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September 2015

Stucco doesn't leak…holes do.
Fluid-Applied Barriers (FABs) for Stucco

It seems as though the entire world is blaming stucco as the cause of water intrusion into homes, offices or whatever. This has been the mantra of homeowners, insurance companies and even some contractors since the storm season of 2004. In reality, it is not the stucco that has leaked. It is the lack of or the improper flashing and sealing around penetrations through walls (windows, doors, hose bibs, dryer vents and others) that have caused the greatest majority of these leaks.

The cement industry has always maintained that stucco was water-resistant but not water-proof. Beginning in 2005, the Stucco Task Force (STF) of the Florida Concrete and Products Association (now the Florida Lath & Plaster Bureau - FLAPB) decided to prove their claims. With the aid of a grant, the NCMA was contracted to run a series of tests on masonry walls for water tightness under storm conditions. There is an ASTM Standard, E514, for testing wind-driven rain penetration of wall assemblies which were followed and increased. The results of those tests showed virtually no leakage through the stucco in walls without penetrations. Due to the constraints of a column of this nature, I won't go further into this test. Those of you who wish to read the entire report may do so at www.ncma.org/foundation/programs. The document number is 2005.002.

Then the University of Florida, Hurricane Research Center began a series of tests on both masonry and wood frame walls with windows of different profiles installed. Both the Fenestration Manufacturers Association (FMA) and the FCPA Stucco Task Force were closely involved with each providing product and labor to build and plaster the samples. In these tests, the window openings were tested by negative pressure from the back or representatively the indoor side while applying water in a spray to the outside. Additionally, these same walls were then exposed to a simulated hurricane driven rain force while installed in a mock house wall. This simulator could provide approximately a 140mph wind to the exterior face of the wall. Again, the water penetration was measured. Many of these installations, both masonry and frame, performed well and many failed. The final report, *Residential Window Installation Option for Hurricane-Prone Regions* by Cory Thomas Salzano is available.

Some of the masonry wall test samples at UF required the use of a Liquid Applied Barrier on the jamb return, the sill and on the face of the masonry surface to 9 inches out from the opening. It was thought that these LABs would prevent water penetration through the masonry. The FMA, to their credit, had decided that they needed to do something to standardize window installations to provide for a more water-tight installation practice. The first step in doing so was to amend the current guidelines, AAMA Liquid Applied Flashings, and the initial draft included this 9-inch surface application. The Stucco Task force was very concerned about this proposed new requirement due to a history of debonding of stucco at locations where LABs were used. As it turned out, the use of LABs in these areas had little or no effect on the performance of stucco over masonry at window openings.

A second round of tests were then undertaken by the FMA and conducted in Tampa with the assistance of Titan America, LLC. Four more masonry walls were built and plastered with four different window installation types. These were then subjected to the FMA's standard water penetration tests. No LAB was applied to the block face. Again, there were no leaks through the masonry. This test satisfied the FMA that LABs were not necessary over the exterior façade of the masonry.

I was asked to address the Installation Committee of the FMA at their annual meeting at Marco Island in October of 2008. I presented the results of all these tests and asked the FMA to remove the LAB requirement. A compromise was proposed in which the LAB need only be applied to the return and sill of masonry openings. FMA then asked the FCPA's Stucco Task Force to comment prior to their final vote. The position of the STF (and now the FLAPB) is that LABs are not necessary at all over masonry openings. However, we may approve new proposal provided that the bond of stucco to the CMU is not hampered. In other words, we were asking that language be included in the new guidelines that LABs must be tested for bondability to stucco. While the testing requirement was eventually dropped, the resulting evolution of their document, FMA/AAMA 200-12, *Standard Practice for Installation of Windows with Frontal Flanges for Surface Barrier Masonry Construction for Extreme Wind/Water Conditions* addresses all concerns. The following is the current version of that text:

> 6.2.1.4 Treat the masonry opening, including the sill (sub-sill) area, with a liquid-applied flashing for the purpose of protecting the masonry rough opening cavity from liquid water intrusion. The seal shall be applied before the installation of the buck/receptor materials. The liquid-applied flashing shall be applied in accordance with the manufacturer's recommendations. The liquid-applied flashing application shall include the rough opening return, to form one continuous sealed area (see Figures 2 & 3). Using a compatible sealant or liquid-applied flashing, ensure that the corner joints are properly sealed…
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> *Note 2*: *In the event that the surface-applied stucco to the liquid-applied flashing is a concern, it is acceptable to coat only the portion of the masonry rough opening that will not be in direct contact with the surface-applied stucco of the exterior façade.*

The Florida Lath & Plaster Bureau endorses this FMA/AAMA 200-12 document.

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