



Designation: D6154 – 09

Standard Specification for Chemically Modified Asphalt Cement for Use in Pavement Construction¹

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1. Scope

1.1 This specification covers asphalt cements that have been modified by the addition of a chemical gellant. It was developed to provide a reference for specifying chemically modified asphalt cement and reflects the properties of currently available commercial products. The tests are intended to measure degree of modification not performance characteristics. This is not intended to be a performance-based specification.

1.2 Chemically modified asphalt cements are normally produced by addition of a chemical stabilizer. However, any asphalt modifier may be used that will give the required test results when blended with the desired asphalt.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.4 The following precautionary statement pertains to the test method portion only, Section 5, of this specification: *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*:²

- D5 Test Method for Penetration of Bituminous Materials
- D36 Test Method for Softening Point of Bitumen (Ring-and-Ball Apparatus)

¹ 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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² 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.

- D92 Test Method for Flash and Fire Points by Cleveland Open Cup Tester
- D140 Practice for Sampling Bituminous Materials
- D1754 Test Method for Effects of Heat and Air on Asphaltic Materials (Thin-Film Oven Test)
- D2042 Test Method for Solubility of Asphalt Materials in Trichloroethylene
- D4957 Test Method for Apparent Viscosity of Asphalt Emulsion Residues and Non-Newtonian Bitumens by Vacuum Capillary Viscometer

3. Materials and Manufacture

3.1 The asphalt cement used to prepare the chemically modified asphalt cement shall be prepared by the refining of crude petroleum by suitable methods.

4. Physical Properties

4.1 The chemically modified asphalt cement shall be homogeneous, free from water, and shall not foam when heated to 180°C.

4.2 The chemically modified asphalt cement shall conform to the requirements of Table 1.

5. Methods of Sampling and Testing

5.1 Sample and test the chemically modified asphalt cement in accordance with the following methods:

- 5.1.1 *Sampling*—See Practice D140.
- 5.1.2 *Penetration*—See Test Method D5.
- 5.1.3 *Viscosity at 60°C*—See Test Method D4957.
- 5.1.4 *Viscosity at 135°C*—See Test Method D4957.
- 5.1.5 *Flash Point, Cleveland Open Cup*—See Test Method D92.
- 5.1.6 *Solubility in Trichloroethylene*—See Test Method D2042.
- 5.1.7 *Softening Point*—See Test Method D36.
- 5.1.8 *Thin-Film Oven Test*—See Test Method D1754.

6. Keywords

6.1 chemical gellant; chemical stabilizer; Chemically Modified Asphalt Cement; viscosity