



Standard Specification for Structural Clay Nonloadbearing Screen Tile¹

This standard is issued under the fixed designation C 530; 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 standard 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 5) 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 The text of this standard 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 standard.

2. Referenced Documents

2.1 *ASTM Standards*:

C 43 Terminology of Structural Clay Products²

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

3. Grades

3.1 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.

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

3.1.2 *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.

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

3.2 When the grade is not specified, the requirements for Grade ME shall govern.

3.3 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. Types

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

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

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

4.2 When type is not specified, the requirements for Type STA shall govern.

5. Physical Properties

5.1 *Durability*—Screen tile shall meet the properties prescribed in Table 1 for resistance to absorption.

6. Dimensions and Permissible Variations

6.1 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.

6.2 No screen tile shall have greater dimensional variation than that permitted in Table 2.

7. Finish

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

8. Color, Texture, and Pattern

8.1 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.

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 Brick and Structural Clay Tile.

Current edition approved Nov. 10, 1999. Published January 2000. Originally published as C 530–63T. Last previous edition C 530–93(1999).

² *Annual Book of ASTM Standards*, Vol 04.05.

TABLE 1 Physical Properties

Grade	Maximum Water Absorption by 1-h Boiling, percent	
	Average of Five Tests	Individual
SE	10	12
ME	14	16
NE	20	24

TABLE 2 Dimensions and Permissible Variations

Specified Dimension, in. (mm)	Maximum Permissible Variations from Specified Dimensions, Plus or Minus, in. (mm)	
	Type STX	Type STA
Up to 4, incl. (101.6)	$\frac{3}{32}$ (2.38)	$\frac{4}{32}$ (3.18)
Over 4 to 6 (101.6 to 152.4)	$\frac{4}{32}$ (3.18)	$\frac{5}{32}$ (4.76)
Over 6 to 8 (152.4 to 203.2)	$\frac{5}{32}$ (3.96)	$\frac{6}{32}$ (6.35)
Over 8 to 12 (203.2 to 304.8)	$\frac{7}{32}$ (5.56)	$\frac{10}{32}$ (7.94)
Over 12 (304.8)	$\frac{9}{32}$ (7.14)	$\frac{12}{32}$ (9.52)

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. Optional Requirements

9.1 If the purchaser desires closer dimensional tolerances, restrictions on chippage or roughness, or other requirements not specifically contained in this specification, he must so state in a supplemental specification.

10. Sampling and Testing

10.1 Sample and test tile in accordance with Test Methods C 67.

11. Inspection

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

12. Keywords

12.1 clay; masonry construction; nonloadbearing tile; physical properties; screen tile; shale; tile

The American Society for Testing and Materials 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 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, 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).