



Standard Test Methods for Compressive Strength of Molded Soil-Cement Cylinders¹

This standard is issued under the fixed designation D 1633; 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 Department of Defense.

1. Scope *

1.1 This test method covers the determination of the compressive strength of soil-cement using molded cylinders as test specimens.

1.2 Two alternative procedures are provided as follows:

1.2.1 *Method A*—This procedure uses a test specimen 4.0 in. (101.6 mm) in diameter and 4.584 in. (116.4 mm) in height. Height to diameter ratio equals 1.15. This test method made be used only on materials with 30 % or less retained on the $\frac{3}{4}$ -in. (19.0-mm) sieve. See Note 3.

1.2.2 *Method B*—This procedure uses a test specimen 2.8 in. (71.1 mm) in diameter and 5.6 in. (142.2 mm) in height. Height to diameter ratio equals 2.00. This test method is applicable to those materials that pass the No. 4 (4.75-mm) sieve.

1.3 All observed and calculated values shall conform to the guidelines for significant digits and rounding established in Practice D 6026.

1.4 The values stated in inch-pound units are to be regarded as standard, except as noted in 1.4.1-1.4.3. The values given in parentheses are mathematical conversions to SI units, and are provided for information only and are not considered standard.

1.4.1 The gravitational system of inch-pound units is used when dealing with inch-pound units. In this system, the pound (lbf) represents a unit of force (weight), while the unit for mass is slugs.

1.4.2 The slug unit of mass is almost never used in commercial practice (density, scales, balances, etc.). Therefore, the standard unit for mass in this standard is either kilogram (kg) or gram (g), or both. Also, the equivalent inch-pound unit (slug) is not given.

1.4.3 It is common practice in the engineering/construction profession in the United States to use concurrently pounds to represent both a unit of mass (lbm) and of force (lbf). This use combines two separate system of units, the absolute system and the gravitational system. It is scientifically undesirable to combine the use of two separate sets of inch-pound units within a single standard. As stated in 1.4.2, this standard uses the

gravitational system and does not present the slug unit for mass. However, the use of scales or balances recording pounds of mass (lbm) or the recording of density in lbm/ft³ shall not be regarded as nonconformance with this standard.

1.5 *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 42 Test Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete²

D 559 Test Methods for Wetting-and-Drying Tests of Compacted Soil-Cement Mixtures³

D 560 Test Methods for Freezing-and-Thawing Tests of Compacted Soil-Cement Mixtures³

D 653 Terminology Relating to Soil, Rock, and Contained Fluids³

D 1632 Practice for Making and Curing Soil-Cement Compression and Flexure Test Specimens in the Laboratory³

D 2216 Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass³

D 3740 Practice for the Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock Used in Engineering Design and Construction³

D 4753 Specification for Evaluating, Selecting, and Specifying Balances and Scales for Use in Soil, Rock, and Construction Material Testing³

D 6026 Practice for Using Significant Digits in Calculating and Reporting Geotechnical Test Data⁴

E 4 Practices for Load Verification of Testing Machines⁵

3. Terminology

3.1 For definitions of terms used in this test method, refer to Terminology D 653.

4. Significance and Use

4.1 Method A makes use of the same compaction equipment

¹ This test method is under the jurisdiction of ASTM Committee D-18 on Soil and Rock and is the direct responsibility of Subcommittee D18.15 on Stabilization with Admixtures.

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² *Annual Book of ASTM Standards*, Vol 04.02.

³ *Annual Book of ASTM Standards*, Vol 04.08.

⁴ *Annual Book of ASTM Standards*, Vol 04.09.

⁵ *Annual Book of ASTM Standards*, Vol 03.01.

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