



Designation: D3625/D3625M – 12

# Standard Practice for Effect of Water on Bituminous-Coated Aggregate Using Boiling Water<sup>1</sup>

This standard is issued under the fixed designation D3625/D3625M; 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 practice covers a rapid procedure for visually observing the loss of adhesion in uncompacted bituminous-coated aggregate mixtures due to the action of boiling water.

1.2 *Units*—The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the 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 and health 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>

**E1** Specification for ASTM Liquid-in-Glass Thermometers

**D979** Practice for Sampling Bituminous Paving Mixtures

## 3. Summary of Practice

3.1 A bituminous-coated aggregate mixture sample is placed in a container of boiling distilled water and boiled for 10 min. After cooling the boiled mixture, visual observation is made of retained bitumen coating on the aggregate.

<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 D04.22 on Effect of Water and Other Elements on Asphalt Coated Aggregates.

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<sup>2</sup> 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.

## 4. Significance and Use

4.1 This practice is useful as an indicator of the relative susceptibility of bituminous-coated aggregate to water, but should not be used as a measure of field performance because such correlation has not been established. If loss of adhesion due to water is indicated, testing by other procedures should be conducted to further evaluate the mixture.

4.2 This practice should not be used for acceptance/rejection by owner agencies.

## 5. Apparatus

5.1 *Scoop*, shovel or other implement capable of removing a representative sample from a larger mass of bituminous-coated aggregate mixture.

5.2 *Glass Beakers*, heat-resistant, 1000–2000 mL capacity or suitable metal containers of similar dimensions and capacity.

5.3 *Source of Distilled Water* (at least 500 mL (½ qt) for each test) (**Note 1**).

**NOTE 1**—Water that is not distilled has been shown to significantly affect results of the procedure and should not be used.

5.4 *Device for Heating Water*—gas burner with wire gauze supported on tripod or ring, hot plate, camp stove or other suitable device which will distribute heat evenly.

5.5 *Thermometers*—ASTM low-distillation thermometers graduated either in Celsius or Fahrenheit as specified, having a range from 2 to + 300C or 30 to 580F respectively, and conforming to the requirements for thermometer 7C or 7F as prescribed in Specification **E1**. Thermometric devices such as RTDs, thermistors or thermocouples with equal or better accuracy within the temperature range of thermometer 7C or 7F may be used.

## 6. Sample Preparation

6.1 Prepare an uncompacted bituminous-coated aggregate mixture following established laboratory procedures or obtain a sample of plant-produced mixture in accordance with Practice **D979**. The temperature of hot mixtures shall be below the boiling temperature of water, but not less than 85°C (180°F), before placing in boiling water. The temperature of mixtures