Designation: C62 – 08

Standard Specification for Building Brick (Solid Masonry Units Made From Clay or Shale)[1]

This standard is issued under the fixed designation C62; 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.

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

1. Scope*

1.1 This specification covers brick intended for both structural and nonstructural masonry where external appearance is not a requirement. The brick are prismatic units available in a variety of sizes, shapes, textures, and colors. The specification does not cover brick intended for use as facing units or where surface appearance is a requirement, (see Specification C216). This specification does not cover brick intended for use as paving brick (see Specification C902).

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

1.3 Brick are manufactured from clay, shale, or similar naturally occurring earthy 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, fired bond, and incipient fusion in Terminology C43.)

1.4 Brick are shaped during manufacture by molding, pressing, or extrusion, and the shaping method is a way to describe the brick (see Terminology C43).

1.5 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.

1.6 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.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

C43 Terminology of Structural Clay Products[3]

C67 Test Methods for Sampling and Testing Brick and Structural Clay Tile

C216 Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)

C902 Specification for Pedestrian and Light Traffic Paving Brick

E835/E835M Guide for Modular Coordination of Clay and Concrete Masonry Units

3. Grades

3.1 Grades classify brick according to their resistance to damage by freezing when wet, as defined in Note 1. Three grades are covered and the grade requirements are shown in Table 1.

3.1.1 *Grade SW (Severe Weathering)*—Brick intended for use where high and uniform resistance to damage caused by cyclic freezing is desired and where the brick may be frozen when saturated with water.

3.1.2 *Grade MW (Moderate Weathering)*—Brick intended for use where moderate resistance to cyclic freezing damage is

[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.

[3] Withdrawn. The last approved version of this historical standard is referenced on www.astm.org.

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

TABLE 1 Physical Requirements

Designation	Minimum Compressive Strength gross area, psi (MPa)		Maximum Water Absorption by 5-h Boiling, %		Maximum Saturation Coefficient[A]	
	Average of 5 Brick	Individual	Average of 5 Brick	Individual	Average of 5 Brick	Individual
Grade SW	3000 (20.7)	2500 (17.2)	17.0	20.0	0.78	0.80
Grade MW	2500 (17.2)	2200 (15.2)	22.0	25.0	0.88	0.90
Grade NW	1500 (10.3)	1250 (8.6)	no limit	no limit	no limit	no limit

[A] The saturation coefficient is the ratio of absorption by 24-h submersion in cold water to that after 5-h submersion in boiling water.

permissible or where the brick may be damp but not saturated with water when freezing occurs.

3.1.3 *Grade NW (Negligible Weathering)*—Brick with little resistance to cyclic freezing damage but which are acceptable for applications protected from water absorption and freezing.

NOTE 1—The word "saturated," with respect to this standard, refers to the condition of a brick that has absorbed water to an amount equal to that resulting from submersion in room temperature water for 24 h.

4. Physical Properties

4.1 *Appearance*—If brick are required to have a particular color, texture, finish, uniformity, or limits on cracks, warpage or other imperfections detracting from the appearance they are purchased under Specification C216.

4.2 *Durability*—When Grade is not specified, the requirements for Grade SW shall govern.

4.2.1 *Physical Property Requirements*—The brick shall conform to the physical requirements for the Grade specified as prescribed in Table 1. For the compressive strength requirements in Table 1, test the unit with the compressive force perpendicular to the bed surface of the unit, with the unit in the stretcher position.

4.2.2 *Absorption Alternate*—The saturation coefficient requirement does not apply, provided the 24-h cold water absorption of each unit of a random sample of five brick does not exceed 8.0 %.

4.2.3 *Freezing and Thawing Alternative*—The requirements for 5 h boiling water absorption and saturation coefficient do not apply, provided a sample of five brick, meeting the strength requirements of Table 1, passes the freezing and thawing test as described in the Rating Section of the Freezing and Thawing test procedures of Test Methods C67.

4.2.3.1 *Grade SW: Breakage and Weight Loss Requirement*—No individual unit separates or disintegrates resulting in a weight loss greater than 0.5 % of its original dry weight.

NOTE 2—The 50 cycle freezing and thawing test is used as an alternative only when the brick do not conform to either Table 1 requirements for maximum water absorption and saturation coefficient, or to the requirements of the Absorption Alternate in 4.2.2.

4.2.3.2 *Grade SW: Cracking Requirement*—No individual unit develops a crack that exceeds, in length, the unit's least dimension.

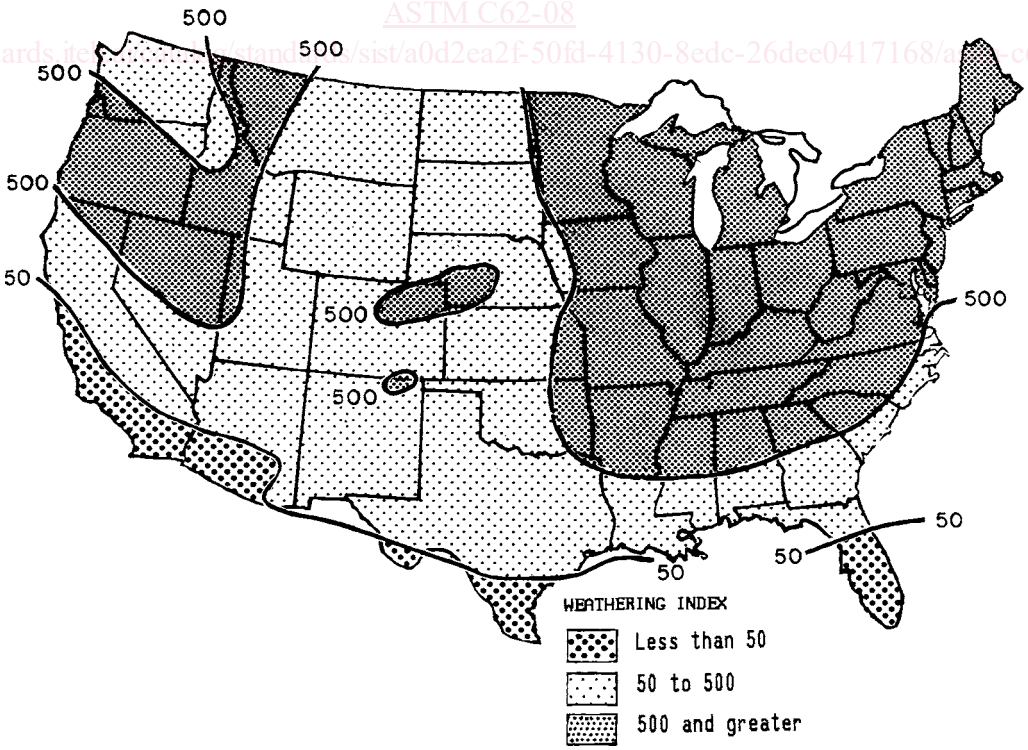

FIG. 1 Weathering Indices in the United States