

## SECTION 330 PRIME, TACK AND FLUSH SEAL COATS

### 330.1 DESCRIPTION

This work consists of preparing and treating a prepared surface with asphalt material and sand as required.

### 330.2 MATERIALS

Materials shall conform to the following Sections:

- A. **Asphalt:** Section 890.
- B. **Blotting Sand for Prime Coat:** Section 879.
- C. **Sand for Flush Seal:** Section 879.

### 330.3 CONSTRUCTION REQUIREMENTS

#### A. Weather and Seasonal Requirements:

Application shall be made only during daylight hours, when the wind does not adversely affect the spraying operation and when the following conditions are met:

1. **Tack Coat:** The application of a tack coat will be permitted only:
  - a. When the ambient air and surface temperature on the project are both at least 35EF (2EC) in the shade.
  - b. When conditions are dry, except emulsified asphalt may be applied when the surface is slightly damp.
2. **Prime Coat:** The application of a prime coat will be permitted only:
  - a. When the ambient air and surface temperatures on the project are both at least 60EF (16EC) in the shade.
  - b. When conditions are dry.

When plans call for prime on interim surfacing, the prime application shall closely follow the base finishing operation and at no time shall the prime operation be more than three miles (5 kilometers) from the base finishing operation. The cure time for the processed base, prime, and blotting sand application will be determined by the Engineer.

3. **Flush Seal Coat:** The application of a flush seal coat will be permitted only:
  - a. Between May 1 and November 1, inclusive.

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- b. When ambient air and surface temperatures on the project are both at least 50EF (10EC) in the shade.
- c. When the surface is dry or slightly damp.

### **B. Dilution of Emulsified Asphalt:**

Prior to application emulsified asphalt shall be diluted and uniformly mixed by adding potable water in the distributor and if necessary, agitating the mixture. The rate of dilution shall be as directed by the Engineer.

The temperature of the emulsified asphalt and water at the time of dilution shall be sufficient to result in a uniform blend.

### **C. Equipment:**

The following minimum equipment shall be furnished by the Contractor.

1. **Broom:** A rotary power broom.
2. **Heating Equipment:** Equipment for heating the asphalt material in or at the tank car, transport truck or distributor shall be designed and constructed to heat the material without burning, scorching or overheating, and with positive control of the heat. The introduction of steam directly into the material will not be permitted.
3. **Distributors:** Distributors used to apply the asphalt material shall be self-propelled, equipped with pressure type mechanical circulating pumps and valves, a heating system and insulated tank, which will provide the uniform required temperature throughout the entire contents of the distributor tank. The distributor shall have a capacity of at least 800 gallons (3000 Liters). Detachable distributor units separate from the tank will not be allowed.

The distributor shall uniformly apply the heated asphalt material to the road surface in accurately measured quantities, and maintain the specified rate of application during the distribution of the entire tank-load, regardless of change in gradient, superelevation, direction, or content level in the tank. Calibration runs for verification shall be made at the start of the work.

The spray nozzles shall be designed, sized, and arranged to insure uniform distribution of heated asphalt material at the designated rate, in an overlapping fan shaped spray without surge, streaks, ridges, or bare spots. A strainer shall be provided in the discharge line to prevent nozzles from clogging. The output of each and every nozzle on the bar shall be the same and a test shall be made, in advance of use to determine compliance with this requirement. Different sizes, heights, pressures, and settings of nozzles for different designated rates shall be provided.

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The distributor shall be equipped with a tachometer, clearly visible to the operator, which accurately shows the speed in feet (meters) per minute.

Pressure metering distributors shall be furnished with an accurate pressure gage showing the distribution pressure. Volume metering distributors shall be furnished with a pump tachometer or meter showing the volume furnished. The distributor shall include an accurate, mercury actuated thermometer showing the temperature of the material in the tank and a contents gage showing the number of gallons (Liters) in the tank at any content level.

The distributor shall be equipped with adjustable spray bars arranged so the application width will be available in 2 foot (0.6 meter) intervals from 4 foot (1.2 meter) to at least 16 foot (4.8 meters).

The distributor spray bars shall be capable of operating at a constant controlled height and shall be of the full circulating type. Each nozzle of the distributor bar shall be equipped with a cutoff valve which immediately stops the flow without dripping. Compliance with these requirements must be proven before the distributor can be used.

### **D. Surface Preparation:**

The surface shall be thoroughly swept with a rotary power broom and cleaned of all foreign material. Adjacent appurtenances shall be protected from the splatter of asphalt. Surfaces to receive a prime coat shall be satisfactorily compacted and cured and if necessary, lightly sprinkled with water.

### **E. Application of Asphalt:**

During application the temperature of the asphalt shall be maintained within the temperature range specified. Asphalt shall be applied by pressure distributor in a uniform and continuous manner.

Unauthorized increases in rate of application will not be eligible for payment.

The angle of the spray nozzles and the height of the spray bar shall be set to obtain uniform distribution. The distributor shall travel at the established speed when the spray bar is opened. Areas inaccessible to the distributor shall be covered by hand spray methods. When the distributor is not in operation, it shall be parked off the roadbed or drip pans shall be placed under the spray bar.

Tack application ahead of mat laydown shall be limited by job conditions and be subject to approval. Tack application ahead of mat laydown shall not exceed the amount estimated for one days operation.

Tacked areas which become unsatisfactory as a result of traffic, weather or other conditions shall be retacked. Required retacking which is not the fault of the

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Contractor, will be paid for at the contract unit price for tack asphalt.

### F. Application of Sand:

Blotting of prime coats shall be accomplished by broom sweeping or spreading sand on the primed surface with a mechanical spreader. Hand spreading will be permitted on odd shaped or inaccessible areas. Sanding or blotting will not be permitted until the prime has set for at least 24 hours, **unless otherwise directed by the Engineer.**

The fresh application of asphalt for flush seal shall be covered with a uniform spread of sand. The sand shall be placed by a self-powered aggregate spreader with positive controls or other equipment acceptable to the Engineer. The sand shall be placed uniformly on the asphalt application. Rolling will not be required. The finished surface shall be smooth riding without transverse or longitudinal ridges and shall present a uniform satisfactory appearance. Bleeding areas shall be resanded. Rough and nonuniform areas shall be corrected.

**Unauthorized increases in rate of application will not be eligible for payment.**

### G. Traffic Control:

The Contractor shall provide flaggers, signs, and barriers to warn, direct, and prevent traffic from traveling on the freshly applied asphalt until it has penetrated, and does not track or pickup on the tires of traveling vehicles or the surface has been blotted with sand.

## 330.4 METHOD OF MEASUREMENT

- A. **Asphalt:** Asphalt will be measured to the nearest 0.1 ton (0.1 metric ton).
- B. **Blotting Sand For Prime:** Blotting sand for prime will be measured to the nearest 0.1 ton (0.1 metric ton).
- C. **Sand For Flush Seal:** Sand for flush seal will be measured to the nearest 0.1 ton (0.1 metric ton).

## 330.5 BASIS OF PAYMENT

- A. **Asphalt:** Asphalt will be paid for at the contract unit price per ton (metric ton) complete in place. Separate payment will not be made for water for dilution of emulsified asphalt.
- B. **Blotting Sand For Prime:** Blotting sand for prime will be paid for at the contract unit price per ton (metric ton) complete in place.
- C. **Sand For Flush Seal:** Sand for flush seal will be paid for at the contract unit price per ton (metric ton) complete in place.