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## Standard Guide for Application of Fully Adhered Hot-Applied Reinforced Waterproofing Systems<sup>1</sup>

This standard is issued under the fixed designation D6622/D6622M; 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.

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<sup>ε1</sup> NOTE—Units information was editorially corrected in January 2018.

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### 1. Scope

1.1 This guide covers the minimum installation recommendations for fully adhered, hot-applied reinforced waterproofing systems on vertical and low-slope (plaza deck) surfaces.

1.2 For the purpose of this guide, the substrate is assumed to be concrete or masonry, structurally sound, able to accept the weight of anticipated loads, and meets the local building code requirements. Similarly, all components of the waterproofing system are assumed to comply with any federal, state, and local environmental regulations that may be in effect at the time of installation. Expansion joints, insulation, drainage layers, and overburden are beyond the scope of this guide.

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~~nonconformance 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, health, and environmental practices and determine the applicability of regulatory requirements prior to use.*

1.5 *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.*

### 2. Referenced Documents

#### 2.1 ASTM Standards:<sup>2</sup>

- C981 Guide for Design of Built-Up Bituminous Membrane Waterproofing Systems for Building Decks
- D41/D41M Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing
- D43/D43M Specification for Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing
- D173/D173M Specification for Bitumen-Saturated Cotton Fabrics Used in Roofing and Waterproofing
- D226/D226M Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing
- D227/D227M Specification for Coal-Tar-Saturated Organic Felt Used in Roofing and Waterproofing
- D449/D449M Specification for Asphalt Used in Dampproofing and Waterproofing

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<sup>2</sup> 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.



- D450/D450M Specification for Coal-Tar Pitch Used in Roofing, Dampproofing, and Waterproofing
- D1079 Terminology Relating to Roofing and Waterproofing
- D1327/D1327M Specification for Bitumen-Saturated Woven Burlap Fabrics Used in Roofing and Waterproofing
- D1668/D1668M Specification for Glass Fabrics (Woven and Treated) for Roofing and Waterproofing
- D2178/D2178M Specification for Asphalt Glass Felt Used in Roofing and Waterproofing
- ~~D2822/D2822M Specification for Asphalt Roof Cement, Asbestos-Containing (Withdrawn 2016)<sup>3</sup>~~
- ~~D4022/D4022M Specification for Coal Tar Roof Cement, Asbestos-Containing (Withdrawn 2014)<sup>3</sup>~~
- D4586/D4586M Specification for Asphalt Roof Cement, Asbestos-Free
- D4990 Specification for Coal-Tar Glass Felt Used in Roofing and Waterproofing
- ~~D5295/D5295M~~ Guide for Preparation of Concrete Surfaces for Adhered (Bonded) Membrane Waterproofing Systems
- D5643/D5643M Specification for Coal Tar Roof Cement, Asbestos Free
- ~~D5726 Specification for Thermoplastic Fabrics Used in Hot-Applied Roofing and Waterproofing~~
- D5898/D5898M Guide for Standard Details for Adhered Sheet Waterproofing
- D5957 Guide for Flood Testing Horizontal Waterproofing Installations
- D6152/D6152M Specification for SEBS-Modified Mopping Asphalt Used in Roofing
- D6162/D6162M Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements
- D6163/D6163M Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements
- D6164/D6164M Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements
- D6451/D6451M Guide for Application of Asphalt Based Protection Board
- D6506/D6506M Specification for Asphalt Based Protection Board for Below-Grade Waterproofing

2.2 Other Documents:

- CAN/CGSB-37.50 Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing<sup>3</sup>
- CAN/CGSB-37.51 Application for Hot-Applied Rubberized Asphalt for Roofing and Waterproofing<sup>3</sup>

### 3. Terminology

3.1 *Definitions*—For definitions of terms used in this guide, refer to Terminology D1079.

### 4. Classification

4.1 The following types are used to identify the waterproofing systems included in this guide.

- 4.1.1 *Type I*—Membranes consisting of hot-applied coal tar pitch, and two or more layers of organic or inorganic felts or fabrics.
- 4.1.2 *Type II*—Membranes consisting of hot-applied asphalt, and two or more layers of organic or inorganic felts or fabrics.
- 4.1.3 *Type III*—Membranes consisting of hot-applied asphalt or polymer-modified asphalt, and one or more polymer-modified bitumen sheets. The sheets are typically SBS-modified bitumen and may be reinforced with fiberglass or polyester, or both.
- 4.1.4 *Type IV*—Membranes consisting of hot-applied polymer-modified asphalt, and fabric reinforcement.

### 5. Significance and Use

5.1 This guide outlines general procedures and precautions for the application of fully adhered hot-applied built-up reinforced waterproofing systems.

5.2 This guide is not all inclusive and is intended only to supplement detailed instructions from designers, and the recommendations of manufacturers. Manufacturers of some of the systems addressed by this guide require proprietary products and special procedures not described in this guide. Manufacturers' recommendations should therefore be considered in the application of this guide.

<sup>3</sup> Canadian General Standards Board, Ottawa, Canada K1A 1G6.



5.3 For design guidelines, consult Guide C981.

## 6. Delivery of Materials

6.1 Deliver materials in the manufacturer's original unopened packages and containers.

6.2 All materials or material packaging must be clearly marked in a weather-resistant manner with type, stock, or lot number, and other pertinent information, for example, size, manufacturer's name, ASTM specification, flash point, equiviscous temperature, or other application information.

## 7. Storage and Handling of Materials

7.1 Store materials on raised platforms or pallets. Store rolls vertically or horizontally, as recommended by the roll manufacturer. Store materials in a dry, ventilated, and weatherproof location. Avoid damage or embedment of foreign materials.

7.2 Store materials to prevent system supplier's markings from being destroyed.

7.3 When used as part of the system, store primer and mastic in tightly closed original containers at temperatures recommended by the system supplier.

## 8. Safety Precautions

8.1 Safety precautions include, but are not limited to: wear protective clothing, vent fumes especially in confined spaces, avoid contact with hot bitumen, do not use flammable materials near an open flame or near equipment that may produce sparks or open flames. Obtain and refer to MSDSs for further safety precautions.

## 9. Environmental Conditions

9.1 Installation can proceed when conditions agreed upon by the owner, producer or system supplier, installer, and specifier are met.

9.2 Conditions that may interfere with the installation and performance of the waterproofing include: inclement weather, wet or frost-covered surfaces, dirty or dusty surfaces, high winds, and temperatures above or below a workable range for the products to be installed.

## 10. Materials

10.1 *Type I:*

10.1.1 Coal-tar primer: Specification D43/D43M.

10.1.2 Coal-tar pitch: Specification D450/D450M.

10.1.3 Felts: Specification D227/D227M or D4990.

10.1.4 Coal-tar-treated glass fabric: Specification D1668/D1668M, Type II.

10.1.5 Coal-tar-saturated cotton fabric: Specification D173/D173M.

10.1.6 Coal-tar-saturated burlap fabric: Specification D1327/D1327M.

10.1.7 Coal-tar flashing cement: Specification ~~D4022/D4022M~~ or D5643/D5643M.

10.1.8 Protection board: Specification D6506/D6506M.

10.2 *Type II:*



- 10.2.1 Asphalt primer: Specification [D41/D41M](#).
- 10.2.2 Asphalt: Specification [D449/D449M](#).
- 10.2.3 Felts: Specification [D226/D226M](#) or [D2178/D2178M](#).
- 10.2.4 Bitumen-saturated cotton fabric: Specification [D173/D173M](#).
- 10.2.5 Treated glass fabric: Specification [D1668/D1668M](#), Type I or II.
- 10.2.6 Bitumen-saturated burlap fabric: Specification [D1327/D1327M](#).
- 10.2.7 Flashing cement: Specification ~~[D2822/D2822M](#)~~ or [D4586/D4586M](#).
- 10.2.8 Protection board: Specification [D6506/D6506M](#).

10.3 *Type III:*

- 10.3.1 Asphalt primer: Specification [D41/D41M](#).
- 10.3.2 Asphalt: Specification [D6152/D6152M](#) or [D449/D449M](#).
- 10.3.3 ~~SBS-modified-ply~~ SBS-modified ply sheets: Specification [D6162/D6162M](#), [D6163/D6163M](#), or [D6164/D6164M](#).
- 10.3.4 Asphalt-treated glass fabric: Specification [D1668/D1668M](#), Type I.
- 10.3.5 Flashing cement: recommended by the manufacturer.
- 10.3.6 Protection board: Specification [D6506/D6506M](#).

10.4 *Type IV:*

- 10.4.1 Rubberized asphalt: CAN/CGSB-37.50. [ASTM D6622/D6622M-20](https://standards.iteh.ai/catalog/standards/sist/941287e1-edb6-4979-8d6b-cc758c445891/astm-d6622-d6622m-20)
- 10.4.2 Fabric reinforcement: spunbonded polyester, supplied by the rubberized asphalt manufacturer.

10.5 Mechanical fasteners and accessories: corrosion-resistant.

## 11. Substrate Preparation

- 11.1 Prepare and evaluate concrete surfaces in accordance with Guide ~~[D5295](#)~~ [D5295/D5295M](#). Verify that required slopes for drainage and embedded nailers (if any) are installed.
- 11.2 Apply primer to all surfaces to receive waterproofing at rates recommended by the manufacturer. Allow to dry.
- 11.3 Areas must be covered with waterproofing on the same day as primer is applied (or within a longer period if allowed by the manufacturer) or they must be re-primed.
- 11.4 In areas that become contaminated by dust, dirt, or other foreign material that would interfere with the satisfactory installation or performance of the system, clean and re-prime prior to installation of the waterproofing.

## 12. Installation

- 12.1 *General:*
  - 12.1.1 Use care during installation to avoid damaging the prepared substrate.