



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 which 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 the 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:

D 5 Test Method for Penetration of Bituminous Materials²

D 36 Test Method for Softening Point of Bitumens (Ring and Ball Apparatus)³

D 92 Test Method for Flash and Fire Point by Cleveland Open Cup⁴

¹ This specification is under the jurisdiction of ASTM Committee D-4 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.45 on Modified Asphalt Specifications.

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² Annual Book of ASTM Standards, Vol 04.03.

³ Annual Book of ASTM Standards, Vol 04.04.

⁴ Annual Book of ASTM Standards, Vol 05.01.

D 140 Practice for Sampling Bituminous Materials²

D 1754 Test Method for Effect of Heat and Air on Asphaltic Materials (Thin Film Oven Test)²

D 2042 Test Method for Solubility of Asphalt Materials in Trichloroethylene²

D 4957 Test Method for Apparent Viscosity of Asphalt Emulsion Residues and Non-Newtonian Bitumens by Vacuum Capillary Viscometer²

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 D 140.

5.1.2 *Penetration*—See Test Method D 5.

5.1.3 *Viscosity at 60°C*—See Test Method D 4957.

5.1.4 *Viscosity at 135°C*—See Test Method D 4957.

5.1.5 *Flash Point, Cleveland Open Cup*—See Test Method D 92.

5.1.6 *Solubility in Trichloroethylene*—See Test Method D 2042.

5.1.7 *Softening Point*—See Test Method D 36.

5.1.8 *Thin-Film Oven Test*—See Test Method D 1754.