



Standard Specification for Concrete Masonry Units for Construction of Catch Basins and Manholes¹

This standard is issued under the fixed designation C 139; 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 solid precast segmental concrete masonry units made from a mixture of portland cement, water, and suitable mineral aggregates, with or without the inclusion of other materials. The units are intended for use in the construction of catch basins and manholes.

1.2 The text of this standard referenced 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 33 Specification for Concrete Aggregates²
- C 140 Test Methods for Sampling and Testing Concrete Masonry Units and Related Units³
- C 150 Specification for Portland Cement⁴
- C 207 Specification for Hydrated Lime for Masonry Purposes⁴
- C 595 Specification for Blended Hydraulic Cements⁴
- C 618 Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete²
- C 989 Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars²
- C 1157 Performance Specification for Blended Hydraulic Cement⁴
- C 1209 Terminology of Concrete Masonry Units and Related Units³
- C 1232 Terminology of Masonry³

3. Terminology

3.1 Terminology defined in Terminology C 1209 and Terminology C 1232 shall apply for this specification.

¹ This specification is under the jurisdiction of ASTM Committee C-15 on Manufactured Masonry Units and is the direct responsibility of Subcommittee C15.03 on Concrete Masonry Units and Related Units.

Current edition approved Jan. 10, 1999. Published June 1999. Originally published as C 139 – 38 T. Last previous edition C 139 – 97.

² Annual Book of ASTM Standards, Vol 04.02.

³ Annual Book of ASTM Standards, Vol 04.05.

⁴ Annual Book of ASTM Standards, Vol 04.01.

4. Materials

4.1 Cementitious materials shall conform to the following ASTM specifications:

- 4.1.1 *Portland Cement*— Specification C 150.
- 4.1.2 *Blended Hydraulic Cements*—Specification C 595 or Performance Specification C 1157.
- 4.1.3 *Ground Blast-Furnace Slag*—Specification C 989.
- 4.1.4 *Hydrated Lime*— Type S of Specification C 207.
- 4.1.5 *Fly Ash*—Specification C 618.
- 4.1.6 *Siliceous and Pozzolan Materials*—Siliceous and pozzolan materials shall conform to applicable ASTM standards, or shall be shown by test or experience to be not detrimental to the durability of the concrete.
- 4.2 *Aggregates*—Aggregates shall conform to Specification C 33, except grading requirements shall not apply.
- 4.3 *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 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.

5. Physical Requirements

5.1 At the time of delivery to the site of the work, the units shall conform to the requirements prescribed in Table 1.

6. Dimensions and Permissible Variations

- 6.1 The thickness of any unit shall be not less than 5 in. (127 mm).
- 6.2 Overall dimensions shall not vary by more than $\pm 3\%$ from the specified dimensions.

7. Sampling and Testing

7.1 The purchaser or his authorized representative shall be accorded proper facilities to inspect and sample the units at the place of manufacture from the lots ready for delivery. At least ten days should be allowed for completion of the tests.

7.2 Units shall be sampled and tested in accordance with Test Methods C 140.

7.3 Except as specified in Section 8, and unless otherwise