



Designation: D946 – 09

# Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction<sup>1</sup>

This standard is issued under the fixed designation D946; 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.

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

## 1. Scope

1.1 This specification covers asphalt cement for use in the construction of pavements.

1.2 This specification covers the following penetration grades:

40–50,	120–150, and
60–70,	200–300.
85–100,	

## 2. Referenced Documents

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

- D5 Test Method for Penetration of Bituminous Materials
- D36 Test Method for Softening Point of Bitumen (Ring-and-Ball Apparatus)
- D92 Test Method for Flash and Fire Points by Cleveland Open Cup Tester
- D113 Test Method for Ductility of Bituminous Materials
- D140 Practice for Sampling Bituminous Materials
- D1754 Test Method for Effects of Heat and Air on Asphaltic Materials (Thin-Film Oven Test)

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.40 on Asphalt Specifications.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

D2042 Test Method for Solubility of Asphalt Materials in Trichloroethylene

## 3. Manufacture

3.1 Asphalt cement shall be prepared by the refining of crude petroleum by suitable methods.

## 4. Properties

4.1 The asphalt cement shall be homogeneous and shall not foam when heated to 347°F (174°C).

4.2 The asphalt cement shall conform to the requirements given in Table 1 or Table 2, as specified by the purchaser. Table 2 requirements limit the temperature susceptibility of asphalt over Table 1 requirements. Asphalts that meet Table 2 requirements will also meet Table 1 requirements of the same grade.

## 5. Methods of Sampling and Testing

5.1 The material shall be sampled and the properties enumerated in this specification shall be determined in accordance with the following ASTM methods:

- 5.1.1 *Sampling*—Practice D140.
- 5.1.2 *Penetration*—Test Method D5.
- 5.1.3 *Softening Point*—Test Method D36.
- 5.1.4 *Flash Point*—Test Method D92.
- 5.1.5 *Ductility*—Test Method D113.
- 5.1.6 *Thin Film Oven Test*—Test Method D1754.
- 5.1.7 *Solubility in Trichloroethylene*—Test Method D2042.

## 6. Keywords

6.1 asphalt cement; pavement; penetration