Designation: C1694 – 09

Standard Specification for Reinforced Autoclaved Aerated Concrete (AAC) Elements[1]

This standard is issued under the fixed designation C1694; 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 reinforced solid elements manufactured from autoclaved aerated concrete (AAC), a cementitious product addressed by Specification C1693. The specification addresses dimensional tolerances, maximum limits for drying shrinkage, requirements for steel reinforcement, 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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

A82/A82M Specification for Steel Wire, Plain, for Concrete Reinforcement (Withdrawn 2013)[3]

C1693 Specification for Autoclaved Aerated Concrete (AAC)

3. Classification

3.1 Reinforced AAC elements manufactured in accordance with this specification shall be classified according to their strength class.

4. Materials and Manufacture

4.1 Reinforced AAC elements manufactured in accordance with this specification shall be composed entirely of AAC material conforming to Specification C1693.

5. Physical Requirements

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

5.2 *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 elements are classified.

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

5.4 *Steel Reinforcemen*—The properties of the steel reinforcement shall be determined in accordance with Specification A82/A82M and shall conform to the requirements of Table 1.

5.5 *Weld-Point Shear Strength*—The weld-point shear strength in the reinforcement shall be determined in accordance with Section 8 and shall conform to the requirements of Table 2.

5.6 *Concrete Cover of Steel Reinforcement*—The minimum concrete cover over the steel reinforcement shall be 0.375 in. (10 mm). The reinforcing steel shall receive a corrosion-resistant coating before casting.

NOTE 1—A cover greater than 0.375 in. (10 mm) may be required in fire resistant applications.

5.7 *Effectiveness of Corrosion Protection of Steel Reinforcement*—The effectiveness of the corrosion protection for the steel reinforcement shall be determined according to Section 7, and the resulting percentage of surface area that is corroded shall not exceed 5 % of the total surface area.

6. Dimensions and Permissible Variations

6.1 The dimensions of the reinforced elements shall be as specified by the AAC manufacturer. Allowable deviations from the specified element dimensions are provided in Table 3.

7. Corrosion Protection of Steel Reinforcement in AAC

7.1 *Apparatus:*

[1] This specification is under the jurisdiction of ASTM Committee C27 on Precast Concrete Products and is the direct responsibility of Subcommittee C27.60 on Precast Autoclaved Aerated 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.

[3] The last approved version of this historical standard is referenced on www.astm.org.

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