State: Mississippi	**Materials:** Re: Section 702 - Bituminous Material
Date: 8/13/25	**Web Address:** https://mdot.ms.gov/portal/engineering_standards_guides_manuals
Contact: Griffin Sullivan	**Contact Info:** wsullivan@mdot.ms.gov
NOTES: All approved emulsions are listed in the state Approved Product List (APL) at: http://sp.mdot.ms.gov/Materials/Pages/Approved-Products-List-(APL).aspx	

Mississippi		**Table 1: Requirements for Anionic Emulsified Asphalts (1)**							
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**Rapid-Setting**		**Medium-Setting**			**Slow-Setting**		**Quick-Setting**
			RS-1	**RS-2**	**MS-1**	**MS-2**	**MS-2h**	**SS-1**	**SS-1h**	**QS-1H**
EMULSIONS:										
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	20-100	-	20-100	100 min.		20-100		
	50 °C (122 °F)		-	75-400	-					
Storage Stability Test, 24 hours, % (2)			1 max.							-
Sieve Test, % (2,3)			0.10 max.							
Demulsibility, % (4)			60 min.	60 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, %			55 min.	65 min.	55 min.	65 min.		57 min.		
DISTILLATION RESIDUE (5):										
Penetration, 25 ºC (77 °F), tenths of mm		T49	90-150				40-90	90-150	40-90	
Ductility, 25 ºC (77 °F), cm		T51	40 min.							
Solubility in trichloroethylene or n-propyl bromide, %		T44	-							97.5 min.
Ash Content		T111/ D8078	1.0 max.							-
NOTES:		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* $CaCl_2$ solution. 5. The required tests on residue may be performed on residue obtained by evaporation at 325 °F, 3 hours, 50 g, after filtering through a No. 50 sieve; however, in the event of the failure of any test performed on this residue, the emulsion shall be distilled and the test repeated in the residue so obtained.							

Mississippi		Table 2: Requirements for Cationic Emulsified Asphalts (1)							
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**Rapid-Setting**		**Medium-Setting**		**Slow-Setting**		**Quick-Setting**
			CRS-1	**CRS-2**	**CMS-2**	**CMS-2h**	**CSS-1**	**CSS-1h**	**CQS-1h**
EMULSIONS:									
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	-				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.		-				
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.	65 min.			57 min.		62 min.
Oil Distillate, volume of emulsion, %			3 max.		12 max.		-		
DISTILLATION RESIDUE (4):									
Penetration, 25 ºC (77 °F), tenths of mm		T49	90-150			40-90	90-150	40-90	
Ductility, 25 ºC (77 °F), cm		T51	40 min.						
Ash Content, %		T111	1.0						
NOTES:		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. The required tests on residue may be performed on residue obtained by evaporation at 325 °F, 3 hours, 50 g, after filtering through a No. 50 sieve; however, in the event of the failure of any test performed on this residue, the emulsion shall be distilled and the test repeated in the residue so obtained.							

Mississippi		Table 3: Requirements for High Float Emulsified Asphalt (1)					
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**Rapid-Setting**	**Medium-Setting**			
			HFRS-2	**HFMS-1**	**HFMS-2**	**HFMS-2h**	**HFMS-2s**
EMULSIONS:							
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	-	20-100	-		
	50 °C (122 °F)		75-400	-	100 min.		
Storage Stability Test, 24 hours, % (2)			1 max.				
Sieve Test, % (2,3)			0.10 max.				
Demulsibility , % (4)			50 min.	-			
Coating Ability and Water Resistance	Dry Aggregate		-	Good			
	After Spraying		-	Fair			
	Wet Aggregate		-	Fair			
	After Spraying		-	Fair			
Residue, %			65 min.	55 min.	65 min.		
Oil Distillate, volume of emulsion, %			-				1-7
DISTILLATION RESIDUE (5):							
Penetration, 25 ºC (77 °F), tenths of mm		T49	100-250	100-200	90-250	40-90	250 min.
Ductility, 25 ºC (77 °F), cm		T51	40 min.				
Solubility in trichloroethylene, % (6)		T44	-	97.5 min.	-		
Ash Content, %		T111	1.0 max				
Float Test at 60 °C (140 °F), seconds		T50	1200 min.				

NOTES:

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* $CaCl_2$ solution.
5. The required tests on residue may be performed on residue obtained by evaporation at 325 °F, 3 hours, 50 g, after filtering through a No. 50 sieve; however, in the event of the failure of any test performed on this residue, the emulsion shall be distilled and the test repeated in the residue so obtained.
6. N-propyl bromide may also be used for HFRS-2.

Mississippi		Table 4: Requirements for Polymer Modified Asphalt Emulsions		
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**Rapid-Setting**	
			CRS-2P	**CRS-2L**
EMULSIONS:				
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	-	
	50 °C (122 °F)		100-400	
Settlement, 5 days, %			-	
Storage Stability Test, 24 hours, %			1 max.	
Sieve Test, %			0.10 max.	
Particle Charge Test			Positive	
Demulsibility, %			40 min.	
Residue by Distillation, %		T59	65 min.	
EVAPORATION RESIDUE:				
Penetration, 25 °C (77 °F), tenths of mm		T49	90-150	100-175
Force Ratio (f2/f1)		T300	0.30 min.	-
Elastic Recovery, 25 ºC (77 °F), %		T301	60 min.	-
Polymer Solids content, %		-	2.5 min.	
Solubility in Trichloroethylene, %		T44	-	97.5 min. (1)
Ash Content, %		T111	1.0 max.	-
NOTES:		1. 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%.		

Mississippi		Table 5: Requirements for EA-1 Prime	
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**EA-1**
EMULSIONS:			
Viscosity, Saybolt Furol Seconds	25 °C (77 °F)	T59	-
	50 °C (122 °F)		30-100
Water Content Xylene Distillation, %		-	3-8
RESIDUE FROM DISTILLATION:			
Penetration, 25 °C (77 °F), tenths of mm		T49	80-300
Ductility, 25 °C (77 °F), cm		T51	40 min.
Solubility in Trichloroethylene, %		T44	97.0 min.
Asphalt Cement, % of Total Primer		-	50.0 min.
NOTES:		None.	

Mississippi		Table 6: Requirements for AE-P Prime	
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**AE-P**
EMULSIONS:			
Viscosity, Saybolt Furol Seconds	25 °C (77 °F)	T59	10-50
	50 °C (122 °F)		-
Settlement, 5 days, %			5 max.
Total Distilllate, % weight (1)			55 max.
Oil Distillate, volume of emulsion, %			12 max.
RESIDUE FROM DISTILLATION:			
Solubility in Trichloroethylene, %		T44	97.5 min.
Float Test at 60 °C (140 °F), seconds		T50	20 min.
NOTES:		1. Distillation to 500 °F	