



Designation: ~~C129~~—~~11~~ C129 – 14

## Standard Specification for Nonloadbearing Concrete Masonry Units<sup>1</sup>

This standard is issued under the fixed designation C129; 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 reappraisal. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reappraisal.

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

### 1. Scope\*

1.1 This specification covers hollow and solid nonloadbearing concrete masonry units made from portland cement, water, and mineral aggregates with or without the inclusion of other materials. These units are intended for use in nonloadbearing partitions, but under certain conditions they may be suitable for use in nonloadbearing exterior walls above grade where effectively protected from the weather.

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 standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

NOTE 1—Concrete masonry units covered by this specification are made from lightweight or normal weight aggregates, or both.

NOTE 2—When particular features are desired, such as density classification, surface texture for appearance or bond, finish, color, fire resistance, insulation, acoustical properties, or other special features, such properties should be specified separately by the purchaser. However, suppliers should be consulted as to the availability of units having the desired features.

### 2. Referenced Documents

2.1 *ASTM Standards*:<sup>2</sup>

C33 Specification for Concrete Aggregates

C140 Test Methods for Sampling and Testing Concrete Masonry Units and Related Units

C150 Specification for Portland Cement

C207 Specification for Hydrated Lime for Masonry Purposes

C331 Specification for Lightweight Aggregates for Concrete Masonry Units

C456 Test Method for Hydration Resistance of Basic Bricks and Shapes

C595 Specification for Blended Hydraulic Cements

C618 Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete

C989 Specification for Slag Cement for Use in Concrete and Mortars

C1157 Performance Specification for Hydraulic Cement

C1232 Terminology of Masonry

### 3. Terminology

3.1 Terminology defined in Terminology C1232 shall apply for this specification.

### 4. Classification

4.1 Nonloadbearing concrete masonry units manufactured in accordance with this specification shall conform to one of three density classifications prescribed in Table 1.

### 5. Materials and Manufacture

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

5.1.1 *Portland Cement*—Specification C150.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee C15 on Manufactured Masonry Units and is the direct responsibility of Subcommittee C15.03 on Concrete Masonry Units and Related Units.

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<sup>2</sup> 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.

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

**TABLE 1 Density Classification<sup>A</sup> Requirements**

Density Classification	Oven-Dry Density of Concrete, lb/ft <sup>3</sup> (kg/m <sup>3</sup> ) Average of 3 Units
Lightweight	Less than 105 (1680)
Medium-Weight	105 to less than 125 (1680 to 2000)
Normal-Weight	125 (2000) or more

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<sup>A</sup> Consult manufacturers for available densities

- 5.1.2 *Blended Hydraulic Cements*—Specification **C595**.
- 5.1.3 *Hydraulic Cement*—Specification **C1157**.
- 5.1.4 *Hydrated Lime, Type S*—Specification **C207**.
- 5.1.5 *Ground Granulated Blast Furnace Slag*—Specification **C989**.
- 5.1.6 *Pozzolans*—Specification **C618**.

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

- 5.2.1 *Normal Weight Aggregates*—Specification **C33**.
- 5.2.2 *Lightweight Aggregates*—Specification **C331**.

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 and shall conform 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 strength requirements prescribed in **Table 2**. All units shall be sound and free of cracks or other defects that interfere with the 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.

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 masonry units. The time of delivery to the purchaser is FOB plant when the purchaser or purchaser’s agent transports the concrete masonry units, or at the time unloaded at the worksite if the manufacturer or manufacturer’s agent transports the concrete masonry units.

6.2 At the time of delivery to the purchaser, the total linear drying shrinkage of units shall not exceed 0.065%.

6.3 *Solid Units*—The net cross-sectional area of solid units, in every plane parallel to the bearing surface, shall be not less than 75 % of the gross cross-sectional area measured in the same plane.

## 7. Dimensions and Permissible Variations

7.1 Minimum face shell thickness shall be not less than ½ in. (13 mm).

7.2 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 units are the manufacturer’s designated dimensions. Nominal dimensions of modular size units are equal to the

**TABLE 2 Strength Requirements**

	Compressive Strength (average net area) min. psi (MPa)
Average of 3 units	600 (4.14)
Individual unit	500 (3.45)

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