



Designation: D5747/D5747M – 20

Standard Practice for Tests to Evaluate the Chemical Resistance of Geomembranes to Liquids¹

This standard is issued under the fixed designation D5747/D5747M; 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 practice covers procedures for the testing of geomembranes for chemical resistance with liquid wastes, prepared chemical solutions, and leachates derived from solid wastes.

1.2 This practice covers procedures for testing semi-crystalline, amorphous, elastomeric, and fabric-reinforced geomembranes.

1.3 This practice is intended to be used in conjunction with Practice D5322 or D5496, or both. The scope of this practice is limited to testing and reporting procedures for unexposed and exposed geomembrane samples.

1.4 Evaluation and interpretation of test data are beyond the scope of this practice.

1.5 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system are not necessarily exact equivalents; therefore, to ensure conformance with the standard, each system shall be used independently of the other, and values from the two systems shall not be combined.

1.6 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use. Specific precautionary statements are given in Section 7.*

1.7 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

- C717 Terminology of Building Seals and Sealants
- D412 Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension
- D413 Test Methods for Rubber Property—Adhesion to Flexible Substrate
- D624 Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
- D638 Test Method for Tensile Properties of Plastics
- D751 Test Methods for Coated Fabrics
- D882 Test Method for Tensile Properties of Thin Plastic Sheet
- D883 Terminology Relating to Plastics
- D907 Terminology of Adhesives
- D1004 Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheet
- D1505 Test Method for Density of Plastics by the Density-Gradient Technique
- D2124 Test Method for Analysis of Components in Poly(Vinyl Chloride) Compounds Using an Infrared Spectrophotometric Technique
- D2240 Test Method for Rubber Property—Durometer Hardness
- D3417 Test Method for Enthalpies of Fusion and Crystallization of Polymers by Differential Scanning Calorimetry (DSC) (Withdrawn 2004)³
- D3418 Test Method for Transition Temperatures and Enthalpies of Fusion and Crystallization of Polymers by Differential Scanning Calorimetry
- D3895 Test Method for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry
- D4437/D4437M Practice for Nondestructive Testing (NDT) for Determining the Integrity of Seams Used in Joining Flexible Polymeric Sheet Geomembranes
- D4439 Terminology for Geosynthetics

¹ This practice is under the jurisdiction of ASTM Committee D35 on Geosynthetics and is the direct responsibility of Subcommittee D35.02 on Endurance Properties.

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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 The last approved version of this historical standard is referenced on www.astm.org.