



Designation: D 4637 – 96

Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane¹

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1. Scope

1.1 This specification covers non-reinforced, fabric- or scrim-reinforced and fabric-backed vulcanized rubber sheet made from ethylene-propylene-diene terpolymer (EPDM), intended for use in single-ply roof membranes.

1.2 The test methods and property limits used to characterize these sheets are specific for each classification and are minimum values to make the product fit for its intended purpose.

1.3 In-place roof system design criteria, such as fire resistance, field seaming strength, material compatibility, and uplift resistance, among others, are factors that must be considered but are beyond the scope of this specification.

1.4 The following precautionary caveat pertains to the test methods portion only, Section 8, of this specification: *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:

- D 412 Test Methods for Rubber Properties in Tension²
- D 413 Test Methods for Rubber Property-Adhesion to Flexible Substrate²
- D 471 Test Method for Rubber Property—Effect of Liquids²
- D 518 Test Method for Rubber Deterioration-Surface Cracking²
- D 573 Test Method for Rubber-Deterioration in an Air Oven²
- D 624 Test Method for Rubber Property—Tear Resistance²
- D 751 Test Methods for Coated Fabrics³
- D 816 Methods of Testing Rubber Cements²
- D 1149 Test Method for Rubber Deterioration—Surface

¹ This specification is under the jurisdiction of ASTM Committee D-8 on Roofing, Waterproofing, and Bituminous Materials and is the direct responsibility of Subcommittee D08.18 on Nonbituminous Organic Roof Coverings.

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² Annual Book of ASTM Standards, Vol 09.01.

³ Annual Book of ASTM Standards, Vol 09.02.

Ozone Cracking in a Chamber²

D 1204 Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature⁴

D 2137 Test Methods for Rubber Property—Brittleness Point of Flexible Polymers and Coated Fabrics²

G 26 Practice for Operating Light-Exposure Apparatus (Xenon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials⁵

3. Classification

3.1 Types describe the sheet construction:

3.1.1 *Type I*—Non-reinforced.

3.1.2 *Type II*—Scrim (or fabric) internally reinforced.

3.1.3 *Type III*—Fabric backed.

4. Materials and Manufacture

4.1 The sheet shall be formulated from the EPDM polymers and other compounding ingredients. The principal polymer used in the sheet shall be greater than 95 % EPDM.

4.2 The sheet shall be capable of being bonded to itself for making watertight field splices and repairs, and the manufacturer or fabricator shall recommend suitable bonding methods and materials.

5. Physical Properties

5.1 The sheet shall conform to the physical requirements prescribed in Table 1.

5.2 Other requirements shall be agreed upon between the purchaser and the supplier.⁶

6. Dimensions and Permissible Variations

6.1 The width and length of the sheet shall be agreed upon between the purchaser and the supplier.

6.1.1 The width and length tolerance shall be + 3 %, – 0 %.

6.2 Sheet thicknesses greater than the minimum shall be agreed upon between the purchaser and the supplier.

6.2.1 The thickness tolerance shall be + 15 %, – 10 % of the specified thickness, but in no case shall the thickness be less

⁴ Annual Book of ASTM Standards, Vol 08.01.

⁵ Annual Book of ASTM Standards, Vol 14.02.

⁶ Performance requirements and application specifications are being investigated by other ASTM D-8 Task Groups and will be covered by separate specifications.