State: Arizona	Specification: Section 1005 Bituminous Materials (starting on page 1144)
Date: 12/01/25	Web Address: https://azdot.gov/business/contracts-and-specifications/specifications-pay-items-list
Contact: Dharminder (Paul) Sharma	Contact Info: dsharma@azdot.gov

Arizona		Table 1005-3: Emulsified Asphalt (Requirements for Anionic Emulsified Asphalts)			
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**Rapid-Setting**		**Slow-Setting**
			RS-1	**RS-2**	**SS-1**
EMULSIONS:					
Viscosity, Saybolt Furol seconds	25°C (77°F)	T59	20-100	-	20-100
	50°C (122°F)		-	50-400	-
Settlement, 5 days, %			5 max.	5 max.	5 max.
Sieve Test, % (1)			0.10 max.	0.10 max.	0.10 max.
Demulsibility, % (2)			60 min.	60 min.	-
Residue, %		(3) & (4)	55 min.	63 min.	57 min.

NOTES:
1. Distilled water will be used instead of the 2% sodium oleate solution.
2. Use 35 ml, 0.02 N CaCl$_2$ solution.
3. Residue will be obtained in accordance with the requirement of Arizona Test Method 504 and shall conform to all the requirements of AASHTO M 320 for PG 64-16, except that for CRS-2 the dynamic shear (G*/sin δ) on the original residue shall be a minimum of 1.00 kPa and a maximum of 1.50 kPa.
4. Residue by evaporation may be determined in accordance with the requirements of Arizona Test Method 512; however, in case of dispute, AASHTO T 59 will be used.

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Arizona			Table 1005-3: Emulsified Asphalt (Requirements for Cationic Emulsified Asphalts)		
Property		Test Method AASHTO (T), ASTM (D), or Other	Rapid-Setting		Slow-Setting
			CRS-1	CRS-2	CSS-1
EMULSIONS:					
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	-	-	20-100
	50 °C (122 °F)		20-100	50-400	-
Settlement, 5 days, %			5 max.	5 max.	5 max.
Storage Stability Test, 24 hours, %			-	-	-
Sieve Test, % (1)			0.10 max.	-	0.10 max.
Particle Charge			Positive	Positive	Positive (2)
Residue, %		(3) & (4)	60 min.	65 min.	57 min.
Classification: Uncoated particles, %		Ariz. 502	-	55 min.	-
TABLE 1005-3 Notes:		1. Distilled water will used instead of the 2% sodium oleate solution. 2. If the Particle Charge Test is inconclusive, material having a maximum pH value of 6.7 will be acceptable. 3. Residue will be obtained in accordance with the requirement of Arizona Test Method 504 and shall conform to all the requirements of AASHTO M 320 for PG 64-16, except that for CRS-2 the dynamic shear (G*/sin δ) on the original residue shall be a minimum of 1.00 kPa and a maximum of 1.50 kPa. 4. Residue by evaporation may be determined in accordance with the requirements of Arizona Test Method 512; however, in case of dispute, AASHTO T 59 will be used.			

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Arizona		Table 1005-3a, Page 1145: Requirements for Polymerized Cationic Rapid-Setting Emulsified Asphalt (1)	
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**CRS-2p**
EMULSIONS:			
Viscosity, Saybolt Furol seconds	50 °C (122 °F)	T59	100-400
Storage Stability Test, 24 hours, %			1 max.
Sieve Test, retained on 850 µm, %			0.10 max.
Particle Charge			Positive
Demulsibility, % (2)			40 min.
Residue from distillation, %		T59	66 min.
Oil Distillate, volume of emulsion, %			0.50 max.
DISTILLATION RESIDUE:			
Penetration, 25 °C (77 °F), tenths of mm		T49	40-100
Ductility, 4 °C (39.2 °F), cm (3)		T51	35 min.
Elastic Recovery, 25 °C (77 °F), % (4)		T301	55 min.
NOTES:		1. The introduction of polymer must occur before emulsification. 2. Use 35 ml of 0.8% sodium dioctyl sulfosuccinate solution. 3. Use pull rate of 1 cm/minute. 4. Testing shall be performed on residue by distillation, not on residue by oven evaporation.	

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Arizona		Table 1005-3b, Page 1146: Requirements for Polymerized High Float Emulsified Asphalt (1)		
Property		Test Method AASHTO (T), ASTM (D), or Other	HFE-150P	HFE-300P
EMULSIONS:				
Viscosity, Saybolt Furol seconds	50 °C (122 °F)	T59	50-400	50-400
Storage Stability Test, 24 hours, %			1 max.	1 max.
Sieve Test, retained on 850 µm, % (2)			0.10 max.	0.10 max.
Residue from distillation, %			65 min.	65 min.
Oil Distillate, volume of emulsion, %			7.0 max.	7.0 max.
DISTILLATION RESIDUE:				
Penetration, 25 ºC (77 °F), tenths of mm		T49	150-300	300 +
Float Test, seconds	60 °C (140 °F)	T50	1200	1200
Ductility, 25 ºC (77 °F), cm		T51	100 min.	N/A
Elastic Recovery, 4 °C (39.2 °F), % (3)		T301	25 min.	25 min.
NOTES:	1. The introduction of polymer must occur before emulsification. 2. Use distilled water. The use of two percent sodium oleate solution will not be accepted. 3. Testing shall be performed on residue by distillation, not on residue by oven evaporation.			

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Arizona		Table 1005-4, Page 1147: Recycling Agents				
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**RA-1**	**RA-5**	**RA-25**	**RA-75**
EMULSIONS:						
Viscosity, Saybolt Furol seconds	60 °C (140 °F)	T201	100-200	200-800	1000-4000	5000-10000
Flash Point, Open Cleveland Cup, °F		T48	340 min.	375 min.	425 min.	450 min.
Saturate by weight, %		D2007	30 max.	30 max.	30 max.	30 max.
Test on Residue, weight change, %		T240	6.5 max.	4.0 max.	3.0 max.	2.0 max.
Viscosity Ratio		See note (1)	3 max.	3 max.	3 max.	3 max.
NOTES:		1. This is the ratio of viscosity of residue at 60 °C (140 °F) (in centistokes) over the viscosity of recycling agent at 60 °C (140 °F) (in centistokes).				

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Arizona		Table 1005-5, Page 1148: Emulsified Recycling Agents				
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**ERA-1**	**ERA-5**	**ERA-25**	**ERA-75**
EMULSIONS:						
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	15-40	15-100	15-100	15-100
Miscibility			Pass	Pass	Pass	Pass
Sieve Test, % (1)			0.10 max.	0.10 max.	0.10 max.	0.10 max.
Particle Charge			Positive	Positive	Positive	Positive
Residue, %		See notes (2) & (3)	60 min.	60 min.	60 min.	60 min.
NOTES:		1. Distilled water will be used instead of 2% sodium oleate solution. 2. Residue will be obtained in accordance with the requirements of Arizona Test Method 504 and shall conform to all requirements specified in Table 1005-4. 3. Residue by evaporation may be determined in accordance with the requirements of Arizona Test Method 512; however, in case of dispute, AASHTO T59 will be used.				

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