



Designation: C530 – 23

Standard Specification for Structural Clay Nonloadbearing Screen Tile¹

This standard is issued under the fixed designation C530; 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*

1.1 This specification covers unglazed, structural clay, non-loadbearing screen tile.

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

1.3 Tile covered by this specification 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 C1232).

1.4 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.

1.5 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.

1.6 *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

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.

C67/C67M Test Methods for Sampling and Testing Brick and Structural Clay Tile
C1232 Terminology for Masonry

3. Terminology

3.1 *Definitions*—For definitions relating to structural clay nonloadbearing screen tile, refer to Terminology C1232.

4. Classification

4.1 Three grades of screen tile, based on relative durability, are covered as follows:

NOTE 1—Screen walls present many more exposed surfaces than other brick or tile walls, the question of durability and selection of grade may be more critical in the screen walls. For this reason, these requirements are more conservative than for brick.

4.1.1 *Grade SE*—Screen tile exhibiting a uniformly high resistance to disintegration by weathering or by freezing or thawing in the presence of moisture.

4.1.2 *Grade ME*—Screen tile exhibiting a moderate and somewhat nonuniform resistance to weathering. Grade ME tile exhibit good durability in areas of mild to moderate exposure but may not be adequate for severe exposures.

4.1.3 *Grade NE*—Screen tile for interior use (no exposure to rain or freezing).

4.1.4 Grade SE tile may be accepted in lieu of Grades ME or NE. Grade ME tile may be accepted in lieu of Grade NE.

4.2 Two types of screen tile, based on dimensional tolerances, are covered as follows:

4.2.1 *Type STX*—Screen tile having a high degree of mechanical perfection and minimum size variation.

4.2.2 *Type STA*—Screen tile exhibiting characteristic architectural effects resulting from a larger degree of size variation than obtainable with Type STX.

5. Ordering Information

5.1 Orders for material under this specification shall include the following information:

5.1.1 *Grade (4.1)*—When grade is not specified, the requirements for Grade ME shall govern.

5.1.2 *Type (4.2)*—When type is not specified, the requirements for Type STA shall govern.

5.1.3 *Sizes and Shapes*—Specify in accordance with Section 7.

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

TABLE 1 Dimensions and Permissible Variations

Specified Dimension, in. (mm)	Maximum Permissible Variations from Specified Dimensions, Plus or Minus, in. (mm)	
	Type	Type
	STX	STA
Up to 4, incl. (101.6)	3/32 (2.38)	1/8 (3.18)
Over 4 to 6 (101.6 to 152.4)	1/8 (3.18)	3/16 (4.76)
Over 6 to 8 (152.4 to 203.2)	5/32 (3.96)	1/4 (6.35)
Over 8 to 12 (203.2 to 304.8)	7/32 (5.56)	5/16 (7.94)
Over 12 (304.8)	9/32 (7.14)	3/8 (9.52)

5.1.4 *Color Texture, and Pattern*—Specify in accordance with 8.3.

5.2 Orders for material under this specification may include the following information:

5.2.1 Dimensional tolerances more stringent than in Table 1.

5.2.2 Restrictions on chippage or roughness.

5.2.3 Other requirements not specifically contained in this specification.

6. Physical Properties

6.1 *Durability*—Screen tile, when tested in accordance with Test Methods C67/C67M, shall meet the properties prescribed in Table 2 for resistance to absorption.

7. Dimensions and Permissible Variations

7.1 The dimensions of screen tile units shall be specified by the purchaser.

NOTE 2—Since screen tile are available in numerous sizes and shapes, the purchaser must specify these items. All sizes and shapes are not necessarily available in all parts of the United States. Therefore, the specifier should ascertain local availability before specifying a particular unit size or pattern.

7.2 No screen tile shall have greater dimensional variation than that permitted in Table 1.

TABLE 2 Physical Properties

Grade	Maximum Water Absorption by 1-h Boiling, percent	
	Average of Five Tests	Individual
	SE	10
ME	14	16
NE	20	24

8. Finish and Appearance

8.1 All tile shall be reasonably free from laminations and from defects that impair the placement, strength, or permanence of the construction.

8.2 Tile surfaces shall be smooth, scored, combed, or roughened as specified by the purchaser.

8.3 Color, texture, and pattern shall be specified by the purchaser. The texture and color range that will be visible in the finished wall shall conform to an approved sample of at least four representative units.

NOTE 3—Tile colors vary with clay type and degree of burning. Color does not indicate tile classification unless it has been related to absorption and strength by tests.

Because a multitude of individual unit patterns and wall patterns are available, screen-wall strength in every direction may not be related to the compressive strength of individual units. Designers are cautioned to investigate each wall design thoroughly and to provide sufficient expansion and pressure-relieving joints to eliminate induced forces that might create critical stresses in screen-wall units.

9. Sampling and Testing

9.1 Sample and test tile in accordance with Test Methods C67/C67M.

10. Keywords

10.1 clay; masonry; nonloadbearing tile; physical properties; screen tile; shale; tile

SUMMARY OF CHANGES

Committee C15 has identified the location of selected changes to this standard since the last issue (C530–13(2017)) that may impact the use of this standard. (March 1, 2023)

(1) Added Section 5—Ordering Information.

(2) Relocated text regarding default grade and type to Section 5—Ordering Information.

(3) Relocated text regarding optional requirements to Section 5—Ordering Information.