Designation: D6999 – 19

Standard Practice for Miscibility of Emulsified Asphalts[1]

This standard is issued under the fixed designation D6999; 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 practice covers the suitability of all medium and slow-setting emulsified asphalts to be diluted with water. If desired, other liquids may be substituted for water, such as propylene glycol. It is not applicable to the rapid-setting types.

1.2 *Units*—The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.3 The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.

1.4 *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, 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]

D8055 Guide for Selecting an Appropriate Electronic Thermometer for Replacing Mercury Thermometers in D04 Road and Paving Standards

3. Sample Conditioning for Testing

3.1 All emulsified asphalts shall be properly stirred to achieve homogeneity.

3.2 All emulsified asphalts with viscosity testing requirements of 50 °C shall be heated to 50 ± 3 °C in the original sample container in a water bath or oven. The container should be vented to relieve pressure. After the sample reaches 50 ± 3 °C, stir the sample to achieve homogeneity.

3.3 Emulsified asphalts with viscosity testing requirements of 25 °C should be mixed or stirred at 25 ± 3 °C in the original sample container to achieve homogeneity.

NOTE 1—Emulsified asphalts with viscosity testing requirements of 25 °C may be heated and stirred as specified in 3.2, if necessary. In the event the 3.2 method is used, the sample should be cooled to 25 ± 3 °C.

4. Significance and Use

4.1 It is sometimes desirable to dilute an emulsified asphalt in the field with water. This practice is designed to ascertain if this may be done without irreversibly separating the water and asphalt (breaking) in the emulsified asphalt.

NOTE 2—Water supplies available in some areas contain high levels of dissolved salts and other minerals which coalesce (break) emulsified asphalts to a greater degree than distilled or deionized water. It is recommended that the user evaluate potential local job site water sources such as tap water using this practice before attempting a field dilution.

5. Apparatus and Materials

5.1 *Beaker*—Glass, 400-mL capacity.

5.2 *Graduated cylinder*—100-mL capacity, or other suitable container to approximate 50 mL.

5.3 *Graduated cylinder*—200-mL capacity.

5.4 Representative sample of water to be used at the job site or, if not readily available, then distilled or deionized or tap water may be used. See Note 2 for guidance.

5.5 *Thermometer*—A thermometer as described in Guide D8055 and capable of measuring the temperatures of 25 °C and 50 °C to a tolerance of ±3 °C. A PRT-100 (DIN/IEC class A, three or four-wire) thermometer is suitable for this purpose.

6. Procedure

6.1 Place approximately 50 mL of the 25 ± 3 °C emulsified asphalt into a 400-mL glass beaker.

6.2 Gradually add 150 mL of 25 ± 3 °C water, with constant stirring. Allow the mixture to stand for 2 h; then examine it for any appreciable coagulation of the asphalt.

[1] This practice is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.42 on Emulsified Asphalt Test.

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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.