



Designation: D5889/D5889M – 16

Standard Practice for Quality Control of Geosynthetic Clay Liners¹

This standard is issued under the fixed designation D5889/D5889M; 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 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.*

2. Referenced Documents

2.1 ASTM Standards:²

- D792 Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
- D882 Test Method for Tensile Properties of Thin Plastic Sheeting
- D1505 Test Method for Density of Plastics by the Density-Gradient Technique
- D4439 Terminology for Geosynthetics

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.

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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.

- D4632/D4632M Test Method for Grab Breaking Load and Elongation of Geotextiles
- 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/D5891M Test Method for Fluid Loss of Clay Component of Geosynthetic Clay Liners
- D5993 Test Method for Measuring Mass Per Unit of Geosynthetic Clay Liners
- D5994/D5994M Test Method for Measuring Core Thickness of Textured Geomembranes
- D6243/D6243M Test Method for Determining the Internal and Interface Shear Strength of Geosynthetic Clay Liner by the Direct Shear Method
- D6496/D6496M Test Method for Determining Average Bonding Peel Strength Between Top and Bottom Layers of Needle-Punched Geosynthetic Clay Liners
- D6693/D6693M Test Method for Determining Tensile Properties of Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembranes
- D6768/D6768M 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 Facilities³

3. Terminology

3.1 Definitions:

3.1.1 Geosynthetic Definitions:

3.1.1.1 *adhered geosynthetic clay liner (GCL), n*—GCL product in which the clay component is bonded to a film or membrane by adhesion.

³ Available from U.S. Government Publishing Office, 732 N. Capitol St., NW, Washington, DC 20401-0001, http://www.gpo.gov.