



Designation: D 6373 – 99

Standard Specification for Performance Graded Asphalt Binder¹

This standard is issued under the fixed designation D 6373; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This specification² covers asphalt binders graded by performance. Grading designations are related to the average seven-day maximum pavement design temperature, and minimum pavement design temperature.

NOTE 1—For asphalt cements graded by penetration at 25°C, see Specification D 946. For asphalt cements graded by viscosity at 60°C see Specification D 3381.

NOTE 2—Proposed Practice P 249 provides non-mandatory information for determining the performance grade of an asphalt binder.

2. Referenced Documents

2.1 ASTM Standards:

- D 8 Terminology Relating to Materials for Roads and Pavements³
- D 92 Test Method for Flash and Fire Points by Cleveland Open Cup⁴
- D 95 Test Method for Water in Petroleum Products and Bituminous Materials by Distillation⁴
- D 140 Practice for Sampling Bituminous Materials⁴
- D 946 Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction³
- D 2042 Test Method for Solubility of Asphalt Materials in Trichloroethylene³
- D 2170 Test Method for Kinematic Viscosity of Asphalts (Bitumens)²
- D 2171 Test Method for Viscosity of Asphalts by Vacuum Capillary Viscometer²
- D 2872 Test Method for Effect of Heat and Air on a Moving Film of Asphalt (Rolling Thin-Film Oven Test)³
- D 3381 Specification for Viscosity-Graded Asphalt Cement for Use in Pavement Construction³
- D 4402 Method for Viscosity Determinations of Unfilled Asphalts Using the Brookfield Thermosel Apparatus⁵
- D 5546 Test Method for Solubility of Polymer Modified

Asphalt Materials in 1, 1, 1-Trichloroethane⁵

P 245 Proposed Test Method for Determining the Flexural Creep Stiffness of Asphalt Binder Using the Bending Beam Rheometer (BBR)⁶

P 246 Proposed Test Method for Determining the Rheological Properties of Asphalt Binder for Specification Purposes Using a Dynamic Shear Rheometer (DSR)⁶

P 249 Proposed Practice for Grading or Verifying the Performance Grade of an Asphalt Binder⁷

P 252 Proposed Test Method for Determining the Fracture Properties of Asphalt Binder in Direct Tension (DT)⁷

2.2 AASHTO Standards:

PP1 Standard Practice for Accelerated Aging of Asphalt Binder Using a Pressurized Aging Vessel (PAV)⁸

3. Terminology

3.1 Definitions:

3.1.1 Definitions for many terms common to asphalt cement are found in Terminology Standard D 8.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *asphalt binder, n*—an asphalt-based cement that is produced from petroleum residue either with or without the addition of non-particulate, non-fibrous organic modifiers.

4. Ordering Information

4.1 When ordering under this specification, include in the purchase order the performance grade of asphalt binder required from Table 1 (for example, PG 52-16 or PG 64-34).

5. Materials and Manufacture

5.1 The asphalt binder shall be prepared by the refining of crude petroleum by suitable methods, with or without the addition of modifiers.

5.2 Modifiers may be any organic material of suitable manufacture, used in virgin or recycled condition, and that is dissolved, dispersed or reacted in asphalt cement to enhance its performance.

NOTE 3—This specification is not intended to address the grading of

¹ This specification is under the jurisdiction of ASTM Committee D-4 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.40 on Asphalt Specifications.

Current edition approved Feb. 10, 1999. Published July 1999.

² This specification is based on SHRP Product 1001 and AASHTO MP1.

³ *Annual Book of ASTM Standards*, Vol 04.03.

⁴ *Annual Book of ASTM Standards*, Vol 05.01.

⁵ *Annual Book of ASTM Standards*, Vol 04.04.

⁶ Discontinued; see *1995 Annual Book of ASTM Standards*, Vol 04.03.

⁷ Discontinued; see *1996 Annual Book of ASTM Standards*, Vol 04.03.

⁸ Available from the American Association of State Highway and Transportation Officials, 444 N. Capitol St. NW, Washington, DC 20001.