

SECTION 420: PRIME COAT

420.1 DESCRIPTION

This work shall consist of providing and applying asphalt Material and blotter material (if required) to a prepared base course or existing surface.

420.2 MATERIALS

Prime coat asphalt Material shall be one of the following types unless otherwise specified in the plan set or in the Contract:

1. SS-1 emulsified asphalt;
2. CSS-1 emulsified asphalt;
3. Asphalt Emulsified Prime (AE-P)
4. Other Material approved by the City Engineer or designee

420.2.1 Emulsified Asphalt

Emulsified asphalt may be diluted as recommended by the manufacturer.

Emulsified asphalt shall consist of uncracked petroleum asphalt uniformly emulsified with water and an emulsifying or stabilizing agent. Emulsified asphalt shall be homogenous and show no separation of asphalt after thorough mixing. Anionic emulsified asphalt shall meet the requirements of AASHTO M 140 and cationic emulsified asphalt shall meet the requirements of AASHTO M 208.

420.2.2 Asphalt Emulsified Prime (AE-P)

Asphalt emulsified prime of the designation AE-P shall meet the requirements of Table 420.2.2:1, "Asphalt Emulsified Prime."

**Table 420.2.2:1
Asphalt Emulsified Prime**

Test	AE-P
Viscosity Saybolt Furol at 122 °F, Seconds	15-150
Settlement 24 hours, %	1-
Residue from Distillation Test, %	65+
Oil Distillate by volume of Emulsion, %	25-
Tests on Residue from Distillation	
Solubility in Trichloroethylene, %	97.5+

420.2.3 Blotter Material

The blotter material shall be a fine aggregate (sand) in accordance with the gradation requirements of Table 420.2.3:1, "Blotter Material," unless otherwise approved by the Project Manager or City Engineer.

**Table 420.2.3:1
Blotter Material**

Sieve Size	% Passing
3/8 in	100
No. 4	80 – 100
No. 16	45 – 80
No. 50	10 – 30
No. 100	2 - 10

420.2.4 Certification

The Contractor shall provide a manufacturer’s written certification that the prime Material is chemically identical to those identified in the Contract Documents

420.3 CONSTRUCTION REQUIREMENTS

420.3.1 Application of Prime Coat Asphalt Material

Prime coat asphalt Material shall not be applied until the quantities, application rates, Material temperature, and areas to be treated have been approved by the City Engineer or designee.

Application of prime coat asphalt Material, loading and cleaning of distributor, dilution rates of prime material concentrate where applicable, curing of Material and storage shall be accomplished in accordance with the manufacturer’s recommendations or as directed by the City Engineer or designee.

Prime coat asphalt Material shall be applied in a uniform and continuous layer using a pressure distributor. Nozzles on the pressure distributor shall be fully opened and at the same angle from the spray bar, approximately 30°. The spray bar shall be kept at a height above the surface to provide a double or triple lap of the prime Material.

Should clogging, skipping, streaking or other irregularities in distribution occur, operations shall cease until corrective action is taken by the Contractor.

The total amount of prime coat asphalt Material applied in overlapped areas shall not exceed the approved application rate.

420.3.2 Equipment

The Contractor shall provide a distributor and equipment for heating the prime coat asphalt Material.

The distributor shall be self propelled and capable of maintaining the prime coat asphalt Material at an even temperature, distributing the Material uniformly on variable widths with uniform pressure, and at readily determined, controlled rates as specified.

The distributor shall circulate the prime coat asphalt Material within the tank, the spray bar, and other accessories when not spraying.

The distributor shall be equipped with a hand spray gun having a means for precise control with single or double nozzle and a positive shut-off valve.

Distributor equipment shall include a tachometer, pressure gages, accurate volume measuring devices or a calibrated tank, a thermometer that measures the temperature of the tank contents, a power unit for the pump, and laterally and vertically adjustable spray bars.

420.3.3 Weather and Temperature Limitations

Prime coat asphalt Material shall not be applied in the following conditions:

1. If the surface has standing water;
2. If the air temperature is less than manufacturer’s recommendation; or
3. If the weather conditions prevent the proper placement of the prime coat asphalt Material.

The City Engineer or designee may waive these temperature and weather limitations in order to protect the work in progress.

420.3.4 Penetration Time and Use of Blotter Material

The prime coat asphalt Material shall be allowed to penetrate for a minimum of 24 hours after application without being disturbed or for such additional period of time as determined by the City Engineer or designee necessary to permit adequate penetration and to prevent pickup by equipment.

Traffic shall not be permitted to drive on the primed surface unless prior approval is granted by the City Engineer or designee.

The primed surface shall be maintained by the Contractor until the surfacing has been placed. Suitable precautions shall be taken by the Contractor to protect the primed surface against damage during this interval including spreading and removal of blotter material in amounts necessary to absorb excess prime Material prior to paving or use by traffic if so authorized.

420.3.5 Preparation of Surface

The surface to be primed shall be shaped to the specified grade and section, and shall be free from all ruts, corrugations, segregated materials, or other irregularities, and shall be uniformly compacted in accordance with Section 310 Base Course of these Standard Specifications. The surface shall be moist but not saturated when prime Material is applied.

420.4 METHOD OF MEASUREMENT -

The City will consider any water added to further dilute emulsified asphalts incidental to *Prime Coat Material* and no separate payment will be made.

Blotter material (if needed) will be considered incidental to *Prime Coat Material* and no separate payment will be made.

420.5 BASIS OF PAYMENT

Pay Item	Pay Unit
<i>Prime Coat Material</i>	Ton