



Designation: D7425/D7425M – 11

Standard Specification for Spray Polyurethane Foam Used for Roofing Applications¹

This standard is issued under the fixed designation D7425/D7425M; 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 the types and physical properties of spray polyurethane foam (SPF) for use in SPF roofing applications.

1.2 This specification does not provide guidance for application.

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 non-conformance with the 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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

[C165 Test Method for Measuring Compressive Properties of Thermal Insulations](#)

[C168 Terminology Relating to Thermal Insulation](#)

[C177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus](#)

[C518 Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus](#)

[C1363 Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus](#)

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

[D1621 Test Method for Compressive Properties of Rigid Cellular Plastics](#)

[D1622 Test Method for Apparent Density of Rigid Cellular Plastics](#)

[D1623 Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics](#)

[D2126 Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging](#)

[D2842 Test Method for Water Absorption of Rigid Cellular Plastics](#)

[D6226 Test Method for Open Cell Content of Rigid Cellular Plastics](#)

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

3. Terminology

3.1 *Definitions*—For definitions of terms used in this specification, refer to Terminologies [D1079](#) and [C168](#).

3.1.1 *knit line*—also called lift line. They are interchangeable terms describing the adhesion plane where one pass is sprayed over another.

4. Significance and Use

4.1 This specification covers spray polyurethane foam (SPF) that is used as part of a SPF roofing system.

5. Classification

5.1 This specification covers SPF currently commercially available as described by the physical property requirements in [Table 1](#).

5.2 SPF shall be manufactured with HFC, hydrocarbon or/and water blowing agents. It is classified into two types as follows:

5.2.1 *Type I*—Thermal resistance, R value, is equal to or greater than $0.98 \text{ K}\cdot\text{m}^2/\text{W}$ [$5.6^\circ\text{F}\cdot\text{ft}^2\cdot\text{h}/\text{Btu}$] per 25.4 mm [1 in.] thickness.

5.2.2 *Type II*—Thermal resistance, R value, is between 0.72 and $0.98 \text{ K}\cdot\text{m}^2/\text{W}$ [4.1 and $5.6^\circ\text{F}\cdot\text{ft}^2\cdot\text{h}/\text{Btu}$] per 25.4 mm [1 in.] thickness.

6. Ordering Information

6.1 Orders for materials purchased under this specification shall include the following:

6.1.1 ASTM designation, year of issue, and title.

6.1.2 Type (see [5.2](#)).

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.