Designation: D2746/D2746M – 18

Standard Test Method for Staining Tendency of Asphalt (Stain Index)[1]

This standard is issued under the fixed designation D2746/D2746M; 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 (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers the determination of the staining tendency of asphalt and the assignment of a stain index proportional to the extent of staining observed.

1.2 This test method is applicable to asphalts having ring-and-ball softening points of 85°C [185°F] or greater.

NOTE 1—This test method may be modified for use with other bituminous materials with softening points less than 85°C [185°F] by using a different temperature than specified in Section 7 by agreement of the interested parties. The report of results from such a test may cite this method but must clearly state the temperature employed in the exception and acknowledge that the interpretation of results in Section 9 and the precision and bias stated in Section 10 may not apply.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.4 *This standard does not purport to address the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D36/D36M Test Method for Softening Point of Bitumen (Ring-and-Ball Apparatus)
D140/D140M Practice for Sampling Asphalt Materials
E230/E230M Specification for Temperature-Electromotive Force (emf) Tables for Standardized Thermocouples
E1137/E1137M Specification for Industrial Platinum Resistance Thermometers
E2251 Specification for Liquid-in-Glass ASTM Thermometers with Low-Hazard Precision Liquids

3. Summary of Test Method

3.1 A horizontal disc of asphalt, cast in a brass retaining ring, is placed on a sheet of filter paper supported on a flat plate and heated at 80°C [175°F] for 120 h. The diameter of the resulting stained circle on the paper is compared to the inside diameter of the brass ring to determine the staining characteristic of the asphalt. The stain index is the difference between the diameter of the stained circle and the initial disc diameter measured to the nearest 0.5 mm [1⁄64 in.].

4. Significance and Use

4.1 This test method measures the tendency for oil components to separate spontaneously from asphalt. The separation of oil components can cause staining in asphalt roofing products and adjacent materials in storage and use.

4.2 The stain index is related to the thermal stability of the asphalt. Higher stain index values indicate lower stability and greater tendency for staining.

4.3 Use this procedure to determine the staining tendency of asphalt and to compare the results against a material for which the staining tendency is known.

5. Apparatus

5.1 *Rings*—Square shouldered brass retaining rings conforming to the dimensions required for use in the ring-and-ball softening point apparatus (see Fig. 1(a) of Test Method D36/D36M).

5.1.1 The inside diameter of the ring to be placed in contact with the filter paper during the test is 16 mm [40⁄64 in.].

NOTE 2—This test method depends on accurate measurement of diameter and precise alignment of the face and rim of the ring on a flat surface. Therefore, deformed rings must not be used.

[1] This test method is under the jurisdiction of ASTM Committee D08 on Roofing and Waterproofing and is the direct responsibility of Subcommittee D08.02 on Steep Roofing Products and Assemblies.

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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.