



Designation: D7196 – 16

Standard Test Method for Raveling Test of Cold Mixed Emulsified Asphalt Samples¹

This standard is issued under the fixed designation D7196; 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 (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method measures the resistance to raveling characteristics of emulsified asphalt and field aggregates or Recycled Asphalt Pavement (RAP) mixtures by simulating an abrasion similar to early return to traffic.

1.2 A precision and bias statement for this standard has not been developed at this time. Therefore, this standard should not be used for acceptance or rejection of a material for purchasing purposes.

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

1.4 *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.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D75 Practice for Sampling Aggregates

D977 Specification for Emulsified Asphalt

D979 Practice for Sampling Bituminous Paving Mixtures

D2397 Specification for Cationic Emulsified Asphalt

D3910 Practices for Design, Testing, and Construction of Slurry Seal

D4753 Guide for Evaluating, Selecting, and Specifying Balances and Standard Masses for Use in Soil, Rock, and Construction Materials Testing

D6372 Practice for Design, Testing, and Construction of Microsurfacing

D6925 Test Method for Preparation and Determination of the Relative Density of Asphalt Mix Specimens by Means

of the Superpave Gyrotory Compactor

2.2 *ISSA Document:*

ISSA Technical Bulletin No. 100 Test Method for Wet Track Abrasion of Slurry Surfaces

3. Summary of Test Method

3.1 An aggregate or RAP, or both, is mixed together with a preset amount of additives (if shown to be necessary), water (if necessary) and emulsified asphalt. This may be a field blended mixture (Method A) or a laboratory blended mixture (Method B). The mixture is compacted in a gyratory compactor and cured at the specified conditions for a designated period of time. After the assigned curing time, a rotating rubber hose exerts an abrasion force on the specimen for a preset time period and the abraded loss of material is calculated.

4. Significance and Use

4.1 This test is useful for classifying the curing and formulation of cold mixed emulsified asphalt samples through ravel testing of compacted specimens. This performance test should be used to rank the mix conditions and approximate curing time for return to traffic and resistance to weather damage.

5. Apparatus

5.1 *Hobart Mixer*—The $\frac{1}{3}$ H.P. Fixed Speed Motor, model A 120 will be used to abrade the sample.

5.2 *Raveling Test Adapter Base*—This base must fit the Hobart mixer in 5.1 and be an adequate and level support for clamping the test specimen in place. The test specimen should not move during abrasion. A picture of the base can be seen in Fig. 1.³

5.3 *Raveling Test Abrasion Head with Hose*—The abrasion head should be free floating over the sample and have a mass of 600 ± 15 g. This mass shall include the rubber hose. The rubber hose shall be a Parker 290 Ozex General Purpose Hose or equivalent. The hose shall be 19 mm ID by 6.25 mm wall thickness and cut to 127 mm in length. The rubber hose shall

¹ This test method is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.27 on Cold Mix Asphalts.

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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.

³ The sole source of supply of the Raveling Test Adapter Base known to the committee at this time is Precision Machine and Welding, Salina, Kansas. If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,¹ which you may attend.