



Standard Test Method for Determining the (In-Plane) Hydraulic Transmissivity of a Geosynthetic by Radial Flow¹

This standard is issued under the fixed designation D6574/D6574M; 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.

^{ε1} NOTE—Table 1 was editorially inserted in Section 11.3 in March 2014.

1. Scope

1.1 This test method covers the procedure for determining the in-plane transmissivity of geosynthetics under varying normal compressive stresses using a radial flow apparatus. The test is intended to be an index test used primarily for geotextiles, although other products composed of geotextiles and geotextile-type materials may be suitable for testing with this test method.

1.2 This test method is based on the assumption that the transmissivity of the geosynthetic is independent of orientation of the flow and is therefore limited to geosynthetics that have similar transmissivity in all directions and should not be used for materials with oriented flow behavior.

1.3 This test method has been developed specifically for geosynthetics that have transmissivity values on the order of or less than $2 \times 10^{-4} \text{ m}^2/\text{s}$. Consider using Test Method **D4716** for geosynthetics with transmissivity values higher than $2 \times 10^{-4} \text{ m}^2/\text{s}$.

1.4 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

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.*

¹ This test method is under the jurisdiction of ASTM Committee **D35** on Geosynthetics and is the direct responsibility of Subcommittee **D35.03** on Permeability and Filtration.

Current edition approved July 1, 2013. Published July 2013. Originally approved in 2000. Last previous edition approved in 2011 as D6574 – 00(2011). DOI: 10.1520/D6574_D6574M-13E01.

2. Referenced Documents

2.1 ASTM Standards:²

- D4354** Practice for Sampling of Geosynthetics and Rolled Erosion Control Products(RECPs) for Testing
- D4439** Terminology for Geosynthetics
- D4716** Test Method for Determining the (In-plane) Flow Rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head
- D5092** Practice for Design and Installation of Groundwater Monitoring Wells

3. Terminology

3.1 For definitions of terms relating to geosynthetics, refer to Terminology **D4439**.

3.2 Definitions:

3.2.1 *geosynthetic, n*—a planar product manufactured from polymeric material used with soil, rock, earth, or other geotechnical engineering related material as an integral part of a man-made project, structure, or system. **D4439**

3.2.2 *geotextile, n*—a permeable geosynthetic comprised solely of textiles. **D4439**

3.2.3 *gravity flow, n*—flow in a direction parallel to the plane of a geosynthetic driven predominantly by a difference in elevation between the inlet and outflow points of a specimen. **D4439**

3.2.3.1 *Discussion*—The pressure at the outflow is considered to be atmospheric.

3.2.4 *head (static), n*—the height above a standard datum of the surface of a column of water (or other liquid) that can be supported by a static pressure at a given point. The static head is the sum of the elevation head and the pressure head. **D5092**

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.