State: Kansas	**Materials:** Re: Section 1203 – Emulsified Asphalt
Date: 2-26-2025	**Web Address:** www.ksdot.org
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Kansas		**Table 1: Requirements for Anionic Emulsified Asphalts**				
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**RS-1H**	**SS-1H**	**MS-1**	**SS-1HP**
EMULSIONS:						
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	-	10-100	-	10-75
	50 °C (122 °F)		75-300	-	100-400	-
Storage Stability Test, 24 hours, %			1 max.			
Sieve Test, %			0.50 max.			0.1 max.
Demulsibility, %			60 min. (1)	-	75 min. (2)	-
Residue, %			65 min.	57 min.	65 min.	57 min.
Oil Distillate, volume of emulsion, %			-		8 max.	-
DISTILLATION RESIDUE:						
Penetration, 25 ºC (77 °F), tenths of mm		T49	75-150	75-125	300 min.	75-150
Ductility, cm	25 ºC (77 °F)	T51	80 min.		-	10-35
Solubility in trichloroethylene, %		T44	97.5 min.			-
Elastic Recovery, 50 °F, %		T301	-			25 min.
NOTES:		1. Use 35 ml of 0.02 N $CaCl_2$ 2. Use 50 ml of 0.1 N $CaCl_2$				

Kansas		Table 2: Requirements for Cationic Emulsified Asphalts				
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**CRS-1H**	**CSS-1H**	**CMS-1**	**CSS-Special**
EMULSIONS:						
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	-	10-60	-	
	50 °C (122 °F)		75-300	-	100-400	-
Storage Stability Test, 24 hours, %			1 max.			-
Sieve Test, %			0.50 max.			0.1 max.
Residue, %			65 min.	57 min.	65 min.	64.0-66.0
Oil Distillate, volume of emulsion, %			3 max.	-	8 max.	0.5 max.
DISTILLATION RESIDUE:						
Penetration, 25 ºC (77 °F), tenths of mm		T49	75-150	50-100	300 min.	(1)
Ductility, 25 ºC (77 °F), cm		T51	80 min.		-	
Solubility in trichloroethylene, %		T44	97.5 min.			-
Viscosity, 180 °F, Saybolt Furol seconds		T59	-		300-700	-
NOTES:		1. Determined by the producer.				

Kansas		Table 3: Requirements for Polymer Modified Emulsified Asphalts (1)			
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**RS-1HP**	**CRS-1HP**	**CSS-1HM**
EMULSIONS:					
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	-		10-60
	50 °C (122 °F)		75-300		-
Storage Stability Test, 24 hours, %			1 max.		
Sieve Test, %			0.50 max.		
Demulsibility , %			60 min. (2)	-	
Residue, %	(3)		65 min.		57 min.
Oil Distillate, volume of emulsion, %			-	3 max.	-
DISTILLATION RESIDUE:					
Penetration, 25 ºC (77 °F), tenths of mm		T49	75-150		50-100
Ductility, 25 ºC (77 °F), cm		T51	80 min.		
Solubility in trichloroethylene, %		T44	97.5 min.		
Elastic Recovery, 25 °C (77 °F), %		T301	60 min.		-

NOTES:

1. Provide a modified asphalt emulsion that contains a minimum of 3.0 % polymer solids by weight of asphalt. Provide material that shows no evidence of a white substance on the surface after standing for 24 hours. For use in microsurfacing. Formulate the modified emulsified asphalt so that if the paving mixture is applied at a thickness of 1 inch, and the relative humidity is not more than 50% with the ambient air temperature at least 75 °F, it will cure sufficiently so rolling traffic can be allowed on the pavement in 1 hour with no damage to the surface. It must show no separation after mixing. If the Contractor's storage tanks are equipped with a mechanical propeller type agitation device, and the entire contents fo the tank are thoroughly mixed before each day's use, the requirement for satisfactory compliance with the 5 day settlement test will be waived.
2. Use 35 ml of 0.02 N $CaCl_2$
3. Modify the distillation procedure of AASHTO T59 as follows: Slowly bring the temperature on the lower thermometer to 350 ± 9 °F and maintain for 20 minutes. Complete the distillation in 60 ± 15 minutes from the first application of heat.

Kansas		Table 4: Requirements for Emulsion Bonding Liquid	
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**EBL**
EMULSIONS:			
Viscosity, Saybolt Furol seconds	50 °C (122 °F)		25-125
Storage Stability Test, 24 hours, %	(1)		1 max.
Sieve Test, %	(2)		0.3 max.
Demulsibility , %	(3)		60 min.
Residue, %	(4)		63 min.
Oil Distillate, volume of emulsion, %			2 max.
DISTILLATION RESIDUE:			
Penetration, 25 ºC (77 °F), tenths of mm		T49	90-150
Elastic Recovery, 50 °F, %		T301	60 min.
NOTES:		1. After standing undisturbed for 24 hours, the surface shall show no white, milky colored substance, but shall be a smooth homogeneous color throughout. 2. The Sieve Test is waived if successful application of the material has been achieved in the field. 3. AASHTO T59 with modifications to include a 400 ± 10 °F maximum temperature to be held for a period of 20 minutes. 4. The organic solvent shall be approved by the Engineer as suitable. The test may be waived by the Engineer.	

Kansas		Table 5: Requirements for Asphalt Rejuvenating Agent	
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**Asphalt Rejuvenating Agent**
EMULSIONS:			
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	15-100
Storage Stability Test, 24 hours, % (1)			1 max.
Sieve Test, % (2)			0.10 max.
Residue, % (3)			60 min.
Oil Distillate, volume of emulsion, %			2 max.
DISTILLATION RESIDUE:			
Penetration, 25 ºC (77 °F), tenths of mm		T49	50-150
Asphaltenes, %		-	25 max.
Elastic Recovery, 4 ºC, 20cm, % min.		T301	60
NOTES:		1. After standing undisturbed for 24 hours, the surface shall show no white, milky colored substance, but shall be a smooth homogeneous color throughout. 2. The Sieve Test is waived if successful application of the material has been achieved in the field. 3. Use modified AASHTO T 59 procedure – distillation temperature of 350°F with a 20 minute hold.	