

Standard Specification for North Country Brick

This specification has been developed by Taylor Concrete Products, Inc. as a recommended standard for concrete face brick. It is based on ASTM C 55-01 (Standard Specification for Concrete Brick) and accounts for the specific qualities of North Country Brick.

1. Scope

1.1 This specification covers concrete brick intended for the use in structural masonry, architectural veneer, or facing for buildings and other structures, and are made from Portland cement, water, and suitable mineral aggregates with and without the inclusion of other materials.

1.2 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.

1.3 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

Note 1- Concrete brick covered by this specification are made from normal weight aggregates.

Note 2- When particular features are desired, such as weight classification, high compressive strength, surface textures for appearance or bond, finish, color, fire resistance, insulation, acoustical properties, or other special features, such properties should be specified separately by the purchaser. Local suppliers should be consulted as to the availability of North Country Brick having the desired features.

2. Referenced Documents

2.1 ASTM Standards:

C 33 Specifications for Concrete Aggregates¹

C 140 Test Methods for Sampling and Testing Concrete Masonry Units and Related Units²

C 150 Specification for Portland Cement³

C 207 Specification for Hydrated Lime for Masonry Purposes⁴

C 426 Test Methods for Drying Shrinkage of Concrete Masonry Units³

C 1209 Terminology of Concrete Masonry Units and Related Units³

C 1232 Terminology of Masonry³

3. Terminology

3.1 *Definitions*- For definitions of terms used in this specification, refer to Terminology C 1209 and Terminology C 1232.

4. Classification

4.1 Concrete brick units manufactured in accordance with this specification shall conform as follows:

4.1.1 *Grade N* - For use as architectural veneer and facing units in exterior walls and for use where high strength and resistance to moisture penetration and sever frost action are desired.

5. Materials and Manufacture

5.1 *Cementitious Materials*—Materials shall conform to the following applicable specifications:

5.1.1 *Portland Cement*—Specification C 150.

5.2 *Aggregates*—Aggregates shall conform to the following specifications, except that grading requirements shall not necessarily apply:

5.2.1 *Normal Weight Aggregates*—Specification C 33.

5.3 *Other Constituents*—Air-entraining agents, coloring pigments, integral water repellents, finely ground silica, and other constituents shall be previously established as suitable for use in concrete masonry units and shall conform

¹ Annual Book of ASTM Standards, Vol 04.02.

² Annual Book of ASTM Standards, Vol 04.05.

³ Annual Book of ASTM Standards, Vol 04.01.

⁴ Annual Book of ASTM Standards, Vol 04.01.

to applicable ASTM standards or shall be shown by test or experience not to be detrimental to the durability of the concrete masonry units or any material customarily used in masonry construction.

6. Physical Requirements

6.1 At the time of delivery to the purchaser, units shall conform to the physical requirements prescribed in Table 1.

6.2 At the time of delivery to the purchaser, the total linear drying shrinkage of units shall not exceed 0.065 % when tested in accordance with Test Method C 426.

NOTE 3—The purchaser is the public body or authority, association, corporation, partnership, or individual entering into a contract or agreement to purchase or install, or both, concrete brick. The time of delivery to the purchaser is FOB plant when the purchaser or the purchaser's agent transports the concrete brick, or at the time unloaded at the worksite if the manufacturer or the manufacturer's agent transports the concrete brick.

7. Dimensions and Permissible Variations

7.1 No overall dimension (width, height, and length) shall differ by more than +/- 1/8 in. (3.2 mm) from the specified standard dimensions.

Note 4 – Standard dimensions of concrete brick are the manufacturer’s designated dimensions. Nominal Dimensions of modular size concrete brick are equal to the standard dimensions plus the thickness of one mortar joint. Nominal dimensions of nonmodular size concrete brick usually exceed the standard dimensions by 1/8 to ¼ in. (3.2 to 6.4 mm).

7.2 *Coring* – Unless otherwise specified, brick shall be either solid or cored. The net cross-sectional area of the cored brick in any plane parallel to the surface containing the cores shall be at least 75% of the gross cross-sectional area measure in the same plane. No part of any hole shall be less than ¾ in. (19.1 mm) from any edge of the brick.

8. Finish and Appearance

8.1 All units shall be sound and free of cracks or other defects that interfere with proper placement of the units or significantly impair the strength or permanence of the construction. Minor cracks incidental to the usual method of manufacture or minor chipping resulting from customary methods of handling in shipment and delivery are not grounds for rejection.

8.2 Where units are to be used in exposed wall construction, the face or faces of that are to be exposed shall not show chips or cracks not otherwise permitted or other imperfections when viewed from a distance of not less than 20 ft (6.1 m) under diffused lighting.

8.2.1 Five percent of a shipment containing chips, not larger than ½ in. (12.7 mm) in any dimension, or cracks not wider than 0.02 in. (0.5 mm) and not longer than 25% of the nominal height of the unit is permitted.

8.3 The color and texture shall be from the standard catalog of North Country Brick by Taylor Concrete or as specified by the purchaser. The finished surfaces that will be exposed in place shall conform to an approved sample consisting of not less than four units, representing the range of texture and color permitted.

Table 1 Strength and Absorption Requirements

Compressive Strength, min, psi (Mpa) (Concrete Brick Tested Flatwise)		Water Absorption, max, lb/ft3 (Average of 3 Units)
Average Gross Area		Weight Classification-Oven Dry Weight of Concrete, lb/ft3 (kg/m3)
Average of 3 Units	Individual Unit	Normal Weight 125(2000) or more
3500 (24.1)	3000 (20.7)	10 (160)

9. Methods of Sampling and Testing

9.1 The purchaser or authorized representative shall be accorded proper facilities to inspect and sample the concrete brick at the place of manufacture from the lots ready for delivery. At least 10 days shall be allowed for completion of the test.

9.2 Sample and test concrete brick in accordance with Test Methods C 140 and Test Method C 426, when applicable.

9.3 Total linear shrinkage shall be based on tests of concrete brick made with the same materials, concrete mix design, manufacturing process, and curing method, conducted in accordance with Test Method C 426 no more than 24 months prior to delivery.

10. Compliance

10.1 If a sample fails to conform to the specified requirements, the manufacturer shall be permitted to remove units from the shipment. A new sample shall be selected by the purchaser from the remaining units in the shipment with a similar configuration and dimension and tested at the expense of the manufacturer. If the second sample meets the specified requirements, the remaining portion of the shipment represented by the sample meets the specified requirements. If the second sample fails to meet the specified requirements, the remaining portion of the shipment represented by the sample fails to meet the specified requirements.

Note 5 – Unless otherwise specified in the purchase order, the costs of tests is typically borne as follows: (1) if the results of the tests show that the units do not conform to the requirements of this specification, the cost is typically borne on the sell; (2) if the results of the tests show that the units conform to the specification requirements, the cost is typically borne by the purchaser.

11. Keywords

11.1 absorption; architectural veneer; compressive strength; concrete brick; concrete masonry units; facing units; linear shrinkage; portland cement