



Designation: C1691 – 21

Standard Specification for Unreinforced Autoclaved Aerated Concrete (AAC) Masonry Units¹

This standard is issued under the fixed designation C1691; 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 specification covers solid, unreinforced masonry units manufactured from autoclaved aerated concrete (AAC), a cementitious product. This specification addresses dimensional tolerances, maximum limits for drying shrinkage, and shipping and handling.

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
C1232 Terminology for Masonry
C1693 Specification for Autoclaved Aerated Concrete (AAC)

3. Terminology

3.1 *Definitions*—Terms defined in Terminology **C1232** shall apply in this specification.

¹ This specification is under the jurisdiction of ASTM Committee **C15** on Manufactured Masonry Units and is the direct responsibility of Subcommittee **C15.10** on Autoclaved Aerated Concrete Masonry Units.

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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. Classification

4.1 AAC masonry units manufactured in accordance with this specification shall be classified according to their strength class as specified in Specification **C1693**—AAC2, AAC3, AAC4, AAC5, or AAC6.

NOTE 1—Typically, classes AAC2, ACC4, and ACC6 are predominantly used in masonry construction. Contact manufacturers for the availability of all classes.

5. Materials and Manufacture

5.1 AAC masonry units manufactured in accordance with this specification shall be composed entirely of AAC material conforming to Specification **C1693**.

6. Physical Requirements

6.1 *Compressive Strength*—The compressive strength of the units shall be determined according to Specification **C1693** and shall conform to the requirements of Specification **C1693** for the strength class in which the units are classified.

6.2 *Dry Bulk Density*—The dry bulk density shall be determined according to Specification **C1693** and shall conform to the requirements of Specification **C1693** for the strength class in which the units are classified.

6.3 *Drying Shrinkage*—The drying shrinkage shall be determined in accordance with Specification **C1693** and shall conform to the requirements of Specification **C1693** for the strength class in which the units are specified.

7. Dimensions and Permissible Variations

7.1 The specified dimensions of the units shall be established by the AAC unit manufacturer.

7.2 No overall unit dimension (width, height, or length) shall differ by more than 1/8 in. (3 mm) from the corresponding specified dimension

8. Visual Inspection

8.1 All units shall be sound and free of defects that would interfere with the proper placing of the unit or impair the strength or permanence of the construction. Minor imperfections incidental to the usual methods of manufacture, or

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

resulting from customary methods of handling in shipment and delivery, shall not be deemed grounds for rejection.

9. Sampling and Testing

9.1 The purchaser or the authorized representative shall be accorded proper facilities to inspect and sample the units at the place of manufacture from the lots ready for delivery.

10. Rejection and Rehearing

10.1 If the shipment fails to conform to the specific requirements, the manufacturer shall be permitted to sort it, and new specimens shall be selected by the purchaser from the

retained lot and tested. If the second set of specimens fails to conform to the test requirements, the entire lot shall be rejected.

NOTE 2—Unless otherwise specified in the purchase order, the cost of tests is typically borne as follows: If the results of the tests show that the units do not conform to the requirements of this specification, the cost is typically borne by the seller. If the results of the tests show that the units do conform to the requirements of this specification, the cost is typically borne by the purchaser.

11. Keywords

11.1 autoclaved aerated concrete (AAC); compressive strength; density; masonry units; shrinkage

SUMMARY OF CHANGES

Committee C15 has identified the location of selected changes to this standard since the last issue (C1691–11(2017)) that may impact the use of this standard. (December 1, 2021)

(1) Revised 4.1 to address AAC strength classes as specified in Specification C1693.

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