

Designation: D 3583 - 85 (Reapproved 1991)^{ε1}

AMERICAN SOCIETY FOR TESTING AND MATERIALS

1916 Race St. Philadelphia, Pa 19103

Reprinted from the Annual Book of ASTM Standards. Copyright ASTM
If not listed in the current combined index, will appear in the next edition.

Standard Methods of Testing Joint Sealant, Hot-Applied, Elastomeric-Type, for Portland Cement Concrete Pavements, or Joint Sealant, Hot-Applied, Elastomeric, Jet-Fuel-Resistant-Type, for Portland Cement Concrete Pavements¹

This standard is issued under the fixed designation D 3583; 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.

^{ε1} NOTE—Section 18, Keywords, was added editorially in April 1991.

1. Scope

1.1 These methods cover test methods for evaluating joint sealant, hot-applied, elastomeric-type and elastomeric jet-fuel-resistant-type for portland cement concrete pavements.

1.2 The methods included are:

Method	Section
Artificial Weathering	13
Bond	11
Flexibility	16
Flow	10
Penetration	9
Resilience	12
Solubility (Change in Weight)	15
Tensile Adhesion	14

1.3 *This standard does not purport to address all of the safety problems, 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 precautionary statements are given in Section 5.

2. Referenced Documents

2.1 ASTM Standards:

- C 33 Specification for Concrete Aggregates²
- C 150 Specification for Portland Cement²
- C 192 Practice for Making and Curing Concrete Test Specimens in the Laboratory²
- C 220 Specification for Flat Asbestos-Cement Sheets³
- D 5 Test Method for Penetration of Bituminous Materials⁴
- D 217 Test Method for Cone Penetration of Lubricating Grease⁵
- D 471 Test Method for Rubber Property—Effect of Liquids⁶

¹ These methods are under the jurisdiction of ASTM Committee D-4 on Road and Paving Materials and are the direct responsibility of Subcommittee D04.33 on Formed-In-Place Sealants for Joints and Cracks in Pavements.

Current edition approved Nov. 29, 1985. Published January 1986. Originally published as D 3583 - 77 T. Last previous edition D 3583 - 77.

² Annual Book of ASTM Standards, Vol 04.02.

³ Annual Book of ASTM Standards, Vol 04.05.

⁴ Annual Book of ASTM Standards, Vol 04.03.

⁵ Annual Book of ASTM Standards, Vol 05.01.

⁶ Annual Book of ASTM Standards, Vol 09.01.

D 3406 Specification for Joint Sealant, Hot-Applied, Elastomeric-Type, for Portland Cement Concrete Pavements⁴

D 3569 Specification for Joint Sealant, Hot-Applied, Elastomeric, Jet-Fuel-Resistant-Type, for Portland Cement Concrete Pavements⁴

G 23 Practice for Operating Light-Exposure Apparatus (Carbon-Arc-Type) With and Without Water for Exposure of Nonmetallic Materials⁷

3. Significance and Use

3.1 These methods outline procedures for determining a measure of field performance for hot-applied, field-molded elastomeric joint sealant. The joint sealant, when in place, shall form a resilient and adhesive compound that is resistant to weathering, and shall effectively seal joints in concrete throughout repeated cycles of expansion and contraction, and against the infiltration of moisture, jet-fuel (Specification D 3569 only), and incompressibles. It shall not flow from the joint or be picked up by vehicle tires. The joint sealant shall be stable at the manufacturer's recommended safe heating temperature for a minimum of 6 h before placement. The poured joints shall be free of any internal voids due to placement or voids that develop subsequently in use. Evaluation is based on results of testing for artificial weathering, bond, flexibility, flow, penetration, resilience, solubility, and tensile adhesion after extended heating periods.

4. Apparatus

4.1 *Requirements*—The following apparatus will be required to carry out the test procedures as specified herein:

4.1.1 *Laboratory Melter*—The unit for melting laboratory samples shall be of the double-boiler type, and shall use a high flash-point oil as a heat transfer medium. It shall have thermostatically controlled heating to maintain the oil temperature with a tolerance of $\pm 5^\circ\text{F}$ ($\pm 3^\circ\text{C}$) of that required to maintain the sample at the safe heating temperature recommended by the sealant manufacturer. The melter should be in a ventilated hood and it is recommended that the technician shall wear a respirator fitted with an organic chemical filter. The melting units may be equipped with a

⁷ Annual Book of ASTM Standards, Vol 14.02.