

## SECTION 408

### SURFACE TREATMENT

#### DESCRIPTION

**408.01.01 General.** This work shall consist of an application of bituminous material and cover of screenings applied on a previously compacted and bonded bituminous surface, all in accordance with these specifications and in reasonably close conformity with the lines shown on the plans or established by the Engineer.

#### MATERIALS

**408.02.01 Bituminous Material.** The type and grade of bituminous material will be specified in the contract. The grade may be changed one (1) grade by the Engineer during construction at no change in unit price.

The bituminous material shall meet the applicable requirements of Section 703, "Bituminous Materials". The bituminous material may be conditionally accepted at the source.

**408.02.02 Screenings.** Screenings shall meet the requirements of subsection 705.03.05, "Screenings", for the size specified. Attention is directed to subsection 106.04, "Samples and Tests".

#### CONSTRUCTION

**408.03.01 Distributors.** The distributor shall meet the requirements of subsection 404.03.02, "Distributors".

**408.03.02 Aggregate Spreaders.** The aggregate spreaders shall be self propelled and supported by at least four (4) wheels equipped with pneumatic tires on two (2) axles. The aggregate spreader shall be equipped with positive control so that the required amount of material will be deposited uniformly over the full width of the bituminous material.

**408.03.03 Rollers.** There shall be operating with each aggregate spreader, one (1) pneumatic-tired roller and one (1) steel-wheeler roller. The pneumatic-tired roller shall meet the requirements of subsection 401.03.04(b), "Rollers". The steel-wheel shall meet the requirements of the same subsection, (a) or (c).

**408.03.04 Weather Limitations.** Bituminous material shall not be spread when weather conditions are unsuitable, when the atmospheric temperature is below sixty-five (65) degrees Fahrenheit, or the pavement temperature is below eighty (80) degrees Fahrenheit.

**408.03.05 Maintaining Traffic.** Where public traffic is being routed over a surface upon which a surface treatment is to be applied, the surface treatment shall not be applied to more than one-half (1/2) the width of the traveled way at a time, and the remaining half width shall be kept free of obstructions and open for use by public traffic at all times until the surface treatment first applied is ready for use by traffic.

Traffic will not be allowed on the newly placed bituminous material and screenings until, in the opinion of the Engineer, the screenings and bituminous material have sufficiently set and bonded to prevent displacement by such traffic.

When the newly completed surface treatment is open to traffic, the traffic shall be controlled by the use of flagmen and a pilot car for a period of six (6) hours or for such time as deemed necessary by the Engineer as follows:

- (a) A flagman shall be stationed at the beginning of each newly completed section open to traffic, to stop oncoming traffic preparatory to piloting operations and shall be kept on duty during the entire control period.
- (b) Traffic control as described above shall be moved ahead progressively as the newly completed surface is open to traffic.

**408.03.06 Preparation of Surface.** Immediately before applying the bituminous material, the surface to be treated shall be thoroughly cleaned of all dirt and loose material by sweeping with power brooms supplemented by hand brooms if necessary. The process of cleaning shall continue until the surfacing is exposed and all dirt and loose material is removed from the entire width of surfacing.

**408.03.07 Application of Bituminous Material.** Bituminous material shall be applied by means of a pressure distributor in a uniform, continuous spread over the section to be treated. The temperature of the bituminous material shall conform to the applicable requirements of subsection 406.03.04, "Application of Bituminous Material". The quantity of bituminous material to be used per square yard shall be as directed if the texture of the surface is such that bituminous material penetrates too rapidly, a preliminary application of from five one hundredths (0.05) to one-tenth (0.1) gallon per square yard of surface may be required. A strip of building paper at least three (3) feet in width and with a length equal to that of the spray bar of the distributor plus one (1) foot shall be used at the beginning of each spread. If the cutoff is not positive, the use of paper may be required at the end of each spread. The paper shall be removed and disposed of in satisfactory manner. The distributor shall be moving forward at proper application speed at the time the spray bar is opened. Any skipped areas or deficiencies shall be corrected. Junctions of spreads shall be carefully made to assure a smooth riding surface.

The length of spread bituminous material shall not be in excess of that which trucks loaded with screenings can immediately cover.

The spreader of bituminous material shall not be more than six (6) inches wider than the width covered by the screenings from the spreading device. Under no circumstances shall operations proceed in such manner that bituminous material will be allowed to chill, set up, dry, or otherwise impair retention of the screenings.

The distributor, when not spreading, shall be parked so that the spray bar or mechanism will not drip bituminous materials on the surface of the traveled way.

**408.03.08 Application of Screenings.** Immediately following the application of the bituminous material, screenings shall be spread at the required rate per square yard.

In order to avoid building a longitudinal joint, when spreading screenings on the first width of bituminous material, no screening shall be applied within six (6) inches of the edge adjacent to the next application of bituminous material.

Bituminous material and screenings shall not be spread over a greater distance than can be rolled and finished within one (1) day's operation.

In order to eliminate dust film, screenings shall be moistened with water before being applied. In spreading the screenings, the equipment used shall be so operated that the fresh bituminous material will be covered before equipment wheels come upon it.

Asphaltic emulsion applied to the road surface shall be covered with screenings before setting or breaking occurs.

After the screenings have been spread upon the bituminous material, any piles, ridges, or uneven distribution shall be carefully removed with flat bottom shovels or other approved methods to insure against permanent ridges or bumps in the completed surface. Additional screenings shall be spread by hand in whatever quantities required to prevent picking up by the rollers or traffic.

After the application of the screenings the surface where specified shall be lightly broomed or otherwise maintained as directed for a period of four (4) days or as directed. Maintenance of the surface shall include the distribution of screenings over the surface to absorb any free bituminous material and cover any area deficient in screenings. The maintenance shall be conducted so as not to displace imbedded material. Excess material shall be swept at the time determined by the Engineer.

**408.03.09 Rolling.** Rolling shall follow immediately behind spreading screenings to properly embed the screenings in the soft bituminous material and rolling shall commence at the outer edges and proceed toward the inner edge of each spread of bituminous material and screenings, and shall be continued until the screenings are thoroughly set.

The sequence of rollers and roller patterns will be established by the Engineer.

#### METHOD OF MEASUREMENT

**408.04.01 Measurement.** The quantity of bituminous material to be measured for payment will be the number of tons conforming to all the requirements in the completed work. The quantity of screenings measured for payment will be the number of tons or cubic yards conforming to all the requirements in the completed work.

All measurements will be made in accordance with subsection 109.01, "Measurement of Quantities".

#### BASIS OF PAYMENT

**408.05.01 Payment.** The accepted quantity of materials measured as provided in subsection 408.04.01, "Measurement", will be paid for at the contract unit price bid per ton for bituminous material and per ton or cubic yard for screenings.

The above prices shall be full compensation for furnishings the material, mixing, loading, hauling, placing, rolling, sweeping, and incidentals necessary for doing all the

work involved in placing bituminous material and screenings, as shown on the plans or established by the Engineer.

The Department reserves the right to increase or to omit all or any part of the estimated amount of screening material or bituminous material to be used and no additional compensation shall be allowed by reason of such increase or decrease.

Flagmen and pilot cars will be paid for in accordance with Section 624, "Accommodations for Public Traffic".

All payments will be made in accordance with subsection 109.02, "Scope of Payment".

Payment will be made under:

Pay Item	Pay Unit
Liquid Asphalt (type).....	Ton
Emulsified Asphalt (type).....	Ton
Screenings.....	Ton or Cubic Yard