

Standard Specification for

Cationic Emulsified Asphalt

AASHTO DESIGNATION: M 208-87¹
(ASTM DESIGNATION: D 2397-79)

1. SCOPE¹

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

NOTE—See AASHTO M 140 for emulsions other than cationic.

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

2. REFERENCED DOCUMENTS**2.1 AASHTO:**

M 140 Emulsified Asphalt

T 40 Sampling Bituminous Materials

T 59 Testing Emulsified Asphalts
T 200 pH of Aqueous Solutions with the Glass Electrode

3. REQUIREMENTS

3.1 The emulsified asphalt shall be homogeneous. Within 30 days after delivery, and provided separation has not been caused by freezing, the emulsified asphalt shall be homogeneous after thorough mixing.

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 AASHTO T 40, Sampling Bituminous Materials.

4.2 Samples shall be stored in clean airtight sealed containers at a temperature of not less than 4.5°C (40°F) until tested.

5. METHODS OF TEST

5.1 The properties of the emulsified asphalts given in Table 1 shall be determined in accordance with T 59, Testing Emulsified Asphalt, with the following exception:

5.2 pH Value—T 200 for pH of Aqueous Solutions with the Glass Electrode.

5.3 Sieve Test—Use distilled water in all wetting and washing operations in place of sodium oleate solution (2 percent).

¹ Except for particle charge requirements for the SS Grades, the Suggested Uses, and SI units, this Specification agrees with ASTM D 2397-79.

TABLE 1 Requirements and Typical Applications for Cationic Emulsified Asphalt^a

Type..... Grade.....	Rapid Setting				Medium Setting				Slow Setting			
	CRS-1		CRS-2		CMS-1		CMS-2		CSS-1		CSS-2	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Test on emulsions:												
Viscosity, Saybolt Furol at 25°C (77°F), s	20	100	100	400	50	450	50	450	20	100	20	100
Viscosity, Saybolt Furol at 50°C (122°F), s		1 ^b		1 ^b		1 ^b		1 ^b		1 ^b		1 ^b
Storage stability test, 24 h, %												
Demulsibility, 35 mL 0.8%												
Sodium dioctyl sulfosuccinate, %	40		40									
Classification test	pases		pases									
Coating, ability and water resistance:												
Coating, dry aggregate					good		good					
Coating, after spraying					fair		fair					
Coating, wet aggregate					fair		fair					
Coating, after spraying					fair		fair					
Particle charge test	positive		positive		positive		positive		positive ^c		positive ^c	
Sieve test, %		0.10 ^b		0.10 ^b		0.10 ^b		0.10 ^b		0.10 ^b		0.10 ^b
Cement mixing test, %												
Distillation:												
Oil distillate, by volume of emulsion, %		3		3		12		12				
Residue, %	60		65		65		65		57		57	
Tests on residue from distillation test:												
Penetration, 25°C (77°F), 100 g, 5 s	100	250	100	250	100	250	40	90	100	250	40	90
Ductility, 25°C (77°F), 50 mm/min, mm	40		40		40		40		40		40	
Solubility in trichlorethylene, %	97.5		97.5		97.5		97.5		97.5		97.5	

^a Refer to R 5 for typical applications.

^b This test requirement on representative samples may be waived, if successful application of the material has been achieved in the field.

^c If the particle charge test result is inconclusive, material having a maximum pH value of 6.7 will be acceptable, if previously agreed to by the buyer and seller.