



Designation: D5889-97 (Reapproved 2008) Designation: D5889 – 11

Standard Practice for Quality Control of Geosynthetic Clay Liners¹

This standard is issued under the fixed designation D5889; 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 practice covers the manufacturing quality control of geosynthetic clay liners (GCLs), describing types of tests, the proper test methods, and the minimum testing frequencies.

1.2 This practice is intended to aid manufacturers, suppliers, purchasers and users of GCLs in establishing a minimum level of effort for manufacturing quality control.

1.3 This practice does not address manufacturing quality assurance, product acceptance testing, or conformance testing. These are independent activities taken by organizations other than the GCL manufacturer.

1.4 The values stated in SI units are to be regarded as the standard. The inch-pound units given in parentheses are for information only.

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.*

2. Referenced Documents

2.1 ASTM Standards:²

D638 ~~Test Method for Tensile Properties of Plastics~~ 882 [Test Method for Tensile Properties of Thin Plastic Sheeting](#)

D4439 [Terminology for Geosynthetics](#)

D4632 [Test Method for Grab Breaking Load and Elongation of Geotextiles](#) ~~D4643 Test Method for Determination of Water (Moisture) Content of Soil by Microwave Oven Heating~~

D5199 [Test Method for Measuring the Nominal Thickness of Geosynthetics](#)

D5261 [Test Method for Measuring Mass per Unit Area of Geotextiles](#)

D5887 [Test Method for Measurement of Index Flux Through Saturated Geosynthetic Clay Liner Specimens Using a Flexible Wall Permeameter](#)

D5890 [Test Method for Swell Index of Clay Mineral Component of Geosynthetic Clay Liners](#)

D5891 [Test Method for Fluid Loss of Clay Component of Geosynthetic Clay Liners](#)

D5993 ~~Test Method for Measuring Mass Per Unit of Geosynthetic Clay Liners~~ [Test Method for Measuring Mass Per Unit of Geosynthetic Clay Liners](#)

D6496 [Test Method for Determining Average Bonding Peel Strength Between Top and Bottom Layers of Needle-Punched Geosynthetic Clay Liners](#)

D6693 [Test Method for Determining Tensile Properties of Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembranes](#)

D6768 [Test Method for Tensile Strength of Geosynthetic Clay Liners](#)

2.2 Government Document:

EPA/600/R-93/182 [Technical Guidance Document Quality Assurance and Quality Control for Waste Containment Facilities](#)³

3. Terminology

3.1 Definitions:

3.1.1 Geosynthetic Definitions:

3.1.1.1 *geomembrane, n*—an essentially impermeable geosynthetic composed of one or more synthetic sheets.

¹ This practice is under the jurisdiction of ASTM Committee D35 on Geosynthetics and is the direct responsibility of Subcommittee D35.04 on Geosynthetic Clay Liners. Current edition approved Dec. 1, 2008-2011. Published February 2009-October 2011. Originally approved in 1995. Last previous edition approved in 2003-2008 as D5889 – 97 (2003); (2008). DOI: 10.1520/D5889-97R08:10.1520/D5889-11.

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.

³ Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.