



Standard Specification for Structural Clay Non-Load-Bearing Tile¹

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

1. Scope

1.1 This specification covers structural clay non-load-bearing tile (partition, fireproofing, and furring). One grade of tile is covered, designated Grade NB.

1.2 The property requirements of this standard apply at the time of purchase. The use of results from testing of tile extracted from masonry structures for determining conformance or non-conformance to the property requirements (Section 3) of this standard is beyond the scope of this standard.

1.3 Tile covered by this standard are manufactured from clay, shale, or similar naturally occurring substances and subjected to a heat treatment at elevated temperatures (firing). The heat treatment must develop sufficient fired bond between the particulate constituents to provide the strength and durability requirements of this specification. (See *firing* and *fired bond* in Terminology C 43.)

1.4 Fireproofing tile intended for use in load-bearing masonry shall conform to Specification C 34.

1.5 If tile having a particular color (Note 1), texture, or finish are desired, these features shall be specified separately by the purchaser.

NOTE 1—Color of tile varies with the type of clay used and degree of burning; hence, it cannot be taken as indicative of classification until after it has been related to absorption by actual tests.

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

2. Referenced Documents

2.1 ASTM Standards:

C 34 Specification for Structural Clay Load-Bearing Wall Tile²

C 43 Terminology of Structural Clay Products²

C 67 Test Methods of Sampling and Testing Brick and Structural Clay Tile²

¹ This specification is under the jurisdiction of ASTM Committee C-15 on Manufactured Masonry Units and is the direct responsibility of Subcommittee C15.02 on Clay Brick and Structural Clay Tile.

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² Annual Book of ASTM Standards, Vol 04.05.

3. Absorption

3.1 Structural clay non-load-bearing tile shall conform to the following requirements for absorption:

Grade	Absorption by 1-h Boiling, ^A %
NB	Individual Maximum 28

^AThe range in percentage absorption for tile delivered to any one job shall be not more than 12.

4. Number of Cells and Weights

4.1 Partition and split furring tile shall conform to the requirements prescribed in Table 1 for total number of cells, number of cells in the direction of wall thickness, and dry weights per square foot of tile.

4.2 The requirements for minimum weights of structural clay non-load-bearing tile shall be waived if the over-all thickness of the shells, measured between the inner and extreme outer surfaces of scored tile, is not less than 5/8 in. (15.9 mm) and the mean shell thickness of unscored tile is not less than 1/2 in. (12.7 mm). Thickness of webs shall be not less than 1/2 in.

5. Dimensions and Permissible Variations

5.1 No over-all dimension shall vary more than 3 % over or under the specified dimension for any form or size of tile. See Note 2.

NOTE 2—Purchasers and designers should ascertain the type and size of tile, modular or non-modular, available in the locality under consideration and should specify accordingly, stating the size and type represented by the available tile.

Modular sizes are designated by the specified nominal dimensions which are equal to the actual manufactured dimensions plus the thickness of one mortar joint, not to exceed 1/2 in. (12.7 mm) (see Section 6.) For example, if the modular, specified, or nominal dimensions of a unit are 4 by 8 by 12 in. (102 by 203 by 305 mm) the actual manufactured dimensions may be 3 1/2 by 7 1/2 by 11 1/2 in. (114.7 by 215.7 by 317.7 mm).

6. Fireproofing Tile

6.1 Tile intended for use in fireproofing structural members shall be of such sizes and shapes that they can be erected to cover completely the exposed surfaces of the members.

TABLE 1 Number of Cells and Weight of Tile

Dimensions, in. (mm)		Minimum Number of Cells		Minimum Weight, ^A lb/ft ² (kg/m ²) of Tile	
		In Unit	In Direction of Wall Thickness	Average	Individual
Partition Tile					
2 by 12 by 12	51 by 305 by 305)	3	1	14 (68)	13 (63)
3 by 12 by 12	(76 by 305 by 305)	3	1	15 (73)	14 (68)
4 by 12 by 12	(102 by 305 by 305)	3	1	16 (78)	15 (73)
6 by 12 by 12	(152 by 305 by 305)	3	1	22 (107)	21 (102)
6 by 12 by 12	(152 by 305 by 305)	4	2	25 (112)	24 (117)
8 by 12 by 12	(203 by 305 by 305)	4	2	30 (146)	28 (137)
10 by 12 by 12	(254 by 305 by 305)	4	2	35 (161)	33 (161)
12 by 12 by 12	(305 by 305 by 305)	4	2	40 (195)	38 (185)
Split Furring Tile					
1½ by 12 by 12	(38 by 305 by 305)	3	...	7½ (37)	7 (34)
2 by 12 by 12	(51 by 305 by 305)	3	...	8 (39)	7½ (37)

^AThe weights given in the table are for scored tile. If any of the faces are unscored, the weights shall be increased 0.5 lb/ft²(2.4 kg/m²) of unscored area.

7. Workmanship, Finish, and Appearance

7.1 The finish of the outer face or faces of tile shall be plaster-base finish or exposed wall finish as specified in the invitation for bids.

7.2 Surfaces of tile for plaster-base finish shall be smooth, scored, combed, or roughened. When smooth, the tile shall be free of glaze and the absorption shall be not less than 5 % nor more than 25 %. When scored, each groove shall be not less than 1/16 in. (1.6 mm) nor more than 1/16 in. (6.4 mm) in depth, and not more than 1 in. (25.4 mm) in width. The area covered by the grooves shall not exceed 50 % of the area of the scored faces. When combed, the tile shall be scratched or scarified prior to burning by mechanical means which shall make scratches or scarifications on the surface of the tile not less than 1/16 in. nor more than 1/8 in. (3.2 mm) in depth, and not more than 1/4 in. apart. When roughened, the die skin on the face of the tile shall be entirely broken by mechanical means, such as wire cutting or wire brushing. (The die skin may be observed within the cells of the tile.)

7.3 Surfaces of tile with exposed finish shall be smooth, combed, or roughened. Combed or roughened tile surfaces shall conform to the requirements for these finishes given in 7.2.

8. Sampling and Test Units

8.1 The purchaser or his authorized representative shall be accorded proper facilities for sampling and inspection of units

both at the place of manufacture and at the site of the work. At least 10 days from the time of sampling should be allowed for completion of the tests.

8.2 Tile shall be sampled and tested in accordance with Test Methods C 67.

9. Visual Inspection

9.1 All tile shall be reasonably free of laminations and of cracks, blisters, surface roughness, and other defects that would interfere with the proper setting of the tile or impair the strength or permanence of the construction.

10. Rejection

10.1 In case the shipment fails to conform to the requirements, the manufacturer is permitted to sort it, and new specimens shall be selected by the purchaser from the retained lot and tested at the expense of the manufacturer. In case the second set of specimens fails to meet the requirements, the entire lot shall be rejected.

11. Expense of Tests

11.1 Except as specified in Section 10, and unless otherwise agreed, the expense of inspection and testing shall be borne by the purchaser.

12. Keywords

12.1 clay; masonry construction; non-load-bearing tile; physical properties; shale; tile

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