

State: South Carolina	Materials: Re: Section 406-407
Date: 8-13-25	Web Address: www.scdot.org
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South Carolina		Table 1: Requirements for Anionic Emulsified Asphalts (1), (5)				
Property	Test Method AASHTO (T), ASTM (D), or Other	Rapid-Setting	Medium-Setting		Slow-Setting	
		RS-1	MS-1	MS-2	SS-1	
EMULSIONS:						
Viscosity, Saybolt Furol seconds	25° C (77° F)	20-100		100 min.	20-100	
	50° C (122° F)	-				
Storage Stability Test, 24 hours, %	(2)	1 max.				
Sieve Test, %	(2,3)	0.10 max.				
Demulsibility, %	(4)	60 min.	-			
Cement Mixing Test, %	T59	-			2.0 max.	
Coating Ability and Water Resistance		Dry Aggregate	-	Good		-
		After Spraying	-	Fair		-
		Wet Aggregate	-	Fair		-
		After Spraying	-	Fair		-
Residue, %		55 min.		65 min.	57 min.	
DISTILLATION RESIDUE:						
Penetration, 25° C (77° F), tenths of mm	T49	100-200				
Ductility, 25° C (77° F), cm	T51	40 min.				
Solubility in trichloroethylene or n-propyl bromide, %	T44	97.5 min.				
NOTES:	<ol style="list-style-type: none"> 1. Refer to R5 for typical applications. 2. This test requirement on representative samples is waived if successful application of the material has been achieved in the field. 3. A maximum percentage of 0.30 is acceptable for samples taken at the point of use. 4. The demulsibility test shall be performed within 30 days from the date of shipment. Use 35 ml, 0.02 N CaCl₂ solution. 					

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| | <p>5. Less Tracking Tack Coat Materials (Anionic-Cationic and Hot Applied) formulation is up to supplier: Must place field test section and obtain field samples to demonstrate low tracking properties and bond strength--min 100 PSI using LISSTdevice.</p> |
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Table 2: Requirements for Cationic Emulsified Asphalts (1), (4)

Property	Test Method AASHTO (T), ASTM (D), or Other	Rapid-Setting			Medium-Setting	Slow-Setting		Quick-Setting
		CRS-1	CRS-1h (MIRS)	CRS-2	CMS-2	CSS-1	CSS-1h	CQS-1h (Micro)
Viscosity, Saybolt Furol seconds	25° C (77° F)	-			20-100			
	50° C (122° F)	20-100		100-400	50-450	-		
Storage Stability Test, 24 hours, %	(2)	1 max.						
Sieve Test, %	(2)	0.10 max.						
Particle Charge		Positive						
Demulsibility, %	(3)	40 min.	-	40 min.	-			
Cement Mixing Test, %		-			2.0 max.		-	
Coating Ability and Water Resistance	Dry Aggregate	-			Good	-		
	After Spraying	-			Fair	-		
	Wet Aggregate	-			Fair	-		
	After Spraying	-			Fair	-		
Residue, %		60 min.	55 min.	65 min.		57 min.		62 min.
Oil Distillate, volume of emulsion, %		3 max.	12 max.	3 max.	12 max.	-		0.50 max.
DISTILLATION RESIDUE:								
Penetration, 25° C (77° F), tenths of mm	T49	100-250	50-100	100-250			40-90	40-100
Ductility, 25° C (77° F), cm	T51	40 min.	-	40 min.				
Solubility in trichloroethylene, %	T44	97.5 min.						
NOTES:	<ol style="list-style-type: none"> 1. Refer to R5 for typical applications. 2. This test requirement on representative samples is waived if successful application of the material has been achieved in the field. 3. Use 35 ml of 0.8% sodium dioctyl sulfosuccinate solution. 4. Less Tracking Tack Coat Materials (Anionic-Cationic and Hot Applied) formulation is up to supplier: Must place field test section and obtain field samples to demonstrate low tracking properties and bond strength--min 100 PSI using LISSTdevice. 							

Table 3: Requirements for High Float Emulsified Asphalt (1), (4)

Property	Test Method AASHTO (T), ASTM (D), or Other	Medium-Setting		
		HFMS-1	HFMS-2	
EMULSIONS:				
Viscosity, Saybolt Furol seconds	25° C (77° F)	T59	20-100	100 min.
	50° C (122° F)		-	
Storage Stability Test, 24 hours, % (2)	1 max.			
Sieve Test, % (2,3)	0.10 max.			
Demulsibility, %	-			
Coating Ability and Water Resistance	Dry Aggregate		Good	
	After Spraying		Fair	
	Wet Aggregate		Fair	
	After Spraying		Fair	
Residue, %	55 min.		65 min.	
DISTILLATION RESIDUE:				
Penetration, 25° C (77° F), tenths of mm	T49	100-200		
Ductility, 25° C (77° F), cm	T51	40 min.		
Solubility in trichloroethylene, %	T44	97.5 min.		
Float Test at 60° C (140° F), seconds	T50	1200 min.		
NOTES:	<ol style="list-style-type: none"> 1. Refer to R5 for typical applications. 2. This test requirement on representative samples is waived if successful application of the material has been achieved in the field. 3. A maximum percentage of 0.30 is acceptable for samples taken at the point of use. 4. Less Tracking Tack Coat Materials (Anionic-Cationic and Hot Applied) formulation is up to supplier: Must place field test section and obtain field samples to demonstrate low tracking properties and bond strength--min 100 PSI using LISSTdevice. 			

Table 4: Requirements for Polymer Modified Asphalt Emulsions (3)

Property	Test Method AASHTO (T), ASTM (D), or Other	Rapid-Setting	
		CRS-2P or CRS-2L (1) (Surface Treatments)	
EMULSIONS:			
Viscosity, Saybolt Furol seconds	50 °C (122 °F)	T59	100-400
Storage Stability Test, 24 hours, %			1 max.
Sieve Test, %			0.10 max.
Particle Charge Test			Positive
Demulsibility, %			40 min.
Residue by Distillation, %			65 min.
DISTILLATION RESIDUE:			
Penetration, 25 °C (77 °F), tenths of mm	T49		100-175
Ductility, 5 cm/minute, cm	4 °C (39.2 ° F)	T51	30 min.
	25 °C (77°F)		125 min.
Elastic Recovery, 25 °C (77 °F), %	T301		50 min.
Polymer Solids content, %	-		2.5 min.
Solubility in Trichloroethylene, %	T44		97.5 min. (2)
NOTES:	<ol style="list-style-type: none"> 1. Add either natural latex, a styrene-butadiene-styrene (SBS) polymer, or an unvulcanized styrene-butadiene rubber (SBR) in an emulsified latex form to a PG 58-22 base asphalt at the necessary proportions to result in 3% polymer by weight of the asphalt residue. Do not perform any post blending or acid modification of the CRS-2P. The RCE will sample the asphalt at a frequency of not less than one sample per 25,000 gallons and will submit the sample to the OMR within 7 days if sampling. 2. If the solubility of the residue is less than 97.5 percent, the base asphalt binder for the emulsion shall be tested. The solubility of the base asphalt binder shall be greater than 99%. 3. Less Tracking Tack Coat Materials (Anionic-Cationic and Hot Applied) formulation is up to supplier: Must place field test section and obtain field samples to demonstrate low tracking properties and bond strength--min 100 PSI using LISSTdevice. 		

South Carolina		Table 5: Requirements for EA-P Special Emulsion (1)	
Property		Test Method AASHTO (T), ASTM (D), or Other	Slow-Setting Prime
EMULSIONS:			
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	10.0-50.0
Sieve Test, %			0.10 max.
Residue by Distillation, %			40.0 min.
Oil Distillate, volume of emulsion, %			8.0 max.
NOTES:		1. Less Tracking Tack Coat Materials (Anionic-Cationic and Hot Applied) formulation is up to supplier: Must place field test section and obtain field samples to demonstrate low tracking properties and bond strength--min 100 PSI using LISSTdevice.	