IWA research papers

by **Mark S. Graham**

From Oct. 4-7, the XI International Waterproofing & Roofing Congress was held in Florence, Italy. The conference was sponsored by the International Waterproofing Association (IWA) with support from NRCA and brought together roofing professionals from around the world to exchange findings of their current research.

Thirty technical papers were presented by authors from 13 countries, including three papers from U.S. authors and three papers from Canadian authors. Following is a brief synopsis of several conference papers.

Technical papers

In "The most recent frontiers of performance in APP modified bitumen waterproofing membranes with the use of a new polyolefin generation," the use of new generation polyolefin (NGP) modifiers in polymer-modified bitumen sheet products is discussed. The research concludes NGP modifiers can be ideal bitumen modifiers and can optimize the desirable properties found with APP and SBS modifiers.

"Tear resistance of bituminous roofing membranes—to tear or not to tear" analyzes various methods for testing tear-strength resistance properties of bituminous membranes using nonwoven reinforcements.

The research indicates that depending on reinforcement configuration and tear specimen shape, specific tear-strength tests may not analyze membranes' tear-strength properties but rather materials' tensile-strength properties. The research concludes trapezoidal-shaped tear-strength specimens and the nail tear-out method may be most appropriate for analyzing tear-strength properties of reinforced bituminous membrane products.

"Flexible polyolefin roofing membranes: Ten years of field experience" reports on TPO membrane performance in Europe. Another paper, "Thermoplastic polyolefin (TPO) roofing membranes: The North American experience," provides the North American perspective. Both papers indicate there have been significant product formulation changes during the past 10 years. The research concludes the performance levels of current TPO membranes appear adequate.

In "Asbestos is out but what about its substitutes? A review of problems with some roof shingle replacements," some roof shingle replacement problems associated with fiber-cement synthetic shingles, shakes and slates are discussed.

The author presents data from a laboratory evaluation of fiber-cement products from six manufacturers and compares the data with recognized data for authentic natural slate and asbestos-cement products. The fiber-cement products investigated generally exhibited significantly poorer physical properties than the natural slate and asbestos-cement products they attempt to replicate.

Also investigated in this research is how much fiber-cement products bend before they break, which indicates a fiber-cement product's relative brittleness. The data reveal fiber-cement products are significantly more brittle than asbestos-cement products and, in some instances, may be so brittle they may not adequately bridge fastener heads. This is significant because most fiber-cement products are not manufactured with countersunk fastener holes that could permit fiber-cement products to lie flat without bridging over fastener heads when properly installed.

"Industrial approach to recycling, re-use and disposal of bituminous waste" provides a European manufacturer's experiences with handling bituminous waste at its 15 plants in 11 countries. Various waste-handling methods were evaluated, including recycling, reuse incineration, landfill disposal and selling of downgraded products (e.g., non-first-grade products). Each waste-handling method's feasibility varies with regional economics. The research concludes that assuming technically feasible solutions are found, methods other than landfill disposal can be economically feasible.

The next conference

The next conference will be Sept. 25-27, 2002, in Lake Buena Vista, Fla. The conference's theme will be "Exploring Tomorrow's Technology Today." Original papers are being solicited for presentation at the conference and publication in the conference's proceedings; abstracts should be submitted no later than Jan. 31, 2001. For more information about submitting abstracts, access NRCA's Web site, www.nrca.net, or contact me at (847) 299-9070, Ext. 211; fax (847) 299-1183; or e-mail mgraham@nrca.net.

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