Product ID 11506
Product ID 11507

LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SPECIFICATIONS

POLYMER MODIFIED ASPHALTIC MATERIALS

DESCRIPTION:

These specifications cover polymer modified asphaltic materials for road maintenance.

GENERAL REQUIREMENTS:

Polymer modified asphalt shall be prepared by the refining of petroleum. It shall be uniform in character, free from water, and shall not foam when heated to 350°. Asphalt shall be from the Approved Materials List.

Storage tanks, piping, retorts, booster tanks, distributors and other equipment used in delivering, storing or handling asphaltic materials shall be kept clean and in good operating condition and shall be operated in such manner as to avoid contamination of the contents with foreign materials.

Test methods shall be the latest in effect in addition to the ones included in this specification. Final test results for polymer modified asphaltic materials will be applied to the proper table herein for conformance to specifications. Any deviation from the specifications will result in a payment adjustment as specified. If test results are such that a price adjustment would result from more than 1 test value, the payment adjustment for the greatest reduction shall apply.

The adjustment in pay for polymer modified asphaltic materials shall be applied only to samples taken at the point of delivery. Samples taken at the refinery shall conform to specification requirements; if the refinery sample fails to meet these requirements, the material will be rejected and shall not be shipped.

SAMPLING:

Sampling will be in accordance with the Materials Sampling Manual.

TABLE 1
POLYMER MODIFIED ASPHALT CEMENTS

Property	AASHTO Test Method	PG76-22m		PG70-22m	
		Spec.	Deviation	Spec.	Deviation
		100	90 or Remove	100	90 or Remove
Tests on Original Binder:					
Rotational Viscosity @ 135°C, Pa·s [2]	T 316	3.0-	---	3.0-	---
Dynamic Shear, 10 rad/s, G*/Sin Delta, kPa	T 315	1.00+ @ 76°C	0.99-	1.00+ @ 70°C	0.99-
Dynamic Shear, 10 rad/s, Phase Angle, °	T 315	75° @ 76°C	---	---	---
Flash Point, °C	T 48	232+	---	232+	---
Solubility, % [3]	T 44	99.0+	---	99.0+	---
Separation of Polymer, 163°C, 48 hours, degree C difference in R & B from top to bottom [4]	ASTM D7173 AASHTO T 53	2-	---	2-	---
Tests on Rolling Thin Film Oven Residue:	T 240				
Mass Change, %	T 240	1.00-	---	1.00-	---
Dynamic Shear, 10 rad/s, G*/Sin Delta, kPa	T 315	---	2.19-	---	2.19-
Multiple Stress Creep Recovery (MSCR), Jnr(3.2 kPa), @67°C	T 350	0.5-	---	1.0 - 2.0-	---
Multiple Stress Creep Recovery (MSCR), , % Recovery (3.2 kPa), @67°C	T 350	Meets curve[5]	---	15	---
Tests on Pressure Aging Vessel Residue:	R 28				
Dynamic Shear, @ 26.5°C, 10 rad/s, G* Sin Delta, kPa	T 315	6000-	---	6000-	------
Bending Beam Creep Stiffness, S, MPa @ -12°C.	T 313	300-	---	300-	---
Bending Beam Creep Slope, m value,@ -12°C	T 313	0.300+	---	0.300+	---

[1]Tank mixers are required. Submit written documentation of tank cleaning annually.
[2]The rotational viscosity will be measured to determine product uniformity. The rotational viscosity measured by the supplier shall be noted on the Certificate of Delivery. A binder having a rotational viscosity of 3.0 Pa·s or less will typically have adequate mixing and pumping capabilities. Binders with rotational viscosity values higher than 3.0 Pa·s should be used with caution and only after consulting with the supplier as to any special handling procedures and guarantees of mixing and pumping capabilities.
[3]Not all polymers are soluble in the specified solvents. If the polymer modified asphalt digested in the solvent will not pass the filter media, a sample of the base asphalt used in making the polymer modified asphalt should be tested for solubility. If the solubility of the base asphalt is at least 99.0%, the material will be considered as passing.
[4]Prepare samples per ASTM D7173. Determine softening point of top and bottom per AASHTO T 53.
[5]As defined in AASHTO M 332

TABLE 2
ANIONIC EMULSIFIED ASPHALT

		SS-1h		
		SPECIFICATION	DEVIATION	
PROPERTY	**TEST METHOD**	**100**	**80**	**50 or Remove and Replace[1]**
Viscosity, Saybolt Furol @ 25° C, s	AASHTO T 59	20-100	---	---
Residue by Distillation, % by wt.	AASHTO T 59	57+	52 – 56	51-
Sieve Test, % (Retained on 850 µm)	AASHTO T 59	0.1-	---	---
Cement Mixing	AASHTO T 59	2-	---	---
Settlement, 5-day, %	AASHTO T 59	5.0-	---	---
TESTS ON RESIDUE BY DISTILLATION:				
Penetration, 25° C, 100g, 5s, dmm	AASHTO T 49	40 – 90	30 – 39 91 – 100	29- 101+
Solubility, %	AASHTO T 44	97.5+	---	---
Ductility, 25° C, 5 cm/min, cm	AASHTO T 51	40+	26 – 39	25-

[1] At the Chief Engineer's option.