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Standard Specification for Liquid Applied Moisture Cured Polyurethane Coating Used in Spray Polyurethane Foam Roofing System[1]

This standard is issued under the fixed designation D 6947; 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 a single component, moisture cured, elastomeric urethane polymer coating used as a protective coating for spray polyurethane foam roofing systems.

1.2 This specification does not provide guidance for application.

1.3 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.4 The following precautionary caveat pertains only to the test method portions, Sections 5 and 6.

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 requirements prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:* [2]

D 16 Terminology for Paint, Related Coatings, Materials, and Applications

D 412 Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension

D 471 Test Method for Rubber Property—Effect of Liquids

D 522 Test Methods for Mandrel Bend Test of Attached Organic Coatings

D 562 Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer

D 624 Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

D 903 Test Method for Peel or Stripping Strength of Adhesive Bonds

D 1079 Terminology Relating to Roofing and Waterproofing

D 1644 Test Methods for Nonvolatile Content of Varnishes

D 1653 Test Methods for Water Vapor Transmission of Organic Coating Films

D 2196 Test Methods for Rheological Properties of Non-Newtonian Materials by Rotational (Brookfield type) Viscometer

D 2697 Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings

D 4798 Practice for Accelerated Weathering Test Conditions and Procedures for Bituminous Materials (Xenon-Arc Method)

G 21 Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

3. Terminology

3.1 For definitions of terms specific to this standard, refer to Terminologies D 16 and D 1079.

4. Materials and Manufacture

4.1 *Composition*—The product, as manufactured, shall be in liquid form for application to spray polyurethane foam (SPF) surfaces by brushing, rolling, or spraying. The product shall be composed of a solvent-borne moisture curing urethane elastomeric polymer, to which various pigments or other additives have been added to give the required physical properties.

4.2 *Physical Properties*—Although the product is supplied as a liquid, its performance is based on the functional properties of the dried material in film form. The coating is formed into a film fully adhered to the substrate surface.

5. Physical Properties

5.1 The liquid coating shall comply with physical property requirements in Table 1.

5.2 The film shall comply with physical property requirements in Table 2.

6. Sample and Test Methods

6.1 *Viscosity (Test Methods D 2196)*—Brookfield LVT Viscometer #4 Spindle, 6 RPM.

6.2 *Specimen Preparation (Dry Time)*—Films are prepared by applying two coats, with a minimum of an 8-h drying period between coats, to an FEB sheet substrate to give a total dry film thickness of 0.50 ± 0.5 mm (20 ± 2 mils). The film is allowed

[1] This specification is under the jurisdiction of ASTM Committee D08 on Roofing and Waterproofing and is the direct responsibility of Subcommittee D08.06 on Spray Polyurethane Foam Roof Systems.

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[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.