Standard Method of Test for

Density of Hydraulic Cement

AASHTO Designation: T 133-16
Release: Group 1 (April 2016)
ASTM Designation: C188-14

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AASHTO

1. SCOPE

1.1. This method covers determination of the density of hydraulic cement. Its particular usefulness is in connection with the design and control of concrete mixtures.

1.2. The density of hydraulic cement is defined as the mass of a unit volume of the solids.

1.3. The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

Warning—Fresh hydraulic cementitious mixtures are caustic and may cause chemical burns to skin and tissue upon prolonged exposure.

1.4. *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. *AASHTO Standard*:

- T 105, Chemical Analysis of Hydraulic Cement

2.2. *ASTM Standard*:

- C670, Standard Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials

3. TERMINOLOGY

3.1. *Definitions*—For definitions of terms used in this test method, refer to ASTM C125.

4. SIGNIFICANCE AND USE

4.1. This test method provides a procedure for the determination of density of hydraulic cement samples using non-instrumental techniques.

5. APPARATUS

5.1. *Le Chatelier Flask—the standard flask*—Is circular in cross section with shape and dimensions conforming essentially to Figure 1 (see Note 1). The requirements in regard to tolerance,