS CAN BE USED (OPTIONAL)				TERMINATION BARS CAN BE USED (OPTIONAL)			
	Other	1/4" DRILL BIT AND DRILL (REQUIRED)				1/4" DRILL BIT AND DRILL (REQUIRED)			
16.	AVERAGE PULLOUT RESISTANCE (lbs.) (FM TINIUS OLSEN PULLOUT RESISTANCE TESTS) 3,000 PSI AGED 28 DAYS)								
		648, NA, 937, 1151, 1184, 1272				648, NA, 937, 1151, 1184, 1272			
17.	MEETS THE FM APPROVAL REQUIREMENTS AS A COMPONENT OF A CLASS I CONCRETE ROOF CONSTRUCTION (yes/no)	YES				YES			
18.	ACCEPTED BY THE FOLLOWING CODES	DADE COUNTY				DADE COUNTY			
19.	MANUFACTURER WARRANTY AVAILABLE (yes/no)	YES				YES			
20.	SEE APPENDIX IF CHECKED	X				X			

NA = not applicable

## Roof Fasteners: Concrete Decks

[illegible]



## Roof Fasteners: Concrete Decks

NA = not applicable

## Roof Fasteners: Concrete Decks

## Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

NA = not applicable



## Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

NA = not applicable

## Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

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NA = not applicable

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NA = not applicable

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NA = not applicable



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NA = not applicable



## Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

NA = not applicable





## Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

[illegible]

NA = not applicable

## Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

OLYMPIC MANUFACTURING GROUP				POWERS FASTENERS				POWERS FASTENERS			
OLYMPIC BASE SHEET FASTENER				POWERS RAWL SPEED-LOCK TOGGLE				POWERS RAWL POWERLITE			
U.S.				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
STEEL				CARBON STEEL & STAINLESS STEEL				DUPONT ZYTEL NYLON			
G-90 HOT DIPPED GALVANIZED & CR-10 FLUOROCARBON				PERMA-SEAL FLUOROPOLYMER (ON CARBON STEEL BOLT ONLY)				NA			
SPLIT BODY				ANNULAR THREAD				HIGH THREAD WITH TAPERED ROOT			
NA				NA				SHARP			
SHANK EXPANSION				CLAMPING				THREADED, SUBSTRATE COMPACTION			
NA	1.75	NA	NA	0.250	5	3-1/2	1-1/2	0.675	2	1/2	1-1/2
NA	1.20			0.250	6	4-1/2	1-1/2	0.675	2-1/2	1	1-1/2
				0.250	7	5-1/2	1-1/2	0.675	3	1-1/2	1-1/2
				0.250	8	6-1/2	1-1/2	0.675	3-1/2	2	1-1/2
				0.250	9	7-1/2	1-1/2	0.675	4	2-1/2	1-1/2
				0.250	10	8-1/2	1-1/2	0.675	4-1/2	3	1-1/2
				0.250	12	10-1/2	1-1/2	0.675	5	3-1/2	1-1/2
				0.250	14	12-1/2	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
								0.675	8-1/2	7	1-1/2
								0.675	9	7-1/2	1-1/2
								0.675	9-1/2	8	1-1/2
								0.675	10	8-1/2	1-1/2
								0.675	11	9-1/2	1-1/2
								0.675	12	10-1/2	1-1/2
								0.675	13	11-1/2	1-1/2
								0.675	14	12-1/2	1-1/2
RECTANGULAR WITH ROUNDED CORNERS				PHILLIPS FLAT HEAD #3 RECESS				1/4" SQUARE DRIVE RECESS			
--				0.042				0.134			
1 X 1.3				0.426				1.000			
NO				YES				YES			
YES				YES				YES			
ROUND	2-3/4	G-90 GALVANIZED & GALVALUME		ROUND	3	GALVALUME		ROUND BARBED	2	GALVALUME	
								ROUND BARBED	3	GALVALUME	
				OPTIONAL							
P090, P060											
MALLET (REQUIRED)				APPROPRIATE DRILL & BIT FOR BASE MATERIAL (REQUIRED)				APP. DRILL & BIT FOR BASE MATL/ IMPACT WRENCH REQUIRED			
40 MIN.				995				--			
NA				620				540			
NA				570				595			
FM, UL, METRO-DADE COUNTY				FM				FM			
FM, UL, METRO-DADE COUNTY				FM				FM			
NA				FM				FM			
YES				YES				YES			
				X				X			

## Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

[illegible]

NA = not applicable

# Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

SFS STADLER INC				SFS STADLER INC.				SIMPLEX			
TPR-THE PEEL RIVET				BASE-LOK				BASE-LOC			
ISRAEL				U.S.				U.S.			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
X				X				X			
ALUMINUM ALLOY				NYLON				CARBON NYLON GLASS FIBER RESIN			
NA				NA				NA			
HOLLOW RIVET BODY				HIGH PROFILE THREAD				HIGH PROFILE SPIRAL THREAD			
PIERCING MANDRELL				DRILL				SPADE SHOVEL DRILL POINT			
CLAMPING				THREADED				THREADED			
0.250	1-1/4	1/4	1	0.562	1-5/8	NA	1-1/2	0.562	1.7	0.0625	1.5
0.250	2	1	1								
0.250	3	2	1								
0.250	4	3	1								
0.250	5	4	1								
0.250	6	5	1								
0.250	7	6	1								
0.250	8	7	1								
0.250	9	8	1								
0.250	10	9	1								

## Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

[illegible]

NA = not applicable

## Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

[illegible]

## Roof Fasteners: Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks

1.	COMPANY NAME	U.S. INTEC			
2.	PRODUCT NAME	DRILL-TEC LITE DECK			
3.	COUNTRY OF MANUFACTURE	U.S.			
4.	DECK TYPE:				
	Lightweight Concrete	X			
	Gypsum	X			
	Cementitious Wood Fiber	X			
5.	USED WITH:				
	Insulation Attachment	X			
	Built-Up Membranes				
	Single-Ply Membranes				
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.	SHANK DIAMETER (inches) / SHANK LENGTH (inches) / FASTENING RANGE THICKNESS (inches) / DECK PENETRATION (inches)				
		0430	2	--	1-1/2
		0430	2-1/2	--	1-1/2
		0430	3	--	1-1/2
		0430	3-1/2	--	1-1/2
		0430	4	--	1-1/2
		0430	4-1/2	--	1-1/2
		0430	5	--	1-1/2
		0430	5-1/2	--	1-1/2
		0430	6	--	1-1/2
		0430	6-1/2	--	1-1/2
		0430	7	--	1-1/2
		0430	7-1/2	--	1-1/2
		0430	8	--	1-1/2
		0430	8-1/2	--	1-1/2
		0430	9	--	1-1/2
		0430	9-1/2	--	1-1/2
		0430	10	--	1-1/2
12.	HEAD SHAPE	ROUND, 1/4-IN. RECESS			
13.	HEAD DIMENSIONS (inches)				
	Thickness	0.120			
	Diameter	1.00			
14.	PLATES				
	Required (yes/no)	YES			
	Available From Manufacturer (yes/no)	YES			
15.	PLATE SHAPE / DIMENSIONS (inches) / MATERIAL				
		ROUND BARBED	3	GALVALUME	
16.	INSTALLATION EQUIPMENT				
	Screw Gun (optional/required)				
	Installation Tool With Screw Gun (optional/required)				
	Special Tool Needed (optional/required)				
	Other	IMPACT WRENCH, ELECTRIC DRILL (REQUIRED)			
17.	AVERAGE PULLOUT RESISTANCE (lbs.)				
	Lightweight Concrete	280			
	Gypsum	600			
	Cementitious Wood Fiber	450			
18.	ACCEPTED BY THE FOLLOWING CODES				
	Lightweight Concrete				
	Gypsum	FM, METRO-DADE COUNTY			
	Cementitious Wood Fiber	FM, METRO-DADE COUNTY			
19.	MANUFACTURER WARRANTY AVAILABLE (yes/no)	YES			
20.	SEE APPENDIX IF CHECKED				

NA = not applicable

## Appendix, Roof Fasteners

### BMCA INSULATION PRODUCTS, INC.

Lexusco clips are installed using a rubber mallet. No power tools or power sources are required. Lexusco 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 GAFTITE 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 GAFTITE 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 fastened 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.

GAFTITE #14-10 and #12-11 fasteners are available with a 1/4-in. hex head design.

### GAF MATERIALS CORPORATION

For GAFTITE 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 GAFTITE 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 fastened 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.

GAFTITE #14-10 and #12-11 fasteners are available with a 1/4-in. hex head design.

### ITW BUILDDEX

ITW Buildex Accutrak roof insulation fastening tool installs fasteners and plates in a one-step continuous process. The Accutrak tool was designed exclusively to be used with ITW Buildex Accutrak 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.

The Hextra Plus and Roofgrip Plus systems combine the Hextra and Roofgrip fasteners with a 3" round galvalume plate in a preassembled form. The Accufast tool installs the preassembled parts from a stand-up position.

### JOHNS MANVILLE INTERNATIONAL, INC.

The UltraFast fastener line is available as a pre-assembled as UltraFast ASAP (metal plate) and UltraFast ASAP (plastic plate) or as separate screws and plates.

### 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 fastened 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 HD #14 and STD #12 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 FASTENERS, INC.**

The Woodie and specially designed Woodie plates are for attachment of insulation, single-ply membranes, or standing-seam metal roofing clips to oriented strand board (OSB) or plywood roof decks.

#12 Hex Washer Head Deck Screws may be used with Powers 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.

For further details and technical information on roofing fasteners and other anchoring and fastening systems, please consult the Powers Rawl Fastening Systems Design Manual published by Powers Fasteners, Inc.

Steel Deck: deck screws should penetrate through a minimum 3/4" per FMRC 1-29.

Wood Deck: deck screws should penetrate through a minimum 1/4" in plywood decks that are 3/4" thick per FMRC 1-29.

### **SIMPLEX NAILS & FASTENERS, INC.**

#### Abbreviation Chart:

#### Shank Type / Nail Finish

- |       |  |
|-------|--|
| B/    | = Barbed Shank is recommended when it is installed into a hard species of wood, or if a high pull out resistance is not desired                      |
| AG/   | = Annular Grooved is recommended when it is installed into any type of wood, or if the appropriate building codes require a high pull out resistance |
| /B    | = Bright Finish is recommended if it will not be exposed to a corrosive environment.   |
| /EGYD | = Electro Galvanized Yellow Dichromate is recommended if it is exposed to a moderately corrosive environment   |
| /RL   | = Rust-Lok is recommended if it is exposed to a highly corrosive environment   |
| EGS-  | = Electro Galvanized Steel is recommended if it is exposed to a moderately corrosive environment   |
| SS-   | = Stainless Steel is recommended if it is exposed to a highly corrosive environment  |

#### Wood Deck Nails:

The 3/4" plywood average pull out resistance was performed by the American Plywood Association in accordance to the American Plywood Association's testing procedure. The average pullout resistance in a nominal 2" pine plank was done in the Simplex Nails & Fasteners Testing Lab. Rust-Lok is the priority coating that will pass the thousand hour salt spray rust test.

Original Round Metal Caps Nails are unique to the roofing industry due to the fact that it is the only cap nail that has the nail and the cap welded together to prevent the nail from backing through the roofing membrane. These nails are used to secure base sheets to the deck, flashing behind counter flashing, back nailing of roof membrane, thin insulation to a wood deck and various other miscellaneous roofing tasks.

Insulation Round Metal Cap Nails are designed with wider shanks and longer lengths in order to install all types of roofing insulation into wood decks.

Economy Round Metal Cap Nails is designed to be less expensive by using friction to hold the

shank to the cap instead of welding the shank to the cap. It should be used in situations that would not permit the nail to back through the roofing membrane.

Square Head Metal Cap Nails are designed to be strong and economical. It has an extra strong cap welded to the shank.

Plex-Cap Plastic Cap Nails are designed to be affordable and increase the rupture values of softer building products. It should be used to secure roofing felt, insulation and polyfilm for temporary roofing to wood decks.

Coil Roofing Nails are designed with a high wire that will allow it to fit all types of pneumatic nail guns. They have 120 nails per coils and 60 coils per box.

#### Concrete Deck Nails:

The Zanchor Drive Nail=s average pull out resistance was performed by Law Engineering, Inc. in accordance to the ASTM E-488-90 testing procedure using 4,000 psi concrete.

Zanchor Drive Nails are designed to fit in to a pre-drilled 1/4" hole and with a termination bar or the Simplex 2" & 3" plate in order to hold the base flashing, base sheet or insulation board into structural concrete, brick or mortar.

Masonry Round Metal Cap Nails are designed with a wide fluted hardened steel shank, welded to a hardened steel cap. They should be used to secure flashing behind counter flashing and various other miscellaneous roofing tasks into bricks or masonry joints.

#### Lightweight Concrete, Gypsum, or Cementitious Wood Fiber Decks Nails:

Base-Loks are designed to give a superior hold for base sheets while minimizing the destruction to the deck, by requiring less fasteners than any equivalent method. The Base-Lok=s average pull out resistance was performed by Trinity Engineering, Inc. in accordance with Dade County Protocol PA 105 (A) and 117 (A) testing procedure. The Base-Lok has been tested with most of the leading base sheets for its rupture value and these results are available from Simplex upon request. Base-Loks should be used to secure base sheets to low and steep sloped cementitious wood fiber, gypsum, cellular and lightweight concrete decks with the use of a clutched slow speed drill and a standard 1/4" hex head bit.

Tube-Loks are designed to secure felts, base sheets, insulation, shingles, slate, to low and steep sloped cementitious wood fiber, gypsum, cellular and lightweight concrete decks. The Tube-Lok=s average pull out resistance was performed accordance with Dade County Protocol PA 117 (A) testing procedure. Complete installation instruction are available from Simplex upon request.

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## Section 4

*Low-Slope Roofing  
Materials Guide*

**2000**

*Roof Cements and Coatings*

## Information on Section 4: Roof Cements and Coatings

### General Information

Section 4: Roof Cements and Coatings in the 2000 edition of NRCA's *Low-Slope Roofing Materials Guide* provides a comprehensive listing of cements and coatings used in low-slope roofing. In addition, it provides information on cold-applied roof systems that employ coating products or cements as the primary weatherproofing medium and, in some instances, adhesive and stabilizing properties.

An index of the manufacturers included in Section 4: Roof Cements and Coatings and locations of their specific products within this section immediately follows this Roof Cements and Coatings sections.

### Roof Cement and Coating Products

Information on roof cements and coatings is presented in the guide in two parts: Part 1: General Information and Part 2: Technical Data.

Specific listing information included in Part 1: General Information is as follows:

1. Company name
2. Product name
3. Product description
4. Uses
5. Application methods
6. Roof system description
7. Country of manufacture and year of first commercial use
8. Sales and technical information contacts

In Part 2: Test Results, specific information included is as follows:

1. Company name
2. Product name
3. Fire ratings
4. Complies with ASTM standards

Warranty information for cold-applied membrane roof systems is provided in Section 5: Roof Membrane Warranties.

Users of the guide who are interested in additional information regarding roof cements and coatings are encouraged to refer to *The NRCA Roofing and Waterproofing Manual, Fourth Edition*.

# Index to Cement and Coatings

	CEMENT & COATINGS	INCOMPLETE
<b>ACRYMAX TECHNOLOGIES INC.</b> 221 Brooke Street Media, PA 19063 610/566-7470 FAX: 610/891-0834 E-mail: Web:	482 530	677
<b>ALCO-NVC, INC.</b> P.O. Box 14001 Detroit, MI 48214 800/323-0029 FAX: 313/331-4726 E-mail:alconvc@aol.com Web: www.alconvc.com	482 530	677
<b>ALUMINUM COATING MFRS.</b> 7301 Bessemer Avenue Cleveland, OH 44127 800/556-8030 FAX: 216/341-5833 E-mail: sales@alum.com Web:	483 531	677
<b>AMERICAN TAR COMPANY</b> Division of Fields Company, LLC 2240 Taylor Way Tacoma, WA 98421 253/627-4099 FAX: 253/627-3859 E-mail:	485 532	677
<b>ANDEK CORP.</b> P.O. Box 392 850 Glen Avenue Moorestown, NJ 08057 888/88ANDEK FAX: 888/44ANDEK E-mail:	487 533	677
<b>CELOTEX CORP.</b> 4010 Boy Scout Blvd. Tampa, FL 33607 813/873-1700 FAX: 813/873-4080 E-mail: celotex.com Web:	488 533	677
<b>CONKLIN CO.</b> P.O. Box 155 Shakopee, MN 55379-0155 800/888-8838 FAX: 612/496-4285 E-mail: marketing@conklin.com Web: www.conklin.com	489 533	677
<b>DEWITT PRODUCTS CO.</b> 5860 Plumer Detroit, MI 48209 313/554-0575 800/962-8599 FAX: 313/554-2171 E-mail: Web: ww.dewitt@globalbiz.com	489 535	678
<b>ECOLOGY ROOF SYSTEMS</b> 505 N. Tustin Avenue #188 Santa Ana, CA 92705 714/972-1001 FAX: 714/972-1079 E-mail: Web: www.ecologyroofsystems.com	491 535	

	CEMENT & COATINGS	INCOMPLETE
<b>ERSYSTEMS</b> Elastomeric Roofing Systems 50 Medina Street Loretto, MN 55357-0056 612/479-6690 FAX: 612/479-6691 E-mail: ersinfo@ersystems.com Web: www.ersystems.com	493 537	
<b>FIELDS COMPANY, LLC</b> 2240 Taylor Way Tacoma, WA 98421 253/627-4098 FAX: 253/383-2181 E-mail: Web:	495 537	
<b>GAF MATERIALS CORP.</b> 1361 Alps Road Wayne, NJ 07470 973/628-3000 800/766-3411 FAX: 973/628-3451 E-mail: Web: www.gaf.com	499 539	
<b>GARDNER ASPHALT CORP/APOC DIVISION</b> P.O. Box 5449 Tampa, FL 33675-5449 FAX: 813/248-6768 E-mail: Web:	499 540	
<b>GARLAND COMPANY, INC.</b> 3800 E. 91st Street Cleveland, OH 44105 216/641-7500 FAX: 216/641-0633 E-mail: Web:		678
<b>GMX, INC.</b> 9105 Way Avenue Cleveland, OH 44105 216/641-7502 FAX: 216/641-0633 E-mail: Web:	501 541	
<b>GRUNDY DIV. OF HENRY CO.</b> 1301 Herkimer St. Joliet, IL 60432 815/726-5087 800/435-1210 FAX: 815/726-7301 E-mail: Web:	502 541	678
<b>HENRY COMPANY</b> 2911 Slauson Avenue Huntington, CA 90255 213/583-5000 FAX: 213/582-6429 E-mail: Web:	505 543	
<b>KARNAK CORPORATION</b> 330 Central Avenue Clark, NJ 07066 732/388-0300 800/526-4236 FAX: 732/388-9422 E-mail: Web: www.karnakcorp.com	508 545	

# Index to Cement and Coatings

CEMENT & COATINGS		INCOMPLETE
<b>KEMPER SYSTEMS, INC.</b> 550 S. Michigan Street Seattle, WA 98108 206/767-9505 800/541-5455 FAX: 206/767-9531 E-mail: kempersys.com Web:	511	
	546	
<b>KOKEM PRODUCTS INC.</b> 4432 N.E. Davis Portland, OR 97213 503/235-9206 FAX: 503/235-9206 E-mail: Web:	511	
	546	
<b>METALRYLICS ACRYLIC-POLYESTER ROOFING PRODUCTS</b> 142 N. 27th Street San Jose, CA 95116 408/280-7733 FAX: 408/280-6329 E-mail: metacrylics@msn.com	511	
	546	
<b>MONSEY DIV OF HENRY CO.</b> 336 Cold Stream Road Kimberton, PA 19442 800/523-0268 FAX: 610/933-4598 E-mail: monsey-bakor.com	513	669
	547	
<b>NATIONAL COATINGS CORP.</b> 1201 Calle Suerte Camarillo, CA 93012 805/388-7112 FAX: 805/388-8140 E-mail: nationalcoatings.com Web:	517	
	549	
<b>REPUBLIC POWDERED METALS</b> 3735 Green Road Beachwood, OH 44122 800/551-7081 FAX: 888/742-1759 E-mail: Web:	517	678
	549	
<b>R.M. LUCAS CO.</b> 3211 South Wood Street Chicago, IL 60608 773/523-4300 FAX 773/523-3290 E-mail: rmlucas@ix.netcam.com web:	518	678
	548	
<b>SOMAY PRODUCTS, INC.</b> 4301 N.W. 35th Avenue Miami, FL 33142-4382 305/633-6333 FAX: 305/638-5524 E-mail: Web:		678
<b>SOUTHWESTERN PETROLEUM CORP. (SWEPCO)</b> 534 N. Main St., P.O. Box 961005 Ft. Worth, TX 76161-0005 817/332-2336 800/877-9372 FAX: 817/877-4047 E-mail: swepcousa.com	521	678
	551	

CEMENT & COATINGS		INCOMPLETE
<b>SPM THERMO-SHIELD INC.</b> Rt. 2, Box 208A Custer, SD 57730 605/673-3201 FAX: 605/673-3200 E-mail: spm@thermoshield.com Web:	522	
	551	
<b>SUNGUARD MARKETING CORP.</b> 4432 N.E. Davis Portland, OR 97213 503/235-9206 FAX: 503/235-9206 E-mail: Web:		678
<b>TAMKO ROOFING PRODUCTS INC.</b> 220 W. 4th Street, P.O. Box 1404 Joplin, MO 64802 417/624-6644 FAX: 417/624-8935 E-mail: Web: www.tamko.com	522	
	551	
<b>TEXAS REFINERY CORP.</b> One Refinery Place, P.O. Box 711 Ft. Worth, TX 76101 817/332-1161 FAX: 817/332-2340 E-mail: Web: www.texasrefinery.com	524	679
	553	
<b>TOPCOAT, INC. A SUBSIDIARY OF GAF MATERIALS CORP.</b> 24 Industrial Road Walpole, MA 02081-1305 800/323-0009 FAX: 508/660-2471 E-mail:	524	679
	553	
<b>TREMCO INC.</b> 3735 Green Road P.O. Box 228069 Beachwood, OH 44122-8069 216/292-5000 FAX: 216/766-5629 Web: www.tremcoroofing.com	525	
	553	
<b>UNIFLEX, INDUSTRIAL DIV. OF KOOL SEAL, INC.</b> 1499 Enterprise Parkway Twinsburg, OH 44087 216/425-4717 FAX: 216/425-9778 E-mail:	527	670
	555	
<b>UNIROOF CORPORATION</b> P.O. Box 160135 Altamonte Springs, FL 32716-0133 407/869-5110 FAX: E-mail: Web:	528	676
	555	
<b>UNITED COATINGS</b> 19011 E. Cataldo Greenacres, WA 99016 509/926-7143 FAX: 519/928-1116 E-mail: Web:	528	
	555	

# Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	ACRYMAX TECHNOLOGIES INC.	ACRYMAX TECHNOLOGIES INC.	ACRYMAX TECHNOLOGIES INC.	ALCO-NVC, INC.	ALCO-NVC, INC.	ALCO-NVC, INC.
2.	PRODUCT NAME	ACRYMAX AF-130	ACRYMAX AF-130 FR	ACRYMAX ACM 9000	#216 AF FLASHING CEMENT	#269T AF SBS TROWEL GRADE	#269 AF SBS PLUS ADHESIVE
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating						
	Asphalt/Coal Tar Cement				X	X	
	Asphalt Emulsion			X			
	Modified Bitumen Coating or Cement				X	X	X
	Elastomeric Coating or Cement (specify type)	ACRYLIC	ACRYLIC				
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	NONFIBRATED	NONFIBRATED	NONFIBRATED	FIBRATED	FIBRATED	NONFIBRATED
	Color(s) Available	UNLIMITED	WHT, GRAY, TAN	BLACK	BLACK	BLACK	BLACK
	Solids Content (% by volume)	51.0	51.0	50.0	68 ±2	68	
	Weight Per Gallon (lbs.)	12.1	12.1	8.5	9.5	9	8
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	1-2	1-2	1-2	48-72		30-40
	Coverage (gals./square)	2-5	2-5	2-6	8	8	1.5
	USES						
4A.	SURFACING						
	Built-Up Roofing	X	X	X	X	X	
	Composite Roofing	X	X	X	X	X	
	Modified Bitumen Roofing	X	X	X	X	X	X
	Single-Ply Roofing						
	Other Roofing				X	X	
4B.	PATCHING/REPAIRING						
	Built-Up Roofing	X	X	X	X	X	X
	Composite Roofing	X	X	X	X	X	
	Metal Roofing	X	X	X	X	X	
	Other Roofing	X	X	X	X	X	X
4C.	PRIMING						
	Built-Up Roofing				X		
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing	X	X	X	X	X	
	Composite Roofing	X	X	X	X	X	
	Metal Roofing	X	X	X	X	X	
	Other Roofing				X	X	
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing	X	X	X			
	Coal Tar Built-Up Roofing						
	Metal Roofing	X	X	X			
	Other Roofing						
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing						X
	Cold-Process Modified Roofing						X
	Roll Roofing (Coated Sheets)						
	Shingles, Tiles Other Steep Products				X		
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing	X	X		X	X	
	Reroofing/Maintenance	X	X	X	X	X	
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	BRUSH, SPRAY ROLLER	BRUSH, SPRAY ROLLER	BRUSH, SPRAY ROLLER	TROWEL	TROWEL	BRUSH, SPRAY, SQUEEGEE
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA					
	See Built-Up Roofing Section If Checked					X	X
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS	NA					
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	ACRYMAX + POLY 1 REINFORCEMENT	ACRYMAX + POLY 1 REINFORCEMENT	ACRYMAX + POLY 1 REINFORCEMENT			
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1979	1985	1989	1984	1986	1986
9.	FOR SALES INFORMATION CONTACT:	S. BENNING 800/553-0523	S. BENNING 800/553-0523	S. BENNING 800/553-0523	SALES 800/323-0029	SALES 800/323-0029	SALES 800/323-0029
10.	FOR TECHNICAL INFORMATION CONTACT:	S. BENNING 800/553-0523	S. BENNING 800/553-0523	S. BENNING 800/553-0523	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.
11.	SEE APPENDIX IF CHECKED						

NA=not applicable



## Roof Cements and Coatings Part 1: General Information

ALCO-NVC, INC.	ALCO-NVC, INC.	ALCO-NVC, INC.	ALCO-NVC, INC.	ALUMINUM COATING MANUFACTURERS	ALUMINUM COATING MANUFACTURERS	ALUMINUM COATING MANUFACTURERS	ALUMINUM COATING MANUFACTURERS	ALUMINUM COATING MANUFACTURERS	ALUMINUM COATING MANUFACTURERS
#214 AF ALUMAGARD NON FIBRATED COAT	#215 AF ALUMAGARD FIBRATED COAT	#207 ASPHALT ROOF PRIMER	#270 AF ROOF CAP MASTIC	FIBRATED LIQUID ROOF COATING	RUBBERIZED DAMP SURFACE ROOF COATING	ROOF EMULSION FIBERED	NO FIBER ROOF EMULSION	ASPHALT PRIMER	COLD-PROCESS ADHESIVE
		X						X	
X	X			X	X				X
						X	X		
			X						
NONFIBRATED	FIBRATED	NONFIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	NONFIBRATED	NONFIBRATED	FIBRATED
ALUMINUM	ALUMINUM	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
8.5	8.8	40 +	58 +	70	65	46	45	48	64
8-24	8-24	7.2	8	7.9	8	8.2	8.6	7.4	8.0
1	1-1.5	4	6	24	24	12	12	4	24
		1-1.5	2-2.5	2-3	2-3	2-3	2-3	0.5-1	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	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, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY	BRUSH, SPRAY, SQUEEGEE
				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	USA
1965	1965	1912	1990	1967	1967	1967	1967	1967	1967
SALES	SALES	SALES	SALES	R. KAPLAN	R. KAPLAN	R. KAPLAN	R. KAPLAN	R. KAPLAN	R. KAPLAN
800/323-0029	800/323-0029	800/323-0029	800/323-0029	800/556-8030	800/556-8030	800/556-8030	800/556-8030	800/556-8030	800/556-8030
TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	C. FRATIANNE	C. FRATIANNE	C. FRATIANNE	C. FRATIANNE	C. FRATIANNE	C. FRATIANNE
				800/556-8030	800/556-8030	800/556-8030	800/556-8030	800/556-8030	800/556-8030

# Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	ALUMINUM COATING MANUFACTURERS	ALUMINUM COATING MANUFACTURERS	ALUMINUM COATING MANUFACTURERS	ALUMINUM COATING MANUFACTURERS	ALUMINUM COATING MANUFACTURERS	ALUMINUM COATING MANUFACTURERS
2.	PRODUCT NAME	PLASTIC CEMENT	WET / DRY CEMENT	FLASHTITE	GLAS-MASTIC	NEOPRENE RUBBER ROOF CEMENT	RUBBERIZED CEMENT
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating						
	Asphalt/Coal Tar Cement	X	X	X	X		X
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)					CEMENT	
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED
	Color(s) Available	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
	Solids Content (% by volume)	70	70	70	68	66	66
	Weight Per Gallon (lbs.)	9.5	9.5	9.5	9.3	9.1	9.3
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	24	24	24	24	24	24
	Coverage (gals./square)	4-8	4-8	4-8	4-8	4-8	4-8
	USES						
4A.	SURFACING						
	Built-Up Roofing						
	Composite Roofing						
	Modified Bitumen Roofing						
	Single-Ply Roofing						
	Other Roofing						
4B.	PATCHING/REPAIRING						
	Built-Up Roofing	X	X	X	X	X	X
	Composite Roofing					X	
	Metal Roofing	X	X	X	X	X	X
	Other Roofing						
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing	X	X	X	X	X	X
	Composite Roofing					X	
	Metal Roofing	X	X	X	X	X	X
	Other Roofing						
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing						
	Coal Tar Built-Up Roofing						
	Metal Roofing						
	Other Roofing						
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing						
	Cold-Process Modified Roofing						
	Roll Roofing (Coated Sheets)						
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing						
	Reroofing/Maintenance						
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	TROWEL	TROWEL, CAULK	TROWEL	TROWEL	TROWEL	TROWEL
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1967	1967	1967	1991	1994	1991
9.	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
10.	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
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

[illegible]

## Roof 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
2.	PRODUCT NAME	# 1859 ATCOSHIELD	# 1860 ALUMINUM ASPHALT COAT	# 1864 ATCOSHIELD 2	# 1866 PREMIUM FIBERED ALUMINUM COAT	# 1868 PREMIUM ALUMINUM COATING	# 1868 PREMIUM ALUMINUM COATING
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coalt Tar Coating	X	X	X	X	X	X
	Asphalt/Coal Tar Cement						
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)						
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	FIBRATED	NONFIBRATED	FIBRATED	FIBRATED	FIBRATED	NONFIBRATED
	Color(s) Available	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM
	Solids Content (% by volume)						
	Weight Per Gallon (lbs.)	8.2	7.8	8.2	8.8	8.8	8.4
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	8-24	8-24	8-24	8-24	8-24	8-24
	Coverage (gals./square)	0.75-1.5	0.75-1.5	0.75-1.5	0.75-1.5	0.75-1.5	0.75-1.5
	USES						
4A.	SURFACING						
	Built-Up Roofing	X	X	X	X	X	X
	Composite Roofing	X	X	X	X	X	X
	Modified Bitumen Roofing	X	X	X	X	X	X
	Single-Ply Roofing						
	Other Roofing	X	X	X	X	X	X
4B.	PATCHING/REPAIRING						
	Built-Up Roofing						
	Composite Roofing						
	Metal Roofing						
	Other Roofing						
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing						
	Composite Roofing						
	Metal Roofing						
	Other Roofing						
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing	X	X	X	X	X	X
	Coal Tar Built-Up Roofing						
	Metal Roofing	X	X	X	X	X	X
	Other Roofing						
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing						
	Cold-Process Modified Roofing						
	Roll Roofing (Coated Sheets)						
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing						
	Reroofing/Maintenance						
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS	SURFACING, FIELDS GLASS, SEBS & POLY	SURFACING, FIELDS GLASS, SEBS & POLY	SURFACING, FIELDS GLASS, SEBS & POLY	SURFACING, FIELDS GLASS, SEBS & POLY	SURFACING, FIELDS GLASS, SEBS & POLY	SURFACING, FIELDS GLASS, SEBS & POLY
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1926	1926	1926	1926	1926	1926
9.	FOR SALES INFORMATION CONTACT:	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098
10.	FOR TECHNICAL INFORMATION CONTACT:	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

[illegible]

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	ANDEK CORP.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.
2.	PRODUCT NAME	SILVER FILM	ELASTIGUM ROOFERS CEMENT	NOAH'S PITCH PLASTIC COMPOUND	S.I.S. ADHESIVE	AWP ALL WEATHER PLASTIC CEMENT	SBS MOD BIT ADHESIVE
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating						
	Asphalt/Coal Tar Cement		X	X	X	X	
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement						X
	Elastomeric Coating or Cement (specify type)	RESIN					
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	NONFIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED
	Color(s) Available	SILVER	BLACK	BLACK	BLACK	BLACK	BLACK
	Solids Content (% by volume)	75					
	Weight Per Gallon (lbs.)	8.7					
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	24					
	Coverage (gals./square)	0.25-0.33			1.5		1.5
	USES						
4A.	SURFACING						
	Built-Up Roofing	X					
	Composite Roofing	X					
	Modified Bitumen Roofing	X					
	Single-Ply Roofing						
	Other Roofing						
4B.	PATCHING/REPAIRING						
	Built-Up Roofing	X	X	X		X	
	Composite Roofing	X	X	X		X	
	Metal Roofing	X					
	Other Roofing	X	X	X		X	
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing		X	X		X	
	Composite Roofing		X	X		X	
	Metal Roofing						
	Other Roofing		X	X		X	
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing						
	Coal Tar Built-Up Roofing						
	Metal Roofing						
	Other Roofing						
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing				X	X	
	Cold-Process Modified Roofing						X
	Roll Roofing (Coated Sheets)		X		X	X	
	Shingles, Tiles Other Steep Products		X		X	X	
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing	X					
	Reroofing/Maintenance	X					
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	BRUSH, SPRAY, ROLLER	TROWEL	TROWEL	BRUSH, SQUEEGEE	TGR	BRUSH, SQUEEGEE
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1984					
9.	FOR SALES INFORMATION CONTACT:	H. LISS 800/800-2844	CELOTEX REGIONAL	CELOTEX REGIONAL	CELOTEX REGIONAL	CELOTEX REGIONAL	CELOTEX REGIONAL
10.	FOR TECHNICAL INFORMATION CONTACT:	N. SHEARER 800/800-2844	SALES OFFICE	SALES OFFICE	SALES OFFICE	SALES OFFICE	SALES OFFICE
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	CONKLIN CO., INC.	CONKLIN CO., INC.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.
SBS MOD BIT FLASHING CEMENT	ALUMINUM ROOF COATING (FIBERATED)	ALUMINUM ROOF COATING (NONFIBRATED)	ELASTIGUM ROOF COATING	ASPHALT PRIMER	FLAT TOP EMULSION	RAPID ROOF III	BENCHMARK	PRO FLASH FLASHING CEMENT	PRO WET / STICK FLASHING CEMENT WET/DRY
				X					
	X	X	X		X			X	X
X									
						ACRYLIC	ACRYLIC		
FIBRATED BLACK	FIBRATED ALUMINUM	NONFIBRATED ALUMINUM	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	NONFIBRATED WHITE/TAN/GRAY	NONFIBRATED WHITE/GRAY	FIBRATED BLACK	FIBRATED BLACK
						51.3-54.5	54.0-55.0	72.9	74.4
						11.3	10.4-10.8	9.0	9.0
						2-8	2-8	48-72	48-72
	1.5	1.5	1.5	1.5	3	3-4	3-4	0.7-1	0.7-1
	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		
TROWEL	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	ROLLER, SPRAY	ROLLER, SPRAY	TROWEL	TROWEL
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	USA
CELOTEX REGIONAL	CELOTEX REGIONAL	CELOTEX REGIONAL	CELOTEX REGIONAL	CELOTEX REGIONAL	CELOTEX REGIONAL	BLDG PROD DIV 800/888-8838	BLDG PROD DIV 800/888-8838	D. MCCLELLAN 800/962-8599	D. MCCLELLAN 800/962-8599
SALES OFFICE	SALES OFFICE	SALES OFFICE	SALES OFFICE	SALES OFFICE	SALES OFFICE	BLDG PROD DIV 800/888-8838	BLDG PROD DIV 800/888-8838	J. MCCLELLAN 800/962-8599	J. MCCLELLAN 800/962-8599

## Roof 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.
2.	PRODUCT NAME	PRO COAT FIBER ROOF COATING	PRO PRIIMER ASPHALT	PRO RESATURANT ASPHALT	PRO ASPHALT EMULSION (FIBRE)	PRO ASPHALT EMULSION (NO FIBRE)	PRO LAP CEMENT
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer		X	X			
	Asphalt/Coal Tar Coating	X					X
	Asphalt/Coal Tar Cement						
	Asphalt Emulsion				X	X	
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)						
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	FIBRATED	FIBRATED	FIBRATED	FIBRATED	NONFIBRATED	FIBRATED
	Color(s) Available	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
	Solids Content (% by volume)	70.9	72.1	76.3	48.5	47.4	71.3
	Weight Per Gallon (lbs.)	8.2	7.7	8.3	9.0	9.0	81.5
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	8	4	8	5	5	
	Coverage (gals./square)	5	10	2-3	2.5	2.5	5
	USES						
4A.	SURFACING						
	Built-Up Roofing	X	X	X	X	X	X
	Composite Roofing	X	X	X	X	X	X
	Modified Bitumen Roofing		X		X	X	
	Single-Ply Roofing						
	Other Roofing	X			X	X	X
4B.	PATCHING/REPAIRING						
	Built-Up Roofing	X	X				
	Composite Roofing	X	X				
	Metal Roofing		X				
	Other Roofing						
4C.	PRIMING						
	Built-Up Roofing		X				
	Concrete/Wood Decks		X				
	Metal		X				
4D.	FLASHING						
	Built-Up Roofing						
	Composite Roofing						
	Metal Roofing						
	Other Roofing						
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing	X		X			
	Coal Tar Built-Up Roofing						
	Metal Roofing	X		X			
	Other Roofing						
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing						X
	Cold-Process Modified Roofing						X
	Roll Roofing (Coated Sheets)						
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing	X	X		X	X	
	Reroofing/Maintenance	X	X		X	X	
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	SPRAY, BRUSH SQUEEGEE	SPRAY, ROLL SQUEEGEE	SPRAY, BRUSH SQUEEGEE	SPRAY, ROLL SQUEEGEE	SPRAY, ROLL SQUEEGEE	SPRAY, SQUEEGEE
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS		NA	NA	NA	NA	NA
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS			NA	NA	NA	NA
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS			NA	NA	NA	NA
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1931	1931	1992	1991	1991	1991
9.	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
10.	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
11.	SEE APPENDIX IF CHECKED						

NA=not applicable



## Roof Cements and Coatings Part 1: General Information

[illegible]

# Roof Cements and Coatings Part 1: General Information

1. COMPANY NAME	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS
2. PRODUCT NAME	ERS 302	ERS 309	ERS 100	ERS 200	ERS 305	ERS 307A
3.1. PRODUCT DESCRIPTION, GENERAL CATEGORY						
Asphalt Primer						
Asphalt/Coal Tar Coating	X				X	X
Asphalt/Coal Tar Cement						
Asphalt Emulsion			X			
Modified Bitumen Coating or Cement		X		X		
Elastomeric Coating or Cement (specify type)						
3.2. PRODUCT DESCRIPTION, GENERAL FEATURES						
Fibrated/Nonfibrated	FIBRATED	FIBRATED	BOTH	BOTH	NONFIBRATED	FIBRATED
Color(s) Available	BLACK	BLACK	BLACK	BLACK	ALUMINUM	BLACK
Solids Content (% by volume)	60	60	45	45	58	68
Weight Per Gallon (lbs.)	9.2	9.2	9.0	9.0	9.1	9.1
Drying Time (hours, 50% R.H. at 70° F, touch dry)	48 - 72	48 - 72	24 - 48	24 - 48	24 - 48	96
Coverage (gals./square)	2 - 3	2 - 3				
USES						
4A. SURFACING						
Built-Up Roofing	X	X	X	X	X	
Composite Roofing	X	X	X	X	X	
Modified Bitumen Roofing	X	X	X	X	X	
Single-Ply Roofing						
Other Roofing			X	X	X	
4B. PATCHING/REPAIRING						
Built-Up Roofing			X	X		
Composite Roofing			X	X		
Metal Roofing			X	X		
Other Roofing			X	X		
4C. PRIMING						
Built-Up Roofing						
Concrete/Wood Decks						
Metal						
4D. FLASHING						
Built-Up Roofing			X	X		
Composite Roofing			X	X		
Metal Roofing			X	X		
Other Roofing			X	X		
4E. RESATURATION/RESURFACING						
Asphalt Built-Up Roofing						X
Coal Tar Built-Up Roofing						
Metal Roofing						
Other Roofing						
4F. COLD-PROCESS ADHESIVE/LAP CEMENT						
Cold-Process Built-Up Roofing	X	X				
Cold-Process Modified Roofing						
Roll Roofing (Coated Sheets)	X	X				
Shingles, Tiles Other Steep Products						
4G. LIQUID-APPLIED MEMBRANE						
New Roofing			X	X		
Reroofing/Maintenance			X	X		
5. APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY
ROOF SYSTEM DESCRIPTION (or NA)						
6A. ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA
See Built-Up Roofing Section If Checked						
6B. MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS			NA	NA	NA	NA
See Modified Bitumen Roofing Section If Checked						
6C. LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	ERS 302 PLUS 2-3 PLIES ERS ROOFING	ERS 309 PLUS 2-3 PLIES ERS ROOFING	NA	NA	NA	NA
7. COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8. YEAR OF FIRST COMMERCIAL USE	1988	1988	1988	1988	1988	1988
9. FOR SALES INFORMATION CONTACT:	E. NELSON	E. NELSON	E. NELSON	E. NELSON	E. NELSON	E. NELSON
10. FOR TECHNICAL INFORMATION CONTACT:	B. PFIEFER	B. PFIEFER	B. PFIEFER	B. PFIEFER	B. PFIEFER	B. PFIEFER
11. SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS
ERS 307T	ERS 308	ERS 315	ERS 306	PRIMER / SURFACER	HER 202 FG	ERATHANE 300	ERAKOTE	ERATHANE 300 BASE COAT	ERAGUARD 2000
X	X								
		X	X						
				URETHANE	URETHANE	URETHANE	URETHANE	URETHANE	MOD. ACRYLIC
FIBRATED	FIBRATED	FIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED
BLACK	ALUMINUM	BLACK	BLACK	ALUM GRAY	ALUM GRAY	ALUM GRAY	GRAY, WHITE	GRAY	GRAY
68	60	79	60	51	89	65	65	83	36
9.1	9.2	9.9	9.2	8.8	10.0	9.0	9.5	9.3	9.1
96	24 - 48	48 - 72	48 - 72	2	24	24	24	15	1
				0.5	0.5	1.0	1.0-1.5	1.0-2.0	0.5
	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
BRUSH, SPRAY	BRUSH, SPRAY	TROWEL	TROWEL	BRUSH, SPRAY ROLLER	BRUSH	SPRAY, ROLLER	SPRAY, ROLLER	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
NA	NA	NA	NA	PRIMER/ SUR- FACER, HER 202, ERATHANE 300	PRIMER/ SUR- FACER, HER 202, ERATHANE 300	PRIMER/ SUR- FACER, HER 202, ERATHANE 300	PRIMER/ SUR- FACER, HER 202, ERAKOTE	ERATHANE 300, BASECOAT, BASECOAT, ERATHANE 300	ERAGUARD 2000, HER 202, ERAGUARD 1000
USA	USA	USA	USA	USA	USA	USA	USA	USA	USA
1988	1988	1988	1988	1979	1977	1977	1985	1992	1992
E. NELSON	E. NELSON	E. NELSON	E. NELSON	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747
B. PFIEFER	B. PFIEFER	B. PFIEFER	B. PFIEFER	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747
				X	X	X	X	X	X

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS	ERSYSTEMS
2.	PRODUCT NAME	ERAGUARD 1000	ERAGUARD 1100	ERAGUARD 1001	ERAGUARD 4000	ERAGUARD 6000	ERAGUARD 500
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating						
	Asphalt/Coal Tar Cement						
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)	ACRYLIC	ACRYLIC	ACRYLIC	SILICONE	HYPALON	ACRYLIC
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	NONFIBRATED	FIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED
	Color(s) Available	GRAY, WHITE	GRAY, WHITE	UNLIMITED	GRAY, WHITE	WHITE	GRAY, WHITE
	Solids Content (% by volume)	52	55	39	65	29	50
	Weight Per Gallon (lbs.)	12.0	11.8	9.0	11	10	12
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	6	10	3	2-4	24	6
	Coverage (gals./square)	1.0-4.0	1.0-4.0	0.75-1.0	3.0	1.0-3.0	1.0-4.0
	USES						
4A.	SURFACING						
	Built-Up Roofing	X	X				X
	Composite Roofing	X	X				X
	Modified Bitumen Roofing	X	X				X
	Single-Ply Roofing	X	X			X	X
	Other Roofing	X	X	X	X	X	X
4B.	PATCHING/REPAIRING						
	Built-Up Roofing	X	X				X
	Composite Roofing	X	X				X
	Metal Roofing	X	X				X
	Other Roofing	X	X				X
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing						
	Composite Roofing						
	Metal Roofing						
	Other Roofing						
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing	X	X				X
	Coal Tar Built-Up Roofing						
	Metal Roofing	X		X		X	X
	Other Roofing	X	X		X	X	X
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing						
	Cold-Process Modified Roofing						
	Roll Roofing (Coated Sheets)						
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing	X			X		
	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, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	ERAGUARD 2000, HER 202, ERAGUARD 1000					
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1990	1995	1995	1990	1990	1995
9.	FOR SALES INFORMATION CONTACT:	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747	T. LEONARD 800/403-7747
10.	FOR TECHNICAL INFORMATION CONTACT:	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747	J. LEONARD 800/403-7747
11.	SEE APPENDIX IF CHECKED	X	X	X	X	X	X

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

ERSYSTEMS	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC
ERATHANE 300 BASE COAT BRUSHABLE	F100 POWRCOAT	C100 ROOF COAT	M100 RUBR COAT	F150 POWERSEAL	F110 POWLAP	F400 POWRPRIME	F540, 500 ALUMINUM COATING	F630, F640, F650 FIBERED ALUM COAT	F600 FLAMEBLOC
	X	X		X	X	X	X	X	X
			X						
POLYURETHANE									
NONFIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	NONFIBRATED	NONFIBRATED	FIBRATED	FIBRATED
GRAY	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	ALUMINUM	ALUMINUM	ALUMINUM
83									
9.4	7.8	7.3	7.6	7.8	8.0	7.0	7.5-8.0	7.5-8.2	8.0
15	24-144	24-144	24-144	24-144	24-144	4-8	8-24	8-24	8-24
1.0-2.0	2-6	2-6	2-6	2-6	2-6	0.5-1	0.75-1.50	0.75-1.50	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	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 SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY
NA	ADHESIVE, FIELDS GLASS & POLYESTER	ADHESIVE, FIELDS GLASS & POLYESTER	ADHESIVE, FIELDS GLASS & POLYESTER	ADHESIVE, FIELDS GLASS & POLYESTER	ADHESIVE, FIELDS GLASS & POLYESTER	NA	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER
	X	X		X	X		X	X	X
NA	ADHESIVE, FIELDS GLASS, SEBS & POLY	ADHESIVE, FIELDS GLASS, SEBS & POLY	ADHESIVE, FIELDS GLASS, SEBS & POLY	ADHESIVE, FIELDS GLASS, SEBS & POLY	ADHESIVE, FIELDS GLASS, SEBS & POLY	NA	SURFACING, FIELDS GLASS SEBS & POLY	SURFACING, FIELDS GLASS SEBS & POLY	SURFACING, FIELDS GLASS SEBS & POLY
	NA	NA	NA	NA	NA	NA	NA	NA	NA
USA	USA	USA	USA	USA	USA	USA	USA	USA	USA
1996	1975	1975	1994	1975	1975	1975	1975	1975	1975
T. LEONARD 800/403-7747	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098
J. LEONARD 800/403-7747	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098
X									

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC
2.	PRODUCT NAME	F670 MOBLSHIELD	M860 POLRBRITE	M850 POLRSHIELD	F700 POWRGARD	M700 RUBRGARD	F750 POWRGARD 2
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating	X					
	Asphalt/Coal Tar Cement						
	Asphalt Emulsion				X	X	X
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)		ACRYLIC LATEX	ACRYLIC LATEX			
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	FIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	FIBRATED
	Color(s) Available	ALUMINUM	WHITE	WHITE	BLACK	BLACK	BLACK
	Solids Content (% by volume)						
	Weight Per Gallon (lbs.)	7.7	12	11.5	8.3	8.4	8.3
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	8-24	8-24	8-24	6-48	6-48	6-48
	Coverage (gals./square)	0.75-1.50	1.50-2.0	1.50-2.0	3-12	3-4	3-12
	USES						
4A.	SURFACING						
	Built-Up Roofing	X	X	X	X	X	X
	Composite Roofing	X	X	X			
	Modified Bitumen Roofing	X	X	X	X	X	X
	Single-Ply Roofing						
	Other Roofing	X	X	X	X	X	X
4B.	PATCHING/REPAIRING						
	Built-Up Roofing						
	Composite Roofing						
	Metal Roofing						
	Other Roofing						
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing						
	Composite Roofing						
	Metal Roofing						
	Other Roofing						
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing	X	X	X	X	X	X
	Coal Tar Built-Up Roofing						
	Metal Roofing	X	X	X	X	X	X
	Other Roofing						
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing					X	
	Cold-Process Modified Roofing					X	
	Roll Roofing (Coated Sheets)					X	
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing						
	Reroofing/Maintenance						
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	ROLLER, SPRAY	ROLLER, SPRAY	ROLLER, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	SURFACING, FIELDS GLASS & POLYESER	SURFACING, FIELDS GLASS & POLYESER	SURFACING, FIELDS GLASS & POLYESER	SURFACING, FIELDS GLASS & POLYESER	ADHESIVE, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESER
	See Built-Up Roofing Section If Checked	X	X	X	X		
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS	SURFACING, FIELDS GLASS SEBS & POLY	SURFACING, FIELDS GLASS SEBS & POLY	SURFACING, FIELDS GLASS SEBS & POLY	SURFACING, FIELDS GLASS SEBS & POLY	ADHESIVE, FIELDS GLASS, SEBS & POLY	SURFACING, FIELDS GLASS SEBS & POLY
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1975	1975	1975	1975	1975	1975
9.	FOR SALES INFORMATION CONTACT:	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098
10.	FOR TECHNICAL INFORMATION CONTACT:	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

[illegible]

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC
2.	PRODUCT NAME	C300 ROOF MASTIC	M400 RUBRPRIME	F460 WATERSTOP	M150 RUBRSEAL	M600 FIREBLOC	M630 SILVERSHIELD 3
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer		X	X			
	Asphalt/Coal Tar Coating					X	X
	Asphalt/Coal Tar Cement	X					
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement				X		
	Elastomeric Coating or Cement (specify type)						
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	FIBRATED	NONFIBRATED	NONFIBRATED	FIBRATED	FIBRATED	FIBRATED
	Color(s) Available	BLACK	BLACK	BLACK	BLACK	ALUMINUM	ALUMINUM
	Solids Content (% by volume)						
	Weight Per Gallon (lbs.)	8	7	7.2	7.6	8	8.1
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	6-12	4-8	4-8	24-144	8-24	8-24
	Coverage (gals./square)					.75-1.5	.75-1.5
	USES						
4A.	SURFACING						
	Built-Up Roofing				X	X	X
	Composite Roofing					X	X
	Modified Bitumen Roofing				X	X	X
	Single-Ply Roofing						
	Other Roofing				X	X	X
4B.	PATCHING/REPAIRING						
	Built-Up Roofing	X			X		
	Composite Roofing	X					
	Metal Roofing	X			X		
	Other Roofing	X			X		
4C.	PRIMING						
	Built-Up Roofing		X	X			
	Concrete/Wood Decks		X	X			
	Metal		X	X			
4D.	FLASHING						
	Built-Up Roofing	X					
	Composite Roofing	X					
	Metal Roofing	X					
	Other Roofing	X					
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing		X	X	X	X	X
	Coal Tar Built-Up Roofing						
	Metal Roofing				X	X	X
	Other Roofing				X	X	X
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing				X		
	Cold-Process Modified Roofing				X		
	Roll Roofing (Coated Sheets)				X		
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing						
	Reroofing/Maintenance						
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	TROWEL	ROLLER, SPRAY	ROLLER, SPARY	BRUSH, SPRAY, SQUEEGEE	ROLLER, SPRAY	ROLLER, SPRAY
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	ADHESIVE, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS	NA	NA	NA	ADHESIVE, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER	SURFACING, FIELDS GLASS & POLYESTER
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA
7.	COUNTRY OF MANUFACTURE	USA		USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1975		1975	1975	1975	1975
9.	FOR SALES INFORMATION CONTACT:	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098	T. VANDERLINDA 800/627-4098
10.	FOR TECHNICAL INFORMATION CONTACT:	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098	B. SHEIN 800/627-4098
11.	SEE APPENDIX IF CHECKED						

NA=not applicable



## Roof Cements and Coatings Part 1: General Information

[illegible]

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC
2.	PRODUCT NAME	APOC 104 PLASTIC CEMENT	APOC 107 FIBRE COLD-PLY	APOC 109 WET/DRY CEMENT	APOC 128 FLASHING CEMENT	APOC 122 FLASHING CEMENT	APOC 124 WET/DRY CEMENT
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating						
	Asphalt/Coal Tar Cement	X	X	X	X	X	X
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)						
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	FIBERED	FIBERED	FIBERED	FIBERED	FIBERED	FIBERED
	Color(s) Available						
	Solids Content (% by volume)	80	70	80	80	80	80
	Weight Per Gallon (lbs.)	8.5	8.5	8.5	8.5	8.5	8.5
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	4-8	1/2	4 - 8	4-8	4-8	4-8
	Coverage (gals./square)	12		12	12	12	12
	USES						
4A.	SURFACING						
	Built-Up Roofing	X	X	X	X	X	X
	Composite Roofing	X	X	X	X	X	X
	Modified Bitumen Roofing						
	Single-Ply Roofing						
	Other Roofing	X		X	X	X	X
4B.	PATCHING/REPAIRING						
	Built-Up Roofing	X		X	X	X	X
	Composite Roofing	X		X	X	X	X
	Metal Roofing	X		X	X	X	X
	Other Roofing	X		X	X	X	X
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing	X		X	X	X	X
	Composite Roofing	X		X	X	X	X
	Metal Roofing	X		X	X	X	X
	Other Roofing	X		X	X	X	X
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing		X				
	Coal Tar Built-Up Roofing						
	Metal Roofing						
	Other Roofing						
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing		X				
	Cold-Process Modified Roofing						
	Roll Roofing (Coated Sheets)		X				
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing						
	Reroofing/Maintenance						
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	TROWEL	BRUSH, SPRAY	TROWEL	TROWEL	TROWEL	TROWEL
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS						
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS						
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS						
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1945	1945	1945	1945	1945	1945
9.	FOR SALES INFORMATION CONTACT:	JERRY SMITH	JERRY SMITH	JERRY SMITH	JERRY SMITH	JERRY SMITH	JERRY SMITH
10.	FOR TECHNICAL INFORMATION CONTACT:	MIKE YAP	MIKE YAP	MIKE YAP	MIKE YAP	MIKE YAP	MIKE YAP
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GMX, INC.	GMX, INC.	GMX, INC.
APOC 133 MBA FLASHING CEMENT	APOC 136 MBA ADHESIVE	APOC 211 ALUMINUM PAINT	APOC 212 ALUMINUM COATING	APOC 300 ASPHALT EMULSION	APOC 302 FIBERED EMULSION	APOC 252 ELASTOMERIC WHITE	ULTRA-SHIELD METAL RUSTPROOFING	ULTRA-SHIELD BUILT-UP MASTIC	ULTRA-SHIELD WHITE ROOF COATING
		X	X				X	X	
				X	X				
X	X					COATING			X
FIBERED	NON-FIBERED	NON-FIBERED	FIBERED	NON-FIBERED	FIBERED				
80	70	60	60	45	45	65	48	48	58
8.6	8.4	9	9.1	8.6	8.6	11.5	8.2	8.2	9.2
4-8	1/2	4-8	4-8	4-8	4-8	4-8	24-36	24-36	2-3
12	100	125	100	50-100	50-100	50-100	3-6	2-3	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		X		X
X	X			X	X				
				X					
				X					
				X					
				X	X	X		X	
				X	X	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	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH SPRAY	BRUSH SPRAY	BRUSH SPRAY	BRUSH, ROLLER SPRAY	BRUSH, ROLLER SPRAY	BRUSH, ROLLER SPRAY
								WITH POLYMAT	
								WITH POLYMAT	
USA	USA	USA	USA	USA	USA	USA	USA	USA	USA
1945	1945	1945	1945	1945	1945	1945	1989	1989	1989
JERRY SMITH	JERRY SMITH	JERRY SMITH	JERRY SMITH	JERRY SMITH	JERRY SMITH	JERRY SMITH	T. CARNEY 800/321-9336	T. CARNEY 800/321-9336	T. CARNEY 800/321-9336
MIKE YAP	MIKE YAP	MIKE YAP	MIKE YAP	MIKE YAP	MIKE YAP	MIKE YAP	T. CARNEY 800/321-9336	T. CARNEY 800/321-9336	T. CARNEY 800/321-9336

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	GMX, INC.	GMX, INC.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.
2.	PRODUCT NAME	ULTRA-SHIELD NONFIBERED ALUMINUM	ULTRA-SHIELD FIBERED ALUMINUM	GRUNDY PLASTIC CEMENT	GRUNDY PLASTIC CEMENT (AF)	GRUNDY PLASTIC CEMENT WET SURFACE	GRUNDY PLASTIC CEMENT WET SURFACE (AF)
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating	X	X				
	Asphalt/Coal Tar Cement			X	X	X	X
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)						
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated			FIBRATED	FIBRATED	FIBRATED	FIBRATED
	Color(s) Available			BLACK	BLACK	BLACK	BLACK
	Solids Content (% by volume)	40	52	70 ± 2	78 ± 2	70 ± 2	78 ± 2
	Weight Per Gallon (lbs.)	7.8	8.4	9.5	9.5	9.5	9.5
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	1-2		6	6	6	6
	Coverage (gals./square)	1	2	8	8	8	8
	USES						
4A.	SURFACING						
	Built-Up Roofing	X	X				
	Composite Roofing						
	Modified Bitumen Roofing	X	X				
	Single-Ply Roofing						
	Other Roofing						
4B.	PATCHING/REPAIRING						
	Built-Up Roofing			X	X	X	X
	Composite Roofing			X	X	X	X
	Metal Roofing			X	X	X	X
	Other Roofing			X	X	X	X
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing			X	X	X	X
	Composite Roofing			X	X	X	X
	Metal Roofing			X	X	X	X
	Other Roofing			X	X	X	X
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing	X	X				
	Coal Tar Built-Up Roofing						
	Metal Roofing	X	X				
	Other Roofing						
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing						
	Cold-Process Modified Roofing						
	Roll Roofing (Coated Sheets)						
	Shingles, Tiles Other Steep Products			X	X	X	X
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing						
	Reroofing/Maintenance	X	X				
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	BRUSH, ROLLER SPRAY	BRUSH, ROLLER SPRAY	TROWEL	TROWEL	TROWEL	TROWEL
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS						
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS						
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS						
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1989	1989	1967	1967	1967	1967
9.	FOR SALES INFORMATION CONTACT:	T. CARNEY 800/321-9336	T. CARNEY 800/321-9336	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210
10.	FOR TECHNICAL INFORMATION CONTACT:	T. CARNEY 800/321-9336	T. CARNEY 800/321-9336				
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.
GRUNDY FLASHING CEMENT	GRUNDY NO. 22 FLASHING CEMENT (AF)	GRUNDY NO. 22 ELASTOMERIC CEMENT (AF)	GRUNDY COLD APPLICATION CEMENT	GRUNDY COLD APPLICATION CEMENT (AF)	GRUNDY FIBRE ROOF COATING	GRUNDY FIBRE ROOF COATING (AF)	GRUNDY NONFIBRE ROOF COATING	GRUNDY ASPHALT CONCRETE PRIMER	GRUNDY ASPHALT BU 68 RESATURANT
					x	x	x	X	X
X		X	X	X					
	X								
FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	NONFIBRATED	NONFIBRATED	FIBRATED
BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
68 ± 2	76 ± 2	78 ± 2	67 ± 2	73 ± 2	72 ± 2	77 ± 2	68 ± 2	60 ± 2	68 ± 2
9.5	8.5	9.0	8.5	8.5	8.0	8.0	7.5	7.0	8.0
6	6	6	6	6	2	2	2	1	6
8	8	8	2	2	1.5	1.5	1	1	1.5-3.0
					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							
TROWEL	TROWEL	TROWEL	BRUSH, SQUEEGEE	BRUSH, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE
USA	USA	USA	USA	USA	USA	USA	USA	USA	USA
1967	1990	1990	1967	1985	1967	1985	1967	1967	1967
J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.	GRUNDY DIVISION OF HENRY CO.
2.	PRODUCT NAME	GRUNDY ASPHALT 68 RESATURANT (AF)	GRUNDY FIBRE ROOF MASTIC TYPE II	GRUNDY PLYGRIP ADHESIVE	GRUNDY ALUMINUM COATING	GRUNDY #200 FIBRE ALUMINUM ROOF COATING	GRUNDY #220 NONFIBERED ALUM. ROOF COATING
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating	X					
	Asphalt/Coal Tar Cement						
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement		X	X	X	X	X
	Elastomeric Coating or Cement (specify type)						
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	NONFIBRATED
	Color(s) Available	BLACK	BLACK	BLACK	SILVER	SILVER	SILVER
	Solids Content (% by volume)	71 ± 2	54 ± 2	59 ± 2	65 ± 2	65 ± 2	64 ± 2
	Weight Per Gallon (lbs.)	8.0	8.0	8.0	9.4	9.2	9.0
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	6	6	2	2	2	2
	Coverage (gals./square)	1.5-3.0	1.5	1.5	1.5	1.5	1
	USES						
4A.	SURFACING						
	Built-Up Roofing				X	X	X
	Composite Roofing				X	X	X
	Modified Bitumen Roofing				X	X	X
	Single-Ply Roofing						
	Other Roofing				X	X	X
4B.	PATCHING/REPAIRING						
	Built-Up Roofing						
	Composite Roofing						
	Metal Roofing						
	Other Roofing						
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing						
	Composite Roofing						
	Metal Roofing						
	Other Roofing						
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing	X	X				
	Coal Tar Built-Up Roofing						
	Metal Roofing		X				
	Other Roofing	X	X				
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing		X				
	Cold-Process Modified Roofing		X	X			
	Roll Roofing (Coated Sheets)		X				
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing						
	Reroofing/Maintenance						
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS						
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS						
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS						
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1985	1985	1990	1988	1967	1967
9.	FOR SALES INFORMATION CONTACT:	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210	J. VAN PELT 800/435-1210
10.	FOR TECHNICAL INFORMATION CONTACT:						
11.	SEE APPENDIX IF CHECKED			X	X		

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

[illegible]

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.
2.	PRODUCT NAME	#905 FLASHMASTER	#100 EMULSION	#103 ASPHALT PRIMER	#104 ASPHALT PRIMER	#107 ASPHALT EMULSION	#109 LIQUID ROOF
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer			X	X		
	Asphalt/Coal Tar Coating					X	X
	Asphalt/Coal Tar Cement	X					
	Asphalt Emulsion		X			X	X
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)		X				NEOPRENE
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	FIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED
	Color(s) Available	BLACK	BLACK	BLACK	BLACK	BLACK	BLACK
	Solids Content (% by volume)	75	50	40	40	50	60
	Weight Per Gallon (lbs.)	9	8.5	7	7	8.5	8.5
	Drying Time (hours, 50% R.H. at 70° F, touch dry)			0.5-2	0.5-2	8-24	3-24
	Coverage (gals./square)		3.0	0.5	0.5	3.5	3.0
	USES						
4A.	SURFACING						
	Built-Up Roofing		X			X	X
	Composite Roofing		X			X	X
	Modified Bitumen Roofing		X			X	X
	Single-Ply Roofing						
	Other Roofing		X			X	X
4B.	PATCHING/REPAIRING						
	Built-Up Roofing	X					X
	Composite Roofing	X					X
	Metal Roofing						
	Other Roofing	X					X
4C.	PRIMING						
	Built-Up Roofing		X	X	X		
	Concrete/Wood Decks		X	X	X		
	Metal		X	X	X		
4D.	FLASHING						
	Built-Up Roofing	X	X				X
	Composite Roofing	X					X
	Metal Roofing						
	Other Roofing						
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing		X			X	X
	Coal Tar Built-Up Roofing						
	Metal Roofing		X			X	X
	Other Roofing		X			X	X
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing						
	Cold-Process Modified Roofing						
	Roll Roofing (Coated Sheets)						
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing						
	Reroofing/Maintenance		X			X	X
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	TROWEL	BRUSH, SPRAY	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY	BRUSH, SPRAY
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS		3 OR 4 PLY COLD APPLIED SYSTEM			3 OR 4 PLY COLD APPLIED ROOF SYSTEM	3 OR 4 PLY COLD APPLIED ROOF SYSTEM
	See Built-Up Roofing Section If Checked		X			X	X
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS						
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS						
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1982	1989	1997	1991	1940	1997
9.	FOR SALES INFORMATION CONTACT:	J. HOLLERAN 800/598-7663	J. HOLLERAN 800/598-7663	J. HOLLERAN 800/598-7663	J. HOLLERAN 800/598-7663	J. HOLLERAN 800/598-7663	J. HOLLERAN 800/598-7663
10.	FOR TECHNICAL INFORMATION CONTACT:	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182
11.	SEE APPENDIX IF CHECKED						

NA=not applicable



## Roof Cements and Coatings Part 1: General Information

HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.
#111 INSULBOND INSULATION ADHESIVE	#120 ALUMINUM ROOF PAINT	#201 FIBERED ASPHALT COATING	#203 COLD APPLIED	#204 PLASTIC ROOF CEMENT	#208 WET PATCH ROOFING CEMENT	#209 ELASTOMERIC SBS MOD MASTIC	#220 ALUMITOP FIBRATED ALUMINUM	#229 ALUMINUM EMULSION	#280 PREMIUM WHITE ELASTOMERIC
	X	X		X	X	X	X		
X								X	
									X
NONFIBRATED BLACK	NONFIBRATED SILVER	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED SILVER	NONFIBRATED SILVER	NONFIBRATED WHITE/TAN/GRAY
60	45	30	25	72	72	70	50	50	50
8.5	8.5	8.5	8	10	10	8	10	9	11
0.5-2	1.0	12.0	8-24	8.0		8.0	4.0	4.0	2.0
2-2.5	0.3	1.3	1.5-2				1.5-2	1.5	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, ROLLER	BRUSH, ROLL	BRUSH, SQUEEGEE	TROWEL	TROWEL	TROWEL	BRUSH, SPRAY, ROLL	BRUSH, SPRAY, ROLL	BRUSH, SPRAY, ROLL
3 OR 4 PLY COLD APPLIED ROOF SYSTEM	3 OR 4 PLY COLD APPLIED ROOF SYSTEM		3 OR 4 PLY COLD APPLIED ROOF SYSTEM				3 OR 4 PLY COLD APPLIED ROOF SYSTEM	3 OR 4 PLY COLD APPLIED ROOF SYSTEM	3 OR 4 PLY COLD APPLIED ROOF SYSTEM
X			X						
USA	USA	USA	USA	USA	USA	USA	USA	USA	USA
1989	1950	1944	1975	1934	1934	1986	1965	1987	1983
J. HOLLERAN 800/598-7663	J. HOLLERAN 800/598-7663	J. HOLLERAN 800/598-7663	J. HOLLERAN 800/598-7663	J. HOLLERAN 800/598-7663	J. HOLLERAN 800/598-7663	J. HOLLERAN 800/598-7663	J. HOLLERAN 800/598-7663	J. HOLLERAN 800/598-7663	J. HOLLERAN 800/598-7663
S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	HENRY CO.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.
2.	PRODUCT NAME	#287 SOLARFLEX WHITE ROOF COATING	#19 FLASHING CEMENT	#19 AF FLASHING CEMENT	#19 ULTRA RUBERIZED FLASHING CEMENT	#66 AF MODIFIED BITUMEN ADHESIVE	#71 AF ROOF COATING
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating						X
	Asphalt/Coal Tar Cement		X	X			
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement					X	
	Elastomeric Coating or Cement (specify type)	X			CEMENT		
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	FIBRATED	FIBERED	FIBERED	FIBERED	FIBERED	FIBERED
	Color(s) Available	WHITE/TAN	BLACK	BLACK	BLACK	BLACK	BLACK
	Solids Content (% by volume)	42					
	Weight Per Gallon (lbs.)	11				8.65	
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	1.0				24-48	
	Coverage (gals./square)	2.0	8	8	8	1-2	4
	USES						
4A.	SURFACING						
	Built-Up Roofing	X	X	X	X		X
	Composite Roofing	X	X	X	X		X
	Modified Bitumen Roofing	X				X	
	Single-Ply Roofing						
	Other Roofing	X					X
4B.	PATCHING/REPAIRING						
	Built-Up Roofing		X	X	X	X	X
	Composite Roofing		X	X	X		X
	Metal Roofing		X	X	X		
	Other Roofing		X	X	X	X	
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing		X	X	X		
	Composite Roofing		X	X	X		
	Metal Roofing		X	X	X		
	Other Roofing		X	X	X	X	
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing	X					X
	Coal Tar Built-Up Roofing						
	Metal Roofing						X
	Other Roofing	X					
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing						
	Cold-Process Modified Roofing					X	
	Roll Roofing (Coated Sheets)						X
	Shingles, Tiles Other Steep Products		X	X	X		
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing		X	X			
	Reroofing/Maintenance	X	X	X			X
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	BRUSH, SPRAY, ROLL	TROWEL	TROWEL	TROWEL	TROWEL, BRUSH	BRUSH, SPRAY
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	3 OR 4 PLY COLD APPLIED ROOF SYSTEM					
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS						
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS						
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1988	1945	1982	1998	1989	1948
9.	FOR SALES INFORMATION CONTACT:	J. HOLLERAN 800/598-7663	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
10.	FOR TECHNICAL INFORMATION CONTACT:	S. LEONARD 972/494-5182	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
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.
#78 AF COLD ADHESIVE CEMENT	#81 F MODIFIED BITUMEN ADHESIVE	# 97 FIBERED ALUMINUM	# 97AF NONFIBERED ALUMINUM	#100 AF NONFIBERATED EMULSION	# 107 AF VELVET ROOF COATING	#155 AMPHIBOKOTE WET / DRY	#155 AF AMPHIBIKOTE WET / DRY	#169AF NF ALUMINUM	#170 AF TAR CEMENT
		X	X						
X				X		X	X		X
	X	X	X	X				X	
FIBERED BLACK	FIBERED BLACK	FIBERED ALUMINUM	FIBERED ALUMINUM	NONFIBERED BLACK	NONFIBERED BLACK	FIBERED BLACK	FIBERED BLACK	NONFIBERED ALUMINUM	FIBERED BLACK
	8.65			58					66
	24-48	24	24	8.5					9.59
2-4	1-2	1-1.5	1-1.5	4-6	24			24-48	
				4-6	1-2			1-1.5	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	X	X				X	
		X	X					X	
X									
	X								
X									
X		X	X					X	
X		X	X					X	
BRUSH, SPRAY	BRUSH, SPRAY, TROWEL, SQUEEGEE	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY	BRUSH, TROWEL, SPRAY	TROWEL	TROWEL	BRUSH, SPRAY, ROLLER	TROWEL
COLD-PROCESS SYSTEM + POLY-MAT + ALUMINUM						NA	NA	NA	NA
						NA	NA	NA	NA
						NA	NA	SURFACING	NA
USA	USA	USA	USA	USA	USA	USA	USA	USA	USA
1977	1981	1948	1984	1954	1947	1952	1952	1947	1958
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	SALES DEPT 800/526-4236	SALES DEPT 800/526-4236	SALES 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	TECH DEPT 800/526-4236	TECH DEPT 800/526-4236	TECH DEPT 800/526-4236	TECH DEPT 800/526-4236

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.
2.	PRODUCT NAME	#220 AF FIBERED EMULSION	#229 AF AR ELASTOMERIC	#297 AF AQUA-LUM EMULSION ALUMINUM	#298 AF ALUMIN - R ELASTOMERIC ALUMINUM	#501 ELASTO-BRITE	#505 AF ELASTO-BRITE M
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating			X			
	Asphalt/Coal Tar Cement						
	Asphalt Emulsion	X					
	Modified Bitumen Coating or Cement			X			
	Elastomeric Coating or Cement (specify type)		CEMENT/COATING		COATING	COATING	COATING
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	FIBERED	FIBERED	FIBERED	NONFIBERED	NONFIBERED	NONFIBERED
	Color(s) Available	BLACK	BLACK	ALUMINUM	ALUMINUM	VARIOUS	VARIOUS
	Solids Content (% by volume)		65				50
	Weight Per Gallon (lbs.)		8.6		8.5		12.5
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	24-48		24-48	24-48	24-48	48
	Coverage (gals./square)	4	4-15	1-1.5	1.5-2.0	2	2
	USES						
4A.	SURFACING						
	Built-Up Roofing	X		X	X	X	
	Composite Roofing	X		X	X		
	Modified Bitumen Roofing	X	X	X	X		
	Single-Ply Roofing						
	Other Roofing			X	X	X	X
4B.	PATCHING/REPAIRING						
	Built-Up Roofing	X	X				
	Composite Roofing		X				
	Metal Roofing		X				
	Other Roofing		X				
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal	X					
4D.	FLASHING						
	Built-Up Roofing		X				
	Composite Roofing		X				
	Metal Roofing		X				
	Other Roofing		X				
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing	X		X	X	X	
	Coal Tar Built-Up Roofing						
	Metal Roofing	X	X	X	X		X
	Other Roofing				X		X
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing	X					
	Cold-Process Modified Roofing						
	Roll Roofing (Coated Sheets)						
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing	X	X			X	X
	Reroofing/Maintenance	X	X	X		X	X
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	BRUSH, SPRAY	BRUSH, ROLLER TROWEL, SPRAY	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	COLD PROCESS SYSTEM	NA	NA	NA		
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA		
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	COLD PROCESS SYSTEM	COLD PROCESS SYSTSEM		ELASTOMERIC SYSTEM	ARCHITECTURAL COATING SYSTEM	METAL ROOFING MAINTENANCE SYSTEM
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1954	1973	1982	1979	1978	1978
9.	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
10.	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
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KEMPER SYSTEMS INC.	KOKEM PRODUCTS INC.	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS
#108 ASPHALT PRIMER	#98 AF FIBERED ALUMINUM	#502 RC-W ELASTO-KOTE	KEMPEROL	SUNGUARD-R	ACRYLIC PRIMER	ARCYLIC GEL	ACRYLIC BASE	ACRYLIC WHITE	ACRYLIC GRAY
X	X								
	X								
	X								
		X	COATING	ELAS. COATING	ADHESIVE	ACRYLIC MASTIC		COATING	COATING
NONFIBERED BLACK	FIBERED ALUMINUM	NONFIBERED VARIOUS	NONFIBERED VARIETY	X VARIOUS	NONFIBERED BLACK, CLEAR	NONFIBERED WHITE	NONFIBERED GRAY	NONFIBERED WHITE	NONFIBERED GRAY
			99	70	26	67	65	67	67
			9.5	12	8.5	12	12	12	12
8	24	24	3	4-24	1-24	24	24-48	24-48	24-48
0.5-0.75	1-1.5	1-1.5	6.3	1	0.33-1.5	9	5-7	1-4	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		X	X
X					X				
X					X				
X					X				
			X		X	X		X	X
			X		X	X		X	X
			X		X	X		X	X
			X		X	X		X	X
	X		X		X	X	X	X	X
	X	X			X	X	X	X	X
	X	X			X	X	X	X	X
				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, TROWEL, RUBBER GLOVE	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
				X					
				X					
		ARCH COAT SYSTEM / METAL ROOFING	OLYESTER RESIN, POLYESTER REINFORCEMENT		PRIMER + BASE + WHITE + FABRIC		PRIMER + BASE + WHITE + FABRIC	PRIMER + BASE + WHITE + FABRIC	PRIMER + BASE + GRAY + FABRIC
USA	USA	USA	GERMANY	USA	USA	USA	USA	USA	USA
1945	1998	1975	1960	1979	1972	1981	1981	1981	1981
SALES DEPT 800/526-4236	SALES DEPT 800/526-4236	SALES DEPT 800/526-4236	SALES DEPT. 800/541-5455	R. KO 503/235-9206	M. ANTHENIEN 408/280-7733	M. ANTHENIEN 408/280-7733	M. ANTHENIEN 408/280-7733	M. ANTHENIEN 408/280-7733	M. ANTHENIEN 408/280-7733
TECH DEPT 800/526-4236	TECH DEPT 800/526-4236	TECH DEPT 800/526-4236	TECH DEPT 800/541-5455	R. KO 503/235-9206	L. ANTHENIEN 408/280-7733	L. ANTHENIEN 408/280-7733	L. ANTHENIEN 408/280-7733	L. ANTHENIEN 408/280-7733	L. ANTHENIEN 408/280-7733

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS
2.	PRODUCT NAME	ACRYLIC STORM CLOUD	ACRYLIC BEIGE	ACRYLIC DESERT SAND	ACRYLIC BRICK RED	ACRYLIC CUSTOM COLORS	ACRYLIC PRIMER
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						X
	Asphalt/Coal Tar Coating						
	Asphalt/Coal Tar Cement						
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)	COATING	COATING	COATING	COATING	COATING	
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED
	Color(s) Available	STORM CLOUD	BEIGE	DESERT SAND	BRICK RED	CUSTOM	BLK, WHT, CLR
	Solids Content (% by volume)	67	67	67	67	67	25
	Weight Per Gallon (lbs.)	12	12	12	12	12	8.5
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	24-48	24-48	24-48	24-48	24-48	4
	Coverage (gals./square)	1-4	1-4	1-4	1-4	1-4	1
	USES						
4A.	SURFACING						
	Built-Up Roofing	X	X	X	X	X	X
	Composite Roofing	X	X	X	X	X	X
	Modified Bitumen Roofing	X	X	X	X	X	X
	Single-Ply Roofing	X	X	X	X	X	X
	Other Roofing	X	X	X	X	X	X
4B.	PATCHING/REPAIRING						
	Built-Up Roofing		X			X	X
	Composite Roofing		X			X	X
	Metal Roofing		X			X	X
	Other Roofing		X			X	X
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing		X				
	Composite Roofing		X				
	Metal Roofing		X				
	Other Roofing		X				
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing	X	X	X	X	X	X
	Coal Tar Built-Up Roofing	X	X	X	X	X	X
	Metal Roofing	X	X	X	X	X	X
	Other Roofing	X	X	X	X	X	X
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing	X	X	X	X	X	
	Cold-Process Modified Roofing					X	
	Roll Roofing (Coated Sheets)						
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing	X	X	X	X	X	X
	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, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS						NA
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS						NA
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	PRIMER + BASE + STORMCLOUD + FABRIC	PRIMER + BASE + BEIGE + FABRIC	PRIMER + BASE + DESERT SAND + FABRIC	PRIMER + BASE + BRICK RED + FABRIC	PRIMER + BASE + CUSTOM + FABRIC	
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1981	1981	1981	1981	1981	1974
9.	FOR SALES INFORMATION CONTACT:	M. ANTHENIEN 408/280-7733	M. ANTHENIEN 408/280-7733	M. ANTHENIEN 408/280-7733	M. ANTHENIEN 408/280-7733	M. ANTHENIEN 408/280-7733	M. ANTHENIEN 408/280-7733
10.	FOR TECHNICAL INFORMATION CONTACT:	L. ANTHENIEN 408/280-7733	L. ANTHENIEN 408/280-7733	L. ANTHENIEN 408/280-7733	L. ANTHENIEN 408/280-7733	L. ANTHENIEN 408/280-7733	L. ANTHENIEN 408/280-7733
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

[illegible]

# Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.
2.	PRODUCT NAME	#226 PRO GRADE ASBESTOS FREE FLASHING CEMENT	#300 PREMIUM ALUMINUM ROOF COATING	ASBESTOS FREE ALUMINUM ROOF COATING	#842 PRO GRAD ASBESTOS FREE ALUM ROOF COAT	#300 ASBESTOS FREE ALUM ROOF COAT	#832 ALUMINUM ROOF PAINT UNFIBERED
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating		X	X	X	X	X
	Asphalt/Coal Tar Cement	X					
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)						
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibred/Nonfibred	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	NONFIBRATED
	Color(s) Available	BLACK	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM
	Solids Content (% by volume)	70	42	42	42	42	42
	Weight Per Gallon (lbs.)	10.6	8.2	8.2	8.2	8.2	8.2
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	6	2	2	2	2	1
	Coverage (gals./square)	8	1.0-1.3	1.0-1.3	1.0-1.3	1.0-1.3	0.5-1.0
	USES						
4A.	SURFACING						
	Built-Up Roofing		X	X	X	X	X
	Composite Roofing		X	X	X	X	X
	Modified Bitumen Roofing		X	X	X	X	X
	Single-Ply Roofing						
	Other Roofing		X	X	X	X	X
4B.	PATCHING/REPAIRING						
	Built-Up Roofing	X					
	Composite Roofing	X					
	Metal Roofing	X					
	Other Roofing	X					
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing	X					
	Composite Roofing	X					
	Metal Roofing	X					
	Other Roofing	X					
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing	X	X	X	X	X	X
	Coal Tar Built-Up Roofing						
	Metal Roofing		X	X	X	X	X
	Other Roofing						
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing						
	Cold-Process Modified Roofing						
	Roll Roofing (Coated Sheets)						
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing						
	Reroofing/Maintenance						
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	TROWEL CAULK	BRUSH SPRAY	BRUSH SPRAY	BRUSH SPRAY	BRUSH SPRAY	BRUSH, SPRAY. ROLLER
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	NA
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE						
9.	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
10.	FOR TECHNICAL INFORMATION CONTACT:	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182
11.	SEE APPENDIX IF CHECKED						

NA=not applicable



## Roof Cements and Coatings Part 1: General Information

MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.
#113 PRO GRADE ASPHALT PRIMER	#818 AQUA-BRIGHT ASPHALT EMULSION ALUM ROOF COAT	ASPHALT FIBERED EMULSION ROOF COATING	MBA GOLD MOD BIT MEMB ADHESIVE	SPRAY MASTIC COATING ASBESTOS FREE	LONG-LIFE PREMIUM FIBERED ROOF COATING	#27 PRO GRADE FLASHING CEMENT	LONG-LIFE ASBESTOS FREE ALL WEATHER CEM.	MB GOLD ELASTOMERIC FLASHING CEMENT	#911 PRO GRADE WET SEAL ROOF REPAIR
X				X	X				
	X	X				X	X		X
			X					X	
NONFIBRATED BLACK	NONFIBRATED ALUMINUM	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK
56	37	50	62	66	66	68	71	72	65
7.4	9.0	9.0	8.2 ±2	7.8	8.2	8.6	10.0	9.5	9.6
4	2	2		6		6	6	6	6
0.5-1.0	1.5	2	1.5	1.5-2.0	2.0	8.0	8.0	8.0	8.0
	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						
BRUSH, SPRAY. ROLLER	BRUSH, SPRAY. ROLLER	BRUSH, SPRAY. ROLLER	BRUSH, SPRAY, NOTCH SQUEEGEE	SPRAY, SQUEEGEE	BRUSH SPRAY	TROWEL CAULK	TROWEL CAULK	TROWEL CAULK	TROWEL CAULK
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	USA
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	W. MULLEN 800/523-0268	W. MULLEN 800/523-0268	W. MULLEN 800/523-0268
S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.
2.	PRODUCT NAME	#225 PRO GRADE ASBESTOS FREE ALL WEATHER CEM	M.S. SEAM SEALER	M.S. SOLVENT BASED PRIMER	M.S. SOLVENT BASED COATING	#230 PLUS ELASTOMERIC FLASH CEMENT	#869 ELASTOMERIC ALUMINUM ROOF COATING
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating						
	Asphalt/Coal Tar Cement	X					
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)		COATING	COATING	COATING	CEMENT	COATING
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	FIBRATED	NONFIBERED	NONFIBERED	NONFIBERED	FIBERED	FIBERED
	Color(s) Available	BLACK	WHITE	WHITE	WHITE	BLACK	ALUMINUM
	Solids Content (% by volume)	70.2	39.8	38.7	38.0	65.0-70.0	38.0-42.0
	Weight Per Gallon (lbs.)	8.8	9.4	9.8	9.4	9.0-9.4	8.6-9.0
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	6-8	2-4	2	2	8	2
	Coverage (gals./square)	8.0	0.5	0.5	3.0	8	1.5-2.0
	USES						
4A.	SURFACING						
	Built-Up Roofing	X					X
	Composite Roofing	X					X
	Modified Bitumen Roofing						X
	Single-Ply Roofing						
	Other Roofing	X	X	X	X		X
4B.	PATCHING/REPAIRING						
	Built-Up Roofing	X				X	
	Composite Roofing	X				X	
	Metal Roofing	X				X	
	Other Roofing	X				X	
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing	X				X	
	Composite Roofing	X				X	
	Metal Roofing	X				X	
	Other Roofing	X				X	
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing						X
	Coal Tar Built-Up Roofing						
	Metal Roofing						X
	Other Roofing						
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing						
	Cold-Process Modified Roofing						
	Roll Roofing (Coated Sheets)						
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing						
	Reroofing/Maintenance						
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	TROWEL CAULK	BRUSH	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	TROWEL, CAULK	BRUSH, SPRAY
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS		NA	NA	NA	NA	NA
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA		NA
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA		NA
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE						
9.	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
10.	FOR TECHNICAL INFORMATION CONTACT:	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	S. LEONARD 972/494-5182
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

# Roof Cements and Coatings Part 1: General Information

MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	NATIONAL COATINGS CORP.	NATIONAL COATINGS CORP.	REPUBLIC POWDERED METALS, INC.	REPUBLIC POWDERED METALS, NC.	REPUBLIC POWDERED METALS, INC.	REPUBLIC POWDERED METALS, INC.	REPUBLIC POWDERED METALS, INC.	REPUBLIC POWDERED METALS, INC.
MOD. PLUS HIGH SOLIDS MOD BIT ADHESIVE	00-32 ADHESIVE	ACRYSHIELD	ACRYFLEX	SOLARGARD	SOLARGARD HY-BUILD	PERMAFLEX	ALUMAMATION 301	GEOGARD	GEOGARD ALUMINUM
	NONFIBERED BLACK						X		
	72 8.4					X			
ADHESIVE	0.5-2.0	COATING	CEMENT	ACRYLIC	ACRYLIC			URETHANE	URETHANE
FIBERED BLACK		NONFIBRATED WHT, SPECIAL	NONFIBRATED WHITE, GRAY	NONFIBRATED VARIOUS	FIBRATED VARIOUS	FIBRATED BLACK	FIBRATED ALUMINUM	NONFIBRATED GRAY	NONFIBRATED ALUMINUM
68.0-72.0		60	60	51	51	60	47	65	80
9.8-10.2		12.1	8.8	11.5	11.1	8.7	8.8	11.0	10
		2-8	4-12	4-6	1	24	24	24	24
1.5		2-3		2-3	2-3	2-6	2-4	3-5	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	X	X	X	X	X
SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	SPRAY ROLLER	TROWEL, BRUSH, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY ROLLER	BRUSH, SPRAY ROLLER	BRUSH, SPRAY ROLLER	BRUSH, SPRAY ROLL, SQUEEGEE	BRUSH, SPRAY ROLL, SQUEEGEE
NA	NA	NA		NA	NA	NA	NA	NA	NA
NA	NA	NA		NA	NA	NA	NA	NA	NA
NA	NA	CLEARSEAL POLY FABRIC ACRY- SHIELD ACRYFLEX	CLEARSEAL POLY FABRIC ACRY- SHIELD ACRYFLEX	NA	NA	NA	NA	NA	NA
USA	USA	USA	USA	USA	USA	USA	USA	USA	USA
		1981	1989	1975	1967	1984	1947	1983	1983
W. MULLEN 800/523-0268	W. MULLEN 800/523-0268	M. CORDELL 805/388-7112	M. CORDELL 805/388-7112	J. MILLIKEN	J. MILLIKEN	J. MILLIKEN	J. MILLIKEN	J. MILLIKEN	J. MILLIKEN
S. LEONARD 972/494-5182	S. LEONARD 972/494-5182	M. CORDELL 805/388-7112	M. CORDELL 805/388-7112	D. BATKE 800/255-1136	D. BATKE 800/255-1136	D. BATKE 800/255-1136	D. BATKE 800/255-1136	D. BATKE 800/255-1136	D. BATKE 800/255-1136

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY
2.	PRODUCT NAME	NO. 748 3 LB. ALUM ROOF COATING AF FIBERATED	NO. 779 ASPHALT PLAS ROOF CEM WET SURFACE -AF	NO. 301 FIBRATED LIQUID ROOF COATING	NO. 714 FIBRATED LIQUID ROOF COATING AF	NO. 315 ASPHALT ROOF PRIMER	NO. 351 KWIK-SET CEMENT
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer					X	
	Asphalt/Coal Tar Coating	X		X	X		
	Asphalt/Coal Tar Cement		X				X
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)						
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	FIBRATED		FIBRATED	FIBRATED	NONFIBRATED	FIBRATED
	Color(s) Available	ALUMINUM	BLACK	BLACK	BLACK	BLACK	BLACK
	Solids Content (% by volume)	62		57	67	36	63
	Weight Per Gallon (lbs.)	8.6	8.4	7.7	8.0	7.3	8.2
	Drying Time (hours, 50% R.H. at 70° F, touch dry)						
	Coverage (gals./square)	1.5	8	3	3	0.75	3
	USES						
4A.	SURFACING						
	Built-Up Roofing	X	X	X	X		
	Composite Roofing	X	X				
	Modified Bitumen Roofing	X	X				
	Single-Ply Roofing						
	Other Roofing	X	X				
4B.	PATCHING/REPAIRING						
	Built-Up Roofing		X	X	X		X
	Composite Roofing		X				
	Metal Roofing		X	X	X		X
	Other Roofing		X				
4C.	PRIMING						
	Built-Up Roofing					X	
	Concrete/Wood Decks					X	
	Metal						
4D.	FLASHING						
	Built-Up Roofing		X				X
	Composite Roofing		X				X
	Metal Roofing		X				X
	Other Roofing		X				
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing	X		X	X		
	Coal Tar Built-Up Roofing						
	Metal Roofing	X					
	Other Roofing						
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing						X
	Cold-Process Modified Roofing						
	Roll Roofing (Coated Sheets)						X
	Shingles, Tiles Other Steep Products		X				
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing						
	Reroofing/Maintenance						
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	BRUSH, SPRAY	TROWEL CAULK	BRUSH SPRAY	BRUSH SPRAY	BRUSH SPRAY	BRUSH
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS			NA	NA	NA	NA
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS			NA	NA	NA	NA
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS			NA	NA	NA	NA
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1990	1990	1912	1989	1959	1954
9.	FOR SALES INFORMATION CONTACT:	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300
10.	FOR TECHNICAL INFORMATION CONTACT:	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY
NO. 753 POLYESTER MASTIC AF	NO. 751 KWIK-SET CEMENT AF	NO. 758 2 LB. ALUM ROOF COATING AF (FIBRATED)	NO. 608 2 LB. ALUM ROOF COATING (NONFIBRATED)	NO. 718 3.8-LB. ALUM ROOF COAT AF (FIBRATED)	NO. 618 3.8-LB. ALUM ROOF COAT (NONFIBRATED)	NO. 371 ASPHALT PLASTIC ROOF CEMENT	NO. 771 ASPHALT PLASTIC ROOF CEMENT AF	NO. 379 ASPHALT PLASTIC ROOF CEM WET SURFACE	NO. 071 TAR-BASE PLASTIC ROOF CEMENT
X	X								
FIBRATED	FIBRATED	FIBRATED	NONFIBRATED	FIBRATED	NONFIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED
BLACK	BLACK	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	BLACK	BLACK	BLACK	BLACK
58	67	60	44	65	48	65			
7.7	8.1	8.4	7.9	8.8	8.4	7.7	8.4	8.0	9.6
7	2-3	1.5	0.75	1.5	1	8	8	8	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									
BRUSH SPRAY		BRUSH SPRAY	BRUSH SPRAY	BRUSH SPRAY	BRUSH SPRAY	TROWEL	TROWEL	TROWEL	TROWEL
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	USA	USA	USA	USA	USA	USA	USA	USA	USA
1982	1990	1990	1954	1990	1975	1912	1989	1959	1956
J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300
R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	R.M. LUCAS COMPANY
2.	PRODUCT NAME	NO. 079 TAR-BASE PLASTIC WET SURFACE	NO. 736 ELASTOMERIC MB ADHES BRUSH	NO. 766 ELASTOMERIC MB CEMENT TROWEL	#737 LIQUID MODIFIED COATING	NEOPRENE CEMENT	#536 INSULATION ADHESIVE
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating						
	Asphalt/Coal Tar Cement	X					
	Asphalt Emulsion						X
	Modified Bitumen Coating or Cement		X	X	X		X
	Elastomeric Coating or Cement (specify type)					NEOPRENE	
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	FIBRATED	FIBRATED	FIBRATED	FIBRATED	FIBRATED	NONFIBRATED
	Color(s) Available	BLACK	BLACK	BLACK	BLACK	WHITE/BLACK	BROWN
	Solids Content (% by volume)					65	60
	Weight Per Gallon (lbs.)	9.6	8.0	7.9		9	9.5
	Drying Time (hours, 50% R.H. at 70° F, touch dry)		24-48	24-48		4-24	2
	Coverage (gals./square)	8	1-2	2-4		4-8	2
	USES						
4A.	SURFACING						
	Built-Up Roofing				X		
	Composite Roofing						
	Modified Bitumen Roofing				X		
	Single-Ply Roofing						
	Other Roofing						
4B.	PATCHING/REPAIRING						
	Built-Up Roofing	X			X	X	
	Composite Roofing					X	
	Metal Roofing				X	X	
	Other Roofing				X	X	
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing					X	
	Composite Roofing					X	
	Metal Roofing					X	
	Other Roofing					X	
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing				X		
	Coal Tar Built-Up Roofing						
	Metal Roofing				X		
	Other Roofing				X		
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing		X	X			X
	Cold-Process Modified Roofing		X	X	X		
	Roll Roofing (Coated Sheets)		X	X			
	Shingles, Tiles Other Steep Products			X			
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing						
	Reroofing/Maintenance		X		X		
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	TROWEL	BRUSH SPRAY	TROWEL, CAULK	BRUSH SPRAY	TROWEL, CAULK	BRUSH, SPRAY, SQUEEGEE
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA			
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS	NA	NA	NA			
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA			
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1956	1995	1995	1997	1995	1996
9.	FOR SALES INFORMATION CONTACT:	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300	J. BARRY 773/523-4300
10.	FOR TECHNICAL INFORMATION CONTACT:	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545	R. BARRY 773/523-0545
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

R.M. LUCAS COMPANY	R.M. LUCAS COMPANY	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.
#310 KWI-K-DRY PRIMER	#648 ALUM ROOF COATING NF - 3 LB	HEAVY DUTY ROOF COATING	HEAVY DUTY PRIMER	HEAVY DUTY PATCHING COMPOUND	H.D. GRAVEL ROOF PRESERV. (ASPHALT)	H.D. GRAVEL ROOF PRESERV. (COAL TAR)	FLEX-SHIELD ROOF COATING	FLEX-SHIELD "EM" ROOF COATING	ALUMINUM ROOF COATING
X	X	X	X	X	X	X	X	X	X
NONFIBRATED BLACK	NONFIBRATED ALUMINUM	FIBRATED BLACK	NON-FIBRATED BLACK	FIBRATED BLACK	NONFIBRATED BLACK	NONFIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED SILVER-GREEN
50	50								
7.2	8.7	8.3	7.2	9.24	8.09	9.75	8.5	8.7	9.69
2-6		1-2	1-2	1-2			2-4	2-4	1-2
0.75	0.75	2.0-5.0	0.5-2.0	10	7	7	1.75-9.0	2.5-6.0	1.0-1.5
	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
BRUSH, SPRAY, ROLLER	BRUSH, SPRAY ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	TROWEL, CAULK	BRUSH, SPRAY	BRUSH, SPRAY	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
		X	X	X			X	X	X
		X	X	X			X	X	X
USA	USA	USA	USA	USA	USA	USA	USA	USA	USA
1998	1996	1933	1933	1933	1980	1980	1970	1994	1933
J. BARRY 773/523-4300	J. BARRY 773/523-4300	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. 800/877-9372	SALES DEPT. 800/877-9372	SALES DEPT. 800/877-9372
R. BARRY 773/523-0545	R. BARRY 773/523-0545	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.	TECH. DEPT.

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SPM THERMO- SHIELD, INC	SPM THERMO- SHEILD, INC.	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS
2.	PRODUCT NAME	ADHESIVE #9	ALUMINUM ROOF SHIELD	THERMO SHIELD ROOF COATING	THERMO SHIELD ROOF COATING	TAM-PRO FIBERED EMULSION COAT	TAM-PRO Q-15 ELASTOMERIC FLASHING CEMENT
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating		X				
	Asphalt/Coal Tar Cement	X					X
	Asphalt Emulsion					X	
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)			X	ACRYLIC		
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated		NONFIBRATED	NONFIBERED		FIBRATED	FIBRATED
	Color(s) Available	BLACK	SILVER	SEVERAL		BLACK	BLACK
	Solids Content (% by volume)			52		50 ±5	70
	Weight Per Gallon (lbs.)	8.4	8.6	10		8.5	9
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	1-2	1-2	1		8-24	8
	Coverage (gals./square)	1.5-4.0	0.3-0.67	3		3	8
	USES						
4A.	SURFACING						
	Built-Up Roofing		X	X	X	X	
	Composite Roofing		X	X	X	X	
	Modified Bitumen Roofing		X	X	X	X	
	Single-Ply Roofing		X	X	X		
	Other Roofing		X	X	X	X	
4B.	PATCHING/REPAIRING						
	Built-Up Roofing	X		X	X		X
	Composite Roofing			X	X		X
	Metal Roofing			X	X		X
	Other Roofing			X	X		X
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks			X			
	Metal			X			
4D.	FLASHING						
	Built-Up Roofing			X			X
	Composite Roofing			X			X
	Metal Roofing			X			X
	Other Roofing			X			X
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing		X	X	X	X	
	Coal Tar Built-Up Roofing			X	X		
	Metal Roofing		X	X	X	X	
	Other Roofing		X	X	X	X	
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing	X					X
	Cold-Process Modified Roofing	X					X
	Roll Roofing (Coated Sheets)	X					X
	Shingles, Tiles Other Steep Products						X
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing			X	X		
	Reroofing/Maintenance			X	X		
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	BRUSH, SPRAY, ROLL, SQUEEGEE	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	ROLLER, SPRAY	BRUSH, SPRAY ROLLER	TROWEL
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS						
	See Built-Up Roofing Section If Checked	X	X				
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS						
	See Modified Bitumen Roofing Section If Checked	X	X				
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS			ACRYLIC UNDER- COAT, POLYFORCE CLOTH, TOPCOAT	CAN BE USED W/POLY REIN- FORCING FABRIC		
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1933	1933	1984	1984	1990	1990
9.	FOR SALES INFORMATION CONTACT:	SALES DEPT. 800/877-9372	SALES DEPT. 800/877-9372	SALES DEPT. 605/673-3201	SALES DEPT 800/538-2955	DISTRICT OFF.	DISTRICT OFF.
10.	FOR TECHNICAL INFORMATION CONTACT:	TECH. DEPT.	TECH. DEPT.	TECH. DEPT. 605/673-3201	TECH DEPT 800/538-2955	TECH SERVICE 800/641-4691	TECH SERVICE 800/641-4691
11.	SEE APPENDIX IF CHECKED						

NA=not applicable



## Roof Cements and Coatings Part 1: General Information

TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS
TAM-PRO PLASTIC ROOF CEMENT	TAM-PRO FIBERED ROOF COAT	TAM-PRO COLD APPLIED CEMENT	TAM-PRO WET/ DRY SURFACE PLAS ROOF CEM	TAM-PRO HEAVY-BODY FLASHING CEMENT	TAM-PRO FIBERED ALUM ROOF COAT	TAM-PRO NONFIBER ALUM COATING	TAM-PRO FIRE RATE (FR) FIBER ALUM ROOF COAT	TAM-PRO CPA SBS ADHESIVE	TAM-PRO CPS SBS FLASH CEMENT
	X				X	X	X		
X		X	X	X					
								X	X
FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED BLACK	FIBRATED SILVER	NONFIBRATED SILVER	FIBRATED SILVER	FIBRATED BLACK	FIBRATED BLACK
80 ±5	50	60 ±5	80 ±5	75 ±5	40	40	42	58 ±2	68 ±2
9.5	84	8.4	9.5	9.0	8.4	7.6	8.6	8.5	9.0
8	8-12	12-24	8	8	2-4	2-4	2-4	1-4	8
8	1-4	2	8	8	1.5	1	1.5	1.5	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				X	
TROWEL	BRUSH, SPRAY, ROLL, SQUEEGEE	BRUSH	TROWEL, CAULK	TROWEL	BRUSH, SPRAY	BRUSH, SPRAY ROLLER	BRUSH, SPRAY	BRUSH, SPRAY SQUEEGEE	TROWEL, CAULK
USA	USA	USA	USA	USA	USA	USA	USA	USA	USA
1990	1990	1990	1990	1990	1990	1990	1990	1990	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

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	TAMKO ROOFING PRODUCTS	TEXAS REFINERY CORP.	TEXAS REFINERY CORP.	TEXAS REFINERY CORP.	TEXAS REFINERY CORP.	TOPCOAT, INC. SUBSIDIARY OF GAF MATERIALS
2.	PRODUCT NAME	TAM-PRO ASPHALT PRIMER	TEXOTROPIC	QUICK-DRY ANTIOXIDENE	MIGHTYPLATE ROOF COATING	MIGHTYPLATE II	TOPCOAT MEMBRANE
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer	X					
	Asphalt/Coal Tar Coating		X	X	X	X	
	Asphalt/Coal Tar Cement						
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)						SYN. RUBBER
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	NONFIBRATED	FIBRATED	NONFIBRATED	FIBRATED	FIBRATED	NONFIBRATED
	Color(s) Available	BLACK	ALUMINUM	BLACK	BLACK	BLACK	UNLIMITED
	Solids Content (% by volume)	50 ±5	64	71.5	71.5	73.5	58
	Weight Per Gallon (lbs.)	7.6	8.16	7.15	7.83	8.33	12.5
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	1-2		0.33			2
	Coverage (gals./square)	1					1.5-3.25
	USES						
4A.	SURFACING						
	Built-Up Roofing		X		X	X	
	Composite Roofing						
	Modified Bitumen Roofing		X				
	Single-Ply Roofing						
	Other Roofing						X
4B.	PATCHING/REPAIRING						
	Built-Up Roofing				X	X	
	Composite Roofing						
	Metal Roofing						X
	Other Roofing						
4C.	PRIMING						
	Built-Up Roofing	X			X	X	
	Concrete/Wood Decks	X					
	Metal	X		X			
4D.	FLASHING						
	Built-Up Roofing						
	Composite Roofing						
	Metal Roofing						
	Other Roofing						
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing				X	X	
	Coal Tar Built-Up Roofing						
	Metal Roofing		X	X			X
	Other Roofing						X
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing				X	X	
	Cold-Process Modified Roofing						
	Roll Roofing (Coated Sheets)						
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing						X
	Reroofing/Maintenance						X
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	BRUSH, SPRAY, ROLLER	SPRAY, ROLLER	BRUSH, SPRAY ROLLER	BRUSH, SPRAY, SQUEEGEE	BRUSH, SPRAY, SQUEEGEE	SPRAY
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS		MIGHTYPLY II GLASS-BASE POLY-MAT	NA	MIGHTYPLY II GLASS-BASE POLY-MAT	MIGHTYPLY II GLASS-BASE POLY-MAT	NA
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS		MIGHTYPLATE SINGLE-PLY	NA	NA	NA	NA
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS		NA	NA	NA	NA	MEMBRANE COMPONENT OF ROOF SYSTEM
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1990					1979
9.	FOR SALES INFORMATION CONTACT:	DISTRICT OFF.	J. MCGEE 800/827-0711	J. MCGEE 800/827-0711	J. MCGEE 800/827-0711	J. MCGEE 800/827-0711	J. GARDNER 800/323-0009
10.	FOR TECHNICAL INFORMATION CONTACT:	TECH SERVICE 800/641-4691	TECH SERVICE 800/827-0711	TECH SERVICE 800/827-0711	TECH SERVICE 800/827-0711	TECH SERVICE 800/827-0711	C. LEIBY 800/323-0009
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

[illegible]

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.
2.	PRODUCT NAME	SHEETING BOND	SHEETING BOND	TREMPRIME W.B.	DOUBLE DUTY ALUMINUM L.V.	POLARCOTE	TREMLASTIC
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer			X			
	Asphalt/Coal Tar Coating				X		
	Asphalt/Coal Tar Cement						
	Asphalt Emulsion						X
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)	CEMENT	CEMENT			ACRYLIC	
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	NONFIBRATED	FIBRATED
	Color(s) Available	BLACK	WHITE	BLACK	ALUMINUM	WHITE	BLACK
	Solids Content (% by volume)						
	Weight Per Gallon (lbs.)	8.7	8.7	8.8	9.1		8.4
	Drying Time (hours, 50% R.H. at 70° F, touch dry)						
	Coverage (gals./square)	4	4	0.5	0.5		4
	USES						
4A.	SURFACING						
	Built-Up Roofing				X	X	X
	Composite Roofing						
	Modified Bitumen Roofing				X	X	X
	Single-Ply Roofing						
	Other Roofing						
4B.	PATCHING/REPAIRING						
	Built-Up Roofing						
	Composite Roofing						
	Metal Roofing						
	Other Roofing		X				
4C.	PRIMING						
	Built-Up Roofing						
	Concrete/Wood Decks						
	Metal						
4D.	FLASHING						
	Built-Up Roofing						
	Composite Roofing						
	Metal Roofing						
	Other Roofing	X					
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing						X
	Coal Tar Built-Up Roofing						
	Metal Roofing						
	Other Roofing						X
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing						X
	Cold-Process Modified Roofing						
	Roll Roofing (Coated Sheets)						
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing						
	Reroofing/Maintenance						
5.	APPLICATION METHOD(S) (Brush, Caulk, Roller, Spray, Squeegee, Trowel)	TROWEL	TROWEL	BRUSH, SPRAY, ROLLER	ROLLER, BRUSH	BRUSH SPRAY	ROLLER, BRUSH
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	POLYESTER MAT CP
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS	NA	NA	NA	NA	NA	POLYESTER MAT CP
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA	NA	NA	NA	NA
7.	COUNTRY OF MANUFACTURE	CANADA	CANADA	CANADA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE						
9.	FOR SALES INFORMATION CONTACT:	SALES OFFICE	SALES OFFICE	SALES OFFICE	SALES OFFICE	SALES OFFICE	SALES OFFICE
10.	FOR TECHNICAL INFORMATION CONTACT:	TECHNICAL DEPARTMENT	TECHNICAL DEPARTMENT	TECHNICAL DEPARTMENT	TECHNICAL DEPARTMENT	TECHNICAL DEPARTMENT	TECHNICAL DEPARTMENT
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	UNIFLEX	UNIFLEX
ECOLASTIC	TREMLAR LRM-H	TREMAR LRM-V	TREMLITE METAL PRIMER WB	TREMLITE MASTIC	TREMLITE COATING	POLARCOTE FR	TREMLASTIC S	UNIFLEX 500 ALUMINUM (10 YEAR)	LO-VOC ALUMINUM (10 YEAR)
								X	X
X							X		
	X	X							
			ACRYLIC	ACRYLIC	ACRYLIC	ACRYLIC			
FIBRATED BLACK	NONFIBRATED BLACK	NONFIBRATED BLACK	NONFIBRATED GRAY	NONFIBRATED WHITE	NONFIBRATED WHITE	NONFIBRATED WHITE	NONFIBRATED BLACK	FIBRATED	FIBRATED
						67	50	42 ± 2	61 ± 2
8.6	8.8	9.1	9.9	10.3	11.7	12.2	8.4	8.75	9.6
								4-6	4-6
7	4	4	0.2	6	0.75	1/COAT	4	2.0-2.5	2.0-3.0
						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
ROLLER, BRUSH, SPRAY	SQUEEGEE	TROWEL	BRUSH, SPRAY, ROLLER	TROWEL	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER	BRUSH, SPRAY, ROLLER
NA	NA	NA	NA	NA	NA	NA	POLYESTER MAT CP	NA	NA
NA	NA	NA	NA	NA	NA	NA	POLYESTER MAT CP	NA	NA
NA			NA	NA	NA	NA	NA	NA	NA
USA	CANADA	CANADA	USA	USA	USA	CANADA	USA	USA	USA
								1946	1984
SALES OFFICE	SALES OFFICE	SALES OFFICE	SALES OFFICE	SALES OFFICE	SALES OFFICE	SALES OFFICE	SALES OFFICE	SALES 800/321-0572	SALES 800/321-0572
TECHNICAL DEPARTMENT	TECHNICAL DEPARTMENT	TECHNICAL DEPARTMENT	TECHNICAL DEPARTMENT	TECHNICAL DEPARTMENT	TECHNICAL DEPARTMENT	TECHNICAL DEPARTMENT	TECHNICAL DEPARTMENT	D. DESTRO	D. DESTRO

## Roof Cements and Coatings Part 1: General Information

1.	COMPANY NAME	UNIFLEX	UNIFLEX	UNIROOF CORPORATION	UNITED COATING	UNITED COATINGS	UNITED COATINGS
2.	PRODUCT NAME	SUPERBRITE ALUMINUM PAINT	WATERBASED METAL PRIMER	FORMFLEX 6,000	ROOFMATE	UNISEAL	ACRYLEX 300
3.1	PRODUCT DESCRIPTION, GENERAL CATEGORY						
	Asphalt Primer						
	Asphalt/Coal Tar Coating	X					
	Asphalt/Coal Tar Cement						
	Asphalt Emulsion						
	Modified Bitumen Coating or Cement						
	Elastomeric Coating or Cement (specify type)			ACRYLIC	ACRYLIC	EPOXY	ACRYLIC
3.2	PRODUCT DESCRIPTION, GENERAL FEATURES						
	Fibrated/Nonfibrated	NONFIBRATED		NONFIBRATED			
	Color(s) Available			MANY			
	Solids Content (% by volume)	34 ± 2	39		60	20	38
	Weight Per Gallon (lbs.)	7.6	10.1		11.8	8.4	10.2
	Drying Time (hours, 50% R.H. at 70° F, touch dry)	1	1-2	4	2	0.50	0.50
	Coverage (gals./square)	2.5	2.5	1.5	2-4	0.33	0.40
	USES						
4A.	SURFACING						
	Built-Up Roofing	X			X		
	Composite Roofing	X			X		
	Modified Bitumen Roofing	X			X		
	Single-Ply Roofing				X		
	Other Roofing	X		X	X		
4B.	PATCHING/REPAIRING						
	Built-Up Roofing						
	Composite Roofing						
	Metal Roofing			X			
	Other Roofing						
4C.	PRIMING						
	Built-Up Roofing					X	
	Concrete/Wood Decks					X	
	Metal		X	X			X
4D.	FLASHING						
	Built-Up Roofing			X			
	Composite Roofing			X			
	Metal Roofing			X			
	Other Roofing			X			
4E.	RESATURATION/RESURFACING						
	Asphalt Built-Up Roofing	X					
	Coal Tar Built-Up Roofing						
	Metal Roofing	X					
	Other Roofing	X					
4F.	COLD-PROCESS ADHESIVE/LAP CEMENT						
	Cold-Process Built-Up Roofing						
	Cold-Process Modified Roofing						
	Roll Roofing (Coated Sheets)						
	Shingles, Tiles Other Steep Products						
4G.	LIQUID-APPLIED MEMBRANE						
	New Roofing				X		
	Reroofing/Maintenance	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	BRUSH, SPRAY, ROLLER
	ROOF SYSTEM DESCRIPTION (or NA)						
6A.	ASPHALT BUILT-UP ROOF MEMBRANE COMPONENTS	NA	NA		NA	NA	NA
	See Built-Up Roofing Section If Checked						
6B.	MODIFIED BITUMEN ROOF MEMBRANE COMPONENTS	NA	NA		NA	NA	NA
	See Modified Bitumen Roofing Section If Checked						
6C.	LIQUID-APPLIED MEMBRANE ROOF COMPONENTS	NA	NA		ROOF MATE BASE COAT, TOP COAT & POLY FABRIC	NA	NA
7.	COUNTRY OF MANUFACTURE	USA	USA	USA	USA	USA	USA
8.	YEAR OF FIRST COMMERCIAL USE	1984	1984	1985	1973	1993	1993
9.	FOR SALES INFORMATION CONTACT:	SALES 800/321-0572	SALES 800/321-0572	D. KONSTAN 407/869-5110	B. MANN 800/541-4383	B. MANN 800/541-4383	B. MANN 800/541-4383
10.	FOR TECHNICAL INFORMATION CONTACT:	D. DESTRO	D. DESTRO	D. KONSTAN 407/869-5110	B. MANN 800/541-4383	B. MANN 800/541-4383	B. MANN 800/541-4383
11.	SEE APPENDIX IF CHECKED						

NA=not applicable

## Roof Cements and Coatings Part 1: General Information

UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS	UNITED COATINGS
ROOF SHIELD 60	BERM 500	BERM 600 / UNITED 600	ELASTRON 858	UNI-TILE SEALER	ALUMISEAL PRIMER	ADHERE-IT EPDM PRIMER	UNIBASE PRIMER
	X						
ACRYLIC		ACRYLIC	BUTYL	EPOXY	URETHANE	URETHANE	ACRYLIC
			TAN				TRANS. GREEN
60	60	55	60	15	55	55	
11.5	12	11.5			8.6-9.2	8.9	
2	4	2	4-6	30 MIN.	1-2	1	1
2-3	3-5	1.5-2	3	0.25-0.5	0.33	0.33-0.5	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					
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
ROOF MATE BASE COAT, TOP COAT & POLY FABRIC	BERM 500, BERTM 600 & POLY FABRIC	BERM 500, BERM 600 & POLY FABRIC	ELASTRON 858	UNI-TILE SEALER	ALUMISEAL	ADHERE-IT	UNIBASE
USA	USA	USA	USA	USA	USA	USA	USA
1988	1990	1990	1965	1970		1995	1996
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

## Roof Cements and Coatings Part 2: Technical Data

1.	COMPANY NAME	ACRYMAX TECHNOLOGIES INC.	ACRYMAX TECHNOLOGIES INC.	ACRYMAX TECHNOLOGIES INC.	ALCO-NVC, INC.
2.	PRODUCT NAME	ACRYMAX AF-130	ACRYMAX AF-130 FR	ACRYMAX ACM 9000	#216 AF FLASHING CEMENT
3.	FIRE RATING				
	UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C)				
	Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C)				
	FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)	NO	YES	NO	
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)			TYPE III	
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)				
4G.	ASTM D 2822-91 <i>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)</i>				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				TYPE I
4I.	ASTM D 3019-94 <i>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</i>				
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				

1.	COMPANY NAME	ALCO-NVC, INC.	ALCO-NVC, INC.	ALCO-NVC, INC.	ALCO-NVC, INC.
2.	PRODUCT NAME	#269T AF SBS TROWEL GRADE	#269 AF SBS PLUS ADHESIVE	#214 AF ALUMABARD NON FIBRATED COAT	#215 AF ALUMAGARD FIBRATED COAT
3.	FIRE RATING				
	UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C)		CLASS A	CLASS A, B	CLASS A, B
	Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C)				
	FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)				
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)			TYPE I	TYPE III
4G.	ASTM D 2822-91 <i>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)</i>				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)	TYPE I			
4I.	ASTM D 3019-94 <i>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</i>				
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				



## Roof Cements and Coatings Part 2: Technical Data

ALCO-NVC, INC.	ALCO-NVC, INC.	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS
#207 ASPHALT ROOF PRIMER	#270 AF ROOF CAP MASTIC	FIBRATED LIQUID ROOF COATING	FIBRATED LIQUID ROOF COATING ASESTOS FREE	RUBBERIZED DAMP SURFACE ROOF COATING	RUBBERIZED DAMP SURFACE ROOF COAT AF	ROOF EMULSION FIBERED	NO FIBER ROOF EMULSION	ASPHALT PRIMER	COLD PROCESS ADHESIVE
	CLASS A								
YES								YES	
				TYPE I		TYPE IV	TYPE II		
		TYPE I							
	TYPE II		TYPE I		TYPE I				
									TYPE II

ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS
PLASTIC CEMENT	PLASTIC CEMENT ASBESTOS FREE	WET / DRY CEMENT	WET / DRY CEMENT, ASBESTOS FREE	FLASHTITE	FLASHTITE, ASBESTOS FREE	GLAS-MASTIC	NEOPRENE RUBBER ROOF CEMENT	RUBBERIZED CEMENT	2.0# ALUMINUM FIBERED
									TYPE III
TYPE I, CLASS II		TYPE I, CLASS II		TYPE I, CLASS II			TYPEII, CLASS II		
	TYPE I		TYPE I		TYPE I	TYPE I		TYPE I	

## Roof Cements and Coatings Part 2: Technical Data

1.	COMPANY NAME	ALUMINUM COATING MFRS	ALUMINUM COATING MFRS	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY
2.	PRODUCT NAME	3.0# ALUMINUM FIBERED	2.0# ALUMINUM NO FIBER	# 1818 ATCOCOAT	# 1825 ATCOLAP
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or 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
4A.	COMPLIES WITH: ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)			TYPE II	
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)	TYPE III	TYPE II		
4G.	ASTM D 2822-91 <i>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)</i>				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free (Type I, II, or no response)</i>				
4I.	ASTM D 3019-94 <i>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</i>				TYPE III
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation (Type I, II, or no response)</i>				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal (Type I, II, or no response)</i>				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				

1.	COMPANY NAME	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY
2.	PRODUCT NAME	# 1826 RAINSTOP	# 1840 ATCOGARD	# 1850 ATCOGARD 2	# 1857 ATCOSCREEN
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or 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
4A.	COMPLIES WITH: ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)	YES			
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)		TYPE III	TYPE IV	
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)				TYPE III
4G.	ASTM D 2822-91 <i>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)</i>				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free (Type I, II, or no response)</i>				
4I.	ASTM D 3019-94 <i>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</i>				
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation (Type I, II, or no response)</i>				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal (Type I, II, or no response)</i>				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				

## Roof Cements and Coatings Part 2: Technical Data

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
#1858 LIQUID SUN SHIELD	# 1859 ATCOSHIELD	# 1866 PREMIUM FIBERED ALUMINUM	# 1868 PREMIUM ALUMINUM	# 1823 ATCOMASTIC	#1897 FLAMEBLOC	#1898 FLAMEBLOC	#1326 ATCOSTOP	# 1821 RAINSEAL	# 1822 ROOF PATCH
	CLASS A, B	CLASS A, B	CLASS A, B		CLASS A, B	CLASS A, B			
	CLASS A, B	CLASS A, B	CLASS A, B		CLASS A, B	CLASS A, B			
	NO	NO	NO	NO	NO	NO		NO	NO
							YES		
TYPE I	TYPE III	TYPE III	TYPE I		TYPE III	TYPE I			
				TYPE I				TYPE I	TYPE II
				YES				YES	

AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	AMERICAN TAR COMPANY	ANDEK CORP.	ANDEK CORP.	ANDEK CORP.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.
# 1860 ALUMINUM ASPHALT COAT	# 1864 ATCOSHIELD 2	# 4200 ATCOWHITE	#5000 ATCOBRITE	ANDEK RUBBERCOAT 1047	ANDEK SILVER FILM	ANDEK RUBBERCOAT BASE	ELASTIGUM ROOFERS CEMENT	NOAH'S PITCH PLASTIC COMPOUND	S.I.S. ADHESIVE
CLASS A, B	CLASS A, B	CLASS A, B	CLASS A, B				CLASS A, B, C	CLASS A, B, C	CLASS A, B, C
CLASS A, B	CLASS A, B	CLASS A, B	CLASS A, B				CLASS A, B, C	CLASS A, B, C	CLASS A, B, C
NO	NO	NO	NO				YES	YES	YES
						YES			
TYPE I	TYPE III				TYPE I				
							TYPE I, II		
				YES				YES	TYPE III

## Roof Cements and Coatings Part 2: Technical Data

1.	COMPANY NAME	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.
2.	PRODUCT NAME	SBS MOD BIT FLASHING CEMENT	ALUMINUM ROOF COATING (FIBRATED)	ALUMINUM ROOF COATING (NONFIBRATED)	ELASTIGUM ROOF COATING
3.	FIRE RATING				
	UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C)	CLASS A, B, C	CLASS A, B, C		CLASS A, B, C
	Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C)	CLASS A, B, C	CLASS A, B, C		CLASS A, B, C
	FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)	YES	YES		YES
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				TYPE I, II
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibred, Asbestos Fibred, And Fibred Without Asbestos</i> (Type I, II, III or no response)		TYPE III	TYPE I	
4G.	ASTM D 2822-91 <i>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)</i>				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				
4I.	ASTM D 3019-94 <i>Standard Specification For Lap Cement Used with Asphalt Roll Roofing, Non-fibred, Asbestos Fibred, and Non-Asbestos Fibred (Grade 1 or 2, Type I; Type II; Type III; or</i>	TYPE III			
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				

1.	COMPANY NAME	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.	CELOTEX CORP.
2.	PRODUCT NAME	AWP ALL WEATHER PLASTIC CEMENT	SBS MODIFIED BITUMEN ADHESIVE	ASPHALT PRIMER	FLAT TOP EMULSION
3.	FIRE RATING				
	UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C)	CLASS A, B, C	CLASS A, B, C	CLASS A, B, C	CLASS A, B, C
	Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C)	CLASS A, B, C	CLASS A, B, C	CLASS A, B, C	CLASS A, B, C
	FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)	YES	YES	YES	YES
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)			YES	
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				TYPE IV
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibred, Asbestos Fibred, And Fibred Without Asbestos</i> (Type I, II, III or no response)				
4G.	ASTM D 2822-91 <i>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)</i>				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)	TYPE I, II			
4I.	ASTM D 3019-94 <i>Standard Specification For Lap Cement Used with Asphalt Roll Roofing, Non-fibred, Asbestos Fibred, and Non-Asbestos Fibred (Grade 1 or 2, Type I; Type II; Type III; or</i>		TYPE III		
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				

## Roof Cements and Coatings Part 2: Technical Data

CONKLIN CO., INC.	CONKLIN CO., INC.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.
RAPID ROOF III	BENCHMARK	PRO FLASH FLASHING CEMENT	PRO WET / STICK FLASH. CEMENT WET / DRY	PRO SBS FLASHING CEMENT	PRO ROOFLOX 300 ALUMINUM FIBRE COATING	PRO BRITE 200 ALUMINUM FIBRE COATING	PRO COAT FIBER ROOF COATING	PRO PRIMER ASPHALT	PRO RESATURANT ASPHALT
CLASS A	CLASS A								
	YES								
								YES	
							TYPE I		TYPE I
					TYPE III	TYPE III			
		TYPE I	TYPE I						
				TYPE II, III					
			YES						

DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	DEWITT PRODUCTS CO.	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS
PRO ASPHALT EMULSION (FIBRE)	PRO ASPHALT EMULSION (NO FIBRE)	PRO LAP CEMENT	PRO SBS ADHESIVE	PRO SILVER SHIELD 300 ALUM COAT NO FIBRE	PRO SILVER SHIELD ALUM COAT NO FIBRE	ERS 309	ERS 100	ERS 200	ERS 305
						CLASS A, B, C			
						CLASS A, B, C			
						CLASS A, B, C			
TYPE III	TYPE IV						TYPE II	TYPE II	
				TYPE I	TYPE I				
									TYPE III
		TYPE II, III	TYPE II, III			TYPE III			

## Roof Cements and Coatings Part 2: Technical Data

1.	COMPANY NAME	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS
2.	PRODUCT NAME	ERS 307A	ERS 307T	ERS 308	ERS 315
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)				
4A.	COMPLIES WITH: ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)	TYPE I	TYPE I		
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)				
4G.	ASTM D 2822-91 <i>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)</i>			TYPE III	
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				TYPE I
4I.	ASTM D 3019-94 <i>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</i>				
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				

1.	COMPANY NAME	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF SYSTEMS	ECOLOGY ROOF CEMENT	ECOLOGY ROOF CEMENT
2.	PRODUCT NAME	ERS 306	ERR 302	ERS 301	ERS 300A
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)		CLASS A, B, C CLASS A, B, C CLASS A, B, C		
4A.	COMPLIES WITH: ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)			YES	
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)	TYPE I			
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)				
4G.	ASTM D 2822-91 <i>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)</i>				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				TYPE I
4I.	ASTM D 3019-94 <i>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</i>		TYPE III		
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				

## Roof Cements and Coatings Part 2: Technical Data

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## Roof Cements and Coatings Part 2: Technical Data

1.	COMPANY NAME	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC
2.	PRODUCT NAME	F670 MOBL SHIELD	M860 POLRBRITE	M850 POLRSHIELD	F700 POWRGARD
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or 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
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				TYPE III
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)	TYPE III			
4G.	ASTM D 2822-91 <i>Standard Specification For Asphalt Roof Cement</i> (Type I and Class I or Class II, or Type II and Class I or II, or no response)				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				
4I.	ASTM D 3019-94 <i>Standard Specification For Lap Cement Used with Asphalt Roll Roofing, Non-fibered, Asbestos Fibered, and Non-Asbestos Fibered</i> (Grade 1 or 2, Type I; Type II; Type III; or				
4J.	ASTM D 3409-93 <i>Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing</i> (Grade or 2, Type I; Type II; or no response)				
5.	SEE APPENDIX IF CHECKED				

1.	COMPANY NAME	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC
2.	PRODUCT NAME	F880 SUNGUARD	F200 POWERBOND	C250 FOOF FLASH	F300 POWERMASTIC
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)	CLASS A, B CLASS A, B NO			
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)	TYPE III			
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)				
4G.	ASTM D 2822-91 <i>Standard Specification For Asphalt Roof Cement</i> (Type I and Class I or Class II, or Type II and Class I or II, or no response)			TYPE II, CLASS I	
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)		TYPE II		TYPE I
4I.	ASTM D 3019-94 <i>Standard Specification For Lap Cement Used with Asphalt Roll Roofing, Non-fibered, Asbestos Fibered, and Non-Asbestos Fibered</i> (Grade 1 or 2, Type I; Type II; Type III; or				
4J.	ASTM D 3409-93 <i>Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				YES
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing</i> (Grade or 2, Type I; Type II; or no response)				
5.	SEE APPENDIX IF CHECKED				



## Roof Cements and Coatings Part 2: Technical Data

FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC
M300 RUBBER MASTIC	C240 TILEBOND	M620 SILVER MASTIC	C100 ROOF COAT	M150 RUBRSEAL	M200 RUBBROND	F630, F640, F650 FIBERED ALUM COATING	F 600 FLAMEBLOC	M 700 RUBRGARD	POWRGARD 2
			CLASS A, B CLASS A, B	CLASS A, B CLASS A, B		CLASS A, B CLASS A, B	CLASS A, B CLASS A, B	CLASS A, B CLASS A, B	CLASS A, B CLASS A, B
			NO	NO		NO	NO	NO	NO
								TYPE III	TYPE IV
			TYPE II						
				TYPE I					
						TYPE III	TYPE III		
	TYPE II, CLASS I								
TYPE I					TYPE I				
YES									

FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	FIELDS CO., LLC	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.
M 800 RUBRSTAR	C 300 ROOF MASTIC	C 200 ROOFBOND	M 400 RUBRPRIME	F 460 WATERSTOP	M 600 SILVRBLOC	M 630 SILVRSHEILD 3	GAF PREMIUM FIBERED ALUM ROOF COATING	GAF ALUMINUM ROOF PAINT	GAF ASPHALT CONCRETE PRIMER
CLASS A, B CLASS A, B NO					CLASS A, B CLASS A, B NO	CLASS A, B CLASS A, B NO	CLASS A		
			YES	YES					YES
TYPE III									
					TYPE III	TYPE III	TYPE III	TYPE I	
	TYPE I, CLASS II	TYPE II, CLASS I							
	YES								

## Roof Cements and Coatings Part 2: Technical Data

1.	COMPANY NAME	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.	GAF MATERIALS CORP.
2.	PRODUCT NAME	GAF WEATHERCOAT EMULSION	RUBEROID MOD BIT ADHESIVE	RUBEROID MB FLASHING CEMENT	GAF JETBLACK PREMIUM FLASHING CEM
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)	CLASS A			
4A.	COMPLIES WITH: ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)	TYPE IV			
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)				
4G.	ASTM D 2822-91 <i>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)</i>				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)			TYPE I	TYPE I
4I.	ASTM D 3019-94 <i>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</i>		TYPE III		
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)			YES	YES
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				

1.	COMPANY NAME	GAF MATERIALS CORP.	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC
2.	PRODUCT NAME	GAF ALUMINUM EMULSION	APOC 101 PLASTIC CEMENT	APOC 103 ASPHALT	APOC 104 PLASTIC CEMENT
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)	CLASS A			
4A.	COMPLIES WITH: ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)			YES	
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)				
4G.	ASTM D 2822-91 <i>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)</i>				TYPE I, CLASS II
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)		TYPE I		
4I.	ASTM D 3019-94 <i>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</i>				
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				YES
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				

## Roof Cements and Coatings Part 2: Technical Data

GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC	GARDNER / APOC
APOC 107 FIBREX COLD-PLY	APOC109 WET / DRY CEMENT	APOC 122 FLASHING CEMENT	APOC 124 WET - R - DRY	APOC 128 FLASHING CEMENT	APOC 133 MBA FLASHING CEMENT	APOC 136 MBA ADHESIVE	APOC 211 ALUMINUM PAINT	APOC 212 ALUMINUM COATING	APOC 300 ASPHALT EMULSION
CLASS A, B, C							CLASS A, B, C	CLASS A, B, C	CLASS A
									TYPE III
							TYPE I	TYPE III	
			TYPE I, CLASS II	TYPE I, CLASS I					
	TYPE I	TYPE I			TYPE I				
TYPE III						TYPE III			
	YES		YES						

GARDNER / APOC	GARDNER / APOC	GMX, INC.	GMX, INC.	GMX, INC.	GMX, INC.	GMX, INC.	GRUNDY DIV. OF HENRY CO.	GRUNDY DIV. OF HENRY CO.	GRUNDY DIV. OF HENRY CO.
APOC 302 FIBERED EMULSION	APOC 252 WHITE ELASTOMERIC	ULTRA-SHIELD BUILT-UP MASTIC	ULTRA-SHIELD WHITE ROOF COATING	ULTRA-SHIELD FIBERED ALUMINUM	ULTRA-SHIELD NONFIBERED ALUMINUM	ULTRA-SHIELD METAL RUSTPROOFING	GRUNDY PLASTIC CEMENT	GRUNDY ROOF CEMENT (AF)	GRUNDY PLASTIC CEM WET SURFACE
CLASS A	CLASS A								
TYPE II		TYPE II				TYPE II			
		TYPE II				TYPE II			
			TYPE II	TYPE I	TYPE I				
							TYPE I, CLASS I		TYPE I, CLASS I
								TYPE I	
									YES

## Roof Cements and Coatings Part 2: Technical Data

1.	COMPANY NAME	GRUNDY DIV. OF HENRY CO.	GRUNDY DIV. OF HENRY CO.	GRUNDY DIV. OF HENRY CO.	GRUNDY DIV. OF HENRY CO.
2.	PRODUCT NAME	GRUNDY COLD APPLIED CEMENT	GRUNDY COLD APPLIED CEMENT (AF)	GRUNDY FIBRE ROOF COATING	GRUNDY FIBRE ROOF COATING (AF)
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)				
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)	TYPE I		TYPE I	
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)		TYPE I		TYPE I
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)				
4G.	ASTM D 2822-91 <i>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)</i>				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				
4I.	ASTM D 3019-94 <i>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</i>				
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				

1.	COMPANY NAME	GRUNDY DIV. HENRY CO.	GRUNDY DIV. HENRY CO.	GRUNDY DIV. OF HENRY CO.	GRUNDY DIV. OF HENRY CO.
2.	PRODUCT NAME	GRUNDY 1MB-AF ALUMINUM COATING	GRUNDY #200 FIBRE ALUMINUM ROOF COATING	GRUNDY ASPHALT CONCRETE PRIMER	GRUNDY ASPHALT BU 68 RESATURANT
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)	CLASS A CLASS B			
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)			YES	
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				TYPE I
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)	TYPE III	TYPE III		
4G.	ASTM D 2822-91 <i>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)</i>				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				
4I.	ASTM D 3019-94 <i>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</i>				
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED	X			

## Roof Cements and Coatings Part 2: Technical Data

GRUNDY DIV. OF HENRY CO.	GRUNDY DIV. HENRY CO.	GRUNDY DIV. HENRY CO.	GRUNDY DIV. HENRY CO.	GRUNDY DIV. HENRY CO.	GRUNDY DIV. HENRY CO.	GRUNDY DIV. OF HENRY CO.	GRUNDY DIV. HENRY CO.	GRUNDY DIV. HENRY CO.	GRUNDY DIV. HENRY CO.
GRUNDY NONFIBRE ROOF COATING	GRUNDY PLASTIC CEMENT WET SURFACE (AF)	GRUNDY FLASHING CEMENT	GRUNDY NO. 22 FLASHING CEMENT (AF)	GRUNDY NO. 22 ELASTOMERIC CEMENT (AF)	GRUNDY PLYGRIP MB ADHESIVE	GRUNDY FIBRE ROOF MASTIC II	GRUNDY #220 NONFIBERED ALUM ROOF	GRUNDY NO. 20 AF EMULSION	GRUNDY NO. 20 NF EMULSION
					CLASS A			CLASS A	CLASS A
								TYPE IV	
					TYPE III	TYPE II			
							TYPE I		
		TYPE I, CLASS I							
	TYPE I		TYPE I	TYPE I					
TYPE I, GRADE 2									
	YES		YES	YES					
					X			X	

GRUNDY DIV. OF HENRY CO.	GRUNDY DIV. HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.
GRUNDY ASPHALT BU 68 RESATURANT AF	GRUNDY NO. 120 ALUMINUM ROOF EMULSION	#100 ELASTO- EMULSION	#103 PRIMER	#107 ASPHALT EMULSION	#280 PREMIUM WHITE ELASTOMERIC	#287 SOLAR- FLEX	#307 FIBRATED ASPHALT EMULSION	#109 LIQUID ROOF	#111 INSULBOND
	CLASS A	CLASS A		CLASS A	CLASS A	CLASS A	CLASS A	CLASS A	CLASS A
			YES						
				TYPE III			TYPE IV		
TYPE I									

## Roof Cements and Coatings Part 2: Technical Data

1.	COMPANY NAME	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.
2.	PRODUCT NAME	#120 PREMIUM ALUMINUM	#201 FIBERED ASPHALT COATING	#203 COLD-AP	#204 PLASTIC ROOF CEMENT
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)			CLASS A	
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)		TYPE I		
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)	TYPE I			
4G.	ASTM D 2822-91 <i>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)</i>				TYPE I, CLASS I
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				
4I.	ASTM D 3019-94 <i>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</i>			TYPE III	
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				

1.	COMPANY NAME	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.
2.	PRODUCT NAME	#104 ASPHALT PRIMER	#208 WET PATCH	#209 ELASTOMERIC	#220 FIBERED ALUMINUM COATING
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)				CLASS A
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)	YES			
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)				TYPE II
4G.	ASTM D 2822-91 <i>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)</i>		TYPE I, CLASS I		
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)			TYPE I	
4I.	ASTM D 3019-94 <i>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</i>				
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				

## Roof Cements and Coatings Part 2: Technical Data

HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	HENRY CO.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.
#229 ALUMINUM EMULSION	#403 SPRAY GRADE COLD AP	#520 FIBERED ALUMINUM COATING	#902 PERMANENT BOND ADHES	#903 HI-SOLIDS MB ADHESIVE	# 19 FLASHING CEMENT	# 19AF FLASHING CEMENT	#19 ULTRA FLASHING CEMENT	#66AF MOD BIT ADHESIVE	# 71AF ROOF COATING
CLASS A	CLASS	CLASS A	CLASS A	CLASS A				CLASS A	
				YES				CLASS A	YES
									TYPE I
		TYPE III							
					TYPE I, CLASS I				
						TYPE I	TYPE I		
	TYPE III		TYPE III, GRADE I	TYPE III, GRADE II				TYPE III	
							YES		

KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.
# 78AF COLD ADHESIVE CEMENT	# 155AF AMPHIBIKOTE WET / DRY	# 229AF AR ELASTOMERIC	# 297AF AQUA-LUM EMULSION ALUMINUM	#501 AF ELASTO-BRITE	# 505AF ELASTO-BRITE M	#97 FIBERED ALUMINUM	#97 AF FIBERED ALUMINUM	#100 AF NONFIBERED EMULSION	#19 ULTRA RUBBER FLASH CEMENT
			PENDING	PENDING	CLASS A	CLASS A	CLASS A		
						YES	YES		
								TYPE III	
TYPE I									
						TYPE II	TYPE III		
	TYPE I	TYPE I							TYPE I
TYPE III									
	YES								YES
								TYPE II	

## Roof Cements and Coatings Part 2: Technical Data

1.	COMPANY NAME	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.	KARNAK CORP.
2.	PRODUCT NAME	#81 AF MOD BIT ADHESIVE	# 169AF NF ALUMINUM	# 170AF TAR CEMENT	# 220AF BRUSH EMULSION
3.	FIRE RATING				
	UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C)		CLASS A		CLASS A
	Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C)				
	FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)		YES		
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				TYPE II
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)		TYPE I		
4G.	ASTM D 2822-91 <i>Standard Specification For Asphalt Roof Cement</i> (Type I and Class I or Class II, or Type II and Class I or II, or no response)				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				
4I.	ASTM D 3019-94 <i>Standard Specification For Lap Cement Used with Asphalt Roll Roofing, Non-fibered, Asbestos Fibered, and Non-Asbestos Fibered</i> (Grade 1 or 2, Type I; Type II; Type III; or	TYPE III			
4J.	ASTM D 3409-93 <i>Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)			YES	
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				TYPE II
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing</i> (Grade or 2, Type I; Type II; or no response)				
5.	SEE APPENDIX IF CHECKED				

1.	COMPANY NAME	KARNAK CORP.	KEMPER SYSTEMS, INC.	KOKEM PRODUCTS, INC.	METACRYLICS
2.	PRODUCT NAME	# 155 AMPHIBIKOTE WET / DRY	KEMPEROL	SUNGUARD	ACRYLIC GRAY
3.	FIRE RATING				
	UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C)		CLASS A, B	CLASS A, B	CLASS A
	Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C)				CLASS A
	FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)				
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)				
4G.	ASTM D 2822-91 <i>Standard Specification For Asphalt Roof Cement</i> (Type I and Class I or Class II, or Type II and Class I or II, or no response)	TYPE I			
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				
4I.	ASTM D 3019-94 <i>Standard Specification For Lap Cement Used with Asphalt Roll Roofing, Non-fibered, Asbestos Fibered, and Non-Asbestos Fibered</i> (Grade 1 or 2, Type I; Type II; Type III; or				
4J.	ASTM D 3409-93 <i>Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)	YES			
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing</i> (Grade or 2, Type I; Type II; or no response)				
5.	SEE APPENDIX IF CHECKED		X		



## Roof Cements and Coatings Part 2: Technical Data

METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS
ACRYLIC STORM CLOUD	ACRYLIC BEIGE	ACRYLIC DESERT SAND	ACRYLIC BRICK RED	ACRYLIC CUSTOM	ACRYLIC PRIMER	ACRYLIC BASE	GEL	BASE	ACRYLIC WHITE
CLASS A CLASS A	CLASS A CLASS A	CLASS A CLASS A	CLASS A CLASS A	CLASS A CLASS A	CLASS A CLASS A	CLASS A CLASS A	CLASS A CLASS A	CLASS A CLASS A	CLASS A CLASS A
					NO	NO			
					NO		YES	YES	YES
					TYPE I, III				
					TYPE I				

METACRYLICS	METACRYLICS	METACRYLICS	METACRYLICS	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.
ACRYLIC WHITE	ACRYLIC GEL	ACRYLIC COLORS	PRIMER	METALSHIELD ELASTOMERIC ROOF COAT WHITE	#227 PRO GRADE ASBESTOS FREE FLASH CEMENT	#226 PRO GRADE AF PLASTIC ROOF CEMENT	#300 PREMIUM ALUMINUM ROOF COATING	ASBESTOS FREE ALUMINUM ROOF COATING	#842 PRO GRADE AF ALUMINUM FOOF COATING
CLASS A CLASS A NO	CLASS A CLASS A NO	CLASS A CLASS A YES	CLASS A CLASS A	CLASS A YES					CLASS A
		YES	YES						
		NO							
		TYPE I							
		TYPE I							
							TYPE II	TYPE III	TYPE III
					TYPE I	TYPE I			

## Roof Cements and Coatings Part 2: Technical Data

1.	COMPANY NAME	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.
2.	PRODUCT NAME	#300 AF ALUMINUM ROOF COATING	ALUMINUM ROOF PAINT UNFIBERED	PREMIUM FIBERED ROOF COATING	BLIND NAILING COLD CEMENT / ROOF ADHESIVE
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)				
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)			TYPE I	
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)	TYPE III	TYPE I		
4G.	ASTM D 2822-91 <i>Standard Specification For Asphalt Roof Cement</i> (Type I and Class I or Class II, or Type II and Class I or II, or no response)				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				
4I.	ASTM D 3019-94 <i>Standard Specification For Lap Cement Used with Asphalt Roll Roofing, Non-fibered, Asbestos Fibered, and Non-Asbestos Fibered</i> (Grade 1 or 2, Type I; Type II; Type III; or				TYPE II
4J.	ASTM D 3409-93 <i>Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing</i> (Grade or 2, Type I; Type II; or no response)				
5.	SEE APPENDIX IF CHECKED				

1.	COMPANY NAME	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.
2.	PRODUCT NAME	METALSHIELD ELASTOMERIC ROOF COATING	ELASTIC ROOF SEALER	#27 PRO GRADE FLASHING CEMENT	LONG-LIFE AF ALL WEATHER CEMENT
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)	CLASS A  YES			
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)				
4G.	ASTM D 2822-91 <i>Standard Specification For Asphalt Roof Cement</i> (Type I and Class I or Class II, or Type II and Class I or II, or no response)		TYPE I, CLASS 1, 2	TYPE I, CLASS I	
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				TYPE I
4I.	ASTM D 3019-94 <i>Standard Specification For Lap Cement Used with Asphalt Roll Roofing, Non-fibered, Asbestos Fibered, and Non-Asbestos Fibered</i> (Grade 1 or 2, Type I; Type II; Type III; or				
4J.	ASTM D 3409-93 <i>Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				YES
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing</i> (Grade or 2, Type I; Type II; or no response)				
5.	SEE APPENDIX IF CHECKED				

## Roof Cements and Coatings Part 2: Technical Data

MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	MONSEY DIVISION OF HENRY CO.	NATIONAL COATINGS CORP.
#818 AQUA- BRIGHT ASPH EMUL ALUM	ASPHALT FIBERED EMULSION ROOF COATING	MBA GOLD MOD BIT MEMBRANE ADHESIVE	MB GOLD ELASTOMERIC FLASHING CEM	#911 PRO GRADE WET SEAL ROOF REPAIR	#113 PRO GRADE ASPHALT PRIMER	#225 PRO GRADE AF ALL WEATHER CEMENT	SPRAY MASTIC COATING ASBESTOS FREE	LONG-LIFE PREMIUM FIBER ROOF COAT	ACRYSHIELD
CLASS A									CLASS A
									CLASS A
									YES
					YES				
	TYPE II, CLASS I								
							TYPE I	TYPE I	
			TYPE I	TYPE I		TYPE I			
		TYPE III							
				YES		YES			
									X

NATIONAL COATINGS CORP.	REPUBLIC POWDERED METALS INC.	REPUBLIC POWDERED METALS INC.	REPUBLIC POWDERED METALS INC.	REPUBLIC POWDERED METALS INC.	REPUBLIC POWDERED METALS INC.	R.M. LUCAS CO.	R.M. LUCAS CO.	R.M. LUCAS CO.	R.M. LUCAS CO.
ACRYFLEX	PERMAFLEX	ALUMIINATION 301	GEOGARD	SOLARGARD	SOLARGARD HY-BUILDE	NO. 301 FIBRATED LIQUID ROOF COATING	NO. 714 FIBRATED LIQUID ROOF COAT AF	NO. 315 ASPHALT ROOF PRIMER	NO. 071 TAR BASE PLASTIC ROOF CEMENT
CLASS A		CLASS A	CLASS A	CLASS A	CLASS A				
CLASS A		CLASS A	CLASS A	CLASS A	CLASS A				
YES									
								YES	
	TYPE II					TYPE I			
							TYPE I		
		TYPE III							
									YES
X									

## Roof 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. 351 KWIK-SET CEMENT	NO. 753 POLYESTER MASTIC	NO. 751 KWIK-SET CEMENT AF	NO. 215 ALUM ROOF COATING AF (FIBRATED)
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)				
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)		TYPE II		
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibred, Asbestos Fibred, And Fibred Without Asbestos</i> (Type I, II, III or no response)				TYPE III
4G.	ASTM D 2822-91 <i>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)</i>				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				
4I.	ASTM D 3019-94 <i>Standard Specification For Lap Cement Used with Asphalt Roll Roofing, Non-fibred, Asbestos Fibred, and Non-Asbestos Fibred (Grade 1 or 2, Type I; Type II; Type III; or</i>	TYPE II		TYPE II	
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				

1.	COMPANY NAME	R.M. LUCAS CO.	R.M. LUCAS CO.	R.M. LUCAS CO.	R.M. LUCAS CO.
2.	PRODUCT NAME	NO. 215 ALUM ROOF COATING (NONFIBRATED)	NO. 079 TAR BASE PLASTIC WET SURFACE	NO. 736 ELASTOMERIC MOD BIT ADHES BRUSH	NO. 779 ASPHALT ROOF CEMENT WET SURFACE
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)				
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibred, Asbestos Fibred, And Fibred Without Asbestos</i> (Type I, II, III or no response)	TYPE I			
4G.	ASTM D 2822-91 <i>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)</i>				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				TYPE I
4I.	ASTM D 3019-94 <i>Standard Specification For Lap Cement Used with Asphalt Roll Roofing, Non-fibred, Asbestos Fibred, and Non-Asbestos Fibred (Grade 1 or 2, Type I; Type II; Type III; or</i>			TYPE I, GRADE 2	
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)		YES		YES
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing (Grade or 2, Type I; Type II; or no response)</i>				
5.	SEE APPENDIX IF CHECKED				

## Roof Cements and Coatings Part 2: Technical Data

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.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.
NO. 718 3.8-LB. ALUM ROOF AF (FIBRATED)	NO. 618 3.8-LB. ALUM ROOF (NONFIBRATED)	NO. 371 ASPHALT PLASTIC ROOF CEMENT	NO. 771 ASPHALT PLASTIC ROOF CEMENT AF	NO. 379 ASPHALT PLASTIC WET SURFACE	NO. 766 ELASTOMERIC MOD BIT ADHES TROWEL	NO. 748 3 LB. ALUM ROOF COAT AF FIBERATED	HEAVY DUTY ROOF COATING	HEAVY DUTY PRIMER	HEAVY DUTY PATCHING COMPOUND
								YES	
							TYPE I		
TYPE III	TYPE I					TYPE III			
		TYPE I, CLASS II		TYPE I, CLASS I					
			TYPE I		TYPE I				TYPE I
					TYPE III, GRADE 2				
				YES					

SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SOUTHWESTERN PETROLEUM CORP.	SPM THERMO-SHIELD INC.	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS
HD GRAVEL ROOF PRESERVATIVE (ASPHALT)	FLEX-SHIELD "EM" ROOF COATING	ALUMINUM ROOF COATING	ADHESIVE #9	ALUMINUM ROOF SHIELD	HD GRAVEL ROOF RESERVATIVE (COAL TAR)	FLEX-SHIELD ROOF COATING	SPM THERMO-SHIELD ROOF COATING	TAM-PRO HEAVY BODY FLASHING CEMENT	TAM-PRO FIBERED ALUM ROOF COAT
		CLASS A, B, C					CLASS A		CLASS A
		CLASS A, B, C YES						NO	NO
	TYPE IV					TYPE IV			
TYPE I									
		TYPE III		TYPE I					TYPE III
								TYPE I	
			TYPE III						
								YES	
					YES				

## Roof Cements and Coatings Part 2: Technical Data

1.	COMPANY NAME	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS
2.	PRODUCT NAME	TAM-PRO NONFIBER ALUM ROOF COAT	TAM-PRO FIRE RATE (FR) FIBER ALUM ROOF COAT	TAM-PRO CPA SBS ADHESIVE	TAM-PRO CPA SBS FLASHING CEMENT
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)		CLASS A CLASS A	CLASS A CLASS A	
		NO	YES	NO	NO
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)	TYPE I	TYPE III		
4G.	ASTM D 2822-91 <i>Standard Specification For Asphalt Roof Cement</i> ( <b>Type I and Class I or Class II, or Type II and Class I or II</b> , or no response)				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> ( <b>Type I, II</b> , or no response)				TYPE I
4I.	ASTM D 3019-94 <i>Standard Specification For Lap Cement Used with Asphalt Roll Roofing, Non-fibered, Asbestos Fibered, and Non-Asbestos Fibered</i> ( <b>Grade 1 or 2, Type I; Type II; Type III</b> ; or			TYPE II	
4J.	ASTM D 3409-93 <i>Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				YES
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> ( <b>Type I, II</b> , or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> ( <b>Type I, II</b> , or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing</i> ( <b>Grade or 2, Type I; Type II</b> ; or no response)				
5.	SEE APPENDIX IF CHECKED				

1.	COMPANY NAME	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS
2.	PRODUCT NAME	TAM-PRO Q-15 ELASTOMERIC FLASHING CEM	TAM-PRO ASPHLAT PRIMER	TAM-PRO PLASTIC ROOF CEMENT	TAM-PRO FIBERED ROOF COAT
3.	FIRE RATING UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C) Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C) FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)				
		NO	NO	NO	NO
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)		YES		
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				TYPE I
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)				
4G.	ASTM D 2822-91 <i>Standard Specification For Asphalt Roof Cement</i> ( <b>Type I and Class I or Class II, or Type II and Class I or II</b> , or no response)				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> ( <b>Type I, II</b> , or no response)	TYPE I		TYPE I	
4I.	ASTM D 3019-94 <i>Standard Specification For Lap Cement Used with Asphalt Roll Roofing, Non-fibered, Asbestos Fibered, and Non-Asbestos Fibered</i> ( <b>Grade 1 or 2, Type I; Type II; Type III</b> ; or				
4J.	ASTM D 3409-93 <i>Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)	YES			
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> ( <b>Type I, II</b> , or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> ( <b>Type I, II</b> , or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing</i> ( <b>Grade or 2, Type I; Type II</b> ; or no response)				
5.	SEE APPENDIX IF CHECKED				

## Roof Cements and Coatings Part 2: Technical Data

TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TAMKO ROOFING PRODUCTS	TEXAS REFINERY CORP.	TEXAS REFINERY CORP.	TEXAS REFINERY CORP.	TOPCOAT, INC., SUBSIDIARY OF GAF MATERIALS	TOPCOAT, INC., SUBSIDIARY OF GAF MATERIALS	TOPCOAT, INC., SUBSIDIARY OF GAF MATERIALS	TOPCOAT, INC., SUBSIDIARY OF GAF MATERIALS
TAM-PRO FIBERED EMUL COATING	TAM-PRO COLD APPLY CEMENT	TAM-PRO WET / DRY PLASTIC ROOF CEMENT	TEXOTROPIC	MIGHTYPLATE ROOF COATING	MIGHTYPLATE II	TOPCOAT MEMBRANE	FLASHING GRADE	SB-900 FLASHING GRADE	SKYLITE
CLASS A			CLASS A	CLASS A	CLASS A	CLASS A	CLASS A		
CLASS A						CLASS A	CLASS A		
YES	NO	NO				YES	YES	NO	NO
TYPE IV									
		TYPE I							
	TYPE III								
		YES							

TOPCOAT, INC., SUBSIDIARY OF GAF MATERIALS	TOPCOAT, INC., SUBSIDIARY OF GAF MATERIALS	TOPCOAT, INC., SUBSIDIARY OF GAF MATERIALS	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.
MB PRIMING SYSTEM	FLEXSEAL	MP-300	POLYROOF L.V.	TREMFIX	FIBERMAT	SHEETING BOND	TREMPRIME W.B.	DOUBLE DUTY ALUMINUM L.V.	POLARCOTE
			CLASS A	CLASS A	CLASS A	CLASS A	CLASS A	CLASS A	CLASS A
			CLASS A	CLASS A	CLASS A	CLASS A	CLASS A	CLASS A	CLASS A
NO	NO	NO					YES	YES	YES

## Roof Cements and Coatings Part 2: Technical Data

1.	COMPANY NAME	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.
2.	PRODUCT NAME	TREMLASTIC	ECOLASTIC	ELS	TREMLAR LRM-H
3.	FIRE RATING				
	UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C)	CLASS A	CLASS A	CLASS A	CLASS A
	Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C)	CLASS A	CLASS A	CLASS A	CLASS A
	FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)	YES			
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)				
4G.	ASTM D 2822-91 <i>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)</i>				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				
4I.	ASTM D 3019-94 <i>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</i>				
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing</i> (Grade or 2, Type I; Type II; or no response)				
5.	SEE APPENDIX IF CHECKED				

1.	COMPANY NAME	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.	TREMCO, INC.
2.	PRODUCT NAME	TREMLAR LRM-V	TREMLITE METAL PRIMER WB	TREMLITE MASTIC	TREMLITE COATING
3.	FIRE RATING				
	UL Classification(s) as a Part of Any Roofing System Per ANSI/UL 790 (Class A, B, and/or C)	CLASS A	CLASS A	CLASS A	CLASS A
	Fire Rating(s) as a Part of Any Roof System Per ASTM E 108 (Class A, B, and/or C)	CLASS A	CLASS A	CLASS A	CLASS A
	FM CLASS 1 Fire Rating as a Part of Any Roof System (yes/no)				
	COMPLIES WITH:				
4A.	ASTM D 41-94 <i>Standard Specification For Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4B.	ASTM D 43-94 <i>Standard Specification For Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing</i> (yes or no)				
4C.	ASTM D 1227-95 <i>Standard Specification For Emulsified Asphalt Used As A Protective Coating For Built-Up Roofing</i> (Type I, II, III, IV, or no response)				
4D.	ASTM D 2823-90 <i>Standard Specification for Asphalt Roof Coatings</i> (Type I, II, or no response)				
4E.	ASTM D 4479-93 <i>Standard Specification For Asphalt Roof Coatings - Asbestos Free</i> (Type I, II or no response)				
4F.	ASTM D 2824-94 <i>Standard Specification For Aluminum Pigmented Asphalt Roof Coatings, Non-Fibered, Asbestos Fibered, And Fibered Without Asbestos</i> (Type I, II, III or no response)				
4G.	ASTM D 2822-91 <i>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)</i>				
4H.	ASTM D 4586-93 <i>Standard Specification for Asphalt Roof Cement, Asbestos Free</i> (Type I, II, or no response)				
4I.	ASTM D 3019-94 <i>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</i>				
4J.	<i>ASTM D 3409-93 Standard Test Method For Adhesion Of Asphalt-Roof Cement To Damp, Wet, Or Underwater Surfaces</i> (yes or no response)				
4K.	ASTM D 4022-94 <i>Standard Specification For Coal Tar Roof Cement</i> (yes or no response)				
4L.	ASTM D 3747-95 <i>Standard Specification For Emulsified Asphalt Adhesive For Adhering Roof Insulation</i> (Type I, II, or no response)				
4M.	ASTM D 1187-95 <i>Standard Specification For Asphalt-Base Emulsion Used As Protective Coatings For Metal</i> (Type I, II, or no response)				
4N.	ASTM D 3468-90 <i>Standard Specification For Liquid-Applied Neoprene And Chlorosulfonated Polyethylene Used In Roofing And Waterproofing</i> (Grade or 2, Type I; Type II; or no response)				
5.	SEE APPENDIX IF CHECKED				



## Roof Cements and Coatings Part 2: Technical Data

[illegible]

## Appendix, Cement and Coatings

### ERSYSTEMS

Coatings: The elastomeric coatings include acrylic, urethane, silicone and Hypalon7 coatings for metal, concrete and foam roof and metal and concrete wall systems.

The Metal Roof Restoration System is designed to renew a metal roof - protect it from rusting, waterproof all seams, fasteners and roof penetrations without fabric or tapes, and restore the metallic finish for long term preservation. Available as a water-based acrylic system or polyurethane system.

The Single Ply Restoration System addresses the limitations of the original single-ply system (i.e., weak EPDM seams and flashings) and then provides for coating the membrane to reduce the temperature of the roof and deterioration against the elements.

Spray-Applied Polyurethane Foam: The ER Foam System consists of sprayed-in-place polyurethane foam used in conjunction with ERSYSTEMS elastomeric coatings. 2.7# and 3.0# roofing foam and 2.0# residential foam is available. ER Foam is typified with high density high compressive foam with good yield and smooth texture. Foam is protected for the UV and weather with acrylic elastomers (Eraguard 1000), polyurethane elastomers (Erathane 300), or silicone elastomers (Eraguard 4000).

Slo-Low Rise Adhesive: Used for rapid means of fully adhering the board stock to the deck and can be easily applied with the ERSprayer. Perfect for adhering insulation board to hard-to-fasten decks.

### GRUNDY DIVISION OF HENRY CO.

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.

### HENRY COMPANY

#111 Insulboard Roof Insulation Adhesiver is a solvent-free rubberized asphalt emulsion formulated for laminating solvent-sensitive polystyrene foam boards and adhering it to a variety of overlay boards and substrates. It is ideal for tapered insulation systems.

### NATIONAL COATINGS CORP.

Acryshield complies with ASTM D 6083-97A, *Standard Specification For Liquid Applied Acrylic Coating Used in Roofing*. Acryflex complies with both ASTM C920-98, *Standard Specification for Elastomeric Joint Sealants* and Federal Specification TT-S-00230C, Class A.

## Section 5

*Low-Slope Roofing  
Materials Guide*

***2000***

*Roof Membrane Warranties*

## Information on Section 5: Roof Membrane Warranties

### General Information

Section 5: Roof Membrane Warranties in the 2000 edition of NRCA's *Low-Slope Roofing Materials Guide* provides information on warranties offered by material manufacturers applicable to their built-up, modified bitumen, and single-ply membrane products listed. 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 examination of the document itself:

<u>No.</u>	<u>Item of Information</u>
1	Identity of issuing entity
4	Scope of coverage
6	Nature of remedy
8	Notification of requirements
9	Exclusive of 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.

<u>No.</u>	<u>Item of Information</u>
2	Title, original publication date, and identifying symbol (if any)
3	Product specification
5	Length of coverage
13	Wind coverage/exclusion
15	Cost to obtain
16	Minimum charge
18	Pre-construction notice and approval requirement
19	Approved, authorized, or licensed contractor
20	Job inspection policy
21	Contractor's post-installation obligation
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 may 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 a manufacturer does not provide the relevant data. Brackets ([ ]) are used in the listing to indicate information that a manufacturer feels is pertinent but 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, 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 name will appear in the warranty section. Or if one company purchases the assets of another, upon request NRCA simply moves the name of the company that acquired it. In the warranty section, on the other hand, this is not possible until warranty documents bearing the new corporate name are provided to NRCA. The name of the entity must remain as it appears in the document. An explanation of such situations is sometimes provided in a footnote in the warranty section in order to clarify an apparent discrepancy in its corporate name.

By necessity, the warranty listing in the guide presents 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 consequence; therefore, all parties should understand the document at the outset of a construction project to preclude subsequent misunderstandings.

The firm of Hendrick, Phillips, Schemm & Salzman, Atlanta, Ga., in coordination with NRCA staff prepares

the warranty section of the *Low-Slope Roofing Materials Guide*.

## 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 cases, 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 manufacturers' 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 specification, or roofing systems that are covered by the warranty. If properly updated by the manufacturer, the reader should be able to identify these product listings in the membrane section.

**4. Scope of coverage:** In most cases, 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 application. The term *workmanship* refers to the workmanship of the contractor and is meant to indicate whether proper or defective workmanship on the part of the roofing contractor/applicator 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 on 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 instances, this period commences upon the completion of the roof installation final inspection and approval by the manufacturer. In a few instances, particularly in cases of material-only warranties, the coverage period may begin at the time of sale or invoice date.

**6. Nature of remedy:** This 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 a 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 limitations (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 warrant 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 excluded 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 limited.

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 sale of goods that the goods shall be merchandise if the seller is a merchant of goods of that kind. To be merchantable, goods must be fit at least for the ordinary purpose of 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 a 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 as 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 to 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 the 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 the 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 the 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 Exclusion 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 or 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 adjacent building
11. Damage resulting from lack of positive, proper, or adequate drainage; ponding on the 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 roof deck
18. Contaminants that may have not been approved first or accepted by manufacturer; exposure to or contact with damaging substances or 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 unauthorized 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 questions concerning this issue.

Many manufacturers' warranties list either gales, strong gales, wind storm, and/or hurricanes and tornadoes as examples of natural disaster or acts of God that are specifically excluded from warranty coverage. 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 the warranty coverage.

The second sentence under 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 information is based exclusively upon the manufacturer's responses 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.

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 specific conditions to make warranty ineffective or null and void; a key for which follows. 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.

#### **14. 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 or 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 warrant 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 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:** This category briefly covers 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 a reference to any 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 name 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 the manufacturer was unable to satisfy its warranty commitments.



NRCA also asks manufacturers if they carry insurance covering their warrant 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 to 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 provisions 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 the owner 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.

# Index to Warranties

	Warranty
<b>ALLIED SIGNAL ROOFING SYSTEMS</b> 2000 Regency Parkway, Suite 225 Cary, NC 27511-8507 919/461-0670 or 800/221-6490 FAX: 919/461-4720 E-mail: alliedroof@alliedsignal.com Web: alliedroof.com	570
<b>AMERICAN LUBRICANTS CO.</b> 1227 Deeds Avenue Dayton, OH 45401 937/222-2851 FAX: 937/461-7729 E-mail: Web:	574
<b>BARRETT COMPANY</b> 3422 Old Capitol Trail Wilmington, DE 19808 800/647-0100 FAX: E-mail: Web:	574
<b>BITEC INC.</b> #2 Industrial Park Drive Morrilton, AR 72110 800/535-8597 FAX: 501/354-3019 E-mail: dga@bitec.com Web: www.bi-tec.com	578
<b>BONDCOTE ROOFING SYSTEMS</b> 984 Southford Road Middlebury, CT 06762 800/368-2160 FAX: E-mail: Web:	580
<b>BURKE INDUSTRIES</b> 2250 South 10th Street San Jose, CA 95112 408/297-3500 or 800/297-7010 FAX: 408/280-0938 E-mail: Web:	580
<b>CARLISLE SYNTEC INC.</b> P.O. Box 7000 Carlisle, PA 17013 717/245-7000 FAX: 717/245-7245 E-mail: Web:	582

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<b>CELOTEX CORP.</b> 4010 Boy Scout Blvd. Tampa, FL 33607 813/873-1700 FAX: 813/873-4080 E-mail: Web:	584
<b>CONKLIN CO.</b> P.O. Box 155 Shakopee, MN 55379-0155 800/888-8838 FAX: 612/496-4285 E-mail: marketing@conklin.com Web: www.conklin.co	588
<b>DANOSA CARIBBEAN, INC.</b> Box 13757, Santurce Station San Juan, PR 00908 809/785-4545 FAX: 809/787-3092 E-mail: danosapr@icepr.com Web:	590
<b>DERMABIT WATERPROOFING IND.</b> P.O. Box 273 Alexandria, VA 22313-0273 703/739-2801 FAX: 703/739-2802 E-mail: Web: www.dewitt@globalbiz.com	590
<b>DIBITEN</b> P.O. Box 5108 Denver, CO 80217-5108 800/342-4836 FAX: 303/978-3904 E-mail: Web:	592
<b>DURO-LAST INC.</b> 525 Morley Drive Saginaw, MI 48601 800/248-0280 FAX: 800/432-9331 E-mail: Web:	594
<b>(ENSURCO) DURADEK, U.S., LTD.</b> 1722 Iron Street North Kansas City, MO 84116 800/338-3568 FAX: 816/421-2924 E-mail: duradek@kcnet.com Web:	596

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<b>ERSYSTEMS</b> Elastomeric Roofing Systems, Inc. 50 Medina Street Loretto, MN 55357-0056 612/479-6690 FAX: 612/479-6691 E-mail: ersinfo@ersystems.com Web: www.ersystems.com	598
<b>FIRESTONE BUILDING PRODUCTS CO.</b> 525 Congressional Blvd. Carmel, IN 46032 800/428-4442 FAX: E-mail: firestonebpco.com Web:	600
<b>FLEX MEMBRANE INTERNATIONAL</b> Bethlehem Drive Morgantown, PA 19543 610/286-7788 FAX: 610/286-7786 E-mail: flexroof@compuserv.com Web:	604
<b>GAF MATERIALS CORP.</b> 1361 Alps Road Wayne, NJ 07470 973/628-3000 FAX: 973/628-3451 E-mail: Web: gaf.com	606
<b>GENFLEX ROOFING SYSTEMS</b> 1722 Indian Wood Circle Maumee, OH 43537 800/448-4272 FAX: 419/891-4436 E-mail: Web: www.genflex.com	612
<b>GRACE &amp; CO., W.R.</b> 62 Whittemore Avenue Cambridge, MA 02140 617/876-1400 FAX: E-mail: Web:	616
<b>HENRY COMPANY</b> 2911 Slauson Avenue Huntington Park, CA 90255 213/583-5000 FAX: 213/582-6429 E-mail: Web:	618

	Warranty
<b>HERBERT MALARKEY COMPANY</b> P.O. Box 17217 Portland, OR 97217-0217 603/283-1191 or 800/545-1191 FAX: E-mail: Web:	618
<b>IMPERITALIA S.P.A.</b> Strada Lanzo 131 10148 Torino, ITALY 11-262-0941 FAX: 11-262-1621 E-mail: Web:	620
<b>INTEC/PERMAGLAS</b> P.O. Box 2845 Port Arthur, TX 77643 800/231-4631 FAX: 409/724-2348 E-mail: support@usintec.com Web:	620
<b>INTERNATIONAL DIAMOND SYSTEMS</b> P.O. Box 351950 Toledo, OH 43635 419/382-0111 FAX: 419/382-3275 E-mail: Web:	620
<b>JOHNS MANVILLE INTERNATIONAL</b> Roofing Systems Group P.O. Box 5108 Denver, CO 80217 303/978-2000 FAX: 303/978-3904 E-mail:	622
<b>JPS ELASTOMERICS</b> 9 Sullivan Road Holyoke, MA 01040-2800 800/621-ROOF FAX: 413/552-1198 E-mail: info@stvroof.com Web:	628
<b>KOPPERS INDUSTRIES INC.</b> 436 Seventh Avenue Pittsburgh, PA 15219 800/558-2706 FAX: 412/227-2002 E-mail: Web: www.koppers.com	630

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<b>MBTECHNOLOGY CORPORATION</b> 188 South Teilman Avenue Fresno, CA 93706 800/621-9281 FAX: 209/233-4607 E-mail: Web:	632
<b>MONSEY BAKOR</b> 363 Cold Stream Road Kimberton, PA 19442 800/523-0268 FAX: 610/933-4598 E-mail: monsey-bakor.com Web:	636
<b>MULE HIDE PRODUCTS CO., INC.</b> 2924 Wyetta Drive Beloit, WI 53511 608/365-3111 FAX: E-mail: Web:	636
<b>OLYMPIC RUBBER ROOFING SYSTEM</b> P.O. box 091082 Milwaukee, WI 53209 800/552-5393 or 414/442-3117 FAX: E-mail: Web:	638
<b>PERFORMANCE ROOF SYSTEMS</b> 4821 Chelsea Avenue Kansas City, MO 64130 816/921-0221 FAX: 816/921-5540 E-mail: prshunt@aol.com Web:	638
<b>PROTECTIVE COATINGS INC.</b> 1620 Birchwood Avenue Fort Wayne, IN 46803 800/992-8299 FAX: 219/422-7147 E-mail: Web:	642
<b>REPUBLIC POWDERED METALS</b> 3735 Green Road Beachwood, OH 44122 800/551-7081 FAX: 888/742-1759 E-mail: Web:	642

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<b>ROOFING PRODUCTS INTERNATIONAL</b> 57460 Dewitt Street Elkhart, IN 46517 800/628-2957 or 219/293-9096 FAX: 219/294-3450 E-mail: Web: www.roofingproductsint. Com	644
<b>SARNAFIL INC.</b> 100 Dan Road Canton, MA 02021 800/451-2504 FAX: E-mail: Web:	646
<b>SEAMAN CORPORATION</b> FiberTite Roofing Systems 1000 Venture Blvd. Wooster, OH 44691 800/927-8578 FAX: 800/649-2737 E-mail:	646
<b>SIPLAST INC.</b> 1111 Hwy. 67 South Arkadelphia, AR 71923 870/246-8094 FAX: 800/649-2737 E-mail: kersey@siplast.com Web:	650
<b>SOPREMA, INC.</b> 310 Quadral Drive Wadsworth, OH 44281 330/334-0066 or 800/356-3521 FAX: 330/334-4289 E-mail: Web:	652
<b>SOUTHWESTERN PETROLEUM CORP.</b> 534 North Main Street, P.O. Box 961005 Ft. Worth, TX 76161-0005 817/332-2336 or 800/877-9372 FAX: 817/877-4047 E-mail: swepcousa.com Web:	652
<b>TAMKO ROOFING PRODUCTS, INC.</b> 220 W. 4th St., P.O. Box 1404 Joplin, MO 64802 417/624-6644 FAX: 417/624-2340 E-mail: Web: www.tamko.com	654

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<b>TEXAS REFINERY CORP.</b> One Refinery Place, P.O. Box 711 Ft. Worth, TX 76101 817/332-1161 FAX: 817/332-2340 E-mail: Web: www.texasrefinery.com	660
<b>TREMCO INC.</b> 3735 Green Road P.O. Box 228069 Beachwood, OH 44122-8069 216/292-5000 FAX: 216/292-5629 Web: www.tremcoroofing.com	660
<b>UNIROOF</b> P.O. Box 180133 Altamonte Springs, FL 32716-0133 407/869-5100 FAX: E-mail: Web:	

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<b>U.S. INTEC INC.</b> P.O. Box 2845 Port Arthur, TX 77643 800/624-6832 (Tech Hotline) 800/231-4631 (US) 800/392-4216 (TX)	662
<b>VERSICO INC.</b> 3485 Fortuna Drive Akron, OH 44312 216/644-6700 or 800/992-7663 FAX: 216/644-2613 E-mail: Web:	664
<b>W.P. HICKMAN SYSTEMS INC.</b> 30700 Solon Industrial Parkway Solon, OH 44139 440/248-7780 FAX: 440/248-6524 E-mail: wphickman@wphickman.com Web:	664

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## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

<b>1. Identity of issuing entity</b>	<b>AlliedSignal, Inc.</b>	<b>AlliedSignal, Inc.</b>	<b>AlliedSignal, Inc.</b>
<b>2. Title, original publication date, and identifying symbol, if any</b>	ABlack Armor NDL Roofing System Warranty≡; April 1990; 004590	APRMA NDL Roofing System Warranty≡; February 1991	ARoof Materials 10-Year Limited Warranty≡; 1987; GOES 681
<b>3. Product, specification, or system covered</b>	Built-up roofing specifications: RP-40, RP-41, RP-50TC, 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-50TC, 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-50TC, RP51-TC, RP-40-5, RP-41-5, RP-60, RP-61, RP-60-5, RP-61-5
<b>4. Scope of coverage</b>	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 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. [AlliedSignal indicates that when the specification requires a Aprotected 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; AlliedSignal 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.
<b>5. Length of coverage</b>	5, 10, 15, 20, or 25 years: BUR Specs: RP-40, RP-41, RP-50TC, 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 Aprotected 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
<b>6. Nature of remedy</b>	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.
<b>7. Monetary limitations</b>	None stated.	None stated.	Prorated of purchase price of defective materials
<b>8. Notification requirements</b>	Written notification upon discovery of a leak to AlliedSignal Inc. Commercial Roofing Systems, 2000 Regency Parkway, Suite 255 Cary, NC 27511-8507. (See Special Features/Conditions.)	Written notification upon discovery of a leak to AlliedSignal, Inc., Black Armor Coal Tar Roofing Systems, 2000 Regency Parkway, Suite 255, Cary, NC 27511-8507. (See Special Features/Con ditions.)	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.
<b>9. Exclusive or additional remedy</b>	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.	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.
<b>10. Inclusion of consequential damages</b>	No	No	No
<b>11. Determination of warranty applicability</b>	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.
<b>12. Specific exclusions from coverage (see item 12 in Introduction)</b>	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
<b>13. Wind coverage/exclusions</b>	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.

<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	M, R (See Special Features/Conditions.)	M, R (See Special Features/Conditions.)	I, R
<b>15. Cost to obtain</b>	5 years: \$8.00/square; 10 years: \$10.00/square; 15 years: \$12.00/-sq; 20 years: \$15.00/sq, 25 years: \$20.00/sq	5 years: \$8.00/square; 10 years: \$10.00/square; 15 years: \$12.00/square; 20 years: \$15.00/square	None
<b>16. Minimum charge</b>	5 years: \$700; 10 years: \$800; 15 years: \$900; 20 years: \$1,000; 20 years \$1,500	5 years: \$700; 10 years: \$800; 15 years: \$900; 20 years: \$1,000	None
<b>17. Ineligible structure or building use</b>	Cold-storage and freezer roofs; private residences	Cold-storage and freezer roofs, private residences	None
<b>18. Pre-construction notice and approval requirements</b>	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.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	No
<b>20. Job inspection policy</b>	Independent field auditor typically 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 typically 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
<b>21. Contractor's post-installation obligation</b>	Contractor obligated to repair workmanship deficiencies for two years.	None; material-only warranty	None; material-only warranty
<b>22. Backed by named insurance or surety</b>	No; AlliedSignal indicates that it is self-insured.	No; AlliedSignal indicates that it is self-insured.	No; AlliedSignal indicates that it is self-insured.
<b>23. Issuing entity manufactures and/or sells products</b>	AlliedSignal Inc. manufactures and sells product	AlliedSignal, Inc. manufactures and sells product.	AlliedSignal Inc. manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	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.
<b>26. Special features/conditions</b>	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 would have otherwise been AlliedSignal Inc.'s responsibility but for the emergency condition. If the roofing system experiences reoccurring 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 would have otherwise been AlliedSignal, Inc.'s responsibility but for the emergency condition. If the roofing system experiences reoccurring 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 overlay 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.
<b>27. Executed by owner</b>	No	No	Yes; warranty registration form must be signed on behalf of owner and mailed to Allied.



## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

<b>1. Identity of issuing entity</b>	<b>AlliedSignal, Inc.</b>	<b>AlliedSignal, Inc.</b>	<b>AlliedSignal, Inc.</b>
<b>2. Title, original publication date, and identifying symbol, if any</b>	"Millennium® NDL Roofing System Warranty;" August 1994	"Infinitee NDL Roofing System Warranty;" March 1998	ABlack Armor Premier Series Warranty≡; March 1989; CS
<b>3. Product, specification, or system covered</b>	Millennium® - standard base, premium base, ST, SM, GTC, GMC	Infinitee Roofing Systems	Built-up Roofing Specifications: RP-41, RP51-TC, RP-61. If roofing system utilizes insulation, insulation must be supplied by Allied-Signal. Warranty requires use of Black Armor Pitch, Black Armor Felts, Black Armor Base Flashings, and AlliedSignal roof insulations.
<b>4. Scope of coverage</b>	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 the roof system to a watertight condition only when leaks result from (1) defects in workmanship or ordinary wear and tear of the Millennium roof membrane and the approved base-flashing; (2) blisters, bare spots, fishmouth wrinkles, ridges, and splits in the roofing membrane not caused by structural movement or failure from movement of any material underlying the roof membrane or base flashing system; and (3) slippage of the roofing membrane or base flashing. Deterioration of the membrane caused by standing water alone is not excluded from this warranty.	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 the roof system to a watertight condition only when leaks result from (1) defects in workmanship or ordinary wear and tear of the Infinitee roof membrane and the approved base-flashing; (2) blisters, bare spots, fishmouths, wrinkles, ridges, and splits in the roofing membrane system not caused by structural movement or failures or movement of any material underlying the roof membrane or base flashing system; and (3) slippage of the 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 systems; and (3) slippage of the built-up roofing membrane or base flashing.
<b>5. Length of coverage</b>	<u>5 years:</u> Millennium Specification Nos.: 100-C-N, 100-C-NN, 140-C-N, 140-C-NN, 145-C-N, 145-C-NN, 150-C-N, 100-MP-N, 100-MP-NN, 120-MP-N, 120-MP-NN, 140-MP-N, 140-MP-NN, 145-MP-N, 145-MP-NN, 150-MP-NN, 160-MP-N, 160-MP-NN <u>10 years:</u> Millennium Specification Nos.: 100-C-NN, 140-C-N, 140-C-NN, 145-C-N, 145-C-NN, 150-C-NN, 100-MP-NN, 120-MP-N, 120-MP-NN, 140-MP-N, 140-MP-NN, 145-MP-N, 145-MP-NN, 150-MP-NN, 160-MP-N, 160-MP-NN <u>10 years:</u> Millennium Specification Nos.: 100-C-NN, 140-C-N, 140-C-NN, 145-C-N, 145-C-NN, 150-C-NN, 100-MP-NN, 120-MP-N, 120-MP-NN, 140-MP-N, 140-MP-NN, 145-MP-N, 145-MP-NN, 150-MP-NN, 160-MP-N, 160-MP-NN <u>15 years:</u> Millennium Specification Nos.: 140-C-N, 140-C-NN, 145-C-N, 145-C-NN, 150-C-NN, 120-MP-N, 120-MP-NN, 140-MP-N, 140-MP-NN, 145-MP-N, 145-MP-NN, 150-MP-NN, 160-MP-N, 160-MP-NN <u>20 years:</u> Millennium Specification Nos.: 145-C-N, 145-C-NN, 150-C-NN, 120-MP-N, 120-MP-NN, 140-MP-N, 140-MP-NN, 145-MP-NN, 150-MP-NN, 160-MP-N, 160-MP-NN <u>25 Years:</u> Millennium Specification Nos.: 160-MP-N, 160-MP-NN	<u>5 years:</u> Infinitee Specification Nos.: 100-MA-N, 100-MA-NN, 105-PM-N, 105-PM-NN, 120-MA-N, 120-MA-NN, 125-PM-N, 125-PM-NN, 130-MA-NN, 135-PM-NN, 140-MA-N, 140-MA-NN, 145-PM-N, 145-PM-NN, 160-MA-N, 160-MA-NN, 165-PM-N, 165-PM-NN, 100-C-N, 100-C-NN, 105-C-N, 105-C-NN, 140-C-N, 140-C-NN, 145-C-N, 145-C-NN, 150-C-N, 150-C-NN, 100-T-N, 140-T-N, 140-T-NN <u>10 years:</u> Infinitee Specification Nos.: 100-MA-NN, 105-PM-NN, 120-MA-N, 120-MA-NN, 125-PM-N, 125-PM-NN, 130-MA-NN, 135-PM-NN, 140-MA-N, 140-MA-NN, 145-PM-N, 145-PM-NN, 160-MA-N, 160-MA-NN, 165-PM-N, 165-PM-NN, 100-C-NN, 105-C-NN, 140-C-N, 140-C-NN, 145-C-N, 145-C-NN, 150-C-N, 150-C-NN, 140-T-N, 140-T-NN <u>15 years:</u> Infinitee Specification Nos.: 120-MA-N, 120-MA-NN, 125-PM-N, 125-PM-NN, 130-MA-NN, 135-PM-NN, 140-MA-N, 140-MA-NN, 145-PM-N, 145-PM-NN, 160-MA-N, 160-MA-NN, 165-PM-N, 165-PM-NN, 150-C-N, 150-C-NN, 140-T-N, 140-T-NN <u>20 years:</u> Infinitee Specification Nos.: 125-PM-N, 125-PM-NN, 135-PM-NN, 140-MA-NN, 145-PM-N, 145-PM-NN, 160-MA-N, 160-MA-NN, 165-PM-N, 165-PM-NN, 140-T-N, 140-T-NN <u>25 years:</u> Infinitee Specification Nos.: 165-PM-N, 165-PM-NN	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, RP51-TC, and RP-61 with flashing spec BS-250
<b>6. Nature of remedy</b>	AlliedSignal will, at its own expense, take appropriate action 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.	AlliedSignal will take appropriate action to make the roofing system watertight.
<b>7. Monetary limitations</b>	None stated	None stated	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.
<b>8. Notification requirements</b>	Written notification upon discovery of a leak to AlliedSignal, Inc. Commercial Roofing Systems, 2000 Regency Parkway, Suite 255, Cary, NC 27511-8507.]	Written notification within 30 days to AlliedSignal Inc. Commercial Roofing Systems, 2000 Regency Parkway, Suite 255, Cary, NC 27511-8507	Written notification within 30 days after discovery of all leaks to AlliedSignal Commercial Roofing Systems, 2000 Regency Parkway, Suite 255, Cary, NC 27511-8507
<b>9. Exclusive or additional remedy</b>	AlliedSignal 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 the exclusive liability set forth in warranty; excludes UCC warranties	AlliedSignal 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 the exclusive liability set forth in warranty; excludes UCC warranties.	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; excludes UCC warranties.
<b>10. Inclusion of consequential damages</b>	No	No	No
<b>11. Determination of warranty applicability</b>	AlliedSignal's determination	AlliedSignal's determination	Neutral (no provision)
<b>12. Specific exclusions from coverage (see item 12 in Introduction)</b>	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 22.	1, 2, 3, 4, 5, 6, 9, 11, 13, 15, 22	1, 2, 3, 4, 6, 7, 9, 10, 15, 22. Warranty also excludes failure of owner to make repairs not covered under warranty.

<b>13. Wind coverage/exclusions</b>	AlliedSignal indicates warranty covers roof damage caused by winds up to gale force, Warranty excludes wind storms and gales. [A gale is defined on the Beaufort Scale as winds between 39-46 mph.]	AlliedSignal indicates warranty covers roof damage caused by winds up to gale force, Warranty excludes wind storms and gales. [A gale is defined on the Beaufort Scale as winds between 39-46 mph.]	Warranty excludes gales.
<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	C, M, R	C, M, R	R
<b>15. Cost to obtain</b>	5 years: \$3.50/square 10 years: \$5.00/square 15 years: \$7.50 square 20 years: \$12.50/square 25 years: \$20.00/square	5 years: \$ 3.50/square 10 years: \$ 5.00/square 15 years: \$ 7.50/square 20 years: \$12.50/square 25 years: \$20.00/square	5 years: \$ 8.00/square 10 years : \$10.00/square 15 years: \$12.00/square 20 years: \$15.00/square 25 years: \$20.00/square
<b>16. Minimum charge</b>	5 years: \$350 10 years: \$500 15 years: \$750 20 years: \$1,000 25 years: \$1,500	5 years: \$ 350 10 years: \$ 500 15 years: \$ 750 20 years: \$1,000 25 years: \$1,500	5 years: \$ 700 10 years: \$ 800 15 years: \$ 900 20 years: \$1,000 25 years: \$1,500
<b>17. Ineligible structure or building use</b>	Cold storage and freezer roofs; private residences	Cold storage and freezer roofs; private residences	Cold-storage or freezer roofs; private residences
<b>18. Pre-construction notice and approval requirements</b>	Contractor required to submit request for warranty not less than 14 days prior to date of project start to 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 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.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	Independent field auditor typically makes on-site inspections prior to or at job start-up, during and after application ,as well as two years after issuance of warranty; no charge.	Independent field auditor typically makes on-site inspections prior to or at job start-up, and after application, as well as two years after issuance of warranty; no charge	Independent field auditor typically makes on-site inspections prior to, during, and/or after application, as well as two years after issuance of warranty; no charge.
<b>21. Contractor's post-installation obligation</b>	Contractor obligated to repair all leaks, any defects and workmanship deficiencies for two years.	Contractor obligated to repair all leaks, any defects and workmanship deficiencies for two years.	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.
<b>22. Backed by named insurance or surety</b>	No; AlliedSignal indicates that it is self-insured.	No; AlliedSignal indicates that it is self-insured.	No; AlliedSignal indicates that it is self-insured.
<b>23. Issuing entity manufactures and/or sells products</b>	AlliedSignal manufactures and sells product.	AlliedSignal Inc. sells product only	AlliedSignal, Inc. manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	No restrictions stated	Warranty may be transferred to a subsequent owner only if: (1) owner provides written notification of any transfer of ownership to AlliedSignal Commercial Roofing Systems, 2000 Regency Parkway, Suite 255, Cary, NC 27511-8507, within 30 days of such transfer; (2) any repairs required by AlliedSignal after an inspection of the roof are made and properly performed; and (3) owner pays to AlliedSignal the then current published warranty transfer fee.	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.
<b>26. Special features/conditions</b>	<p>If the roof 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 will reimburse the owner for reasonable repair expense that would have otherwise been AlliedSignal's responsibility but for the emergency condition.</p> <p>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 will follow the recommendations of its technical services department as to the appropriate remedy for the problem. If 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.</p> <p>Warranty shall be governed by the laws of the state of New Jersey</p>	<p>If the roof 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 will reimburse the owner for reasonable repair expense that would have otherwise been AlliedSignal's responsibility but for the emergency condition.</p> <p>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 will follow the recommendations of its technical services department as to the appropriate remedy for the problem at its expense, including, but not limited to crediting the owner with the remaining value of roof based on service life received. If 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.</p> <p>Warranty shall be governed by the laws of the State of New Jersey</p>	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.
<b>27. Executed by owner</b>	No	No	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	AlliedSignal, Inc.	American Lubricants Company	The Barrett Company, Inc.
2. Title, original publication date, and identifying symbol, if any	ABlack Armor Premier Series Warranty≡; March 1989; MFS	ATiffany Division Limited Material Warranty≡; November 1, 1989; 10/89	Barrett Company ARam-Tough Elastomeric Built Up Roof Five Year Material Limited Warranty≡; 1986; DT 1249
3. Product, specification, or system covered	Built-up Roofing Specifications: RP-40, RP-41, RP-50TC, RP51-TC, RP-60, RP-61. Warranty requires use of Black Armor Pitch, Black Armor Felts, and Black Armor Base Flashing; no insulation requirement.	Tiffany Modified Bitumen	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
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 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 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 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, RP51-TC, and RP-61 with flashing spec BS-250	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.	5 years
6. Nature of remedy	AlliedSignal will take appropriate action to make the roofing system watertight.	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.	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.
7. Monetary limitations	Warranty states there is no aggregate dollar limit to the cost of any Aappropriate repairs≡ over the term of this warranty. However, if a repair otherwise covered by warranty is not an Aappropriate repair,≡ owner's sole remedy and AlliedSignal's total remaining liability shall be payment to owner of Aremaining roof value≡ which is prorated based on years roof has been in service and total installed cost.	Amount of adjustment material provided by American Lubricants will in no case exceed the amount on the original purchase.	Barrett's maximum liability shall be for the full value of the original Barrett supplied material componentsXonly purchase price. In case of premature deterioration, maximum value allowed as credit shall not exceed the original Barrett supplied components purchase price.
8. Notification requirements	Written notification within 30 days after discovery of all leaks to AlliedSignal Commercial Roofing Systems, 2000 Regency Parkway, Suite 255, Cary, NC 27511-8507	None stated.	None
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; excludes UCC warranties.	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	Neutral (no provision)	Neutral (no provision)	Barrett shall have sole and exclusive right of determination of warranty applicability.
12. Specific exclusions from coverage (see item 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, 11, 13, 17, 18, 19, 20	19
13. Wind coverage/exclusions	Warranty excludes gales.	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 14 in Introduction)	R	C, R	I, O (See Special Features/Conditions.)

<b>15. Cost to obtain</b>	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	None
<b>16. Minimum charge</b>	5 year: \$700; 10 year: \$800; 15 year: \$900; 20 year: \$1,000; 25 year: \$1,500	None	None
<b>17. Ineligible structure or building use</b>	Cold-storage or freezer roofs; private residences	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.
<b>18. Pre-construction notice and approval requirements</b>	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 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.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	Independent field auditor typically makes on-site inspections prior to, during, and after application, as well as two years after issuance of warranty.;	No manufacturer inspections; contractor makes prejob inspection at his discretion.	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.
<b>21. Contractor's post-installation obligation</b>	Contractor obligated to repair workmanship deficiencies for two years.	None; material-only warranty	Although this is a material only warranty, contractor is obligated to make repairs to all workman ship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No; AlliedSignal indicates that it is self-insured	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.
<b>23. Issuing entity manufactures and/or sells products</b>	AlliedSignal, Inc. 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.
<b>24. Conditions for renewal or extension</b>	No renewal provision	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
<b>25. Assignability</b>	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.	No restrictions stated.
<b>26. Special features/conditions</b>	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.		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.
<b>27. Executed by owner</b>	No	Yes	Yes

## 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 ARam-Tough Elastomeric Built-up Roof Limited Warranty; 1986; DT 1247	Barrett Company ARam-Tough Elastomeric Built-Up Roof Material Components Ten Year Limited Warranty; 1986; DT 1248	Barrett AProtected Membrane Roof Limited Warranty; 1984; 1984
3. Product, specification, or system covered	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-100-2-PKLB-100-3MK-312-2P, KLB-100-3PKLB-100-4MK-312-3P, KLB-100-4PKLB-100-1MBK-312-4P	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	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
4. Scope of coverage	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.	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.
5. Length of coverage	5, 8, 10, 12, 15, 20, or 25 years, depending on specification used	10 years	10 and 20 years
6. Nature of remedy	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.	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.
7. Monetary limitations	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 componentsXonly 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.	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.
8. Notification requirements	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	Written notification within 30 days of any failure covered by the warranty.
9. Exclusive or additional remedy	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.	Excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. 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.	Neutral (no provision)
12. Specific exclusions from coverage (see item 12 in Introduction)	1, 2, 3, 4, 6, 7, 8, 12, 16, 18	19	1, 2, 4, 6, 7, 8, 12, 16
13. Wind coverage/exclusions	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.	Warranty excludes high winds, gales, hurricanes, and tornadoes. [Barrett indicates that warranty covers roof damage from wind speeds up to 72 miles per hour.]

<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	B, C, H, I, R	I, O (See Special Features/Conditions.)	B, C, H, R
<b>15. Cost to obtain</b>	\$5.00/square	\$2.00/square	\$5.00/square
<b>16. Minimum charge</b>	\$500	\$250	\$500
<b>17. Ineligible structure or building use</b>	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 installations are subject to technical review and approval.
<b>18. Pre-construction notice and approval requirements</b>	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 submit request form with pertinent information prior to job start.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	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.	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.
<b>21. Contractor's post-installation obligation</b>	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.	Contractor obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	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.	Surety not named on warranty; Barrett indicates it has insurance coverage of \$1 million per occurrence.
<b>23. Issuing entity manufactures and/or sells products</b>	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 and sells some products and only sells some products.
<b>24. Conditions for renewal or extension</b>	No renewable provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	Not assignable	No restrictions stated	Not assignable
<b>26. Special features/conditions</b>	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 become a materials-only sale without any warranty or guarantee as expressly provided for on Barrett invoices and terms of sale.	
<b>27. Executed by owner</b>	Yes	Yes	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

<b>1. Identity of issuing entity</b>	<b>The Barrett Company, Inc.</b>	<b>Bitec, Inc.</b>	<b>Bitec, Inc.</b>
<b>2. Title, original publication date, and identifying symbol, if any</b>	Barrett Company ARam-Tough Platinum System Warranty <sup>3</sup> ; 1986; DT 1246	ALimited Ten-Year Material Warranty <sup>3</sup> ; June 1986; (F-203-1/89)	Limited AInsured <sup>3</sup> Roofing Warranty; June 1987
<b>3. Product, specification, or system covered</b>	KLB-100-3PG-PMR, K-312-3P-PMR, KLB-100-4PG--PMRK-312-4P-PMR, KLB-100-3P-PMRK-312-4F-PMR, KLB-100-4P-PMR, KLB-100-4F-PMR	All Bitec modified bitumen membranes	All Bitec modified bitumen membranes
<b>4. Scope of coverage</b>	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.	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.	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.)
<b>5. Length of coverage</b>	10, 15, 20, or 25 years, depending upon specification used	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, SFM3.5H.1, SFM3.5H.2, SFM3.5HFR.1, SFM3.5HFR.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, SPM4H.1.15, SPM4H.2.15, SPS3H.1.15, SPS3H.2.15, SFM3.5H.1.15, SFM3.5H.2.15, SFM3.5HFR.1.15, SFM3.5HFR.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, SPM4H.1.20, SPM4H.2.20, SPM3H.1.20, SPS3H.2.20, SFM3.5H.1.20, SFM3.5H.2.20, SFM3.5HFR.1.20, SFM3.5HFR.2.20
<b>6. Nature of remedy</b>	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.	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.	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.
<b>7. Monetary limitations</b>	Barrett's repair obligations over the life of this warranty are limited to the owner's original cost of the product.	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 scheduled, reduced 10 percent per year, ranging from 100 per-cent in years 1 and 2 to 10 percent in year 10.	Bitec's obligations limited to the amount of the original cost of labor and material for installation of the defective membrane.
<b>8. Notification requirements</b>	Written notification within 30 days following any failure of the product covered by the warranty.	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.)	Claims must be directed to Bitec, Inc., P.O. Box 497, Morrilton, 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.
<b>9. Exclusive or additional remedy</b>	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.	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.	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.
<b>10. Inclusion of consequential damages</b>	No	No	No
<b>11. Determination of warranty applicability</b>	Barrett shall have the sole and exclusive right of good faith determination of warranty applicability.	Neutral (no provision)	Neutral (no provision)
<b>12. Specific exclusions from coverage (see item 12 in Introduction)</b>	1, 2, 3, 4, 6, 7, 8, 12, 16, 18	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.	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.

<b>13. Wind coverage/exclusions</b>	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.]	No coverage for damage caused by wind	No coverage for damage caused by wind
<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	B, C, H, I, R	I, L	B, C
<b>15. Cost to obtain</b>	\$10.00/square	None	10 years: no charge for coated membrane; \$3.00/square for uncoated membranes; 15 years: \$4.00/square; 20 years: \$5.00/square
<b>16. Minimum charge</b>	\$500	None	10 years: \$300; 15 years: \$400; 20 years: \$500
<b>17. Ineligible structure or building use</b>	Unusual or unique applications may require specification modifications or other special considerations.	Roofs installed over cold storage or freezer compartments.	Cold storage, freezer compartments, residences, apartment buildings, and condominiums
<b>18. Pre-construction notice and approval requirements</b>	Contractor must file Barrett pre-construction form and intent to warrant application with Barrett prior to commencement of installation.	None required	Contractor required to give notice and obtain approval at least 14 days before project is started.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	No	Yes
<b>20. Job inspection policy</b>	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.	No on-site inspections	Bitec field technical representative makes on-site job inspections prior to, during, and after completion prior to issuance of warranty; no charge. Per diem cost for extra inspection.
<b>21. Contractor's post-installation obligation</b>	Contractor obligated to make repairs to all workmanship deficiencies for two years.	None	Contractor obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No; Barrett indicates that it carries \$1-million-per-occurrence products liability insurance.	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.
<b>23. Issuing entity manufactures and/or sells products</b>	Barrett manufactures some, but not all, components and sells the products as a complete system.	Bitec, Inc. manufactures and sells product.	Bitec, Inc. manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	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.	Not assignable
<b>26. Special features/conditions</b>	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.	For warranty to be validated, registration form must be completed and mailed to Bitec's offices, P.O. Box 497, Morrilton, AR 72110, within 30 days after job completion.	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.
<b>27. Executed by owner</b>	Yes	Owner signs Bitec registration form.	No



## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Bitec, Inc.	Bondcote Corp.	Burke Rubber Company, a division of Burke Industries
2. Title, original publication date, and identifying symbol, if any	"Mineral Design Limited Warranty"; January 1997; Form MDW - 12/96	BondCote Roofing Systems AStandard Warranty; Feb. 1, 1993	Burkeline Roofing Systems Warranty for Commercial Building; April 1988; BR00322
3. Product, specification, or system covered	Mineral Design MDA or MD5	BondCote Single Ply Roofing Systems	CSPE Hypalon CSPE Hypalon
4. Scope of coverage	Material only; Bitec warrants that the Mineral Design membrane will be free from manufacturing defects which result in leaks. Warranty covers the Bitec Mineral Design membrane only when installed on slope of 3:12 or greater.	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 authorized roofing applicator.
5. Length of coverage	25 years	10 years; 15 years, only for new construction or tear-off applications using certain insulations	5 or 10 years (See Conditions for Renewal or Extension.)
6. Nature of remedy	Bitec will make repairs or cause repairs to be made or will replace the Mineral Design membrane (exclusive of all other roofing components) as required to prevent leaks resulting directly from and solely from manufacturing defects. Extent of repair or replacement is at sole discretion of Bitec.	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 will cause to be repaired leaks in the Burkeline Roofing System
7. Monetary limitations	Bitec's maximum liability is limited to the original cost of the Mineral Design membrane when purchased, and the reasonable repair or replacement cost of the membrane. After the first year, Bitec's maximum liability is the original cost of the Mineral Design membrane reduced by 4% per year.	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
8. Notification requirements	Owner must notify Bitec by certified mail at P.O. Box 497, Morrilton, AR, 72110 within 30 days of the alleged discovery of leaks allegedly to have been caused by manufacturing defects. (See Special Features/Conditions)	Written notification to BondCote Roofing Systems, 984 Southford Road, Middlebury, CT, 06762, within 30 days after leaks are discovered or should have been discovered	Written notice within 30 days of discovery of any leaks
9. Exclusive or additional remedy	Warranty is expressly in lieu of any other obligations, warranties and guarantees, or liability on the part of Bitec; excludes UCC warranties.	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.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Bitec's determination	BondCote's good-faith determination	Burke's determination; Burke's sole judgment whether exclusions apply
12. Specific exclusions from coverage (see item 12 in Introduction)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 (including ionized radiation or contamination from any hazardous substance or waste.	1, 2, 3, 4, 6, 8, 12, 16	1, 3, 4, 5, 7, 18
13. Wind coverage/exclusions	Warranty covers wind speeds up to 60 mph for five years after initial application if the Mineral Design membrane has been installed in accordance with published installation requirements and leaks occur. Warranty excludes gales, windstorms, hurricanes and tornadoes.	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 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
14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)	I, L	C, I	B, C, F, G
15. Cost to obtain	None		5 years: \$6.00/square; 10 years: \$8.00/square
16. Minimum charge			5 years: \$800; 10 years: \$600

<b>17. Ineligible structure or building use</b>	Roof installed over cold storage or freezer compartments.		Residential buildings; there may be other buildings with special requirements.
<b>18. Pre-construction notice and approval requirements</b>	None required.	Contractor must complete project approval form and forward to BondCote Roofing Systems for approval prior to job start.	Contractor must provide roof layout plan and all details to Burke prior to job start; Burke approval required.
<b>19. Approved, authorized, or licensed requirements</b>	No	Yes	Yes
<b>20. Job inspection policy</b>	No on-site inspections.	BondCote technical field representative makes inspections after completion prior to issuing warranty; BondCote will inspect prior to and during application for Anew contractors and on large or difficult installations.	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.
<b>21. Contractor's post-installation obligation</b>	None; material-only warranty.	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to all leaks and materials and workmanship for two years.
<b>22. Backed by named insurance or surety</b>	No; Bitec indicates that it does not carry insurance covering its warranty obligations.	No; BondCote indicates that it does not carry insurance covering its warranty obligations.	No; Burke indicates it does carry insurance that covers its warranty obligations.
<b>23. Issuing entity manufactures and/or sells products</b>	Bitec manufactures and sells the product.	BondCote Roofing Systems manufactures and sells the product.	Burke manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	No renewal provision.	None	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.
<b>25. Assignability</b>	Non-transferable. Warranty solely benefits the first consumer, purchaser or owner of Bitec Mineral Design membrane; it cannot be transferred in any form to anyone.	Not assignable without written permission from BondCote Roofing Systems.	No restrictions stated.
<b>26. Special features/conditions</b>	<p>Claims require proof of purchase of the Mineral Design membrane. Owner must provide Bitec with a receipt which can be traced to a Bitec distributor who sold the Mineral Design membrane.</p> <p>Bitec has ninety days after receipt of notification to make, or cause to be made repairs or replacements covered under warranty. Prior to expiration of the ninety day period, Bitec will not be liable for any cost of repair or replacement unless Bitec has given written approval of the repair or replacement of Mineral Design membrane.</p> <p>Warranty may not be changed or modified. No one, including any representative or employee of Bitec has the authority to assume any additional liability for Bitec in connection with Mineral Design membranes.</p>	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 document
<b>27. Executed by owner</b>	Warranty registration card must be completed and sent to Bitec within 10 days of membrane installation.	Yes (See Special Features/Conditions.)	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Burke Rubber Company, a division of Burke Industries	Burke Rubber Company, a division of Burke Industries	Carlisle SynTec Incorporated
2. Title, original publication date, and identifying symbol, if any	Burkeline Gold Total Roofing System Warranty for Commercial Building ; April 1988; BR00355	Burkeline Standard Limited Material Warranty ; February 1988; BR 00352	Carlisle Golden Seal Total Roofing System Warranty;" WA-F0001 (1/99)
3. Product, specification, or system covered	CSPE Hypalon	CSPE Hypalon	Sure-Seal EPDM, Brite-Ply EPDM, Fleeceback EPDM, Sure-Weld TPO 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 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.	Material and workmanship; Carlisle warrants to repair leaks in the Carlisle Golden Seal Total Roofing System caused by a defect in the Carlisle Total Roofing System's materials or workmanship of Carlisle-authorized roofing applicator in installing the Total Roofing System. Carlisle Total Roofing System is defined as Carlisle membrane, flashings, counter flashings, adhesives and sealants, insulation, recovery board, fasteners, fastener plates, fastening bars, metal edging, metal termination bars, and any other Carlisle-brand products utilized in installation.
5. Length of coverage	15 years (See Conditions For Renewal or Extension.)	2 years (See Conditions for Renewal or Extension.)	10 years: Brite-Ply and Brite-Ply Fleeceback 10 or 15 years: all other systems
6. Nature of remedy	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.	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.	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.	None stated
8. Notification requirements	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.	Written notice within 30 days of discovery of any leak in the Carlisle Total Roofing System to Carlisle's Warranty 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.	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 UCC warranties.	Owner's remedies and Carlisle's liability limited to Carlisle's repair of leaks; 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	Burke's determination; Burke's sole judgment whether exclusions apply	Carlisle's determination. (See Special Features/Conditions.)
12. Specific exclusions from coverage (see item 12 in Introduction)	1, 3, 4, 5, 7, 18	1, 3, 4, 5, 7, 18, 20	1, 2, 3, 5, 7, 13, 16, 17. Warranty also specifically excludes insect infestation
13. Wind coverage/exclusions	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.	Warranty form states it excludes winds of peak gust speeds ____ mph or higher measured at 10 meters above ground, hurricanes, and tornadoes. Carlisle indicates 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 14 in Introduction)	B, C, F, G	B,F,G	B, C, F (including failure of owner to comply with Carlisle's care and maintenance information sheet)

<b>15. Cost to obtain</b>	\$11.00/square	None	Manufacturer charges for this warranty; however, they refused to provide costs. Contact manufacturer directly for specific pricing information.
<b>16. Minimum charge</b>	\$1,100	None	Manufacturer charges for this warranty; however, they refused to provide costs. Contact manufacturer directly for specific pricing information
<b>17. Ineligible structure or building use</b>	Private residences, condominiums, townhomes	None	Single-family residential structures; however, warranty is available for apartment homes, co-ops, condominiums, and the like.
<b>18. Pre-construction notice and approval requirements</b>	Contractor must submit completed Burke Form BR00339 to Burke; approval number and changes/requirements then forwarded by Burke to applicator; must have approval number to apply for final warranty inspection.	No	Carlisle must be contacted for a project specification and detail review
<b>19. Approved, authorized, or licensed requirements</b>	Yes	No	Yes
<b>20. Job inspection policy</b>	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	If requested by owner or applicator, Carlisle technical representative makes on-site inspections prior to 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
<b>21. Contractor's post-installation obligation</b>	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.	Contractor obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	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.	No; Carlisle indicates that it does not carry insurance covering its warranty obligation.
<b>23. Issuing entity manufactures and/or sells products</b>	Burke manufactures and sells product.	Burke manufactures and sells product.	Carlisle manufactures and sells system components.
<b>24. Conditions for renewal or extension</b>	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.	No renewal provision
<b>25. Assignability</b>	No restrictions stated.	No restrictions stated.	Warranty not assignable by operation of law or otherwise; however, 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 a Carlisle representative, and fees may apply to any reissuance. Carlisle reserves the right, in its sole discretion, to refuse to reissue warranty.
<b>26. Special features/conditions</b>	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.	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 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 the owner.
<b>27. Executed by owner</b>	No	No	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Carlisle SynTec Incorporated	Celotex Corporation	Celotex Corporation
2. Title, original publication date, and identifying symbol, if any	"Carlisle Membrane Roofing System Warranty;" WA-F0002 (1/99)	"Commercial Roofing Material Only Limited Warranty"; September 1997; Form 1146-1190 Rev.D	"Celo-1 EPDM Membrane Material Only Limited Warranty"; September 1997; Form 1010-0888 Rev. D
3. Product, specification, or system covered	Sure-Seal EPDM, Brite-Ply EPDM, Fleeceback EPDM, Sure-Weld TPO Roofing Systems	<b>BUR Specifications:</b> AGS-5-W-M, AGS-5-C-M, AGS-4-F-G, G/A-5-W-M, G/A-5-C-M, G/A-4-F-G, AGS-4-W-M, AGS-4-C-M, AGS-4-F-S, G/A-4-W-M, G/A-4-C-M, G/A-4-F-S, AGS-4-W-G, AGS-4-C-G, AGS-H+4-W-M, G/A-4-W-G, G/A-4-C-G, G/A-H+4-W-M, AGS-4-W-S, AGS-4-C-S, AGS-H+3-W-M, G/A-4-W-S, G/A-4-C-S, G/A-H+3-W-M, G/A-3-W-G, AGS-5-F-M, AGS-H+3-W-S, G/A-5-F-M, G/A-H+3-W-S, G/A-3-W-M, AGS-3-C-G, AGS-H+3-W-G, G/A-3-C-G, G/A-H+3-W-G, G/A-3-W-S, AGS-4-F-M, G/A-4-F-M; <b>Modified Bitumen Specifications:</b> SBS-4-W-M, SBS-DP-3-F-M, APP-3-C-M, SBS-3-W-M, SBS-DP-2-F-M, APP-2-C-M, SBS-2-W-M, SBS-H+2-W-M, APP-4-C-S, SBS-DP-4-W-M, SBS-H+2-W-M, APP-3-C-S, SBS-DP-3-W-M, SBS-H+2-IV-W-M, APP-2-C-S, SBS-DP-2-W-M, SBS-DP-H+3-W-M, APP-4-F-M, SBS-4-C-M, SBS-DP-H+2-W-M, APP-3-F-M, SBS-3-C-M, SBS-2-C-M, APP-2-F-M, SBS-2-C-M, SBS-2-R-M, APP-4-F-S, SBS-DP-4-C-M, APP-4-W-M, APP-3-F-S, SBS-DP-3-C-M, APP-3-W-M, APP-2-F-S, SBS-DP-2-C-M, APP-2-W-M, APP-H+3-W-M, SBS-4-F-M, APP-4-W-S, APP-H+2-W-M, SBS-3-F-M, APP-3-W-S, APP-H+2-IV-W-M, SBS-2-F-M, APP-2-W-S, APP-H+3-W-S, SBS-DP-4-F-M, APP-4-C-M, APP-H+2-W-S, APP-H+2-IV-W-S	Celo-1 Type I, Celo-1 Type II, Celo-1 Type III, Celo-1 Type IIIR
4. Scope of coverage	Material and workmanship; Carlisle warrants to repair leaks in the Carlisle membrane roofing system caused by a defect in the Carlisle membrane roofing systems's materials or workmanship of Carlisle authorized applicator in installing the membrane system. Carlisle roofing system is defined as Carlisle membrane, flashings, adhesives and sealants, and any other Carlisle-brand products utilized in installation.	Material only; Celotex warrants that the Celotex roof membrane and base flashing will withstand ordinary wear and tear by the elements and will be free of manufacturing defects which affect the ability of the materials to keep the roof watertight.	Material only; Celotex represents that its cured EPDM rubber roofing sheet is free from manufacturing defects and will not deteriorate prematurely to the point of failure due to weathering.
5. Length of coverage	5 to 10 years	10 years: built-up roofing; 12 years: modified bitumen	10 years
6. Nature of remedy	Carlisle will repair leaks in the Carlisle membrane system.	Celotex will provide replacement material.	Celotex will, at its option, provide replacement membrane, F.O.B., place of manufacture, to effect repair or provide credit to be applied towards the purchase of replacement membrane. Celotex not responsible for any labor or service charges pertaining to either original or replacement membrane. Warranty is prorated at the rate of 1/120 for each month of service.
7. Monetary limitations	None stated.	Celotex's maximum responsibility is the original cost of the Celotex membrane and flashing materials. Celotex is not responsible for any labor charges.	Celotex's maximum responsibility is the original cost of the Celotex membrane and flashing materials. In calculating Celotex's liability, the cost of the original membrane will be reduced by the amount of usage owner has received prior to the date of the claim, at the rate of 1/120 for each month of service provided by the membrane after the date of the original purchase.
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 notice within 10 days of discovery of any leaks in the roofing system to Celotex Corporation, P.O. Box 31602, Tampa, FL 33631.	Written notice within 10 days of the discovery of any leaks in the membrane to Celotex Corporation, P.O. Box 31602, Tampa, FL 33631.
9. Exclusive or additional remedy	Owner's remedies and Carlisle's liability limited to Carlisle's repair of leaks; remedy stated in warranty is owner's sole and exclusive remedy for failure of the Carlisle roofing system or its components; excludes UCC warranties.	. Warranty is owner's sole and exclusive remedy with respect to the roofing system and owner waives any and all other claims, rights, proceedings, actions and demands from Celotex relating to the roofing system. Warranty is in lieu of any and all other Celotex warranties; excludes UCC warranties.	Celotex makes no warranties or guarantees of any kind, express or implied, except as stated in warranty; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Carlisle's determination (See Special Features/Conditions.)	Celotex's determination	Celotex's determination.
12. Specific exclusions from coverage (see item 12 in Introduction)	1, 2, 3, 5, 7, 13, 16, 17. Warranty also specifically excludes insect infestation.	1 (including chemical or organic deposits), 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 15, 20, 23	1 (including chemical or organic deposits), 2, 3, 4, 5, 6, 8, 9, 11, 12, 15, 19, 20, 23
13. Wind coverage/exclusions	Warranty form states that it excludes Awinds 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.	Warranty covers roof damage resulting from wind speeds up to 72 mph. Warranty excludes gales, hurricanes and tornadoes.	Warranty covers roof damage resulting from wind speeds up to 72 mph. Warranty excludes gales, hurricanes and tornadoes.

<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	B, C, F (including failure of owner to comply with Carlisle's care and maintenance information sheet)	C	C
<b>15. Cost to obtain</b>	(Carlisle declines to provide this information because it is used for marketing purposes.)	\$100	None
<b>16. Minimum charge</b>	(Carlisle declines to provide this information because it is used for marketing purposes.)	\$100	None
<b>17. Ineligible structure or building use</b>	Single-family residential structures; however, warranty is available for apartment homes, co-ops, condominiums, and the like.	None	None
<b>18. Pre-construction notice and approval requirements</b>	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	None required
<b>19. Approved, authorized, or licensed requirements</b>	Yes	No	Yes
<b>20. Job inspection policy</b>	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	No on-site inspections.
<b>21. Contractor's post-installation obligation</b>	Contractor obligated to make repairs to workmanship deficiencies for two years.	None; material-only warranty.	None; material-only warranty
<b>22. Backed by named insurance or surety</b>	No; Carlisle indicates that it does not carry insurance covering its warranty obligation.	No; Celotex indicates that it does not carry insurance covering its warranty obligations.	No; Celotex indicates that it does not carry insurance covering its warranty obligations.
<b>23. Issuing entity manufactures and/or sells products</b>	Carlisle manufactures and sells system components.	Celotex manufactures and sells the product.	Celotex manufactures and sells the product.
<b>24. Conditions for renewal or extension</b>	Warranty may be renewed for an additional 5 years. (Carlisle declined to provide further information regarding costs and procedures to renew.)	No renewal provision.	No renewal provision
<b>25. Assignability</b>	Warranty is not assignable by operation of law or otherwise; however, application may be made by a new owner for reissuance of the warranty during the original warranty period. Certain procedures, including but not limited to, an inspection of the Roofing System by a Carlisle representative, and fees may apply to any reissuance.	Not assignable; warranty accrues to the original owner named in the warranty and does not accrue to the benefit of any tenant, purchaser, successor or assignee.	Not assignable; warranty accrues to the original owner named in the warranty and does not accrue to the benefit of any tenant, purchaser, successor, or assignee
<b>26. Special features/conditions</b>	Carlisle shall not be responsible for the cleanliness or discoloration of the Carlisle roofing 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 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 only applies to Celotex materials which are installed in accordance with current Celotex specifications. No representative of Celotex has authority to make any representation or promise except as stated in warranty document. Any inspection conducted by Celotex may require that adequate samples of the roof be taken for testing by Celotex to evaluate any claim of a purported defect or deterioration. Refusal by the owner to permit removal of samples for testing constitutes a waiver of the claim.	No representative of Celotex has authority to make any representation or promise except as stated in warranty document. Any inspection conducted by Celotex may require that adequate samples of the Membrane be taken for testing by Celotex to evaluate any claim of a purported defect or deterioration. Refusal by the owner to permit removal of samples for testing constitutes a waiver of the claim.
<b>27. Executed by owner</b>	No	No	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Celotex Corporation	Celotex Corporation	Celotex Corporation
2. Title, original publication date, and identifying symbol, if any	"Specification Warranty"; September 1997; Form 1033-0487 Rev. B	"Roofing System Limited Warranty"; September 1997; Form 1005-1092 Rev. A	"Celo-1 Extended Coverage Roofing Sheet Only Warranty"; September 1997; Form 1038-0587 Rev. C
3. Product, specification, or system covered	<b>Built-Up Roofing Specifications:</b> AGS-5-W-M, AGS-4-C-S, AGS-H+3-W-M, AGS-4-W-M, AGS-3-C-G, AGS-H+3-W-G, AGS-4-W-G, AGS-5-F-M, AGS-H+3-W-S, AGS-4-W-S, AGS-4-F-M, AGS-5-C-M, AGS-4-F-G, AGS-4-C-M, AGS-4-F-S, AGS-4-C-G, AGS-H+4-W-M. (All specifications require use of AGS felt.)	<b>Built-Up Roofing Specifications:</b> G/A-5-W-M, G/A-5-C-M, G/A-4-F-G, G/A-4-W-M, G/A-4-C-M, G/A-4-F-S, G/A-4-W-G, G/A-4-C-G, G/A-H+4-W-M, G/A-4-W-S, G/A-4-C-S, G/A-H+3-W-M, G/A-3-W-M, G/A-3-C-G, G/A-H+3-W-G, G/A-3-W-G, G/A-5-F-M, G/A-H+3-W-S, G/A-3-W-S, G/A-4-F-M; <b>Modified Bitumen Specifications:</b> SBS-4-W-M, SBS-DP-3-F-M, APP-3-C-M, SBS-3-W-M, SBS-DP-2-F-M, APP-2-C-M, SBS-2-W-M, SBS-H+3-W-M, APP-4-C-S, SBS-DP-4-W-M, SBS-H+2-W-M, APP-3-C-S, SBS-DP-3-W-M, SBS-H+2-IV-W-M, APP-2-C-S, SBS-DP-2-W-M, SBS-DP-H+3-W-M, APP-4-F-M, SBS-4-C-M, SBS-DP-H+2-W-M, APP-3-F-M, SBS-3-C-M, SBS-2-C-M, APP-2-F-M, SBS-2-C-M, SBS-2-R-M, APP-4-F-S, SBS-DP-4-C-M, APP-4-W-M, APP-3-F-S, SBS-DP-3-C-M, APP-3-W-M, APP-2-F-S, SBS-DP-2-C-M, APP-2-W-M, APP-H+3-W-M, SBS-4-F-M, APP-4-W-S, APP-H+2-W-M, SBS-3-F-M, APP-3-W-S, APP-H+2-IV-W-M, SBS-2-F-M, APP-2-W-S, APP-H+3-W-S, SBS-DP-4-F-M, APP-4-C-M, APP-H+2-W-S, APP-H+2-IV-W-S; <b>EPDM Specifications:</b> Celo-1 Type I, Celo-1 Type II, Celo-1 Type III, Celo-1 Type IIIR Membrane Insulation Assembly (MIA)	Celo-1 Type I, Celo-1 Type II, Celo-1 Type III, Celo-1 Type IIIR
4. Scope of coverage	Material and workmanship; Celotex will repair any leaks in the Celotex roof membrane and base flashing caused by defects in the Celotex roofing materials or errors in workmanship.	Material and workmanship; Celotex warrants that it will repair leaks in the Celotex roof membrane and base flashing caused by defects in the Celotex roofing materials or errors in workmanship.	Material only; Celotex represents that its cured Celo-1 EPDM roofing sheet is free from manufacturing defects and will not deteriorate prematurely to the point of failure due to weathering.
5. Length of coverage	10 years: 3 ply; 15 years: 3 ply; 20 years: 4 ply	10 years: Celo-1 EPDM, Built-up Roofing; 12 years: Modified Bitumen; 15 years: Celo-1 EPDM Built-up Roofing, Modified Bitumen; 20 years: Built-up Roofing and Modified Bitumen	5 or 10 years beyond termination date of Roofing System Limited Warranty for Celo-1 EPDM (See Special Features/Conditions)
6. Nature of remedy	Celotex will have repairs made and will pay for such repairs. Owner's sole remedy and Celotex's liability limited to Celotex's repair of Celotex roofing materials.	Celotex will have repairs made and will pay for such repairs. Owner's sole remedy and Celotex's liability limited to Celotex's repair of the Celotex roof membrane and base flashing.	Celotex will provide replacement material, F.O.B., place of manufacture. Celotex not responsible for any labor and service charges pertaining to either original or replacement product. Owner's sole remedy and Celotex's liability is replacement of that portion of the Celotex roof membrane or base flashing which contains manufacturing defects or deterioration caused by ordinary wear and tear of the elements that has caused one or more leaks. Warranty is prorated for each month of service.
7. Monetary limitations	None stated.	For built-up roofing and modified bitumen specifications, Celotex's maximum liability is limited to \$100/square. For Membrane Insulation Assembly Warranty, Celotex's maximum liability is limited to \$130/square. For Celo-1 EPDM specifications, Celotex's maximum liability is limited to the original installed cost of Celotex membrane materials.	Celotex's maximum responsibility is the original cost of the Celotex membrane and flashing materials. Original purchase price of EPDM sheet is reduced for each month of service provided by the product.
8. Notification requirements	Written notice within 10 days of discovery of any leaks in the roofing system to Celotex Corporation, P.O. Box 31602, Tampa, FL 33631.	Written notice within 10 days of discovery of leaks in the roofing system to Celotex Corporation, P.O. Box 31602, Tampa, FL 33631.	Written notice within 10 days of discovery of any leaks in the roofing system to Celotex Corporation, P.O. Box 31602, Tampa, FL 33631.
9. Exclusive or additional remedy	Warranty is owner's sole and exclusive remedy with respect to the roofing system and owner waives any and all other claims, rights, proceedings, actions and demands from Celotex relating to the roofing system. Warranty is in lieu of any and all other Celotex warranties; excludes UCC warranties.	Warranty is owner's sole and exclusive remedy with respect to the roofing system and Owner waives any and all other claims, rights, proceedings, actions and demands from Celotex relating to the roofing system. Warranty is in lieu of any and all other Celotex warranties; excludes UCC warranties.	Celotex makes no warranties or guarantees of any kind, express or implied, except as stated in warranty; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Celotex's determination	Celotex's determination.	Celotex's determination
12. Specific exclusions from coverage (see item 12 in Introduction)	1 (including chemical or organic deposits), 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 15, 23	1 (including chemical or organic deposits), 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 15, 23	1 (including chemical or organic deposits), 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 15, 23
13. Wind coverage/exclusions	Warranty covers roof damage resulting from wind speeds up to 72 mph. Warranty excludes gales, hurricanes and tornadoes.	Celotex indicates warranty covers damage resulting from winds without stating a speed. Warranty excludes gales, hurricanes and tornadoes.	Warranty covers roof damage resulting from wind speeds up to 72 mph. Warranty excludes gales, hurricanes and tornadoes.
14. Specific conditions to make warranty ineffective or null and	C	C	C

<b>warranty ineffective or null and void (see item 14 in Introduction)</b>			
<b>15. Cost to obtain</b>	10 years: \$10.00/square; 15 years: \$12.00/square; 20 years: \$15.00/square	<u>Celo-1</u> 10 years: \$ 5.00/square; 15 years: \$10.00/square <u>Built-Up Roofing</u> 10 years: \$ 7.00/square; 10 years MIA: \$10.00/square; 15 years: \$ 9.00/square; 15 years MIA: \$11.00/square; 20 years: \$14.00/square; 20 years MIA: \$13.00/square <u>Modified Bitumen</u> 12 years: \$ 8.00/square; 12 years MIA: \$10.00/square; 15 years: \$ 9.00/square; 15 years MIA: \$11.00/square; 20 years: \$14.00/square; 20 years MIA: \$13.00/square	5 years: \$1.00/square; 10 years: \$2.00/square
<b>16. Minimum charge</b>	10 years: \$1,000; 15 years: \$1,200; 20 years: \$1,500	<u>Celo-1</u> 10 years: \$ 500; 15 years: \$1,000 <u>Built-up Roofing</u> 10 years: \$ 700; 10 years MIA: \$1,000; 15 years: \$ 900; 15 years MIA: \$1,100; 20 years: \$1,400; 20 years MIA: \$1,300 <u>Modified Bitumen</u> 12 years: \$ 800; 12 years MIA: \$1,000; 15 years: \$ 900; 15 years MIA: \$1,100; 20 years: \$1,400; 20 years MIA: \$1,300	5 years: \$100; 10 years: \$200
<b>17. Ineligible structure or building use</b>	None	Contact local Celotex sales office for building evaluation.	Contact local Celotex sales office for building evaluation.
<b>18. Pre-construction notice and approval requirements</b>	Contractor must fill out Notice of Award; if accepted, notify Celotex of start date and completion.	Contractor must fill out a Notice of Award; if accepted, notify Celotex of start date and completion.	Contractor must fill out a Notice of Award; if accepted, notify Celotex of start date and completion.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	Independent inspection service makes on-site inspections prior to application and after completion prior to issuance of warranty, as well as two years after issuance of warranty; no charge.	Independent inspection service makes on-site inspections after completion prior to issuance of warranty, as well as two years after issuance of warranty; no charge.	Independent inspection service makes on-site inspections after completion, as well as two years after issuance of warranty; no charge.
<b>21. Contractor's post-installation obligation</b>	Contractor obligated to make repairs to all leaks, any defects and workmanship deficiencies for two years.	Contractor obligated to make repairs to materials and workmanship deficiencies for two years.	Contractor obligated to make repairs to materials and workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No; Celotex indicates that it does not carry insurance covering its warranty obligations.	No; Celotex indicates that it does not carry insurance covering its warranty obligations.	No; Celotex indicates that it does not carry insurance covering its warranty obligations.
<b>23. Issuing entity manufactures and/or sells products</b>	Celotex manufactures and sells product.	Celotex manufactures and sells the product.	Celotex manufactures and sells the product.
<b>24. Conditions for renewal or extension</b>	Warranty may be extended for five years at a cost of \$500.	No renewal provision. For Celo-1 specifications, "Celo-1 Extended Coverage Roofing Sheet Only Warranty" for 5 or 10 year additional material-only warranty coverage.	No renewal provision
<b>25. Assignability</b>	Not assignable; warranty applies to the original owner named in the warranty and cannot be transferred to or for the benefit of any tenant, purchaser, successor, or assignee.	Not assignable; warranty accrues to the original owner named in the warranty and does not accrue to the benefit of any tenant, purchaser, successor, or assignee.	Not assignable; warranty accrues to the original owner named in the warranty and does not accrue to the benefit of any tenant, purchaser, successor, or assignee.
<b>26. Special features/conditions</b>	No representative of Celotex has authority to make any representation or promise except as stated in warranty document. Any inspection conducted by Celotex may require that adequate samples of the roofing system be taken for testing by Celotex to evaluate any claim of purported defect or deterioration. Refusal by the owner to permit removal of samples for testing constitutes a waiver of the claim.	This warranty form is used for built-up roofing, modified bitumen, Celo-1 EPDM, membrane insulation assembly (M.I.A.), and membrane only. At time of issuance, warranty type is designated. No representative of Celotex has authority to make any representation or promise except as stated in warranty document. Any inspection conducted by Celotex may require that adequate samples of the roofing system be taken for testing by Celotex to evaluate any claim or purported defect or deterioration. Refusal by the owner to permit removal of samples for testing constitutes a waiver of the claim.	This is an extended warranty, issued and valid only with purchase of Celotex Roofing System Limited Warranty and covers roofing sheet only after expiration of standard warranty. No representative of Celotex has authority to make any representation or promise except as stated in warranty document. Any inspection conducted by Celotex may require that adequate samples of the roofing system be taken for testing by Celotex to evaluate any claim of purported defect or deterioration. Refusal by the owner to permit removal of samples of testing constitutes a waiver of the claim. If Celotex Roofing System Limited Warranty is terminated or cancelled for reasons other than normal expiration, this Roofing Sheet Only Limited Warranty shall be void upon such termination or cancellation.
<b>27. Executed by owner</b>	No	No	No



## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Conklin Company, Inc.	Conklin Company, Inc.	Conklin Company, Inc.
2. Title, original publication date, and identifying symbol, if any	AConklin Limited Materials Warranty; November 1990; 1-000141A (Code #078270B 11/96 appears on packet accompanying warranty documents.)	"Conklin Company Limited Joint Warranty"; Form E; November 1990; 1-00139A; (Code #078269A 07/94 appears on packet accompanying warranty documents.)	AConklin Company, Inc. Total Roof System Limited Joint Warranty; Form E; November 1990; 1-000139; (Code #078268B 01/93 appears on packet accompanying warranty documents.)
3. Product, specification, or system covered	Hy-Crown	Hy-Crown. Warranty is limited exclusively to the use of approved Conklin Joint Warranty roofing membrane system.	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; 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 membrane/coating will be free from water leaks resulting from ordinary wear and tear from the elements or from improper application.	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	1 to 15 years	1 to 10 years	1 to 15 years
6. Nature of remedy	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.	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	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 roofing membrane/coating and the labor required to apply the roofing membrane/coating or \$250,000, whichever is lesser.	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	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.	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	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.	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	Neutral (no provision)	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (see item 12 in Introduction)	1, 2, 3, 4, 6, 7, 14, 15, 16 19, 20, 24, 25	1, 2, 3, 4, 6, 7, 14, 15, 16, 24, 25	1, 2, 3, 4, 6, 7, 14, 15, 16, 24, 25
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 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.	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 14 in Introduction)	Including notice to contractor (R)	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.)	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.)

<b>16. Minimum charge</b>	1 to 10 years: no charge; 11 to 15 years: less than 10,000 square feet, \$200; greater than 10,000 square feet, \$300	\$5.00/square	\$8.00/square
<b>16. Minimum charge</b>	None for 1 to 10 years; \$200 for 11 to 15 years	\$500	\$800
<b>17. Ineligible structure or building use</b>	None	None	None
<b>18. Pre-construction notice and approval requirements</b>	Application must be submitted within 30 days of completion of project	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 must complete preapplication forms and submit them to Conklin prior to starting job; mandatory preinspection by Conklin prior to granting approval.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	No on-site inspections.	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.	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.
<b>21. Contractor's post-installation obligation</b>	None; material-only warranty	Contractor obligated to make repairs to all leaks, any defects, and material and workmanship deficiencies for two years.	Contractor obligated to make repairs to all leaks, any defects, and material and workmanship deficiencies for three years
<b>22. Backed by named insurance or surety</b>	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.	No; Conklin indicates that it does not carry insurance covering its warranty obligations
<b>23. Issuing entity manufactures and/or sells products</b>	Conklin sells product only.	Conklin sells product only.	Conklin sells product only
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	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 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.	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.
<b>26. Special features/conditions</b>	Warranty interpreted and governed by the laws of the state of Minnesota.	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.	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.
<b>27. Executed by owner</b>	Yes	Yes; warranty also executed by contractor.	Yes; warranty also executed by contractor

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Danosa Caribbean, Inc.	Dermabit	Dermabit
2. Title, original publication date, and identifying symbol, if any	Danosa Roofing Membrane System Limited Warranty <sup>2</sup> ; 1979	A Dermabit Waterproofing Industries A Guarantee Material and Labor <sup>2</sup> ; April 1988	Dermabit Waterproofing Industries A Material Guarantee <sup>2</sup> ; April 1988
3. Product, specification, or system covered	Esterdan RM; Glasdan AL-80, Glasdan R-36; Esterdan R-36	Dermabit APP 4170, 4170S; Elaspalt SBS 4170, 4170S	Dermabit APP 4170; Elaspalt 4170, 4170S, SBS
4. Scope of coverage	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	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.
5. Length of coverage	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)	10 years
6. Nature of remedy	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.	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.
7. Monetary limitations	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.	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.
8. Notification requirements	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	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	Excludes other guarantees and warranties; excludes UCC warranties.	Excludes UCC warranties and any other obligations or liability on the part of Dermabit	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.
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 12 in Introduction)	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	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.)
13. Wind coverage/exclusions	Warranty excludes hurricanes. [Danosa indicates that there is no coverage for damage caused by wind.]	Warranty excludes windstorms, hurricanes, and tornadoes.	Warranty excludes windstorms, hurricanes, and tornadoes.

14. <b>Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</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.	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.
15. <b>Cost to obtain</b>	\$6.00 square	None	None
16. <b>Minimum charge</b>	None	None	None
17. <b>Ineligible structure or building use</b>	None	Cold-storage buildings	Cold-storage buildings
18. <b>Pre-construction notice and approval requirements</b>	Danosa requires a letter from contractor indicating date and Danosa specification number before commencing work.	None	None
19. <b>Approved, authorized, or licensed requirements</b>	Yes	Yes	No
20. <b>Job inspection policy</b>	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.	No on-site inspections
21. <b>Contractor's post-installation obligation</b>	Contractor obligated to make repairs to workmanship deficiencies for 10 years.	Contractor obligated to make repairs to workmanship deficiencies for two years.	None
22. <b>Backed by named insurance or surety</b>	No	No; Dermabit indicates that it carries \$1 million product-liability insurance coverage	No; Dermabit indicates that it carries \$1 million product- liability insurance coverage.
23. <b>Issuing entity manufactures and/or sells products</b>	Danosa manufactures and sells the product.	Dermabit manufactures and sells product.	Dermabit manufactures and sells product.
24. <b>Conditions for renewal or extension</b>	Five- or ten-year extension available if roof passes inspection and additional fee is paid.	No renewal provision	No renewal provision
25. <b>Assignability</b>	Not assignable	Not assignable	Not assignable
26. <b>Special features/conditions</b>	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.	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.
27. <b>Executed by owner</b>	No	No	No

No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Dibiten, a division of Johns-Manville Corporation	Dibiten, a division of Johns-Manville Corporation	Dibiten, a division of Johns-Manville Corporation
2. Title, original publication date, and identifying symbol, if any	"20 Year Limited Material Warranty"; March 1997; RS-9013 3-97	"10 Year Limited Material Warranty"; March 1997; RS-9010 3-97	"15 Year Limited Material Warranty"; March 1997; RS-9012 3-97
3. Product, specification, or system covered	Dibiten Poly/4 Two Ply Specifications: 401-2, 402-2, 403-2, 404-2; Dibiten Poly 4.5 Two Ply Specifications: 451-2, 452-2, 453-2, 454-2	Dibiten Poly 4 Uncoated Specifications: 401, 402, 403, 404, 405, 406 in Region 2; Dibiten Poly 4.5 Granular Specifications: 451, 452, 453, 454, R455, R456; Dibiten Poly 5 Uncoated Specifications: 501, 502, 503, 504, R505, R506	Dibiten Poly 5 specifications with roof coating: 501, 502, 503, 504, R505, R506
4. Scope of coverage	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.	Material only; Dibiten warrants its roofing membrane to be free of manufacturing defects.
5. Length of coverage	20 years	10 years	15 years
6. Nature of remedy	If the Dibiten membrane is proved to have manufacturing defects that affect the watertight integrity of the membrane, Dibiten will pay a share, on a pro-rata basis (1/20 per year) of all costs including materials and labor, for repair or replacement of the defective Dibiten membrane.	If the Dibiten membrane is proved to have manufacturing defects that affect the watertight integrity of the membrane, Dibiten will pay a share, on a pro-rata basis (1/10 per year) of all costs including materials and labor, for repair or replacement of the defective Dibiten membrane.	If the Dibiten membrane is proved to have manufacturing defects that affect the watertight integrity of the membrane, Dibiten will pay a share, on a pro-rata basis (1/15 per year) of all costs including materials and labor, for repair or replacement of the defective Dibiten membrane.
7. Monetary limitations	Dibiten's liability not to exceed the original cost of the membrane.	Dibiten's liability not to exceed the original cost of the membrane.	Dibiten's liability not to exceed the original cost of the membrane.
8. Notification requirements	Written notice within 30 days of discovery of water leaks through the Dibiten membrane to Dibiten, P.O. Box 5108, Denver, Colorado 80217-5108.	Written notice within 30 days of discovery of water leaks through the Dibiten membrane to Dibiten, P.O. Box 5108, Denver, Colorado 80217-5108.	Written notice within 30 days of discovery of water leaks through the Dibiten membrane to Dibiten, P.O. Box 5108, Denver, Colorado 80217-5108.
9. Exclusive or additional remedy	Warranty is exclusive warranty from Dibiten and represents the exclusive remedy available to any purchaser of the membrane materials. Dibiten makes no other representation or warranty of any kind. No retailer, contractor or distributor is authorized to alter the warranty. Dibiten shall not be liable for any damages which are based on negligence, breach of warranty, strict liability or any other theory other than the limited liability stated in warranty; excludes UCC warranties.	Warranty is exclusive warranty from Dibiten and represents the exclusive remedy available to any purchaser of the membrane materials. Dibiten makes no other representation or warranty of any kind. No retailer, contractor or distributor is authorized to alter the warranty. Dibiten shall not be liable for any damages which are based on negligence, breach of warranty, strict liability or any other theory other than the limited liability stated in warranty; excludes UCC warranties.	Warranty is exclusive warranty from Dibiten and represents the exclusive remedy available to any purchaser of the membrane materials. Dibiten makes no other representation or warranty of any kind. No retailer, contractor or distributor is authorized to alter the warranty. Dibiten shall not be liable for any damages which are based on negligence, breach of warranty, strict liability or any other theory other than the limited liability stated in warranty; 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 12 in Introduction)	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 13, 17, 19, 20, 22	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 13, 17, 19, 20, 22	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 13, 17, 19, 20, 22
13. Wind coverage/exclusions	Warranty excludes wind and hurricanes. Dibiten indicates that there is no coverage for damage caused by wind.	Warranty excludes wind and hurricanes. Dibiten indicates that there is no coverage for damage caused by wind.	Warranty excludes wind and hurricanes. Dibiten indicates that there is no coverage for damage caused by wind.
14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)	C, F, H, I, M, R	C, F, H, I, M, R	C, F, H, I, M, R
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

<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	No on-site inspections.	No on-site inspections	No on-site inspections
<b>21. Contractor's post-installation obligation</b>	None; material-only warranty.	None; material-only warranty	None; material-only warranty
<b>22. Backed by named insurance or surety</b>	No; Dibiten indicates that it does not carry insurance covering its warranty obligations.	No; Dibiten indicates that it does not carry insurance covering its warranty obligations.	No; Dibiten indicates that it does not carry insurance covering its warranty obligations.
<b>23. Issuing entity manufactures and/or sells products</b>	Dibiten manufactures and sells product.	Dibiten manufactures and sells product.	Dibiten manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	No renewal provision.	No renewal provision	No renewal provision
<b>25. Assignability</b>	No restrictions stated. Warranty states that it is made to the original owner.	No restrictions stated	No restrictions stated
<b>26. Special features/conditions</b>	<p>In order to continue limited warranty coverage, owner must implement a maintenance program prescribed by Dibiten on the reverse side of limited warranty, including repair of any item beyond the scope of the warranty which would affect the integrity of the Dibiten membrane and recoating smooth surfaced membranes as necessary and: (a) maintaining a file showing proof-of-purchase, all inspections and repairs; (b) inspecting roof at least semiannually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing damaged masonry, poorly mounted counterflashing, loose caulking, bad mortar joints, and any loose stone or tile coping that about the roof; (f) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (g) examining roof top equipment to determine if they move excessively or leak; (h) checking building exterior for settlement or movement; and (i) recoating any areas of excessive wear, flaking, or blistered areas of protective coatings.</p> <p>Installing roofing contractor must be licensed by and in good standing with the licensing authority of the jurisdiction in which the structure is located.</p> <p>Region 2 excludes CA, NV, AZ, UT, ID, NM, TX, HI, FL.</p>	<p>In order to continue limited warranty coverage, owner must implement a maintenance program prescribed by Dibiten on the reverse side of limited warranty, including repair of any item beyond the scope of the warranty which would affect the integrity of the Dibiten membrane and recoating smooth surfaced membranes as necessary and: (a) maintaining a file showing proof-of-purchase, all inspections and repairs; (b) inspecting roof at least semiannually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing damaged masonry, poorly mounted counterflashing, loose caulking, bad mortar joints, and any loose stone or tile coping that about the roof; (f) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (g) examining roof top equipment to determine if they move excessively or leak; (h) checking building exterior for settlement or movement; and (i) recoating any areas of excessive wear, flaking, or blistered areas of protective coatings.</p> <p>Installing roofing contractor must be licensed by and in good standing with the licensing authority of the jurisdiction in which the structure is located.</p> <p>Region 2 excludes CA, NV, AZ, UT, ID, NM, TX, HI, FL.</p>	<p>In order to continue limited warranty coverage, owner must implement a maintenance program prescribed by Dibiten on the reverse side of limited warranty, including repair of any item beyond the scope of the warranty which would affect the integrity of the Dibiten membrane and recoating smooth surfaced membranes as necessary and: (a) maintaining a file showing proof-of-purchase, all inspections and repairs; (b) inspecting roof at least semiannually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing damaged masonry, poorly mounted counterflashing, loose caulking, bad mortar joints, and any loose stone or tile coping that about the roof; (f) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (g) examining roof top equipment to determine if they move excessively or leak; (h) checking building exterior for settlement or movement; and (i) recoating any areas of excessive wear, flaking, or blistered areas of protective coatings.</p> <p>Installing roofing contractor must be licensed by and in good standing with the licensing authority of the jurisdiction in which the structure is located.</p> <p>Region 2 excludes CA, NV, AZ, UT, ID, NM, TX, HI, FL.</p>
<b>27. Executed by owner</b>	Registration form must be completed and returned to Dibiten within 30 days of completion of the Dibiten membrane and a copy of the contractor's bill must be attached.	Registration form must be completed and returned to Dibiten within 30 days of completion of the Dibiten membrane and a copy of the contractor's bill must be attached.	Registration form must be completed and returned to Dibiten within 30 days of completion of the Dibiten membrane and a copy of the contractor's bill must be attached.

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Dibiten, a division of Johns-Manville Corporation	Dibiten, a division of Johns-Manville Corporation	Duro-Last Roofing, Inc.
2. Title, original publication date, and identifying symbol, if any	"12 Year Limited Material Warranty"; September 1997; RS-9011 9-97	"6 Year Limited Material Warranty"; March 1997; RS-9009 3-97	A15 Year Warranty; August 1, 1991; DL 15-00 Rev.
3. Product, specification, or system covered	Dibiten Poly 4 Specifications with roof coating: 401, 402, 404, R405, R406	Dibiten Poly/4 Uncoated Specifications 401, 402, 403, 404, 405, 406	Duro-Last
4. Scope of coverage	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.	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	12 years	6 years	15 years
6. Nature of remedy	If the Dibiten membrane is proved to have manufacturing defects that affect the watertight integrity of the membrane, Dibiten will pay a share, on a pro-rata basis (1/12 per year) of all costs including materials and labor, for repair or replacement of the defective Dibiten membrane.	If the Dibiten membrane is proved to have manufacturing defects that affect the watertight integrity of the membrane, Dibiten will pay a share, on a pro-rata basis (1/6 per year) of all costs including materials and labor, for repair or replacement of the defective Dibiten membrane.	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	Dibiten's liability not to exceed the original cost of the membrane.	Dibiten's liability not to exceed the original cost of the membrane.	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 water leaks through the Dibiten membrane to Dibiten, P.O. Box 5108, Denver, Colorado 80217-5108.	Written notice within 30 days of discovery of water leaks through the Dibiten membrane to Dibiten, P.O. Box 5108, Denver, Colorado 80217-5108.	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	Warranty is exclusive warranty from Dibiten and represents the exclusive remedy available to any purchaser of the membrane materials. Dibiten makes no other representation or warranty of any kind. No retailer, contractor or distributor is authorized to alter the warranty. Dibiten shall not be liable for any damages which are based on negligence, breach of warranty, strict liability or any other theory other than the limited liability stated in warranty; excludes UCC warranties.	Warranty is exclusive warranty from Dibiten and represents the exclusive remedy available to any purchaser of the membrane materials. Dibiten makes no other representation or warranty of any kind. No retailer, contractor or distributor is authorized to alter the warranty. Dibiten shall not be liable for any damages which are based on negligence, breach of warranty, strict liability or any other theory other than the limited liability stated in warranty; excludes UCC warranties.	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 12 in Introduction)	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 13, 17, 19, 20, 22	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 13, 17, 19, 20, 22	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 wind and hurricanes. Dibiten indicates that there is no coverage for damage caused by wind.	Warranty excludes wind and hurricanes. Dibiten indicates that there is no coverage for damage caused by wind.	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 14 in Introduction)	C, F, H, I, M, R	C, F, H, I, M, R	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	Structures used for cool or cold storage	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	None
19. Approved, authorized, or licensed requirements	Yes	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; material-only warranty	None; material-only warranty	Contractor obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No; Dibiten indicates that it does not carry insurance covering its warranty obligations.	No; Dibiten 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 manufactures and sells product.	Dibiten 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	No restrictions stated	Assignable with written permission of Duro-Last, Inc.
26. Special features/conditions	<p>In order to continue limited warranty coverage, owner must implement a maintenance program prescribed by Dibiten on the reverse side of limited warranty, including repair of any item beyond the scope of the warranty which would affect the integrity of the Dibiten membrane and recoating smooth surfaced membranes as necessary and: (a) maintaining a file showing proof-of-purchase, all inspections and repairs; (b) inspecting roof at least semiannually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing damaged masonry, poorly mounted counter-flashing, loose caulking, bad mortar joints, and any loose stone or tile coping that abut the roof; (f) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (g) examining roof top equipment to determine if they move excessively or leak; (h) checking building exterior for settlement or movement; and (i) recoating any areas of excessive wear, flaking, or blistered areas of protective coatings.</p> <p>Installing roofing contractor must be licensed by and in good standing with the licensing authority of the jurisdiction in which the structure is located.</p> <p>Region 2 excludes CA, NV, AZ, UT, ID, NM, TX, HI, FL.</p>	<p>In order to continue limited warranty coverage, owner must implement a maintenance program prescribed by Dibiten on the reverse side of limited warranty, including repair of any item beyond the scope of the warranty which would affect the integrity of the Dibiten membrane and recoating smooth surfaced membranes as necessary and: (a) maintaining a file showing proof-of-purchase, all inspections and repairs; (b) inspecting roof at least semiannually; (c) removing any debris; (d) cleaning gutters, downspouts, drains, and surrounding areas; (e) repairing damaged masonry, poorly mounted counter-flashing, loose caulking, bad mortar joints, and any loose stone or tile coping that abut the roof; (f) correcting materials at edges of the roof that have been lifted by wind by an approved contractor; (g) examining roof top equipment to determine if they move excessively or leak; (h) checking building exterior for settlement or movement; and (i) recoating any areas of excessive wear, flaking, or blistered areas of protective coatings.</p> <p>Installing roofing contractor must be licensed by and in good standing with the licensing authority of the jurisdiction in which the structure is located.</p> <p>Region 2 excludes CA, NV, AZ, UT, ID, NM, TX, HI, FL.</p>	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	Registration form must be completed and returned to Dibiten within 30 days of completion of the Dibiten membrane and a copy of the contractor's bill must be attached.	Registration form must be completed and returned to Dibiten within 30 days of completion of the Dibiten membrane and a copy of the contractor's bill must be attached.	Yes



## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Duro-Last Roofing, Inc.	Ensuro Duradek Limited	Ensuro Duradek Limited
2. Title, original publication date, and identifying symbol, if any	A15 Year Residential Material Warranty; March 1993; DL 15-01 Rev. 3/93	Ensuro Duradek Warranty; September 1995	AEnsuro Duradek Warranty; September 1995
3. Product, specification, or system covered	Duro-Last Roofing System	Duradek A Ultra Series 60 mil products (See Special Features/Conditions)	Duradek Classic, Custom, Supreme, Decor, SafetyDek, Reflections, Ultra, Marble, Commercial, SurcoSeal 60, SurcoSeal 40 (See Special Features/Conditions)
4. Scope of coverage	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 only; Ensuro Duradek guarantees to repair or replace at its expense any portion of the Duradek Vinyl decking membrane which leaks due to a manufacturing defect.	Material only; Ensuro Duradek guarantees to repair or replace at its expense any portion of the Duradek Vinyl decking membrane which leaks due to a manufacturing defect
5. Length of coverage	15 years	10 years	5 years
6. Nature of remedy	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.	Ensuro Duradek agrees to repair or replace the Duradek membrane with the same (or similar) color design or grade of material and pay transportation costs and all other costs necessary to remedy failure	Ensuro Duradek agrees to repair or replace the Duradek membrane with the same (or similar) color design or grade of material and pay transportation costs and all other costs necessary to remedy failure.
7. Monetary limitations	None stated.	None stated	None stated
8. Notification requirements	Written notification to Duro-Last's corporate headquarters, 525 Morley Drive, Saginaw, MI 48601, within 30 days after discovery of any defective material.	Written notice to Applicator promptly upon discovery of any needed repairs.	Written notice to Applicator promptly upon discovery of any needed repairs.
9. Exclusive or additional remedy	Warranty is owner's sole and exclusive remedies for failure of the roofing membrane material or accessories; excludes UCC warranties. (See Special Features/Conditions.)	Remedies provided in warranty state the limit of Ensuro=s responsibilities; seeks to exclude UCC warranties. No representative has authority to make any representations other than those stated in warranty.	Remedies provided in warranty state the limit of Ensuro=s responsibilities; seeks to exclude UCC warranties. No representative has authority to make any representations other than those states in warranty.
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 12 in Introduction)	1, 3, 18. Warranty also excludes damages caused by chemicals not normally found in nature.	1, 2, 3, 5, 6, 10, 11, 22 (Warranty also excludes normal wear and tear and failure of the structure to provide an adequate means of waterproofing)	1, 2, 3, 5, 6, 10, 11, 22 (Warranty also excludes normal wear and tear and failure of the structure to provide an adequate means of waterproofing)
13. Wind coverage/exclusions		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 14 in Introduction)	A, C, I	C	C
15. Cost to obtain	None	None	None
16. Minimum charge	None	None	None
17. Ineligible structure or building use	None	None	None

<b>18. Pre-construction notice and approval requirements</b>	None required	Applicator required to obtain approval prior to beginning installation from local distributor who acts as agent for manufacturer=s approval.	Applicator required to obtain approval prior to beginning installation from local distributor who acts as agent for manufacturer s approval.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	No on-site inspections	No on-site inspections	No on-site inspections
<b>21. Contractor's post-installation obligation</b>	Although this is a material-only warranty, contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to all leaks, any defects, and material and workmanship deficiencies for 10-year duration of warranty.	Applicator obligated to make repairs to all leaks, any defects, and material and workmanship deficiencies for 5-years duration of warranty.
<b>22. Backed by named insurance or surety</b>	No; Duro-Last indicates that it does not carry insurance covering its warranty obligations.	No; Ensurco indicates that it carries \$2 million liability insurance coverage	No; Ensurco indicates that it carries \$2 million liability insurance coverage
<b>23. Issuing entity manufactures and/or sells products</b>	Duro-Last manufactures and sells product.	Ensurco Duradek manufacturers and sells product	Ensurco Duradek manufacturers and sells product
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	No restrictions stated.	No restricitons stated	No restrictions stated
<b>26. Special features/conditions</b>	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.	<p>Proof of purchase and payment must be presented to obtain warranty coverage.</p> <p>Each Duradek system requires a sealant (caulking) in a number of areas. The sealant is subject to annual inspection and maintenance by the building owner. Neither Ensurco nor the Contractor are responsible for damages occurring from repairs necessary due to problems arising from the sealant after the first complete year of installation. Ensurco or the Contractor will provide, at a nominal cost, the correct sealants to maintain the job.</p> <p>Warranty is offered by both Ensurco and a Medallion Level= certified applicator only. Ensurco is responsible for any materials related problems and the Contractor is responsible for workmanship. In either case, the application contractor will facilitate any necessary repairs.</p>	<p>Proof of purchase and payment must be presented to obtain warranty coverage.</p> <p>Each Duradek system requires a sealant (caulking) in a number of areas. The sealant is subject to annual inspection and maintenance by the building owner. Neither Ensurco nor the Applicator are responsible for damages occurring from repairs necessary due to problems arising from the sealant after the first complete year of installation. Ensurco or the Applicator will provide, at a nominal cost, the correct sealants to maintain the job.</p> <p>Warranty is offered by both Ensurco and the installation company. Ensurco is responsible for any materials related problems and the dealer is responsible for workmanship. In either case, the installing contractor will facilitate any necessary repairs.</p>
<b>27. Executed by owner</b>	Yes	No	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

<b>1. Identity of issuing entity</b>	<b>Elastomeric Roofing Systems, Inc.</b>	<b>Elastomeric Roofing Systems, Inc.</b>	<b>Elastomeric Roofing Systems, Inc.</b>
<b>2. Title, original publication date, and identifying symbol, if any</b>	"ERSystems ____ Year EPDM Membrane Material Warranty"; October 1, 1996; 961001 MMW	"ERSystems ____ Year Permaweld CPA Material Warranty"; October 1, 1996; 961001 PMMW	"ERSystems ____ Year EPDM Roof System Warranty"; October 1, 1996; 961001 RSW
<b>3. Product, specification, or system covered</b>	.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	Permaweld, Permaweld Fleece Backed, PermaVac systems	.045 and .060 black nonreinforced EPDM; .045 and .060 black FR EPDM; reinforced 90, plate bond, fully adhered, ballasted, batten.
<b>4. Scope of coverage</b>	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 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.
<b>5. Length of coverage</b>	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 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
<b>6. Nature of remedy</b>	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.	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.
<b>7. Monetary limitations</b>	The maximum value allowed by ERSystems for the repair or credit shall not exceed the original product purchase price.	The maximum value allowed by ERSystems for the repair or credit shall not exceed the original product purchase price.	None stated.
<b>8. Notification requirements</b>	The buyer must notify ERSystems by registered mail, return receipt requested, at 50 Medina Street, Loretto, MN 55357-0056, within 30 days of discovery of the failure.	The buyer must notify ERSystems by registered mail, return receipt requested, at 50 Medina Street, Loretto, MN 55357-0056, within 30 days of discovery of the failure.	The buyer must notify ERSystems by registered mail, return receipt requested, at 50 Medina Street, Loretto, MN 55357-0056, within 30 days of discovery of the failure.
<b>9. Exclusive or additional remedy</b>	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.
<b>10. Inclusion of consequential damages</b>	No	No	No
<b>11. Determination of warranty applicability</b>	ERSystems' determination	ERSystems' determination	ERSystems' determination
<b>12. Specific exclusions from coverage (see item 12 in Introduction)</b>	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, 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.
<b>13. Wind coverage/exclusions</b>	The warranty covers roof damage resulting from wind speeds up to 55 mph. The 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.
<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	C, M, S (See Special Features/Conditions.)	C, M, S (See Special Features/Conditions.)	C, M, S (See Special Features/Conditions.)

<b>15. Cost to obtain</b>	5 years: \$50; 10 years: \$75; 15 years: \$2.00/square	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
<b>16. Minimum charge</b>	5 years: \$50; 10 years: \$75; 15 years: \$100	5 years: \$50; 10 years: \$75; 15 years: \$100	5 years: \$600; 10 years: \$800; 15 years: \$1,000
<b>17. Ineligible structure or building use</b>	Cold-storage buildings, single-family residences, and special-purpose facilities.	Cold-storage buildings, single-family residences, and special purpose facilities	Cold-storage buildings, single-family residences, and special purpose facilities
<b>18. Pre-construction notice and approval requirements</b>	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.	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.	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.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	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.	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.
<b>21. Contractor's post-installation obligation</b>	None; material-only warranty.	None; material-only warranty	The contractor is obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	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.	No; ERSystems indicates that it carries a \$2.5 million product liability insurance covering its warranty obligations.
<b>23. Issuing entity manufactures and/or sells products</b>	ERSystems sells product only.	ERSystems sells product only.	ERSystems sells product only.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	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.	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.
<b>26. Special features/conditions</b>	<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 the price for the system is consideration for the limitation of ERSystems liability stated in warranty.</p>	<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 nonwarranted 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. 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 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.</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. 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>
<b>27. Executed by owner</b>	Yes	Yes	Yes

## 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	A Firestone 10-Year EPDM/UltraPly 78+ Membrane Limited Warranty; August 1994; 8/94X Item #916R-01	Red Shield "Roofing System Limited Warranty;" November 1997; 11/97 - Item #811-01	Firestone "Modified Bitumen Membrane Limited Warranty;" November 1997; 11/97 Item # 595(R)MB (Replaces 7/94)-01
3. Product, specification, or system covered	Firestone Rubbergard EPDM, Firestone UltraPly	Firestone RubberGard EPDM Systems, Firestone UltraPly 78+ Systems, Firestone APP Systems, Firestone SBS Systems, Firestone Built-up Systems	Firestone APP, Firestone SBS
4. Scope of coverage	Material only; Firestone warrants that it will provide replacement membrane materials sufficient to replace any area of EPDM or UltraPly 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 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 insulations, and other Firestone-brand accessories when installed in accordance with Firestone technical specifications. Firestone indicates that roof coatings and sealants, specifically Firestone PC 100 Acrylic Top 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	10 years	5, 10, 15, or 20 years: Firestone EPDM; 5, 10, or 15 years: UltraPly 78+; 5, 10, 12, 15, or 20 years: Firestone SBS; 5, 10, 12, 15, or 20 years: Firestone APP	5, 10, or 12 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.	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	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 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 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 14 in Introduction)	M, S (See Special Features/Conditions.)	C, M, S (See Special Features Conditions.)	M, S (See Special Features/Conditions.)
15. Cost to obtain	\$50	Firestone EPDM: 5 years: \$3.00/square; 10 years: \$5.00/square; 15 years: \$8.00/square; 20 years: \$10.00/square; (warranty price is reduced \$1.00/square for using nonreinforced membrane with the exception of 20-year term.) UltraPly: 5 years: \$3.00/square; 10 years: \$5.00/square; 15 years: \$8.00/square; Firestone APP (without roof monitoring): 5 years: \$3.00/square; 10 years: \$7.00/square; 12 years: \$9.00/square; 15 years: \$12.00/square; 20 years: \$17.00/square; Firestone SBS (without roof monitoring): 5 years: \$3.00/square; 10 years: \$7.00/square; 12 years: \$9.00/square; 15 years: \$12.00/square; 20 years: \$17.00/square; Firestone Built-up (without roof monitoring): 5 years: \$3.00/square; 10 years: \$7.00/square; 12 years: \$9.00/square; 15 years: \$12.00/square; 20 years: \$17.00/square; (warranty price for APP, SBS, and built-up systems are reduced when roof monitoring is employed)	\$50.00
16. Minimum charge	\$50	Varies from \$250 to \$750 depending on length of coverage	300

17. <b>Ineligible structure or building use</b>	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. <b>Pre-construction notice and approval requirements</b>	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.	Contractor must submit Aapplication for warranty≡ certifying that the membrane has been installed in accordance with Firestone technical specifications.
19. <b>Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
20. <b>Job inspection policy</b>	No on-site inspections	Firestone field technical representative makes on-site inspection after completion and prior to issuance of warranty; no charge	No on-site inspections
21. <b>Contractor's post-installation obligation</b>	Although this is a material-only warranty, contractor is obligated to make repairs to workmanship deficiencies for two years.	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. <b>Backed by named insurance or surety</b>	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. <b>Issuing entity manufactures and/or sells products</b>	Firestone manufactures and sells the product.	Firestone manufactures and sells the product.	Firestone manufactures and sells the product.
24. <b>Conditions for renewal or extension</b>	No renewal provision	No arenewal provision	No renewal provision
25. <b>Assignability</b>	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. <b>Special features/conditions</b>	<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, 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 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. <b>Executed by owner</b>	No	No	No

## 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 ; September 1997; 9/97 Item #913MB (Replaced 2/96)-01	A Firestone Protected Membrane Limited Warranty; August 1994; 8/94X Item #915R-01	Firestone A Modified Bitumen Standard Roof System Limited Warranty; January 1996; 1/96X Item #558(R)MB (Replaces 7/94)-01
3. Product, specification, or system covered	Firestone APP 160, 170, 180, Firestone SBS	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 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 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: 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.	10 years	5, 10, or 12 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.	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	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.	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 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 (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 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 damaged caused by wind.
14. Specific conditions to make warranty ineffective or null and void (see item 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	None	\$200	5 years: \$3.00/square; 10 years: \$5.00/square; 12 years: \$6.00/square
16. Minimum charge	None	\$200	5 yrs: \$300/sq; 10 yrs: \$350/sq; 12 yrs: \$400/sq

<b>17. Ineligible structure or building use</b>	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
<b>18. Pre-construction notice and approval requirements</b>	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.
<b>19. Approved, authorized, or licensed requirements</b>	No	Yes	Yes
<b>20. Job inspection policy</b>	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.
<b>21. Contractor's post-installation obligation</b>	None required.	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor is obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No; Firestone indicates that it is self-insured.	No; Firestone indicates that it is self-insured.	No; Firestone indicates that it is self-insured.
<b>23. Issuing entity manufactures and/or sells products</b>	Firestone manufactures and sells the product.	Firestone manufactures and sells the product.	Firestone manufactures and sells the product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	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.
<b>26. Special features/conditions</b>	<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 Ind. without regard to conflict of laws. 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. 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 Fire stone 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>
<b>27. Executed by owner</b>	No	No	No



## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

<b>1. Identity of issuing entity</b>	<b>Firestone Building Products Company, division of Bridgestone/Firestone, Inc.</b>	<b>Firestone Building Products Company, division of Bridgestone/Firestone, Inc.</b>	<b>Flex Membrane International</b>
<b>2. Title, original publication date, and identifying symbol, if any</b>	"Manufacturer's Insulation Warranty"; 4/96 - Item #953S-01	Firestone Roofing Membrane Limited Warranty; December 1996; 12/96 Item #812R (Replaces 8/94)-01	AWarranty; July 1990
<b>3. Product, specification, or system covered</b>	Firestone ISO 95+ insulation	Firestone Rubbergard EPDM, Firestone Ultra Ply 78+	Flex FB Elvaloy, Flex MF/R Elvaloy, Flex MF/R 50, Flex MF/R 60, Flex MF/R 70, Flex MF/R 80, Flex FB 100
<b>4. Scope of coverage</b>	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.	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 and workmanship; Flex warrants against leakage caused by defects in Flex materials or workmanship in the application of Flex's material.
<b>5. Length of coverage</b>	10, 15, or 20 years [firestone indicates term of insulation warranty cannot exceed that of the standard or Red Shield Term.]	15 years: Firestone Ultra Ply 78+; 20 years: Firestone EPDM	5, 10, or 15 years
<b>6. Nature of remedy</b>	Firestone shall provide the owner with free Firestone 95+ and Firestone roofing membrane materials and shall repair the affected roof area.	The owner's sole and exclusive remedy and Firestone's liability shall be limited to the repair of the leak.	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.
<b>8. Notification requirements</b>	None stated.	Firestone's repair obligations over the life of the warranty are limited to the original cost of the membrane installation.	None stated.
<b>8. Notification requirements</b>	Written notification within 30 days of the discovery of any event leading to a claim.	Written notification within 30 days of any occurrence of a leak.	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
<b>9. Exclusive or additional remedy</b>	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.	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.	Warranty supersedes and is in lieu of any and all other express warranties that conflict with the terms and conditions stated in the warranty.
<b>10. Inclusion of consequential damages</b>	No	No	No
<b>11. Determination of warranty applicability</b>	Firestone's determination	Firestone's determination	Flex's judgement
<b>12. Specific exclusions from coverage (see item 12 in Introduction)</b>	1, 2, 3, 6, 7, 10, 12, 13, 18, 22. The warranty also specifically excludes damages caused by atomic radiation, insects, or animals.	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, 4, 5, 16
<b>13. Wind coverage/exclusions</b>	The warranty excludes winds, hurricanes, and tornadoes. Firestone indicates that there is no coverage for damages caused by wind.	The warranty excludes winds, hurricanes, and tornadoes. Firestone indicates that there is no coverage for damage caused by wind.	Warranty excludes hurricanes and tornadoes. Flex indicates that warranty covers wind speeds up to 60 mph.
<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	J	M, S (See Special Features/Conditions.)	B, C, F, G, H
<b>15. Cost to obtain</b>	None	\$200	5 years: None; 10 years: \$5.00/square; 15 years: \$8.00/square
<b>16. Minimum charge</b>	None	\$200	5 years: None; 10 years: \$375; 15 years: \$600
<b>17. Ineligible structure or building use</b>	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.	None

<b>18. Pre-construction notice and approval requirements</b>	Preinstallation notice must be submitted 14 days prior to job start and must be approved by Firestone technical service.	Preinstallation notice must be submitted 14 days prior to job start.	The contractor submits request for guarantee to Flex for approval with roof diagram.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	No	Yes
<b>20. Job inspection policy</b>	Firestone field technical representative makes on-site inspection after job completion prior to issuance of warranty; no charge.	No on-site inspections	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.
<b>21. Contractor's post-installation obligation</b>	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.	The contractor is obligated to make repairs to all leaks and workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No; Firestone indicates that it is self-insured.	No; Firestone indicates that it is self-insured.	No; Flex indicates that it does not carry insurance covering its warranty obligations.
<b>23. Issuing entity manufactures and/or sells products</b>	Firestone manufactures and sells the product.	Firestone manufactures and sells the product.	Flex manufactures and sells the product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision in warranty. Flex indicates that it may issue extensions on an individual project basis.
<b>25. Assignability</b>	No restrictions stated.	Warranty is transferable subject to Firestone inspection, written approval, and payment of current transfer fee.	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.
<b>26. Special features/conditions</b>	<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. Contact Firestone immediately if the Firestone Roofing System comes into contact with any such materials</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, superstrata or overlays, either permanent or temporary, as necessary to expose the surface of the membrane for inspection and/or repair.</p>	No representative of Flex has authority to make any representations or promises except as stated in warranty.
<b>27. Executed by owner</b>	No	No	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Flex Membrane International	GAF Materials Corporation (GAF)	GAF Materials Corporation (GAF)
2. Title, original publication date, and identifying symbol, if any	AMembrane Material Warranty; July 1990	ALimited Warranty on Material GAFGLAS; March 1994, Form 10450 3/94	"EverGuard Gold Seal Guarantee;" January 1998; Form 10510 1/98
3. Product, specification, or system covered	Flex membrane material in all Flex roof systems	GAFGLAS Ply 6, GAFGLAS Ply 4 and all GAF BUR specifications	EverGuard Single-Ply Membrane Systems
4. Scope of coverage	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.	Material and workmanship; GAF guarantees to make repairs to GAF EverGuard roofing membrane, coated metal roof edges and base flashing, membrane base flashing, expansion joint covers, and pre-flashed accessories as are necessary to correct leaks resulting solely from natural deterioration of the EverGuard roofing materials and from workmanship in applying the EverGuard roofing materials.
5. Length of coverage	5, 10, or 15 years	10 years	10 years: All materials and systems 15 years: Minimum .045" material, all systems 20 years: Minimum .080" material, new/tear-off systems
6. Nature of remedy	Flex's sole obligation shall be to repair or replace the defective membrane material.	GAF's sole responsibility is the repair or replacement, 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.	GAF will make repairs to GAF EverGuard roofing membrane, coated metal roof edges and base flashing, membrane base flashing, expansion joint covers, and pre-flashed accessories as shall be necessary to correct covered leaks at no cost to owner. Warranty excludes repair or replacement of insulation or other materials not sold by GAF.
7. Monetary limitations	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.	None stated
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 within 30 days to GAF Contractor Services department, 1361 Alps road, Bldg. 7-1, Wayne, NJ 07470 of leaks resulting from manufacturing defect or ordinary war and tear by the elements.	Written notification within 30 days of discovery of leak to GAF Contractor Services Department, 1361 Alps Road, Building 7, Wayne, NJ 07470. Notice to roofing contractor is not notice to GAF.
9. Exclusive or additional remedy	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	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. 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.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Flex's judgment	Neutral (no provision).	Neutral (no provision)
12. Specific exclusions from coverage (see item 12 in Introduction)	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.	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

13. Wind coverage/exclusions	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.	GAF indicates warranty covers roof damage resulting from wind speeds up to 60 mph. Warranty excludes roof damage resulting from windstorms above 60 mph, hurricanes and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)	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.	C, H, I, S. Also, guarantee states that cancellation of this guarantee will result if roof is damaged by any cause listed as an exclusion (See Item 12 above) if the damage affects the integrity or watertightness of the roof and owner does not promptly make repairs following notification by GAF.
15. Cost to obtain	5 years: None; 10 years: \$1.00/square; 15 years: \$2.00/square	None	10 years: \$6.00/sq 15 years: \$9.00 sq. 20 years: \$12.00/square
16. Minimum charge	5 years: None; 10 years: \$50; 15 years: \$100	None	10 years: \$500 15 years: \$750 20 years: \$1,000
17. Ineligible structure or building use	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	Private residences, walking decks, buildings with high internal humidity, freezer buildings or buildings used for cold storage unless approved in writing in advance by GAF.
18. Pre-construction notice and approval requirements	The contractor submits request for guarantee to Flex for approval with roof diagram.	None	Pre-installation form is submitted by contractor, reviewed by Contractor Services department, project acceptance is faxed and/or mailed back to contractor.
19. Approved, authorized, or licensed requirements	Yes	No	Yes
20. Job inspection policy	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	GAF technical field representative makes on-site inspections prior to and during (as required by project size and project specifications) and after application, as well as 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 workmanship deficiencies for two years.	None; material-only warranty	Contractor obligated to make repairs to all leaks and workmanship deficiencies for two years.
22. Backed by named insurance or surety	No	No; GAF indicates that it does not carry insurance covering its warranty obligations.	No; GAF indicates it does not carry insurance covering its guarantee obligations.
23. Issuing entity manufactures and/or sells products	Flex manufactures and sells the product.	GAF manufactures and sells the product.	GAF sells products only.
24. Conditions for renewal or extension	No renewal provision in warranty. Flex indicates that it may issue extension on individual project basis.	No renewal provision	No renewal provision
25. Assignability	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	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.
26. Special features/conditions	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 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 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.	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 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. 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. GAF shall not be responsible for or liable for any change or amendment to the GAF roof specifications in regard to the roof construction, unless the change or amendment is approved in writing by an authorized GAF Contractor Services 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 guarantee provided that the temporary repairs are reasonable and customary, and do not result in permanent damage to the GAF membrane or base flashing. Owner is responsible for all expenses associated with temporary repairs.
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"; November 1996; Form 10446 11/96	"Commercial Roof Guarantee"; November 1996, Form 10442 11/96	"Ruberoid LMG"; January 1, 1997; Form 10460 1/97
3. Product, specification, or system covered	Built-Up Roofing and Modified Bitumen Products: 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, Ruberoid Mop Smooth, Ruberoid Torch 1, Ruberoid 601 Plus, Ruberoid Modified Base Sheet, GAFGLAS Ply 6, GAFGLAS Ply 4, GAFGLAS Flex Ply 6, Ultima 80 Base	All Ruberoid and GAFGLAS Specifications	Modified Bitumen Products: Ruberoid Mop Plus, Ruberoid Mop FR, Ruberoid Mop 170 FR, Ruberoid Mop Granule, Ruberoid 30, Ruberoid 30 FR, Ruberoid Torch FR, Ruberoid Torch Plus, Ruberoid Torch Granule, Ruberoid Torch Smooth Coated, Ruberoid Torch Smooth
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 only; GAF warrants that the Ruberoid roof membrane and Ruberoid base flashing materials will withstand ordinary wear and tear by the elements and will be free of manufacturing defects which affect their ability to maintain the roof in watertight condition. Warranty applies to Ruberoid materials installed in accordance with current GAF specifications.
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: Ruberoid 30, Ruberoid 30 FR, Ruberoid Torch Smooth; 12 years: Ruberoid Mop 170 FR, Ruberoid Mop Granule, Ruberoid Torch Smooth Coated, Ruberoid Torch Granule; 15 years: Ruberoid Mop Plus, Ruberoid Mop Plus FR, Ruberoid Torch Plus, Ruberoid Torch FR
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's sole responsibility is the repair or replacement, at GAF's option, of that portion of the Ruberoid 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 other roof components used with the Ruberoid materials is not included.
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.	None stated.
8. Notification requirements	Written notification within 30 days of discovery of leak to GAF Contractor Services department, 1361 Alps Road, Building 7-B, Wayne, NJ 07470	Written notice within 30 days of discovery of leak to GAF Contractor Services department, 1361 Alps Road, Building 7-B, Wayne, NJ 07470	Written notice within 30 days of discovery of leak to GAF Contractor 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.	Warranty 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)	GAF's determination
12. Specific exclusions from coverage (see item 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.	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.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 17, 19, 20, 22, 24.
13. Wind coverage/exclusions	Warranty excludes windstorms, hurricanes, and tornadoes. GAF indicates that there is no coverage for damage caused by wind.	Warranty excludes windstorms, hurricanes and tornadoes. GAF indicates that there is no coverage for damage caused by wind.	Warranty excludes windstorms, hurricanes and tornadoes. GAF indicates that there is no coverage for damage caused by wind.

<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	C, H, I, S. Also, guarantee states that cancellation of this guarantee will result if roof is damaged by any cause listed as an exclusion (See Item 12 above) 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 (See Item 12 above) if the damage affects the integrity or watertightness of the roof and owner does not promptly make repairs following notification by GAF.	Warranty states that cancellation of this warranty will result if the roof is damaged by any cause listed as an exclusion (See Item 12 above) if the damage affects the integrity or watertightness of the roof.
<b>15. Cost to obtain</b>	5 yrs: \$ 5.00/sq; 10 yrs: \$ 9.00/sq; 12 yrs: \$10.00/sq; 15 yrs: \$12.00/sq; 20 yrs: \$17.00/sq	5 yrs: \$ 4.00/sq; 10 yrs: \$ 6.00/sq; 12 yrs: \$7.00/sq; 15 yrs: \$9.00/sq; 20 yrs: \$12.00/sq	None
<b>16. Minimum charge</b>	5 yrs: \$350; 10 yrs: \$750; 12 yrs: \$750; 15 yrs: \$800; 20 yrs: \$1,000	5 yrs: \$350; 10 yrs: \$500; 12 yrs: \$500; 15 yrs: \$500; 20 ys: \$500	None
<b>17. Ineligible structure or building use</b>	High-humidity buildings (i.e., car washes, swimming pools), domed structures, heated tanks, storage silos, drying kilns, 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.	Applications over buildings with high internal humidity, freezer buildings or buildings used for cold storage.
<b>18. Pre-construction notice and approval requirements</b>	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.	None required.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	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.	No on-site inspections.
<b>21. Contractor's post-installation obligation</b>	The contractor is obligated to make repairs to all leaks and workmanship deficiencies for two years.	Contractor obligated to make repairs to all leaks and workmanship deficiencies for two years	None; material-only guarantee.
<b>22. Backed by named insurance or surety</b>	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.
<b>23. Issuing entity manufactures and/or sells products</b>	GAF manufactures and sells product.	GAF manufactures and sells product.	GAF manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	Ruberoid Liberty guarantees may be renewed for five years at a cost of \$5.00 per square. Inspection is required and repairs are at owner's expense. Application of Matrix modified bitumen coating is required. Contact GAF for program details.	The owner requests during the last 6 months of the 5 <sup>th</sup> year that GAF make roof inspection free of charge. GAF will advise the owner of any repairs necessary to qualify for additional 5 yrs. The owner must make repairs at his sole expense & notify jGAF no later than 45 days after the expiration of the original 5-yr. guarantee. GAF will then reinspect and, if acceptable, guarantee will be extended for 5 yrs. 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
<b>25. Assignability</b>	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 Contractor 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 Contractor Services manager, and (4) an assignment fee of \$500 is paid. Otherwise, guarantee is not assignable, directly or indirectly.	Not transferable or assignable in any manner.
<b>26. Special features/conditions</b>	<p>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 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.</p> <p>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.</p> <p>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 to the specifications is approved in writing by an authorized GAF technical service manager.</p> <p>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 guarantee provided that the temporary repairs are reasonable and customary, and do not result in permanent damage to the GAF membrane or base flashing. Owner is responsible for all expenses associated with temporary repairs.</p>	<p>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 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.</p> <p>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 and steel grating that are installed over the GAF roofing materials.</p> <p>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 Contractor Services manager. The roofing contractor is not an agent of GAF; notice to the roofing contractor is not notice to GAF.</p> <p>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 guarantee provided the temporary repairs are reasonable and customary and do not result in permanent damage to the GAF membrane or base flashing. Owner is responsible for all expenses associated with temporary repairs.</p>	<p>Claims under this warranty require proof of purchase.</p> <p>GAF shall have reasonable time after notification of a claim to inspect the roof and if GAF determines manufacturing defects are covered by warranty, GAF will have 30 days after receipt of notification of leaks to make or cause to be made repairs or replacement.</p> <p>The owner must initiate and follow a 10-point maintenance program prescribed by GAF on the reverse side of guarantee including: (1) maintaining a file showing all inspections, repairs, original construction drawings and specifications; (2) inspecting roof at least semiannually; (3) inspecting roof for damage after severe weather conditions; (4) repairing non-guaranteed conditions affecting the GAF roof system; (5) removing any debris; (6) examining/reattaching loose metalwork; (7) repairing loose masonry/coping stones; (8) examining roof top equipment to determine if they move excessively or leak; (9) recoating any cracked, flaking, blistered or worn areas of protective coatings; and (10) minimize rooftop traffic.</p> <p>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 specifications, unless the change or amendment to the specifications is approved in writing by an authorized GAF Contractor Services manager. Notice to the roofing contractor or distributor is not notice to GAF.</p>
<b>27. Executed by owner</b>	No	No	Yes; Owner must sign and mail in warranty registration form within 90 days of roof completion.

## 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	ALimited Warranty on Material Ruberoid Tenre; March 1994; Form 10301 3/94	"Liberty PDR Guarantee"; November 1996; Form 10457 11/96	"Liberty LWIC Single Source Guarantee"; December 1996; Form 10459 12/96
3. Product, specification, or system covered	All Ruberoid specifications	Modified Bitumen Specifications: NN-O-2-MS(PD), I-O-2-MS(PD), NN-O-2-TS(PD), I-O-2-TS(PD), NN-O-3-MS(PD), I-O-3-MS(PD), NN-O-3-TS(PD), I-O-3-TS(PD)	GAFLAS Built-Up Roof Specifications: N-B-5-G, N-B-5-C, N-B-5-M, N-B-4-G, N-B-4-C, N-B-4-M, N-B-5-G/P6, N-B-5-C/P6, N-B-5-M/P6, N-B-4-G/P6, N-B-4-C/P6, N-B-4-M/P6; Ruberoid Modified Bitumen Specifications: N-1-2-20/30, N-1-2-20/30FR, N-1-1-TS, N-1-1-TG, N-1-1-TSC, N-1-1-MG, N-1-1-MGRF, N-1-1-MSG, N-2-1-MGP, N-2-1-MGPFR, N-3-1-MGP, N-3-1-MGPFR, N-1-2-20/MG, N-1-2-20/MGRF, N-1-2-20/MSG, N-1-2-20/MGP, N-1-2-20/MGPFR, N-2-1-TGP, N-2-1-TGPFR, N-3-1-TGP, N-3-1-TGPFR, N-1-2-TGP, N-1-2-TGPFR, N-1-2-TG
4. Scope of coverage	Material only; GAF warrants that the Ruberoid roofing membrane and Ruberoid 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 Ruberoid roofing membrane and Ruberoid base flashings installed in accordance with current Ruberoid specifications.	Material and workmanship; GAF guarantees GAF roofing membrane, GAF base flashing, GAF underlying insulation, GAF expansion joint covers and GAF pre-flashed accessories installed with an above-grade plaza deck assembly will withstand ordinary wear and tear by the elements and will be free of manufacturing and installation workmanship defects which affect its ability to maintain a watertight condition. Warranty covers repairs to the GAF materials as shall be necessary solely to correct leaks resulting from natural deterioration of GAF materials; blisters; 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; slippage of membrane or base flashing; and normal pedestrian plaza deck usage. Guarantee covers repairs to GAF roofing materials and does not include repair or replacement of roof deck, insulation, protection boards, drainage boards and traffic surfacing used in conjunction with the plaza deck assembly not sold by GAF.	Material and workmanship; GAF guarantees to make repairs to GAF roofing membrane, GAF base flashing, GAF expansion joint covers, GAF pre-flashed accessories and GAF lightweight concrete insulation as are necessary solely to correct leaks resulting from natural deterioration of GAF materials; blisters; bare spots; fishmouths; ridges; buckles and wrinkles; splits not caused by structural failure or movement or cracks in substrate or roof base (other than the LWIC insulation) over which GAF materials are applied; workmanship in applying the GAF materials; and slippage of membrane or base flashing. GAF also warrants that, as to the LWIC insulation, the actual resistance to heat flow through the LWIC insulation will be at least 80% of the design thermal resistance and that the LWIC will not cause the roofing membrane to leak as a result of the vapor pressure effects (blisters) of moisture retained within the LWIC or cause structural damage to the building as a result of thermal or chemical reactions.
5. Length of coverage	10 years; 12 years with GAF weather-coated emulsion or fibered aluminum coating, or granule surface.	10 years: NN-O-2-MS(PD), I-O-2-MS(PD), NN-O-2-TS(PD), I-O-2-TS(PD); 15 or 20 years: NN-O-3-MS(PD), I-O-3-MS(PD), NN-O-3-TS(PD), I-O-3-TS(PD)	5, 10 and 12 years: 3- or 4-ply GAFLAS Ply 4 or Ply 6 Specifications, Ruberoid or Plus Specifications; 12 years: Ruberoid or Plus Specifications; 15 or 20 years: 4-Ply GAFLAS 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 guarantee.
6. Nature of remedy	GAF's sole responsibility is the repair or replacement, at GAF's option, of that portion of Ruberoid materials that contains manufacturing defects or deterioration caused by ordinary wear and tear by the elements that have resulted in a roof leak.	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. Warranty excludes repair or replacement of materials not sold by GAF. Removal and replacement of plaza deck assembly materials to expose the GAF materials shall be made at the sole cost of the Owner even if GAF determines the leak is covered by the GAF guarantee.	GAF will make repairs to GAF membrane, base flashing, expansion joint covers, pre-flashed accessories and lightweight concrete insulation as shall be necessary solely in order to correct covered leaks at no cost to owner. Warranty excludes repair or replacement of roof deck or other materials not sold by GAF. Should the LWIC insulation fail to perform, GAF shall, at its own expense, (1) make or cause to be made repairs or modifications to the LWIC insulation as GAF deems appropriate so that the LWIC insulation will perform as warranted, and (2) repair or replace the roof membrane to the extent that it is damaged as a result of the failure of the LWIC insulation to perform as warranted as a result of repairs or modifications to the LWIC insulation.
7. Monetary limitations	GAF's maximum liability during the first year after completion is the original cost of Ruberoid materials. After the first year, GAF's maximum liability is the original cost of the Ruberoid 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 Ruberoid 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 Contractor services, 1361 Alps Road, Wayne, NJ Bldg 7-1of leak resulting from manufacturing defect or ordinary wear and tear by the elements.	Written notification within 30 days of discovery of leak to GAF Contractor Services Department, 1361 Alps Road, Building 7-1, Wayne, NJ 07470.	Written notification within 30 days of discovery of leak or a failure of the LWIC insulation to GAF Contractor Services Department, 1361 Alps Road, Building 7-1, Wayne, NJ 07470.
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.	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.	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 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, 8, 10, 11, 13, 15, 17, 22, 24. Warranty also excludes new penetrations, modifications or additions, damage resulting from removal of plaza decking material applied over the GAF roofing materials, and damage caused by vehicular traffic on the plaza deck.	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.

<b>13. Wind coverage/exclusions</b>	Warranty excludes windstorms, hurricanes, and tornadoes. GAF indicates that there is no coverage for damage caused by wind.	Warranty excludes windstorms, hurricanes, and tornadoes. GAF indicates that there is no coverage for damage caused by wind.	Warranty excludes windstorms, hurricanes and tornadoes. GAF indicates that there is no coverage for damage caused by wind.
<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	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.	C, H, I, S. Also, guarantee states that cancellation of this guarantee will result if roof is damaged by any cause listed as an exclusion (See Item 12 above) 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 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 to rectify the damage and preserve the integrity of the roof following notification by GAF.
<b>15. Cost to obtain</b>	None	C, H, I, S. Also, guarantee states that cancellation of this guarantee will result if roof is damaged by any cause listed as an exclusion (See Item 12 above) if the damage affects the integrity or watertightness of the roof and owner does not promptly make repairs following notification by GAF.	5 years: \$6.00/square; 10 years: \$10.00/square; 12 years: \$12.00/square; 15 years: \$14.00/square; 20 years: \$19.00/square
<b>16. Minimum charge</b>	None	10 years: \$800; 15 years: \$1,000; 20 years: \$1,200	5 yrs: \$450; 10 yrs: \$850; 12 yrs: \$900; 15 yrs: \$1,000; 20 yrs: \$1,200
<b>17. Ineligible structure or building use</b>	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	High-humidity buildings (i.e., car washes, swimming pools), domed structures, heated tanks, storage silos, drying kilns, freezer or cooler buildings when freezer or cooler insulation is also the roof insulation.	High-humidity buildings (i.e., car washes, swimming pools), domed structures, heated tanks, storage silos, drying kilns, freezer or cooler buildings when the freezer or cooler insulation is also the roof insulation.
<b>18. Pre-construction notice and approval requirements</b>	None	Contractor must submit a notice of award of contract at least ten days prior to commencement, providing job details.	The contractor must submit a notice of award of contract at least ten days prior to commencement, providing job details.
<b>19. Approved, authorized, or licensed requirements</b>	None	Yes	Yes
<b>20. Job inspection policy</b>	No on-site inspections	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. Flood testing of all plaza deck roofing installations is required.	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.
<b>21. Contractor's post-installation obligation</b>	None	Contractor obligated to make repairs to all leaks and workmanship deficiencies for two years.	Contractor obligated to make repairs to all leaks and workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No; GAF indicates that it does not carry insurance covering its warranty 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.
<b>23. Issuing entity manufactures and/or sells products</b>	GAF manufactures and sells the product.	GAF manufactures and sells product.	GAF manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal policy	No renewal policy
<b>25. Assignability</b>	Not transferable or assignable in any manner	Assignable to another owner only if (1) request is made in writing 30 days after ownership transfer; (2) the visible GAF roofing materials and plaza deck are 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 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.
<b>26. Special features/conditions</b>	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 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.	Upon request by GAF, the owner shall remove (and subsequently replace) all plaza deck assembly materials to expose the GAFMC Roofing Materials to allow for inspection and repair of the GAFMC Roofing Materials. Removal and replacement of the plaza deck assembly materials shall be made at the sole cost of the owner even if GAF determines that the leak is covered by this guarantee. 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 to the specification is approved in writing by an authorized GAF technical service manager.	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 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. 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 to the specifications 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 guarantee provided that the temporary repairs are reasonable and customary, and do not result in permanent damage to the GAF membrane or base flashing. Owner is responsible for all expenses associated with temporary repairs. No claim may be made in respect to thermal performance unless based on tests carried out by a qualified laboratory using tests and procedures satisfactory to GAF. GAF reserves the right to perform thermal testing on the LWIC insulation at its discretion and at its own cost.
<b>27. Executed by owner</b>	Yes (See Special Features/Conditions.)	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)	GenCorp, Inc.
2. Title, original publication date, and identifying symbol, if any	"EverGuard Material Only Guarantee (A Limited Warranty);" January 1, 1998; Form 10512 1/98	"EverGuard Silver Seal Guarantee;" January 1998; Form 10511 1/98	"Ten Year Membrane Only Warranty For Commercial Buildings"; 1997; 4-97
3. Product, specification, or system covered	All EverGuard Single-Ply Membrane Applications	EverGuard Single-Ply Membrane Systems	GenFlex Thermoplastic, PVC, and TPO membranes, GenFlex EPDM
4. Scope of coverage	Material only; GAF warrants that the EverGuard roof membrane and EverGuard coated metal and membrane flashing materials will withstand ordinary wear and tear by the elements and will be free of manufacturing defects which affect their ability to maintain the roof in watertight condition.	Material and workmanship; GAF guarantees to make repairs to GAF EverGuard roofing membrane, coated metal roof edges and base flashing, membrane base flashing, expansion joint covers, and pre-flashed accessories as are necessary to correct leaks resulting solely from natural deterioration of the EverGuard roofing materials and from workmanship in applying the EverGuard roofing materials.	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.
5. Length of coverage	10 years	10 years: All materials and systems 15 years: Minimum .045" material, all systems 20 years: Minimum .080" material, new/tear-off systems	10 years
6. Nature of remedy	GAF's sole responsibility is the repair or replacement, at GAF's option, of that portion of the EverGuard 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 other roof components used with the EverGuard materials is not included. If GAF determines there are manufacturing defects covered by this warranty, GAF will repair or replace the EverGuard materials within 90 days after notification of leaks.	GAF will make repairs to GAF EverGuard roofing membrane, coated metal roof edges and base flashing, membrane base flashing, expansion joint covers, and pre-flashed accessories as shall be necessary to correct covered leaks at no cost to owner. Warranty excludes repair or replacement of insulation or other materials not sold by GAF	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.
7. Monetary limitations	None stated	GAF=s maximum liability shall not exceed in the aggregate over the life of guarantee more than the original cost of the GAF supplied materials and reasonable and customary cost of labor used to install such materials.	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.
8. Notification requirements	Written notice within 30 days of discovery of leak to GAF EverGuard Contractor Services Department, 1361 Alps Road, Building 7, Wayne, NJ 07470. Notice to the roofing contractor is not notice to GAF.	Written notification within 30 days of discovery of leak to GAF Contractor Services Department, 1361 Alps Road, Building 7, Wayne, NJ 07470. Notice to roofing contractor is not notice to GAF.	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, Ohio 43537, Attention: Technical Department.
9. Exclusive or additional remedy	Warranty 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. 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.	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. 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.	Remedy stated in warranty is sole and exclusive remedy for failure of the roofing membrane; no other express warranties; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	GAF=s determination	Neutral (no provision)	Neutral
12. Specific exclusions from coverage (see item 12 in Introduction)	1,2,3,4,5,6,7,8,9,10,11 12,13,15,17,19,20,22,24	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	1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 13, 24. (Warranty also specifically 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.	GAF indicates warranty covers roof damage resulting from wind speeds up to 60 mph. Warranty excludes roof damage resulting from windstorms above 60 mph, hurricanes and tornadoes.	Warranty excludes damage resulting from wind gusts in excess of 54 mph and hurricanes.
14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)	Warranty states that cancellation of this warranty will result if the roof is damaged by any cause listed as an exclusion (See Item 12 above) if the damage affects the integrity or watertightness of the roof.	C, H, I, S. Also, guarantee states that guarantee will be canceled if roof is damaged by any cause listed as an exclusion (See Item 12 above) if the damage affects the integrity or watertightness of the roof and owner does not promptly make repairs following notification by GAF.	B, C, D, H, K
15. Cost to obtain	None	10 years: \$4.00/square 15 years: \$6.00/square 20 years: \$8.00/square	None

<b>16. Minimum charge</b>	None	10 years: \$400      20 years: \$900 15 years: \$600	None
<b>17. Ineligible structure or building use</b>	Private residences, walking decks, applications over buildings with high internal humidity, freezer buildings or buildings used for cold storage unless approved in writing in advance by GAF.	Private residences, walking decks, buildings with high internal humidity, freezer buildings or buildings used for cold storage unless approved in writing in advance by GAF	Private residences, walking decks
<b>18. Pre-construction notice and approval requirements</b>	Pre-installation form is submitted by contractor, reviewed by Contractor Services department, project acceptance is faxed and/or mailed back to contractor.	Pre-installation form is submitted by contractor, reviewed by Contractor Services department, project acceptance is faxed and/or mailed back to contractor.	None
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	No
<b>20. Job inspection policy</b>	No on-site inspections	GAF technical field representative makes on-site inspections prior to and during (as required by project size and project specifications) and after application, as well as two years after issuance of warranty; no charge.	No on-site inspections
<b>21. Contractor's post-installation obligation</b>	None; material-only guarantee	Contractor obligated to make repairs to all leaks and workmanship deficiencies for two years.	None; material-only warranty
<b>22. Backed by named insurance or surety</b>	No; GAF indicates it does not carry insurance covering its guarantee obligations.	No; GAF indicates it does not carry insurance covering its guarantee obligations	No; GenCorp indicates that it is self-insured.
<b>23. Issuing entity manufactures and/or sells products</b>	GAF sells products only.	GAF sells products only.	GenCorp manufactures and sells GenFlex thermoplastic PVC and TPO membranes and only sells GenFlex EPDM.
<b>24. Conditions for renewal or extension</b>	No renewal provision.	No renewal provision.	No renewal provision
<b>25. Assignability</b>	Not transferable or assignable in any manner.	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.	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 the owner's obligations under this warranty.
<b>26. Special features/conditions</b>	<p>The owner must initiate and follow a 9-point maintenance program prescribed by GAF on the reverse side of guarantee including: (1) maintaining a file showing all inspections, repairs, original construction drawings and specifications; (2) inspecting roof at least semiannually; (3) inspecting roof for damage after severe weather conditions; (4) repairing non-guaranteed conditions affecting the GAF roof system; (5) removing any debris; (6) examining/reattaching loose metalwork; (7) repairing loose masonry/coping stones; (8) examining roof top equipment to determine if they move excessively or leak; and (9) minimize rooftop traffic.</p> <p>GAF shall not be responsible for or liable for any change or amendment to the GAF specifications, unless the change or amendment to the specifications is approved in writing by an authorized GAF Contractor Services manager.</p>	<p>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 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.</p> <p>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.</p> <p>GAF shall not be responsible for or liable for any change or amendment to the GAF roof specifications in regard to the roof construction, unless the change or amendment to the specifications is approved in writing by an authorized GAF Contractor Services manager.</p> <p>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 guarantee provided that the temporary repairs are reasonable and customary, and do not result in permanent damage to the GAF membrane or base flashing. Owner is responsible for all expenses associated with temporary repairs</p>	<p>While GenCorp reserves the right to suspend its obligations under the warranty if all bills for installation, supplies, and service have not been paid in full to the roofing contractor 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>
<b>27. Executed by owner</b>	Yes; owner must sign and mail in warranty registration form within 30 days of roof completion.	No	Registration form is to be completed and submitted to GenFlex Roofing Systems in Maumee, Ohio.

## 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	"Thermoplastic Roofing System Warranty"; 1996; 10-96	"EPDM Roofing System Warranty"; 1996; 10-96	"Limited Membrane Only Warranty;" 1996; 10-96
3. Product, specification, or system covered	GenFlex PVC and GenFlex TPO Roofing Systems	GenFlex EPDM	GenFlex Thermoplastic PVC and TPO membranes, GenFlex EPDM
4. Scope of coverage	Material and workmanship; GenCorp warrants that it will repair leaks in the GenFlex RM or GenFlex TPO roofing system caused by a defect in GenFlex brand materials or workmanship of the GenFlex authorized contractor. The roofing system consists of GenFlex RM or GenFlex TPO brand membrane, GenFlex brand insulation, fasteners, adhesives, sealants, flashings, fastener plates, metal bars and related GenFlex brand accessory items when used in accordance with GenFlex's published written technical specifications.	Material and workmanship; GenCorp warrants that it will repair leaks in the GenFlex EPDM roofing system caused by a defect in GenFlex brand materials or workmanship of the GenFlex authorized contractor. The roofing system consists of GenFlex EPDM brand membrane, GenFlex brand insulation, fasteners, adhesives, sealants, flashings, roofing tapes, fastener plates, metal bars, and related GenFlex EPDM brand accessory items when used in accordance with GenFlex'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.
5. Length of coverage	5, 10, 15 or 20 years	5, 10, 15 or 20 years	5, 10, 15 or 20 years. In order to obtain 20 year coverage, thermoplastic membranes must be at least .060 mils.
6. Nature of remedy	If there is a leak caused by a defect in GenFlex brand materials or workmanship, GenCorp will repair the leak.	If there is a leak caused by a defect in GenFlex brand materials or workmanship, GenCorp will repair the leak.	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.
7. Monetary limitations	None stated.	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.
8. Notification requirements	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	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	Remedy stated in warranty is sole and exclusive remedy for failure of the system; no other express warranties; excludes UCC warranties.	The owner's sole and exclusive remedy for failure of the system; excludes UCC warranties.	Remedy stated in warranty is the sole and exclusive remedy for failure of the roofing membrane; no other express warranties; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral	GenCorp's determination	Neutral
12. Specific exclusions from coverage (see item 12 in Introduction)	1,2,3,4,5,6,7,9,10,12 (see Special Features/Conditions), 1-3,17,24. (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.)	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	Warranty excludes roof damage resulting from wind gusts in excess of 54 mph and hurricanes. GenCorp indicates that, when a request is made prior to bidding and after a specific roof system design criteria is met, GenCorp's "Thermoplastic Roofing System High Wind Warranty" covering winds of peak gusts up to 100 mph may be obtained. GenFlex Technical Department must be contacted for approval.	Warranty excludes roof damage resulting from wind gusts in excess of 54 mph and hurricanes. GenCorp indicates that, when a request is made prior to bidding and after a specific roof system design criteria is met, GenCorps "EPDM Roofing System High Wind Warranty" covering winds of peak gusts up to 100 mph may be obtained. GenFlex Technical Department must be contacted for approval.	Warranty excludes roof damage resulting from wind gusts in excess of 54 mph and hurricanes.
14. Specific conditions to make warranty ineffective or null and void (see item 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 (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	5 yrs: \$3.00/sq; 10 yrs: \$6.00/sq; 15 yrs: \$8.00/sq; 20 yrs: \$10.00 sq.	5 ys: \$3.00/sq; 10 yrs: \$5.00/sq; 15 yrs: \$8.00/sq; 20 yrs: \$10.00/sq	10 years: no charge; 15 years: \$100; 20 years: \$200

<b>16. Minimum charge</b>	5 years: \$250; 10 years: \$300; 15 years: \$400; 20 years: \$550	5 years: \$250; 10 years: \$300; 15 years: \$400; 20 years: \$550	10 years: no charge; 15 years: \$100; 20 years: \$200.
<b>17. Ineligible structure or building use</b>	Private residences, walking decks	Private residences, walking decks	Private residences, walking decks
<b>18. Pre-construction notice and approval requirements</b>	Authorized contractor must submit pre-job survey form to GenCorp technical department in Maumee, Ohio	Authorized contractor must submit pre-job survey form to GenCorp technical department in Maumee, Ohio	Authorized contractor must submit pre-job survey form to GenFlex Roofing Systems technical department in Maumee, Ohio.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	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, no charge.	Upon request or GenFlex evaluation, a GenFlex technical representative makes on-site inspection prior to, during application and after completion prior to issuance of warranty; no charge.	No on-site inspections
<b>21. Contractor's post-installation obligation</b>	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
<b>22. Backed by named insurance or surety</b>	No; GenCorp indicates that it is self-insured.	No; GenCorp indicates that it is self-insured.	No; GenCorp indicates that it is self-insured.
<b>23. Issuing entity manufactures and/or sells products</b>	GenCorp manufactures and sells GenFlex PVC and TPO thermoplastic membranes.	GenCorp sells product only.	GenCorp manufactures and sells GenFlex thermoplastic PVC and TPO membranes and only sells GenFlex EPDM.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	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.	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 the owner's obligations under this warranty.
<b>26. Special features/conditions</b>	<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>While GenCorp reserves the right to suspend its warranty obligations if all bills for installation have not been paid, or the warranty fee has not been paid or if the owner has not reimbursed GenCorp for claim investigation costs, the sole and exclusive remedy provision for failure of the roof membrane and exclusion of other warranties, including UCC warranties, remains in full force and effect.</p> <p>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, walk pads, and any 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>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>While GenCorp reserves the right to suspend its warranty obligations if all bills for installation have not been paid, or the warranty fee has not been paid or if the owner has not reimbursed GenCorp for claim investigation costs, the sole and exclusive remedy provision for failure of the roof membrane and exclusion of other warranties, including UCC warranties, remains in full force and effect.</p> <p>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, walk pads, and any 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>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 an repair costs incurred by GenCorp.</p> <p>While GenCor reserves the right to suspend its warranty obligations if all bills for installation have not been paid, or the warranty fee has not been paid or if the owner has not reimbursed GenCor for claim investigation costs, the sole and exclusive remedy provision for failure of the roof membrane and exclusion of other warranties, including UCC warranties, remains in full force and effect.</p> <p>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, walk pads, and any 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>
<b>27. Executed by owner</b>	No	No	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	W.R. Grace & Co. - Conn.	W.R. Grace & Co. - Conn.	W.R. Grace & Co. - Conn.
2. Title, original publication date, and identifying symbol, if any	"PRMA System Platinum 15 Year Material and Labor Warranty"; June 1997; PRMA-032 6/97	"PRMA System 10 Year Material Warranty"; June 1997; PRMA-031 6/97	"PRMA System Gold 10 Year Material and Labor Warranty"; June 1997; PRMA-035 6/97
3. Product, specification, or system covered	PRMA membrane	PRMA Membrane	PRMA membrane
4. Scope of coverage	Material and workmanship; Grace agrees to make or cause to be made, at Grace's expense, all repairs necessary to correct leaks to the Grace PRMA System, resulting from system membrane deterioration as a result of ordinary wear and tear and the effects thereof; improper workmanship by the contractor in the installation of the System; splits in the PRMA System membrane; temperature fluctuations or thermal shock; and System membrane slippage.	Material only; Grace warrants that water will not leak directly through any individual sheet of PRMA membrane as a result of deterioration of the sheet caused by ordinary wear and tear and the effects thereof and the PRMA membrane will bridge ruptures caused by cracking of the immediate substrate up to 1.6 mm (0.0625 in.) in width.	Material and workmanship; Grace agrees to make or cause to be made, at Grace's expense, all repairs necessary to correct leaks to the Grace PRMA System resulting from system membrane deterioration as a result of ordinary wear and tear and the effects thereof; improper workmanship by the contractor in the installation of the PRMA System; splits in the System membrane; temperature fluctuations or thermal shock; and System membrane slippage.
5. Length of coverage	15 years	10 years	10 years
6. Nature of remedy	Grace agrees to make or cause to be made, at Grace's expense, all repairs necessary to correct leaks. Cost for removing ballast or removable pavers is the responsibility of Grace. Cost for removing solid or inter-locking pavers or otherwise exposing the PRMA System from structural or solid overburden is the responsibility of owner.	Grace will supply replacement PRMA membrane, and accessory products deemed necessary and approved by Grace equal to the cost of materials paid to Grace for the original installation. Warrants does not cover any costs or expenses associated with labor costs for the removal of ballast or pavers or otherwise exposing the PRMA membrane and installation of replacement membrane.	Grace agrees to make or cause to be made, at Grace's expense, repairs necessary to correct leaks. Costs for removing ballast or removable pavers is the responsibility of Grace. Cost for removing solid or interlocking pavers or otherwise exposing the PRMA system is the responsibility of owner.
7. Monetary limitations	Grace's total liability shall not exceed the cost of materials required and approved by Grace for repair plus labor costs for repair activities also approved by Grace.	Grace's liability to provide replacement material is limited to the cost of materials paid to Grace for the original installation.	Grace's total liability shall not exceed the cost of materials required and approved by Grace for repair plus labor costs for repair activities approved by Grace.
8. Notification requirements	Written notice within 30 days from the date of discovery of the need for any repair or the date such need should reasonably have been discovered that may be a responsibility of Grace.	None stated.	Written notice within 30 days from the date of discovery of the need for any repair or the date such need should reasonably have been discovered that may be a responsibility of Grace.
9. Exclusive or additional remedy	Owner waives any and all other claims, actions, and demands relating to the use of the PRMA System. Statements, obligations and representations contained in warranty and made expressly in lieu of all other warranties; excludes UCC warranties.	Owner waives any and all other claims, actions, and demands relating to the use of the PRMA System. Statements, obligations, and representations contained in the warranty and made expressly in lieu of all other warranties; excludes UCC warranties.	Owner waives any and all other claims, actions, and demands relating to the use of the PRMA System. Statements, obligations, and representations contained in warranty are made expressly in lieu of all other warranties; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral	Grace's determination	Neutral
12. Specific exclusions from coverage (see item 12 in Introduction)	1, 2, 3, 4, 6, 7, 8, 10, 15	1, 3, 15, 17	1, 2, 3, 4, 6, 7, 8, 10, 15
13. Wind coverage/exclusions	Warranty excludes windstorms, hurricanes and tornadoes. Grace indicates there is no coverage for damage caused by wind.	No coverage for damage caused by wind.	Warranty excludes windstorms, hurricanes and tornadoes. Grace indicates there is no coverage for damage caused by wind.
14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)	C, I	R	C, I
15. Cost to obtain	\$4.50/square	\$1.50/square	\$2.50/square

<b>16. Minimum charge</b>	\$450	\$150	\$250
<b>17. Ineligible structure or building use</b>	None	None	None
<b>18. Pre-construction notice and approval requirements</b>	Grace requires contractor to give a pre-job report prior to commencement of installation.	Grace requires contractor to provide a pre-job report prior to commencement of installation.	Grace requires contractor to give a pre-job report prior to commencement of installation.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	Grace representative makes on-site inspections prior to and after completion, prior to issuance of warranty, as well as two years after issuing warranty; no charge.	Grace representative makes on-site inspections prior to and after completion, prior to issuance of warranty, as well as two years after issuing warranty; no charge.	Grace representative makes on-site inspections prior to and after completion, prior to issuance of warranty, as well as two years after issuing warranty; no charge.
<b>21. Contractor's post-installation obligation</b>	Contractor obligated to make repairs to workmanship deficiencies for two years.	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.
<b>22. Backed by named insurance or surety</b>	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.
<b>23. Issuing entity manufactures and/or sells products</b>	Grace manufactures and sells product.	Grace manufactures and sells product.	Grace manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	Not assignable	No restrictions stated.	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 structure 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.
<b>26. Special features/conditions</b>	PRMA System shall be maintained by owner in accordance with such instructions of Grace as may be in effect from time to time.  Warranty provides that Grace shall not be liable for penal damages.	Warranty provides that Grace shall not be liable for penal damages.	PRMA System must be maintained by owner in accordance with such instructions of Grace as may be in effect from time to time.  Warranty provides that Grace shall not be liable for penal damages.
<b>27. Executed by owner</b>	Yes; warranty is to be signed and "accepted" by owner and installing contractor.	Yes; warranty is to be signed and "accepted" by owner and installing contractor.	Yes; warranty is to be signed and "accepted" by owner and installing contractor.

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Henry Company	Henry Company	Herbert Malarkey Roofing Company
2. Title, original publication date, and identifying symbol, if any	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	Malarkey Roofing System Warranty
3. Product, specification, or system covered	Built-up roofing specifications HM107W, HM107C, HM107-IW, HM107-IC, HM107-5, HM107LWC, HM106W, HM106-IW	Built-up roofing specifications HM106W, HM106C, HCA80W HCG203W	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 Panoply SBS mineral cap sheet, #917 SBS mineral cap sheet, #919 SBS smooth cap sheet
4. Scope of coverage	Material and workmanship: Henry Company warrants the roof membrane against leaks and will cause to be repaired at no cost to the building leaks occurring in the roof membrane that are due to ordinary wear of the elements.	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.	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.
5. Length of coverage	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	10, 12, 15, or 20 years
6. Nature of remedy	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.	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.
7. Monetary limitations	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.	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.)
8. Notification requirements	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	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
9. Exclusive or additional remedy	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.	Warranty is in lieu of and excludes all other warranties, guarantees or obligations; 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 12 in Introduction)	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.	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 15, 17, 23

<b>13. Wind coverage/exclusions</b>	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.	Warranty excludes windstorms, hurricanes, and tornadoes. Malarkey indicates that there is no coverage for damage caused by wind.
<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	B, D, F, H	B, H, S	C
<b>15. Cost to obtain</b>	\$10.00/square	\$10.00/square	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
<b>16. Minimum charge</b>	\$1,000	\$1,000	10 yrs (with \$35/sq monetary limitation): \$400; 10 yrs (with \$50/sq monetary limitation): \$450; 10 yrs (without monetary limitation): \$600; 12 yrs: \$800; 15 yrs: \$1,000; 20 yrs: \$1,500
<b>17. Ineligible structure or building use</b>	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.	Cold storage, single family
<b>18. Pre-construction notice and approval requirements</b>	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.	Warranty application must be filed with and approved by Malarkey prior to job start.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	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.	Malarkey representative makes inspections prior, during, and after application depending upon size; no charge.
<b>21. Contractor's post-installation obligation</b>	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 all leaks and any defects for two years.
<b>22. Backed by named insurance or surety</b>	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; Malarkey indicates that it does not carry insurance covering its warranty obligations.
<b>23. Issuing entity manufactures and/or sells products</b>	Henry Company manufactures and sells product.	Henry Company manufactures and sells the product.	Malarkey manufactures and sells product
<b>24. Conditions for renewal or extension</b>	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.	No renewal provision	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.
<b>25. Assignability</b>	Warranty may be transferred to a new building owner with prior written consent of Henry Company, which consent shall not be unreasonably withheld; consent shall not be determined to be unreasonably withheld if the use of the building by any owner is materially different from the use of the prior building owner.	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.	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.
<b>26. Special features/conditions</b>	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.	Warranty is only valid when Malarkey pre-approved asphalt, base flashing system, and roof insulation when the roof is insulated are used.
<b>27. Executed by owner</b>	No	No	No



## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Imper Italia S.p.A.	Intec/Permugas, a division of U.S. Intec, Inc.	International Diamond 105 Non-Penetrating Roofing Systems, Inc. (IDS)
2. Title, original publication date, and identifying symbol, if any	Imper Italia Roofing Membrane Guarantee	Roofing System Guarantee; September 1996	Limited Workmanship Warranty; Revised 12/95
3. Product, specification, or system covered	Paralon NT4, Arwenol ARD/S	Built-up roofing specifications: See specification manual for details A: G-B4UP-M B: M-84UP=N M-4TP-RI C: ERA-84TP-N G-B5UP-N M-B5UP-N M-5TP-RI ERA-B5TP-N G-4UP-RI M-4UP-RI ERA-4TP-RI G-B4TP-N M-5UP-TI ERA-B4TP-N G-B5TP-N M-B4TP-N ERA-B5TP-N G-4TP-RI M-B5TP-N ERA-B5TP-RI	Diamond 105, Seal-A-Plate, FM Bar, Ballasted, Bonded Plate, 135 Totally Adhered, Reinforced
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/Permugas guarantees to the original building owner that it will repair or replace, at its sole discretion, the Intec/Permugas 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/Permugas 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.)	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.)
5. Length of coverage	10 years	5, 10, 15, or 20 years (length of coverage depends upon number and type of plies as well as climate zone)	10 years workmanship, 15 years materials
6. Nature of remedy	Imper Italia will provide replacement material at its own expense.	Intec/Permugas shall repair or replace the membrane and base flashings or any portion thereof to make the Intec/Permugas 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.)	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 de-fective 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 re-placement of the defective IDS product by repair or substitution of new aterial.
7. Monetary limitations	Imper Italia's total liability shall not exceed the original cost of its membrane roofing material.	Intec/Permugas' maximum liability shall not exceed in the aggregate over the life of the guarantee more than the dollar amount inserted on an individual basis.	IDS' obligation to remedy defects shall not exceed the original cost of IDS materials as charged by IDS.
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/Permugas 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	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
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.	The warranty replaces and excludes all other warranties; remedy stated in warranty is the sole and exclusive remedy; excludes UCC warranties. The warranty states: AThe 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.≡
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Rol-Ply, Inc.'s determination	Intec/Permugas' determination (See Special Features/Conditions.)	IDS= determination
12. Specific exclusions from coverage (see item 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/Permugas was notified within 15 days	1, 2, 3, 4, 5, 6, 7, 10, 11, 12 (including those items contained in <i>IDS Roofing Care and Maintenance Guide</i> ), 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.)
13. Wind coverage/exclusions	Warranty does not mention wind conditions specifically.	Intec/Permugas indicates that there is no coverage for damage caused by wind. Guarantee excludes windstorms, hurricanes, and tornadoes.	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.)
14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)	B, C, J, N	B, C, E, G, H, I, L, M, R (See Special Features/Conditions.)	C, M, N, S
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	\$8.00/square

16. Minimum charge	None	5 years: \$600; 10 years: \$750; 12 years: \$800; 15 years: \$1,000; 20 years: \$1,500	10 years: \$500, 15 years: \$600
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 areas	The warranty states that IDS shall have no obligation if building is used for noncommercial purposes, such as residential, personal, family, or household purposes.
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/Permaglas ten days prior to commencement of guaranteed job.	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
19. Approved, authorized, or licensed requirements	Yes	Yes	
20. Job inspection policy	Imper Italia inspects job site prior to and after application prior to issuance of guarantee; there may be an inspection charge.	Intec/Permaglas technical roof inspectors make on-site inspections at job completion and prior to the issuance of a guarantee and at two years after the issuance of the guarantee; no charge.	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.
21. Contractor's post-installation obligation		Contractor is responsible for any repairs that may be necessary as a result of improper installation as to which complaints are made or inspections reveal to be necessary, within a two year period after completion of the roof. Contractor agrees to assist U.S. Intec in inspections so long as inspections and subsequent repairs are made within 3 months after the 2 <sup>nd</sup> anniversary of the completion of the roof.	The contractor is obligated to make repairs to workmanship deficiencies for two years.
22. Backed by named insurance or surety	No	No; Intec/Permaglas indicates that it does not carry insurance covering its guarantee obligations.	No; IDS indicates that it does not carry insurance covering its warranty obligations.
23. Issuing entity manufactures and/or sells products	Imper Italia S.p.A. manufactures product; product sold in United States by its representative, Rol-Ply, Inc.	Intec/Permaglas manufactures and sells product.	IDS manufactures and sells the product.
24. Conditions for renewal or extension	No renewal provision	No renewal provisions.	No renewal provision.
25. Assignability	No restrictions stated.	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/Permaglas, Attn: Contractor Services Department, 1361 Alps Rd., Wayne, NJ 07470 within 30 days after ownership transfer; (2) the membrane is inspected by Intec/Permaglas and any required repairs are completed at the owner's expense; (3) the proposed assignment is approved in writing by an authorized Intec/Permaglas Contractor Services Manager; and (4) an assignment fee of \$750 is paid to Intec/Permaglas. The guarantee is not otherwise transferable or assignable, directly or indirectly.	The warranty is not transferable
26. Special features/conditions	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.	<p>The guarantee excludes workmanship coverage from Intec/Permaglas for first two years. (See Item #21 above.)</p> <p>In the event Intec/Permaglas determines that complaint is excluded by the guarantee, owner shall be responsible for reimbursing Intec/Permaglas for the reasonable costs associated with the inspection. Owner's failure to reimburse Intec/Permaglas within 30 days of receipt of invoice shall terminate Intec/Permaglas obligations. If the inspection occurs during the first two years, the reimbursable expenses are the joint obligation of the owner and the roofing contractor.</p> <p>Intec/Permaglas may make inspection during the period between 23 and 25 months after validation of guarantee. An inspection report detailing any application related inadequacies or leaks will be provided to owner and roofing contractor. Owner and roofing contractor agree that all such application inadequacies or leaks will be repaired within 30 days, weather permitting.</p> <p>If Intec/Permaglas discovers conditions in or adjacent to the roofing system that are not covered by the guarantee but which affect the watertight integrity of the roof system, the owner agrees to completely remedy the condition within 30 days. Owner shall send an inspection report to Intec/Permaglas detailing such repair within 15 days of their completion. Intec/Permaglas representatives may be retained to furnish all necessary inspection services at owner's cost.</p> <p>In the event the owner discovers leaks or other conditions which create an emergency condition, the owner may make essential temporary repairs as necessary at the owner's expense.</p> <p>Owner shall perform routine inspections and maintenance. Regular inspections should be made at least once a year and as soon as possible after extreme weather conditions such as heavy winds, rain or hail, excessive snow or ice build-up and/or earthquakes. Any existing or potential problems discovered during an inspection must be reported to Intec Permaglas immediately.</p> <p>No representative, employee or agent of Intec/Permaglas or any other person has the authority to assume for Intec/Permaglas any additional or other liability or responsibility. Intec/Permaglas shall not be responsible for any change or amendment to the Intec/Permaglas roof specifications unless approved in writing by an authorized Intec/Permaglas Technical Services Manager.</p> <p>Absent reasonable access to the roof, owner shall be responsible for all additional expenses incurred by Intec/Permaglas. Failure of owner to reimburse Intec/Permaglas promptly for such additional expenses shall void the guarantee.</p>	<p>Although the warranty states that it covers workmanship of any installed IDS product, the warranty also states: A 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: A 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.</p> <p>All legal actions against IDS must be noticed and venued in Toledo, Lucas County, Ohio and Ohio law shall apply.</p> <p>The warranty states: A 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. =</p> <p>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.</p> <p>The warranty states: A 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. =</p> <p>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.</p> <p>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.</p>
27. Executed by owner	No	No	Yes; warranty must be signed, dated, and returned to IDS at its office in Toledo, Ohio not later than 30 days after receipt.

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	International Diamond 105 Non-Penetrating Roofing Systems, Inc. (IDS)	Johns Manville International, Inc. (JM)	Johns Manville International, Inc. (JM)
2. Title, original publication date, and identifying symbol, if any	ALimited Ten Year Membrane Only Warranty (Prorated)≡; Revised 12/95	"Gold Shield Roofing System Guarantee;" September 1997; JM-645-2 (9/97), RS-7082 11-97	AUltraGard Roofing System Guarantee;≡ April 1998; RS-8048 (4/98)
3. Product, specification, or system covered	Diamond 105, Seal-A-Plate, FM Bar, Ballasted, Bonded Plate, 135 Totally Adhered, Reinforced	BUR Specifications: 4GIS, 4GIG, 5GNG, 5GLG, 5GIC, with GlasPly Premier Felts, installed over two layers of Fescoboard	EPDM: Ballasted, Mechanically Attached, Fully/ Adhered PVC: Mechanically Attached, Fully Adhered
4. Scope of coverage	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 and workmanship; JM 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 JM membrane, flashing, insulation, and accessories; all other components of building are excluded.	Material and workmanship; JM 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 JM membrane, flashing, insulation, and accessories; all other components of building are excluded.
5. Length of coverage	10 or 15 years	20 years for new construction or tear-off	5, 10 or 15 years
6. Nature of remedy	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.	JM will take prompt appropriate action to return the Roofing System to a watertight condition. Exclusive responsibility and liability of JM under guarantee is to make repairs that may be necessary to maintain the Roofing System in a water tight condition.	JM will take prompt appropriate action to return the Roofing System to a watertight condition. Exclusive responsibility and liability of JM under guarantee is to make repairs that may be necessary to maintain the Roofing System in a water tight condition.
7. Monetary limitations	IDS' obligation to remedy defects shall not exceed the original cost of IDS materials as charged by IDS.	Guarantee includes space for JM's maximum monetary obligation to be inserted. (JM indicates that for these specifications, JM's maximum liability is \$100 per sq.; minimum coverage is \$10,000.)	Guarantee includes space for JM's maximum monetary obligation to be inserted. (JM indicates that for these specifications, JM's maximum liability is the original installed cost of the roof system.)
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 to JM's Guarantee Services Department, 10100 W. Ute Ave., Littleton, CO 80127, immediately upon discovery of leak and in no event later than 30 days after discovery of leak.	Written notification to JM's Guarantee Services Department, 10100 W. Ute Ave., Littleton, CO 80127, immediately upon discovery of leak and in no event later than 30 days after discovery of leak.
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: AThe 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.≡	Guarantee states that JM 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.	Guarantee states that JM 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.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision).	Neutral; JM arranges inspection	Neutral; JM arranges inspection
12. Specific exclusions from coverage (see item 12 in Introduction)	1, 2, 3, 4, 5, 6, 7, 10, 11, 12 (including those items contained in <i>IDS Roofing Care and Maintenance Guide</i> ), 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, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 18	1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 18
13. Wind coverage/exclusions	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.	JM indicates that guarantee covers roof damage resulting from wind speeds up to 63 mph.	JM indicates that guarantee covers roof damage resulting from wind speeds up to 54 mph. Warranty excludes wind speeds in excess of a strong gale which the Baurfort Scale defines as winds between 47-54 mph.
14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)	C, M, N, S	C, F, M (See Special Features/Conditions.)	C, F, M (See Special Features/Conditions.)
15. Cost to obtain	None	\$12.00/square	PVC systems: 5 years \$ 4.00/square 10 years \$ 7.00/square 15 years \$10.00/square
16. Minimum charge	None	\$1,200	EPDM Systems: 5 years \$2.00/square 10 years \$4.00/square 15 years \$6.00/square When liquid adhesive is used, there is an additional \$1.00/square warranty charge.

<b>17. Ineligible structure or building use</b>	The warranty states that IDS shall have no obligation if building is used for noncommercial purposes, such as residential, personal, family, or household purposes.	Cold-storage buildings, private residences, storage silos, heated tanks	Cold-storage buildings, private residences, storage silos, heated tanks
<b>18. Pre-construction notice and approval requirements</b>	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.	Contractor is required to submit a guarantee application for approval 14 days prior to start of construction.	Contractor is required to submit a guarantee application for approval 14 days prior to start of construction.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	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.	Inspections made by local JM field representatives prior, during, and after application as well as two years after issuance of guarantee; no charge.	Inspections made by local JM field representatives prior, during, and after application as well as two years after issuance of guarantee; no charge.
<b>21. Contractor's post-installation obligation</b>	The contractor is obligated to make repairs to workmanship deficiencies for two years.	Contractor is obligated to make repairs to workmanship deficiencies for two years.	Contractor is obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No; IDS indicates that it does not carry insurance covering its warranty obligations.	No; JM indicates that it does not carry insurance covering its warranty obligations.	No; JM indicates that it does not carry insurance covering its warranty obligations.
<b>23. Issuing entity manufactures and/or sells products</b>	IDS manufactures and sells the product.	JM manufactures and sells product.	JM manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	The warranty is not transferable.	Guarantee will be transferred by JM, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to JM as soon as practical, but no later than 30 days after the date of building ownership transfer.	Guarantee will be transferred by JM, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to JM as soon as practical, but no later than 30 days after the date of building ownership transfer.
<b>26. Special features/conditions</b>	<p>The warranty states: AIDS 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.</p> <p>All legal actions against IDS must be noticed and venued in Toledo, Lucas County, Ohio and Ohio law shall apply.</p> <p>The warranty states: AThe 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.⚡</p> <p>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.</p> <p>The warranty states: AAll 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.⚡</p> <p>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.</p> <p>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.</p>	<p>To be eligible for this 20-year guarantee, a four-ply specification with GlasPly Premier Felts must be installed over two layers of either JM Fesco or insulation; the project must be either new construction or tear-off.</p> <p>In order to continue guarantee coverage, owner must implement a maintenance program prescribed by JM on the reverse side of the 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 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 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, JM will reimburse the owner for repair expenses for essential temporary repairs that would have been JM's responsibility.</p> <p>In the event JM pays for repairs that are required due to acts or omissions of others, JM 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. All terms and conditions are to be construed under internal law of Colorado.</p>	<p>In order to continue guarantee coverage, owner must implement a maintenance program prescribed by JM 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, JM will reimburse the owner for repair expenses for essential temporary repairs that would have been JM's responsibility.</p> <p>In the event JM pays for repairs, which are required due to acts or omissions of others, JM 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>Parties agree that any controversy or claims relating to the Guarantee shall be settled exclusively by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association at the Denver, Colorado office. All terms and conditions are to be construed under internal laws of Colorado.</p> <p>Because JM does not practice engineering or architecture, neither the issuance of the guarantee nor any review of building=s construction or inspection of roof plans by JM representatives shall constitute any warranty by JM or in any way constitute an extension of the terms and conditions of the Guarantee.</p>
<b>27. Executed by owner</b>		Yes; Guarantee must be signed, dated, and returned to JM at its office in Littleton, CO.	Yes; Guarantee must be signed, dated, and returned to JM at its office in Littleton, CO.



## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

<b>1. Identity of issuing entity</b>	<b>Johns Manville International, Inc. (JM)</b>	<b>Johns Manville International, Inc. (JM)</b>	<b>Johns Manville International, Inc. (JM)</b>
<b>2. Title, original publication date, and identifying symbol, if any</b>	"Gold Shield Roofing System Guarantee"; September 1997; JM-645-2 (9/97) RS-7082 11/97	"Gold Shield Roofing System Guarantee"; September 1997; JM-645-2 (9/97), RS-7082 11/97	"Gold Shield Roofing System Guarantee"; June 1997; JM-645-2 (6/97), RS-7082 11-97
<b>3. Product, specification, or system covered</b>	BUR Specifications: 4GIS, 4GIG, 3GIS, 3GIG, 4GIC, 4GNC, 4GNS, with use of GlasPly Premier Felts; DynaKap Modified Bitumen Specifications: 2CID, 2CIG, 2CND, 2CNG, 3CID, 3CND (See Special Features/Conditions)	BUR Specifications: 4GIS, 4GIG, 5GIC, 4GNS, 4GNG, with use of GlasPly Premier Felts; DynaKap Modified Bitumen Specifications: 3CID, 3CIG, 3FID, (See Special Features/Conditions), APP Modified Bitumen Specification:s: 3CIN-W, 3PIN-W.	BUR Specifications: 4GIS, 3GIS, 4GIG, 3GIG, 4GNS, 3GNS, 4GNG, 3GNG, 4GLG, 3GLG, 4GIC, 4GNC, 3GIC, 3GNC, 4GIG-CT, 4GNG-CT, 3GIG-CT, 3GNG-CT. Modified Bitumen Specifications: 2GID, 2GND, 2CID, 2CND, 3CID, 3CND, 3CIG, 3CNG, 2PIN-W, 2PIS-W, 2PFN-W, 3PIN-W
<b>4. Scope of coverage</b>	Material and workmanship; JM 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 JM membrane, flashing, insulation, and accessories; all other components of building are excluded.	Material and workmanship; JM 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 JM membrane, flashing, insulation, and accessories; all other components of building are excluded.	Material and workmanship; JM 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 JM membrane, flashing, insulation, and accessories; all other components of building are excluded.
<b>5. Length of coverage</b>	5 years for re-roofing; 10 years for new construction or tear-off.	20 years for new construction or tear-off.	5 or 10 years
<b>6. Nature of remedy</b>	JM will take prompt appropriate action to return the Roofing System to a watertight condition. Exclusive responsibility and liability of JM under guarantee is to make repairs that may be necessary to maintain the Roofing System in a water tight condition.	JM will take prompt appropriate action to return the Roofing System to a watertight condition. Exclusive responsibility and liability of JM under guarantee is to make repairs that may be necessary to maintain the Roofing System in a water tight condition.	JM will take prompt appropriate action to return the Roofing System to a watertight condition. Exclusive responsibility and liability of JM under guarantee is to make repairs that may be necessary to maintain the Roofing System in a water tight condition.
<b>7. Monetary limitations</b>	Guarantee includes space for JM's maximum monetary obligation to be inserted. (JM indicates that for these specifications, JM's maximum liability is the original installed cost of the roof system.)	Guarantee includes space for JM's maximum monetary obligation to be inserted. (JM indicates that for these specifications, JM's maximum liability is the original installed cost of the roof system.)	Guarantee includes space for JM's maximum monetary obligation to be inserted. (JM indicates that for these specifications, JM's maximum liability is the original installed cost of the roof system.)
<b>8. Notification requirements</b>	Written notification to JM's Guarantee Services Department, 10100 W. Ute A e., Littleton, CO 80127 immediately upon discovery of leak and in no event later than 30 days after discovery of leak.	Written notification to JM's Guarantee Services Department, 10100 W. Ute Ave., Littleton, CO 80127, immediately upon discovery of leak and in no event later than 30 days after discovery of leak.	Written notification to JM's Guarantee Services Department, 10100 W. Ute Ave., Littleton, CO 80127, immediately upon discovery of leak and in no event later than 30 days after discovery of leak.
<b>9. Exclusive or additional remedy</b>	Guarantee states that JM 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.	Guarantee states that JM 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.	Guarantee states that JM 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.
<b>10. Inclusion of consequential damages</b>	No	No	No
<b>11. Determination of warranty applicability</b>	Neutral; JM arranges inspection	Neutral; JM arranges inspection	Neutral; JM arranges inspection
<b>12. Specific exclusions from coverage (see item 12 in Introduction)</b>	1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 18	1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 18	1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 18
<b>13. Wind coverage/exclusions</b>	JM indicates that guarantee covers roof damage resulting from wind speeds up to 63 mph.	JM indicates that guarantee covers roof damage resulting from wind speeds up to 63 mph.	JM indicates that guarantee covers roof damage resulting from wind speeds up to 63 mph.
<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	C, F, M (See Special Features/Conditions.)	C, F, M (See Special Features/Conditions.)	C, F, M (See Special Features/Conditions.)
<b>15. Cost to obtain</b>	\$8.50/square	\$17.00/square	5 years: \$5.00/square; 10 years: \$6.00/square
<b>16. Minimum charge</b>	\$850	\$1,700	5 years: \$500; 10 years: \$600
<b>17. Ineligible structure or building use</b>	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
<b>18. Pre-construction notice and approval requirements</b>	Contractor is required to submit a guarantee application for approval 14 days prior to start of construction.	Contractor is required to submit a guarantee application for approval 14 days prior to start of construction.	Contractor is required to submit a guarantee application for approval 14 days prior to start of construction.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	Inspections made by local JM field representatives prior, during, and after application as well as two years after issuance of guarantee; no charge.	Inspections made by local JM field representatives prior, during, and after application as well as two years after issuance of guarantee; no charge.	Inspections made by local JM field representatives prior, during, and after application as well as two years after issuance of guarantee; no charge.

<b>21. Contractor's post-installation obligation</b>	Contractor is obligated to make repairs to workmanship deficiencies for two years.	Contractor is obligated to make repairs to workmanship deficiencies for two years.	Contractor is obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No; JM indicates that it does not carry insurance covering its warranty obligations.	No; JM indicates that it does not carry insurance covering its warranty obligations.	No; JM indicates that it does not carry insurance covering its warranty obligations.
<b>23. Issuing entity manufactures and/or sells products</b>	JM manufactures and sells product.	JM manufactures and sells product.	JM manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	Guarantee will be transferred by JM, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to JM as soon as practical, but no later than 30 days after the date of building ownership transfer.	Guarantee will be transferred by JM, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to JM as soon as practical, but no later than 30 days after the date of building ownership transfer.	Guarantee will be transferred by JM, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to JM as soon as practical, but no later than 30 days after the date of building ownership transfer.
<b>26. Special features/conditions</b>	<p>Specifications 4GIC, 4GNC, 4GNS and RGNG are eligible for this guarantee in JM=s designated Region 3 only.</p> <p>In order to continue guarantee coverage, owner must implement a maintenance program prescribed by JM on the reverse side of the 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 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 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, JM will reimburse the owner for repair expenses for essential temporary repairs that would have been JM's responsibility.</p> <p>In the event JM pays for repairs that are required due to acts or omissions of others, JM 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>Parties agree that any controversy or claims relating to Guarantee shall be settled exclusively by arbitration in accordance with the construction Industry Arbitration Rules of the American Arbitration Association at the Denver, Colorado office. All terms and conditions are to be construed under internal law of Colorado.</p> <p>Because JM does not practice engineering or architecture, neither the issuance of the guarantee nor any review of building=s construction or inspection of roof plans by JM representatives shall constitute any warranty by JM or in any way constitute an extension of the terms and conditions of the Guarantee.</p>	<p>To be eligible for this 20 year guarantee, a four-ply specification with GlasPly minimum Premier Felts must be installed over two layers of JM insulation with the top layer being JM Fesco Board. In order to continue guarantee coverage, owner must implement a maintenance program prescribed by JM on the reverseside of 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 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, JM will reimburse the owner for repair expenses for essential temporary repairs that would have been JM's responsibility.</p> <p>In the event JM pays for repairs, which are required due to acts or omissions of others, JM 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>Parties agree that any controversy or claims relating to Guarantee shall be settled exclusively by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association at the Denver, Colorado office. All terms and conditions are to be construed under internal law of Colorado.</p> <p>Because JM does not practice engineering or architecture, neither the issuance of the guarantee nor any review of building=s construction or inspection of roof plans by JM representatives shall constitute any warranty byJM or in any way constitute an extension of the terms and conditions of the Guarantee.</p>	<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 JM 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 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 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, JM will reimburse the owner for repair expenses for essential temporary repairs that would have been JM's responsibility.</p> <p>In the event JM pays for repairs, which are required due to acts or omissions of others, JM 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>Parties agree that any controversy or claims relating to Guarantee shall be settled exclusively by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association at the Denver, Colorado office. All terms and conditions are to be construed under internal law of Colorado.</p> <p>Because JM does not practice engineering or architecture, neither the issuance of the guarantee nor any review of building=s construction or inspection of roof plans by JM representatives shall constitute any warranty byJM or in any way constitute an extension of the terms and conditions of the Guarantee.</p>
<b>27. Executed by owner</b>	Yes; Guarantee must be signed, dated, and returned to JM at its office in Littleton, CO.	Yes; Guarantee must be signed, dated, and returned to JM at its office in Littleton, CO.	Yes; Guarantee must be signed, dated, and returned to JM at its office in Littleton, CO.

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Johns Manville International, Inc. (JM)	Johns Manville International, Inc. (JM)	Johns Manville International, Inc. (JM)
2. Title, original publication date, and identifying symbol, if any	"Gold Shield Roofing System Guarantee"; September 1997; JM-645-2 (9/97) RS-7082 11-97	"Gold Shield Roofing System Guarantee"; September; JM-645-2 (9/97), RS-7082 11-97	"Gold Shield Roofing System Guarantee"; September 1997; JM-645-2 (9/97), RS-7002 11-97
3. Product, specification, or system covered	BUR Specifications: 4GIS, 4GIG, 5GIC, 5GNS, 5GNG, with use of GlasPly Premier Felts and one layer of Fescoboard; DynaKap Modified Bitumen Specifications: 3CID, 3CIG, 3CND, 3CNG (See Special Features/Conditions).	APP Modified Bitumen Products: APPEX Classic FR Premium, Classic FR, Classic M, Classic S, 5S, 4S, 4M, 4MFR, 4.5M, 200, Bicolor, Tricor, Tricor MFR, when applied over one or two plies	APP Modified Bitumen Products: Bicolor or Tricor when installed over two APPEX base sheets, utilizing three plies of material.
4. Scope of coverage	Material and workmanship; JM 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 JM membrane, flashing, insulation, and accessories; all other components of building are excluded.	Material and workmanship; JM 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 JM membrane, flashing, insulation, and accessories; all other components of building are excluded.	Material and workmanship; JM 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 JM membrane, flashing, insulation, and accessories; all other components of building are excluded.
5. Length of coverage	15 years for new construction or tear-off.	5 years: any APPEX modified bitumen membrane product installed over one ply of felt or any 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
6. Nature of remedy	JM will take prompt appropriate action to return the Roofing System to a watertight condition. Exclusive responsibility and liability of JM under guarantee is to make repairs that may be necessary to maintain the Roofing System in a water tight condition.	JM will take prompt appropriate action to return the Roofing System to a watertight condition. Exclusive responsibility and liability of JM under guarantee is to make repairs that may be necessary to maintain the Roofing System in a water tight condition.	JM will take prompt appropriate action to return the Roofing System to a watertight condition. Exclusive responsibility and liability of JM under guarantee is to make repairs that may be necessary to maintain the Roofing System in a water tight condition.
7. Monetary limitations	Guarantee includes space for JM's maximum monetary obligation to be inserted. (JM indicates that for these specifications, JM's maximum liability is the original installed cost of the roof system.)	Guarantee includes space for JM's maximum monetary obligation to be inserted. (JM indicates that for these specifications, JM's maximum liability is the original installed cost of the roof system.)	Guarantee includes space for JM's maximum monetary obligation to be inserted. (JM indicates that for these specifications, JM's maximum liability is the original installed cost of the roof system.)
8. Notification requirements	Written notification to JM's Guarantee Services Department, 10100 W. Ute Ave., Littleton, CO 80127, immediately upon discovery of leak and in no event later than 30 days after discovery of leak.	Written notification to JM's Guarantee Services Department, 10100 W. Ute Ave., Littleton, CO 80127, immediately upon discovery of leak and in no event later than 30 days after discovery of leak.	Written notification to JM's Guarantee Services Department, 10100 W. Ute Ave., Littleton, CO 80127, 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 JM 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.	Guarantee states that JM 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.	Guarantee states that JM 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.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral; JM arranges inspection	Neutral; JM arranges inspection	Neutral; JM arranges inspection
12. Specific exclusions from coverage (see item 12 in Introduction)	1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 18	1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 18	1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 15, 18
13. Wind coverage/exclusions	JM indicates that guarantee covers roof damage resulting from wind speeds up to 63 mph.	JM indicates that guarantee covers roof damage resulting from wind speeds up to 63 mph.	JM indicates that 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 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	\$12.50/square	5 yrs: \$5.00/sq; 10 yrs: \$6.00/sq; 12 yrs: \$8.50/sq	\$17.00/square
16. Minimum charge	\$1,250	5 years: \$500; 10 years: \$600; 12 years: \$850	\$1,700



<b>17. Ineligible structure or building use</b>	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
<b>18. Pre-construction notice and approval requirements</b>	Contractor is required to submit a guarantee application for approval 14 days prior to start of construction.	Contractor is required to submit a guarantee application for approval 14 days prior to start of construction.	Contractor is required to submit a guarantee application for approval 14 days prior to start of construction.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	Inspections made by local JM field representatives prior, during, and after application as well as two years after issuance of guarantee; no charge.	Inspections made by local JM field representatives prior, during, and after application as well as two years after issuance of guarantee; no charge.	Inspections made by local JM field representatives prior, during, and after application as well as two years after issuance of guarantee; no charge.
<b>21. Contractor's post-installation obligation</b>	Contractor is obligated to make repairs to workmanship deficiencies for two years.	Contractor is obligated to make repairs to workmanship deficiencies for two years.	Contractor is obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No; JM indicates that it does not carry insurance covering its warranty obligations.	No; JM indicates that it does not carry insurance covering its warranty obligations.	No; JM indicates that it does not carry insurance covering its warranty obligations.
<b>23. Issuing entity manufactures and/or sells products</b>	JM manufactures and sells product.	JM manufactures and sells product.	JM manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	Guarantee will be transferred by JM, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to JM as soon as practical, but no later than 30 days after the date of building ownership transfer.	Guarantee will be transferred by JM, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to JM as soon as practical, but no later than 30 days after the date of building ownership transfer.	Guarantee will be transferred by JM, in its sole discretion, only after receiving satisfactory information and payment of a transfer fee, which must be delivered to JM as soon as practical, but no later than 30 days after the date of building ownership transfer.
<b>26. Special features/conditions</b>	<p>Specifications 5GIC, 5GNC, 5GNS and 5GNG are eligible for this guarantee in JM's designated Region 3 only. JM'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 JM 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, JM will reimburse the owner for repair expenses for essential temporary repairs that would have been JM's responsibility.</p> <p>In the event JM pays for repairs, which are required due to acts or omissions of others, JM 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. All terms and conditions are to be construed under internal laws of Colorado.</p>	<p>In order to continue guarantee coverage, owner must implement a maintenance program prescribed by JM 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, JM will reimburse the owner for repair expenses for essential temporary repairs that would have been JM's responsibility.</p> <p>In the event JM pays for repairs, which are required due to acts or omissions of others, JM 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. All terms and conditions are to be construed under internal laws of Colorado.</p>	<p>In order to continue guarantee coverage, owner must implement a maintenance program prescribed by JM 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, JM will reimburse the owner for repair expenses for essential temporary repairs that would have been JM's responsibility.</p> <p>In the event JM pays for repairs, which are required due to acts or omissions of others, JM 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. All terms and conditions are to be construed under internal laws of Colorado.</p>
<b>27. Executed by owner</b>	No	No	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	JPS Elastomerics Corp.,	JPS Elastomerics Corp.,	JPS Elastomerics Corp.,
2. Title, original publication date, and identifying symbol, if any	AHi-Tuff Plus Total Systems Limited Warranty for Commercial Building - NDL <sub>1</sub> ; January, 1995; RSD-FM-13A	ALimited Material Warranty for Commercial Building <sub>2</sub> ; January 1995, RSD-FM-12	ALimited Warranty for Commercial Building - NDL <sub>1</sub> ; January, 1995, RSD-FM-11
3. Product, specification, or system covered	Hi-Tuff Roofing System Total Roof System includes membrane, Hi-Tuff edge metal system, insulation, adhesives, fasteners, insulation plates, term bars, and other materials provided by JPS.	Hi-Tuff Roofing membrane wearing surface	Hi-Tuff Roofing System
4. Scope of coverage	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 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.	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.
5. Length of coverage	10 or 15 years	5 or 10 years	10 years
6. Nature of remedy	JPS will repair leaks in the roofing system using methods determined to be suitable at JPS's discretion.	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.	JPS will repair leaks in the roofing system using methods determined to be suitable at JPS' discretion.
7. Monetary limitations	None stated.	JPS' liability limited to the cost of the material at the time of claim, prorated for service to date of claim.	None stated.
8. Notification requirements	Written notification of leaks must be delivered to JPS Warranty Service Department at Holyoke, MA 01040-2800, within 30 days of discovery.	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	Written notification of leaks must be delivered to JPS Warranty Services Department, Holyoke, MA 01040-2800, within 30 days of discovery.
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.	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	JPS' determination; JPS' sole judgment whether specific exclusions and conditions that make warranty null and void occur.	JPS' determination; JPS' 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.
12. Specific exclusions from coverage (see item 12 in Introduction)	1, 3, 5, 7, 17. Warranty states that specific Condition M also makes the warranty inapplicable.	1, 2, 3, 16, 23	1, 3, 5, 7, 17. Warranty states that specific Condition M also makes the warranty inapplicable.
13. Wind coverage/exclusions	Warranty excludes winds of peak gust speed of ____ mph measured 10 meters above the ground, hurricanes, and tornadoes.	Warranty excludes gale-force winds.	Warranty excludes winds of peak gust speed of ____ mph measured 10 meters above the ground, hurricanes, and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)	B, C, F, G, H, I	B, C, F, G, I	B, C, F, G, H, I
15. Cost to obtain	10 years: \$8.00 or \$11.00/square; 15 years: \$9.00 and \$12.00/square	5 years: \$150; 10 years: \$300	10 years: \$6.00/square
16. Minimum charge	10 years: \$600; 15 years: \$675	5 years: \$150; 10 years: \$300	10 years: \$450
17. Ineligible structure or building use	Residential buildings	Residential buildings	Residential buildings

<b>18. Pre-construction notice and approval requirements</b>	Contractor submits request to JPS for approval of warranty form, along with diagram and details.	None	Contractor submits request to JPS for approval of warranty form, along with diagram and details.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	JPS technical representative makes on-site inspection after application prior to issuance of warranty; no charge.	JPS technical representative makes on-site inspection after application prior to issuance of warranty; no charge.	JPS technical representative makes on-site inspection after application prior to issuance of warranty; no charge.
<b>21. Contractor's post-installation obligation</b>	Contractor is normally obligated to make repairs to all leaks, any defects, and workmanship deficiencies for two years.	Contractor is normally obligated to make repairs to all leaks, any defects, and workmanship deficiencies for two years.	Contractor is normally obligated to make repairs to all leaks, any defects, and workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No	No	No
<b>23. Issuing entity manufactures and/or sells products</b>	JPS manufactures and sells the product.	JPS manufactures and sells the product.	JPS manufactures and sells the product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	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 is transferable; consult JPS for conditions of transferability. Conditions are noted in JPS maintenance instructions.
<b>26. Special features/conditions</b>	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.	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.
<b>27. Executed by owner</b>	Yes	Yes	Yes

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Koppers Industries, Inc.	Koppers Industries, Inc.	Koppers Industries, Inc.																		
2. Title, original publication date, and identifying symbol, if any	AKoppers Built-Up Roofing Classic Warranty≡; CRD-04/95 C	AKoppers Built-Up Roofing Standard Warranty≡; CRD-04/95 B	AModified Bitumen Roof Membrane Warranty≡; CRD-04/95 D																		
3. Product, specification, or system covered	Built-Up roofing specifications: 200 Series, 400 Series, 500 Series. All Classic Warranties require two layers of insulation supplied and/or approved by Koppers.	Built-Up roofing specifications: 200 Series and 400 Series	Modified bitumen specifications																		
4. Scope of coverage	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.	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.	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.																		
5. Length of coverage	5 or 10 years for BUR specifications Series 200, 400, and 500; 15 or 20 years for BUR Specification Series 200, 400, and 500	5 or 10 years for BUR specification Series 200, 400; 15 or 20 years for BUR specification Series 200, 400. 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.	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.																		
6. Nature of remedy	Koppers will undertake repairs so long as the repair is considered Aprudent≡ (i.e., Koppers considers that the cost of the repair is less than the Aremaining value≡ of the roof on the date the repair is required. ARemaining 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.	Koppers will schedule a roof inspection and arrange for any repairs that are covered by warranty.	Koppers will schedule a roof inspection and arrange for any repairs that are covered by warranty.																		
7. Monetary limitations	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.	Koppers' liability is a minimum of \$1,000 and is limited based upon the length of the warranty:  <table><tr><td><u>Length of Warranty</u></td><td><u>Liability Limit</u></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>	<u>Length of Warranty</u>	<u>Liability Limit</u>	5 years	\$100/square	10 years	\$50/square	15 years	\$75/square	20 years	\$100/square	Koppers' liability is a minimum of \$1,000 and is limited based upon the length of the warranty, as follows:  <table><tr><td><u>Length of Warranty</u></td><td><u>Liability Limit</u></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>	<u>Length of Warranty</u>	<u>Liability Limit</u>	5 years	\$100/square	10 years	\$50/square	12 years	\$100/square
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5 years	\$100/square																				
10 years	\$50/square																				
12 years	\$100/square																				
8. Notification requirements	Call Koppers at 800/468-9626 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 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 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 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.	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.	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 is 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' determination	Koppers' determination																		
12. Specific exclusions from coverage (see item 12 in Introduction)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 22, 23	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 18, 22, 23	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 22, 23																		

<b>13. Wind coverage/exclusions</b>	Warranty excludes wind damage, hurricanes, and tornadoes. Koppers indicates that there is no coverage for damage caused by wind.	The warranty excludes wind damage, hurricanes and tornadoes. Koppers indicates that there is no coverage for damage caused by wind.	The warranty excludes wind damage, hurricanes, and tornadoes. Koppers indicates that there is no coverage for damage caused by wind.
<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	H, M	H, M	H, M
<b>15. Cost to obtain</b>	5 yrs: \$ 8.00/sq; 10 yrs: \$10.00/sq; 15 yrs: \$12.00/sq; 20 yrs: \$15.00/sq	5 yrs: \$4.00/sq; 10 yrs: \$6.00/sq; 15 yrs: \$7.00/sq; 20 yrs: \$8.00/sq	5 yrs: \$4.00/sq; 10 yrs: \$5.00/sq; 12 yrs: \$6.00/sq
<b>16. Minimum charge</b>	5 yrs: \$700; 10 yrs: \$800; 15 yrs: \$900; 20 yrs: \$1,000	5 yrs: \$350; 10 yrs: \$550; 15 yrs: \$600; 20 yrs: \$650	5 yrs: \$350; 10 yrs: \$550; 12 yrs: \$600
<b>17. Ineligible structure or building use</b>	Cooler/freezer buildings, private residences	Cooler/freezer buildings, private residences	Cold-storage or freezer/cooler units
<b>18. Pre-construction notice and approval requirements</b>	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.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	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.	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.	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.
<b>21. Contractor's post-installation obligation</b>	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.
<b>22. Backed by named insurance or surety</b>	No; Koppers indicates that it is self-insured.	No; Koppers indicates that it is self-insured.	No; Koppers indicates that it is self-insured.
<b>23. Issuing entity manufactures and/or sells products</b>	Koppers manufactures and sells product.	Koppers manufactures and sells product.	Koppers sells product only.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	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.
<b>26. Special features/conditions</b>	<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 the 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 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.</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>	<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>
<b>27. Executed by owner</b>	No	No	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Koppers Industries, Inc.	MBTechnology Corporation	MBTechnology Corporation
2. Title, original publication date, and identifying symbol, if any	AKoppers IRMA Roof Warranty with Styrofoam Brand Insulation; June 1991; CRD-05/91 [Specimen copy has designation CRD-05/91SP.]	A10-Year Limited Material Warranty; 1990	MBTechnology ARoof Membrane Guarantee (Form MBT-108) ___ Year Limited; April 1990; Form MBT-108A 4/90
3. Product, specification, or system covered	IRMA Built-up Roofing specifications: 263, 264, 273, 274, 463, 464, 473, 474	All published FG90GWH, FG160CWH, SC75GWH, FGFT160CWH, MF160WAL systems. Cap sheet substitutes allowed for nonBfire-rated systems as outlined in current manual.	All published FG90GWH, FG160CWH, SC75GWH, FGFT160CWH, MF160WAL systems. Cap sheet substitutes allowed for nonBfire-rated systems as outlined in current manual.
4. Scope of coverage	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 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.	MBT guarantees that the roof membrane shall remain in a watertight condition or MBT shall repair roof membrane at its own expense.
5. Length of coverage	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 or precast 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.	10 years	10, 12, 15, or 20 years (length and type of coverage depends upon specification used).
6. Nature of remedy	Koppers will undertake repairs as long as the repair is Apracticable, i.e., the cost of the repair is less than the "remaining value" of the roof on the date the repair is required. ARemaining 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.	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.	Warranty states, A[r]oofting 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.)
7. Monetary limitations	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.	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.	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.
8. Notification requirements	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.	All repairs must be authorized in writing in advance by manager, technical services, MBTechnology, 188 S. Teilman St., Fresno, CA 93706-9956.	Written notification by certified mail to MBT's office at 188 S. Teilman, Fresno, CA 93706, within 10 days of the date owner discovers material defect.
9. Exclusive or additional remedy	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.	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. 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.
10. Inclusion of consequential damages	No	No	No

<b>11. Determination of warranty applicability</b>	Koppers determines whether repair is practical. Thermal resistance of insulation tested according to ASTM C518-85. (See Special Features/Conditions.)	MBT's determination	MBT's sole and exclusive determination as to whether leaks in MBT material will be rectified by repair or replacement.
<b>12. Specific exclusions from coverage (see item 12 in Introduction)</b>	1, 2, 3, 4, 5, 7, 8, 9, 10, 12, 15, 16, 17, 18, 22, 23	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, 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.
<b>13. Wind coverage/exclusions</b>	The warranty covers roof damage resulting from wind speeds up to 70 miles per hour.	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.]
<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	B (except emergency repairs), G	L	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.
<b>15. Cost to obtain</b>	10 yrs: \$9.00/sq; 15 yrs: \$10.50/sq; 20 yrs: \$13.00/sq	None	10 or 12 yrs: \$6.00/sq; 15 yrs: \$8.50/sq; 20 yrs: \$13.50/sq
<b>16. Minimum charge</b>	10 yrs: \$800; 15 yrs: \$900; 20 yrs: \$1,000	None	10 or 12 yrs: \$600; 15 yrs: \$850; 20 yrs: \$1,350
<b>17. Ineligible structure or building use</b>	Cooler/freezer buildings, private residences	Coolers, cold-storage, or freezer buildings	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.
<b>18. Pre-construction notice and approval requirements</b>	The contractor telephones application to Koppers 14 days prior to job start. If project is approved, contractor is sent application for warranty.	None required.	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.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	No	Yes
<b>20. Job inspection policy</b>	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.	No on-site inspections	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
<b>21. Contractor's post-installation obligation</b>	Contractor is obligated to make repairs to workman-ship deficiencies for two years.	None; material-only warranty	Contractor obligated to make repairs to workmanship deficiencies and all leaks for two years.
<b>22. Backed by named insurance or surety</b>	No; Koppers indicates that it does not carry insurance covering its warranty obligations.	No; MBT indicates that it carries \$100 million general liability insurance covering its warranty obligations.	No
<b>23. Issuing entity manufactures and/or sells products</b>	Koppers manufactures and sells product.	MBT manufactures and sells product.	MBT manufactures and sells the product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	Renewal at MBT's discretion
<b>25. Assignability</b>	Warranty states that original named owner is covered and not any tenant, purchaser, or successor without prior written notice to and approval from Koppers.	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 the warranty and shall not accrue to the benefit of, or be assignable to any tenant, successor, purchaser, or assignee of original owner.
<b>26. Special features/conditions</b>	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 test-ing cost and insulation replacement. 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.	Roofing contractor must complete warranty registration and mail promptly along with proof of purchase to MBT offices to validate warranty.	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.
<b>27. Executed by owner</b>		No	Yes

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	MBTechnology Corporation	Monsey Bakor	Monsey Bakor
2. Title, original publication date, and identifying symbol, if any	12-Year Limited Material Warranty; 1990	Roofing Systems & Waterproofing Limited Warranty; 09/96	Limited Roofing & Waterproofing Product Warranty; 09/96
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.	Modified Plus Modified Bitumen roofing products and systems	Modified Plus Modified Bitumen roofing products and systems
4. Scope of coverage	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; 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.
5. Length of coverage	12 years	12 years	12 years
6. Nature of remedy	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.	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.
7. Monetary limitations	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.	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.
8. Notification requirements	All repairs must be authorized in writing in advance by manager, technical services, MBTechnology, 188 S. Teilman St., Fresno, CA 93706-9956.	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
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. 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.	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.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	MBT's determination	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (see item 12 in Introduction)	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, 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.
13. Wind coverage/exclusions	Warranty excludes windstorms and hurricanes. [MBT indicates that there is no coverage for damage caused by wind.]	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
14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)	L	B, C, H, I, R	B, C, H, I, R
15. Cost to obtain	None	None	None



<b>16. Minimum charge</b>	None	Minimum roof size of 50 squares	None
<b>17. Ineligible structure or building use</b>	Coolers, cold-storage, or freezer buildings	None	None
<b>18. Pre-construction notice and approval requirements</b>	None required.	None	None
<b>19. Approved, authorized, or licensed requirements</b>	No	No	No
<b>20. Job inspection policy</b>	No on-site inspections	No on-site inspections	No on-site inspections
<b>21. Contractor's post-installation obligation</b>	None; material-only warranty	None; material-only warranty	None; material-only warranty
<b>22. Backed by named insurance or surety</b>	No; MBT indicates that it carries \$100 million general liability insurance covering its warranty obligations.	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.
<b>23. Issuing entity manufactures and/or sells products</b>	MBT manufactures and sells product.	Monsey Bakor manufactures and sells the product.	Monsey Bakor manufactures and sells the product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	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.	The warranty is not assignable without Monsey Bakor's prior written consent.	The warranty is not assignable without Monsey Bakor's prior written consent.
<b>26. Special features/conditions</b>	Roofing contractor must complete warranty registration and mail promptly along with proof of purchase to MBT offices to validate warranty.	<p>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.</p> <p>The owner shall bear any expense of removing and replacing traffic walkways or other structures to allow repairs to be made when necessary.</p>	<p>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.</p> <p>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.</p>
<b>27. Executed by owner</b>	No	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	Monsey Bakor	Mule-Hide Products	Mule-Hide Products
2. Title, original publication date, and identifying symbol, if any	A Gold Seal Roofing & Waterproofing Membrane Warranty; 09/96	A Mule-Hide Membrane Material Warranty; May 1, 1994	A Mule-Hide Products Co., Inc. Premium System Warranty for Commercial Buildings; May 1, 1994
3. Product, specification, or system covered	Modified Plus Modified Bitumen roofing products and systems	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
4. Scope of coverage	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.	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 war-ranty, 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	12, 15, or 20 years (Monsey Bakor indicates that warranty coverage depends upon specification and specific product used. Standard term is 12 years).	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
6. Nature of remedy	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.	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.
7. Monetary limitations	None stated	The maximum prorated value allowed for repair or credit shall not exceed the original purchase price of the membrane.	None stated.
8. Notification requirements	Written notice of any defect of the membrane within 30 days of the defect to Monsey Bakor, Cold Stream Road, Kimberton, PA 19442	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.
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 membrane or its installation; excludes all other warranties, guarantees, conditions, and representations; excludes UCC warranties.	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.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (no provision)	Mule-Hide's determination	Mule-Hide's determination (See Special Features/ Conditions.)
12. Specific exclusions from coverage (see item 12 in Introduction)	1, 3, 4, 5, 6, 8, 11, 12, 17; also excludes normal wear and tear and aesthetic diminution.	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.)

<b>13. Wind coverage/exclusions</b>	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.	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.
<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	B, C, H, I, R	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>15. Cost to obtain</b>	12 yrs: \$6.00/sq; 15 yrs: \$10.00/sq; 20 yrs: \$15.00 sq	10 yrs: \$25.00; 20 ys: \$2.00/sq (EPDM black only)	10 yrs: \$8.00/sq; 15 yrs: \$14.00/sq
<b>16. Minimum charge</b>	12 years: \$300; 15 years: \$500; 20 years: \$750	10 years: \$25.00	10 years: \$800; 15 years: \$1,250
<b>17. Ineligible structure or building use</b>	Cold-storage facilities; all residential buildings other than multiple dwellings	None	Residences
<b>18. Pre-construction notice and approval requirements</b>	The contractor must submit details of project, including deck construction, vapor retarder, insulation materials, and all flashing details prior to installation and obtain approval.	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.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	No	Yes
<b>20. Job inspection policy</b>	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.	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.
<b>21. Contractor's post-installation obligation</b>	The contractor is obligated to make repairs to workmanship deficiencies for two years.	None; material-only warranty	Contractor is obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No; Monsey Bakor indicates that it carries umbrella liability insurance covering its warranty obligations in the amount of \$10 million.	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.
<b>23. Issuing entity manufactures and/or sells products</b>	Monsey Bakor manufacturers and sells the product.	Mule-Hide sells the product only.	Mule-Hide sells the product only.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	The warranty is not assignable without Monsey Bakor's prior written consent.	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 un-der 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.
<b>26. Special features/conditions</b>	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.	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, represen-tation 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 dir-ectors of Mule-Hide. The owner acknowledges that owner had a duty to exercise reasonable care in the selection of a contractor.
<b>27. Executed by owner</b>	Yes; the warranty does not come into force until receipt of a signed copy by Monsey Bakor and owner.	No	Yes; owner expressly accepts Mule-Hide's terms, conditions, and limitations.

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Mule-Hide Products	Olympic Rubber Roofing Systems	Performance Roof Systems, Inc. (PRS)
2. Title, original publication date, and identifying symbol, if any	AMule-Hide Products Co., Inc. Standard System Warranty for Commercial Buildings; May 1, 1994	"Watershield & Waterguard System Warranty"; December 1, 1996	ADerbigum Ten Year Limited Material Warranty; October 1, 1993
3. Product, specification, or system covered	EPDM systems: ballasted, mechanically attached, fully adhered; Hypalon systems: ballasted, mechanically attached, fully adhered; Thermoplastic (PVC) systems: mechanically attached, fully adhered	Olympic EPDM Rubber Roofing System: Watershield, Waterguard, Waterguard MR	Derbigum XPS, Derbigum XPS/FR, Derbicolor XPS, Derbicolor XPS/FR, Derbigum GP, Derbicolor GP, Derbigum GP/FR, Derbicolor GP/FR, Derbibase
4. Scope of coverage	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; Olympic warrants that Olympic will provide, at its expense, all materials and all labor necessary to render the installed roofing system watertight.	Material only; PRS warrants that the roofing material and flashing, if properly handled and installed according to current PRS specifications, shall be manufactured to meet all published product specifications and will be free of any defect which would inhibit such material's ability to properly perform.
5. Length of coverage	10 or 15 years	10 years. (Warranty form allows for different warranty periods to be inserted for Olympic to supply materials versus labor necessary to make roof watertight.)	10 years
6. Nature of remedy	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.	Olympic will provide, at its expense, all materials and all labor necessary to render the installed roofing system watertight.	Should the PRS material not properly perform, PRS shall either refund the original purchase price of the material or replace the material found to be defective.
7. Monetary limitations	None stated.	Expenses incurred by Olympic are cumulative and are limited to the owner's original cost of the Olympic roofing system installed.	PRS' exclusive responsibility and liability will be to replace the material or to give a full refund for the full amount of the purchase price.
8. Notification requirements	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 notification within 30 days following discovery of any failure or possible failure of the installed roofing system.	None stated.
9. Exclusive or additional remedy	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 supersedes and is in lieu of all other expressed warranties that are in conflict.	Warranty is in lieu of all other warranties; PRS not liable for any damages based upon negligence, breach of warranty, strict liability, or any other legal theory of liability other than exclusive liability set forth in warranty; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Mule-Hide's determination (See Special Features/ Conditions.)	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (see item 12 in Introduction)	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, 6, 12 (including care and maintenance guidelines printed on reverse side of warranty), 15, 16, 18	None listed; material-only warranty
13. Wind coverage/exclusions	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.	Olympic indicates warranty covers roof damage resulting from wind speeds up to 40 mph. Warranty excludes gale force winds, hurricanes and tornadoes.	No coverage for damage caused by wind.
14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)	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.	A, B, C, D, H, R	None listed.
15. Cost to obtain	10 years:\$5.00/square for Hypalon, thermoplastics; \$6.00/square for EPDM	\$3.00/square	None

<b>16. Minimum charge</b>	10 years: \$500; 15 years: \$900	\$250	None
<b>17. Ineligible structure or building use</b>	Residences	Private residences	None
<b>18. Pre-construction notice and approval requirements</b>	Submit pre-job survey form and warranty application to Mule-Hide Products Co. for approval prior to job commencement.	The contractor is to submit pre-job survey, including drawing and scope of work.	None required.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	Mule-Hide field representative makes on site inspections prior to, during, and after completion and two years after issuance of warranty; no charge.	Olympic authorized representative makes on-site inspections after application and prior to issuance of warranty; Aspot check= inspections are made after two years; no charge.	No on-site inspections.
<b>21. Contractor's post-installation obligation</b>	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
<b>22. Backed by named insurance or surety</b>	No; Mule-Hide indicates that it does not carry insurance covering its warranty obligations.	No	No; PRS indicates that it does not carry insurance covering its warranty obligations.
<b>23. Issuing entity manufactures and/or sells products</b>	Mule-Hide sells the product only.	Olympic Rubber Roofing Systems manufactures and sells the product.	PRS manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	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.	No restrictions stated; warranty requires that Olympic be notified in writing within 30 days upon transfer of ownership.	No restrictions stated.
<b>26. Special features/conditions</b>	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.		
<b>27. Executed by owner</b>	Yes; owner expressly accepts Mule-Hide's terms, conditions, and limitations.	No	Yes; owner must execute and return to PRS the ATen Year Limited Material Warranty= notification card.

## 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)	Performance Roof Systems, Inc. (PRS)
2. Title, original publication date, and identifying symbol, if any	"Derbigum Roof Service Contract"; October 1, 1993	A Derbigum Roof System Guaranty"; October 1, 1993	A Derbigum Roof Membrane Guaranty"; October 1, 1993
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	Derbigum XPS, Derbigum XPS/FR, Derbicolor XPS, Derbicolor XPS/FR, Derbigum GP, Derbicolor GP, Derbigum GP/FR, Derbicolor GP/FR, Derbibase
4. Scope of coverage	Material and workmanship; PRS guarantees that it will under-take 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 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.
5. Length of coverage	10 years	10 years	10 years
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 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).
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.	No limit to PRS' expenditures for damages covered by this guaranty.
8. Notification requirements	Contact PRS immediately at (800) 727-9872 if roof leaks.	Contact PRS immediately at (800) 727-9872 if roof leaks.	Contact PRS immediately at (800) 727-9872 if roof leaks.
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.	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.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral (See Special Features/Conditions.)	Neutral (See Special Features/Conditions.)	Neutral (See Special Features/Conditions.)
12. Specific exclusions from coverage (see item 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, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 17, 22, 24; also excludes damages resulting from vermin, etc.
13. Wind coverage/exclusions	No coverage for damage caused by wind.	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 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, F, N; warranty indicates that lack of regular and routine maintenance may void contract.
15. Cost to obtain	\$12.50/square	\$7.50/square	\$6.00/square
16. Minimum charge	\$1,250	\$1,000	\$750
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	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
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.	PRS requires a 14-day guaranty application notification in order to verify specifications and to assign a roof auditor.

19. <b>Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
20. <b>Job inspection policy</b>	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.	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. <b>Contractor's post-installation obligation</b>	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. <b>Backed by named insurance or surety</b>	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.	No; PRS indicates that it does not carry insurance covering its warranty obligations.
23. <b>Issuing entity manufactures and/or sells products</b>	PRS manufactures and sells product.	PRS manufactures and sells product.	PRS manufactures and sells product.
24. <b>Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
25. <b>Assignability</b>	No restrictions stated.	No restrictions stated.	No restrictions stated.
26. <b>Special features/conditions</b>	<p>Owner shall be invoiced for reasonable repair costs for re-pairs 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 con-tacting 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 in-verted roof membrane systems, prior to permanent repairs being made.</p> <p>PRS' specifications and all details must be properly se-lected 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 (or any other parts of the roofing assembly), or any review of project specifications or plans, does not ex-tend 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>	<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 (or any other parts of the roofing assembly), or any review of pro-ject specifications or plans, does not extend the terms and con-ditions 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>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.</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 accor-dance with the directions of a professional roofing consultant mutually selected by the parties. In the event the parties can-not 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>	<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 emer-gency 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 (or any other parts of the roofing assembly), or any review of pro-ject specifications or plans, does not extend the terms and con-ditions 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>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.</p> <p>In the event PRS, the roofing contractor, and the owner cannot agree as to responsibilities under the guaranty, the par-ties agree to submit any such disagreement to arbitration as an exclusive remedy for resolution of such disagreement. All par-ties 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 can-not agree on an arbitrator, each shall select an independent professional roofing consultant as their representative and these consultants shall, in turn, select another, unaffiliated pro-fessional 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. <b>Executed by owner</b>	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.

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

<b>1. Identity of issuing entity</b>	<b>Protective Coatings, Inc.</b>	<b>Republic Powdered Metals, Inc. (RPM)</b>	<b>Republic Powdered Metals, Inc. (RPM)</b>
<b>2. Title, original publication date, and identifying symbol, if any</b>	"Protective Coatings, Inc. EPDM Roofing Limited Year Warranty"	"Republic Single Ply Systems Warranty"; September 1997; W001 9/97	"Republic Single Ply Systems Total System Warranty"; September 1997; W003 9/97
<b>3. Product, specification, or system covered</b>	ProShield-Black, ProShield-White, ProShield-White Fire Retardant, Black Fire Retardant Totally Adhered, Plate Bonded, NP Mechanically Attached, Ballasted	Geoflex PIB (Polyisobutylene) and Cooley C3 Single Ply Systems	Geoflex PIB (Polyisobutylene) and Cooley C3 Single Ply Systems
<b>4. Scope of coverage</b>	Material and Workmanship; Protective Coatings warrants that the roofing membrane will be free from defects in workmanship and materials and, when properly installed, will remain watertight.	Material and workmanship; RPM warrants that the Republic Single Ply System will remain free from leaks resulting from defects in the manufacture of the materials or the improper installation thereof and that, should a leak occur in any area of the Republic Single Ply System, RPM will promptly correct such leak at its own expense. Republic Single Ply System shall mean all integral field sheet and accessory materials manufactured and/or supplied by Republic.	Material and workmanship; RPM warrants that the Republic Single Ply System will remain free from leaks resulting from defects in the manufacture of any materials and components as accepted by Republic and utilized in connection with the installation of the Republic Single Ply System or the improper installation and that, should a leak occur in any area of the Republic Single Ply System, RPM warrants that it will promptly correct such leak at its own expense. Republic Single Ply System shall mean all integral field sheet, accessory materials and components manufactured, supplied and/or accepted by Republic.
<b>5. Length of coverage</b>	5 or 10 years	10, 15 or 20 years	10, 15 or 20 years
<b>6. Nature of remedy</b>	Protective Coatings will repair or replace roofing system and pay transportation costs and all other costs necessary to remedy roof failure.	RPM warrants that it will promptly correct leaks in any area of the Republic Single Ply System at its own expense.	RPM warrants that it will promptly correct leaks in any area of the Republic Single Ply System at its own expense.
<b>7. Monetary limitations</b>	Protective Coatings' obligation over the life of the warranty shall not exceed owner's original cost of the installed roof.	None stated.	None stated.
<b>8. Notification requirements</b>	Written notice by registered mail to Protective Coatings' Fort Wayne, IN, office within 30 days of discovery of any defect or leak.	Building owner must notify RPM immediately upon the discovery of any leaks in the Republic Single Ply System and confirm notification in writing within seven days after such discovery.	Building owner must notify RPM immediately upon the discovery of any leaks in the Republic Single Ply System and confirm notification in writing within seven days after such discovery.
<b>9. Exclusive or additional remedy</b>	Owner's sole and exclusive remedy; no other warranties; 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. Warranty is in lieu of any other guarantees or warranties, express 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 Republic Single Ply 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. Warranty is in lieu of any other guarantees or warranties, express 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 Republic Single Ply System; excludes UCC warranties.
<b>10. Inclusion of consequential damages</b>	No	No	No
<b>11. Determination of warranty applicability</b>	Neutral (no provision)	Neutral (no provision)	Neutral (no provision)
<b>12. Specific exclusions from coverage (see item 12 in Introduction)</b>	1, 2, 3, 4, 5, 6, 9, 10, 12, 13	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
<b>13. Wind coverage/exclusions</b>	Warranty excludes damage caused by wind.	Warranty excludes hurricanes and tornadoes. RPM indicates that warranty covers roof damage resulting from wind speeds up to 73 mph.	Warranty excludes hurricanes and tornadoes. RPM indicates that warranty covers roof damage resulting from wind speeds up to 73 mph.



<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	C	A, B, C, F, G, H, I, J, L, M (See Special Features/ Conditions)	A, B, C, F, G, H, I, J, L, M (See Special Features/Conditions)
<b>15. Cost to obtain</b>	5 year: none; 10 year: \$3.00/square	10 years: \$5.00/square; 15 years: \$10.00/square; 20 years: \$20.00/square	10 years: \$5.00/square; 15 years: \$10.00/square; 20 years: \$20.00/square
<b>16. Minimum charge</b>	5 year: none; 10 year: \$300	10 years: \$500; 15 years: \$1,000; 20 years: \$2,000	10 years: \$500; 15 years: \$1,000; 20 years: \$2,000
<b>17. Ineligible structure or building use</b>	Noncommercial installations	None	None
<b>18. Pre-construction notice and approval requirements</b>	A pre-installation notice form must be submitted and approved in writing 14 days prior to start.	Notice of award from contractor detailing job requirements must be approved by RPM prior to construction.	Notice of award from contractor detailing job requirements must be approved by RPM prior to construction.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	Protective Coatings' representative makes on-site inspection upon completion of application; no charge.	RPM technical service representative makes on-site inspections prior to, during application and upon completion, prior to issuance of warranty; no charge.	RPM technical service representative makes on-site inspections prior to, during application and upon completion, prior to issuance of warranty; no charge.
<b>21. Contractor's post-installation obligation</b>	Contractor obligated to make repairs due to workmanship deficiencies for two years.	Contractor obligated to make repairs to leaks and workmanship deficiencies for two years.	Contractor obligated to make repairs to leaks and workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No; Protective Coatings indicates that it carries \$500,000 general liability insurance.	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.
<b>23. Issuing entity manufactures and/or sells products</b>	Protective Coatings, Inc. manufactures and sells product.	RPM manufactures and sells the materials.	RPM manufactures and sells the materials.
<b>24. Conditions for renewal or extension</b>	No renewal provision.	No renewal extension.	No renewal extension.
<b>25. Assignability</b>	Not assignable, but if the original owner is the developer or builder of the building, he may, within one year of completion of construction, request Protective Coatings, Inc. permit an assignment of the warranty to the purchase of the building from owner.	Warranty is non-transferable.	Warranty is non-transferable.
<b>26. Special features/conditions</b>	No representative has authority to make any representations other than stated in the warranty.	<p>Owner agrees to accept RPM warranty as part of its purchase of the Republic Single Ply System and understands that the liability of RPM relating to the Republic Single Ply System and its installation is limited to the obligation to address warranty concerns.</p> <p>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.</p> <p>Owner agrees to follow and be bound by all terms and conditions stated in the Republic Care and Maintenance Guide which is incorporated into the warranty by reference.</p>	<p>Owner agrees to accept RPM warranty as part of its purchase of the Republic Single Ply System and understands that the liability of RPM relating to the Republic Single Ply System and its installation is limited to the obligation to address warranty concerns.</p> <p>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.</p> <p>Owner agrees to follow and be bound by all terms and conditions stated in the Republic Care and Maintenance Guide which is incorporated into the warranty by reference.</p>
<b>27. Executed by owner</b>	Yes	See Special Features above.	See Special Features above.

## 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)	Roofing Products International Inc. (RPI)
2. Title, original publication date, and identifying symbol, if any	"Manufacturer's Limited Warranty Material Only"; September 1997; W004 9/97	A Limited Membrane Only Warranty <sup>2</sup> ; RPI-54-692-5C	A Limited Warranty Form <sup>2</sup> ; Form RPI-91-31-1M
3. Product, specification, or system covered	Geoflex, Cooley C3, HyShield	RPI EPDM .045 Black, .060 Black, .045 White, .060 White, RPI FR (Fire Retardant) EPDM .045 Black, .060 Black, .045 White, .060 White.	RPI EPDM .045 Black, .060 Black, .045 White, .060 White, RPI FR (Fire Retardant) EPDM .045 Black, .060 Black, .045 White.
4. Scope of coverage	\ Material only; RPM warrants that the Republic product(s) were manufactured in accordance with RPM's specifications and, when applied to smooth, dry compatible surfaces in accordance with RPM's application instructions and specifications, will remain free of voids, cracking and/or crazing as a result of defects in the material.	Material only; RPI warrants that the non-reinforced rubber membrane sold as "First Grade" will be free from defects in material and workmanship at time of installation and will not prematurely deteriorate to the point of failure because of weathering if properly installed, maintained, and used for purpose seller intended. This warranty refers to the membrane material only. Flashings, adhesives, and other accessories contained in a membrane system are not covered by warranty.	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	5, 10 or 15 years (RPM indicates that warranty coverage depends upon specification and substrate used.)	10 or 20 years	5, 10, or 15 years
6. Nature of remedy	Should RPM's product(s) fail to conform to warranty, RPM shall, at its option, supply a sufficient quantity of materials necessary to remedy the defects, or the cash equivalent of same.	If membrane proves to be defective in materials or workmanship, seller's liability and buyer's remedies limited to repair and replacement of the defective membrane at the FOB point in the original contract. If membrane shows premature deterioration because of weathering, seller's liability and buyer's remedies are limited, at seller's option, to providing repair material for the original membrane or credit to be applied toward purchase of new membrane.	RPI will repair leaks in the RPI Rubber Roofing System.
7. Monetary limitations	RPM's total obligation over the life of the warranty shall not exceed the building owner's original cost of the RPM supplied product(s).	Value of remedy to be determined by seller based on number of remaining months of the unexpired warranty, prorated at the current prices for the membrane. Maximum prorated value allowed for repair or credit not to exceed original membrane purchase price.	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	None	Notification of breach of warranty within 30 days of discovery of premature deterioration of membrane	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	Remedy in warranty is the sole and exclusive remedy available to the building owner so that RPM's compliance constitutes fulfillment of all obligations. Warranty is in lieu of all other warranties, express 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 product; excludes UCC warranties.	No warranties that extend beyond what is stated on warranty document; 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	No
11. Determination of warranty applicability	Neutral (no provision).	Unclear; warranty states, A If upon inspection by the Seller, the Membrane proves to be defective... <sup>2</sup>	Neutral (no provision)

<b>12. Specific exclusions from coverage (see item 12 in Introduction)</b>	1, 2, 3, 6, 7, 10, 11, 12, 16, 17, 19, 20, 23	12, 19	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.
<b>13. Wind coverage/exclusions</b>	Warranty excludes gales, 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.
<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	C, R	None listed.	C
<b>15. Cost to obtain</b>	None	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
<b>16. Minimum charge</b>	None	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
<b>17. Ineligible structure or building use</b>	None	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
<b>18. Pre-construction notice and approval requirements</b>	RPM requires a Notice of Award on all projects showing pertinent information.	None	Submittal of job start notification form, RPI-91 or RPI-50, to RPI headquarters office for review by technical representative
<b>19. Approved, authorized, or licensed requirements</b>	Yes	No	Yes
<b>20. Job inspection policy</b>	No on-site inspections.	No on-site inspections	RPI technical representative makes on-site inspection after application, prior to issuance of warranty; no charge.
<b>21. Contractor's post-installation obligation</b>	None; material-only warranty.	None; material-only warranty	Contractor obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	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.
<b>23. Issuing entity manufactures and/or sells products</b>	RPM manufactures and sells the product.	RPI sells product only.	RPI sells product only.
<b>24. Conditions for renewal or extension</b>	No renewal provision.	No renewal provision	No renewal provision
<b>25. Assignability</b>	Warranty is non-transferable.	No restrictions stated.	No restrictions stated.
<b>26. Special features/conditions</b>	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.
<b>27. Executed by owner</b>	No	No	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Sarnafil, Inc.	Sarnafil, Inc.	Seaman Corporation
2. Title, original publication date, and identifying symbol, if any	A10 Year System Warranty – Sarnafil Roofing Warranty for Commercial Building; March 1995	A10 Year Standard Warranty - Sarnafil Roofing Warranty for Commercial Building; March 1995	AMaterials Warranty for FiberTite Roofing Membrane
3. Product, specification, or system covered	Sarnafil G410, S327, G476	Sarnafil G410, S327, G476	FiberTite Single-Ply Roof
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.	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	10 years	10 years	10 years
6. Nature of remedy	Sarnafil's liability is limited to repair of Sarnafil's roofing membrane, Sarnatherm insulation, or accessory.	Sarnafil's liability limited to Sarnafil's repair of roofing membrane or accessory.	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	None stated.	None stated.	Seaman's prorated liability is based upon the original sales price.
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 within 30 days of discovery of the alleged defect to Seaman Corporation.
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.	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
11. Determination of warranty applicability	Sarnafil's determination	Sarnafil's determination	Seaman's determination.
12. Specific exclusions from coverage (see item 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, 13, 16, 18, 20, 21, 23
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.	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 14 in Introduction)	C, G	C, G	B, C
15. Cost to obtain	\$6.00/square	\$6.00/square	\$9.00/square
16. Minimum charge	\$800	\$800	\$900

<b>17. Ineligible structure or building use</b>	Private residences	Private residences	Roofing installations for personal, family, or household purposes.
<b>18. Pre-construction notice and approval requirements</b>	Contractor is to submit a Sarnafil Anotice 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 Anotice of award= form to Sarnafil's technical department for review and acceptance prior to shipment of Sarnafil membrane and accessories.	Contractor must submit FiberTite Arequest for warranty form/roof award information material submittal data= and obtain approval before material can be shipped.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	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.	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.
<b>21. Contractor's post-installation obligation</b>	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.	Contractor obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	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; Seaman indicates that it is self-insured.
<b>23. Issuing entity manufactures and/or sells products</b>	Sarnafil manufactures and sells the product.	Sarnafil manufactures and sells the product.	Seaman manufactures and sells the product.
<b>24. Conditions for renewal or extension</b>	No renewal provision.	No renewal provision.	No renewal provision
<b>25. Assignability</b>	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.	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.
<b>26. Special features/conditions</b>	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.	The owner will be responsible for the cost of investigation if any leak is determined not to be covered by warranty.
<b>27. Executed by owner</b>	Yes	Yes	Yes

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

<b>1. Identity of issuing entity</b>	<b>Seaman Corporation</b>	<b>Seaman Corporation</b>	<b>Seaman Corporation</b>
<b>2. Title, original publication date, and identifying symbol, if any</b>	A Warranty for Commercial Roofing≡	A Warranty for Commercial Roofing≡	A Materials Warranty for FiberTite Roofing Membrane≡
<b>3. Product, specification, or system covered</b>	FiberTite Roofing Systems	FiberTite Single-Ply Roof	FiberTite Roofing Systems
<b>4. Scope of coverage</b>	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.
<b>5. Length of coverage</b>	5 or 10 years	15 years	15 years
<b>6. Nature of remedy</b>	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 5 percent if the defect occurs in the fifteenth year.
<b>7. Monetary limitations</b>	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.
<b>8. Notification requirements</b>	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.
<b>9. Exclusive or additional remedy</b>	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.
<b>10. Inclusion of consequential damages</b>	No	No	No
<b>11. Determination of warranty applicability</b>	Seaman's good faith determination.	Seaman's good faith determination.	Seaman's determination
<b>12. Specific exclusions from coverage (see item 12 in Introduction)</b>	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
<b>13. Wind coverage/exclusions</b>	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.

<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	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.	A, H. Warranty will also be void if any of the specific exclusions listed above occur or if material is exposed to Aexcessive pressures or sources,≡ external forces, radiation, harmful fumes or foreign substances in the atmosphere, or any use not specifically for roofing application.	A, H. Warranty will also be void if any of the specific ex-clusions listed above occur or if material is exposed to "excessive pressures or sources," external forces, radiat-ion, harmful fumes or foreign substances in the atmos-phere, or any use not specifically for roofing application.
<b>15. Cost to obtain</b>	\$6.00/square	None	\$2.00/square
<b>16. Minimum charge</b>	\$650	None	\$250
<b>17. Ineligible structure or building use</b>	Residential single-dwelling homes eligible for membrane only warranty.	Roofing installations for personal, family, or household purposes.	Roofing installations for personal, family, or household purposes.
<b>18. Pre-construction notice and approval requirements</b>	The contractor to provide pre-installation notice with building and job requirements and obtain approval prior to beginning installation.	Contractor must submit FiberTite Arequest for warranty form/roof award information material submittal data≡ and obtain approval before material can be shipped.	Contractor must submit FiberTite Arequest for warranty form/roof award information material submittal data≡ and obtain approval before material can be shipped.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	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.	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.
<b>21. Contractor's post-installation obligation</b>	No	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No; Seal-Dry indicates that it does not carry insurance covering its warranty obligations.	No; Seaman indicates that it is self-insured.	No; Seaman indicates that it is self-insured.
<b>23. Issuing entity manufactures and/or sells products</b>	Seal-Dry manufactures and sells the product.	Seaman manufactures and sells the product.	Seaman manufactures and sells the product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	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.	No restrictions stated.	No restrictions stated.
<b>26. Special features/conditions</b>	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.	All purchase orders for FiberTite Membrane will be deemed submitted subject to and in accordance with Seaman Corporation standard terms and conditions of sale.	All purchase orders for FiberTite Membrane will be deemed submitted subject to and in accordance with Seaman Corporation standard terms and conditions of sale.
<b>27. Executed by owner</b>	Yes	No	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Seaman Corporation	Siplast, Inc.	Siplast, Inc.
2. Title, original publication date, and identifying symbol, if any	A Warranty for Commercial Roofing	Siplast, Inc. A Roof Membrane Limited Warranty; October 15, 1987	Siplast, Inc. Roof Membrane Guarantee ; March 1, 1982
3. Product, specification, or system covered	FiberTite Single-Ply Roof	Paratech	Paradiene 20/30, Veral, Paradiene 40, Parafor 50 LT
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.	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.]	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.]
5. Length of coverage	15 years	5 or 10 years	10 years, with additional 5-year and 10-year extension options available
6. Nature of remedy	Seaman will repair leaks at its expense.	Siplast shall repair the roof membrane at its own expense. (See Special Features/Conditions.)	Siplast shall repair the roof membrane at its own expense. (See Special Features/Conditions.)
7. Monetary limitations	None stated.	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.	None stated.
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 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.
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.	Owner's exclusive remedy against Siplast regarding the roof membrane; excludes all other warranties; excludes UCC warranties.	Excludes other warranties; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Seaman's good faith determination.	Neutral (no provision)	Neutral (no provision)
12. Specific exclusions from coverage (see item 12 in Introduction)	1, 3, 4, 5, 6, 7, 9, 10, 12, 18, 22, 24	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 15, 23	1, 2, 3, 4, 5, 6, 7, 8, 9, 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 windstorms, hurricanes and tornadoes.	Warranty excludes windstorms, hurricanes, and tornadoes.
14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)	B, C	C, H, R	C, H, R
15. Cost to obtain	\$7.00/square	5 years, \$4.00/square; 10 years, \$5.00/square	None, if over 50 squares
16. Minimum charge	\$750	\$300 if less than 50 squares	\$300 if less than 50 squares



<b>17. Ineligible structure or building use</b>	Roofing installations for personal, family, or household purposes.	Cold-storage buildings and buildings with high-interior--humidity problems.	Cold-storage buildings and buildings with high-interior-humidity problems.
<b>18. Pre-construction notice and approval requirements</b>	Contractor must submit FiberTite Arequest 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.	A guarantee application form listing job conditions and requirements must be submitted and approved by Siplast technical department prior to shipment of materials.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	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.	Inspections by field technical staff prior to and during application as needed, after application and two years after issuance of warranty; no charge.
<b>21. Contractor's post-installation obligation</b>	Contractor obligated to make repairs to workmanship deficiencies for two years.	Contractor is obligated to make repairs to workmanship deficiencies for two years.	Contractor is obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No; Seaman indicates that it is self-insured.	No; Siplast does not carry insurance covering its warranty obligations.	No; Siplast does not carry insurance covering its warranty obligations.
<b>23. Issuing entity manufactures and/or sells products</b>	Seaman manufactures and sells the product.	Siplast manufactures and sells product.	Siplast manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	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 properly 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 main-tenance and repairs have been completed in accordance with Siplast's instructions and specifications.
<b>25. Assignability</b>	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.
<b>26. Special features/conditions</b>	The owner will be responsible for the cost of investigation if any leak is determined not to be covered by warranty.	Warranty provides that the expense of removing and replacing traffic surfaces built over the roof shall be borne by the owner.	Guarantee provides that the expense of removing and replacing traffic surfaces built over the roof shall be borne by the owner.
<b>27. Executed by owner</b>	Yes	No	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Siplast, Inc.	Soprema, Inc.	Southwestern Petroleum Corporation (SWEPCO)
2. Title, original publication date, and identifying symbol, if any	Roof System Guarantee September 1996	Soprema, Inc. Limited Warranty For Roofing System ; Jan. 1, 1997	ASWEPCO Brand Roofing Products Limited Warranty; October 1989; J-7433-08-90-BP
3. Product, specification, or system covered	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, Sopraseal; Elastophene; Flam, Granules, Flam Granules, PS, 180, 180 PS, Flam Granules FR, Granules FR, Flam Stick, Colphene Granules; Sopralast; Aluminum, Copper, Stainless, Mammoth Aluminum.	Uni+Shield Single-Ply Roof System 302; Heavy Duty Cold Process BUR System 301; Uni+Shield II Cold Process BUR System 303
4. Scope of coverage	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 reroofable 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.	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.
5. Length of coverage	10 years: all systems; 15 and 20 years available for Paradiene 20/30 and Veral systems	10, 15, or 20 years	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
6. Nature of remedy	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.	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.
7. Monetary limitations	None stated.	None stated.	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.
8. Notification requirements	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, Inc. at 310 Quadral Drive, Wadsworth, OH 44281.	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.
9. Exclusive or additional remedy	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; ex-cludes all other warranties; Soprema not liable for special, in-cidental 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.	Owner accepts warranty as its sole and exclusive remedy; owner expressly waives any and all other claims; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral	Neutral (no provision)	SWEPCO's determination

<b>12. Specific exclusions from coverage (see item 12 in Introduction)</b>	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.	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 15, 16, 17, 19, 20, 22, 23
<b>13. Wind coverage/exclusions</b>	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.	Warranty excludes windstorms, gales, hurricanes, and tornadoes. [SWEPCO indicates that it does not have a definition of windstorm based upon wind speed.]
<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	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	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.
<b>15. Cost to obtain</b>	10 yrs: no charge; 15 yrs: \$7.50/sq; 20 yrs: \$12.50/sq	10 yrs: no charge; 15 yrs: \$7.50/sq; 20 yrs: \$12.50/square	None
<b>16. Minimum charge</b>	\$300 if less than 50 squares, plus normal per-square charge	None	None
<b>17. Ineligible structure or building use</b>	Cold-storage buildings and buildings with high humidity problems	None	None
<b>18. Pre-construction notice and approval requirements</b>	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).	None
<b>19. Approved, authorized, or licensed requirements</b>	Yes; the roofing contractor and lightweight concrete applicator must be approved and licensed by Siplast.	Yes	No
<b>20. Job inspection policy</b>	Siplast field technical staff makes inspections prior to, during, and after application prior to issuance of guarantee as well as two years after issuance of guarantee; 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.	No on-site inspections
<b>21. Contractor's post-installation obligation</b>	The contractor is obligated to make repairs to workmanship deficiencies for two years.	Contractor obligated to make repairs to workmanship deficiencies for two years.	None; material-only warranty
<b>22. Backed by named insurance or surety</b>	No; Siplast does not carry insurance covering its warranty obligations.	No; Soprema indicates that it does not carry insurance covering its warranty obligations.	No
<b>23. Issuing entity manufactures and/or sells products</b>	Siplast manufactures and sells the products.	Soprema manufactures and sells product.	SWEPCO manufactures and sells PolyShield product; SWEPCO sells Uni+Shield product only.
<b>24. Conditions for renewal or extension</b>	Siplast offers 5- and 10-year options to extend the roof system guarantee. In order to obtain either the 5- or 10-year extension, the owner must properly execute and return the Siplast addendum to roof system 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 properly 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. The owner shall promptly pay 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	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.
<b>25. Assignability</b>	The guarantee is assignable if Siplast is given at least 30 days written notice prior to transfer and the intended building use is stated; an inspection of the roof/roof insulation system is made by Siplast; any repairs to the roof/roof insulation system that may be deemed necessary by Siplast are made at the owner's expense; and, the inspection and processing fee (\$300) is paid to Siplast.	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.	Any transfer of warranty to subsequent owners, purchasers, or tenants must be approved in writing by SWEPCO vice president of customer service.
<b>26. Special features/conditions</b>	No claim may be made with respect to thermal performance of Siplast roof insulation unless based on tests carried out at owner's expense by a qualified laboratory using tests and procedures satisfactory to Siplast. Siplast reserves the right to perform thermal testing of the roof insulation to be carried out at Siplast's direction and expense.	Any product sold by Soprema and not manufactured by Soprema is sold "as is" and without any warranty. Soprema dis-claims 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.	Any replacement products due under warranty will be made FOB SWEPCO's principal place of business or nearest warehouse.
<b>27. Executed by owner</b>	No	No	No; however, SWEPCO's order form, incorporating the warranty, requires buyer's signature

## 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	Tam-Ply IV Guarantee (A Limited Warranty); 12/97 997296, JP21925	Versa-Cap FR Labor and Material Guarantee (A Limited Warranty);" March 1, 1997; 997297	ATwelve Year Limited Material Warranty (A Limited Warranty)≡; January 1996; JP32995 997572
3. Product, specification, or system covered	Tam-Ply IV	Versa-Cap FR, Specification Series 700	Speedweld APP
4. Scope of coverage	Material only; Tamko warrants that the Tam-Ply IV is free from manufacturing defects which result in leaks	Material only; Tamko warrants that the Versa-Cap FR is 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.
5. Length of coverage	10 years	10 years	12 years
6. Nature of remedy	If manufacturing defects result in leaks, Tamko shall have 90 days after receipt of notification to pay the reasonable cost for labor and material necessary to make or cause to be made repairs or replacement of the Tamko product or to pay the reasonable cost thereof (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.	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.
7. Monetary limitations	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. Tamko=s liability is reduced by 20% each year following the initial five years of that portion of the Tam-Ply IV containing a 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.	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.
8. Notification requirements	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 result directly from manufacturing Tamko at P.O. Box 1404, Joplin, MO 64802 within 30 days following discovery of any leaks alleged to defects.	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
9. Exclusive or additional remedy	Guarantee is in lieu of any other obligations, guarantees, warranties, or liabilities on the part of Tamko; excludes UCC warranties. 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.	Guarantee is in lieu of any other obligations, guarantees, warranties, or liabilities on the part of Tamko; 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.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Tamko=s determination.	Tamko's determination	Tamko's determination
12. Specific exclusions from coverage (see item 12 in Introduction)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 (including exposure from a 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	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.
13. Wind coverage/exclusions	Tamko indicates warranty covers roof damage resulting from wind speeds up to strong gales. Warranty excludes strong gales, windstorms, violent storms, hurricanes, and tornadoes. (Strong gales are defined on the Beaufort Scale as winds between 47-54 mph).	Tamko indicates warranty covers roof damage resulting from wind speeds up to 54 mph. Warranty excludes strong gales, windstorms, violent storms, hurricanes and tornadoes.	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.)
14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)	K	K	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.
15. Cost to obtain	None	None	None
16. Minimum charge	None	None	None

17. Ineligible structure or building use	None	Cold-storage facilities, individual residences, condominiums, cooperative apartments, heated tanks, storage silos, dry kilns, car wash buildings, swimming pools, 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	None	None required.
19. Approved, authorized, or licensed requirements	No	No	No
20. Job inspection policy	No on-site inspections	No on-site inspections	No on-site inspections
21. Contractor's post-installation obligation	None; material-only warranty	None; material only warranty	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 manufacturers and sells the products	Tamko manufacturers 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	Guarantee cannot be assigned, sold or transferred in any manner whatsoever. Warranty insures only to the benefit of the building owner of the Tamko product.	Not transferable or assignable in any manner; warranty accrues and inures only to the benefit of the first consumer purchaser or owner.	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.
26. Special features/conditions	<p>Tamko requires that the owner initiate and follow a preventative maintenance program substantially in accordance with 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 Tam-Ply IV is applied.</p> <p>No action for breach of warranty shall be brought later than one year after any cause of action has accrued.</p> <p>Warranty is not valid in Hawaii, Alaska and California. A separate limited warranty is available for products used in California. Products are sold AAS IS≡ and AWITH ALL FAULTS≡ when used outside of the 48 contiguous United States.</p>	<p>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.</p> <p>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.</p> <p>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.</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>
27. Executed by owner	No	No	Yes; owner is to sign and retain warranty with the contractor's receipt for future reference.

### 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.
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<b>2. Title, original publication date, and identifying symbol, if any</b>	APremium Roofing System NDL Guarantee (A Limited Warranty)≡; February 1995; JP22255 997226	ARoofing Systems Guarantee (A Limited Warranty)≡; February 1995; 997225	ACommercial Roofing Guarantee (A Limited Warranty)≡ 7/98 997295, JP1926
<b>3. Product, specification, or system covered</b>	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; 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 FR, Awaflex, Awaplan Versa Flex, Versa-Flash 160, Tam-Glass Premium, Vapor-Chan, Glass-Base Sheet, Base-N-Ply, Versa-Base
<b>4. Scope of coverage</b>	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 roof 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.
<b>5. Length of coverage</b>	20 years	5, 10, 12, or 15 years	5 years: Versa-Base, Base-N-Ply, Glass-Base Sheet, Vapor-Chan 10 years: Tam-Glass Premium, Versa-Flash 160, Awaplan Versa Flex, Awaflex, Awaflex FR 12 years: Awaplan Versa-Smooth, Awaplan 170, Awaplan 170 FR 15 years: Awaplan Heat Welding, Awaplan Premium, Awaplan Premium FR
<b>6. Nature of remedy</b>	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 pay the reasonable cost for labor and material necessary to make repairs or to 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.
<b>7. Monetary limitations</b>	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 to pay the reasonable costs thereof of that portion of the Tamko product containing a manufacturing defect that has resulted in leaks.
<b>8. Notification requirements</b>	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.
<b>9. Exclusive or additional remedy</b>	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.	Guarantee is in lieu of any other obligations, guarantees, warranties, or liability on the part of Tamko; excludes UCC warranties. 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.
<b>10. Inclusion of consequential damages</b>	No	No	No
<b>11. Determination of warranty applicability</b>	Tamko will solely determine the condition of water-tightness.	Tamko will solely determine the condition of water-tightness.	Tamko's determination
<b>12. Specific exclusions from coverage (see item 12 in Introduction)</b>	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 radioactivity 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 radioactivity 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.
<b>13. Wind coverage/exclusions</b>	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.	Tamko indicates warranty covers roof damage resulting from wind speeds up to strong gales. Warranty excludes strong gales, windstorms, violent storms, hurricanes, and tornadoes. (Strong gales are defined on the Beaufort Scale as winds between 47 and 54 mph.)

<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	B, C, F, K	B (Tamko may, at its option, cancel the guarantee), C	K
<b>15. Cost to obtain</b>	\$17.50/square	5 years: \$4.00/square; 10 years: \$8.50/square; 12 years: \$9.00/square; 15 years: \$12.50/square	None
<b>16. Minimum charge</b>	\$1,200	5 yrs: \$400; 10 yrs: \$850; 12 yrs: \$850; 15 yrs: \$1,000	None
<b>17. Ineligible structure or building use</b>	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.	None
<b>18. Pre-construction notice and approval requirements</b>	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
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	No
<b>20. Job inspection policy</b>	Tamko representative makes inspection after completion prior to issuance of guarantee and two years after issuing of guarantee. Tamko representative makes on-site inspection during application of specification 243 only; no charge.	Tamko built-up roofing representative makes inspection after completion prior to issuance of guarantee and two years after issuing of guarantee. Tamko representative makes on-site inspection during application for specification 243 only; no charge.	No on-site inspections.
<b>21. Contractor's post-installation obligation</b>	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
<b>22. Backed by named insurance or surety</b>	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
<b>23. Issuing entity manufactures and/or sells products</b>	Tamko Roofing Products, Inc. manufactures and sells the products.	Tamko Roofing Products, Inc. manufactures and sells product.	Tamko manufactures and sells the products.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	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.	Guarantee cannot be assigned, sold or transferred in any manner whatsoever. Warranty insures only to the benefit of the building owner of the Tamko product.
<b>26. Special features/conditions</b>	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.	Tamko requires that the owner initiate and follow a preventive maintenance program substantially in accordance with the 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 accrued. Warranty is not valid in Hawaii, Alaska and California. A separate limited warranty is available for products used in California. Products are sold AAS IS= and AWITH ALL FAULTS= when used outside of the 48 contiguous United States.
<b>27. Executed by owner</b>	No	No	No

## 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	Total System Coverage Guarantee (A Limited Warranty); February 1995; JP22287 997227	Ten Year Limited Material Warranty (A Limited Warranty) January 1996; JP32996 997574	Roofing System NDL Guarantee (A Limited Warranty); February 1995; JP22254 997228
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	Speedweld (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 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; 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	5, 10, 12, 15, or 20 years	10 years	5, 10, 12, or 15 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.	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	None stated.	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 to Tamko, P.O. Box 1404, Joplin, Missouri, 64802, no later than 30 days after discovery of a leak from any cause.	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 obligation contained in guarantee is expressly in lieu of any other guarantees, obligations or liability on the part of Tamko; 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	Solely Tamko will determine the condition of watertightness.	Tamko's determination.	Solely Tamko will determine the condition of watertightness.
12. Specific exclusions from coverage (see item 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, 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, 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.)	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.)



<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	A, B, C, F, K, N	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
<b>15. Cost to obtain</b>	5 yrs: \$4.00/sq; 10 yrs: \$8.50/sq; 12 yrs: \$9.00/sq; 15 yrs: \$12.50/sq; 20 yrs: \$17.50/sq	None	5 yrs: \$4.00/sq; 10 yrs: \$8.50/sq; 12 yrs: \$9.00/sq; 15 yrs: \$12.50/sq
<b>16. Minimum charge</b>	5 yrs: \$400; 10 yrs: \$850; 12 yrs: \$850; 15 yrs: \$1,000; 20 yrs: \$1,200	None	5 yrs: \$400; 10 yrs: \$850; 12 yrs: \$850; 15 yrs: \$1,000
<b>17. Ineligible structure or building use</b>	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
<b>18. Pre-construction notice and approval requirements</b>	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.	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.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	No	Yes
<b>20. Job inspection policy</b>	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.	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.
<b>21. Contractor's post-installation obligation</b>	The contractor is obligated to make repairs to workmanship deficiencies for two years.	None; material-only warranty	The contractor is obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	No; Tamko indicates that it does not carry insurance to cover 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.
<b>23. Issuing entity manufactures and/or sells products</b>	Tamko manufactures and sells the product.	Tamko manufactures and sells the product.	Tamko manufactures and sells the product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
<b>25. Assignability</b>	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.	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.
<b>26. Special features/conditions</b>	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.	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.
<b>27. Executed by owner</b>	No	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	Texas Refinery Corporation (TRC)	Tremco Incorporated	Tremco Incorporated
2. Title, original publication date, and identifying symbol, if any	Texas Refinery Corporation's Limited Roof System Warranty; 1988; 2M0488	"10 Year QA Plus Warranty For New Roofs;" January 1999	"15 Year QA Plus Warranty For New Roofs;" Rev. 1/11/99
3. Product, specification, or system covered	MightyPlate Single-Ply; MightyPlate Two-Ply System; MightyPlate Liquid Type II Glasbase Roof System; MightyPlate Liquid Poly-Mat Roof System; MightyPlate Liquid MightyPly Roof System.	Therm 100, Therm 200, Burmastic 100, Burmastic 200, BUR Combinations; PowerPly MB Systems, HP4510, Tremfast	Therm 100, Therm 200, Burmastic 100, Burmastic 200, BUR Combinations; PowerPly MB Systems, HP4510, Tremfast
4. Scope of coverage	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 leaks and provide roof inspections, preventive maintenance and limited housekeeping services on the Tremco Roofing System (TRS) in years two (2) and five (5). TRS shall be defined as the weatherproofing assembly and its components as specified by Tremco (See Special Features/Conditions), which includes membrane, insulation, flashings, and termination details. Warranty does not include recoating of roof membranes. (See Special Features/Conditions)	Material and workmanship; Tremco warrants that it will repair leaks and provide roof inspections, preventive maintenance and limited housekeeping services on the Tremco Roofing System (TRS) in years two (2) and five (5). TRS shall be defined as the weatherproofing assembly and its components as specified by Tremco (See Special Features/Conditions), which includes membrane, insulation, flashings, and termination details. Warranty does not include recoating of roof membranes. (See Special Features/Conditions)
5. Length of coverage	5 years: MightyPlate Modified Bitumen Roof Membrane, MightyPly 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 Textotropic surfacing; MightyPly System with aluminum roof coating, textotropic or Ceramic Granules.	10 years	15 years
6. Nature of remedy	TRC agrees to furnish without charge, F.O.B. closest U.S.A. warehouse, sufficient TRC roofing patching material to stop leaks.	Tremco will repair leaks in the roofing system and provide the inspection, preventive maintenance and housekeeping services prescribed in the warranty in years two and five. Tremco will provide roof inspection reports.	Tremco will repair leaks in the roofing system and provide the inspection, preventive maintenance and housekeeping services presented in the warranty in years two and five. Tremco will provide roof inspection reports
7. Monetary limitations	TRC's obligation to furnish additional material is not to exceed original purchase amount.	Tremco's aggregate liability shall not in any event exceed in dollar value the installed contract price of the TRS. Tremco's maximum liability shall be prorated on a straight-line basis over the life of the warranty, and shall not exceed such prorated amount.	Tremco's aggregate liability shall not in any event exceed in dollar value the installed contract price of the TRS. Tremco's maximum liability shall be prorated on a straight-line basis over the life of the warranty, and shall not exceed such prorated amount.
8. Notification requirements	Notification to TRC within 30 days of discovery of leak, confirming oral notice in writing within 10 days	Written notice of all leaks to Tremco at 3735 Green Road, Beachwood, OH 44122, as soon as possible, but in no event more than 30 days after leakage is or should have been discovered	Written notice of all leaks to Tremco at 3735 Green Road, Beachwood, OH 44122, 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	TRC's exclusive responsibility and liability is to furnish sufficient patching materials to maintain the roofing system in a watertight condition; owner re-cognizes 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.	Remedies and obligations stated in warranty are the sole and exclusive remedies of and obligations to the owner for any and all matters arising with respect to or in any way connected with the Tremco roofing system, or its component products, or any goods or services related thereto. Neither Tremco or any affiliate shall be liable for any damages which are based upon negligence, breach of warranty, strict liability or any other theory of liability other than the exclusive liability set forth in the warranty. Warranty is given in lieu of any and all other warranties, obligations or agreements; excludes UCC warranties.	Remedies and obligations stated in warranty are the sole and exclusive remedies of and obligations to the owner for any and all matters arising with respect to or in any way connected with the Tremco roofing system, or its component products, or any goods or services related thereto. Neither Tremco or any affiliate shall be liable for any damages which are based upon negligence, breach of warranty, strict liability or any other theory of liability other than the exclusive liability set forth in the warranty. Warranty is given in lieu of any and all other warranties, obligations or agreements; excludes UCC warranties.
10. Inclusion of consequential damages	No	No	No
11. Determination of warranty applicability	Neutral; TRC arranges for inspection once leak reported.	Neutral	Neutral
12. Specific exclusions from coverage (see item 12 in Introduction)	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, 13, 16, 17	1, 2, 3, 5, 9, 13, 16, 17

<b>13. Wind coverage/exclusions</b>	Warranty excludes windstorms, hurricanes, and tor-nadoes. [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 73 miles per hour. Warranty excludes hurricane force winds (74 mph or greater) and tornadoes.	Tremco indicates that warranty covers roof damage resulting from wind speeds up to 73 miles per hour. Warranty excludes hurricane force winds (74 mph or greater) and tornadoes.
<b>14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	M (See Special Features/Conditions.)	B, C, F, G, J. Warranty also states that Tremco may void warranty for specific exclusions 4, 10, 22	B, C, F, G, J. Warranty also states that Tremco may void warranty for specific exclusions 4, 10, 22
<b>15. Cost to obtain</b>	None	\$10.00/square	\$15.00/square
<b>16. Minimum charge</b>	None	\$1,000	\$1,500
<b>17. Ineligible structure or building use</b>	Cold-storage buildings; residential	Residential	Residential
<b>18. Pre-construction notice and approval requirements</b>	None required	None	None
<b>19. Approved, authorized, or licensed requirements</b>	No	Yes	Yes
<b>20. Job inspection policy</b>	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 services makes on-site inspections prior, during and after application, as well as two years and five years after issuance of warranty; no charge.	Tremco technical services makes on-site inspections prior, during and after application, as well as two years and five years after issuance of warranty; no charge
<b>21. Contractor's post-installation obligation</b>	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.	Contractor obligated to make repairs to workmanship deficiencies for two years.
<b>22. Backed by named insurance or surety</b>	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.	No; Tremco indicates that it maintains significant levels of product liability insurance covering its warranty obligations.
<b>23. Issuing entity manufactures and/or sells products</b>	TRC manufactures and sells product.	Tremco manufactures and sells product.	Tremco manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	Warranty can be renewed for five years at a charge of \$5.00/square, with a \$500 minimum.	Warranty can be renewed for five years at a charge of \$5.00/square, with a \$500 minimum.
<b>25. Assignability</b>	No restrictions stated.	Owner's rights under warranty are not transferable.	Owner's rights under warranty are not transferable
<b>26. Special features/conditions</b>	No representative, employee, or agent of TRC or any other person other than the TRC manager of techni-cal 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 emer-gency 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.	Preventive maintenance services are repairing of tears, splits and breaks in the roof membrane and flashings with appropriate repair mastics and membranes, securing of rooftop equipment, sealing of exposed fasteners, metal projections, termination bar and counterflashing, and repairing of splits and blisters which threaten roof integrity. Housekeeping services are removal of incidental debris and disposal at owner's approved on-site location. Roof inspection services are visual inspection of roof membrane, roof surface conditions and flashing systems. Housekeeping and preventive maintenance does not absolve or replace the owner's responsibility for keeping effluent and debris from the roof surface. Owner must pay for additional cleaning/inspections or assume responsibility for such cleanings if scheduled cleanings are not sufficient to maintain roof integrity. Lack of care and maintenance is cause for cancellation of warranty. If a leak is not within the warranty coverage, Tremco shall advise the owner, and the owner shall have repairs performed within thirty days, according to Tremco specifications, by a Tremco certified or approved applicator. Owner shall provide waivers of subrogation upon request. Any unresolved issues under the warranty shall be submitted to the exclusive jurisdiction of the courts of Cuyahoga County, Ohio, and governed by Ohio law.	Preventive maintenance services are repairing of tears, splits and breaks in the roof membrane and flashings with appropriate repair mastics and membranes, securing of rooftop equipment, sealing of exposed fasteners, metal projections, termination bar and counterflashing, and repairing of splits and blisters which threaten roof integrity. Housekeeping services are removal of incidental debris and disposal at owner's approved on-site location. Roof inspection services are visual inspection of roof membrane, roof surface conditions and flashing systems. Housekeeping and preventive maintenance does not absolve or replace the owner's responsibility for keeping effluent and debris from the roof surface. Owner must pay for additional cleaning/inspections or assume responsibility for such cleanings if scheduled cleanings are not sufficient to maintain roof integrity. Lack of care and maintenance is cause for cancellation of warranty. If a leak is not within the warranty coverage, Tremco shall advise the owner, and the owner shall have repairs performed within thirty days, according to Tremco specifications, by a Tremco certified or approved applicator. Owner shall provide waivers of subrogation upon request. Any unresolved issues under the warranty shall be submitted to the exclusive jurisdiction of the courts of Cuyahoga County, Ohio, and governed by Ohio law.
<b>27. Executed by owner</b>	No	No; warranty states that owner agrees that the warranty, services and remedies set forth in the warranty are exclusive	No; warranty states that owner agrees that the warranty, services and remedies set forth in the warranty are exclusive.

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Uniroof Corporation	Uniroof Corporation	U.S. Intec, Inc.
2. Title, original publication date, and identifying symbol, if any	Uniroof Corporation A Trafficgard Limited Warranty; January 1, 1994	Uniroof Corporation A Uniroof Membrane Roofing Limited Warranty; April 1989; 4/24/89	"U.S. Intec, Inc. Roofing and Waterproofing Products Full Value Warranty"; 1995.
3. Product, specification, or system covered	Traffigard	Uniroof Membrane Roofing	For modified bitumen specifications using SP-4, GBSP-4, GBSP-4FR, GBSP-250FR or Intec Flex membranes, see the U.S. Intec, Inc. Modified Bitumen Roofing Systems manual for details.
4. Scope of coverage	Material only; Uniroof warrants the Trafficgard material will not deteriorate in its condition to the extent of ceasing to be capable of providing an effective weatherproof membrane. Only deterioration as a result of faulty manufacture of Trafficgard or 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.	Material and workmanship (See Special Features/Conditions); U.S. Intec guarantees it will repair or replace, at its sole discretion, the Intec roofing membranes and base flashings, as is necessary to correct leaks resulting from (a) 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; and (4) workmanship in installing the roofing membrane and base flashing.
5. Length of coverage	10 years	10 or 15 years	10, 12, 15 or 20 years (Length of coverage depends on membrane, system configuration and contractor status).
6. Nature of remedy	Uniroof will furnish Trafficgard material as may be required to repair those areas that have failed as a result of the deterioration of the originally furnished Trafficgard 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.	U.S. Intec will repair or replace, at its sole discretion, the Intec roofing membranes, covered roof accessories and base flashings, or portion thereof, as is necessary to correct leaks. During first two years, Intec shall have no obligation to repair any leaks due to misapplication.
7. Monetary limitations	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.	None stated.
8. Notification requirements	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.	Written notice to U.S. Intec within 15 days of discovering conditions which are the basis of a warranty claim against U.S. Intec.
9. Exclusive or additional remedy	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.	Remedy set forth in warranty shall be the sole and exclusive remedy available to owner. Guarantee is in lieu of any other guarantees or warranties, and any other obligation or liability on the part of U.S. 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	No
11. Determination of warranty applicability	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	U.S. Intec's determination.
12. Specific exclusions from coverage (see item 12 in Introduction)	1, 3, 4, 5, 13, 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.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 15, 17, 22. Warranty states that Specific Condition H also makes the warranty inapplicable.
13. Wind coverage/exclusions	Uniroof indicates that there is no coverage for damage caused by wind.	Warranty excludes windstorms, hurricanes, and tornadoes.	Warranty excludes windstorms, hurricanes, and tornadoes. U.S. Intec indicates that there is no coverage for damage caused by wind.
14. Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)	B, C, F, H, N	A, B, C, F, H, I, J, L, N, R	C, G, H, I, L, M
15. Cost to obtain	None	10 years: \$4.00/square; 15 years: \$7.00/square	10 yrs: no charge; 12 yrs: no charge; 15 yrs: \$10.00/sq (for Intec Flex); 20 years: \$15.00/sq (for Intec Flex)

<b>16. Minimum charge</b>	None	10 years: \$200; 15 years: \$350	10 yrs: no charge; 12 yrs: no charge; 15 yrs: \$1,000; 20 yrs: \$1,500.
<b>17. Ineligible structure or building use</b>	None	None	See U.S. Intec's specification manual.
<b>18. Pre-construction notice and approval requirements</b>	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.	Contractor provides notice to U.S. Intec through submittal or prior to job start.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	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	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.	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. U.S. Intec may at its option make an inspection of the roofing system during the period between 23 and 25 months after validation of the guarantee and protect the Owner and contractor with a report detailing any application related inadequacies or leaks in the membrane or base flashing.
<b>21. Contractor's post-installation obligation</b>	Contractor obligated to repair all leaks and any defects for two years.	None; material-only warranty	Contractor is obligated to make repairs to all leaks and workmanship deficiencies for 2 years after the completion of the roof.
<b>22. Backed by named insurance or surety</b>	No; Uniroof indicates that it does not carry insurance covering its warranty obligations.	No; Uniroof indicates that it carries product liability insurance	No; U.S. Intec indicates that it carries product liability insurance covering its guarantee obligations.
<b>23. Issuing entity manufactures and/or sells products</b>	Uniroof sells product only.	Uniroof manufactures and sells the product.	U.S. Intec manufactures and sells product.
<b>24. Conditions for renewal or extension</b>	No renewal provision	No renewal provision.	No renewal provision
<b>25. Assignability</b>	Nontransferable	Warranty is nontransferable	Guarantee is assignable to another owner of the building if the following conditions are met: (1) The request is sent by certified mail to U.S. Intec, Inc., Attn: Contractors Services Department, 1361 Alps Rd., Wayne, NJ 07470 within 30 days after ownership transfer; (2) the membrane is inspected by Intec and any required repairs are completed at the owner's expense; (3) the proposed assignment is approved in writing by an authorized Intec Contractor Services Manager; and (4) an assignment fee of \$750 is paid to Intec. Guarantee is not otherwise transferable or assignable, directly or indirectly..
<b>26. Special features/conditions</b>	This is a joint contractor/manufacture 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 warrants by his signature that the material has been applied as specified in the supplier's application manual. Owner responsible for all costs for inspection and/or repairs if reported condition is found not to be covered under the warranty. Responsibility of Owner to insure at all time that all required routine roof maintenance is performed, including cleaning roof drains and replacing deteriorated caulking.	This is a joint contractor/manufacture 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 warrants by his signature that the material has been applied as specified in the supplier's application manual. Owner responsible for all costs for inspection and/or repairs if reported condition is found not to be covered under the warranty. Responsibility of Owner to insure at all time that all required routine roof maintenance is performed, including cleaning roof drains and replacing deteriorated caulking.	Warranty states that owner and roofing contractor expressly agree that if the owner discovers or should have discovered within the first two years leaks in the membrane or base flashings due to misapplication or to the roofer's failure to install the membrane and base flashings in compliance with the Intec specification manual in effect at the time the roof was installed, it is the roofing contractor's sole responsibility to repair those leaks and Intec shall have no obligation to repair any such leaks. If Intec determines after inspection that a complaint is expressly excluded by the terms of the guarantee, Owner shall be responsible for reimbursing Intec for the reasonable costs associated with making the inspection. If the Owner fails to reimburse U.S. Intec within 30 days of receipt of an invoice, U.S. Intec's guarantee obligations are terminated. If the inspection occurs within the first two years after validation of the guarantee, the reimbursable expenses are the just obligation of the Owner and roofing contractor. If Intec discovers conditions in the Intec membrane or base flashing or adjacent to the roof system that are not covered by the guarantee but which have effected or may effect the ___ integrity of the Intec roofing membrane or base flashings, Owner agrees to completely remedy the conditions within 30 days after notice from Intec, weather permitting. Owner shall send an inspection report to Intec detailing such repairs within 15 days of their completion. Owner may make essential emergency temporary repairs at Owner's expense. Owner's failure to comply with terms and conditions should immediately terminate Intec's obligations under the guarantee .in full without further notice.
<b>27. Executed by owner</b>	Yes (See Special Features/Conditions.)	Yes	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Versico Incorporated, a subsidiary of Carlisle Companies	Versico Incorporated, a subsidiary of Carlisle Companies	Versico Incorporated, a subsidiary of Carlisle Companies
2. Title, original publication date, and identifying symbol, if any	Versico Roofing System Warranty (With Extended Membrane Material Warranty); June 1995	A Versico Total Roofing System Warranty <sup>2</sup> ; June 1995	A Versico Total Roofing System Warranty (With Extended Membrane Material Warranty) <sup>2</sup> ; June 1995
3. Product, specification, or system covered	VersiGard roofing systems, VersiWeld roofing systems; available for black VersiGard membranes only	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 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, 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 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 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	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.	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	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 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.	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	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.	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.	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.	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	Versico's determination	Versico's determination	Versico's determination
12. Specific exclusions from coverage (see item 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 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.	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	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, without prior approval from Versico.	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, without prior approval from Versico.	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, without prior approval from Versico.

14. <b>Specific conditions to make warranty ineffective or null and void (see item 14 in Introduction)</b>	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	B (including taking of test cuts), C, F (including periodic cleaning of drains and removal of harmful debris from roof), G
15. <b>Cost to obtain</b>	Manufacturer charges for this warranty; however, they refused to provide costs. Contact manufacturer directly for specific pricing information.		
16. <b>Minimum charge</b>			
17. <b>Ineligible structure or building use</b>	Single-family residences	Single-family residences	Single-family residences
18. <b>Pre-construction notice and approval requirements</b>	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.	The contractor is required to submit job approval forms before project is authorized for warranty.
19. <b>Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
20. <b>Job inspection policy</b>	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.	Versico inspector makes on-site inspection after completion, prior to issuance of warranty; \$300 inspection charge.
21. <b>Contractor's post-installation obligation</b>	The contractor is obligated to make repairs to workmanship deficiencies for two (2) years.	The contractor is obligated to make repairs to workmanship deficiencies for two (2) years.	The contractor is obligated to make repairs to workmanship deficiencies for two (2) years.
22. <b>Backed by named insurance or surety</b>	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.	No; Versico indicates that it does not carry insurance covering its warranty obligations.
23. <b>Issuing entity manufactures and/or sells products</b>	Versico manufactures and sells product.	Versico manufactures and sells product.	Versico manufactures and sells product.
24. <b>Conditions for renewal or extension</b>	No renewal provision	No renewal provision	No renewal provision
25. <b>Assignability</b>	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.	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. <b>Special features/conditions</b>	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.	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. <b>Executed by owner</b>	No	No	No

## Roof Membrane Warranties (Built-Up, Modified Bitumen, and Single-Ply)

1. Identity of issuing entity	Versico Incorporated, a subsidiary of Carlisle Companies	W.P. Hickman Systems, Inc.,	W.P. Hickman Systems, Inc.,
2. Title, original publication date, and identifying symbol, if any	Versico Roofing System Warranty; June 1995	Hickman Roofing Systems Membrane Assemblies Guarantee; 1985; GOES 447	Roof Assemblies Guarantee January 1, 1980; GOES 447
3. Product, specification, or system covered	VersiGard roofing systems, VersiWeld roofing systems		Built-up Roofing Specifications; Modified Bitumen Specifications; Cold-Process BUR Specifications; Single-Ply Specifications
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; 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 or 15 years	10 years	10 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.	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	None stated.	None stated	None stated.
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.	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	Remedies stated in warranty are the sole and exclusive remedies for failure of the roofing system or its components; excludes 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	Versico's determination	Neutral (no provision)	Neutral (Hickman inspects roof)
12. Specific exclusions from coverage (see item 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 damage caused by insects.	1, 2, 3, 4, 5, 6, 8, 10, 13, 17, 18, 22	1, 2, 3, 4, 5, 6, 8, 10, 13, 17, 18, 22
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, without prior approval from Versico.	Warranty excludes hurricane-related winds. Warranty covers roof damage resulting from wind speeds up to 73 miles per hour.	Warranty excludes hurricane-related 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 14 in Introduction)	B (including taking of test cuts), C, F (including periodic cleaning of drains and removal of harmful debris from roof), G	C	C
15. Cost to obtain	call Versico	\$4.00/square	
16. Minimum charge	call Versico	\$500	\$500



<b>17. Ineligible structure or building use</b>	Single-family residences	Cold-storage, freezer, and dry kiln buildings; Hickman reviews all structures to determine eligibility.	Cold-storage, freezer, and dry kiln buildings; Hickman reviews all structures to determine eligibility.
<b>18. Pre-construction notice and approval requirements</b>	The contractor is required to submit job approval forms before project is authorized for warranty.	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.
<b>19. Approved, authorized, or licensed requirements</b>	Yes	Yes	Yes
<b>20. Job inspection policy</b>	Versico inspector makes on-site inspection after completion, prior to issuance of warranty; \$300 inspection 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.	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.
<b>21. Contractor's post-installation obligation</b>	The contractor is obligated to make repairs to workmanship deficiencies for two (2) years.	Contractor obligated to make repairs to workmanship deficiencies for two years	Contractor obligated to make repairs to workmanship deficiencies for two years
<b>22. Backed by named insurance or surety</b>	No; Versico indicates that it does not carry insurance covering its warranty obligations.	No	
<b>23. Issuing entity manufactures and/or sells products</b>	Versico manufactures and sells product.		W.P. Hickman Systems, Inc. manufactures and sells the product.
<b>24. Conditions for renewal or extension</b>	No renewal provision		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.
<b>25. Assignability</b>	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.	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 writ-ten 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.
<b>26. Special features/conditions</b>	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.		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.
<b>27. Executed by owner</b>	No	No	No

## Section 6

# *Low-Slope Roofing Materials Guide*

# *2000*

*Incomplete Data*

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<b>ACRYMAX TECHNOLOGIES INC.</b> 221 Brooke Street Media, PA 19063 610/566-7470 FAX: 610/891-0834 E-mail: acrymax.com Web:	677
<b>ALCO-NVC, INC.</b> P.O. Box 14001 Detroit, MI 48214 800/323-0029 FAX: 313/331-4726 E-mail:alconvc@aol.com Web: www.alconvc.com	677
<b>ALLIED SIGNAL ROOFING SYSTEMS</b> 2000 Regency Parkway, Suite 225 Cary, NC 27511-8507 919/461-0670 or 800/221-6490 FAX: 919/461-4720 E-mail: alliedroof@alliedsignal.com Web: www.alliedroof.com	674
<b>ALUMINUM COATING MFRS.</b> 7301 Bessemer Avenue Cleveland, OH 44127 800556-8030 FAX: 216/341-5833 E-mail: sales@alum.com Web:	677
<b>AMERICAN TAR COMPANY</b> A Division of Fields Company, LLC 2240 Taylor Way Tacoma, WA 98421 253/627-4098 FAX: 253/627-3859 Web:	677
<b>ANDEK CORP.</b> P.O. Box 392 850 Glen Avenue Moorestown, NJ 08057 888/88ANDEK FAX: 888/44ANDEK E-mail:	674 677
<b>BARRETT COMPANY</b> 3422 Old Capitol Trail Wilmington, DE 19808 800/647-0100 FAX: E-mail: Web;	674

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<b>CELOTEX CORP.</b> 4010 Boy Scout Blvd. Tampa, FL 33607 813/873-1700 FAX: 813/873-4080 E-mail: Web:	675 677
<b>CONKLIN CORP.</b> P.O. box 155 Shakopee, MN 55379-0155 800/888-8838 FAX: 612/496-4285 E-mail: marketing@conklin.com Web: www.conklin.com	677
<b>DANOSA CARIBBEAN INC.</b> Box 13757, Santurce Station San Juan, PR 00908 809/785-4545 FAX: 809/787-3902 E-mail: danosapr@icepr.com Web:	675
<b>DEWITT PRODUCTS CO.</b> 5860 Plumer Detroit, MI 48209 313/554-0575 or 800/962-8599 FAX: 313/554-2171 E-mail: Web: www.dewitt@globalbiz.com	678
<b>GARLAND COMPANY, INC.</b> 3800 E. 91st Street Cleveland, OH 44105 216/641-7500 FAX: 216/641-0633 E-mail: Web:	675
<b>GRACE &amp; CO., W.R.</b> 62 Whittemore Avenue Cambridge, MA 02140 617/876-1400 FAX: E-mail: Web:	676
<b>GRUNDY DIV. OF HENRY COMPANY</b> 2911 Slauson Avenue Huntington Park, CA 90255 213/583-5000 FAX: 213/582-6429 E-mail: Web:	678

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<b>HICKMAN SYSTEMS, INC. W.P.</b> 30700 Solon Industrial Parkway Solon, OH 44139 440/248-7760 FAX: 440/248-6524 E-mail: wphickman@wphickman.com Web:	676
<b>IKO INDUSTRIES</b> 120 Hay Road Wilmington, DE 19809 302/764-3100 FAX: 302/764-5852 E-mail: Web:	675
<b>IMPERITALIA S.P.A.</b> Strada Lanzo 131 10148 Torino, ITALY 11-262-0941 FAX: 11-26201621 E-mail: Web:	675
<b>KOPPERS INDUSTRIES INC.</b> 436 Seventh Avenue Pittsburgh, PA 15219 800/558-2706 FAX: 412/227-2002 E-mail: Web: www.koppes.com	675
<b>MBTECHNOLOGY CORPORATION</b> 188 South Teilman Avenue Fresno, CA 93706 800/621-9281 FAX: 209/233-4607 E-mail: Web:	675
<b>MONSEY DIV OF HENRY COMPANY</b> 336 Cold Stream Road Kimberton, PA 19442 800/523-0268 FAX: 610/933-4598 E-mail: monsey-bakor.com Web:	675
<b>PERFORMANCE ROOF SYSTEMS, INC.</b> 4821 Chelsea Avenue Kansas City, MO 64130 816/921-0221 FAX: 816/921-5540 E-mail: prshunt@aol.com Web:	676

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<b>POLYGLASS USA</b> 150 Lyon Drive Fernley, NV 89408 702/575-6007 FAX: 702/575-2314 E-mail: otto@polyglass.com Web:	676
<b>REPUBLIC POWDERED METALS, INC.</b> 3735 Green Road Beachwood, OH 44122 800/551-7081 FAX: 888/742-1759 E-mail: Web:	678
<b>R.M. LUCAS CO.</b> 3211 South Wood Street Chicago, IL 60608 773/523-4300 773/523-3290 E-mail: rmlucas@ix.netcam.com Web:	678
<b>SOMAY PRODUCTS, INC.</b> 4301 N.W. 35th Avenue Miami, FL 33142-4382 305/633-6333 or 800/356-3521 FAX: 305/334-4289 E-mail: Web:	678
<b>SOUTHWESTERN PETROLEUM CORP.</b> 534 N. Main Street P.O. Box 961005 817/332-2336 or 800/877-9372 FAX: 817/877-4047 E-mail: swepcousa.com	678
<b>SUNGUARD MARKETING CORP.</b> 4432 N.E. Davis Portland, OR 97213 503/235-9206 FAX: 503/235-9206 E-mail: Web:	678
<b>TEXAS REFINERY CORP.</b> One Refinery Place P.O. Box 711 Ft. Worth, TX 76101 817/332-1161 FAX: 817/332-2340 Web: www.texasrefinery..com	679

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<b>TOPCOAT, INC. A SUBSIDIARY OF GAF MATERIALS CORP.</b> 24 Industrial Road Walpole, ME 02081-1305 800/323-0009 FAX: 508/660-2471 E-mail:	679
<b>UNIFLEX, INDUSTRIAL DIV OF KOOL SEAL INC.</b> 1499 Enterprise Parkway Twinsburg, OH 44087 216/425-4717 FAX: 216/425-9778 E-mail:	679

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<b>UNIROOF</b> P.O. Box 160133 Altamonte Springs, FL 32716-0133 407/869-5110 FAX: E-mail: Web:	
<b>W P HICKMAN SYSTEMS INC.</b> 30700 Solon Industrial Parkway Solon, OH 44139 440/248-7760 FAX: 440/248-6524 E-mail: wphickman@wphickman.com Web:	676

## Section 6: Incomplete Data

In publishing the *Low-Slope Roofing Materials Guide*, NRCA maintains a policy of total objectivity in its reporting of data. Nothing is required from listing manufacturers other than to adhere to the prescribed reporting format. Any manufacturer of a product in the product categories included in the *Guide* can be listed by submitting their information in accordance with procedures developed for this purpose.

Product manufacturers included in the *Guide* are encouraged to provide NRCA with listing information for their products that is as complete as possible for publication in the *Guide*. Beginning with the 2000 edition of the *Guide*, in situations where manufacturers have submitted product information (e.g., test results) that is deemed to be incomplete, these specific products have been omitted from the detailed listing sections of the *Guide*. Manufacturers and products with incomplete product listing information are included in this new section of the *Guide*, entitled Section 6: Incomplete Data.

NRCA has established this policy regarding manufacturers' product listings with incomplete data at the request of users of the *Guide*, who are clearly seeking detailed and complete product information from the *Guide* and the companies listed.

Users of the *Guide* who are interested in specific product information on a manufacturer's product that is included in Section 6: Incomplete Data are encouraged to contact the specific product manufacturer directly. Manufacturers' contact information is provided in the index section of the *Guide*.

For the 2000 edition of the *Guide*, incomplete product data was provided by the following manufacturers for the specific products indicated.

### ROOF COVERINGS (Section 1)

#### Built-Up Roofing

Manufacturer	Products
None	None

#### Modified Bitumen

Manufacturer	Products
Allied Signal	Infinitee 20 SM Infinitee 30 GMC Infinitee 30 GMC-FR Infinitee GTC Infinitee GTC-FR Infinitee SF
Andek	Flashband 28
Barrett Company	Ram 200 Ram 201 Ram 203 Ram 250 Ram 306 Ram 306 FR Ram 306 HP Ram 309 Ram 309 FR Ram 309 HT Ram Tough 400 PS