



Standard Test Method for Evaluation of the Effect of Clear Water Repellent Treatments on Water Absorption of Hydraulic Cement Mortar Specimens¹

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1. Scope

1.1 This test method evaluates the effectiveness of clear water repellents on hydraulic cement mortar specimens based on water absorption after a water soak.

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 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 Mortars²

D 1475 Test Method for Density of Liquid Coatings, Inks, and Related Products³

D 3924 Specification for Standard Environment for Conditioning and Test Paint, Varnish, Lacquer and Related Materials³

E 145 Specification for Gravity Convention and Force Ventilation Ovens⁴

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *clear water repellent*—a coating formulated for the purpose of protecting porous substrates by reducing the penetration of liquid water.

4. Summary of Test Method

4.1 The masonry unit is immersed in a clear water repellent, removed and allowed to cure at ambient condition for 7 days. Any deviations should be noted in 10.1.2. After cure, the

masonry unit is weighed and placed in water to a depth of 6.3 mm (¼ in.) for 3 days. After the immersion period, the masonry unit is removed and reweighed. The water repellency value of the treatment is then calculated using a comparison to untreated control specimens.

5. Significance and Use

5.1 Siliceous alkaline substrates are subject to water damage that may result in deterioration. Water repellents can provide protection of siliceous alkaline substrates exposed to water. This test method is used to evaluate the efficacy of clear water repellents on alkaline substrates.

6. Apparatus

6.1 *Forced Draft Oven*, Type 1B, in accordance with the Type Section of Specification E 145.

6.2 *Balance*, having a capacity of not less than 400 g, and sensitivity of 0.01 g.

6.3 *Reservoir Water Pan*, capable of maintaining the water level at 6.3 mm (¼ in.) in depth with noncorroding rods for the specimens to sit off the bottom.

6.4 *Stiff Bristle Brush*, to brush the masonry units.

6.5 *Pressurized Air Source*, to blow residual material off the brushed masonry units.

6.6 *Stopwatch*.

7. Reagents and Materials

7.1 *Masonry Units*, 51 by 51 by 51 mm (2 by 2 by 2 in.) masonry units prepared in accordance with procedures outlined in Test Method C 109 with the form release oil removed can be used.

8. Procedure

8.1 Select substrates needed, brush, and blow off dust with pressurized air. The specimens must be free of loose material that may be lost and alter the weight. They also must be free of material that will alter the absorption characteristics.

8.2 Label each piece. Run triplicate samples for each water repellent treatment. Also include three untreated control samples for each series. All specimens in one series of testing should come from the same lot of masonry units.

NOTE 1—To make comparison between test series, a positive control

¹ This specification is under the jurisdiction of ASTM Committee D 1 on Paint and Related Coatings, Materials, and Applications, and is the direct responsibility of Subcommittee D01.47 on Masonry Treatments.

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

³ *Annual Book of ASTM Standards*, Vol 06.01.

⁴ *Annual Book of ASTM Standards*, Vol 14.04.