

<b>State:</b> Hawaii	<b>Specification:</b> Section 702.04-Emulsified Asphalt (starting on page 702-1)
<b>Date:</b> 08/15/2025	<b>Web Address:</b> <a href="https://hidot.hawaii.gov/highways/">https://hidot.hawaii.gov/highways/</a>
<b>Materials Engineer:</b> Mung Fa Chung	<b>Contact Info:</b> <a href="mailto:mungfa.chung@hawaii.gov">mungfa.chung@hawaii.gov</a>

<i>Hawaii</i>		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-2	MS-1	MS-2	MS-2h	SS-1	SS-1h	QS-1H
<b>EMULSIONS:</b>										
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	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)			1.0 max.	1.0 max.	1.0 max.	1.0 max.	1.0 max.	1.0 max.	1.0 max.	1.0 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.
Demulsibility, % (4)			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.	63 min.	55 min.	65 min.	65 min.	57 min.	57 min.	57 min.	
<b>DISTILLATION RESIDUE:</b>										
Penetration, 25 °C (77 °F), tenths of mm		T49	50-120	100-200	100-200	100-200	40-90	50-120	40-90	40-90
Ductility, 25 °C (77 °F), cm		T51	40 min.	40 min.	40 min.	40 min.	40 min.	40 min.	40 min.	40 min.
Solubility in trichloroethylene or n-propyl bromide, %		T44	97.5 min.	97.5 min.	97.5 min.	97.5 min.	97.5 min.	97.5 min.	97.5 min.	97.5 min.
<b>NOTES:</b>		<ol style="list-style-type: none"> <li>1. Refer to R5 for typical applications.</li> <li>2. This test requirement on representative samples is waived if successful application of the material has been achieved in the field.</li> <li>3. A maximum percentage of 0.30 is acceptable for samples taken at the point of use.</li> <li>4. The demulsibility test shall be performed within 30 days from the date of shipment. Use 35 ml, 0.02 N CaCl<sub>2</sub> solution.</li> </ol>								

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

Hawaii		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	
<b>EMULSIONS:</b>									
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	-	-	-	-	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)			1.0 max.	1.0 max.	1.0 max.	1.0 max.	1.0 max.	1.0 max.	1.0 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		T200	-	-	-	-	-	-	
<b>DISTILLATION RESIDUE:</b>									
Penetration, 25 °C (77 °F), tenths of mm		T49	50-150	100-250	100-250	40-90	50-150	40-90	40-90
Ductility, 25 °C (77 °F), cm		T51	40 min.	40 min.	40 min.	40 min.	40 min.	40 min.	40 min.
Solubility in trichloroethylene, %		T44	97.5 min.	97.5 min.	97.5 min.	97.5 min.	97.5 min.	97.5 min.	97.5 min.
<b>NOTES:</b>		<ol style="list-style-type: none"> <li>1. Refer to R5 for typical applications.</li> <li>2. This test requirement on representative samples is waived if successful application of the material has been achieved in the field.</li> <li>3. Use 35 ml of 0.8% sodium dioctyl sulfosuccinate solution.</li> </ol>							

Hawaii		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	
<b>EMULSIONS:</b>							
Viscosity, Saybolt Furol seconds	25 °C (77 °F)	T59	-	20-100	-	-	-
	50 °C (122 °F)		75-400	-	100 min.	100 min.	100 min.
Storage Stability Test, 24 hours, %	(2)		1.0 max.	1.0 max.	1.0 max.	1.0 max.	1.0 max.
Sieve Test, %	(2,3)		0.10 max.	0.10 max.	0.10 max.	0.10 max.	0.10 max.
Demulsibility, %	(4)		60 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, %			63 min.	55 min.	65 min.	65 min.	65 min.
Oil Distillate, volume of emulsion, %		-	-	-	-	1-7	
<b>DISTILLATION RESIDUE:</b>							
Penetration, 25 °C (77 °F), tenths of mm	T49	100-200	100-200	100-200	40-90	200 min.	
Ductility, 25 °C (77 °F), cm	T51	40 min.	40 min.	40 min.	40 min.	40 min.	
Solubility in trichloroethylene, %	(5) T44	97.5 min.	97.5 min.	97.5 min.	97.5 min.	97.5 min.	
Float Test at 60 °C (140 °F), seconds	T50	1200 min.	1200 min.	1200 min.	1200 min.	1200 min.	
<b>NOTES:</b>	<ol style="list-style-type: none"> <li>1. Refer to R5 for typical applications.</li> <li>2. This test requirement on representative samples is waived if successful application of the material has been achieved in the field.</li> <li>3. A maximum percentage of 0.30 is acceptable for samples taken at the point of use.</li> <li>4. The demulsibility test shall be performed within 30 days from the date of shipment. Use 35 ml, 0.02 N CaCl<sub>2</sub> solution.</li> <li>5. N-propyl bromide may also be used for HFRS-2.</li> </ol>						