



Designation: C1194 – 03

Standard Test Method for Compressive Strength of Architectural Cast Stone¹

This standard is issued under the fixed designation C1194; 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 sampling, preparation of specimens, and determination of the compressive strength of architectural cast stone.

1.2 *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.*

1.3 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

2. Referenced Documents

2.1 *ASTM Standards:*²

C42/C42M Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete

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

C617 Practice for Capping Cylindrical Concrete Specimens

3. Terminology

3.1 *Definitions:*

3.1.1 *cast stone, n*—an architectural precast concrete building unit intended to simulate natural cut stone.

4. Significance and Use

4.1 This test method is to be used in determining the compressive strength of cast stone. Compressive strength is one measure of resistance of cast stone to weathering and structural stress.

¹ This test method is under the jurisdiction of ASTM Committee C27 on Precast Concrete Products and is the direct responsibility of Subcommittee C27.20 on Architectural and Structural Products.

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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.

5. Apparatus

5.1 *Testing Machine*—The testing machine shall conform to the requirements prescribed in Test Method C109/C109M unless otherwise indicated therein.

6. Sampling

6.1 Select the sample to represent the cast stone under consideration. The sample may be selected by the purchaser or his authorized representative from each 500 ft³ (14 m³) of cast stone. Select a sample of adequate size to permit the preparation of three compression test specimens.

7. Test Specimens

7.1 For compression tests, take three specimens from each sample. Cut specimens from the finished surface of the sample to consist of one surface intended to be exposed to view and five saw-cut surfaces, except for faced cast stone, cut specimens through the faced surface to consist of approximately equal parts of the facing material and the backup material.

7.2 Cut test specimens from the sample with saws. The test specimens shall be 2-in. (50.8-mm) or 50-mm cubes. The allowable size tolerance of the cubes shall be $\pm 1/8$ in. (3.2 mm).

7.3 Measure the top and bottom of the bearing surfaces of the test specimens to 0.01 in. (0.25 mm) and average the two bearing areas to obtain the compression area.

8. Conditioning

8.1 For this test, oven dry specimens at a temperature of 100 to 110°C (212 to 230°F) until the loss in mass is not more than 0.1 % in 24 h of drying. Remove from the oven and allow to cool in room temperature for 4 to 6 h before capping.

9. Specimen Preparation

9.1 Cap each specimen, after drying, using equipment, materials, and procedures that conform to those specified in Practice C617. Capping material is required that will exceed the compressive strength of the tested cubes. Form the cap by spreading the capping material upon a capping plate and pressing the specimen firmly on it. Make the cap as thin as possible but not to exceed $3/32$ in. (2.4 mm). Caps must be allowed to harden a minimum of 16 hours prior to testing.