



Designation: D5262 – 21

Standard Test Method for Determining the Unconfined Tension Creep and Creep Rupture Behavior of Planar Geosynthetics Used for Reinforcement Purposes¹

This standard is issued under the fixed designation D5262; 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 intended for use in determining the unconfined tension creep and creep rupture behavior of geosynthetics at constant temperature when subjected to a sustained tensile loading. This test method is applicable to all geosynthetics.

1.2 The test method measures total elongation of the geosynthetic test specimen, from the time of loading, while being maintained at a constant temperature. It includes procedures for measuring the tension creep and creep rupture behavior at constant temperature of conditioned unconfined geosynthetics as well as directions for calculating tension forces to plot creep and creep rupture curves.

1.3 The values stated in SI units are to be regarded as the standard. The values given in parentheses 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *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.

Current edition approved Feb. 15, 2021. Published February 2021. Originally approved in 1992. Last previous edition approved in 2016 as D5262 – 07 (2016). DOI: 10.1520/D5262-21.

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 standards' s Document Summary page on the ASTM website.

D1776/D1776M Practice for Conditioning and Testing Textiles

D2990 Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics

D4354 Practice for Sampling of Geosynthetics and Rolled Erosion Control Products (RECPs) for Testing

D4439 Terminology for Geosynthetics

D4595 Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method

D6637/D6637M Test Method for Determining Tensile Properties of Geogrids by the Single or Multi-Rib Tensile Method

E6 Terminology Relating to Methods of Mechanical Testing

2.2 ISO Standard:³
ISO/TR 20432 Guidelines for the Determination of the Long-Term Strength of Geosynthetics for Soil Reinforcement

3. Terminology

3.1 For definitions of many terms used in this test method, refer to Terminologies **D123**, **D4439**, and **E6**.

4. Summary of Test Method

4.1 The tension creep and creep rupture behavior of unconfined geosynthetics is measured by applying a sustained load in one step and measuring the total elongation of the test specimen as a function of time while maintaining a specified temperature and humidity.

5. Significance and Use

5.1 This test method is developed for use in the determination of anticipated total elongation over time or time to rupture that may occur in geosynthetics under sustained loading conditions.

5.1.1 The test data can be used in conjunction with interpretive methods to determine creep strain potential at design loads.

³ Available from International Organization for Standardization (ISO), ISO Central Secretariat, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland, <https://www.iso.org>.