

Technical Developments

An update on current roofing industry issues from NRCA's Technical Services Section

National Roofing Contractors Association

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ACQ-treated lumber

As of January 1, 2004, wood producers have voluntarily removed chromated copper arsenate- (CCA-) treated wood from U.S. and Canadian consumer markets based on an agreement with the United States Environmental Protection Agency (EPA). Since its development in the early 1930s, CCA-treated lumber had been used extensively in construction applications where moisture resistance is of concern, such as for wood blocking, nailers and supports for roof assemblies.

Currently, there are several substitutes for CCA-treatment being used for treated wood, including alkaline copper quat (ACQ) treatments. Unfortunately, the specific treatments used on treated lumber not always are readily identifiable by consumers.

NRCA has received a number of reports regarding corrosion associated with the use of ACQ-treated wood. Published reports reveal ACQ-treated wood can have more than twice the corrosion potential of CCA-treated wood. Of particular concern are situations where metal may come in direct contact with ACQ-treated lumber. For roofing applications, the attachment of treated wood blocking to metal roof decks and metal flashings (e.g., fascia, copings) to treated wood blocking are of particular concern.

In June 2004, the Southern Pine Council (SPC) issued an advisory addressing fasteners and connectors for treated wood. In this advisory, SPC advises against using standard carbon steel, aluminum and electroplated galvanized steel fasteners and connectors in contact with treated wood. SPC advises hot-dipped galvanized fasteners complying with ASTM A153 and connectors complying with ASTM A653, Class G185, generally are acceptable. SPC recommends Type 304 or Type 316 stainless-steel fasteners and connectors for maximum corrosion resistance in severe exterior applications (e.g., saltwater exposure). Fasteners and connectors with proprietary anti-corrosion coatings also may be acceptable for use with treated wood. When considering the use of such proprietary coated fasteners and connectors, consult hardware manufacturers for specific information regarding the performance of their products with treated wood.

Until more definitive information is available regarding the corrosion potential and recommended fasteners for ACQ-treated wood, NRCA recommends caution be exercised and the SPC guidelines be followed when using treated lumber in roofing applications.

Asphalt shingles' new wind-resistance methodology

The "Tech Today" column in *Professional Roofing*, July 2004, discusses a new methodology being introduced by the Asphalt Roofing Manufacturers Association (ARMA) where asphalt shingles will be classified by Underwriters Laboratories, Inc. (UL) for their wind resistances. This classification is based on testing in accordance with newly developed test methods, UL 2390 and ASTM D6381, that ARMA believes is more representative of actual asphalt shingles' performances in high winds. Testing in accordance with this classification will be included as a requirement in the next edition of the *International Building Code* when it is published in 2006.

Within the past several weeks, UL has revealed the first manufacturer to be classified under this classification program, which is identified as UL Category Code TGAH—Prepared Roof Coverings, Asphalt Shingle Wind Resistance. Owens Corning's Classic, Supreme and Oakridge Pro 30 asphalt shingles have received a "Class H" designation by UL, indicating a design wind resistance up to 150 mph.

In the coming months, NRCA anticipates additional UL classifications of manufacturers' asphalt shingle products. Up-to-date information about the status of UL's classification of wind resistance for asphalt shingles is available by visiting UL's Web site, www.ul.com, and selecting Certifications, then clicking UL Category Code/Guide Information and entering the category code TGAH.

Also, during the 2005 International Roofing Expo (formerly NRCA's convention and exhibit), February 15-18, 2005, in Orlando, Florida, ARMA representatives will be conducting an educational program addressing this new methodology for asphalt shingles' wind resistances. Additional information regarding the 2005 International Roofing Expo is available at www.TheRoofingExpo.com.

Ask the Experts online program

On Tuesday, November 9, 2004, at 3 p.m. EST, NRCA will be holding an online conference as a part of its ongoing Ask the Experts series titled "Current Technical Issues in the Roofing Industry." During this program, Mark S. Graham, NRCA's associate executive director of technical services, will discuss upcoming code restrictions regarding the use of aggregate surfacings, changes in UL fire ratings and how to keep current with changing UL and FM ratings, concerns with the use of ACQ-treated lumber, designing for the safe installation of torch-applied roof systems and roofing materials availability concerns. Time also will be allotted during the program for online participants to ask questions about the program's topics and other roofing industry technical issues.

Additional information regarding this online program including conference registration information is available on NRCA's Web site, www.nrca.net, or by contacting John Schehl, NRCA's director of training, at (847) 299-9070, Ext. 7503, or jschehl@nrca.net.

Loss of certain UL fire ratings

NRCA recently has learned that in late 2003, UL withdrew a number of manufacturers' fire-rating classifications for certain single-ply membrane roof systems installed directly over polyisocyanurate insulation on combustible roof decks. This issue is of concern because since UL withdrew these ratings, building owners, designers and roofing contractors may unknowingly install these particular roof assemblies believing they achieve Class A fire ratings when they actually may have less protective fire ratings or be nonrated. Also of concern is the withdrawal of fire ratings occurred with little or no notification to the roofing industry by UL or the affected manufacturers.

NRCA has received reports stating the loss of fire ratings in this particular instance is the result of failures in the burning brand test portion of standardized fire tests, ASTM E108 and UL 790, on which roof assemblies' exterior fire exposure ratings are based. Furthermore, it appears the cause of these fire-test failures is likely related to changes in polyisocyanurate insulations' facer sheets, blowing agents or both. This appears to be confirmed by the fact similar roof assembly configurations that incorporate an appropriate cover board or specific thermal barrier layer remain as fire-rated assemblies.

The issue of the loss of fire ratings for specific roof assembly configurations that were previously known to be fire-rated illustrates the importance for roofing professionals to obtain the most up-to-date information possible. In the case of UL, even referring to the current edition of its *Roofing Materials and Systems Directory* may not yield ratings currently in effect because the closing date for the 2004 edition was December 12, 2003. As a result, any changes in UL's ratings since that date are not reflected in the current directory.

The most up-to-date source of information regarding roof assemblies' UL ratings is available on UL's Web site, www.ul.com. By accessing the Certifications link on UL's home page, users are directed to an online directory where ratings can be found based on a listing manufacturer's name, UL file number, UL category code, test standard number or keyword. Specific technical questions relating to UL's fire-resistive designs, systems and assemblies can be directed to UL's Architectural Services Group at 1-877-UL-HELPS (854-3577) or via e-mail at nbk.architectural.services@us.UL.com.

Up-to-date information regarding manufacturers' UL ratings also should be available directly from specific manufacturers.

NRCA suggests designers of roof assemblies give consideration to obtaining specific, written certifications from manufacturers for their specific roof assembly designs' fire- and wind-resistance ratings.

Problem resolution assistance from NRCA

NRCA's Technical Services Section receives numerous calls from NRCA members requesting technical assistance and answers to roofing-related technical questions, as well as reporting on technical problems. This service is one of the most important benefits of being an NRCA member.

To complement this service, NRCA has made arrangements with Elk Corp. and GAF Materials Corp. to offer expedited assistance in resolving problems associated with these companies' residential roofing products or services that are reported to NRCA. The premise of this program is NRCA has been given priority access to work with these manufacturers to quickly and amicably resolve problems NRCA members may experience. This problem resolution assistance program is available exclusively to NRCA members.

Currently, NRCA is working to establish similar expedited problem resolution assistance programs with other manufacturers.

Assistance from NRCA's Technical Services Section is available by calling 1-800-323-9545 or (847) 299-9070.