



Designation: D7613 – 17 (Reapproved 2023)

Standard Specification for Flexible Polypropylene Reinforced (fPP-R) and Nonreinforced (fPP) Geomembranes¹

This standard is issued under the fixed designation D7613; 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 specification covers flexible polypropylene reinforced (fPP-R) and nonreinforced (fPP) geomembranes made from flexible polypropylene as the principal polymer prepared by the polymerization of propylene with or without other alpha olefin monomers.

1.2 The tests and property limits used to characterize the sheet are values intended to ensure minimum quality. In-place system design criteria, such as field-seaming strength and material compatibility, among others, are factors that should be considered but are beyond the scope of this specification.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

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

1.5 *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

D573 Test Method for Rubber—Deterioration in an Air Oven

D751 Test Methods for Coated Fabrics

D883 Terminology Relating to Plastics

¹ This specification is under the jurisdiction of ASTM Committee D35 on Geosynthetics and is the direct responsibility of Subcommittee D35.06 on Geosynthetic Specifications.

Current edition approved June 1, 2023. Published June 2023. Originally approved in 2010. Last previous edition approved in 2019 as D7613 – 17 (2019). DOI: 10.1520/D7613-17R23.

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 specification's Document Summary page on the ASTM website.

D1004 Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheet

D1204 Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheet or Film at Elevated Temperature

D2136 Test Method for Coated Fabrics—Low-Temperature Bend Test

D4439 Terminology for Geosynthetics

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

D5199 Test Method for Measuring the Nominal Thickness of Geosynthetics

D5538 Practice for Thermoplastic Elastomers—Terminology and Abbreviations

D5884/D5884M Test Method for Determining Tearing Strength of Internally Reinforced Geomembranes

D6636 Test Method for Determination of Ply Adhesion Strength of Reinforced Geomembranes

D6693/D6693M Test Method for Determining Tensile Properties of Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembranes

D7004/D7004M Test Method for Grab Tensile Properties of Reinforced Geomembranes

G151 Practice for Exposing Nonmetallic Materials in Accelerated Test Devices that Use Laboratory Light Sources

G154 Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Materials

G155 Practice for Operating Xenon Arc Lamp Apparatus for Exposure of Materials

3. Terminology

3.1 *Definitions*—For definitions of terms used in this specification, refer to Terminologies D883 and D4439 and Practice D5538.

4. Materials and Manufacture

4.1 The sheet shall be capable of being heat welded, fused, or adhesively bonded to itself for making watertight field splices and repairs.

4.2 Geomembrane can be nonreinforced or reinforced with fabric or scrim.