



Standard Test Method for Measuring Mass per Unit Area of Geotextiles¹

This standard is issued under the fixed designation D 5261; 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 can be used as an index to the determination of mass per unit area of all geotextiles.

1.2 The values stated in SI units or other units shall be regarded separately as standard. The values stated in parentheses are provided for information only.

1.3 *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:

D 123 Terminology Relating to Textiles

D 1776 Practice for Conditioning Textiles for Testing

D 4354 Practice for Sampling of Geosynthetics for Testing

D 4439 Terminology for Geotextiles

2.2 ISO/DIS Document:

9864-1990 Mass per Unit Area of Geotextiles²

3. Terminology

3.1 Definitions:

3.1.1 *atmosphere for testing geotextiles, n*—air maintained at a relative humidity of $65 \pm 5\%$ and temperature of $21 \pm 2^\circ\text{C}$ ($70 \pm 4^\circ\text{F}$).

3.1.2 *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.

3.1.3 *geotextile, n*—any permeable textile used with foundation, soil, rock, earth, or any other geotechnical-engineering-related material as an integral part of a man-made project, structure, or system.

3.1.4 *Discussion*—Current textile manufacturing techniques produce: nonwoven fabrics, knitted (non-tabular) fabrics, and woven fabrics.

3.2 For definitions of other textile terms used in this test method, refer to Terminology D 123.

3.3 For definitions of other terms relating to geotextiles used in this test method, refer to Terminology D 4439.

4. Summary of Test Method

4.1 The mass per unit area of a geotextile is determined by weighing test specimens of known dimensions, cut from various locations over the full width of the laboratory sample. The calculated values are then averaged to obtain the mean mass per unit area of the laboratory sample.

5. Significance and Use

5.1 This test method is used to determine if the geotextile material meets specifications for mass per unit area. This test method can be used for quality control to determine specimen conformance. This measurement allows for a simple control of the delivered material by a comparison of the mass per unit area of the delivered material and the specified mass per unit area.

5.2 The procedure in this test method may be used for acceptance testing of commercial shipments, but caution is advised since information about between-laboratory precision is incomplete. Comparative tests in accordance with 5.2.1 are advisable.

5.2.1 In case of a dispute arising from differences in reported test results when using the procedures in this test method for acceptance testing of commercial shipments, the purchaser and the manufacturer should conduct comparative tests to determine if there is a statistical bias between their laboratories. Competent statistical assistance is recommended for the investigation of bias. As a minimum, the two parties should take a group of test specimens that are as homogeneous as possible and which are from a lot of material of the type in question. The test specimen should then be randomly assigned in equal numbers to each laboratory for testing. The average results from the two laboratories should be compared using the appropriate student's *t*-test and an acceptable probability level chosen by the two parties before testing is begun. If a bias is found, either its cause must be found and corrected or the purchaser and the manufacturer must agree to interpret future test results in light of the known bias.

¹ This test method is under the jurisdiction of ASTM Committee D35 on Geosynthetics and is the direct responsibility of Subcommittee D35.01 on Mechanical Properties.

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² Available from ISO Case Postale 56, CH-1211, Geneva 20, Switzerland.