

**SECTION 02730
PRIME COAT**

PART I: GENERAL

1.1 GENERAL REQUIREMENTS

- A. Prime coat for asphalt concrete paving

1.2 MEASUREMENT AND PAYMENT

A. Unit Prices:

- 1. No separate payment shall be made for prime coat under this Section. Include payment in unit price for material being primed.
- 2. Refer to Section 01270 – Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum):

- 1. If Contract is Stipulated Price Contract, payment for Work in this Section is included in Total Stipulated Price.

1.3 SUBMITTALS

- A. Conform to requirements of Section 01330 – Submittal Procedures.
- B. Submit product data for proposed prime coat.
- C. Submit report of recent calibration of distributor.

1.4 REFERENCES

- A. CFTS – City of Friendswood Technical Specifications.

1.5 QUALITY ASSURANCE

- A. Provide manufacturer's affidavits that material was manufactured in compliance with standards referenced in this Section.

PART II: PRODUCTS

2.1 CUTBACK ASPHALT

- A. Provide moisture-free homogeneous material which shall not foam when heated to three hundred forty seven degrees Fahrenheit (347° F) and which meets the following requirements:
- B. Asphalt material for prime coat shall be MC-30 or MC-70 and shall meet requirements as specified in TABLE 4.1 – ASPHALT MATERIAL FOR PRIME COAT in this Section:
 - 1. Distillate shall be as specified in TABLE 4.2 – DISTILLATE in this Section, expressed as percent by volume of total distillate to six hundred eighty degrees Fahrenheit (680° F).
 - 2. Tests on Distillation Residue shall be as specified in TABLE 4.3 – DISTILLATE TEST in this Section.

2.2 EMULSIFIED PETROLEUM RESIN

02730-1

- A. EPR-1 Prime: Slow curing emulsion of petroleum resin and asphalt cement conforming to requirements as specified in TABLE 4.4 – EMULSIFIED PERTROLEUM RESIN PROPERTIES in this Section.
- B. For use, EPR-1 may be diluted with water up to a maximum three (3) parts water to one (1) part EPR- 1 in order to achieve desired concentration of residual resin/asphalt to facilitate application.

PART III: EXECUTION

3.1 EXAMINATION

- A. Verify base is ready to support imposed loads.
- B. Verify lines and grades are correct.

3.2 PREPARATION

- A. Thoroughly clean base course surface of loose material by hand brooming or mechanical sweeping prior to application of tack coat.
- B. Prepare sufficient base in advance of paving for efficient operations.

3.3 APPLICATION, BASIC

- A. Apply prime coat with approved type of self-propelled pressure distributor. Distribute prime coat evenly and smoothly under pressure necessary for proper distribution.
- B. Keep storage tanks, piping, retorts, booster tanks and distributors used in handling asphalt materials clean and in good operating condition. Conduct operations so asphalt material does not become contaminated.
- C. If yield of asphaltic material appears to be in error, recalibrate distributor prior to continuing the Work.
- D. Maintain surface until the Work is accepted by the City.

3.4 APPLICATION, CUTBACK ASPHALT

- A. Do not use cutback asphalt during period of April 16th through September 15th.
- B. Do not place prime coat when air temperature is below sixty degrees Fahrenheit (60° F) and falling. Materials may be placed when air temperature taken in shade and away from artificial heat is above fifty degrees Fahrenheit (50° F) and rising.
- C. Distribute at rate of twenty-five hundredths gallons per square yard (0.25 Gal/Sy) to thirty five hundredths gallons per square yard (0.35 Gal/Sy).
- D. Equipment shall accurately determine temperature of asphaltic material in heating equipment and in distributor, for determining rate of application and for obtaining uniformity at junction of two (2) distributor loads. Maintain in accurate working order, including recording thermometer at storage heating unit.
- E. Base temperature of application on temperature-viscosity relationship that shall permit application of asphalt with viscosity of one hundred centistokes (100 cSt) to one hundred twenty-five centistokes (125 cSt). Maintain asphalt within fifteen degrees Fahrenheit (15° F) of temperature

required to meet viscosity. Selected temperature shall be within range specified in TABLE 4.5 – TEMPERATURES FOR VISCOSITY in this Section.

- F. Do not allow temperature of MC-30 to exceed one hundred seventy-five degrees Fahrenheit (175° F).
- G. Do not allow temperature of MC-70 to exceed two hundred degrees Fahrenheit (200° F).

3.5 APPLICATION, EMULSIFIED PETROLEUM RESIN

- A. Do not place prime coat when air temperature is below thirty-six degrees Fahrenheit (36° F) and falling.
- B. Distribute at rate of fifteen hundredths gallons per square yard (0.15 Gal/Sy) to twenty-five hundredths gallons per square yard (0.25 Gal/Sy).

3.6 PROTECTION

- A. Do not allow traffic on or placement of subsequent base or surface courses over freshly applied prime coat until authorized by the Project Manager.

PART IV: TABLES

4.1 ASPHALT MATERIAL FOR PRIME COAT

PROPERTIES	TYPE – GRADE			
	MC – 30		MC – 70	
	MIN.	MAX.	MIN.	MAX.
Water, Percent	-	0.2	-	0.2
Flash Point, T.O.C., °F	100	-	100	-
Kinematic Viscosity at 140° F, cst	30	60	70	140

4.2 DISTILLATE

TEMPERATURE	TYPE – GRADE			
	MC – 30		MC – 70	
	MIN.	MAX.	MIN.	MAX.
to 437° F	-	25	-	20
to 500° F	40	70	20	60
to 600° F	75	93	65	90
Residue from 680° F Distillation, Volume, Percent	50	-	55	-

4.3 DISTILLATE TEST

TEST	TYPE – GRADE			
	MC – 30		MC – 70	
	MIN.	MAX.	MIN.	MAX.
Penetration at 77° F, 100g, 5 sec.	120	250	120	250
Ductility at 77° F, 5 cm/min. cms	100*	-	100*	-
Solubility in Trichloroethylene, %	99	-	99	-
Spot Test	All Negative			

* If penetration of residue is more than two hundred (200) and ductility at seventy-seven degrees Fahrenheit (77° F) is less than one hundred centimeters (100 Cm), material shall be acceptable when its ductility at sixty degrees Fahrenheit (60° F) is more than one hundred centimeters (100 Cm).

4.4 EMULSIFIED PERTROLEUM RESIN PROPERTIES

PROPERTIES	MIN.	MAX.
Fural Viscosity at 77° F, Sec	14	40
Residue by Evaporation, % by Weight	60	-
Sieve Test, %	-	0.1
Particle Charge Test	Positive	
Tests on Distillation Residue:		
Flash Point, COC (F)	400	-
Kinematic Viscosity @ 140° F (cst)	190	350

4.5 TEMPERATURES FOR VISCOSITY

PRIME COAT TYPE	MINIMUM °F	MAXIMUM °F
MC – 30	70	150
MC – 70	125	175

END OF SECTION