



Designation: C232/C232M – 13

## Standard Test Method for Bleeding of Concrete<sup>1</sup>

This standard is issued under the fixed designation C232/C232M; 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 ( $\epsilon$ ) 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 test method covers the determination of the relative quantity of mixing water that will bleed from a sample of freshly mixed concrete.

1.2 When various concretes are to be compared, if the batches are of similar unit weight, the sample masses shall not differ by more than 1 kg [2 lb].

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.4 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.

1.5 *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. (Warning—Fresh hydraulic cementitious mixtures are caustic and may cause chemical burns to skin and tissue upon prolonged exposure).*<sup>2</sup>

### 2. Referenced Documents

2.1 *ASTM Standards:*<sup>3</sup>

**C29/C29M Test Method for Bulk Density (“Unit Weight”) and Voids in Aggregate**

<sup>1</sup> These test methods are under the jurisdiction of ASTM Committee C09 on Concrete and Concrete Aggregates and are the direct responsibility of Subcommittee C09.60 on Testing Fresh Concrete.

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<sup>2</sup> Section on Safety Precautions, Manual of Aggregate and Concrete Testing, *Annual Book of ASTM Standards, Vol 04.02*.

<sup>3</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.

**C138/C138M Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete**

**C172 Practice for Sampling Freshly Mixed Concrete**

**C192/C192M Practice for Making and Curing Concrete Test Specimens in the Laboratory**

**C670 Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials**

### 3. Significance and Use

3.1 This test method provides procedures to be used for determining the effect of variables of composition, treatment, environment, or other factors in the bleeding of concrete. It is also permitted to be used to determine the conformance of a product or treatment with a requirement relating to its effect on bleeding of concrete.

3.2 A specimen consolidated by rodding and tested without further disturbance simulates conditions in which the concrete is not subjected to intermittent vibration after placement.

### 4. Apparatus

4.1 *Container*—A cylindrical container of approximately 14-L [ $\frac{1}{2}$ -ft<sup>3</sup>] capacity, having an inside diameter of  $255 \pm 5$  mm [ $10 \pm \frac{1}{4}$  in.] and an inside height of  $280 \pm 5$  mm [ $11 \pm \frac{1}{4}$  in.]. The container shall conform to the requirements for a measure in Test Method **C29/C29M**. In addition, the inside surface of the container shall be free of corrosion, coatings, or lubricants.

4.2 *Scale*, of sufficient capacity to determine the mass of the load required with an accuracy of 0.5 %. Balances or scales shall be calibrated at least annually or whenever there is reason to question the accuracy of the equipment. Equipment not in operating condition or out of tolerance shall be marked as such and taken out of service until corrected.

4.3 *Pipet*, or similar instrument, for drawing off free water from the surface of the test specimen.

4.4 *Glass Graduate*, 100-mL capacity for collecting and measuring the quantity of water withdrawn.

4.5 *Tamping Rod*—A round, straight steel rod, 16 mm [ $\frac{5}{8}$  in.] in diameter and approximately 610 mm [24 in.] in length, having the tamping end rounded to a hemispherical tip, the diameter of which is 16 mm [ $\frac{5}{8}$  in.].

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