



Designation: C513 – 11

Standard Test Method for Obtaining and Testing Specimens of Hardened Lightweight Insulating Concrete for Compressive Strength¹

This standard is issued under the fixed designation C513; 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 obtaining, preparing, and testing specimens of hardened, lightweight, insulating concrete made with either lightweight aggregate conforming to Specification C332 or using preformed foam made from a foaming agent conforming to Specification C869 and having an oven-dry density not exceeding 800 kg/m^3 [50 lb/ft^3].

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the 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

C88 Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate

C125 Terminology Relating to Concrete and Concrete Aggregates

C332 Specification for Lightweight Aggregates for Insulating Concrete

C617 Practice for Capping Cylindrical Concrete Specimens

C670 Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials

C869 Specification for Foaming Agents Used in Making Preformed Foam for Cellular Concrete

C1005 Specification for Reference Masses and Devices for Determining Mass and Volume for Use in the Physical Testing of Hydraulic Cements

3. Terminology

3.1 *Definitions:*

3.1.1 For definitions of terms used in this test method, refer to Terminology C125.

4. Significance and Use

4.1 This test method is used to determine the compressive strength of hardened lightweight insulating concrete using samples taken from the field. The test results can be used to determine specification compliance when results of tests on specimens molded at the time of construction are not available or are defective, and to establish the strength properties of existing construction.

5. Apparatus

5.1 *Masonry or Carpenter's Saw*, for removing a sample from hardened concrete and cutting cubes from the sample. A core drill is permitted for concrete thicker than 150 mm [6 in.].

5.2 *Testing Machine*, conforming to the requirements in Test Method C39/C39M.

5.3 *Scales and Weights*, used in weighing specimens shall conform to Specification C1005.

5.4 *Drying Oven*, conforming to the requirements in Test Method C88.

6. Sampling

6.1 Remove a sufficiently large sample, from each sample location, so that at least four test specimens for compressive strength, and one for density (unit weight), can be prepared without the inclusion of any concrete that has been cracked, spalled, undercut, or otherwise damaged. The sample shall be of such length and width as to permit the cubes and prisms to

¹ This test method is under the jurisdiction of ASTM Committee C09 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee C09.21 on Lightweight Aggregates and Concrete.

Current edition approved Oct. 1, 2011. Published November 2011. Originally approved in 1963. Last previous edition approved in 1995 as C513 – 89 (1995). DOI: 10.1520/C0513-11.

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.