



Standard Test Method for Determination of Erosion Control Blanket (ECB) Performance in Protecting Hillslopes from Rainfall-Induced Erosion¹

This standard is issued under the fixed designation D 6459; 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 guidelines, requirements and procedures for evaluating the ability of Erosion Control Blankets (ECBs) to protect hillslopes from rainfall-induced erosion. Critical elements of this protection are the ability of the ECB to:

1.1.1 Absorb the impact force of raindrops, thereby reducing soil particle loosening through “splash” mechanisms;

1.1.2 Slow runoff and encourage infiltration, thereby reducing soil particle displacement and transport through “overland flow” mechanisms;

1.1.3 Absorb shear forces of overland flow; and,

1.1.4 Trap soil particles beneath.

1.2 This test method utilizes full-scale testing procedures, rather than reduced-scale (bench-scale) simulation, and is patterned after conditions typically found on construction sites at the conclusion of earthwork operations, but prior to the start of revegetation work. Therefore this considers only unvegetated conditions.

NOTE 1—Future revisions may consider partial or fully vegetated conditions.

1.3 This test method provides a comparative evaluation of an ECB to baseline bare soil conditions under controlled and documented conditions.

1.4 The values stated in SI units are to be regarded as standard. The inch-pound values given in parentheses are provided for information purposes only.

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.* Also, the user must comply with prevalent regulatory codes, such as OSHA (Occupational Health and Safety Administration) guidelines, while using the test method.

2. Referenced Documents

2.1 ASTM Standards:

C 136 Test Method for Sieve Analysis of Fine and Course Aggregates²

D 422 Test Method for Particle-Size Analysis of Soils³

D 698 Test Method for Laboratory Characteristics of Soil Using Standard Effort⁴

D 2974 Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils³

D 4318 Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils³

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *erosion control blanket (ECB)*, *n*—a degradable material, composed primarily of processed natural organic materials, manufactured or fabricated into rolls designed to reduce soil erosion and assist in the growth, establishment and protection of vegetation.

3.1.2 *erosion control net (ECN)*, *n*—a planar woven natural fiber or extruded synthetic mesh used as a component in the manufacture of ECBs.

3.1.3 *index test*, *n*—a test procedure which may contain a known bias, but which may be used to establish an order for a set of specimens with respect to the property of interest.

3.1.4 *lot*, *n*—a unit of production, or a group of other units or packages, taken for sampling or statistical examination, having one or more common properties and being readily separable from other similar units.

3.1.5 *natural*, *n*—a class name of various fibers of animal, mineral or vegetable origin.

3.1.6 *open weave textile (OWT)*, *n*—a temporary degradable ECB composed of natural or polymer yarns woven into a matrix used to provide erosion control and facilitate vegetation establishment.

3.1.7 *polymer*, *n*—a chemical compound or mixture of compounds formed by polymerization and consisting essentially of repeating molecular structural units.

3.1.8 *sample*, *n*—a portion of material which is taken for testing or documentation and used in the laboratory as a source of individual specimens.

¹ This test method is under the jurisdiction of ASTM Committee D-18 on Soil and Rock; Subcommittee D18.25 on Erosion and Sediment Control Technology; and is the direct responsibility of Section 02 on Erosion Control Blankets (ECBs).

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² *Annual Book of ASTM Standards*, Vol 04.02.

³ *Annual Book of ASTM Standards*, Vol 04.08.

⁴ *Annual Book of ASTM Standards*, Vol 15.09.