



Standard Specification for Jet-Fuel-Resistant Concrete Joint Sealer, Hot-Applied Elastic Type¹

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This standard has been approved for use by agencies of the Department of Defense.

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 The values stated in SI units are to be regarded as standard. The values in parentheses are for information only. 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 non-conformance to 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 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 Evaluation²

D 5249 Specification for Backer Material for Use with Cold- and Hot-Applied Joint Sealants in Portland Cement Concrete and Asphalt Joints²

D 5329 Test Methods for Sealants and Fillers, Hot-Applied, for Joints and Cracks in Asphaltic and Portland Cement Concrete Pavements²

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 re-

peated 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 *Maximum 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 11°C (20°F) 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 $25 \pm 0.1^\circ\text{C}$ ($77 \pm 0.2^\circ\text{F}$) and 150 g for 5 s shall be not more than 130.

4.3 *Immersed Penetration*, at $25 \pm 0.1^\circ\text{C}$ ($77 \pm 0.2^\circ\text{F}$) 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 shall be not more than $\pm 2.0\%$, 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 $60 \pm 1^\circ\text{C}$ ($140 \pm 2^\circ\text{F}$) shall be not more than 30 mm.

4.7 *Nonimmersed Bond*—After three cycles at $-18 \pm 1^\circ\text{C}$ ($0 \pm 2^\circ\text{F}$), 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 6 mm ($\frac{1}{4}$ in.) deep, measured perpendicularly to the side of the sealing compound showing the defect.

4.8 *Fuel-Immersed Bond*—After soaking in test fuel, as specified, not more than one of the three specimens tested on extension at $-18 \pm 1^\circ\text{C}$ ($0 \pm 2^\circ\text{F}$) 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

¹ This specification is under the jurisdiction of ASTM Committee D04 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.

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