



## Standard Specification for Industrial Floor Brick<sup>1</sup>

This standard is issued under the fixed designation C410; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope\*

1.1 This specification covers brick made from clay or shale or mixtures thereof and are suitable for surfacing industrial floors. Ceramic shapes known as quarry tile are not covered by this specification.

1.2 Terminology related to industrial floor brick is found in Terminology C1232.

1.3 *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 that are provided for information only and are not considered standard.

### 2. Referenced Documents

#### 2.1 *ASTM Standards*:<sup>2</sup>

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

C279 Specification for Chemical-Resistant Masonry Units  
C1232 Terminology of Masonry

### 3. Classification

3.1 Four types of industrial floor brick are covered (Note 1):

3.1.1 *Type T*—For use where a high degree of resistance to thermal and mechanical shock is required but low absorption is not required.

3.1.2 *Type H*—For use where resistance to chemicals and thermal shock are service factors but low absorption is not required.

3.1.3 *Type M*—For use where low absorption is required. Brick of this type are normally characterized by limited mechanical (impact) shock resistance but are often highly resistant to abrasion.

3.1.4 *Type L*—For use where minimal absorption and a high degree of chemical resistance are required. Brick of this type are normally characterized by very limited thermal and limited mechanical (impact) shock resistance but are highly resistant to abrasion.

NOTE 1—*Discussion of Types of Floor Brick*—The four types of brick included in this specification are designed to cover the diverse needs of many industries for floor units. Recognizing that the requirements of primary aluminum producers are quite different from those of chemical manufacturers, and similarly, that the need of a builder for brick with which to pave an airport terminal building may vary considerably from those of food processing plants, for example, a minimum of four brick types has been deemed necessary. The factors of modulus of rupture, water absorption, and chemical resistance have been selected as the basis for the classification system.

### 4. Physical Properties

4.1 Brick shall conform to the physical requirements for the type specified as prescribed in Table 1.

### 5. Dimensions and Permissible Variations

5.1 The sizes of brick shall be as specified by the purchaser. The maximum permissible variations in dimensions of individual units shall not exceed those given in Table 2.

5.2 Tolerances for warpage of face or edges of individual brick from a plane surface and from a straight line, respectively, shall not exceed the maximum values specified in Table 3.

### 6. Finish and Appearance

6.1 The texture of the finished surface that will be exposed when in place shall conform to an approved sample consisting of not less than four bricks, each representing the texture desired.

### 7. Sampling and Testing

7.1 The brick shall be sampled and tested for modulus of rupture, absorption, measurement of size, and measurement of warpage in accordance with Test Methods C67 and for chemical resistance in accordance with the sulfuric acid solubility test in Section 7 on a sulfuric acid solubility test in Specification C279.

<sup>1</sup> 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.

Current edition approved Dec. 15, 2011. Published January 2012. Originally approved in 1957. Last previous edition approved in 2010 as C410 – 10. DOI: 10.1520/C0410-11.

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto: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.

**TABLE 1 Physical and Chemical Requirements**

Designation	Minimum Modulus of Rupture (brick flatwise), psi (MPa) gross area		Maximum Water Absorption by 5 h Boiling, %		Maximum Mass Loss by Chemical Resistance Test, %
	Average of 5 Brick	Individual	Average of 5 Brick	Individual	
Type T	1000 (6.9)	750 (5.2)	10	12	<sup>A</sup>
Type H	1000 (6.9)	750 (5.2)	6	7	20
Type M	2000 (13.8)	1500 (10.3)	2	2.5	<sup>A</sup>
Type L	2000 (13.8)	1500 (10.3)	1	1.5	8

<sup>A</sup> No requirement.

**TABLE 2 Permissible Variations in Dimensions**

Specified Dimensions, in. (mm)	Maximum Permissible Variations in Dimensions between Largest and Smallest Unit in One Lot, <sup>A</sup> in. (mm)
Up to 2 (50.8), incl	1/16 (1.6)
Over 2 to 4 (50.8 to 101.6), incl	1/8 (3.2)
Over 4 to 9 (101.6 to 228.6), incl	3/16 (4.8)
Over 9 to 12 (228.6 to 304.8), incl	1/4 (6.4)

<sup>A</sup> Size of the lot shall be determined by agreement between the purchaser and the seller.

**TABLE 3 Tolerances on Warpage**

Maximum Face Dimension, in. (mm)	Maximum Permissible Deviation, in. (mm)
Up to 9 (228.6), incl	1/16 (1.6)
Over 9 to 12 (228.6 to 304.8), incl	3/32 (2.4)

### SUMMARY OF CHANGES

Committee C15 has identified the location of selected changes to this standard since the last issue (C410 – 10) that may impact the use of this standard. (Approved Dec. 15, 2011.)

(J) Select sections within the standard were renamed in accordance with the ASTM Form and Style Standards manual.

*ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.*

*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.*

*This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org). Permission rights to photocopy the standard may also be secured from the ASTM website (www.astm.org/COPYRIGHT).*