

State: Indiana	Materials: Section 902-Asphalt Materials
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Indiana		Table 1: Requirements for Anionic Emulsified Asphalts (1)								
Property	Test Method AASHTO (T), ASTM (D), or Other	RS-2 (Note 5)	AE-90	AE-90S	AE-NT	AE-F	SS-1h (Note 5)	AE-150	AE-PL	
EMULSIONS:										
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	-	-	15-100	100 max.	20-100	50 min.	115 max.	
	50 °C (122 °F)		75-400	50 min.	50 min.	-	-	75-300	-	
Viscosity, Rotational Paddle, mPa*s	25 °C (77 °F)				30 - 200	200 max.		100 min.	230 max.	
	50 °C (122 °F)			100 min.	100 min.			150-600		
Settlement, 5 days, %		5.0 max.	5.0 max.	-	5.0 max.	-	-	-	-	
Storage Stability Test, 24 hours, %		1.0 max.	-	1.0 max.	-	-	1.0 max.	-	-	
Sieve Test, %		0.10 max.	0.10 max.	0.10 max.	0.30 max.	0.10 max.	0.10 max.	0.10 max.	0.10 max.	
Demulsibility, %		60 min.	75 min.	30 min.	-	25 min.	-	-	-	
Cement Mixing Test, %		-	-	-	-	-	-	-	-	
Residue, %		65 min.	65 min.	65 min (4)	50 min.	27-35	57 min.	65 min.	30 min.	
Oil Distillate, volume of emulsion, ml/100 g of emulsion (2)		4.0 max.	4.0 max.	3.0 max.	4.0 max.	4.0 max.	4.0 max.	7.0 max.	3.0 max.	
Penetrating Ability, mm.	IN 902.02 (w)	-	-	-	-	-	-	-	6 min.	
Stone Coating Test, %	IN 902.02 (t) 3a	-	90	-	-	-	-	90	-	

Table 1 Continues on Page 2

Indiana		Table 1: Requirements for Anionic Emulsified Asphalts (cont.)							
Property	Test Method AASHTO (T), ASTM (D), or Other	RS-2	AE-90	AE-90S	AE-NT	AE-F	SS-1h	AE-150	AE-PL
DISTILLATION RESIDUE:									
Penetration, 25 °C (77 °F), tenths of mm (3)	T49	90-150	100-200	90-150	40 max.	90 max.	90 max.	100-300 (8)	-
Ductility, 25 °C (77 °F), cm	T51	40 min.	40 min.	-	-	-	40 min.	-	-
Elastic Recovery, 4 °C (39.2 °F), %	T301	-	-	58	-	-	-	-	-
Ash Content, %	T111	1.0 max.							
Float Test at 60 °C (140 °F), seconds (3)	T50	-	1200 min.	1200 min.	-	-	-	1200 min.	-
NOTES:	<ol style="list-style-type: none"> Broken samples or samples more than 14 days old will not be tested. Oil distillate shall be in accordance with ASTM D 396, table 1, grade no. 1. The Engineer may waive the test. Maximum temperature to be held for 15 minutes 350 ± 9 °F. Test according to M140 specifications except the cement testing will be waived. 								

Indiana		Table 2: Requirements for High Float Emulsified Asphalt (1)			
Property		Test Method AASHTO (T), ASTM (D), or Other	HFRS-2 (Note 1)	HFRS-2P (Note 2)	
EMULSIONS:					
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	-	-	
	50 °C (122 °F)		75-400	75-400	
Settlement, 5 days, %			-	-	
Storage Stability Test, 24 hours, %			1.0 max.	1.0 max.	
Sieve Test, %			0.10 max.	0.10 max.	
Demulsibility, %			50 min.	50 min.	
Residue, %			65 min.	65 min.	
Oil Distillate, volume of emulsion, ml/100 g of emulsion			4.0	3	
DISTILLATION RESIDUE:					
Penetration, 25 °C (77 °F), tenths of mm			T49	100-250	100-200
Ductility, 25 °C (77 °F), cm		T51	40 min.	-	
Ash Content., %		T111	1.0 max.	1.0 max.	
Elastic Recovery, 25 °C (77 °F), %		T300	-	60 min.	
Float Test at 60 °C (140 °F), seconds		T50	1200 min.	1200 min.	
NOTES:		1. Test according to M140 specifications except the cement testing will be waived. 2. Test according to M316 specifications. The distillation temperature shall be 350 °F.			

Indiana		Table 3: Requirements for Cationic Emulsified Asphalts		
Property		Test Method AASHTO (T), ASTM (D), or Other	Rapid-Setting	Slow-Setting
			CRS-2P (Note 1)	CSS-1h (Note 2)
EMULSIONS:				
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	-	20-100
	50 °C (122 °F)		100-400	-
Settlement, 5 days, %			-	-
Storage Stability Test, 24 hours, %			1.0 max.	1.0 max.
Sieve Test, %			0.10 max.	0.10 max.
Demulsibility, %			40 min.	-
Cement Mixing Test, %			-	-
Residue, % (3)			65 min.	57 min.
DISTILLATION RESIDUE:				
Penetration, 25 °C (77 °F), tenths of mm		T49	90-150	40-90
Ductility, 25 °C (77 °F), cm		T51	-	40 min.
Elastic Recovery		T301	60 min.	-
Ash Test, %		D2415	1.0 max.	1.0 max.
NOTES:		1. Test according to M316 specifications. 2. Test according to M208 specifications. 3. Distillation temperature shall be 350 °F.		

Indiana		Table 4: Requirements for Asphalt Emulsion Warranted Micro-surfacing (Effective 3-1-2024)	
Property	Test Method AASHTO (T), ASTM (D), or Other		CQS-1hP (Note 1)
EMULSIONS:			
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	20-100
	50 °C (122 °F)		-
Settlement, 5 days, %			-
Storage Stability Test, 24 hours, %			1.0 max.
Sieve Test, %			0.10 max.
Demulsibility, %			-
Cement Mixing Test, %			-
Residue, %			62 min.
DISTILLATION RESIDUE:			
Penetration, 25 °C (77 °F), tenths of mm	T49		40-90
Ductility, 25 °C (77 °F), cm	T51		40 min.
Elastic Recovery, 25 °C, %	T301		60+
Absolute Viscosity, 60°C	T202		8000 min.
Softening Point, 5 °C	T53		60 min.
Ash Test, %	D2415		1.0 max.
NOTES:	1. The polymer modified asphalt emulsion shall be a CQS-1hP in accordance with AASHTO M 316. The distillation temperature shall be 350 F.. The polymer material shall be milled or blended into the asphalt or blended into the emulsifier solution prior to the emulsification process. The minimum polymer solids content will be 3.0% based on the residual of the emulsion. Mix set additives shall be added as required to provide control of the quick-set properties.		

Indiana		Table 5: Requirements for Asphalt Emulsion Recycling	
Property		Test Method AASHTO (T), ASTM (D), or Other	FDR/CIR/CCPR (Note 1)
EMULSIONS:			
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	20-100
	50 °C (122 °F)		-
Settlement, 5 days, %			-
Storage Stability Test, 24 hours, %			1.0
Sieve Test, %			0.10
Demulsibility, %			-
Oil Distillate,,%			1 max.
Residue, % (2)			64 min.
DISTILLATION RESIDUE:			
Penetration, 25 °C (77 °F), tenths of mm		T49	50-200
Ductility, 25 °C (77 °F), cm		T51	-
Solubility in trichloroethylene		T44	-
Ash Test, %		D2415	-
NOTES:		<ol style="list-style-type: none"> 1. The asphalt emulsion shall be selected for the project by the asphalt emulsion supplier based on the Contractor's mixture design. The penetration of the supplied asphalt emulsion shall be within ± 25 dmm of the penetration of the design asphalt emulsion. The asphalt emulsion shall be received on the job site at a temperature no greater than 120°F (50°C). 2. Modified AASHTO T 59 – distillation temperature of 350 \pm9°F (175 \pm5°C) with a 20 minute hold. 	

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Table 6: Requirements for Asphalt Emulsion for UBWC (Section 902)

Property

Test Method
AASHTO (T),
ASTM (D), or
Other

EMULSIONS:

Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	20-100
	50 °C (122 °F)		
Settlement, 5 days, %			
Storage Stability Test, 24 hours, %			1.0 max.
Sieve Test, %			0.05 max.
Demulsibility, %			60 min.
Oil Distillate, %			2 max.
Residue, % (Note 1.)			63 min.

DISTILLATION RESIDUE:

Penetration, 25 °C (77 °F), tenths of mm	T49	90-150
Elastic Recovery, 4 °C, %	T301	58 min.

NOTES: 1. The distillation temperature for this test shall be 350°F (175°C).

Table 7: Requirements for Rapid Penetrating Emulsion

Property		Test Method AASHTO (T), ASTM (D), or Other	
EMULSIONS:			
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	50 max.
	50 °C (122 °F)		-
Sieve Test, %			0.10 max.
Residue, %			30 min.
Oil Distillate, volume of emulsion, ml/100 g of emulsion			1.0 max.
Water Resistance Test, %	ITM 598		60 min.
Identification Test, %	ITM 599	60 min.	
DISTILLATION RESIDUE (1):			
Penetration, 25 °C (77 °F), tenths of mm	T49		150 max.
Ash Content., %	T111		1.0 max.
NOTES:	1. The minimum sample size shall be 300g.		