Marrying EIFS

with Drainage and Mechanical Fastening
Barrier exterior insulation and finish systems work! I know it. You know it. And I’d even hazard a guess that if the individuals who say they don’t were to actually study the products objectively, without the influence of anti-EIFS campaigns promoted by competitive wall systems, they would conclude that EIF systems not only perform incredibly well, but also provide superior insulation qualities, the most attractive “curb appeal” of any wall cladding and tremendous design and color flexibility. They would also acknowledge that EIF systems are amazingly durable—surviving hurricanes, violent weather, desert heat and high-traffic (impact) areas.

However, all positives notwithstanding, current market conditions and codes are dictating that the evolution of EIF systems involve a drainage option for single- and double-family dwellings. These state-of-the-art systems, supplied by all major EIFS manufacturers, come replete with built-in redundancies designed and engineered to make an already great wall system even more capable of successfully managing some of the problems inherent in a large number of residential structures.

With these changes, however, come slightly different methods of application. For instance, special trim pieces and flashings are incorporated, as are secondary weather barriers such as housewraps and building paper. Now, with the substrate covered, it is necessary to use mechanical fasteners to positively affix the EPS board to the substrate. And, although this application process is relatively simple, it does require a new understanding of the disparate number of washers and screw
fasteners available for a variety of applications. It is also necessary to follow all manufacturers’ latest installation procedures and fastening patterns as well as utilize only a mechanical fastening system that is tested within a full EIF system’s end-use configuration.

The most prevalent type is a PB EIFS washer, which is the primary mode of attaching an EIFS with drainage system. It should always feature a recessed chamber that ensures that the thermal integrity of the wall remains intact and prevents fastener head “pops” on the finished surface. Multiple holes are also a must, as they allow the base coat/mesh layer to key into the plate for increased holding power. The plate should be driven to a depth no greater than 1/8 inch below the surface plane. This allows for sufficient rasping. Also, because of the chamber and seating depth of the washer, an EPS thickness of at least 1 inch is required.

Please note: A washer with a thermal chamber is the only acceptable style for PB or PB EIFS with drainage.

Over- or under-driving the washer can negatively impact both the integrity and aesthetics of the wall, as the proper seating is between 1/16 inch and 1/8 inch below the surface plane. The correct fastener, as well as the proper installation pattern, must be strictly followed to ensure the very best performance. And, since most of the battles involve moisture, it is increasingly more important to utilize fasteners with a minimum salt spray (ASTM B 117) resistance as specified by the EIFS manufacturers.

Full-scale, end-use configuration testing witnessed by an independent party is truly the only acceptable criteria in dealing with negative wind-load resistance. Pull-over/push-through tests are insufficient, as one must interpret and apply information in a relative manner to the negative wind-load requirements of a given area. Full-scale, witnessed testing utilizing an ASTM E-330 chamber (or equivalent) provides actu-
al PSF, which follows that of a specific geographic region. This is the most important standard by which a mechanical listening system for EIFS can be measured, and your greatest assurance that your EIF system will stay where it belongs.

As the EIFS evolution continues, a round plastic washer and a highly coded fastener are playing a far more significant role. And, as EIFS manufacturers have provided the highest quality coatings and systems over the years, the same has to apply to EIFS mechan-

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ical fastening systems. A true system is far more than a simple piece of plastic and a screw; it is engineering and design, a proven track record, witness testing and comprehensive installation guidelines. It is the peace of mind that what you install today will certainly be there tomorrow.

About the Author
Ron Chelli is vice president of sales for Wind-lock Corporation, Leesport, Pa. He is an 18-year veteran of the EIFS industry.