



Designation: C1195 – 21

Standard Test Method for Absorption of Architectural Cast Stone¹

This standard is issued under the fixed designation C1195; 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 and preparation of specimens for determining the absorption value of architectural cast stone.

NOTE 1—The testing laboratory performing this test method should be evaluated in accordance with Practice C1093.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

C642 Test Method for Density, Absorption, and Voids in Hardened Concrete

C1093 Practice for Accreditation of Testing Agencies for Masonry

3. Terminology

3.1 *Definitions:*

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

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.

4. Significance and Use

4.1 This test method is to be used in determining the absorption value of cast stone. Absorption is one measure of porosity of cast stone and, hence, its resistance to weathering and in-service durability.

5. Sampling

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

6. Test Specimens

6.1 For absorption testing, saw cut three specimens from the sample. Each specimen shall have one finished surface intended to be exposed to view and five saw-cut surfaces. For faced cast stone, cut the specimens through the faced surface to consist of approximately equal parts of the facing material and the backup material.

6.2 The test specimens shall be $2 \pm \frac{1}{8}$ in. (50.8 ± 3.2 mm) cubes.

7. Conditioning

7.1 Oven dry specimens at a temperature of $230 \pm 9^\circ\text{F}$ ($110 \pm 5^\circ\text{C}$) until the loss in mass is not more than 0.1 % in 24 h of drying. Remove specimens from the oven and allow to cool in room temperature to a final temperature of 68 to 77°F (20 to 25°C) before testing for absorption.

8. Procedure

8.1 Weigh the specimens immediately after conditioning and determine the mass to the nearest 0.1 g. Record as *A* (mass of dried specimen).

8.2 Immerse the specimens in water at a temperature of 60 to 80°F (15.5 to 26.7°C) for 48 ± 1 h such that the top surface of the specimens are at least 6 in. (150 mm) below the surface of the water. Specimens shall be separated from each other and from the bottom of the immersion tank by at least $\frac{1}{8}$ in. (3.2 mm), using wire mesh, grating, or other spacers. The spacer shall not cover more than 10 % of the area of the face that is in direct contact with the spacer. At the end of this period, remove the test specimens from the water one at a time and allow to

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

drain on a $\frac{3}{8}$ in. (9.5 mm) or coarser wire mesh for 60 ± 5 seconds. Surface dry with a damp cloth and determine the mass to the nearest 0.1 g. Record as *B* (mass of the specimen after immersion).

9. Calculations

9.1 Calculate the absorption value of each specimen as follows:

$$\text{absorption, mass \%} = [(B - A)/A] \times 100 \quad (1)$$

where:

A = mass of the dried specimen

B = mass of the specimen after immersion.

9.2 Calculate the average absorption value of the three specimens.

10. Report

10.1 Report the following information:

10.1.1 Identification of the sample

10.1.2 Date of casting

10.1.3 Age of sample when tested

10.1.4 Absorption value of each specimen and the average of the three specimens

10.1.5 Name of the project

11. Precision and Bias

11.1 *Precision*—The precision of this test is similar to Test Method **C642** for which data are not yet available. The precision of this test method will be stated when data become available.

11.2 *Bias*—Since there is no accepted reference material suitable for determining the bias of results of this test method, no statement on bias is being made.

SUMMARY OF CHANGES

Committee C27 has identified the location of selected changes to this standard since the last issue (C1195–19a) that may impact the use of this standard. (May 1, 2021)

(1) Revised **4.1** clarifying what effect porosity has on the performance of cast stone.

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