



Designation: D 1634 – 00

Standard Test Method for Compressive Strength of Soil-Cement Using Portions of Beams Broken in Flexure (Modified Cube Method)¹

This standard is issued under the fixed designation D 1634; 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.

1. Scope *

1.1 This test method covers the determination of the compressive strength of soil-cement, using for test specimens portions of beams broken in flexure in accordance with Test Method D 1635.

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

1.2.1 The converted inch-pound units use the gravitational system of units. In this system, the pound (lbf) represents a unit of force (weight), while the unit for mass is slugs. The converted slug unit is not given, unless dynamic ($F = ma$) calculations are involved.

1.3 *This standard does not purport to address all of the safety problems, 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:

D 653 Terminology Relating to Soil, Rock, and Contained Fluids²

D 1632 Practice for Making and Curing Soil-Cement Compression and Flexure Test Specimens in the Laboratory²

D 1633 Test Method for Compressive Strength of Molded Soil-Cement Cylinders²

D 1635 Test Method for Flexural Strength of Soil-Cement Using Simple Beam with Third-Point Loading²

D 3740 Practice for the Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction²

E 4 Standard Practices for Force Verification of Testing Machines³

3. Terminology

3.1 Definitions:

3.1.1 For common definitions of terms in this standard, refer to Terminology D 653.

4. Significance and Use

4.1 This test method is intended for use in the laboratory and as a research tool for determining relative compressive strength values for various soil-cement mixtures. It is not intended as an alternative for Test Method D 1633 and the test values obtained by these two test methods are not interchangeable and not necessarily comparable. A comparison of strengths obtained by Test Methods D 1633 and D 1634 is given in Footnote 4.⁴

NOTE 1—The quality of the result produced by this standard is dependent on the competence of the personnel performing it, and the suitability of the equipment and facilities used. Agencies that meet the criteria of Practice D 3740 are generally considered capable of competent and objective testing/sampling/inspection/etc. Users of this standard are cautioned that compliance with Practice D 3740 does not in itself assure reliable results. Reliable results depend on many factors; Practice D 3740 provides a means of evaluating some of those factors.

5. Apparatus

5.1 *Compression Testing Machine*—The testing machine may be of any type having sufficient capacity and control to provide the rate of loading prescribed in 7.2. It shall conform to the requirements of Section 15 of Practices E 4. The testing machine shall be equipped with a spherically seated head block having a bearing surface of at least 75 % of the width of the specimen but not greatly in excess of the width of the specimen. The movable portion of this block shall be held closely in the spherical seat, but the design shall be such that the bearing face can be rotated freely and tilted through small angles in any direction.

5.2 *Bearing Plates*—Square, hardened steel bearing plates 19 mm ($\frac{3}{4}$ in.) thick with side dimensions of 76.2 ± 0.13 mm (3 ± 0.005 in.) (for standard beam). The bearing faces when new shall not depart from a plane by more than 0.013 mm

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

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² Annual Book of ASTM Standards, Vol 04.08.

³ Annual Book of ASTM Standards, Vol 03.01.

⁴ Felt, E. J., Abrams, M. S., *Strength and Elastic Properties of Compacted Soil-Cement Mixtures*, ASTM STP 206, ASTM, 1957.

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