FM 1-29 updated again

by Mark S. Graham

In September, FM Global issued another revision to its Loss Prevention Data Sheet 1-29, "Roof Deck Securement and Above-Deck Roof Components." This latest revision, which is actually dated August 2007, follows other revisions that took place in February, May 2006 and January 2006.

If you are involved in roof assembly design and installation where FM Global's guidelines apply, I encourage you to be familiar with the latest revisions to FM 1-29.

Prescriptive changes

FM Global has returned to allowing its prescriptive perimeter and corner fastener enhancements for Class 1-90 but only in limited situations. Since the January 2006 revision, prescriptive perimeter and corner fastener enhancements only have been permitted by FM Global up to Class 1-75. With the latest revision, for buildings located in non-hurricane-prone regions, prescriptive enhancements are permitted in areas where the roof rating's recommended field does not exceed Class 1-90.

FM Global defines hurricane-prone regions in the U.S. and its territories as regions along the Atlantic and Gulf of Mexico coasts where the basic wind speed is greater than 90 mph and Hawaii, Puerto Rico, U.S. Virgin Islands and American Samoa.

Generic configurations

FM 1-29's latest revision also adds two new generic configuration options for perimeter and corner areas where a Class 1-90 roof rating is needed for a roof system's field.

Generic Option 1 provides for the installation of a minimum 1½-inch-thick layer of Class 1 insulation laid loosely over a roof deck; a minimum ½-inch-thick layer of factory- or field-primed water-resistant gypsum cover board over the insulation; through-fastening of both layers using a minimum of No. 14 screws and metal stress plates; and a fully mopped, minimum three-ply built-up or fully mopped or torch-applied, minimum two-layer polymer-modified bitumen membrane system over the cover board.

Generic Option 2 provides for the installation of a minimum 2-inch-thick Class 1 insulation laid loosely over a roof deck; a minimum 7/16-inch-thick APA-rated (Exposure 1, exterior adhesive) oriented strand board (OSB) over the insulation; through-fastening of both layers using a minimum of No. 14 screws and metal stress plates; and a minimum three-ply built-up membrane or minimum two-layer polymer-modified bitumen membrane system with all plies fully mopped over the OSB.

The options apply only to built-up and polymer-modified bitumen membrane roof systems installed over steel roof decks. They do not apply to other membrane types (single plies) or over other roof deck types (wood, cementitious wood fiber).

Other changes

FM 1-29's latest revision also clarifies its limitations on roof assemblies that incorporate cold-process adhesives. FM 1-29 states some cold-process adhesives require a minimum of 28 days for proper curing and 60 days or more for multilayer adhesive applications. Contact-type adhesives used with single-ply membranes may be near full strength within about seven days.

To address this concern, FM 1-29 indicates cold-process adhesives should never be used if a roof assembly may be exposed to a tropical storm before the adhesive reaches at least 50 percent of its ultimate strength. FM 1-29 cites the start of the annual hurricane season north of the equator as June 1 and continuing for six months. Therefore, FM Global restricts roof assemblies that rely on cold-process adhesives from being installed in hurricane-prone regions from June through November.

FM 1-29's latest revision changes insulation attachment requirements when a vapor retarder occurs below rigid board insulation in mechanically attached single-ply membrane roof systems. FM 1-29 now requires insulation above a vapor retarder be mechanically attached (through the vapor retarder) at a rate of one fastener per 2 square feet throughout the roof area (including perimeters and corners) or at a rate to achieve a minimum Class 1-90 rating with an adhered single-ply membrane roof system. The previous edition of FM 1-29 did not include the minimum Class 1-90 requirement.

Some additional revisions to FM 1-29 are intended to clarify the document's intent. A copy of FM 1-29 can be obtained by accessing FM Approvals RoofNav at www.roofnav.com.

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