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# Standard Specification for Emulsified Asphalt<sup>1</sup>

This standard is issued under the fixed designation D 977; 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.

This standard has been approved for use by agencies of the Department of Defense.

# 1. Scope

1.1 This specification covers thirteen grades of emulsified asphalt for use in pavement construction in the manner designated.

#### 2. Referenced Documents

2.1 ASTM Standards:

D 140 Practice for Sampling Bituminous Materials<sup>2</sup> D 244 Test Methods for Emulsified Asphalts<sup>2</sup>

### 3. Requirements

3.1 The emulsified asphalt shall be tested within 14 days of

3.2 Emulsified asphalt shall conform to the requirements prescribed in Table 1.

# 4. Sampling

- 4.1 Samples of emulsified asphalt shall be taken in accordance with Practice D 140.
- 4.2 Samples shall be stored in clean, airtight sealed containers as specified in Practice D 140 at a temperature of not less than  $4^{\circ}$ C) until tested.

#### 5. Test Methods

5.1 The properties of the emulsified asphalts given in Table 1 shall be determined in accordance with Test Methods D 244.

# 6. Keywords

6.1 anionic; emulsion; emulsified asphalt; high float; medium setting; rapid setting; slow setting

delivery. The emulsified asphalt shall be homogeneous after thorough mixing provided separation has not been caused by freezing. Emulsified asphalts separated by freezing shall not be tested.

<sup>&</sup>lt;sup>1</sup> This specification is under the jurisdiction of ASTM Committee D-4 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.41 on Emulsified Asphalt Specifications.

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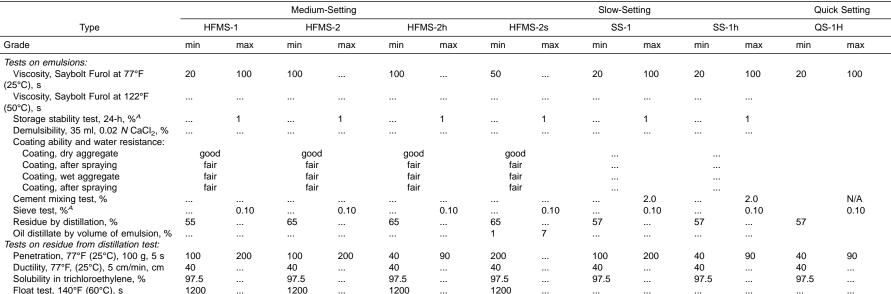
<sup>&</sup>lt;sup>2</sup> Annual Book of ASTM Standards, Vol 04.03.

#### **TABLE 1 Requirements for Emulsified Asphalt**

Note 1—QS-1H emulsions shall meet the requirements outlined in D 3910 Standard Practices for Design, Testing and Construction of Slurry Seal..

Note 2—QS-1h is used for Quick Set Slurry Seal systems.

	Rapid-Setting						Medium-Setting					
Туре	RS-1		RS-2		HFRS-2		MS-1		MS-2		MS	-2h
Grade	min	max	min	max	min	max	min	max	min	max	min	max
Tests on emulsions:												
Viscosity, Saybolt Furol at 77°F	20	100					20	100	100		100	
(25°C), s												
Viscosity, Saybolt Furol at 122°F			75	400	75	400						
(50°C), s												
Storage stability test, 24-h, % <sup>A</sup>		1		1		1		1		1		1
Demulsibility, 35 ml, 0.02 N CaCl <sub>2</sub> , %	60		60		60							
Coating ability and water resistance:												
Coating, dry aggregate	•••						good		good		good	
Coating, after spraying							fair		fair		fair	
Coating, wet aggregate							fair		fair		fair	
Coating, after spraying							fair		fair		fair	
Cement mixing test, %												
Sieve test, % <sup>A</sup>		0.10		0.10		0.10		0.10		0.10		0.10
Residue by distillation, %	55		63		63		55		65		65	
Oil distillate by volume of emulsion, %												
Tests on residue from distillation test:												
Penetration, 77°F (25°C), 100g, 5 s	100	200	100	200	100	200	100	200	100	200	40	90
Ductility, 77°F, (25°C), 5 cm/min, cm	40		40		40		40		40		40	
Solubility in trichloroethylene, %	97.5		97.5		97.5		97.5		97.5		97.5	
Float test, 140°F (60°C), s					1200							



<sup>&</sup>lt;sup>A</sup>This test requirement on representative samples is waived if successful application of the material has been achieved in the field.



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