Designation: D6937 – 08

StandardTest Method for
Determining Density of Emulsified Asphalt[1]

1. Scope

1.1 This test method covers the determination of density of emulsified asphalt used in highway construction. This unit is computed by determining the mass of an emulsified asphalt contained in a standard measure of known volume.

1.2 *This test method 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:*

E1 Specification for ASTM Liquid-in-Glass Thermometers

3. Significance and Use

3.1 This test method provides a controlled laboratory test for the determination of quantitative volumes of emulsified asphalt for use in bills of lading, invoicing, and application rates.

4. Sample Conditioning for Testing

4.1 All emulsified asphalts shall be properly stirred to achieve homogeneity before testing.

4.2 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.

4.3 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 4.2 if necessary. In the event the 4.2 method is used, the sample should be cooled to 25 ± 3°C before testing.

5. Apparatus

5.1 *Density Cup*—Stainless steel measure of known standard volume (83.2 mL).

5.2 *Balance*—capable of being read to the nearest 0.01 g.

5.3 *Water Bath*—constant-temperature, maintained at 25 ± 0.5°C.

5.4 *Thermometer*—ASTM 17C or 17F conforming to the requirements of Specification E1 or equivalent thermometric device.

6. Procedure

6.1 Stir the emulsified asphalt sample and place in a constant-temperature water bath maintained at 25 ± 0.5°C for approximately 1 hr.

6.2 Place the measure and its cap on the balance, tare, and zero the balance.

6.3 Remove the emulsified asphalt sample from the bath and stir, using care to avoid trapping air in the sample. If necessary, strain through a 850-μm sieve to remove any skin or film that might be present in the emulsified asphalt.

6.4 Bring the measure to approximately 25°C and pour the emulsified asphalt into the measure, filling it completely (or within 2 mm of the rim).

6.5 Start placing the cap into the measure and remove, with a clean dry rag or paper, the excess emulsified asphalt oozing through the orifice in the cap.

6.6 When the cap is placed on tightly, clean the measure carefully, weigh on the tared balance to the nearest 0.01 g, and record.

7. Calculation

7.1 Calculate the density of the emulsified asphalt as follows:

$$W = (G)(11.98) \tag{1}$$

where:

W = unit density of the emulsified asphalt, as expressed in g/L, and

G = mass of emulsified asphalt in the measure, g.

NOTE 2—If the desired units are to be expressed in pounds per gallon at 25°C, then the calculation would be W = G/10. Pounds per gallon at

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