Designation: E2568 – 17a

Standard Specification for PB Exterior Insulation and Finish Systems[1]

This standard is issued under the fixed designation E2568; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers PB Exterior Insulation and Finish Systems (EIFS) defined as an exterior, non-bearing wall covering providing a weather-resistant exterior wall envelope on walls required to be combustible or noncombustible, fire-resistance-rated or nonfire-resistance-rated. Further, PB EIFS is a system described as being applied over expanded polystyrene or polyisocyanurate insulation board, an adhesive or mechanical attachment of the insulation board to a substrate, or both, glass fiber reinforcing mesh, a base coat on the face of the insulation board, and a textured protective finish coat.

1.2 This specification does not cover Class PB EIFS with drainage.

1.3 This specification qualifies EIFS products for use in normal service conditions and is not for evaluating in service EIFS installations.

1.4 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.5 *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.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

B117 Practice for Operating Salt Spray (Fog) Apparatus

C297/C297M Test Method for Flatwise Tensile Strength of Sandwich Constructions

C578 Specification for Rigid, Cellular Polystyrene Thermal Insulation

C1289 Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board

D2247 Practice for Testing Water Resistance of Coatings in 100 % Relative Humidity

E84 Test Method for Surface Burning Characteristics of Building Materials

E119 Test Methods for Fire Tests of Building Construction and Materials

E330/E330M Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference

E331 Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference

E2098/E2098M Test Method for Determining Tensile Breaking Strength of Glass Fiber Reinforcing Mesh for Use in Class PB Exterior Insulation and Finish Systems (EIFS), after Exposure to a Sodium Hydroxide Solution

E2110 Terminology for Exterior Insulation and Finish Systems (EIFS)

E2134/E2134M Test Method for Evaluating the Tensile-Adhesion Performance of an Exterior Insulation and Finish System (EIFS)

E2485/E2485M Test Method for Freeze/Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water Resistive Barrier Coatings

E2486/E2486M Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS)

G23 Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials (Withdrawn 2000)[3]

G26 Practice for Operating Light-Exposure Apparatus (Xenon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials (Discontinued 2001) (Withdrawn 2000)[3]

G153 Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials

G155 Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials

[1] This specification 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).

Current edition approved March 1, 2017. Published March 2017. Originally approved in 2007. Last previous edition approved in 2017 as E2568-17. DOI: 10.1520/E2568-17A.

[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.

[3] The last approved version of this historical standard is referenced on www.astm.org.

2.2 *NFPA Standards:*[4]

ANSI/NFPA 268 Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source

ANSI/NFPA 285 Standard Fire Test Method for the Evaluation of Fire Propagation Characteristics of Exterior, Nonload-bearing Wall Assemblies Containing Combustible Components

3. Terminology

3.1 Definitions are in accordance with Terminology E2110 unless otherwise specified.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *class PB EIFS, n*—EIFS where the base coat varies in thickness depending upon the number of layers, or thickness of reinforcing mesh. The reinforcing mesh is glass fiber mesh that is encapsulated by the base coat in accordance with EIFS manufacturer recommendations. Protective finish coats, of various thicknesses in a variety of textures and colors, are applied over the base coat.

3.2.1.1 *Discussion*—Class PB EIFS includes foam plastic conforming to either Specifications C578 or C1289.

3.2.2 *EIFS-related construction, n*—construction that works in conjunction with the EIFS, but is not part of the EIFS.

4. Materials and Manufacture

4.1 *Product Description*—The material and specifications shall be as specified by the selected EIFS manufacturer and shall be defined as in Terminology E2110 except as modified herein.

5. Performance Requirements

5.1 The system and its components shall meet or exceed the performance standards described in 5.2 – 5.7 of this specification.

5.2 *Performance:*

5.2.1 System performance shall be in conformance with the minimum properties listed in Table 1.

5.3 Component performance shall be in conformance with Table 2.

5.4 *Fire Performance:*

5.4.1 System fire performance shall be in conformance with Table 3 as required.

5.5 Component fire performance shall be in accordance with Table 4.

5.6 Structural performance shall be in conformance with Table 5.

5.7 Impact shall be in conformance with Table 6.

6. Inspection

6.1 Materials supplied by the manufacturer shall be supplied to the site location in original unopened containers with labels intact. Upon arrival, the materials shall be inspected for damage, and the manufacturer notified of any discrepancies. Unsatisfactory materials shall not be used.

7. Packaging and Package Marking

7.1 A description of the method of packaging and field identification of the material shall include the following:

7.1.1 Name and address of the manufacturer.

7.1.2 Identification of components,

7.1.3 Lot or batch number,

7.1.4 Quantity of material in the packaged mix,

7.1.5 Storage instructions,

7.1.6 Pot life,

7.1.7 Expiration date (when applicable), and

7.1.8 The name of the accredited inspection agency (when applicable).

8. Keywords

8.1 adhesive; basecoat; Class PB; EIFS; Exterior Insulation and Finish System; system; textured finish; thermal insulation board

[4] Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169-7471, http://www.nfpa.org.

TABLE 1 System Performance Tests

Characteristic	Standard	Minimum Properties
Accelerated weathering	Practices G153[A] or G155[B,C]	No deleterious effects[D] after 2000 h when viewed under 5× magnification.
Freeze/thaw	Test Method E2485/E2485M (Formerly EIMA Std. 101.01)	No deleterious effects[D] when viewed under 5× magnification.
Salt spray resistance	Practice B117	No deleterious effects[D] at 300-h exposure period.
Tensile bond adhesion	Test Methods E2134/E2134M or C297/C297M	No failure in the adhesive coat, base coat, or finish coat. The insulation board shall fail cohesively except that 25 % adhesive failure is acceptable. For tested values of 15 psi (103 kPa) or greater, adhesive failure up to 100 % is acceptable.
Water penetration	Test Method E331	The exterior wall envelope design shall be considered to resist wind-driven rain where the results of testing indicate that water did not penetrate control joints in the exterior wall envelope, joints at the perimeter of openings or intersections of terminations with dissimilar materials after 2 h of water application at a pressure differential of 6.24 psf (299 Pa).
Water resistance	Practice D2247	No deleterious effects[D] at 14-day exposure.

[A] Formerly specified in Practice G23.
[B] Formerly specified in Practice G26.
[C] Due to differences in spectral power distribution, results from Practice G155, Cycle 1, and Practice G153, Cycle 1, cannot be directly compared.
[D] No deleterious effects; no cracking, checking, crazing, erosion, rusting, blistering, peeling, or delamination.

TABLE 2 Component Performance Tests

Characteristic	Standard	Minimum Properties
Physical properties and requirements for EPS	Specification C578	Meets Type I
Physical properties and requirements for polyisocyanurate	Specification C1289	Meets Type II, Class 2 or 3
Alkali resistance of reinforcing mesh	Test Method E2098/E2098M	120 pli (21 N/mm) retained tensile strength

TABLE 3 System Fire Performance Tests

Characteristic	Test Method	Minimum Properties
Fire endurance	Test Methods E119	Maintain fire resistance of known, rated wall assembly
Full-scale multi-story fire test	ANSI/NFPA 285	1. Resistance to vertical spread of flame within the core of the panel from one story to the next. 2. Resistance to flame propagation over the exterior face of the system. 3. Resistance to vertical spread of flame over the interior (room side) surface from one story to the next. 4. Resistance to lateral spread of flame from the compartment of fire origin to adjacent spaces
Ignition resistance	ANSI/NFPA 268	No surface ignition when exposed to 3950 BTU-h/ft^2 (12.5 kW/m^2).

TABLE 4 Fire Performance Test

Characteristic	Test Method	Minimum Properties
Surface burning	Test Method E84	Insulation board and reinforced coating system components shall be tested separately and have a flame spread of 25 or less, and smoke developed of 450 or less.[A]

[A] When used as part of an engineering analysis for system fire performance, additional testing of combined components may be required at the direction of the qualified professional performing the analysis.

TABLE 5 Structural Performance Tests

Characteristic	Test Method	Minimum Properties
Wind load	Test Method E330/E330M	Report negative and positive wind load values

TABLE 6 Impact Performance Tests

NOTE 1—The lowest value stated for each level is the minimum value required.

Characteristic	Test Method	Minimum Properties
Impact resistance	Test Method E2486/E2486M	Standard: 25-49 in-lb (2.83-5.54J) Medium: 50-89 in-lb (5.65-10.1J) High: 90-150 in-lb (10.2-17J) Ultra High: >150 in-lb (>17J)