NRCA UPDATE

Contractors report on corrosion, blisters, coatings

by **Lynne Bonahoom**

NRCA has recently investigated three topics that affect roof performance and/or application: steel deck corrosion; blistering of built-up membranes over perlite roof insulation, and coating modified bitumen membranes. The association's Project Pinpoint data has shown reports of problems involving the first two, but because Project Pinpoint provides only a limited data base, NRCA-member contractors were surveyed as well in April to obtain information on steel deck corrosion and blistering over perlite insulation. A questionnaire on coating modified bitumen membranes was also a part of the survey. The following information is a summary of the survey responses, as reported by Thomas Smith, NRCA director of technology and research.

Steel deck corrosion

Only a small number of deck-corrosion reports were received by NRCA; therefore, it is difficult to draw definitive conclusions. Although deck corrosion associated with phenolic insulation has recently come under scrutiny, the responses show five different types of insulation material over the reported problem decks.

Based upon the April survey, Project Pinpoint analysis, field reports and other sources, the following practices are recommended:

- New steel decks should be specified with corrosion-protection coatings as recommended in NRCA Bulletin 15-91 (see "Tech Transfer," July, Page 58).
- When reroofing, regardless of the type of insulation, the deck should be evaluated for corrosion damage (particularly when leakage has been experienced).

  If the existing roof system contains phenolic insulation, take particular care in evaluating the existing roof (see "Tech Transfer," April, Page 86).
- When re-covering, rather than tearing off, particular care in deck evaluation is needed, because the deck will not be exposed during the reroofing work.
- When reroofing, if phenolic insulation is specified over an existing prime-coated deck, the roof designer should specify preparing and painting the deck prior to application of the insulation.

If you encounter deck-corrosion problems, telephone the NRCA Technical Department at (708) 299-9070. Make sure you meet any warranty requirements for notification, as well.

Blistering of membranes

More reports were received regarding blistering over perlite roof insulation, but the number of blistering reports was still small. For this problem, therefore, it is also difficult to draw definitive conclusions.

When blistering occurs, typically the perlite board is fully encapsulated by being set in and mopped over with asphalt. Also, the roof assembly usually includes a vapor retarder, existing built-up membrane or concrete deck.

Some of the blister reports are over ½-inch perlite. However, several of the reports are over ¾-inch-or-thicker perlite. In at least some of the problem jobs, it was determined that the moisture content of the perlite was within the normally expected range, and it was determined that the contractor's workmanship did not cause the blistering.

Based upon this survey, analysis from Project Pinpoint, input from manufacturers and a 1988 NRCA/Midwest Roofing Contractors Association research report titled, "Application Effects of Hot Asphalt on Roof Insulation," the following practices are recommended:

- Half-inch perlite board should not be encapsulated in asphalt. If the top surface of the board is to be mopped, the board should be secured with mechanical fasteners if the deck is steel or wood. If the deck is not steel or wood, a thicker perlite board should be used, so that securement may be achieved by the use of asphalt.
- Because ¾-inch-or-thicker perlite is formulated differently than ½-inch perlite, the thicker boards may be encapsulated in asphalt. Blistering over ¾-inch-or-thicker perlite is currently believed to happen infrequently. However, if frothing on top of the perlite is observed during application, immediately contact the NRCA Technical Department. Frothing may be most pronounced at board edges.

  Blisters may also occur days or months after job completion, even though frothing was not observed during application. If you notice blister development after job completion, also telephone NRCA's Technical Department.

NRCA will continue to monitor this phenomenon. While this problem is currently believed to happen infrequently, when it does occur, the magnitude of the problem can be serious. Your assistance in reporting problem jobs is needed.

Coating modified bitumen

In conjunction with the Asphalt Roofing Manufacturers Association (ARMA) and the Roof Coatings Manufacturers Association (RCMA), NRCA conducted this section of the survey to obtain contractors' experiences with coating modified bitumen membranes.

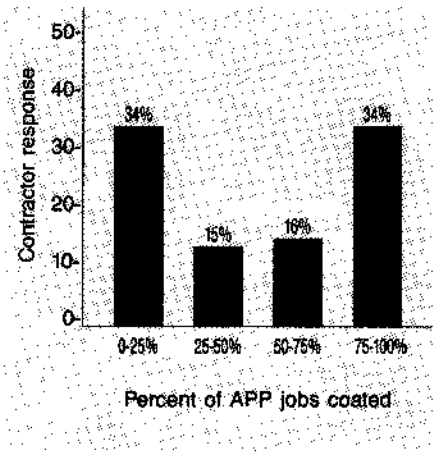
A total of 126 contractors reported 116 APP- and 57 SBS-modified

bitumen jobs. The reasons for coating the membranes were given as follows, in order of importance: warranty requirement, enhanced weathering resistance, aesthetics, improved fire resistance and other.

Of interest is the number of contractors who almost always coat APP versus those who almost never do (see accompanying bar graph). This may indicate a trend toward the increased use of coatings for this type of membrane. However, factory-applied granules, rather than coatings, is by far the most common surfacing for SBS products.

Success with coating APP and SBS membranes appears to be quite good, with most contractors reporting very good or fair experience.

Better experience is reported when the coatings are applied to new versus weathered membranes. Yet this observation contradicts the response of 71 percent of the contractors who say they prefer to apply coatings to a weathered membrane. Those who prefer to apply to a weathered membrane report the preferred weathering time is about one month.



Contractors who almost always coat versus those who usually don't.

Peeling/lifting problems are the most common type of coating problem reported for APP. A blotchy surface is the most common type of coating problem for SBS. Few coating slippage or other problems were reported for either type of membrane.

Very few jobs using a primer were reported. Also, about half of the respondents indicated they have not recoated an APP membrane. And only a few report experience with recoating an SBS membrane.

NRCA, ARMA and RCMA are in the process of evaluating the survey results, which should be helpful in developing guidelines for coating modified bitumen products. PR

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