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Designation: C 140 – 02b

Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units[1]

This standard is issued under the fixed designation C 140; 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 These test methods cover the sampling and testing of concrete masonry units for dimensions, compressive strength, absorption, unit weight (density), and moisture content. Flexural load testing and ballast weight determination of concrete roof pavers are also covered.

NOTE 1—The testing laboratory performing these test methods should be evaluated in accordance with Practice C 1093.

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

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

C 90 Specification for Loadbearing Concrete Masonry Units[2]

C 143 Test Method for Slump of Hydraulic- Cement Concrete[3]

C 1093 Practice for Accreditation of Testing Agencies for Unit Masonry[2]

C 1209 Terminology of Concrete Masonry Units and Related Units[2]

C 1232 Terminology of Masonry[2]

E 4 Practices for Force Verification of Testing Machines[4]

E 6 Terminology Relating to Methods of Mechanical Testing[4]

3. Terminology

3.1 Terminology defined in Terminology C 1209, Terminology C 1232, and Terminology E 6 shall apply for these test methods.

4. Sampling

4.1 *Selection of Test Specimens*:

4.1.1 For purposes of test, full-size concrete masonry units shall be selected by the purchaser or authorized representative. The selected specimens shall be of similar configuration and dimensions. Specimens shall be representative of the whole lot of units from which they are selected.

4.1.2 The term "lot" refers to any number of concrete masonry units of any configuration or dimension manufactured by the producer using the same materials, concrete mix design, manufacturing process, and curing method.

4.2 *Number of Specimens*:

4.2.1 For the compressive strength, absorption, unit weight (density), and moisture content determinations, six units shall be selected from each lot of 10 000 units or fraction thereof and 12 units from each lot of more than 10 000 and less than 100 000 units. For lots of more than 100 000 units, six units shall be selected from each 50 000 units or fraction thereof contained in the lot. Additional specimens shall be taken if directed by the purchaser.

4.3 *Identification*:

4.3.1 Mark each specimen so that it may be identified at any time. Markings shall cover not more than 5 % of the superficial area of the specimen.

4.3.2 Weigh units for moisture content tests immediately after sampling and marking and record as W_r (received weight).

5. Measurement of Dimensions

5.1 *Apparatus*:

5.1.1 Measure overall dimensions with a steel scale having divisions not greater than 1/10-in. (2.5-mm). Face shell and web thicknesses shall be measured with a caliper rule having

[1] These test methods are under the jurisdiction of ASTM Committee C15 on Manufactured Masonry Units and are the direct responsibility of Subcommittee C15.03 on Concrete Masonry Units and Related Units.

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[2] *Annual Book of ASTM Standards*, Vol 04.05.

[3] *Annual Book of ASTM Standards*, Vol 04.02.

[4] *Annual Book of ASTM Standards*, Vol 03.01.

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

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