Designation: E2485 – 06

StandardTest 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; 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 SI units are to be regarded as the standard. The values given in parentheses are for information purposes only.

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

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 definitions and terms relating to this standard, see Terminologies E631 and E2110.

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) one hour 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 (1 ½ ± 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 percent. 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.

7.1.2 For sheathing substrates, two sheathing sections shall be assembled with a 3.2-mm (⅛-in.) joint. The joint shall be treated as it would in its end-use configuration.

7.1.3 Apply the water-resistive barrier coating over the substrate surface in accordance with the manufacturer's instructions. The specimen shall be representative of those used in actual construction. Allow the water-resistive barrier coating to dry a minimum of 24 hours.

7.1.4 The back and sides of the test specimens shall be sealed with an impervious material that need not be the coating.

[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.