Treated wood and roof assemblies

by **Mark S. Graham**

In February, NRCA issued a *Special Report*, "Use of treated wood in roof assemblies." In the report, NRCA provides a brief background of its concerns with the use of the current generation of pressure-treated wood and offers specific interim recommendations intended to address the concern of corrosion relating to the use of treated wood.

Background

Since the early 1930s, the most widely used chemical treatment for treated wood has been chromated copper arsenate (CCA) compounds. CCA-treated wood has proved to perform successfully in many applications, including as roof assembly components.

As of January 2004, wood preservers voluntarily removed CCA-treated wood from U.S. and Canadian consumer markets as a result of an agreement with the U.S. Environmental Protection Agency (EPA). EPA cited the arsenic and chromium contained in the CCA treatment as being possible environmental concerns when used in certain outdoor applications, such as furniture and playground equipment.

Wood preservers have introduced a number of CCA-treatment substitutes, including alkaline copper quat (ACQ), copper azole, sodium borates (SBX) and ammoniacal copper zinc arsenate (ACZA). These new-generation treatments currently are acceptable to EPA. (For additional information, see "CCA-treated wood substitutes," June 2004 issue, page 55.)

Corrosion concerns

NRCA is concerned with the increasing number of reports and bulletins from the treated wood and fastener industries regarding the increased potential for corrosion when using the current new generation of treated wood.

Published reports indicate ACQ compounds and ACZA exhibit more than twice the corrosiveness of CCA, and copper azoles exhibit slightly less than twice the corrosiveness. SBX treatments may be less corrosive than CCA treatments, but SBX cannot tolerate exposure to the elements.

For the roofing industry, the potential for corrosion-related problems resulting from the use of the current new generation of treated wood is a particular concern because treated wood in roof assemblies often is used as a component that interfaces with or directly contacts metal—specifically fasteners, flashings and other accessories, or roof decks.

Recommendations

Until more definitive information is available regarding the long-term performance and corrosion potential for the current new generation of treated wood, NRCA recommends roofing professionals take a conservative approach when using or interfacing with treated wood.

Carbon steel, aluminum and electroplated galvanized steel fasteners should not be used in contact with treated wood. Hot-dipped galvanized steel fasteners complying with ASTM A153, "Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware," are acceptable. NRCA recommends Type 304 or Type 316 stainless-steel fasteners for maximum corrosion resistance.

Fasteners with proprietary anticorrosion coatings may be acceptable. When considering such fasteners, consult the fastener manufacturer for specific performance information and any special instructions or precautions that are applicable to treated wood.

Aluminum fasteners, flashings and accessory products should not be used in direct contact with any treated wood. ACQ-treated wood is not compatible with aluminum. Uncoated metal and painted metal flashings and accessories, except for 300-series stainless steel, should not be used in direct contact with treated wood.

Also, NRCA now believes the corrosion-related concerns regarding the use of the current new generation of treated wood possibly outweigh the benefits treated wood provides. As a result, NRCA is revising its recommendation in *The NRCA Roofing and Waterproofing Manual, Fifth Edition*, for use of treated wood in roof assemblies. NRCA now considers the use of nontreated, construction-grade wood to be acceptable for use in roof assemblies where specific detail construction provides for a secondary means of waterproofing. Construction details depicting such a secondary means of waterproofing are provided in the manual's Construction Details section.

As more information becomes available regarding the current generation of treated lumber, NRCA may revise its recommendations and guidelines provided in the *Special Report*.

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WEB EXCLUSIVE

For a link to NRCA's *Special Report*, as well as links to other sites that address the treated wood issue, log on to www.professionalroofing.net.