



Standard Test Method for Sampling and Testing Grout¹

This standard is issued under the fixed designation C1019; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This test method covers procedures for both field and laboratory sampling and compression testing of grout used in masonry construction. Grout for masonry is specified under Specification C476.

NOTE 1—The testing agency performing this test method should be evaluated in accordance with Practice C1093.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

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

C39/C39M Test Method for Compressive Strength of Cylindrical Concrete Specimens

C143/C143M Test Method for Slump of Hydraulic-Cement Concrete

C476 Specification for Grout for Masonry

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

C617 Practice for Capping Cylindrical Concrete Specimens

C1064/C1064M Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete

C1093 Practice for Accreditation of Testing Agencies for Masonry

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.

C1611/C1611M Test Method for Slump Flow of Self-Consolidating Concrete

3. Significance and Use

3.1 Grout used in masonry is a fluid mixture of cementitious materials and aggregate with a high water content for ease of placement.

3.1.1 During construction, grout is placed within or between absorptive masonry units. Excess water must be removed from grout specimens in order to provide compressive strength test results more nearly indicative of the grout strength in the wall. In this test method, molds are made from masonry units having the same absorption and moisture content characteristics as those being used in the construction.

3.2 This test method is used to either help select grout proportions by comparing test values or as a quality control test for uniformity of grout preparation during construction.

3.3 The physical exposure condition and curing of the grout are not exactly reproduced, but this test method does subject the grout specimens to absorption conditions similar to those experienced by grout in the wall.

NOTE 2—Test results of grout specimens taken from a wall should not be compared to test results obtained with this test method.

4. Apparatus

4.1 Maximum-Minimum Thermometer.

4.2 *Straightedge*, a steel straightedge not less than 6 in. (152.4 mm) long and not less than 1/16 in. (1.6 mm) in thickness.

4.3 *Tamping Rod*, a round, straight, steel rod with a diameter of 3/8 ± 1/16 in. (10 ± 2 mm) and a length of 12 ± 4 inches. (300 ± 100 millimetres). The rod shall have the tamping end or both ends rounded to a hemispherical tip of the same diameter as the rod.

4.4 *Nonabsorbent Blocks and Spacers*, nonabsorbent, rigid squares and rectangles with side dimensions so as to achieve the desired grout specimen side dimensions and of sufficient quantity or thickness to yield the desired grout specimen height, as shown in Fig. 1, Fig. 2, and Fig. 3.

NOTE 3—Nonabsorbent blocks may be of plastic, wood, or other

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