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Standard Guide for Selection of Membranes Used in Vegetative Roofing Systems¹

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1. Scope

1.1 The purpose of this guide is to provide guidance in the selection of a suitable waterproofing membrane within a vegetative roof system. The guide offers various options for reviewing the membrane installation during and upon completion of the installation and prior to the vegetative components being installed. This guide applies to membranes that do or do not require UV protection. For the purpose of this guide, the supporting structure and roof deck are assumed to be mechanically and structurally sound and will accept the weight of the vegetative roof system including the membrane, insulation, and other roofing/waterproofing components including all components related to the vegetative layers as well as the required design loads. Slope to drain at the membrane level is preferred and should be included where possible. Providing a replacement or a re-cover vegetative roofing system on an existing building may require that the support structure be reinforced so that it can safely support the additional weight of the vegetative roof system and also provide the minimum live load capacity required by the building code.

1.2 Design criteria associated with the vegetative portions of the system are beyond the scope of this guide. Please refer to Guide [E2777](#).

1.3 *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.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

¹ This guide is under the jurisdiction of ASTM Committee [D08](#) on Roofing and Waterproofing and is the direct responsibility of Subcommittee [D08.24](#) on Sustainability.

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2. Referenced Documents

2.1 *ASTM Standards:*²

[D1079](#) Terminology Relating to Roofing and Waterproofing
[D5957](#) Guide for Flood Testing Horizontal Waterproofing Installations

[D7877](#) Guide for Electronic Methods for Detecting and Locating Leaks in Waterproof Membranes

[E2777](#) Guide for Vegetative (Green) Roof Systems

2.2 *ANSI/SPRI Standards:*³

[ANSI/SPRI VR-1](#) Procedure for Investigating Resistance to Root Penetration on Vegetative Roofs

2.3 *Other Standards and Documents:*

[FLL Guidelines for the Planning, Construction and Maintenance of Green Roofing – Green Roofing Guideline Section 6.3 Protection Against Damage to the Waterproofing / Root-resistant Membranes FLL Procedure for Investigating Resistance to Root Penetration of Roof Membranes and Protective Layers for Green Roofing](#)⁴

3. Terminology

3.1 *Definitions*—For definitions of terms used in this guide, see Terminology [D1079](#).

4. Significance and Use

4.1 This guide provides the general information, procedures, and guidelines for the selection of the waterproofing membrane to create a waterproofing system for a Vegetative (Green) roof.

4.2 This guide is not all inclusive; this guide is intended to supplement detailed instructions from manufacturers, ASTM Standards, and building code requirements.

5. Roof Design Classifications

5.1 *Types of Constructions or Applications:*

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.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁴ Available from Forschungsgesellschaft Landschaftsentwicklung Landschaftsbau e.V. (FLL), Friedensplatz 4, 53111 Bonn, Germany, www.fll.de.