



Designation: C1252 – 17

Standard Test Methods for Uncompacted Void Content of Fine Aggregate (as Influenced by Particle Shape, Surface Texture, and Grading)¹

This standard is issued under the fixed designation C1252; 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.

1. Scope

1.1 These test methods cover the determination of the loose, uncompacted void content of a sample of fine aggregate. When measured on any aggregate of a known grading, void content provides an indication of that aggregate's angularity, sphericity, and surface texture compared with other fine aggregates tested in the same grading. When void content is measured on an as-received fine-aggregate grading, it can be an indicator of the effect of the fine aggregate on the workability of a mixture in which it may be used.

1.2 Three procedures are included for the measurement of void content. Two use graded fine aggregate (standard grading or as-received grading), and the other uses several individual size fractions for void content determinations:

1.2.1 *Standard Graded Sample (Test Method A)*—This test method uses a standard fine aggregate grading that is obtained by combining individual sieve fractions from a typical fine aggregate sieve analysis. See the Section 9 for the grading.

1.2.2 *Individual Size Fractions (Test Method B)*—This test method uses each of three fine aggregate size fractions: (a) 2.36 mm (No. 8) to 1.18 mm (No. 16); (b) 1.18 mm (No. 16) to 600 μm (No. 30); and (c) 600 μm (No. 30) to 300 μm (No. 50). For this test method, each size is tested separately.

1.2.3 *As-Received Grading (Test Method C)*—This test method uses that portion of the fine aggregate finer than a 4.75-mm (No. 4) sieve.

1.2.4 See the section on Significance and Use for guidance on the method to be used.

1.3 The values stated in SI units shall be regarded as the standard.

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 appro-*

priate safety and health practices and determine the applicability of regulatory limitations prior to use.

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

B88 Specification for Seamless Copper Water Tube

B88M Specification for Seamless Copper Water Tube (Metric)

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

C117 Test Method for Materials Finer than 75-μm (No. 200) Sieve in Mineral Aggregates by Washing

C125 Terminology Relating to Concrete and Concrete Aggregates

C128 Test Method for Relative Density (Specific Gravity) and Absorption of Fine Aggregate

C136 Test Method for Sieve Analysis of Fine and Coarse Aggregates

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

C702 Practice for Reducing Samples of Aggregate to Testing Size

C778 Specification for Standard Sand

D75 Practice for Sampling Aggregates

2.2 *ACI Document:*

ACI 116R Cement and Concrete Terminology³

3. Terminology

3.1 Terms used in these test methods are defined in Terminology C125 or ACI 116R.

¹ These test methods are under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and are the direct responsibility of Subcommittee D04.51 on Aggregate Tests.

Current edition approved May 1, 2017. Published May 2017. Originally approved in 1993. Last previous edition approved in 2006 as C1252 – 06 which was withdrawn January 2015 and reinstated May 2017. DOI: 10.1520/C1252-17.

² 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.

³ Available from American Concrete Institute (ACI), P.O. Box 9094, Farmington Hills, MI 48333-9094, <http://www.aci-int.org>.