State: Maine	**Materials:** Re: Section 702.04-Emulsified Asphalt	**Materials Engineer:** Richard Bradbury
Date: 11/4/24	**Web Address:** www.state.me.us/mdot	**Contact Info:** Richard.bradbury@maine.gov
Description: AASHTO M140. Cationic emulsified asphalt shall conform to AASHTO M208.		**Exclusions:** None stated.

Maine			**Table 1: Requirements for Anionic Emulsified Asphalts (1)**								
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**Rapid-Setting**			**Medium-Setting**			**Slow-Setting**		**Quick-Setting**
			RS-1	**RS-1h**	**RS-2**	**MS-1**	**MS-2**	**MS-2h**	**SS-1**	**SS-1h**	**QS-1H**
	EMULSIONS:										
Viscosity, Saybolt Furol seconds	25° C (77° F)	T 59	20-100	20-100	-	20-100	-	-	20-100	20-100	20-100
	50° C (122° F)		-	-	75-400	-	100 min.	100 Min.	-	-	-
Settlement, 5 days, %			-								
Storage Stability Test, 24 hours, % (2)			1 max.	1 max.	1 max.	1 max.	1 max.	1 max.	1 max.	1 max.	1 max.
Sieve Test, % (2,3)			0.10 max.	0.10 max.	0.10 max.	0.10 max.	0.10 max.	0.10 max.	0.10 max.	0.10 max.	0.10 max.
Demulsibility, % (4)			60 min.	60 min.	60 min.	-	-	-	-	-	-
Cement Mixing Test, %			-	-	-	-	-	-	2.0 max.	2.0 max.	-
Coating Ability and Water Resistance	Dry Aggregate		-	-	-	Good	Good	Good	-	-	-
	After Spraying		-	-	-	Fair	Fair	Fair	-	-	-
	Wet Aggregate		-	-	-	Fair	Fair	Fair	-	-	-
	After Spraying		-	-	-	Fair	Fair	Fair	-	-	-
Residue, %			55 min.	55 min.	65 min.	55 min.	65 min.	65 min.	57 min.	57 min.	57 min.
	DISTILLATION RESIDUE:										
Penetration, 25º C (77° F), tenths of mm		T 49	90-150	40-90	90-150	90-250	90-250	40-90	90-250	40-90	40-90
Ductility, 25º C (77° F), cm		T 51	40 min.	40 min.	40 min.	40 min.	40 min.	40 min.	40 min.	40 min.	40 min.
Ash Content, %		T 111	1 max.		1 max.	1 max.	1 max.	1 max.	1 max.	1 max.	1 max.
Solubility in trichloroethylene or n-propyl bromide, %		T 44		97.5 min							

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NOTES:	1. Refer to R5 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. A maximum percentage of 0.30 is acceptable for samples taken at the point of use. 4. The demulsibility test shall be performed within 30 days from the date of shipment. Use 35 ml, 0.02 *N* $CaCl_2$ solution.

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Maine		Table 2: Requirements for Cationic Emulsified Asphalts (1)						
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**Rapid-Setting**		**Medium-Setting**		**Slow-Setting**		**Quick-Setting**
			CRS-1	**CRS-2**	**CMS-2**	**CMS-2h**	**CSS-1**	**CSS-1h**	**CQS-1h**
EMULSIONS:									
Viscosity, Saybolt Furol seconds	25° C (77° F)	T 59	-	-	-	-	20-100	20-100	20-100
	50° C (122° F)		20-100	100-400	50-450	50-450	-	-	-
Settlement, 5 days, %			-	-	-	-	-	-	-
Storage Stability Test, 24 hours, % (2)			1 max.	1 max.	1 max.	1 max.	1 max.	1 max.	1 max.
Sieve Test, % (2)			0.10 max.	0.10 max.	0.10 max.	0.10 max.	0.10 max.	0.10 max.	0.10 max.
Particle Charge			Positive	Positive	Positive	Positive	Positive	Positive	Positive
Demulsibility , % (3)			40 min.	40 min.	-	-	-	-	-
Cement Mixing Test, %			-	-	-	-	2.0 max.	2.0 max.	-
Coating Ability and Water Resistance	Dry Aggregate		-	-	Good	Good	-	-	-
	After Spraying		-	-	Fair	Fair	-	-	-
	Wet Aggregate		-	-	Fair	Fair	-	-	-
	After Spraying		-	-	Fair	Fair	-	-	-
Residue, %			60 min.	65 min.	65 min.	65 min.	57 min.	57 min.	57 min.
Oil Distillate, volume of emulsion, %			3 max.	3 max.	12 max.	12 max.	-	-	-
pH		T 200	-	-	-	-	-	-	-
DISTILLATION RESIDUE:									
Penetration, 25º C (77° F), tenths of mm		T 49	90-150	90-150	90-250	40-90	90-250	40-90	40-90
Ductility, 25º C (77° F), cm		T 51	40 min.	40 min.	40 min.	40 min.	40 min.	40 min.	40 min.
Ash Content, %		T 111	1 max.	1 max.	1 max.	1 max.	1 max.	1 max.	1 max.
NOTES:		**1.** Refer to R5 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.							

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Maine		Table 3: Requirements for High Float Emulsified Asphalt (1)					
Property		**Test Method AASHTO (T), ASTM (D), or Other**	**Rapid-Setting**	**Medium-Setting**			
			HFRS-2	**HFMS-1**	**HFMS-2**	**HFMS-2h**	**HFMS-2s**
EMULSIONS:							
Viscosity, Saybolt Furol seconds	25° C (77° F)	T 59	-	20-100	-	-	-
	50° C (122° F)		75-400	-	100 min.	100 min.	100 min.
Storage Stability Test, 24 hours, % (2)			1 max.	1 max.	1 max.	1 max.	1 max.
Sieve Test, % (2,3)			0.10 max.	0.10 max.	0.10 max.	0.10 max.	0.10 max.
Demulsibility , % (4)			50 min.	-	-	-	-
Coating Ability and Water Resistance	Dry Aggregate		-	Good	Good	Good	Good
	After Spraying		-	Fair	Fair	Fair	Fair
	Wet Aggregate		-	Fair	Fair	Fair	Fair
	After Spraying		-	Fair	Fair	Fair	Fair
Residue, %			65 min.	55 min.	65 min.	65 min.	65 min.
Oil Distillate, volume of emulsion, %			-	-	-	-	1-7
DISTILLATION RESIDUE:							
Penetration, 25º C (77° F), tenths of mm		T 49	90-150	90-150	90-150	40-90	250 min.
Ductility, 25º C (77° F), cm		T 51	40 min.	40 min.	40 min.	40 min.	40 min.
Ash Content, %		T 111	1 max.	1 max.	1 max.	1 max.	1 max.
Float Test at 60° C (140° F), seconds		T 50	1200 min.	1200 min.	1200 min.	1200 min.	1200 min.
NOTES:		1. Refer to R5 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. A maximum percentage of 0.30 is acceptable for samples taken at the point of use. 4. The demulsibility test shall be performed within 30 days from the date of shipment. Use 35 ml, 0.02 *N* $CaCl_2$ solution.					

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