



Designation: E3317 – 22

Standard Specification for Silica-Based Sediments for the Evaluation of Stormwater Treatment Devices¹

This standard is issued under the fixed designation E3317; 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 specification covers the mineralogy, specific gravity, and particle size distributions (PSDs) of silica-based sediments to be used in the laboratory performance testing of stormwater treatment devices as well as criteria defining acceptable error for the target PSDs.

1.2 Silica-based sediment is used as a surrogate material for performance and scour determinations for some manufactured stormwater treatment devices such as hydrodynamic separators and filters. These data are used to gain regulatory approvals within certain jurisdictions.

1.3 Acceptance of test results attained according to this specification may be subject to specific requirements set by a Quality Assurance Project Plan, a specific verification protocol, or a policy set by an Authority Having Jurisdiction (AHJ). It is advised to review one or all of the above to ensure compliance.

1.4 The values stated in inch-pound units are to be regarded as standard, except for methods to establish and report sediment concentration and particle size. It is convention to exclusively describe sediment concentration in mg/L and particle size in mm or μm , both of which are SI units. The SI units given in parentheses are mathematical conversions, which are provided for information purposes only and are not considered standard. Reporting of test results in units other than inch-pound units shall be regarded as conforming with 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* Silica-based sediment is considered hazardous under the OSHA Hazard Communications Standard (29 CFR 1910.1200).

1.6 *This international standard was developed in accordance with internationally recognized principles on standard-*

¹ This test method is under the jurisdiction of ASTM Committee E64 on Stormwater Control Measures and is the direct responsibility of Subcommittee E64.01 on Lab Evaluation.

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ization 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

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

D3665 Practice for Random Sampling of Construction Materials

D4959 Test Method for Determination of Water Content of Soil By Direct Heating

D6913/D6913M Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis

D7928 Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis

E3318 Terminology for Standards Relating to Stormwater Control Measures

2.2 Other Standards:³

29 CFR 1910.1200 OSHA Hazard Communications Standard

3. Terminology

3.1 Definitions:

3.1.1 For definitions of common technical terms used in this standard, refer to Terminology E3318.

4. Specification for Silica-Based Sediment

4.1 The silica-based sediment shall comprise a minimum 98 % SiO_2 .

4.2 Technical data provided by the sediment supplier shall list a Specific Gravity equal to 2.65 for the silica-based sediment used for the test.

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 Occupational Safety and Health Administration (OSHA), 200 Constitution Ave., NW, Washington, DC 20210, <http://www.osha.gov>.