



Designation: ~~C1248-06~~ Designation: C 1248 – 08

Standard Test Method for Staining of Porous Substrate by Joint Sealants¹

This standard is issued under the fixed designation C 1248; 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 four types of laboratory tests to determine if a joint sealant has a probability of staining a porous substrate (such as marble, limestone, sandstone, and granite). The tests are on compressed samples and include (1) storage under standard laboratory conditions, (2) storage in an oven, and (3) exposure in a fluorescent UV/condensation device, and (4) exposure in a xenon arc device.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety problems, 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.*

1.4 The committee with jurisdiction over this standard is not aware of any comparable standards published by other organizations.

2. Referenced Documents

2.1 *ASTM Standards:*²

C 717 Terminology of Building Seals and Sealants

C 1442 Practice for Conducting Tests on Sealants Using Artificial Weathering Apparatus

G 113 Terminology Relating to Natural and Artificial Weathering Tests of Nonmetallic Materials

G 151 Practice for Exposing Nonmetallic Materials in Accelerated Test Devices that Use Laboratory Light Sources

G 154 Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials

G 155 Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials

3. Terminology

3.1 *Definitions:*

3.1.1 Refer to Terminology C 717 and G 113 for definitions of terms used in this test method.

4. Summary of Test Method

4.1 In this test method standard joint specimens are compressed and clamped at the manufacturer's rated movement capability and subjected to the following treatments; (a) four of the specimens are stored at standard conditions while under compression for up to 28 days; (b) four of the specimens are exposed in an oven while under compression for up to 28 days; (c) four of the specimens are exposed either in a fluorescent UV/condensation device or in a xenon arc device while under compression for up to 28 days.

4.1.1 This test method allows for additional exposure beyond the minimum 28 day exposure period as described in 4.1. If it is desired to extend the exposure period beyond 28 days, prepare an additional six specimens for each extended exposure period. Of these six specimens prepared, two specimens each should be stored as described in the three conditions named in 4.1.

4.2 The effects of the test are evaluated by visual inspection for changes in surface appearance and average measurements of any stain depth and stain width.

4.3 This test method is applicable to any type of elastomeric joint sealant and any type of porous substrate.

5. Significance and Use

5.1 Staining of building materials is an aesthetically undesirable occurrence. This test method evaluates the likelihood of a

¹ This test method is under the jurisdiction of ASTM Committee C24 on Building Seals and Sealants and is the direct responsibility of Subcommittee C24.40 on Weathering.

Current edition approved Jan-April 1, 2006-2008. Published February 2006-April 2008. Originally approved in 1993. Last previous edition approved in 2004-2006 as C 1248-04-1248-06.

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.

sealant causing an early stain on a porous substrate due to exudation of materials from the sealant. Since this is an accelerated test, it does not necessarily predict that the tested sealants will not stain or discolor porous substrates over longer periods of time.

6. Apparatus

6.1 *Forced-Draft Oven.*

6.2 *Exposure Apparatus:*

6.2.1 Fluorescent UV/condensation apparatus that conforms to the requirements in Practices G 151 and G 154 with UVA-340 type lamps.

6.2.2 Xenon-Arc apparatus that conforms to the requirements in Practices G 151 and G 155 with daylight type filters.

6.3 *TFE-Fluorocarbon Spacers.*

6.4 *Masking Tape.*

7. Test Specimens

7.1 Substrates shall be 25 by 25 by 75 mm (1 by 1 by 3 in.). A total of 24 substrates are required to make the twelve test specimens.

7.1.1 If testing beyond the minimum 28 day exposure period, prepare an additional twelve substrates to make the six additional test specimens as required in 4.1.1.

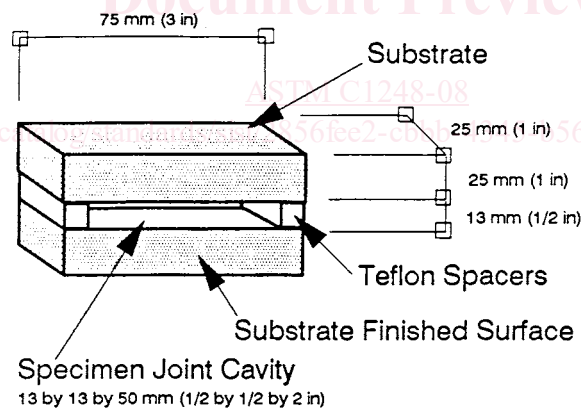
NOTE 1—The precision and bias statement is based on Vermont white marble and Bethel white granite substrates.

7.2 *Primers*—When a primer is recommended by the sealant manufacturer, apply the primer to one substrate block of each test specimen. Apply the primer where the sealant will be in contact with the substrate.

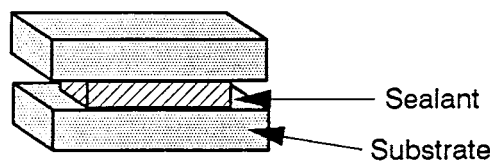
7.3 *Preparation of Test Specimens :*

7.3.1 Standard conditions of temperature and relative humidity used throughout this test method are defined as $23 \pm 2^\circ\text{C}$ ($73.4 \pm 3.6^\circ\text{F}$) and $50 \pm 5\%$, respectively.

7.3.2 *Multi-Component Sealants*—Prepare twelve test specimens for each substrate that is to be used in the test. After maintaining the unopened sample for at least 24 h at standard conditions, mix thoroughly for 5 min at least 250 g of base compound with the appropriate amount of curing agent. Apply a bead of sealant 13 by 13 by 50 mm ($\frac{1}{2}$ by $\frac{1}{2}$ by 2 in.) between parallel 25 by 75 mm (1 by 3 in.) faces of substrates (see Fig. 1). Use appropriate spacers to form the proper size bead. Use adhesive tape, rubber bands, or clamps to hold the test specimen together before and after filling it with the sealant. In the case of a self leveling



(A) PREPARED SPECIMEN BEFORE APPLICATION OF SEALANT



(B) SPECIMEN AFTER APPLICATION OF SEALANT AND REMOVAL OF SPACERS

FIG. 1 Stain Test Specimen