Synopses of technical papers

by **Mark S. Graham**

The North American Conference on Roofing Technology was held in Toronto, Ontario, Canada, Sept. 16-17. The conference, the twelfth in a series of NRCA technical conferences dating to 1969, was sponsored by NRCA, the Canadian Roofing Contractors Association and National Research Council Canada/Institute for Research in Construction.



The conference consisted of 14 presentations based on technical papers about practical approaches to current low- and steep-slope roofing issues in North America. Following are brief reviews of several conference papers.

Hail

"Protocol for Assessment of Hail-Damaged Roofing" describes a detailed field inspection procedure and economics-based method for determining repair or replacement of hail-damaged roofing materials. Although this research is limited to asphalt shingles and wood shakes and shingles, its general principles can be applied to other steep-slope roof systems. The paper reports that hail damage is quantified by examining areas on directional-oriented roof slopes to determine the number of damaged shingles or shakes per roofing square (i.e., per 100 square feet [9.3 m^2]).

"Long-Term Effects of Hail Impact on Asphalt Shingles—An Interim Report" presents interim results of an ongoing laboratory study of new and weathered fiberglass- and organic-reinforced asphalt shingles' impact resistances. The study concludes that dents in asphalt shingles caused by impacts that did not initiate fractures did not change measurably over time and, therefore, are not functional damage.

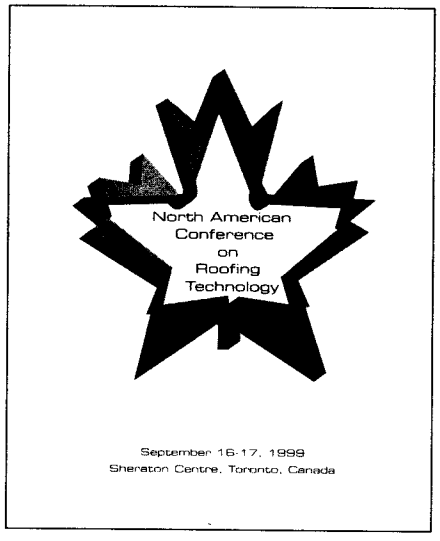
Wind resistance

"Wind Uplift Resistance of Low-Slope Mechanically Fastened Roofs with Attached and Loose-Laid Insulation Boards" discusses the need for attachment of insulation boards in mechanically attached and loose-laid membrane roof systems. The research concludes that neither the number nor placement of insulation fasteners plays a large role in these roof systems' wind performances.

"Influence of Nail Locations on Wind Resistance of Unsealed Asphalt Shingles" analyzes the relationship between fastener placement and damage to asphalt shingles based on wind-tunnel testing. The research indicates fastener placement significantly can affect unsealed asphalt shingles' wind performances.

Energy Star®

"ENERGY STAR® Label for Roofing Products" provides an overview of the Energy Star Roof Products Program, which was developed and is maintained by the U.S. Environmental Protection Agency and U.S. Department of Energy. The program recognizes roofing products that have relatively high solar reflectances, which are said to reduce building cooling loads and costs.



In "A Contractor's View of the ENERGY STAR® Label for Roofing Products," a roofing contractor's perspective of the program is discussed. Depending on roofing contractors' abilities to communicate to customers the benefits and limitations of a product's Energy Star label, the paper's author believes roofing contractors can be affected positively and negatively by the program.

Ventilation

"Ventilating Cathedral Ceilings to Prevent Problematic Icings at Their Eaves" discusses the need to ventilate steep-slope, cathedral ceiling-style roof assemblies to prevent the formation of icicles, ice dams, leaks and structural damage at cold eaves. The research provides design guidelines for sizing necessary ventilation spaces in cathedral ceilings and their inlet and exhaust openings.

Moisture surveys

The paper "A Comparison of Three Different Technologies for Performing Nondestructive Roof Moisture Survey" describes how infrared thermography, nuclear hydrogen detection and electrical capacitance moisture detection methods were used on the same roof assembly. The research compares the accuracy and reliability of the different methods and discusses the data's usefulness. The research concludes all three methods are viable; however, each method's specific limitations must be recognized.

Proceedings

Roofing professionals can obtain conference proceedings, which contain all presented papers, from NRCA's Marketing Services Department at (847) 299-9070 or by accessing NRCA's Web site at www.nrca.net.

Next month in this column, the other seven conference papers will be reviewed. PR

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