



Standard Practice for Use of Test Methods E 96 for Determining the Water Vapor Transmission (WVT) of Exterior Insulation and Finish Systems (EIFS)¹

This standard is issued under the fixed designation E 2321; 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 standard describes how to use Test Methods E 96 to determine the water vapor transmission (WVT) characteristics of an EIFS sample.

1.2 An Exterior Insulation and Finish System (EIFS) is a multilayer exterior building wall material that consists of a number of layers. For the purpose of this standard, these layers, whether they be individual EIFS component materials in single layers, or groups of EIFS component materials, are called the “EIFS sample.”

1.3 The Water Method, Procedures B and D described in section X1.1.2 and X1.1.5 of Appendix X1 of Test Methods E 96 shall be used in this standard.

1.4 This standard is limited to specimens not over 1¼ in. (32 mm) in thickness, except as provided in Section 9 of this standard.

1.5 The values stated in inch-pound units are to be regarded as the standard. Metric inch-pound conversion factors for water vapor transmission, permeance, and permeability are stated in Table 1 of Test Methods E 96. All conversions of mm Hg to Pa are made at a temperature of 0°C.

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.*

2. Referenced Documents

2.1 *ASTM Standards:*²

C 1397 Practice for Application of Class PB Exterior Insulation and Finish Systems

E 96 Test Methods for Water Vapor Transmission of Materials

E 631 Terminology of Building Constructions

E 2110 Terminology for Exterior Insulation and Finish Systems (EIFS)

3. Terminology

3.1 For definitions of general terms relating to:

3.1.1 Water vapor transmission of materials, see Test Methods E 96.

3.1.2 Building construction, see Terminology E 631.

3.1.3 EIFS, see Terminology E 2110.

4. Summary of Practice

4.1 This standard describes how to determine the water vapor transmission (WVT) of the EIFS sample, using the Water Method, Procedures B and D, of Test Methods E 96. In the Water Method, the dish or tray contains distilled water, and the water vapor passes through the test specimen from the inside of the dish to the chamber in which the specimen is contained. Eventually the rate of vapor flow stabilizes, and by weighting the change in weight over time, the water vapor transmission of the EIFS sample can be calculated.

4.1.1 For both Procedures, three specimens shall be used.

4.1.1.1 Procedure B shall be used for specimens that in actual use on a building would have the higher humidity on the indoor side of the wall.

4.1.1.2 Procedure D shall be used, for specimens that in actual use on a building would have the higher humidity on the outdoor side of the wall.

5. Significance and Use

5.1 The purpose of this test is to obtain steady state values of water vapor transfer through the EIFS sample. This characteristic of EIFS is commonly requested by regulatory and design organizations, and is used in thermal and moisture studies of building walls. The degree to which an EIFS allows water vapor to pass through it can affect the performance of an EIFS wall assembly.

5.2 A permeance value obtained under one set of test conditions does not indicate the value under a different set of conditions. For this reason, the test conditions selected are

¹ This practice 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.