Designation: C 510 – 90 (Reapproved 1997)ε1

Standard Test Method for Staining and Color Change of Single- or Multicomponent Joint Sealants[1]

This standard is issued under the fixed designation C 510; 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.

ε[1] NOTE—Keywords were added editorially in June 1997.

1. Scope

1.1 This test method covers an accelerated laboratory procedure to determine if a sample of a joint sealant will stain the substrate when in contract with masonry, concrete, or stone (such as marble, limestone, sandstone, and granite). This test method also is intended to determine whether the sealant itself will change in color when exposed to the weather.

1.2 The values stated in SI units are to be regarded as the standard. The value given in parentheses are for information 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 determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

C 109 Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens)[2]

C 150 Specification for Portland Cement[2]

C 207 Specification for Hydrated Lime for Masonry Purposes[2]

C 717 Terminology of Building Seals and Sealants[3]

D 2203 Test Method for Staining from Sealants[3]

G 23 Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials[4]

3. Terminology

3.1 *Definitions*—For definitions of terms used in this test method, see Terminology C 717.

4. Significance and Use

4.1 Staining of a building is an aesthetically undesireable occurance. This test method evaluates the likelihood of a sealant causing early stain on a porous substrate due to certain chemical exudations from the sealant.

4.1.1 This test method may not predict staining caused by such factors as residue run-down or dirt pick-up by a sealant exudate.

4.2 This test method is useful to predict potential color changes in the sealant itself after weathering.

4.3 See also Test Method D 2203.

5. Apparatus

5.1 The exposure apparatus shall be an accelerated weathering machine, twin enclosed carbon arc, with 102-18 deionized water cycle (102 min light followed by 18 min light and spray), conforming to Type D of Practice G 23.

NOTE 1—Fluorescent and xenon-arc light sources are being investigated as alternatives.

6. Materials

6.1 *Portland Cement*, white, nonstaining, conforming to Type I of Specification C 150.

6.2 *Hydrated Lime*, conforming to Type S of Specification C 207.

6.3 *Ottawa Sand*, graded, white, conforming to the requirements of Section 4 of Test Method C 109.

6.4 *Aluminum Plates*, three 152 by 70-mm (6 by 2¾-in.), No. 16 gage.

6.5 *Metal Frames*, two rectangular noncorrosive, designated as *A* and *B*; frame *A* shall be 6 mm (¼ in.) thick with the inside opening slightly larger than an aluminum plate described in 6.4; frame *B* shall have inside dimensions of 127 by 38 by 6 mm (5 by 1½ by ¼ in.) thick.

7. Test Specimens

7.1 The test specimen shall consist of a slab of mortar mix upon which is placed a layer of sealant.

[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.

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[2] *Annual Book of ASTM Standards*, Vol 04.01.

[3] *Annual Book of ASTM Standards*, Vol 04.07.

[4] *Annual Book of ASTM Standards*, Vol 14.02.