



Designation: D 6154 – 04

# Standard Specification for Chemically Modified Asphalt Cement for Use in Pavement Construction<sup>1</sup>

This standard is issued under the fixed designation D 6154; 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.

## 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 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:*<sup>2</sup>

- D 5 Test Method for Penetration of Bituminous Materials
- D 36 Test Method for Softening Point of Bitumen (Ring-and-Ball Apparatus)
- D 92 Test Method for Flash and Fire Points by Cleveland Open Cup Tester

<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.

Current edition approved June 1, 2004. Published June 2004. Originally approved in 1997. Last previous edition approved in 1997 as D 6154 - 97.

<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.

- D 140 Practice for Sampling Bituminous Materials
- D 1754 Test Method for Effects of Heat and Air on Asphaltic Materials (Thin-Film Oven Test)
- D 2042 Test Method for Solubility of Asphalt Materials in Trichloroethylene
- D 4957 Test Method for Apparent Viscosity of Asphalt Emulsion Residues and Non-Newtonian Bitumens by Vacuum Capillary Viscometer<sup>3</sup>

## 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.

<sup>3</sup> Withdrawn.