Designation: E2485/E2485M – 13 (Reapproved 2018)

Standard Test Method for Freeze/Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water Resistive Barrier Coatings[1]

This standard is issued under the fixed designation E2485/E2485M; 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 test method covers procedures for determining the effect of freezing and thawing of exterior insulation and finish systems (EIFS), an EIFS with water-resistive barrier coatings, and water-resistive barrier coatings by itself.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.3 *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, health, and environmental practices and to determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

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).

4. Summary of Test Method

4.1 Specimens are subjected to cycles of freezing and thawing. Surface changes, viewed at 5× magnification, are examined for signs of deleterious effects, such as cracking, crazing, checking, blistering, peeling, delamination, or erosion.

5. Significance and Use

5.1 Resistance to freezing and thawing is a factor when determining the durability of EIFS, an EIFS with water-resistive barrier coatings, and water-resistive barrier coatings by itself.

6. Apparatus

6.1 *Compressor, Freezing Chamber, and Circulator*—Of such design and capacity that the temperature of the air in the freezing chamber shall not exceed −9 °C [16 °F] 1 h after introducing the maximum charge of units. The initial temperature will not exceed 32 °C [90 °F].

6.2 *Trays and Containers*—Will be shallow, metal, and have an inside depth of 38.1 ± 12.7 mm [1½ ± ½ in.] and be of suitable strength and size so that the tray with a charge of frozen units can be removed from the freezing chamber by one person.

6.3 *Thawing Tank*—Should permit complete submersion of the specimens in their trays. Adequate means shall be provided so that the water in the tank may be kept at a temperature of 24 ± 5.5 °C [75 ± 10 °F].

6.4 *Drying Room*—Maintained at a temperature of 24 ± 8 °C [75 ± 15 °F], with a relative humidity between 30 and 70 %. The drying room should be free from drafts.

7. Test Specimens

7.1 *Water-Resistive Barrier Coatings*

7.1.1 Prepare a minimum of five test specimens measuring a minimum of 150 mm^2 [6 $in.^2$] for each substrate that will be evaluated.

[1] This test method 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] 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.