



Designation: D2521/D2521M – 76 (Reapproved 2021)

# Standard Specification for Asphalt Used in Canal, Ditch, and Pond Lining<sup>1</sup>

This standard is issued under the fixed designation D2521/D2521M; 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 specification covers an oxidized petroleum asphalt which, when applied in a sufficient thickness over a suitable subgrade and covered with a suitable cover material, will provide a satisfactory waterproof membrane for use as a canal, ditch, and pond lining.

1.2 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 should be used independently of the other. Combining values in any way may result in nonconformance with the standard.

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, health, and environmental 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.*

## 2. Referenced Documents

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

[D5/D5M Test Method for Penetration of Bituminous Materials](#)

[D6/D6M Test Method for Loss on Heating of Oil and Asphaltic Compounds](#)

[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](#)  
[D2042 Test Method for Solubility of Asphalt Materials in Trichloroethylene or Toluene](#)  
[D2398 Test Method for Softening Point of Bitumen in Ethylene Glycol \(Ring-and-Ball\) \(Withdrawn 1984\)](#)<sup>3</sup>

## 3. Physical Requirements

3.1 The asphalt shall not foam when heated to 205 °C [400 °F], and shall conform to the requirements prescribed in [Table 1](#).

3.2 At the purchaser's option, phosphorus pentoxide (P<sub>2</sub>O<sub>5</sub>) may be specified as a catalyst or blowing aid in the preparation of the membrane asphalt.

## 4. Sampling and Test Methods

4.1 Sample the material and determine the properties enumerated in this specification in accordance with the following methods:

4.1.1 *Sampling*—Practice [D140/D140M](#).

4.1.2 *Softening Point*—Test Method [D2398](#).

4.1.3 *Penetration*—Test Method [D5/D5M](#).

4.1.4 *Ductility*—Test Method [D113](#).

4.1.5 *Flash Point*—Test Method [D92](#).

4.1.6 *Solubility in Trichloroethylene*—Test Method [D2042](#).

4.1.7 *Loss on Heating*—Test Method [D6/D6M](#).

## 5. Inspection

5.1 Inspection of the material shall be agreed upon between the purchaser and the seller as part of the purchase contract.

## 6. Rejection and Resubmittal

6.1 Failure to conform to any of the requirements prescribed in this specification shall constitute grounds for rejection. In case of rejection, the seller shall have the right to reinspect the rejected material and resubmit the lot after removal of the packages not conforming to the requirements.

## 7. Keywords

7.1 bituminous materials; canal lining; ditch lining; membrane asphalt

<sup>3</sup> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).

<sup>1</sup> 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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<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.

**TABLE 1 Requirements for Asphalt for Use in Waterproof Membrane Construction**

Property	min	max
Softening point (ring and ball), °C [°F]	79 [175]	93 [200]
Penetration of original sample, 0.1 mm:		
at 25 °C [77 °F], 100 g, 5 s	50	60
at 0 °C [32 °F], 200 g, 60 s	30	...
at 46 °C [115 °F], 50 g, 5 s	...	120
Ductility at 25 °C [77 °F], mm	35	...
Flash point (Cleveland open cup), °C [°F]	218 [425]	...
Solubility in trichloroethylene, %	97.0	...
Loss on heating, %	...	1.0
Penetration after loss on heating, % of original at 25 °C [77 °F], 100 g, 5 s	60	...

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