



Designation: C 1555 – 03

Standard Practice for Autoclaved Aerated Concrete Masonry¹

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INTRODUCTION

Masonry units of autoclaved aerated concrete (AAC) can be produced with dimensional tolerances as small as $\frac{1}{16}$ in. (1.5 mm). As a consequence, AAC masonry units can be laid with mortar joints approximately $\frac{3}{8}$ in. (9 mm) thick, and also with thinner joints. The exterior face of the resulting AAC masonry wall is then protected from the elements using an exterior wythe of masonry, a cladding system, or a breathable coating resistant to penetration by liquid water. The interior face can be plastered, furred, or painted.

1. Scope

1.1 This practice applies to construction and testing of masonry made of AAC units. It includes or references terminology, material specifications, and methods of test. It references specifications and test methods.

1.2 *Units*—The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units which 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:

- C 270 Specification for Mortar for Unit Masonry²
- C 476 Specification for Grout for Masonry²
- C 1072 Test Method for Method for Measurement of Flexural Bond Strength²
- C 1232 Terminology of Masonry²
- C 1386 Specification for Precast Autoclaved Aerated Concrete High-Precision Wall Construction Units²
- E 72 Methods of Conducting Strength Tests of Panels for Wall Construction²
- E 96 Test Methods for Water Vapor Transmission of Materials²

E 514 Test Method for Water Penetration and Leakage Through Masonry²

E 518 Test Methods for Flexural Bond Strength of Masonry²

E 519 Test Method for Diagonal Tension (Shear) in Masonry Assemblages²

2.2 Other Documents:

Autoclaved Aerated Concrete: Properties, Testing and Design, RILEM Recommended Practice, RILEM Technical Committees 78-MCA and 51-ALC, E & FN Spon, London, 1993

Specification for Masonry Structures (ACI 530.1-02 / ASCE 6-02 / TMS 602-02), as reported by the Masonry Standards Joint Committee (MSJC), American Concrete Institute (Farmington Hills, Michigan), American Society of Civil Engineers (Reston, Virginia), and The Masonry Society, Boulder, Colorado), 2002

3. Terminology

3.1 *Definitions*—Terms defined in Terminology C 1232 shall apply in this practice.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *autoclaved aerated concrete (AAC)*—low-density cementitious product of calcium silicate hydrates in which the low density is obtained by the formation of macroscopic air bubbles, mainly by chemical reactions within the mass during the liquid or plastic phase. The air bubbles are uniformly distributed and are retained in the matrix on setting, hardening, and subsequent high-pressure steam curing, to produce a cellular structure. Material specifications for this product are prescribed in Specification C 1386.

3.2.2 *thick-bed AAC masonry*—AAC masonry whose mortar joints are approximately $\frac{3}{8}$ in. (10 mm) thick.

¹ This practice 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 *Annual Book of ASTM Standards*, Vol