



Designation: C652 – 17

Standard Specification for Hollow Brick (Hollow Masonry Units Made From Clay or Shale)¹

This standard is issued under the fixed designation C652; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This specification covers hollow building brick and hollow facing brick made from clay, shale, fire clay, or mixtures thereof, and fired to incipient fusion. Four types of hollow brick in each of two grades and two classes are covered. In this specification, the term hollow brick shall be understood to mean hollow clay masonry units whose net cross-sectional area (solid area) in any plane parallel to the surface, containing the cores, cells, or deep frogs, is less than 75 % of its gross cross-sectional area measured in the same plane (see 4.3). This specification does not cover brick intended for use as paving brick (see Specification C902).

1.2 The property requirements of this specification apply at the time of purchase. The use of results from testing of brick extracted from masonry structures for determining conformance or nonconformance to the property requirements (Section 6) of this standard is beyond the scope of this specification.

1.3 Brick covered by this specification are ceramic products manufactured primarily from clay, shale, or similar naturally occurring substances and subjected to a heat treatment at elevated temperatures (firing). The heat treatment shall develop sufficient fired bond between the particulate constituents to provide the strength and durability requirements of this specification. Additives or recycled materials are permitted to be included at the option of the manufacturer. (See “firing” and “firing bond” in Terminology C1232.)

1.3.1 This specification and its individual requirements shall not be used to qualify or corroborate the performance of a masonry unit made from other materials, or made with other forming methods, or other means of binding the materials.

1.4 Hollow brick differ from unglazed structural clay tile (Specifications C34 and C212) and solid brick (Specifications C62 and C216). Hollow brick require greater shell and web

thicknesses and higher minimum compressive strength than structural clay tile, but permit greater void area and lesser distance from exposed edge to core hole than solid brick. Therefore, environmental and structural performance may be different in elements constructed of hollow brick from those constructed of structural clay tile or solid brick.

1.5 The text of this specification references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the specification.

1.6 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.

2. Referenced Documents

2.1 *ASTM Standards*:²

C34 Specification for Structural Clay Load-Bearing Wall Tile

C62 Specification for Building Brick (Solid Masonry Units Made From Clay or Shale)

C67 Test Methods for Sampling and Testing Brick and Structural Clay Tile

C212 Specification for Structural Clay Facing Tile

C216 Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)

C902 Specification for Pedestrian and Light Traffic Paving Brick

C1232 Terminology of Masonry

3. Terminology

3.1 *Definitions*—For definitions relating to masonry and hollow brick, refer to Terminology C1232.

4. Classification

4.1 *Grades*—Grades classify brick according to their resistance to damage by freezing when saturated at a moisture

¹ This specification is under the jurisdiction of ASTM Committee C15 on Manufactured Masonry Units and is the direct responsibility of Subcommittee C15.02 on Brick and Structural Clay Tile.

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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.

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