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Standard Specification for

Materials for Asphalt Tack Coat

AASHTO Designation: MP xxx-yy¹

Technical Section: 2a

Release: Group 3 (Month yyyy)

Working Draft

AASHTO

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1. SCOPE

- 1.1. A tack coat is the application of an emulsified asphalt or performance graded (PG) asphalt binder, followed by any applied surface layer. The tack coat is used to ensure a good bond between the existing asphalt or concrete pavement, between the layers of a structural pavement and at any vertical surfaces that the new layer will be placed adjacent to, such as curbs, gutters, utilities, and construction joints.
- 1.2. This standard specifies quality requirements for emulsified asphalt or performance graded asphalt binder for tack coats.

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2. REFERENCED DOCUMENTS

- 2.1. AASHTO Standards:
- M 140, Emulsified Asphalt
 - M 208, Cationic Emulsified Asphalt
 - M 316, Polymer-Modified Emulsified Asphalt
 - M 320, Performance Graded Asphalt Binder
 - M 322, Performance Graded Asphalt Binder Using MSCR Test

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3. TERMINOLOGY

- 3.1. An emulsified asphalt is typically classified by how quickly it sets according to the following:
- 3.1.1. *slow-setting grades*—Slow-setting grades of emulsified asphalt, used for tack coats are SS-1, SS-1h, CSS-1, and CSS-1h. As manufactured, slow-setting emulsified asphalt contains a maximum of 43 percent water. With appropriate precautions, slow-setting emulsions and may be diluted with additional water.
- 3.1.2. *rapid-setting grades*—Rapid-setting grades of emulsified asphalt, including polymer modified emulsified asphalt and non-tracking materials are RS-1, RS-2, CRS-1, CRS-2. Rapid-setting emulsified asphalt already contains a maximum of 35 percent water and must not be diluted with additional water.
- 3.1.3. *quick-setting grades*—Quick-setting grades of emulsified asphalt used for tack coats are CQS-1 and CQS-1h. Quick-setting emulsified asphalt tack coat emulsions are formulated with a specialty emulsifier that reduces the setting time. Quick-setting emulsified asphalts contain a maximum of 43 percent water.
- Note 1**—Emulsified asphalt manufacturers may not stock all grades of emulsified asphalt.

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- 3.1.4. performance grade(PG) asphalt—PG asphalt binder may be used for tack coat. It is generally preferable to use the same grade of PG asphalt binder used in the asphalt mix for the tack coat. Grades used for hot-applied tack coats will vary with local climate and available performance grades (e.g., PG 64-22 PG 64S-22) or MSCR graded PG binders. The principal sources for PG asphalt binders are asphalt refineries or terminals. Unlike emulsified asphalt, asphalt binder carries no charge and may not be diluted with water.

4. SIGNIFICANCE AND USE

- 4.1. The contractor has the option of using any emulsified asphalt or asphalt binder that conforms to the Agency Standard Specifications for a tack coat. For emulsified asphalt, the rate of setting depends upon the type of emulsified asphalt, the amount of water added, the type and concentration of the emulsifying agent, and atmospheric conditions. The contractor must select either a cationic or anionic emulsified asphalt to be used for tack coat because cationic and anionic emulsified asphalt cannot be used together. Cationic emulsified asphalts are often recommended for areas with damp pavement, such as coastal areas, because they are less sensitive to moisture and temperature. Local contractor experience and manufacturer availability of tack coat material types and grades may dictate which type of material is ultimately selected by a contractor.

Note 2. Many agencies use special purpose tack applications that yield much higher bond strengths, reduce tracking, and allow tack coat emulsions to be applied at much higher rates. Examples include hot-applied materials, trackless tack emulsions, and tack emulsions as applied through a spray paver. These applications may be proprietary and should be specified through local agency standards.

5. ASPHALT REQUIREMENTS

- 5.1. Emulsified asphalt for tack coats shall meet the requirements of emulsified asphalt in M 140, M 208, or M 316. Performance graded asphalt binder shall meet the requirements of M 320 or M 322.
- 5.2. The emulsified asphalt residue hardness classification is determined by the owner agency utilizing regional climatic and traffic conditions.

6. KEYWORDS

- 6.1. Tack coat; emulsified asphalt; performance grade asphalt binder, PG asphalt binder

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