



Designation: D6878/D6878M – 21

Standard Specification for Thermoplastic Polyolefin-Based Sheet Roofing¹

This standard is issued under the fixed designation D6878/D6878M; 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 sheet made from thermoplastic polyolefin (TPO) as the principal polymer, intended for use in single-ply roofing membranes exposed to the weather. The sheet shall contain reinforcing fabrics or scrims.

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

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the standard.

1.4 *This standard may involve hazardous materials, operations, and equipment. 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 requirements 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.*

¹ This specification is under the jurisdiction of ASTM Committee D08 on Roofing and Waterproofing and is the direct responsibility of Subcommittee D08.18 on Nonbituminous Organic Roof Coverings.

Current edition approved Nov. 1, 2021. Published November 2021. Originally approved in 2003. Last previous edition approved in 2019 as D6878/D6878M – 19. DOI: 10.1520/D6878_D6878M-21.

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

D751 Test Methods for Coated Fabrics

D1149 Test Methods for Rubber Deterioration—Cracking in an Ozone Controlled Environment

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

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

D5538 Practice for Thermoplastic Elastomers—Terminology and Abbreviations

D7635/D7635M Test Method for Measurement of Thickness of Coatings Over Fabric Reinforcement

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

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

3. Materials and Manufacture

3.1 The sheet shall be formulated from ethylene and higher alpha-olefin polymers, copolymers, and mixtures thereof, in amounts greater than 50 % by weight of the total polymer content, suitably compounded to satisfy the physical requirements in the specification (see Practice D5538).

3.2 The sheet shall be capable of being heat welded, fused, or adhesively bonded to itself for making watertight field splices and repairs, and the supplier or fabricator shall recommend suitable methods and materials.

3.3 Sheet shall be reinforced with fabric or scrim.

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.