



Designation: D7119 – 07

# Standard Guide for Sampling Spray Polyurethane Foam and Coating in Roofing<sup>1</sup>

This standard is issued under the fixed designation D7119; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This guide covers the removal of test specimens from spray polyurethane foam (SPF) roofing systems in the field for the purpose of examination of an existing system and/or quality assurance for new installations. It describes the types and purposes of sample cuts, visual inspection techniques, laboratory physical property tests, and repair of the core and slit sample holes.

1.2 *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:*<sup>2</sup>

**C1029** Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation

**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

**D4442** Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials

**D6705** Guide for Repair and Recoat of Spray Polyurethane Foam Roofing Systems

## 3. Terminology

3.1 *Definitions*—Definitions are in accordance with Terminology **D1079**.

3.2 *Definitions of Terms Specific to This Standard:*

<sup>1</sup> This guide 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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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

3.2.1 *core samples, n*—cylindrical sections of approximately 50 to 75 mm (2 to 3 in.) in diameter. They shall be cut using a round metal template or coring tool, and they shall extend from surface down to but not through the substrate.

3.2.2 *slit samples, n*—crescent-shaped samples approximately 13 mm ( $\frac{1}{2}$  in.) wide, 19 mm ( $\frac{3}{4}$  in.) deep, and 50 to 75 mm (2 to 3 in.) long, cut with a sharp knife. Slit samples are used to examine the uppermost polyurethane foam layers and the coating system.

3.3 *lift, n*—an individual layer of polyurethane foam that results from a single pass of the spray gun.

## 4. Significance and Use

4.1 Adequate coating thickness (mil thickness) is necessary to protect polyurethane foam from the effects of ultraviolet degradation. This guide outlines general procedures for sampling and measuring the coating thickness by using slit or core samples.

4.2 Thickness of individual lifts of sprayed foam will have a bearing upon foam stability. Core samples are used to determine foam thickness. Compressive strength and core density affect resistance to foot traffic and impact. Specimens from core samples are used to determine these properties using Test Methods **D1621** and **D1622**. Visual examinations of core specimens also indicate the quality of adhesion of the coating and the foam, between foam lifts, and between foam and substrate.

4.3 Slit samples are used to visually examine the foam's cell structure, the number of coating layers applied, dry film thickness of the coating, and coating adhesion.

## 5. Sampling for Quality Assurance of Recently Completed Sprayed Polyurethane Roof Systems

5.1 When specified, samples shall be taken from the SPF roofing system for quality assurance. The sampling frequency shall be according to **5.2** and **5.3** unless another sampling frequency has been specified.

5.2 Two core samples shall be taken from the first 900 m<sup>2</sup> (10 000 ft<sup>2</sup>) of roof area and one for each additional 900 m<sup>2</sup> (10 000 ft<sup>2</sup>) or fraction thereof.