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## Standard Guide for Selecting Test Methods for Geomembrane Seams<sup>1</sup>

This standard is issued under the fixed designation D7700; 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 reappraisal. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reappraisal.

### 1. Scope

1.1 This guide is intended for use as a summary of test methods necessary to evaluate geomembrane seams. It is intended to guide geomembrane users toward the appropriate evaluation techniques to assess geomembrane seam quality.

1.2 Geomembrane seams covered by this guide are: high-density polyethylene (HDPE), linear low-density polyethylene (LLDPE), very low-density polyethylene (VLDPE), flexible polypropylene (fPP), polyvinyl chloride (PVC), ethylene propylene diene terpolymer (EPDM), prefabricated bituminous geomembranes (PBGm), Ethylene Interpolymer Alloy (EIA) and reinforced geomembranes

1.3 Although a significant effort has been made to gather all types of geomembranes and related evaluation techniques which were on the market at the date of completion of this document, some available materials and technologies may have been omitted. The information presented in this document shall thus be considered to be non exhaustive.

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 and health practices and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

#### 2.1 ASTM Standards:<sup>2</sup>

D751 Test Methods for Coated Fabrics

D4437 Practice for Non-destructive Testing (NDT) for Determining the Integrity of Seams Used in Joining Flexible Polymeric Sheet Geomembranes

D4439 Terminology for Geosynthetics

D5641 Practice for Geomembrane Seam Evaluation by Vacuum Chamber

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D35 on Geosynthetics and is the direct responsibility of Subcommittee D35.10 on Geomembranes.

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<sup>2</sup> 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.

D5820 Practice for Pressurized Air Channel Evaluation of Dual Seamed Geomembranes

D6214 Test Method for Determining the Integrity of Field Seams Used in Joining Geomembranes by Chemical Fusion Methods

D6365 Practice for the Nondestructive Testing of Geomembrane Seams using the Spark Test

D6392 Test Method for Determining the Integrity of Nonreinforced Geomembrane Seams Produced Using Thermo-Fusion Methods

D6747 Guide for Selection of Techniques for Electrical Detection of Leaks in Geomembranes

D7002 Practice for Leak Location on Exposed Geomembranes Using the Water Puddle System

D7006 Practice for Ultrasonic Testing of Geomembranes

D7007 Practices for Electrical Methods for Locating Leaks in Geomembranes Covered with Water or Earth Materials

D7056 Test Method for Determining the Tensile Shear Strength of Pre-Fabricated Bituminous Geomembrane Seams

D7177 Specification for Air Channel Evaluation of Polyvinyl Chloride (PVC) Dual Track Seamed Geomembranes

D7272 Test Method for Determining the Integrity of Seams Used in Joining Geomembranes by Pre-manufactured Taped Methods

D7408 Specification for Non Reinforced PVC (Polyvinyl Chloride) Geomembrane Seams

### 3. Terminology

#### 3.1 Definitions:

3.1.1 *destructive technique, n*—a method of seam testing requiring that a sample be removed from the fabricated or installed geomembrane for further evaluation.

3.1.2 *nondestructive technique, n*—a method of seam testing which does not compromise the geomembrane's ability to function as intended.

3.2 For definitions of other geosynthetic terms, refer to Terminology D4439.

#### 3.3 Acronyms:

EPDM—Ethylene propylene diene terpolymer

fPP—Flexible polypropylene

HDPE—High-density polyethylene

LLDPE—Linear low-density polyethylene