



Designation: C 566 – 97

Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying¹

This standard is issued under the fixed designation C 566; 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 approval. 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 test method covers the determination of the percentage of evaporable moisture in a sample of aggregate by drying, both surface moisture and moisture in the pores of the aggregate. Some aggregate may contain water that is chemically combined with the minerals in the aggregate. Such water is not evaporable and is not included in the percentage determined by this test method.

1.2 The values stated in SI units are to be regarded as the standard. The values stated in parentheses are provided 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.* For specific precautionary statements, see 5.3.1, 7.2.1, and 7.3.1.

2. Referenced Documents

2.1 ASTM Standards:

C 29/C 29M Test Method for Unit Weight and Voids in Aggregate²

C 125 Terminology Relating to Concrete and Concrete Aggregates²

C 127 Test Method for Specific Gravity and Absorption of Coarse Aggregate²

C 128 Test Method for Specific Gravity and Absorption of Fine Aggregate²

C 670 Practice for Preparing Precision Statements for Test Methods for Construction Materials²

D 75 Practice for Sampling Aggregates³

E 11 Specification for Wire Cloth and Sieves for Testing Purposes²

2.2 Other Document:

National Research Council Report SHRP-P-619⁴

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms used in this test method, refer to Terminology C 125.

4. Significance and Use

4.1 This test method is sufficiently accurate for usual purposes, such as adjusting batch quantities of ingredients for concrete. It will generally measure the moisture in the test sample more reliably than the sample can be made to represent the aggregate supply. In cases where the aggregate itself is altered by heat, or where more refined measurement is required, the test should be conducted using a ventilated, controlled temperature oven.

4.2 Large particles of coarse aggregate, especially those larger than 50 mm (2 in.), will require greater time for the moisture to travel from the interior of the particle to the surface. The user of this test method should determine by trial if rapid drying methods provide sufficient accuracy for the intended use when drying large size particles.

5. Apparatus

5.1 *Balance*—A balance or scale accurate, readable, and sensitive to within 0.1 % of the test load at any point within the range of use. Within any interval equal to 10 % of the capacity of the balance or scale used to determine mass, the load indication shall be accurate within 0.1 % of the difference in masses.

5.2 *Source of Heat*—A ventilated oven capable of maintaining the temperature surrounding the sample at $110 \pm 5^\circ\text{C}$ ($230 \pm 9^\circ\text{F}$). Where close control of the temperature is not required (see 4.1), other suitable sources of heat may be used, such as an electric or gas hot plate, electric heat lamps, or a ventilated microwave oven.

5.3 *Sample Container*—A container not affected by the heat, and of sufficient volume to contain the sample without danger

¹ This test method is under the jurisdiction of ASTM Committee C-9 on Concrete and Concrete Aggregates and is the direct responsibility of Subcommittee C09.20 on Normal Weight Aggregates.

Current edition approved Jan. 10, 1997. Published March 1997. Originally issued as C 566 – 65 T. Last previous edition C 566 – 96.

² *Annual Book of ASTM Standards*, Vol 04.02.

³ *Annual Book of ASTM Standards*, Vol 04.03.

⁴ Available from the National Research Council, 2101 Constitution Ave., N.W., Washington, DC 20418.