



Designation: D1987 – 18

Standard Test Method for Biological Clogging of Geotextile or Soil/Geotextile Filters¹

This standard is issued under the fixed designation D1987; 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 is used to determine the potential for, and relative degree of, biological growth which can accumulate on geotextile or geotextile/soil filters.

1.2 This test method uses the measurement of flow rates over an extended period of time to determine the amount of clogging.

1.3 This test method can be adapted for nonsaturated as well as saturated conditions.

1.4 This test method can use constant head or falling head measurement techniques.

1.5 This test method can also be used to give an indication as to the possibility of backflushing, biocide treatment, or both, for remediation purposes if biological clogging does occur.

1.6 The values in SI units are to be regarded as the standard. The values provided in inch-pound units are for information only.

1.7 *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.*

1.8 *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

[D123 Terminology Relating to Textiles](#)

¹ This test method is under the jurisdiction of ASTM Committee [D35](#) on Geosynthetics and is the direct responsibility of Subcommittee [D35.02](#) on Endurance Properties.

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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.

[D1776 Practice for Conditioning and Testing Textiles](#)

[D4354 Practice for Sampling of Geosynthetics and Rolled Erosion Control Products \(RECPs\) for Testing](#)

[D4439 Terminology for Geosynthetics](#)

[D4491 Test Methods for Water Permeability of Geotextiles by Permittivity](#)

[D5101 Test Method for Measuring the Filtration Compatibility of Soil-Geotextile Systems](#)

[E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method](#)

[G22 Practice for Determining Resistance of Plastics to Bacteria](#) (Withdrawn 2002)³

3. Terminology

3.1 *Definitions:*

3.1.1 *aerobic, n*—a condition in which a measurable volume of air is present in the incubation chamber or system.

3.1.1.1 *Discussion*—*In geotextiles*, this condition can potentially contribute to the growth of microorganisms.

3.1.2 *anaerobic, n*—a condition in which no measurable volume of air is present in the incubation chamber or system.

3.1.2.1 *Discussion*—*In geotextiles*, this condition cannot contribute to the growth of microorganisms.

3.1.3 *back flushing, n*—a process by which liquid is forced in the reverse direction to the flow direction.

3.1.3.1 *Discussion*—*In other drainage application areas*, this process is commonly used to free clogged drainage systems of materials that impede the intended direction of flow.

3.1.4 *biocide, n*—a chemical used to kill bacteria and other microorganisms.

3.1.5 *geotextile, n*—a permeable geosynthetic comprised solely of textiles.

3.1.6 *permeability, n*—the rate of flow of a liquid under a differential pressure through a material.

3.1.6.1 *Discussion*—*In geotextiles*, permeability refers to hydraulic conductivity.

3.1.7 *permittivity, $(\Psi)(t^{-1})$, n*—of *geotextiles*, the volumetric flow rate of water per unit, in a cross-sectional area head under laminar flow conditions.

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