



Designation: D1140 – 17

Standard Test Methods for Determining the Amount of Material Finer than 75- μ m (No. 200) Sieve in Soils by Washing¹

This standard is issued under the fixed designation D1140; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 These test methods cover the determination of the amount of material finer than a 75- μ m (No. 200) sieve by washing of material with a maximum particle size of 75 mm (3 in.).

1.2 The methods used in this standard rely on the use of water or a dispersant to separate and remove materials finer than a 75- μ m (No. 200) sieve. During these processes soluble substances, such as salts and other minerals, may also be removed. It is not within the scope of this standard to differentiate between the removal of fine particles and soluble substances. It is recommended that materials containing significant amounts of soluble substances be tested using other methods of separation.

1.3 Two methods for determining the amount of material finer than the 75- μ m (No. 200) sieve are provided. The method to be used shall be specified by the requesting authority. If no method is specified, the choice should be based upon the guidance given in 5.2, 5.3, and 5.4.

1.3.1 *Method A*—Test specimen is dispersed by soaking in water prior to wash sieving.

1.3.2 *Method B*—Test specimen is dispersed by soaking in a dispersing solution prior to wash sieving.

1.4 *Units*—The values stated in SI units are to be regarded as standard. Except the sieve designations are typically identified using the “alternative” system in accordance with Specification E11, such as 3 inch and No. 200, instead of the “standard” of 75-mm and 75- μ m, respectively. Reporting of test results in units other than SI shall not be regarded as nonconformance with this test method. The use of balances or scales recording pounds of mass (lbm) shall not be regarded as nonconformance with this standard.

1.5 All observed and calculated values shall conform to the guidelines for significant digits and rounding established in Practice D6026, unless superseded by this test method.

1.5.1 The procedures used to specify how data are collected/recorded and calculated in this standard are regarded as the industry standard. In addition, they are representative of the significant digits that generally should be retained. The procedures used do not consider material variation, purpose for obtaining the data, special purpose studies, or any considerations for the user’s objectives; and it is common practice to increase or reduce significant digits of reported data to be commensurate with these considerations. It is beyond the scope of these test methods to consider significant digits used in analysis methods for engineering design.

1.6 *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

C702 Practice for Reducing Samples of Aggregate to Testing Size

D75 Practice for Sampling Aggregates

D422 Test Method for Particle-Size Analysis of Soils (Withdrawn 2016)³

D653 Terminology Relating to Soil, Rock, and Contained Fluids

D1586 Test Method for Penetration Test (SPT) and Split-Barrel Sampling of Soils

D1587 Practice for Thin-Walled Tube Sampling of Fine-Grained Soils for Geotechnical Purposes

D2216 Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

¹ These test methods are under the jurisdiction of ASTM Committee D18 on Soil and Rock and is the direct responsibility of Subcommittee D18.03 on Texture, Plasticity and Density Characteristics of Soils.

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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.

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

*A Summary of Changes section appears at the end of this standard