



Designation: D 2521 – 76 (Reapproved 1997)

Standard Specification for Asphalt Used in Canal, Ditch, and Pond Lining¹

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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 *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.*

2. Referenced Documents

2.1 ASTM Standards:

- D 5 Test Method for Penetration of Bituminous Materials²
- D 6 Test Method for Loss on Heating of Oil and Asphaltic Compounds³
- D 92 Test Method for Flash and Fire Points by Cleveland Open Cup⁴
- D 113 Test Method for Ductility of Bituminous Materials²
- D 140 Practice for Sampling Bituminous Materials²
- D 2042 Test Method for Solubility of Asphalt Materials in Trichloroethylene²
- D 2398 Test Method for Softening Point of Bitumen in Ethylene Glycol (Ring and Ball)⁵

3. Physical Requirements

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

3.2 At the purchaser's option, phosphorus pentoxide (P₂O₅) may be specified as a catalyst or blowing aid in the preparation

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² Annual Book of ASTM Standards, Vol 04.03.

³ Annual Book of ASTM Standards, Vol 04.04.

⁴ Annual Book of ASTM Standards, Vol 05.01.

⁵ Discontinued—See 1984 Annual Book of ASTM Standards, Vol 04.04.

TABLE 1 Requirements for Asphalt for Use in Waterproof Membrane Construction

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

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 D 140.

4.1.2 *Softening Point*— Test Method D 2398.

4.1.3 *Penetration*— Test Method D 5.

4.1.4 *Ductility*—Test Method D 113.

4.1.5 *Flash Point*— Test Method D 92.

4.1.6 *Solubility in Trichloroethylene*—Test Method D 2042.

4.1.7 *Loss on Heating*— Test Method D 6.

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