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.

Designation: C1878 – 19

Standard Test Method for Surface Water Resistance of Vapor Retarders for Thermal Insulation[1]

This standard is issued under the fixed designation C1878; 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 details a procedure for the determination of the surface water resistance of a vapor retarder by measurement of the quantity of water absorbed in a specified time by the service-exposed surface of a vapor retarder intended for use on thermal insulation.

1.2 This test method covers vapor retarders that are expected to withstand intermittent or occasional exposure to liquid water on the exposed side. Examples of this exposure are condensation and light rain during installation before a structure is enclosed.

1.3 This method does not cover vapor retarders intended for exposure to the elements in outdoor applications.

1.4 This method does not cover thermal insulation products that also act as vapor retarders, such as elastomeric foam and cellular glass.

1.5 In the test, the specimen is exposed to a specified volume of water over a given exposure area, with a resultant head pressure.

1.6 The test method is based on Test Method D3285 (withdrawn), the so-called "Cobb" test used for paper.

1.7 The values stated in SI units are to be regarded as standard.

1.8 *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 determine the applicability of regulatory limitations prior to use.*

1.9 *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]

D3285 Test Method for Water Absorptiveness of Nonbibulous Paper and Paperboard (Cobb Test) (Withdrawn 2010)[3]

3. Significance and Use

3.1 Vapor retarders used on thermal insulation can be exposed to liquid water in normal usage. Some cannot tolerate such exposure without suffering damage. Others are designed to withstand intermittent or occasional exposure in their intended indoor usage. Still others are intended for outdoor applications and exposure to the elements. (not covered by this standard).

3.2 This test is used to evaluate products or materials that are used where exposure to liquid water on the surfaces on an intermittent or occasional basis is possible. Such products would be expected to absorb very little water, if any, in this test.

3.3 In the test, the specimen is exposed to a specified volume of water over a given exposure area, with a resultant head pressure.

3.4 The amount of water absorbed by a specimen is measured in this test. This is used to characterize the water resistance of the specimen. The less water absorbed, the more water resistant the surface is considered to be.

4. Apparatus

4.1 *Water Absorption Apparatus,* to permit one side of the specimen to be wetted uniformly at the moment the soaking period begins, and to allow controlled rapid removal of the water from the specimen at the end of the test period.

4.1.1 A specimen holder as shown in Fig. 1 comprised of a metal ring with a machined lower face, 11.28 ± 0.02 cm inside

[1] This test method is under the jurisdiction of ASTM Committee C16 on Thermal Insulation and is the direct responsibility of Subcommittee C16.33 on Insulation Finishes and Moisture.

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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.

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

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