

# AN FM-APPROVED ROOF REQUIRES FM-APPROVED FLASHING

By Phil Smith, PE

**W**hen an FM-Approved roof is specified by a roofing consultant, designer, or contractor, it is generally understood that this means the roof assembly will be selected using RoofNav, the web-based roofing design tool from FM Approvals. This free tool provides roofing professionals with a step-by-step means to identify, configure, and install roof assemblies and components that comply with FM Approvals roofing standards.

However, there seems to be some confusion in the roofing industry regarding one of the most important roof protection systems: edge flashing. Location-based engineering evaluations of facilities insured by commercial and industrial property insurer FM Global have revealed that many roofs intended to be built as FM-Approved do not include FM-Approved flashing systems. In these cases, building owners who believe they have a complete FM-Approved roofing system actually do not.

*Not all flashing damage occurs at the building corners.*

An FM-Approved roof is required to be installed with an FM-Approved flashing system. There are more than 600 such flashing products listed in RoofNav, searchable by material, wind uplift rating, and other factors. All of these flashing products have been evaluated according to FM Approvals Standard 4435, *Roof Perimeter Flashing*.

FM-Approved flashing systems are produced either by dedicated roofing product manufacturers or fabrication shops. The latter are usually roofing contractors who are also fabricators of specific designs of FM-Approved flashing products. Flashings produced by these manufacturers and fabrication shops have undergone performance evaluations by FM Approvals according to FM Approvals Standard 4435. A re-examination program to the revised consensus standard ANSI/SPRI/FM 4435/ES-1, *Wind Design Standard for Edge Systems Used With Low-Slope Roofing Systems*, is currently underway. The current version of ANSI/ES-1 is referenced by the International Building Code (IBC). Recognition of the new version is expected during the current code-change cycle.

In addition, the manufacturers and fabricators of FM-Approved flashing products must maintain a relationship with FM Approvals that ensures ongoing product performance, quality control program documentation, initial and surveillance audits, and other requirements.

One misconception is that flashing fabricated on site or elsewhere using the guidelines contained in FM Global Property Loss Prevention Data Sheet 1-49, *Perimeter Flashing*, makes that flashing FM-Approved. This is not the case. The FM Approvals process leading to the use of the "FM-Approved" mark includes laboratory evaluation of flashing samples from manufacturers or shop fabricators, as well as the other steps noted above.

The guidelines provided in Data Sheet

1-49 are intended for use in the installation of FM-Approved flashings and where FM-Approved flashings are unavailable. FM-Approved flashing is generally available throughout North America. Currently, it may be somewhat difficult to obtain in Europe and the Asia/Pacific region. FM Approvals is working in these markets to expand the availability of indigenous FM-Approved products.

As the readers of this publication are acutely aware, roof assemblies are the first line of defense against the elements in the complete building envelope. Roof assemblies must be able to protect a structure from the natural hazards associated with the local environment, including rain, hail, snow, high winds—even fire.

Flashing and other edge securement components seal the edge of the roof from the elements and, in some designs, secure the roof membrane along the perimeter of the roof. Unfortunately, the majority of roof covering failures resulting from windstorms involve improperly designed or constructed perimeter flashing systems. If the flashing system fails, a sizable amount of roof covering will likely be lost. If the roof cover securement is also inadequate, the loss will be even greater.


According to a 2006 report by the Roofing Industry Committee on Weather Issues (RICOWI), an investigation of Hurricanes Charley and Ivan in 2004 showed that initial damage to 93 low-slope roofs studied was "typically related to perimeter edge flashing."

Most instances of property loss, including those involving the roof, can be prevented. FM Approvals is doing its part to help property owners avoid losses by periodically reviewing and, where necessary, refining approval standards (e.g., FM-4435), and by helping to make it easier for roof consultants, designers, architects, and contractors to specify and install locally available

FM-Approved roof assemblies anywhere in the world.

Scientific research has demonstrated that most property losses are preventable, not inevitable. A holistic approach to loss prevention can result in a building envelope that is highly resistant to most common natural hazards, including windstorms, rain, hail, snow, and windborne debris impact.

FM Approvals is one of the only organizations in the world that subjects complete roof assemblies to multiple perils, including fire testing above and below the deck, wind-uplift testing, hail-damage testing, accelerated weathering, water leakage, foot traffic, and corrosion-resistance testing of metal parts. FM-approved roof assemblies must meet all of these performance criteria, not just one or two.

When an FM-Approved roof is specified, it must include the FM-Approved roof assembly and also FM-Approved flashing. When used together, the FM-Approved roof assembly and flashing system provide comprehensive protection for the building and its occupants, and full value for the building owner. 



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## Call for Abstracts for RCI 2015 BE Symposium

RCI is seeking abstracts for its 2015 Symposium on Building Envelope Technology, to be held Nov. 9-10 at the Gaylord Opryland Resort and Convention Center in Nashville, Tennessee. Abstracts of no more than 200 words should be received at RCI headquarters no later than April 27, 2015. Contact RCI headquarters for a copy of the Abstract Submittal Form and RCI Guidelines for Presentations.