



Standard Specification for Materials for Bridge Deck Waterproofing Membrane Systems¹

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1. Scope

1.1 This specification covers deck waterproofing membrane systems designed for use on bridge decks which will receive an asphaltic concrete overlay.

1.2 The values stated in SI units are to be regarded as the standard. The inch-pound units given in parentheses are for information only.

2. Referenced Documents

2.1 ASTM Standards:

D 146 Test Methods for Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics for Roofing and Waterproofing²

D 5167 Practice for Melting Hot-Applied Joint and Crack Sealant and Filler for Evaluation³

E 96 Test Method for Water Vapor Transmission of Materials⁴

3. Classification

3.1 Bridge deck waterproofing membrane systems covered in this specification include three types:

3.1.1 *Type I*—Cold applied elastomeric.

3.1.2 *Type II*—Hot applied elastomeric.

3.1.3 *Type III*—Preformed sheet membrane.

4. General Requirements

4.1 Type I covers cold liquid-applied chemically curing membrane materials that may be applied to a bridge deck to prevent the passage of water from the bituminous surface course to or through the bridge deck. A membrane protection course, as specified by the membrane manufacturer, is required.

4.2 Type II covers hot applied elastomeric membrane systems that prevent the passage of water from the bituminous surface course to or through the bridge deck. A membrane protection course, as specified by the membrane manufacturer, is required.

4.3 Type III covers preformed sheet membrane systems which prevent the passage of water from the bituminous surface course to or through the bridge deck.

5. Physical Properties

5.1 *Type I, II, and III:*

5.1.1 Permeability shall be determined in accordance with Test Method E 96 water method.

5.1.2 Pliability shall be determined in accordance with Test Method D 146, except that the test temperature of the test specimen shall be –18°C after 24 h and 180° bend over a 6-mm (¼-in.) mandrel.

6. Performance Requirements

6.1 Bridge deck protective membrane materials shall be proposed as systems that shall specify each of the installation components within the system and state the rates of applications, and so forth, where applicable. Materials which are combined in accordance with the system proposal shall meet the requirements stated in performance (applications) specification. Membrane, when tested at the manufacturer's recommended rate of application, shall meet the minimum requirements as stated in Table 1.

7. Sampling

7.1 *Type I*—The purchaser shall have the right to sample and test the material at any point prior to being incorporated into the work, to ensure that the material conforms to the specified requirements. If sampled at the point of manufacture, it shall be the responsibility of the manufacturer to determine that the samples taken are representative of the batches or lots proposed for shipment. Samples for testing shall consist of not less than a total sample of 4.5 kg (10 lb) or 3.8 L (1 gal) of liquid sealant from each batch or lot submitted for sampling. A batch or lot shall be considered as all finished material that was manufactured simultaneously or continuously as a unit prior to

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² *Annual Book of ASTM Standards*, Vol 04.04.

³ *Annual Book of ASTM Standards*, Vol 04.03.

⁴ *Annual Book of ASTM Standards*, Vol 04.06.

