



Designation: D5889 – 97 (Reapproved 2008)

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
- 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

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.

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

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

3.1.1.2 *geotextile, n*—a permeable geosynthetic comprised solely of textiles.

3.1.2 Organizational Definitions:

3.1.2.1 *installer, n*—the party who installs, or facilitates installation of, any materials purchased from manufacturers or suppliers.

3.1.2.2 *manufacturer, n*—the group, corporation, partnership, or individual that manufactures a product.

3.1.2.3 *purchaser, n*—the person, company, or organization that purchases any materials or work to be performed.

3.1.2.4 *supplier, n*—the party who supplies material or services.

3.1.3 Quality Definitions:

3.1.3.1 *quality assurance (QA), n*—all those planned or systematic actions necessary to provide adequate confidence that a material, product, system, or service will satisfy given needs.

3.1.3.2 *quality control (QC), n*—a planned system of activities whose purpose is to provide a level of quality that meets the needs of users; also, the use of such a system.

3.2 For definitions of other terms, see Terminology D4439.

4. Significance and Use

4.1 GCLs must be properly manufactured in a manner consistent with a minimum level of quality control as determined by in-house testing of the final product. This practice

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