



Standard Specification for Segmental Retaining Wall Units¹

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1. Scope *

1.1 This specification covers segmental retaining wall units of concrete, machine-made from 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 mortarless segmental retaining walls.

NOTE 1—When particular features are desired, such as weight classification, higher compressive strength, surface texture, finish, color, or other special features, such properties should be specified separately by the purchaser. Local suppliers should be consulted as to availability of units having the desired features.

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.

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 331 Specification for Lightweight Aggregates for Concrete Masonry Units²
- 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

C 1262 Test Method for Evaluating the Freeze-Thaw Durability of Manufactured Concrete Masonry Units and Related Concrete Units³

3. Terminology

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

4. Materials

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

4.1.1 *Portland Cements*—Specification C 150.

4.1.2 *Modified Portland Cement*—Portland cement conforming to Specification C 150, modified as follows:

4.1.2.1 *Limestone*—Limestone, with a minimum 85 % Calcium Carbonate (CaCO_3) content, shall be permitted to be added to the cement, provided these requirements of Specification C 150 as modified are met:

(1) Limitation on Insoluble Residue—1.5 %.

(2) Limitation on Air Content of Mortar—Volume percent, 22 % max.

(3) Limitation on Loss of Ignition—7 %.

4.1.3 *Blended Cements*—Specification C 595 or C 1157.

4.1.4 *Pozzolans*—Specification C 618.

4.1.5 *Blast Furnace Slag Cement*—Specification C 989.

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

4.2.1 *Normal Weight Aggregates*—Specification C 33.

4.2.2 *Lightweight Aggregates*—Specification C 331.

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 segmental retaining wall units and shall conform to applicable ASTM standards or shall be shown by test or experience to be not detrimental to the durability of the segmental retaining wall units or any material customarily used in segmental retaining wall construction.

5. Physical Requirements

5.1 At the time of delivery to the work site, the units shall conform to the physical requirements of Table 1 when tested in accordance with 8.2.

5.2 *Freeze-Thaw Durability*—In areas where repeated

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

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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.