Designation: D8051/D8051M – 16 (Reapproved 2023)

Standard Specification for Wax-Modified Asphalt Used in Roofing[1]

This standard is issued under the fixed designation D8051/D8051M; 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 wax-modified asphaltic products intended for use in built-up roof construction, construction of bituminous vapor retarder systems, adhering fleece-backed single-ply roof membranes, and adhering insulation boards used in various types of roof systems. The specification is intended for general classification purposes only, and does not imply restrictions on roofing system design, such as the slope at which this asphalt may be used.

1.2 These products have lower application temperatures compared to products specified by Specification D312/D312M.

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 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 limitations 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:*[2]

D5/D5M Test Method for Penetration of Bituminous Materials

D36/D36M Test Method for Softening Point of Bitumen (Ring-and-Ball Apparatus)

D92 Test Method for Flash and Fire Points by Cleveland Open Cup Tester

D113 Test Method for Ductility of Asphalt Materials

D140/D140M Practice for Sampling Asphalt Materials

D312/D312M Specification for Asphalt Used in Roofing

D1079 Terminology Relating to Roofing and Waterproofing

D2042 Test Method for Solubility of Asphalt Materials in Trichloroethylene or Toluene

D3461 Test Method for Softening Point of Asphalt and Pitch (Mettler Cup-and-Ball Method)

D4402/D4402M Test Method for Viscosity Determination of Asphalt at Elevated Temperatures Using a Rotational Viscometer

D7553 Test Method for Solubility of Asphalt Materials in N-Propyl Bromide

3. Terminology

3.1 For definitions of terms used in this specification, refer to Terminology D1079.

3.2 *Definitions:*

3.2.1 *high-melt-point synthetic wax, n*—synthetic wax with a melt point greater than 90 °C, for example polyethylene wax, oxidized polyethylene wax, Fischer-Tropsch wax, and ethylene bis stearamide wax.

3.2.2 *lightly oxidized asphalt, n*—having a softening point and penetration range as defined in Table 1.

3.2.3 *wax-modified asphalt (WM), n*—a product made by modifying a lightly oxidized asphalt with a high-melt-point synthetic wax.

4. Materials and Manufacture

4.1 The base asphalt shall be prepared from lightly oxidized petroleum asphalt.

4.2 The wax-modified asphalt shall incorporate one or more high-melt-point synthetic waxes in order to meet the requirements of this specification.

5. Physical Properties

5.1 The products shall be homogeneous and free of water.

5.2 The products of each type shall conform to the physical properties prescribed in Table 1.

[1] This specification is under the jurisdiction of ASTM Committee D08 on Roofing and Waterproofing and is the direct responsibility of Subcommittee D08.03 on Surfacing and Bituminous Materials for Membrane Waterproofing and Built-up Roofing.

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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.