Designation: C495 – 07

Standard Test Method for Compressive Strength of Lightweight Insulating Concrete[1]

This standard is issued under the fixed designation C495; 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 preparation of specimens and the determination of the compressive strength of lightweight insulating concrete having an oven-dry density not exceeding 50 lb/ft^3 (800 kg/m^3) as determined by the procedures described herein. This test method covers the preparation and testing of molded 3 by 6-in. (75 by 150-mm) cylinders.

1.2 The values stated in inch-pound units are to be regarded as the standard.

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:*[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

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

C172 Practice for Sampling Freshly Mixed Concrete

C617 Practice for Capping Cylindrical Concrete Specimens

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

3. Significance and Use

3.1 This test method provides standardized requirements for sampling, molding, curing, and testing lightweight insulating concretes for the purpose of determining compliance with compressive strength and density specifications.

4. Apparatus

4.1 *Testing Machine*—Use a testing machine as prescribed in Test Method C39/C39M.

4.2 *Scales and Weights*—Use scales and weights in weighing specimens that conform to those specified in the Apparatus Section of Test Method C109/C109M.

4.3 *Drying Oven*—Use an oven as specified in Test Method C88.

4.4 *Molds*—Use molds made of nonabsorbent materials or of materials treated to reduce absorption, that are watertight, and not subject to distortion of more than 1/16 in. (1.6 mm) in any dimension during molding and early curing of specimens. Coat all mold surfaces that will be in contact with concrete except single use plastic molds with wax or mineral oil, prior to use. Use molds having a diameter of 3 ± 1/16 in. (75 ± 1.6 mm) and a length of 6 ± 1/8 in. (150± 3 mm).

5. Sampling

5.1 Sample fresh lightweight insulating concrete in accordance with applicable provisions of Practice C172, with the following exceptions:

5.1.1 *Sampling from Pump Equipment*—Fill a bucket of approximately 10-qt (9-dm^3) capacity by passing through the discharge stream of the concrete pump hose being used to place the concrete, at the point of placement of the concrete. Exercise care to ensure that the sample is representative of the pour, avoiding the beginning or ending of the discharge from the equipment. Prepare the test specimens as described in Section 6, by filling them with a scoop of lightweight insulating concrete dipped from the bucket.

5.1.2 *Remixing Sample*—Do not remix the sample.

6. Test Specimens

6.1 *Size and Shape*—Use cylindrical test specimens 3 ± 1/16 in. (75 ± 1.6 mm) in diameter and 6 ± 1/8 in. (150 ± 3 mm) in length, with the base of each specimen perpendicular to the longitudinal axis within the limits prescribed in 6.8.

6.2 *Number*—Obtain at least four test specimens for compressive strength tests from each sample of lightweight insulating concrete.

6.3 *Molding*—In molding the specimens, place the concrete in two approximately equal layers. Tap the sides of the mold lightly with a rubber mallet after placing each layer until the

[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.

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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.

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