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Standard Guide for the Selection of Test Methods for Flexible Polypropylene Geomembranes¹

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1. Scope

1.1 This guide covers recommendations for the selection of appropriate test methods for flexible polypropylene sheet used in geomembrane applications to provide consistency in data reporting.

1.2 This guide includes test methods for three types of flexible polypropylene geomembranes including smooth non-reinforced sheet, textured nonreinforced sheet, and scrim-reinforced sheet.

1.3 This guide is intended to aid all personnel involved in the selection, manufacture, installation, or evaluation of flexible polypropylene geomembrane sheet.

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:²

- D471 Test Method for Rubber Property—Effect of Liquids
- D573 Test Method for Rubber—Deterioration in an Air Oven
- D618 Practice for Conditioning Plastics for Testing
- D696 Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30°C and 30°C with a Vitreous Silica Dilatometer
- D746 Test Method for Brittleness Temperature of Plastics and Elastomers by Impact
- D751 Test Methods for Coated Fabrics
- D790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

- D792 Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
- D1004 Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting
- D1149 Test Methods for Rubber Deterioration—Cracking in an Ozone Controlled Environment
- D1204 Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature
- D1238 Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer
- D1505 Test Method for Density of Plastics by the Density-Gradient Technique
- D1603 Test Method for Carbon Black Content in Olefin Plastics
- D2136 Test Method for Coated Fabrics—Low-Temperature Bend Test
- D2137 Test Methods for Rubber Property—Brittleness Point of Flexible Polymers and Coated Fabrics
- D3389 Test Method for Coated Fabrics Abrasion Resistance (Rotary Platform Abrader)
- D3418 Test Method for Transition Temperatures and Enthalpies of Fusion and Crystallization of Polymers by Differential Scanning Calorimetry
- D4218 Test Method for Determination of Carbon Black Content in Polyethylene Compounds By the Muffle-Furnace Technique
- D4364 Practice for Performing Outdoor Accelerated Weathering Tests of Plastics Using Concentrated Sunlight
- D4439 Terminology for Geosynthetics
- D4833 Test Method for Index Puncture Resistance of Geomembranes and Related Products
- D5199 Test Method for Measuring the Nominal Thickness of Geosynthetics
- D5321 Test Method for Determining the Shear Strength of Soil-Geosynthetic and Geosynthetic-Geosynthetic Interfaces by Direct Shear
- D5323 Practice for Determination of 2a??% Secant Modulus for Polyethylene Geomembranes
- D5397 Test Method for Evaluation of Stress Crack Resistance of Polyolefin Geomembranes Using Notched Constant Tensile Load Test

¹ This guide 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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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.