3, p. 318 (C 248–52).
Make the following editorial change in Standard Method C 248–52:
Section 5 (b).—Change the second equation to read as follows:
Bulk density, lb. per cu. ft. = B × 62.4.

Standard Method of Test for
BULK DENSITY OF MAGNESIUM OXYCHLORIDE CEMENTS[1]

ASTM Designation: C 248–52

ADOPTED, 1952.[2]

This Standard of the American Society for Testing Materials is issued under the fixed designation C 248; the final number indicates the year of original adoption as standard or, in the case of revision, the year of last revision.

Scope

1. This method of test covers the procedure for determining the bulk density of magnesium oxychloride cements.

Apparatus

2. The apparatus shall consist of the following:

(a) *Balance.*—A bow balance sensitive to 0.01 g. under a load of 200 g. The pan support bow shall be not less than 6 in. wide. Some type of beaker support shall be provided.
(b) *Beaker* of 1000-ml. capacity.
(c) *Copper Wire,* No. 22 gage.

Preparation of Sample

3. (a) The sample shall consist of at least five pieces or fragments of the cement being tested, each weighing not less than 100 nor more than 200 g. The cement shall be mixed, molded, and cured for seven days in accordance with the procedure prescribed for the test specimens in the Standard Method of Test for Flexural Strength of Magnesium Oxychloride Cements (Using Simple Bar with Two-Point or Single-Point Loading) (ASTM Designation: C 256).[3] Where broken test specimens from Method C 256 are available, suitable pieces or fragments from these specimens may be used.
(b) Each specimen shall be free of all loosely adhering particles. Visibly defective specimens, such as those containing cracks or bubbles, shall not be used.
(c) Specimens shall be selected from test specimens that have been cured in a standard atmosphere and that have not been in contact with water from the time of removal from the forms.

Procedure

4. (a) *Dry Weight, D.*—The dry weight, D, of each specimen cured as described in Section 3(c) shall be determined by weighing in air to the nearest 0.05 g. at 7 days of age.
(b) *Water Immersion.*—After the dry weight has been determined, the specimens shall be placed in water at 70 ± 1 F., for 1 hr. During this 1-hr. soaking period they shall be completely covered with water and shall be so placed in the container that the water has free access to all surfaces.

(c) *Suspended Weight, S.*—The weight, S, of each test specimen, after the soaking period and while suspended in water at 70 ± 1 F., shall be determined to the nearest 0.05 g. by suspending the specimen by means of a loop or halter of No. 22 gage copper wire hung from one arm of the balance. The balance shall be previously counterbalanced with the wire in place and immersed in water to the same depth as is used when the test specimens are in place.

(d) *Saturated Weight, W.*—After determining the suspended weight, each specimen shall be blotted lightly with a moist cloth to remove all drops of water from the surface and the saturated weight, W, in grams determined immediately by weighing in air to the nearest 0.05 g. The blotting operation shall be performed by rolling the specimen lightly on the wet cloth which has previously been saturated with water and then pressed only enough to remove such water as will drop from the cloth. Excessive blotting will introduce error by withdrawing water from the pores of the specimen.

Calculations

5. (a) *Exterior Volume, V.*—The exterior volume, V, in cubic centimeters of the test specimens may be obtained by subtracting the suspended weight from the saturated weight, both in grams, as follows:

$$V = W - S$$

(b) *Bulk Density, B.*—The bulk density at 70 F., B, in grams per cubic centimeters of a specimen is the quotient of its dry weight, D, divided by the exterior volume, V, including pores, and shall be calculated as follows:

$$B = \frac{D}{V}$$

The bulk density in pounds per cubic foot at 70 F. shall be calculated as follows:

Bulk density, lb. per cu. ft. = $B \times 62.2$

(c) *Rounding Off.*—The value for bulk density shall be rounded off to the nearest pound per cubic foot in accordance with the rounding-off method given in Section 3 (d) to (h) of the Recommended Practices for Designating Significant Values in Specified Limiting Values (ASTM Designation: E 29).[3]

Report

6. The average of the values obtained with at least five specimens, and preferably also the individual values, shall be reported.

[1] Under the standardization procedure of the Society, this method is under the jurisdiction of the ASTM Committee C-2 on Magnesium Oxychloride and Magnesium Oxysulfate Cements.
[2] Prior to adoption as standard, this method was published as tentative from 1950 to 1952.

[3] Appears in this publication, see Contents in Numeric Sequence of ASTM Designations at front of book.