

State: Illinois	Materials: Re: Section 1032, Bituminous Materials
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Illinois		Table 1: Requirements for Anionic Emulsified Asphalts (1)			
Property		Test Method AASHTO (T), ASTM (D), or Other	Rapid-Setting	Slow-Setting	
			RS-2	SS-1	SS-1h
EMULSIONS:					
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	-	20-100	20-100
	50 °C (122 °F)		75-400	-	-
Paddle Viscosity, mPa-s	25 °C		-	40-200	40-200
	50 °C		150-800	-	-
Storage Stability Test, 24 hours, % (2)			1 max.		
Sieve Test, % (2)			0.10 max.		
Demulsibility, % (3)			60 min.	-	-
Cement Mixing Test, %			-	2.0 max. (4)	2.0 max. (4)
Residue, %			65 min.	57 min.	57 min.
DISTILLATION RESIDUE:					
Penetration, 25 °C (77 °F), tenths of mm	T49	90-150	90-250	40-90	
Ductility, 25 °C (77 °F), cm	T51	40 min.			
Solubility in trichloroethylene (5)	T44	97.5 min.			
Ash Test, %	T111	1.0 max.			
NOTES:	<ol style="list-style-type: none"> 1. Refer to 1032.06 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, 0.02 N CaCl₂ solution. 4. Cement Mixing Test is waived when the emulsion is being used as a tack coat. 5. IDOT is no longer using TCE. Suppliers are allowed to use solubility in TCE test per AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent 				

To ensure the most accurate and current information, the specific agency should be contacted.

Illinois		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	CSS-1	CSS-1h	CQS-1h	
EMULSIONS:						
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	-	20-100	20-100	20-100	
	50 °C (122 °F)	100-400	-	-	-	
Paddle Viscosity, mPa-s	25 °C	-	40-200	40-200	40-200	
	50 °C	200-800	-	-	-	
Storage Stability Test, 24 hours, % (2)	T59	1 max.	1 max.	1 max.	-	
Sieve Test, % (2)		0.10 max.				
Particle Charge		Positive				
Demulsibility, % (3)		40 min.	-	-	-	
Cement Mixing Test, %		-	2.0 max. (5)	2.0 max. (5)	-	
Residue, %		65 min.	57 min.	57 min.	62 min.	
Oil Distillate, volume of emulsion, %		3 max.	-	-	-	
DISTILLATION RESIDUE:						
Penetration, 25 °C (77 °F), tenths of mm		T49	90-150	90-250	40-90	40-90
Ductility, 25 °C (77 °F), cm		T51	40 min.			
Solubility in trichloroethylene, % (4)	T44	97.5 min.				
Ash Test, %	T111	1 max.				
NOTES:	<ol style="list-style-type: none"> 1. Refer to 1032.06 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. IDOT is no longer using TCE. Suppliers are allowed to use solubility in TCE test per AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent 5. Cement Mixing Test is waived when the emulsion is being used as a tack coat. 					

Illinois		Table 3: Requirements for High Float Emulsified Asphalt (1)				
Property		Test Method AASHTO (T), ASTM (D), or Other	Rapid-Setting			
			HFRS-2	HFE-90	HFE-150	HFE-300
EMULSIONS:						
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	-	-	-	-
	50 °C (122 °F)		75- 400	50 min. (2)	50 min. (2)	50 min. (2)
Paddle Viscosity, mPa-s	25 °C (77 °F)		-	-	-	-
	50 °C (122 °F)		150 - 800	-	-	-
Storage Stability Test, 24 hours, %			1 max. (3)	1 max. (3)	1 max. (3)	1 max. (3)
Sieve Test, %			0.10 max. (3)	0.10 max.	0.10 max.	0.10 max.
Demulsibility , % (4)			50 min.	-	-	-
Coating Test, 3 minutes			-	Stone Coated Thoroughly	Stone Coated Thoroughly	Stone Coated Thoroughly
Residue, %			65 min.	65 min.	65 min.	65 min.
Oil Distillate, volume of emulsion, %			-	7 max.	7 max.	7 max.
DISTILLATION RESIDUE:						
Penetration, 25 °C (77 °F), tenths of mm		T49	100-250	90-150	150-300	300 min.
Ductility, 25 °C (77 °F), cm		T51	40 min.	-	-	-
Solubility in trichloroethylene, % (5)		T44	97.5 min.	-	-	-
Ash Content, %		T111	1.0 max	-	-	-
Float Test at 60 °C (140 °F), seconds		T50	1200 min.			
NOTES:		<ol style="list-style-type: none"> 1. Refer to 1032.06 for typical applications. 2. The emulsion shall be pumpable. 3. This test requirement on representative samples is waived if successful application of the material has been achieved in the field. 4. Use 35 ml, 0.02 N CaCl₂ solution. 5. IDOT is no longer using TCE. Suppliers are allowed to use solubility in TCE test per AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent 				

Illinois		Table 4: Requirements for Polymer Modified Asphalt Emulsions				
Property	Test Method AASHTO (T), ASTM (D), or Other	Anionic		Cationic		
		HFRS-2P	SS-1hP (1)	CRS-2P (1)	CSS-1hP (1)	
EMULSIONS:						
Viscosity, Saybolt Furol Seconds, range	25 °C (77 °F)	-	20-100	-	20-100	
	50 °C (122 °F)	75-400	-	100-400	-	
Paddle Viscosity, mPa-s	25 °C	-	40-200	-	40-200	
	50 °C	150-800	-	200-800	-	
Storage Stability Test, 24 hours, % (2)	T59	1 max.				
Sieve Test, %		0.10 max.				
Particle Charge Test		-	-	Positive	Positive	
Demulsibility, %		50 min.	-	40 min.	-	
Cement Mixing Test, %		-	2.0 max. (4)	-	2.0 max. (4)	
Residue, % (3)		65 min.	57 min.	65 min.	57 min.	
Oil Distillate, volume of emulsion, %		3 max.	-	-	-	
Penetration, 25 °C (77 °F), tenths of mm		T49	100-200	40-90	90-150	40-90
Float Test at 60 °C (140 °F), seconds		T50	1200 min.	-	-	-
Elastic Recovery, 10 °C, %		T301	60 min.	25 min.	60 min.	25 min.
Solubility in trichloroethylene, % (5)	T44	97.5 min.				
Ash Content, %	T111	1 max				
NOTES:	<ol style="list-style-type: none"> The emulsified asphalt shall be modified with a styrene-butadiene diblock or triblock polymer, or a styrene-butadiene rubber. Upon examination of the Storage Stability Test cylinder after standing undisturbed for 24 hours, the surface shall show no white, milky colored substance and shall be a homogenous brown color throughout. The distillation for Polymer Modified Emulsion shall be performed according to AASHTO T59, except the temperature shall be 374 ± 9 °F (190 ± 5 °C) and measured using an ASTM 16F (16C) thermometer. Cement Mixing Test is waived when the emulsion is being used as a tack coat. IDOT is no longer using TCE. Suppliers are allowed to use solubility in TCE test per AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent 					

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Illinois		Table 5: Requirements for Latex Modified Emulsified Asphalts		
Property	Test Method AASHTO (T), ASTM (D), or Other	CQS-1hP (1)		
EMULSIONS:				
Viscosity, Saybolt Furol Seconds	25 °C (77 °F)	T59	20-100	
	50 °C (122 °F)		-	
Paddle Viscosity, mPa-s	25 °C		40-200	
	50 °C		-	
Storage Stability Test, 24 hours, %			-	
Sieve, %			0.10 max.	
Particle Charge			Positive	
Residue from Distillation, % (2)			62 min.	
RESIDUE FROM DISTILLATION:				
Penetration, 25 °C (77 °F), tenths of mm	T49		40-90	
Softening Point, °C (°F)	T53	57 (135) min.		
Elastic Recovery, @ 10°C, cm	T202	50 min.		
Solubility in trichloroethylene, % (3)	T44	97.5 min.		
Ash Content, %	T111	1 max.		
NOTES:	<ol style="list-style-type: none"> 1. The emulsified asphalt shall be a quick traffic latex modified asphalt emulsion containing a minimum of 3.0 % latex solids by weight of asphalt binder. The latex shall be milled or blended into the asphalt emulsifier solution prior to the emulsification process. 2. Distillation temperature shall be 347 ± 9 °F (175 ± 5 °C). 3. IDOT is no longer using TCE. Suppliers are allowed to use solubility in TCE test per AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent 			

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Illinois		Table 6: Requirements for Penetrating Emulsion Prime (PEP)	
Property	Test Method AASHTO (T), ASTM (D), or Other	PEP	
EMULSIONS:			
Viscosity, Saybolt Furol Seconds	25 °C (77 °F)	T59	75 max.
	50 °C (122 °F)		-
Sieve, %	0.10 max.		
Residue, %	38 min.		
Oil Distillate, volume of emulsion, %	4 max.		
RESIDUE FROM EVAPORATION:			
Sand Penetration	IDOT	(1)	
NOTES:	1. The time of penetration shall be equal to or less than that of MC-30. The depth of penetration shall be equal to or greater than that of MC-30. For more information from IDOT on this procedure, please click here .		

Table 7: Requirements for Non-Tracking Emulsified Asphalt

Property		Test Method AASHTO (T), ASTM (D), or Other	NTEA
EMULSIONS:			
Viscosity, Saybolt Furol Seconds	25 °C (77 °F)	T59	20-100
	50 °C (122 °F)		-
Storage Stability Test, 24 hours, %			1 max.
Sieve, %			0.3 max.
Residue, % (1)			50 min.
RESIDUE FROM EVAPORATION:			
Penetration, 25 °C (77 °F), tenths of mm		T49	40 max.
Softening Point, °F (°C)		T53	135 (57) min.
Ash Content, % (2)		T111	1 max.
NOTES:		1. May be distilled at 260 ± -5° C (500 ± -10° F) or evaporated (to avoid bumping) at 163 ± -3° C (325 ± -5° F) 2. IDOT is no longer using TCE. Suppliers are allowed to use solubility in TCE test per AASHTO T 44 may be run in lieu of Ash Content and shall meet a minimum of 97.5 percent	