



Standard Test Method for Rate of Water Absorption of Masonry Mortars¹

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1. Scope*

1.1 This test method covers a standardized laboratory procedure for determining the relative water absorption by capillary uptake (wicking) characteristics of masonry mortars. This test method is not applicable for determining the effectiveness of water repellent coatings.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.2.1 Inch-pound units are given in parentheses for temperature specification and 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:²

C109/C109M Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)

C270 Specification for Mortar for Unit Masonry

C305 Practice for Mechanical Mixing of Hydraulic Cement Pastes and Mortars of Plastic Consistency

C511 Specification for Mixing Rooms, Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in the Testing of Hydraulic Cements and Concretes

C778 Specification for Sand

C1180 Terminology of Mortar and Grout for Unit Masonry

C1384 Specification for Admixtures for Masonry Mortars

C1437 Test Method for Flow of Hydraulic Cement Mortar

¹ This test method is under the jurisdiction of ASTM Committee C12 on Mortars and Grouts for Unit Masonry and is the direct responsibility of Subcommittee C12.02 on Research and Methods of Test.

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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. Terminology

3.1 **Definitions**—For definitions of terms used in this test method, refer to Terminology **C1180**.

4. Significance and Use

4.1 This test method provides a laboratory procedure for determining the relative water absorption properties over time of mortars used for masonry construction. Because the specimens are made under laboratory conditions and do not take into account the effect of the masonry substrate or field mixing procedures, this method is not intended for field use. Data generated from this test method may be useful for determining the relative effectiveness of water repellent admixtures or the effect of other admixtures or mortar components on the water repellency of a mortar. However, use caution in interpreting the results. While the resistance of masonry to water penetration may be related to the water absorption of the mortar, it also depends on other factors, such as the workmanship, extent of bond, and the properties of the masonry units and mortar.

NOTE 1—This test method is specified in Specification **C1384** for demonstrating compliance of mortar admixtures classified as Water Repellent. In this compliance testing, the admixed mortar is compared to a reference mortar made with the same mortar materials except that it does not include the admixture. For quality control testing of water repellent preblended dry mortar mixes, the reference mortar is not typically available since the water repellent additive is added during the manufacturing process prior to bagging the final product. In these cases, the procedure in **Annex A1** can be used to determine the relative resistance of the mortar to absorption by capillary uptake.

5. Apparatus

5.1 **Balance**—A balance readable and accurate to 0.1 g.

5.2 **Uptake Container**—A watertight container with a minimum cross sectional area that is at least 50 % greater than the total area of the specimens' test surface(s) and a minimum depth of 75 mm. Provide a cover for the container to minimize evaporation.

5.2.1 Use specimen supports that allow a minimum of 3 mm clearance from the bottom of the container and that cover a maximum of 10 % of the area of the specimen's test surface. Use supports made of a material that does not float in water and that does not rust, expand, or contract as a result of water exposure.

*A Summary of Changes section appears at the end of this standard