**Designation: ~~C410 – 13 (Reapproved 2017)~~ C410 – 23**

# Standard Specification for Industrial Floor Brick[1]

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 (ε) indicates an editorial change since the last revision or reapproval.

## 1. ~~Scope~~ 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~~The brick covered herein are intended for environments where resistance to chemicals, thermal shock, and/or mechanical shock is ~~C1232.~~required.

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.

1.4 *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.*

1.5 *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]

~~C67~~C67/C67M Test Methods for Sampling and Testing Brick and Structural Clay Tile
C279 Specification for Chemical-Resistant Masonry Units
C1232 Terminology for Masonry

## 3. Terminology

3.1 *Definitions*—For definitions relating to industrial floor brick, refer to Terminology C1232.

## 4. Classification

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

[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**

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

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

4.1.3 *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.

4.1.4 *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.

## 5. Physical Properties and Chemical Resistance Requirements

5.1 ~~Brick~~ When tested in accordance with Test Methods C67/C67M, brick shall conform to the physical requirements for the type specified as prescribed in Table 1.

5.2 When tested in accordance with the sulfuric acid solubility test in Section 8 of Specification C279, brick shall conform to the chemical resistance requirements for the type specified as prescribed in Table 1.

## 6. Dimensions and Permissible Variations

6.1 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.

6.2 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.

## 7. Finish and Appearance

7.1 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.

## 8. Sampling and Testing

8.1 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~~C67/C67M and for chemical resistance in accordance with the sulfuric acid solubility test in Section 8 ~~on a sulfuric acid solubility test in~~ of Specification C279.

**TABLE 1 Physical Properties and Chemical ~~Requirements~~ Resistance 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 | [A] |
| Type H | 1000 (6.9) | 750 (5.2) | 6 | 7 | 20 |
| Type M | 2000 (13.8) | 1500 (10.3) | 2 | 2.5 | [A] |
| Type L | 2000 (13.8) | 1500 (10.3) | 1 | 1.5 | 8 |

[A] No requirement.