



Standard Test Method for Measuring the Light Penetration of a Turf Reinforcement Mat (TRM)¹

This standard is issued under the fixed designation D 6567; 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 measuring the amount of light that penetrates through a Turf Reinforcement Mat.

1.2 This test method does not provide light penetration values for TRM under variable normal sun and soil conditions. This test method determines nominal light penetration.

1.3 The values stated as a percentage are to be regarded as the standard. The values provided in foot-candles are for information only.

1.4 *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 Textiles²

D 1776 Practice for Conditioning Textiles for Testing²

D 4354 Practice of Sampling of Geosynthetics for Testing³

D 4439 Terminology for Geosynthetics³

3. Terminology

3.1 Definitions:

3.1.1 *light penetration, n*—the percentage of incandescent light that is measurable through a geosynthetic material from a static light source.

3.1.2 *turf reinforcement mat (TRM), n*—a long term non-degradable rolled erosion control product composed of a UV stabilized, non-degradable, synthetic fibers, nettings or filaments, or all of these, processed into three dimensional reinforcement matrices.

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

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

4. Summary of Test Method

4.1 The nominal light penetration of TRM's is determined by observing the foot-candles on the light meter through a determined open area versus the amount of foot-candles on the light meter once the TRM is placed over the determined open area.

5. Significance and Use

5.1 Light penetration may be used to control the quality of many TRM's. Light penetration is not indicative of field performance and therefore is not recommended for specifications.

5.2 The light penetration of TRM's may vary considerably depending on the composite materials used in the matrix of the mat or due to inconsistency within a given mat. To minimize variation, specific sample size and procedures are indicated in this test method to help ensure comparable results.

5.3 This test method may be used to determine the effect of different composite materials and make-up of TRM's.

5.4 This test method may be used for acceptance testing of commercial shipments of TRM's, but caution is advised since information on between laboratory precision is incomplete. Comparative tests as directed in 5.4.1 may be advisable.

5.4.1 In case of a dispute arising from differences in reported test results when using this test method for acceptance testing of commercial shipments, the purchaser and the supplier 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 that are formed from a lot of material of the type in question. The test specimens should be randomly assigned in equal numbers to each laboratory for testing. The average results from the two laboratories should be compared using Student's t-test for unpaired data and an acceptable probability level chosen by the two begun. If bias is found, either its cause must be corrected, or the purchaser and supplier must agree to the 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 D35.05 on Geosynthetic Erosion Control.

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² *Annual Book of ASTM Standards*, Vol 07.01.

³ *Annual Book of ASTM Standards*, Vol 04.09.