Maintaining the manual

The NRCA Roofing and Waterproofing Manual, Fifth Edition, has been released and includes important revisions

by Mark S. Graham and James R. Kirby, AIA

In February, *The NRCA Roofing and Waterproofing Manual, Fifth Edition*, was published. This new edition is an update of the manual's previous editions and consists of a four-volume boxed set.

Because the manual is widely recognized and referenced in the roofing industry, the release of a new edition is significant. Following is an overview of the major revisions and additions contained in the manual to assist you in familiarizing yourself with it.

Background

NRCA published its first manual, *A Manual of Roofing Practice*, in 1970; it subsequently was revised in 1971, 1973 and 1976. In 1981, the manual first was published with its present title, *The NRCA Roofing and Waterproofing Manual*. An updated version, still referred to as the first edition, was published in 1983. In 1985, a reformatted, updated, expanded second edition was published. And the manual's third edition was published in 1989. In 1996, the manual's fourth edition, which consists of two volumes, was released. For the fourth edition, a majority of the text was updated and rewritten.

Development of the fifth edition began in 1997. NRCA's Manual Update Committee provided the overall direction, content and format for the fifth edition. Five additional NRCA technical committees were assigned to update the sections addressing architectural sheet-metal and metal roofing, low-slope roofing, steep-slope roofing, spray polyurethane foam-(SPF-) based roofing and reroofing.

NRCA's Technical Operations Committee and Executive Committee also assisted in the manual's development by reviewing and providing input for the text, figures and construction details.

Broad changes

Major changes incorporated into the fifth edition include a new section addressing reroofing and expanded sections about steep-slope roof systems, architectural sheet metal and metal roofing, as well as design guidelines for low-slope membrane roof systems.

The *Handbook of Accepted Roofing Knowledge* (HARK) has been omitted from the fifth edition. The information previously contained in HARK now is incorporated into a new section, General Roofing Project Considerations, or is included in other appropriate sections of the fifth edition.

In addition, several significant changes were made to many of the following sections.

Low-slope

The Low-slope Membrane Roofing section is divided into Roof Decks, Rigid Board Roof Insulation, Roof Membranes and Roof System Design Guidelines sections and features updated technical information.

For example, the information within NRCA Technical Bulletin 2000-01, "ASTM Standards for Polymer-modified Bitumen Sheet Products," and NRCA Technical Bulletin 2000-02, "Fire Safety Considerations in the Design of Roof Systems Utilizing Torch-applied Polymer-modified Bitumen Sheet Products," now is included.

The information within NRCA Technical Bulletin 98-1, "Metric-sized Ply Sheets," also now is incorporated into the low-slope roofing text.

Perhaps the most significant change to this section is the removal of specification plates. The plates have been reformatted and now are called Roof System Design Guidelines. The guidelines have been extensively consolidated and no longer are in specification format.

The information within NRCA Technical Bulletin 2000-3, "Use of Cover Boards Over Polyisocyanurate Roof Insulation," now is incorporated into all construction details with rigid board

insulation—all built-up, modified bitumen, thermoplastic and thermoset details now show cover boards. This is a change from the previous edition, which showed cover boards only with built-up and modified bitumen roof systems.

Steep-slope

The Steep-slope Roofing section also has been reformatted and expanded. In the fifth edition, the Steep-slope Roofing section contains information about asphalt shingles, clay and concrete tile, slate, and wood shakes and shingles. There no longer is an Other Steep-slope Roofing section, which previously contained information about fiber-cement products, metal shingles and panels, foil-laminate bitumen shingles and wood-fiber-based products.

The information addressing metal shingles and panels now is included in the Architectural Sheet Metal and Metal Roofing section; information about foil-laminate bitumen shingles has been incorporated into the asphalt shingle portion of the Steep-slope Roofing section.

Construction details for steep-slope roof systems also have been added. Common details were developed for five categories—asphalt shingles, tile, slate, wood shakes and wood shingles. These details provide the basis for developing a complete set of details for most steep-slope roof system applications.

Metal changes

The Architectural Sheet Metal and Metal Roofing section has been significantly reformatted. Most metal roofing information from the fourth edition has been retained within the fifth edition though updated technical information is included.

The section now is divided into five major subsections—general information about metal types, general information about metal roof systems, specific information about architectural metal panel roof systems, specific information about structural metal panel roof systems and technical information about architectural sheet metal. This includes information about cleats, clips and fasteners, copings, gutters and downspouts, scuppers, perimeter edge metal, counterflashing, expansion joints, area dividers and joinery.

A Sheet Metal Details section has been added to provide information about joinery of different configurations for sheet-metal components, such as copings and expansion-joint covers. The fourth edition's construction details included only one joinery method.

The new information about sheet-metal joinery allows designers to select specific joinery types to be combined with low- and steep-slope details that include sheet-metal accessories. Designers no longer are limited to a single choice for joinery methodology. In addition, the section includes revised and additional architectural and structural metal panel roof system details.

SPF specifics

The Spray Polyurethane Foam-based Roofing section remains similar to the fourth edition's section, but its technical information has been updated. Specification plates have been reformatted and now are called Roof System Design Guidelines. New SPF-based roof assembly details have been added. For example, details with membrane surfacings now are included.

In addition, because SPF roof systems frequently are used in re-cover roofing applications, SPF-based reroofing information is contained in the SPF roofing section, as well as in the new Reroofing section.

Reroofing

NRCA broke new ground with the addition of the Reroofing section to the manual. Other sections of *The NRCA Roofing and Waterproofing Manual, Fifth Edition*, are written primarily for new construction projects, and until now, there never has been a comprehensive industry publication discussing considerations for reroofing projects.

The Reroofing section describes an evaluation process to determine whether to replace or re-cover an existing roof system. The process includes an existing roof system evaluation to determine whether any replacement triggers exist.

Replacement triggers are conditions that mandate removal of existing roof systems. For example, a building code may mandate a maximum number of in-place roof system layers. If that number is met, only a replacement, not a re-cover, roof system is permitted. If replacement triggers do not exist, continued evaluation is necessary to determine whether a re-cover roof system is appropriate.

Individual sections addressing design guidelines specific to re-cover roof systems and replacement roof systems also are included. Once these design guidelines are considered, installation of a reroof system is similar to that of a new roof system, and readers are directed to the appropriate section of the manual for further information.

The Reroofing section is divided into Low-slope Reroofing and Steep-slope Reroofing sections. Each section includes a flow chart describing the previously mentioned process. The Reroofing section does not describe every condition that may arise when reroofing, but it does discuss many of the more common conditions that are encountered during reroofing applications.

Construction details

All roof system construction details now are combined in a single section within the manual. There are more than 450 details and accompanying tables. Details address the following roof systems: built-up, modified bitumen, thermoplastic, thermoset, protected membrane, steep-slope, architectural sheet metal, architectural and structural metal roofing, and SPF. Details about waterproofing also are included.

Explaining the process

by Ambika Puniani

The NRCA Roofing and Waterproofing Manual is just one of many publications and products NRCA offers the roofing industry. However, other than those directly involved with the process, roofing professionals may not realize NRCA publications result from discussions with several roofing professionals.

Typically, either NRCA members or staff members determine a need for a particular publication, and the idea is presented to the appropriate NRCA committee. (NRCA currently has 28 committees, as well as several task forces, that meet at least twice a year.)

If an idea is accepted, the applicable committee and its NRCA staff liaison begin to determine how best to approach the idea. For example, NRCA's Executive Committee (composed of NRCA's president, senior vice president, six vice presidents and immediate former president) determined several years ago that NRCA's roofing and waterproofing manual should be revised every five years. As a result, the committee constantly is noting changes to technical roofing issues to incorporate in the manual.

If work on a particular product affects more than one committee, several committees may address the issue. In the case of NRCA's roofing and waterproofing manual, NRCA's Manual Update Committee asked five specific technical committees to help revise specific sections.

Once guidelines and parameters are set by a committee, NRCA staff members manage a publication's production through the writing, editing and design processes, which may take several weeks, months or longer. In the case of a project as huge as the manual, final production work began more than a year before the manual actually was published.

The committee spearheading a project reviews a publication as it is produced, and the publication may be sent to NRCA's Executive Committee for final approval.

Because NRCA seeks to provide the industry with accurate, timely information, the process of producing a publication is based on roofing professionals' needs.

For more information about NRCA's products, contact NRCA's Marketing Services Department at (800) 323-9545; fax (847) 299-1183; or access NRCA's Web site, www.nrca.net.

Ambika Puniani is editor of *Professional Roofing* magazine.

There also are several tables focusing on edge metal; counterflashings; copings; crickets; and recommended clearance between pipes, walls and curbs.

Other sections

The Waterproofing and Dampproofing section remains largely unchanged from the fourth edition but does include updated technical information.

The fifth edition also now has a consolidated and revised Moisture Control section, which addresses moisture-control issues for low- and steep-slope roof assemblies. Topics include vapor drive, vapor retarders, ventilation and insulation.

Another change in the fifth edition is the elimination of the Energy Manual section—the information now is included in the Moisture Control section. The information from NRCA Technical Bulletin 98-2, "Ventilation for Steep-slope Roof Assemblies," also is included in this section.

In addition, the manual's Appendix has been reformatted and now contains considerably more information. For example, there are new sections discussing technical bulletins, a proposed revision form, four quality-control documents published by NRCA and other industry associations, roofing contractor qualification statement and reference list of industry organizations. The deck-dryness test and humidity-measurement sections have been removed.

Staying current

With its continued expansion and revision during the past 30 years, NRCA's manual has become one of the most widely recognized and accepted technical publications in the North American roofing industry.

The NRCA Roofing and Waterproofing Manual is a living document—it is revised and updated every five years. The fifth edition reflects NRCA's current guidelines in a conservative, time-tested and proven manner.

Editor's note: Although past manual editions no longer are available in print, they are available from NRCA in a CD-ROM format—*The NRCA Roofing and Waterproofing Manual 1970-1995, A 25-Year History*. To purchase the CD-ROM, contact NRCA's Marketing Services Department at (800) 323-9545; fax (847) 299-1183; or visit NRCA's Web site, www.nrca.net.

Mark S. Graham is NRCA's associate executive director of technical services, and James R. Kirby is an NRCA director of technical services.