



Designation: D 6933 – 04

Standard Test Method for Oversized Particles in Emulsified Asphalts (Sieve Test)¹

This standard is issued under the fixed designation D 6933; 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 approval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This test method covers the degree to which an emulsified asphalt may contain particles of asphalt or other discreet solids retained on a 850- μ m mesh sieve.

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:*²

D 88 Test Method for Saybolt Viscosity

E 1 Specification for ASTM Thermometers

E 11 Specification for Wire Cloth and Sieves for Testing Purposes

3. Significance and Use

3.1 The retention of an excessive amount of particles on the sieve indicates that problems may occur in handling and application of the material. Particles of asphalt retained on the sieve often are caused by agglomeration of the dispersed phase. Storage, pumping, handling, and temperature can all contribute to the formation of particles. Contamination from the tank, transport, or hose are other factors affecting particle formation.

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 \pm 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 \pm 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 \pm 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 \pm 3°C before testing.

5. Apparatus and Reagents

5.1 *Sieve*—A sieve having a 76.2-mm frame conforming to Specification E 11, and having a 850- μ m wire sieve cloth.

5.2 *Pan*—A tin box cover or shallow metal pan of appropriate size to fit over the bottom of the standard sieve.

5.3 *Thermometers*—ASTM 17C for tests at 25°C and ASTM 19C for tests at 50°C, conforming to the requirements of Specification E 1, or any other thermometric device of equal accuracy.

5.4 *Nonionic Surfactant Solution (1 %)*—1 g of nonionic surfactant (ethoxylated nonylphenol is recommended) dissolved in distilled water and diluted to 100 mL.

5.5 *Distilled or Deionized Water*

5.6 *Balances*—capable of weighing 2000 g to within \pm 1 g, and 500 g to within \pm 0.1 g.

5.7 *Oven*—Capable of maintaining temperature of 105 \pm 5°C.

5.8 *Desiccator* .

6. Procedure

6.1 The temperature at which the sieve test shall be performed is related to the emulsified asphalt's viscosity. For those materials whose viscosity in saybolt furol seconds as determined by Test Method D 88 is 100 s or less at 25°C, perform the test at ambient temperature. For those materials whose viscosity is more than 100 s at 25°C and those whose viscosity is specified at 50°C, use a test temperature of 50 \pm 3°C.

6.2 Determine the weight of the sieve and pan to the nearest 0.1 g and record this weight. Wet the wire cloth with nonionic surfactant solution.

6.3 Weigh 1000 + 5 g of the emulsified asphalt into a suitable container and pour it through the sieve. Wash the container and the residue on the sieve with distilled water or deionized water until the washings run clear.

¹ This test method 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 Tests.

Current edition approved Aug. 1, 2004. Published August 2004.

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.