



Designation: D7700 – 15

Standard Guide for Selecting Test Methods for Geomembrane Seams¹

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 (ϵ) 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 (PBG), 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 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this 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

- D4437 Practice for Non-destructive Testing (NDT) for Determining the Integrity of Seams Used in Joining Flexible Polymeric Sheet Geomembranes
- D4439 Terminology for Geosynthetics

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

Current edition approved May 1, 2015. Published May 2015. Originally approved in 2012. Last previous edition approved in 2012 as D7700-12. DOI: 10.1520/D7700-15

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.

- D5641 Practice for Geomembrane Seam Evaluation by Vacuum Chamber
- D5820 Practice for Pressurized Air Channel Evaluation of Dual Seamed Geomembranes
- D6214/D6214M 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 Leak Location of Leaks in Geomembranes
- D7002 Practice for Electrical Leak Location on Exposed Geomembranes Using the Water Puddle Method
- D7006 Practice for Ultrasonic Testing of Geomembranes
- D7007 Practices for Electrical Methods for Locating Leaks in Geomembranes Covered with Water or Earthen 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
- D7747 Test Method for Determining Integrity of Seams Produced Using Thermo-Fusion Methods for Reinforced Geomembranes by the Strip Tensile Method
- D7749 Test Method for Determining Integrity of Seams Produced Using Thermo-Fusion Methods for Reinforced Geomembranes by the Grab Method

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.