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DOCTOR SPEC

The Trouble with EIFS

Is it a problem product or just misunderstood?

By [RICH BINSACCA](#)

For the first 15 years that they were used as residential cladding, exterior insulation and finish systems, or EIFS, were regarded as an affordable, attractive, and easy-to-apply exterior finish. In the Southwest and on the Gulf Coast, especially, EIFS—also known as synthetic stucco—appealed to builders and architects as a reliable alternative to true stucco.

Then, in the mid-1990s, a class-action lawsuit in North Carolina brought public attention to problems with the product--mainly severe water intrusion and structural damage behind EIFS used on homes. The product's reputation took a nosedive. Virtually overnight, EIFS became the latest contractor scam on the nightly news.

Yet today, EIFS are still around. About 100 million square feet of EIFS went on new and remodeled homes last year, rivaling any other siding material. The product's continued popularity in light of ongoing litigation regarding EIFS-clad houses might seem puzzling, but many architects and builders who use EIFS claim that the water intrusion problems associated with the product are not a flaw inherent to the system but the result of improper installation. According to fans of the product—and there are many of them—EIFS have endured because they continue to provide a viable, affordable cladding option.

Details, Details

EIFS advocates insist that the cladding itself is stable. What's less reliable, they say, is how EIFS are detailed on the plans and applied in the field.

As evidence, they point to commercial work, where the material continues to enjoy an excellent reputation. "EIFS is a dumb material. It doesn't know what type of building it's on," says Stephen Klamke, executive director of the EIFS Industry Members Association, in Morrow, Ga. "We don't see these problems in commercial buildings."

The reason for that, Klamke and others say, is that commercial prints are more extensive in their detailing of EIFS. "You could have as many EIFS details for a single-family house as for a 10-story building," says Ben Bresnahan, senior associate with Heitmann & Associates, an A/E/C consulting firm in Chesterfield, Mo. "The problem is that no one wants to pay to have them done in residential."



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In addition to less intensive detailing on the plans, the realities of residential work—tight design budgets, design-only service contracts, low-skill/low-bid installers, and cursory supervision on site—also can add up to improper installation of the product. "A wise architect will anticipate these realities and consider them as a design parameter," says Lee R. Connell Jr., AIA, a New Orleans architect who has written a book about construction defects.

In fact, Connell and Bresnahan both claim to have found similar damage with improperly applied brick, lap siding, and true stucco finishes. "It's a matter of a system, EIFS or other, not getting put together properly," Connell says.

Help

The EIFS industry is making an effort to help home builders and architects with these issues. Many manufacturers and a few industry consultants offer a complete set of EIFS details and sections for critical areas, such as at penetrations and where disparate materials intersect. These details are available in various printed and electronic formats and can be either pasted into a CAD program or simply output at the printer and clipped to the blueprints.

In addition, drainable EIFS--as opposed to barrier-type EIFS--are now available for residential use after years in the commercial realm. The drainable version includes a textured watershed medium behind the insulating foam layer.

Compatibility

One of the best ways to avoid the kinds of problems that have plagued EIFS in the past is to pay close attention to how the finish interacts with other materials on a house. Make sure you select materials that are compatible with EIFS. The NAHB Research Center (see "Resources," right) recommends following the manufacturer's requirements for suitable fasteners, vapor retarders, air barriers, flashing material, caulking and sealants, and sealant primers or tape. Identify these materials clearly on the plans and make them part of the installer's contract.

Even with compatible building materials, however, Connell and others maintain that the real key is in the flashing. "If you create a hole in the weather barrier, you have to put it back together like a rain slicker, with the collar under the hood, and so on," Connell says. In other words, you need to provide extensive flashing at vulnerable areas--places where water has been found to get behind the stucco--to effectively bridge disparate materials and systems.

Trouble Spots

EIFS leaks are most commonly found at the points where the cladding interacts with the many other materials and assemblies of a house—around windows, roof/wall intersections, kickouts, chimneys, and foundations. Windows are especially problematic. Water can penetrate the system both at the EIFS/window joint (usually at the head) and through cracks in the window unit itself, independent of the cladding.

With chimneys, improper saddles or crickets may fail to redirect water and also may not be properly flashed to the roof and chimney. "Instead of overlapping, the field uses caulking to connect abutting joints," says Connell. "That's how you get into trouble."

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Even with adequate flashing, Connell says, "You have to assume water will get in some way, so use materials that won't allow extensive damage." While drainable EIFS help shed water away from the sidewall sheathing, Connell and others prefer plywood to swell-prone oriented-strand board and housewrap to more absorbent building paper for the system's weather barrier.

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