



Designation: D8099/D8099M – 17

## Standard Specification for Asphalt Emulsion Pavement Sealer (Mineral Colloid or Chemically Stabilized Type)<sup>1</sup>

This standard is issued under the fixed designation D8099/D8099M; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This specification covers water based asphalt emulsion (mineral colloid or chemically stabilized type) pavement sealer suitable for use as a weather-protective coating over bituminous pavements, such as roadways, parking areas, and drive-ways.

NOTE 1—Application shall be made in accordance with a forthcoming ASTM standard on the application of asphalt emulsion pavement sealer.

1.2 The values stated in 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>

C136/C136M Test Method for Sieve Analysis of Fine and Coarse Aggregates

C142/C142M Test Method for Clay Lumps and Friable Particles in Aggregates

D95 Test Method for Water in Petroleum Products and Bituminous Materials by Distillation

D140/D140M Practice for Sampling Asphalt Materials

D2939 Test Methods for Emulsified Bitumens Used as Protective Coatings (Withdrawn 2012)<sup>3</sup>

### 3. Materials and Manufacture

3.1 *Base Asphalt Emulsion*—This emulsion shall be made using binders prepared from crude petroleum.

3.2 *Mineral Filler (when used)*, shall consist of finely ground clay, silica, limestone, slate, basalt, slag, or other inert inorganic filler materials.

3.3 *Aggregate*—The aggregate shall be either a natural or manufactured angular aggregate composed of clean, hard, durable particles free of clay or other objectionable material. Aggregate used shall follow the manufacturer's recommendations; however, in all cases, 100 % of the aggregate shall pass a 2.38 mm [No. 8] mesh-sieve. Aggregate may either be added at the point of manufacture, post-added at the job site, or both.

3.4 *Additive*—The optional use of an additive shall be approved by the asphalt emulsion pavement sealer manufacturer.

### 4. Physical Requirements

4.1 The manufacturer shall approve the asphalt emulsion pavement sealer as to the specific composition to be used in the mix design.

4.2 The asphalt emulsion pavement sealer shall be of smooth, uniform consistency without separation or settlement in storage to the extent that it cannot be readily dispersed by ordinary stirring.

4.3 The asphalt emulsion pavement sealer shall be of suitable consistency for application above 10°C [50°F] in films by mechanical squeegee/brush equipment, or spray equipment capable of spraying coatings with aggregate without heating, and shall bond to dry surfaces.

4.4 *Mixture Testing*—Prior to application, the contractor shall submit samples of component materials for the proposed

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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.

<sup>3</sup> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).



mix in accordance with the terms of agreement between the contractor and owner/related parties. The samples shall be blended according to the manufacturer's recommendations, and tested for conformance with the physical property requirements contained in **Table 1**. The samples shall be tested by a laboratory designated by the owner/related parties.

## 5. Sampling

5.1 Sample in accordance with Practice **D140/D140M** and Test Methods **D2939**.

## 6. Inspection

6.1 Inspection of material shall be made as agreed upon between the purchaser and the supplier.

## 7. Packaging and Package Marking

7.1 The asphalt emulsion pavement sealer shall be packaged to permit acceptance by the carrier for transportation and to afford adequate protection from the normal hazards of shipping and handling.

**TABLE 1 Physical Requirements for Asphalt Emulsion Pavement Sealer (Mineral Colloid or Chemically Stabilized Type)**

Property	ASTM Designation	Characteristics	
		min	max
Uniformity	<b>D2939</b>	No separation, coagulation, or settlement that cannot be overcome by moderate stirring.	
Wet film continuity	<b>D2939</b>	Uniform homogeneous consistency.	
Density at 25°C [77°F], b/mL [lbs/gal]	<b>D2939</b>	1.0 [9]	1.5 [12]
Residue by evaporation, %	<b>D2939</b>	30	...
Water content, %	<b>D95</b>	...	70
Ash content of residue, %	<b>D2939</b>	10	70
Drying time, firm set, h	<b>D2939</b>		8
Resistance to heat	<b>D2939</b>	No blistering, sagging, or slipping.	
Resistance to water	<b>D2939</b>	No loss of adhesion and no blistering or tendency to re-emulsify.	
Flexibility	<b>D2939</b>	No flaking, cracking, or loss of adhesion to the substrate.	

## 8. Keywords

8.1 bituminous asphalt emulsion pavement sealer; chemically stabilized; mineral colloid

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