



Designation: D6999 – 12

## Standard Practice for Miscibility of Emulsified Asphalts<sup>1</sup>

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 ( $\epsilon$ ) 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. It is not applicable to the rapid-setting types.

1.2 *This practice 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. Sample Conditioning for Testing

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

2.2 All emulsified asphalts with viscosity testing requirements of 50°C shall be heated to  $50 \pm 3^\circ\text{C}$  in the original sample container in a water bath or oven. The container should be vented to relieve pressure. After the sample reaches  $50 \pm 3^\circ\text{C}$ , stir the sample to achieve homogeneity.

2.3 Emulsified asphalts with viscosity testing requirements of 25°C should be mixed or stirred at  $25 \pm 3^\circ\text{C}$  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 2.2, if necessary. In the event the 2.2 method is used, the sample should be cooled to  $25 \pm 3^\circ\text{C}$ .

### 3. Significance and Use

3.1 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.

<sup>1</sup> 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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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.

### 4. Apparatus and Materials

4.1 *Beaker*—glass, 400 mL capacity

4.2 *Graduated cylinder*—100 mL capacity, or other suitable container to approximate 50 ml

4.3 *Graduated cylinder*—200 mL capacity

4.4 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.

4.5 *Thermometer*—A thermometric device capable of measuring the temperatures of 25C and 50C to a tolerance of  $\pm 3\text{C}$

### 5. Procedure

5.1 Place approximately 50 mL of the  $25 \pm 3^\circ\text{C}$  emulsified asphalt into a 400-mL glass beaker.

5.2 Gradually add 150 mL of  $25 \pm 3^\circ\text{C}$  water, with constant stirring. Allow the mixture to stand for 2 h; then examine it for any appreciable coagulation of the asphalt.

### 6. Report

6.1 Report any appreciable amount of coagulation and/or separation of the asphalt and water as non-miscible.

6.2 If there is not any appreciable amount of coagulation and/or separation then report as miscible.

6.3 Report type of water used in the procedure.

### 7. Keywords

7.1 asphalt; asphalt emulsion; cationic emulsified asphalt; emulsified asphalt; miscibility