



Designation: D7311/D7311M – 10

Standard Specification for Liquid-Applied, Single-Pack, Moisture-Triggered, Aliphatic Polyurethane Roofing Membrane¹

This standard is issued under the fixed designation D7311/D7311M; 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 specification covers in-situ applied, single-pack, moisture-triggered, aliphatic polyurethanes intended to form an elastomeric single-ply membrane, once cured. The cured membrane may or may not contain a reinforcing material.

1.2 Single-pack, moisture-triggered, aliphatic polyurethanes are characterized by their ability to use moisture to trigger the curing process only.

1.3 The tests and property limits used to characterize the liquid material and cured membrane are values intended to ensure minimum quality. In-place roof system design criteria such as fire resistance, material compatibility, and uplift resistance, among others, are factors that shall be considered but are beyond the scope of this specification.

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 may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

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

2. Referenced Documents

2.1 *ASTM Standards:*²

[C717 Terminology of Building Seals and Sealants](#)

[C578 Specification for Rigid, Cellular Polystyrene Thermal Insulation](#)

[D412 Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension](#)

[D522 Test Methods for Mandrel Bend Test of Attached Organic Coatings](#)

[D624 Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers](#)

[D1079 Terminology Relating to Roofing and Waterproofing](#)

[D2240 Test Method for Rubber Property—Durometer Hardness](#)

[D5602 Test Method for Static Puncture Resistance of Roofing Membrane Specimens](#)

[D5635 Test Method for Dynamic Puncture Resistance of Roofing Membrane Specimens](#)

[E96/E96M Test Methods for Water Vapor Transmission of Materials](#)

[G154 Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials](#)

3. Terminology

3.1 The following definitions have been developed specifically for the purposes of this specification. For general terminology, see Terminologies [D1079](#) and [C717](#).

3.2 *Definitions of Terms Specific to This Standard:*

3.3 *aliphatic polyurethane*—polyurethane is made by polyaddition of aliphatic di- or polyfunctional hydroxyl group containing compounds and of aliphatic polyfunctional prepolymers.

3.4 *liquid-applied*—a material or a combination of materials that can be poured, spread, or sprayed.

3.5 *moisture-triggered*—the mechanism by which moisture activates a latent hardener contained within the material.

3.6 *single-pack*—a material that is capable of being delivered in one package, and applied without further additions.

4. Materials and Manufacture

4.1 The membrane shall be formulated from the principle polymers and related formula ingredients.

4.2 The product, as manufactured, shall be in liquid form for application by brush, roller, or spray equipment.

4.3 Freshly applied material shall be capable of being bonded to cured material for making watertight field repairs.

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 Aug. 1, 2010. Published September 2010. Originally approved in 2007. Last previous edition approved in 2007 as D7311–07. DOI: 10.1520/D7311_D7311M-10.

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.