Designation: D7196 – 06

StandardTest Method for Raveling Test of Cold Mixed Bituminous Emulsion Samples[1]

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 bituminous emulsion and field aggregates or Recycled Asphalt Pavement (RAP) mixtures by simulating an abrasion similar to early return to traffic.

1.2 The values stated in SI units are to be regarded as the standard unless otherwise indicated.

1.3 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.

1.4 *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
D2379 Test Method for Acidity of Formaldehyde Solutions
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 Micro-Surfacing
D6925 Test Method for Preparation and Determination of the Relative Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory 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 and/or RAP is mixed together with a preset amount of additives (if shown to be necessary), water (if necessary) and bituminous emulsion. 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 bituminous emulsion 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 ⅓ 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.

NOTE 1—A Raveling Test Adapter Base meeting the requirements can be purchased from Precision Machine and Welding, Salina, Kansas, (785) 823-8760.

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 (¾ in. ID by ¼ in. wall thickness) and cut to 127 mm (5 in.) in length. The rubber hose shall be easily removed so that it may be rotated or changed prior to testing to insure a clean surface for abrasion.

[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.

Current edition approved Feb. 15, 2006. Published March 2006. DOI: 10.1520/D7196-06.

[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.