



Designation: D7106/D7106M – 05 (Reapproved 2023)

Standard Guide for Selection of Test Methods for Ethylene Propylene Diene Terpolymer (EPDM) Geomembranes¹

This standard is issued under the fixed designation D7106/D7106M; 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 and provides recommendations for the selection of appropriate test methods for Ethylene Propylene Diene Terpolymer (EPDM) geomembranes used in geotechnical and geoenvironmental applications.

1.2 This guide includes test methods for three different types of EPDM geomembranes including: scrim-reinforced membranes, composite membranes, and smooth, nonreinforced membranes.

1.3 The test methods are divided into three categories including manufacturing quality control, optional performance tests, and seam testing.

1.4 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.

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

1.6 *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

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

Current edition approved Sept. 1, 2023. Published September 2023. Originally approved in 2005. Last previous edition approved in 2015 as D7106/D7106M – 05 (2015)^{ε1}. DOI: 10.1520/D7106_D7106M-05R23.

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.

D297 Test Methods for Rubber Products—Chemical Analysis

D413 Test Methods for Rubber Property—Adhesion to Flexible Substrate

D471 Test Method for Rubber Property—Effect of Liquids

D618 Practice for Conditioning Plastics for Testing

D882 Test Method for Tensile Properties of Thin Plastic Sheeting

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

D1418 Practice for Rubber and Rubber Latices—Nomenclature

D1434 Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting

D2137 Test Methods for Rubber Property—Brittleness Point of Flexible Polymers and Coated Fabrics

D2240 Test Method for Rubber Property—Durometer Hardness

D4355/D4355M Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture, and Heat in a Xenon Arc-Type Apparatus

D4437/D4437M Practice for Nondestructive Testing (NDT) for Determining the Integrity of Seams Used in Joining Flexible Polymeric Sheet Geomembranes

D4439 Terminology for Geosynthetics

D4637/D4637M Specification for EPDM Sheet Used in Single-Ply Roof Membrane

D4833/D4833M Test Method for Index Puncture Resistance of Geomembranes and Related Products

D5199 Test Method for Measuring the Nominal Thickness of Geosynthetics

D5321/D5321M Test Method for Determining the Shear Strength of Soil-Geosynthetic and Geosynthetic-Geosynthetic Interfaces by Direct Shear

D5514/D5514M Test Method for Large-Scale Hydrostatic Puncture Testing of Geosynthetics