



Designation: D7496 – 17

# Standard Test Method for Viscosity of Emulsified Asphalt by Saybolt Furol Viscometer<sup>1</sup>

This standard is issued under the fixed designation D7496; 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 reappraisal. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reappraisal.

## 1. Scope

1.1 This test method utilizes the Saybolt Furol viscometer to measure the consistency of emulsified asphalt. It is applicable to all the emulsified asphalts specified in Specifications [D977](#) and [D2397](#).

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

1.3 *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.*

1.4 *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:*<sup>2</sup>

[D88 Test Method for Saybolt Viscosity](#)

[D977 Specification for Emulsified Asphalt](#)

[D2397 Specification for Cationic Emulsified Asphalt](#)

[E1 Specification for ASTM Liquid-in-Glass Thermometers](#)

[E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves](#)

[E1137/E1137M Specification for Industrial Platinum Resistance Thermometers](#)

<sup>1</sup> 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 Test.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

## 3. Significance and Use

3.1 Viscosity has significance in the use of emulsified asphalts because it is a property which affects their utility. When used in application types of construction, the material must be thin enough to be uniformly applied through the spray bar of distributor, yet thick enough so that it will not flow from the crown or grade of the road. For mixing-grade emulsions, the viscosity may affect mixability and resulting thickness of film on the aggregate. The viscosity of many emulsified asphalts is affected by shear. Therefore, strict adherence to test procedure is necessary to achieve precision.

## 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 the 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 a viscosity testing requirements to 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 method described in 4.2 is used, the sample should be cooled to 25 ± 3 °C and stirred before testing.

## 5. Apparatus

5.1 *Viscometer*—A Saybolt Furol viscometer conforming to the requirements specified in Test Method [D88](#).

5.2 *Sieve*—An 850- $\mu$ m sieve or a 20-mesh strainer of wire cloth, framed or unframed. Refer to Specification [E11](#).

5.3 *Thermometers*—One of the following:

5.3.1 ASTM No. 17C for tests at 25 °C and ASTM No. 19C for tests at 50 °C, conforming to the requirements of Specification [E1](#).

5.3.2 A platinum resistance thermometer (PRT) with a probe which conforms to the requirements of Specification [E1137/E1137M](#), readable to 0.1 °C. The PRT shall have a 3 or 4 wire connection configuration and the overall sheath length shall be at least 50 mm greater than the immersion depth.