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# Standard Specification for Asphalt-Base Emulsions for Use as Protective Coatings for Metal<sup>1</sup>

This standard is issued under the fixed designation D1187; 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.

<sup>e1</sup> NOTE—Editorial switched from inch/pound dominant to SI dominant in April 2002.

## 1. Scope

1.1 This specification covers emulsified asphalt suitable for application in a relatively thick film as a protective coating for metal surfaces.

1.2 The values in SI units are to be regarded as standard. The values in parentheses are for information only.

## 2. Referenced Documents

2.1 *ASTM Standards*:<sup>2</sup>

[C150 Specification for Portland Cement](#)

[D2939 Test Methods for Emulsified Bitumens Used as Protective Coatings](#)

## 3. Classification

3.1 *Type I*—Quick-setting emulsified asphalt suitable for continuous exposure to water within a few days after application and drying.

3.2 *Type II*—Emulsified asphalt suitable for continuous exposure to the weather, only after application and drying.

## 4. Materials and Manufacture

4.1 Emulsified asphalt used as a protective coating for metal shall consist of asphalt, water, and emulsifying agents.

## 5. Composition

5.1 Emulsified asphalt complying with this specification shall conform to the requirements in [Table 1](#).

## 6. Performance Requirements

6.1 *Uniformity*—The emulsion shall be homogeneous. After a thoroughly stirred sample has been held at 10°C (50°F) in a

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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.

TABLE 1 Composition Requirements

	Type I	Type II
Density, min, g/L (lb/gal U.S.)	1010 (8.4)	990 (8.3)
Residue by evaporation, mass %	52.5 ± 2.5	62.5 ± 2.5
Nonvolatile matter soluble in trichloroethylene, min, mass %	85	94
Ash content, max, mass %	14.5	3.8
Water content mass %	47.5 ± 2.5	37.5 ± 2.5

closed container for 48 h, there shall be no separation of water, coagulation of the asphalt base, settling, or packing in the container that cannot be overcome by moderate hand stirring.

6.2 *Consistency*—The emulsion shall be of a consistency that will spread readily and permit application by brush, mop, or trowel at the rate of 1.0 L/m<sup>2</sup> (2.5 gal U.S./100 ft<sup>2</sup>) to vertical metal surfaces at ambient temperatures above 10°C (50°F). See Section 17 of Test Methods [D2939](#).

6.3 *Stability*—There shall be no coagulation during the cement addition or at the conclusion of the 1-min mixing period.

6.4 The emulsion shall conform to the additional requirements prescribed in [Table 2](#).

## 7. Sampling and Test Methods

7.1 Sample the material, and determine the properties enumerated in this specification in accordance with Test Methods [D2939](#), except for stability and flexibility.

7.2 *Stability*:

7.2.1 *Material*—High-early-strength portland cement conforming to the requirements for Type III of Specification [C150](#), and having a minimum specific surface area of 1900 cm<sup>2</sup>/g (133 556 in.<sup>2</sup>/lb).

7.2.2 *Procedure*:

7.2.2.1 Place about 200 g of emulsion in a tared 500-mL round-bottom porcelain dish, and weigh.

7.2.2.2 Add 25 mass % portland cement based on the weight of the emulsion, in small portions while stirring constantly with a stiff spatula.

7.2.2.3 Add small amounts of distilled water if the mixture becomes too stiff to be workable.