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Standard Guide for Storage and Handling of Geosynthetic Clay Liners¹

This standard is issued under the fixed designation D5888; 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 guide covers guidelines for the proper storage and handling of geosynthetic clay liners received at the job site by the end user.

1.2 This guide contains general guidelines and is not intended to replace project-specific requirements as found in the contract drawings or specifications. In the event of a conflict, the requirements of the project specifications will supersede the requirements of this practice.

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

1.4 *This guide offers an organized collection of information or a series of options and does not recommend a specific course of action. This document cannot replace education or experience and should be used in conjunction with professional judgement. Not all aspects of this guide may be applicable in all circumstances. This ASTM standard is not intended to represent or replace the standard of care by which the adequacy of a given professional service must be judged, nor should this document be applied without consideration of a project's many unique aspects. The word "Standard" in the title of this document means only that the document has been approved through the ASTM consensus process.*

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

D4439 Terminology for Geosynthetics

¹ This guide 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.

3. Terminology

3.1 *Definitions:*

3.1.1 *core pipe, n*—a rigid pipe or rod inserted through the core of a GCL roll. Each end of the pipe is connected to a chain or lifting strap which attaches to equipment for GCL unloading, on-site handling, and installation.

3.1.2 *geosynthetic clay liner (GCL), n*—a manufactured hydraulic barrier consisting of clay bonded to a layer or layers of geosynthetics.

3.1.3 *spreader bar, n*—a steel beam used in conjunction with the core pipe that prevents the lifting chains or straps from chafing against the ends of the GCL roll.

3.1.4 *stinger, n*—a rigid pipe or rod with one end directly connected to a forklift or other equipment. The opposite end of the stinger can then be inserted through the GCL roll core such that the equipment is able to unload, handle, or install the GCL.

3.1.5 For definitions of other geosynthetic terms used in this practice, refer to Terminology D4439.

4. Significance and Use

4.1 For optimum performance, GCLs must be stored and handled prior to their installation in a manner that does not impact their physical properties. Adherence to these storage and handling guidelines will help to ensure that acceptable GCL performance will be achieved.

5. Procedure

5.1 *Receiving and Handling GCL at the Job Site:*

5.1.1 The GCLs are packaged in individual rolls and are typically delivered to the job site in trucks. Each roll is individually wrapped and labeled by the GCL manufacturer. Prior to unloading the rolls, make a visual examination of the shipment in order to identify any damage that may have occurred in transit to the site. Record and report any immediately visible or suspected damage to the GCL rolls immediately to the GCL carrier and to the supplier. Tag, mark, and segregate damaged rolls.

5.1.2 Unloading the rolls from the delivery vehicle must be done in manner that prevents damage to the GCL and its packaging.

NOTE 1—A pipe or solid bar of sufficient strength to support the full weight of the GCL roll without significant bending should be used for all unloading and handling activities. The diameter of the pipe should be