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Standard Guide for Detailing of EIFS-Clad Barrier and Drainage Wall Assemblies¹

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1. Scope

1.1 This guide describes the types of project-specific construction conditions that need to be communicated by means of drawings (“details”) for the purpose of constructing Exterior Insulation and Finish System (EIFS)-clad barrier and drainage wall assemblies. EIFS manufacturers provide basic details for the installation of their materials and interface with adjacent materials. These details are generic and, in many cases, do not apply to specific project conditions.

1.2 This guide addresses only the EIFS itself and the interface between the EIFS and the materials immediately adjacent to the EIFS; it does not address all parts of the wall assembly.

1.3 Not all possible construction detail conditions are addressed by this guide. Identify and provide details for all construction conditions that exist on a specific building.

1.4 This guide is intended to supplement but not supersede information from the EIFS manufacturer about how their specific product should be detailed, nor to supersede technical product acceptance reports or the code requirements of regulatory authorities.

1.5 The values stated in inch-pound units are to be regarded as standard. No other units of measurement are included in this standard.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

¹ This guide is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.58 on Exterior Insulation and Finish Systems (EIFS).

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2. Referenced Documents

2.1 *ASTM Standards*:²

E631 Terminology of Building Constructions

E2110 Terminology for Exterior Insulation and Finish Systems (EIFS)

3. Terminology

3.1 For general terminology regarding EIFS and building in general, see Terminology E2110 (for EIFS terms) and Terminology E631 (for buildings in general).

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *detail, n*—a graphic representation of the manner in which building materials are to be constructed as an assembly.

4. Significance and Use

4.1 This guide is for use by individuals and entities involved with the design and specification of EIFS details for a specific building.

4.2 This guide can be applied to both *EIFS-clad barrier wall assembly* and *EIFS-clad wall with drainage*.

4.3 This guide can be applied to new and existing EIFS buildings, prefabricated versus on-site installed EIFS, and residential and commercial EIFS buildings.

4.4 This guide is not meant to replace the types of information normally present in text format in a project’s specifications.

4.5 This guide is not applicable to EIFS materials used in non EIFS applications, such as a topcoat for other base materials like traditional Portland cement plaster (stucco) and concrete.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

5. Form of Details

5.1 Draw details using a drafting style, and at a scale, which makes clear the design of the final construction, including the reinforcing mesh, adhesive layers, and location of the finish.

5.2 If necessary, include the sequence by which the assembly is constructed in the details, such as by means of a 3-D step-by-step sequence of drawings, or some indication of the order in which the detail is assembled.

5.3 Present details in drafting styles (2-D or 3-D, such as isometric, oblique, perspective, etc.) that are consistent with the need to appropriately convey how the various parts of the construction fit together.

6. Detailing Principles

6.1 The following principles apply when designing details.

6.1.1 Terminate the perimeter of the EIFS by wrapping the base coat around the edge of the insulation, either by bonding it to the substrate behind the insulation (called *backwrapping*), or bonding it to the edge of the opening or edge (if an opening or edge is present), or by using trim that is approved by the EIFS producer for use with their EIFS products.

6.1.2 Adhere sealants to the base coat, not the finish coat. Use sealant type acceptable to the EIFS producer and sealant producer. Use sealant primer, if required by the EIFS producer and sealant producer. Use closed cell type backer rod.

6.1.3 Objects are not to be fastened to the EIFS. Fasten objects through the EIFS into a structural material in the substrate. Provide spacers within the EIFS insulation layer to prevent crushing the EIFS when mounting hardware is tightened. Seal all fastener holes through the EIFS, using sealant, gaskets, or other suitable material.

6.1.4 Shield the EIFS from heat producing devices that could damage the EIFS, such as transformers, flues, chimneys, lights, pipes containing high temperature liquids, hot air vents, etc.

6.1.5 Provide working sealant filled expansion joints between prefabricated EIFS panels, at floor lines in wood frame buildings, where expansion joints occur in the substrate, where the substrate type changes, and where significant movement occurs behind the EIFS.

6.1.6 Detail the attachment of the EIFS, and the supporting substrate system to withstand applicable wind loads for the project.

6.1.7 Evaluate the use of a particular EIFS on a building required to be of noncombustible construction in terms of code compliance for insulation type, insulation thickness, insulation density, acceptable substrate, EIFS attachment method, and EIFS coating types.

6.1.8 Detail wall areas that are anticipated to be subject to impact damage with heavy reinforcing mesh in the base coat and show the location for the installation of the heavy reinforcing mesh.

6.1.9 The minimum thickness of the insulation, at any point in the system, must not be less than $\frac{3}{4}$ in.

6.1.10 Code requirements establish the maximum thickness of the insulation, including the use of ornamental foam shapes.

6.1.11 When possible, detail two parallel facing surfaces and a backer rod for sealant joints instead of fillet type joint. If fillet type joints are used, detail the installation of a bond breaker where the two perpendicular surfaces meet.

7. Specific Type of Details to be Provided

7.1 Provide detail drawings of the construction conditions that are present on the specific building. The list below is not all-inclusive, but it gives representative examples of conditions to be aware of and to provide for.

7.1.1 Terminations of the EIFS, such as: at the top, bottom, and side (ends) of EIFS wall assemblies; and at roofs, roof rakes, eaves, parapets, end-of-EIFS-clad wall conditions, openings, and bottoms of EIFS walls near grade, decks, and walkways.

7.1.2 Openings through the EIFS, such as: at windows, doors, louvers, vents, and large pipes or ducts.

7.1.3 Penetrations through the EIFS, such as: at pipes, conduits, electrical cables, TV wires, deck beams, and scuppers.

7.1.4 Joints in the EIFS, such as: sealant joints, expansion joints, aesthetic reveals, and control joints.

7.1.5 Objects mounted through or in contact with the outside surface of the EIFS, such as: handrails, flag pole supports, signage, numbers, fire escapes, and tiles.

7.1.6 Treatments to the surface of the EIFS, such as: added-on foam shapes, sloped surfaces, and decorative trim.

7.1.7 Interface of sealants with the EIFS and adjacent materials, such as: wood, metal, concrete, and masonry.

7.1.8 Interface of weather sealing materials, such as: flashings, sealing tapes, films, and coatings, that are in contact with or adjacent to the EIFS.

7.1.9 Means by which the continuity of the water-resistant barrier is achieved, for EIFS with drainage, such as: at openings, joints, penetrations, and end dams and flashings.

7.1.10 Means by which the weather resistance of the wall is achieved at penetrations, such as: scuppers; windows; doors; deck beam penetrations; wall-roof interface, including water diverters; decks; and pipes.

7.1.11 Means by which the EIFS is protected, if necessary, from excessive heat due to solar radiation, hostile environmental conditions, and heat-producing equipment.

7.1.12 Means by which EIFS is protected against damage due to impact or abrasion, such as: at walkways, near doors, at roofs, on sloped surfaces, and at decks. Consider using separate barriers to protect the EIFS, such as: guardrails, instead of incorporating stronger materials within the wall assembly.

7.1.13 Means by which EIFS is protected at locations near the ground from effects such as: termites, snow, ice, and water.

7.1.14 Show locations of various colors and textures of the EIFS finish coat on the elevation on buildings with more than one color or texture.

7.1.15 For *EIFS with drainage*, show the location of outlets for the drainage cavity on the elevations.

7.2 When an EIFS producer's standard guideline details are used, incorporate or refer to them on the drawings. If they are not shown on the drawings, and are referred-to only, cite the EIFS producer's detail name and other identifying information, including source and date of publication.

8. Keywords

8.1 design; details; doors; drawings; EIFS; end dams and flashings; Exterior Insulation and Finish System; flashings; joints; opening; penetrations; sealants; windows

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