Designation: D 1854 – 96

AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Specification for Jet-Fuel-Resistant Concrete Joint Sealer, Hot-Applied Elastic Type[1]

This standard is issued under the fixed designation D 1854; 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 a jet-fuel-resistant concrete joint sealer, of the hot-applied elastic type, intended for use in sealing joints in concrete pavement in areas exposed to jet fuel spillage. It may be found useful in industrial areas where similar conditions exist (see Appendix X1).

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.* Specific precaution statements are given in Appendix X1.

2. Referenced Documents

2.1 *ASTM Standards:*

D 5167 Practice for Melting of Hot-Applied Joint and Crack Sealant and Filler for Evaluation[2]

D 5249 Specification for Backer Material for Use with Cold- and Hot-Applied Joint Sealants in Portland Cement Concrete and Asphalt Joints[2]

D 5329 Test Methods for Sealants and Fillers, Hot-Applied, for Joints and Cracks in Asphaltic and Portland Cement Concrete Pavements[2]

2.2 *Federal Specification:*

UU-P-63 Paper, Blotting[3]

3. General Requirements

3.1 The joint sealer shall be composed of a mixture of materials that will form a resilient and adhesive compound capable of effectively sealing joints in concrete against the infiltration of moisture and foreign material throughout repeated cycles of expansion and contraction with temperature changes, and that will not flow from the joint or be picked up by vehicle tires at summer temperatures. These characteristics shall be maintained in the presence or absence of jet fuel or similar solvents. The material shall be capable of being brought to a uniform pouring consistency suitable for completely filling the joints without inclusion of large air holes or discontinuities, and without damage to the material. On sawed joints, special precautions and designs will be required to accept materials covered by this specification.

4. Physical Requirements

4.1 *Safe Heating Temperature*—This is the maximum temperature to which the material may be heated and still conform to all the requirements specified. It shall be at least 20°F (11°C) higher than the manufacturer's recommended pour point temperature and shall be provided the testing agency prior to testing (see Appendix X1).

4.2 *Nonimmersed Penetration*, at 77 ± 0.2°F (25 ± 0.1°C) and 150 g for 5 s shall be not more than 130.

4.3 *Immersed Penetration*, at 77 ± 0.2°F (25 ± 0.1°C) and 150 g for 5 s shall be not more than 155.

4.4 *Penetration Difference*, between nonimmersed and immersed penetrations shall be not more than 25.

4.5 *Solubility*—The gain or loss in weight on soaking in test fuel[3] shall be not more than ±2.0 %, and there shall be no apparent defects during the soaking period that will affect the material as a sealing compound.

4.6 *Flow*, after 5 h at 140 ± 2°F (60 ± 1°C) shall be not more than 30 mm.

4.7 *Nonimmersed Bond*—After three cycles at 0 ± 2°F (11.8 ± 11.1°C), not more than one specimen out of three shall develop any crack, separation, or other openings in the sealing compound or between the sealing compound and the mortar blocks that at any point is over ¼in. (6 mm) deep, measured perpendicularly to the side of the sealing compound showing the defect.

4.8 *Immersed Bond*—After soaking in test fuel, as specified, not more than one of the three specimens tested on extension at 0 ± 12°F (17.8 ± 1.1°C) for three cycles shall show complete cohesive failure of the material and the gross area of bare concrete exposed on the face of any one block shall not exceed an area of ¼ in.^{2} (1.6 cm^2).

5. Sampling and Heating

5.1 Samples for testing shall each consist of not less than a 10-lb (5-kg) sample from each batch of the joint sealer. A batch shall be considered as all finished material that was manufactured simultaneously or continuously as a unit between the time of compounding and the time of packaging or placing in

[1] This specification is under the jurisdiction of ASTM Committee D-4 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.33 on Formed-In-Place Sealant for Joints and Cracks in Pavements.

Current edition approved July 10, 1996. Published September 1996. Originally published as D 1854 – 61 T. Last previous edition D 1854 – 74 (1990).

[2] *Annual Book of ASTM Standards*, Vol 04.03.

[3] Available from Standardization Document Order Desk, Bldg. 4, Section D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Attn: NPODS.