State: Tennessee	**Materials:** Re: Subsection 904.03; see also, 900SS.
Date: 4/16/2026	**Web Address:** https://www.tn.gov/tdot/tdot-construction-division/transportation-construction-division-resources/transportation-construction-2015-standard-specifications.html
Contact: Derek Gaw	**Contact Info:** derek.gaw@tn.gov

Tennessee		**Table 1: Requirements for Anionic Emulsified Asphalts (1)**			
Property	**Test Method AASHTO (T), ASTM (D), or Other.**	**Rapid-Setting**		**Slow-Setting**	
		RS-1	**RS-2**	**SS-1**	**SS-1h**
EMULSIONS:					
Viscosity, Saybolt Furol seconds (4.) 25 °C (77 °F)	T59	20-100	-	20-100	
Viscosity, Saybolt Furol seconds (4.) 50 °C (122 °F)		-	75-400	-	-
Storage Stability Test, 24 hours, %		1 max.			
Sieve Test, % (2)		0.10 max.			
Demulsibility, % (3)		60 min.	60 min.	-	-
Cement Mixing Test, %		-	-	-	-
Residue, %		55 min.	63 min.	57 min.	57 min.
DISTILLATION RESIDUE:					
Penetration, 25 ºC (77 °F), tenths of mm	T49	100-200			40-90
Ductility, 25 ºC (77 °F), cm	T51	40 min.			
NOTES:	1. Refer to R5 for typical applications. 2. A maximum percentage of 0.30 is acceptable for samples taken at the point of use. 3. The demulsibility test shall be performed within 30 days from the date of shipment. Use 35 ml, 0.02 *N* $CaCl_2$ solution. 4. Alternatively, meet the Rotational Paddle Viscometer specifications in AASHTO M 140, M 208, or M 316				

Tennessee		Table 2: Requirements for Cationic Emulsified Asphalts (1)					
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**Rapid-Setting**		**Slow-Setting**		**Quick-Setting**
			CRS-2	**CRS – 1 (4)**	**CSS-1**	**CSS-1h**	**CQS-1h**
EMULSIONS:							
Viscosity, Saybolt Furol seconds (5.)	25 °C (77 °F)	T59	-	-	20-100		
	50 °C (122 °F)		100-400	20 - 100	-	-	-
Storage Stability Test, 24 hours, %			1 max.				-
Sieve Test, % (2)			0.10 max.				
Particle Charge			Positive				
Demulsibility , % (3)			40 min.	40 min.	-	-	-
Cement Mixing Test, %			-	-	-	-	-
Coating Ability and Water Resistance	Dry Aggregate		-	-	-	-	-
	After Spraying		-	-	-	-	-
	Wet Aggregate		-	-	-	-	-
	After Spraying		-	-	-	-	-
Residue, %			65 min.	60 min.	57 min.	57 min.	62 min.
Oil Distillate, volume of emulsion, %			3 max.	3.0 max	-	-	-
DISTILLATION RESIDUE:							
Penetration, 25 ºC (77 °F), tenths of mm		T49	100-250	100 - 250	100-250	40-90	40-90
Ductility, 25 ºC (77 °F), cm		T51	40 min.	40 min.	40 min.	40 min.	40 min.
NOTES:		1. Refer to R5 for typical applications. When approved by the engineer, cationic emulsions may be substituted for anionic emulsions. 2. A maximum percentage of 0.30 is acceptable for samples taken at the point of use. 3. Use 35 ml of 0.8% sodium dioctyl sulfosuccinate solution. 4. CRS – 1 added in Supplemental Specification – 900SS dated January 1, 2021 5. Alternatively, meet the Rotational Paddle Viscometer specifications in AASHTO M 140, M 208, or M 316					

Tennessee		Table 3: Requirements for Polymer Modified Asphalt Emulsions	
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**CRS-2P**
EMULSIONS:			
Viscosity, Saybolt Furol Seconds, range (2.)	50 °C (122 °F)	T59	100-400
Storage Stability Test, 24 hours, %			1 max.
Sieve Test, %	(1)		0.1 max
Particle Charge Test			Positive
Demulsibility, %			40 min.
Residue by Evaporation, %			65 min.
EVAPORATION RESIDUE:			
Penetration, 25 ºC (77 °F), tenths of mm		T49	75-175
Ductility, 25 ºC (77 °F), cm		T51	40 min.
Elastic Recovery, 25 ºC (77 °F), %		T301	50 min.
Softening Point, °F		T53	125 min.
NOTES:		1. A maximum percentage of 0.30 is acceptable for samples taken at the point of use. 2. Alternatively, meet the Rotational Paddle Viscometer specifications in AASHTO M 140, M 208, or M 316	

Tennessee		Table 4: Requirements for Special Emulsified Asphalts		
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**Anionic**	**Cationic**
			AE-P	**CAE-P**
EMULSIONS:				
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	10-50 (2.)	10-50 (2.)
	50 °C (122 °F)		-	-
Settlement, 5 days, %			5 max.	-
Storage Stability Test, 24 hours, %			-	1 max.
Sieve Test, % (1)			0.10 max.	0.10 max.
Particle Charge			-	Positive
Stone Coating, % coated			-	-
Residue, %			55 max.	55 max.
Oil Distillate, volume of emulsion, %			12 max.	12 max.
DISTILLATION RESIDUE:				
Penetration, 25 ºC (77 °F), tenths of mm		T49	-	300 min.
Ductility, cm	4 °C (39 °F)	T51	-	-
	25 ºC (77 °F)		-	40 min.
Elastic Recovery, 10 °C (50 °F), %		T301	-	-
Float Test at 60 °C (140 °F), seconds		T50	20 min.	-
NOTES:		1. A maximum percentage of 0.30 is acceptable for samples taken at the point of use. 2. Alternatively, meet the Rotational Paddle Viscometer specifications of 20 – 100 mPa s		

Tennessee		Table 5: Requirements for Emulsified Asphalts for Micro-Surface	
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**Quick-Setting**
			CQS-1h-p
EMULSIONS:			
Viscosity, Saybolt Furol seconds (2.)	25 °C (77 °F)	T59	20-100
	50 °C (122 °F)		-
Sieve Test, % (1)			0.10 max.
Particle Charge			Positive
Residue, %			62 min.
DISTILLATION RESIDUE:			
Penetration, 25 ºC (77 °F), tenths of mm		T49	40-90
Ductility, cm	25 ºC (77 °F)	T51	70 min.
Softening Point (Ring and Ball), °C (°F)		T53	57 (135) min.
NOTES:		1. A maximum percentage of 0.30 is acceptable for samples taken at the point of use. 2. Alternatively, meet the Rotational Paddle Viscometer specifications in AASHTO M 140, M 208, or M 316	