

Missouri Department of Transportation Specifications

1015.20.5.1 Polymer Modified Asphalt Emulsion - Seal Coat. Bituminous material for polymer modified asphalt shall be in accordance with the following:

Polymer Modified Asphalt Emulsion				
Test ^a	CRS-2P		EA-90P	
	Min	Max	Min	Max
Viscosity, SSF @ 50 °C	100	400	100	400
Storage Stability Test ^b , 24 hour, %	----	1	----	1
Classification Test	Pass	----	----	----
Particle Charge Test	Positive	----	----	----
Sieve Test %	----	0.3	----	0.3
Demulsibility, 0.02 N Ca Cl ₂ , %	----	----	30	----
Distillation:				
Oil distillate by volume of emulsion, %	----	3	----	3
Residue from distillation ^c , %	65	----	65	----
Test on Residue from Distillation:				
Penetration, 25 °C, 100g, 5 sec	100	200	100	200
Ductility, 4 °C, 5 cm/minute, cm	30	----	25	----
Ash ^d , %	----	1	----	1
Float Test @ 60 °C, sec	----	----	1200	----
Elastic Recovery ^e , %	58	----	58	----

^a All tests shall be performed in accordance with AASHTO T 59 except as noted.

^b In addition to AASHTO T 59, upon examination of the test cylinder, and after standing undisturbed for 24 hours, the surface shall show no appreciable white, milky colored substance and shall be a homogeneous brown color throughout.

^c AASHTO T 59 shall be modified to maintain a 399 °F ± 10 °F maximum temperature for 15 minutes.

^d Percent ash shall be determined in accordance with AASHTO T 111, *Ash in Bituminous Material*.

^e Elastic recovery shall be determined as follows. Condition the ductilometer and samples to be treated at 50 °F. Prepare the brass plate, mold and briquet specimen in accordance with AASHTO T 51. Keep the specimen at the specified test temperature of 50 °F for 85 to 95 minutes. Immediately after conditioning, place the specimen in the ductilometer and proceed to elongate the sample to 20 cm at a rate of pull of 5 cm/min. After the 20 cm elongation has been reached, stop the ductilometer and hold the sample in the elongated position for 5 minutes. After 5 minutes, clip the sample approximately in half by means of scissors or other suitable cutting devices. Let the sample remain in the ductilometer in an undisturbed condition for one hour. At the end of this time period, retract the half sample specimen until the two broken ends touch. At this point note the elongation (x) in cm. Calculate the percent recovery by the following formula:

$$\% \text{ Recovery} = \frac{20 - X}{20} \times 100$$