



Standard Test Method for Relative Density (Specific Gravity) and Absorption of Fine Aggregate¹

This standard is issued under the fixed designation C128; 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 This test method covers the determination of relative density (specific gravity) and the absorption of fine aggregates. The relative density (specific gravity), a dimensionless quality, is expressed as oven-dry (OD), saturated-surface-dry (SSD), or as apparent relative density (specific gravity). The OD relative density is determined after drying the aggregate. The SSD relative density and absorption are determined after soaking the aggregate in water for a prescribed duration.

1.2 This test method is not intended to be used for lightweight aggregates that comply with Specification C332 Group I aggregates.

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

1.4 The text of this test method references notes and footnotes that provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of this test method.

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.*

2. Referenced Documents

2.1 *ASTM Standards:*²

- C29/C29M Test Method for Bulk Density (“Unit Weight”) and Voids in Aggregate
- C70 Test Method for Surface Moisture in Fine Aggregate
- C117 Test Method for Materials Finer than 75- μ m (No. 200)

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

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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.

- Sieve in Mineral Aggregates by Washing
- C125 Terminology Relating to Concrete and Concrete Aggregates
- C127 Test Method for Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
- C330 Specification for Lightweight Aggregates for Structural Concrete
- C332 Specification for Lightweight Aggregates for Insulating Concrete
- C188 Test Method for Density of Hydraulic Cement
- C566 Test Method for Total Evaporable Moisture Content of Aggregate by Drying
- C670 Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials
- C702 Practice for Reducing Samples of Aggregate to Testing Size
- C1252 Test Methods for Uncompacted Void Content of Fine Aggregate (as Influenced by Particle Shape, Surface Texture, and Grading) (Withdrawn 2015)³
- D75 Practice for Sampling Aggregates
- D854 Test Methods for Specific Gravity of Soil Solids by Water Pycnometer
- 2.2 AASHTO Standard:
 - AASHTO T 84 Specific Gravity and Absorption of Fine Aggregates⁴

3. Terminology

3.1 *Definitions*—For definitions of terms used in this standard, refer to Terminology C125.

4. Summary of Test Method

4.1 A sample of aggregate is immersed in water for 24 ± 4 h to essentially fill the pores. It is then removed from the water, the water is dried from the surface of the particles, and the mass determined. Subsequently, the sample (or a portion of it) is placed in a graduated container and the volume of the sample is determined by the gravimetric or volumetric method. Finally,

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Suite 249, Washington, DC 20001, <http://www.transportation.org>.