

SECTION 37

ASPHALT SURFACE TREATMENT

37.1 MATERIALS

A. General:

This work consists of an application of asphalt covered with a spread of cover aggregate.

B. Related Work:

Section 35 – Prime, Tack, and Flush Seal Coats
Section 116 - Aggregates for Asphalt Surface Treatment
Section 118 - Asphalt Material

37.2 MATERIALS

A. Asphalt:

Asphalt of the type and grade shown on the plans shall conform to the requirements of Section 118 and the following additional requirements:

When tested in accordance with SD 305 using Standard Aggregate (Sioux Falls Quartzite, from the Sioux Falls, South Dakota area), the asphalt shall conform to the following requirements;

Coating Obtained, Min.....95% Aggregate Surface Coated
Coating Retained, Min.....85% Aggregate Surface Coated

This specification requirement (SD 305) will be applicable only to cutback asphalt (Rapid Curing Type).

B. Cover Aggregate:

Cover aggregate of the type specified shall conform to the requirements of Section 116.

37.3 CONSTRUCTION REQUIREMENTS**A. Weather and Seasonal Requirements:**

The application of surface treatments will be permitted only during daylight hours when conditions are dry and when it does not adversely affect the spraying operation.

Minimum temperatures and seasonal limitations are as follows:

COVER AGGREGATE	AIR AND SURFACE TEMP. (IN THE SHADE)	SEASONAL LIMITATIONS (DATES ARE INCLUSIVE)
Type 1	70 degrees F.	June 1 - October 1
Type 2	70 degrees F.	June 1 - October 1
Type 3A	60 degrees F.	June 1 - October 1
Type 3A	70 degrees F.	Sept. 1 - October 1
Type 3B	50 degrees F.	May 1 - December 1

B. Equipment:

The following minimum equipment shall be furnished in good condition by the Contractor:

1. A vacuum, power broom.
2. Equipment for heating and applying the asphalt shall conform to the requirements of Section 35.
3. A self-propelled aggregate spreader, with positive controls capable of depositing the required amount of aggregate uniformly over the full width of the asphalt application. When spreading Type 2 cover aggregate, the spreader shall be equipped with means of applying the larger aggregate to the surface ahead of the smaller aggregate. A tailgate spreader of the type approved by the Engineer may be substituted for the above-described spreader when applying Type 3B cover aggregate.
4. The rollers shall completely cover an overall surface width of at least sixty (60) inches and furnish a minimum uniform rolling pressure of two hundred fifty (250) pounds per inch of rolling width.

C. Surface Preparation:

The surface to be treated shall be thoroughly swept with a vacuum power broom and cleaned of all loose and adhering foreign material. Appurtenances immediately adjacent to the surface to be treated shall be protected from the splatter of asphalt. Freshly primed bases shall be cured prior to the application of surface treatments.

D. Application of Asphalt:

Adjacent appurtenances shall be protected from the splatter of asphalt. The Engineer will specify the temperature range within which the asphalt shall be maintained at the time of application. Asphalt shall be applied by means of a pressure distributor in a uniform and continuous manner. Specified rates shall be applied unless otherwise ordered by the Engineer. Unauthorized increases in rates 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. A strip of building paper, at least three (3) feet in width and with a length equal to that of the spray bar plus one (1) foot, shall be used at the beginning of each spread. The distributor shall be traveling at the proper speed when the spray bar is opened. Skipped areas and deficiencies shall be corrected as soon as they are discovered. The edges of the spread shall not appreciably overlap. Areas inaccessible to the distributor shall be satisfactorily covered by hand spray methods.

Under no circumstances shall spraying operations proceed when it is evident the asphalt spread will not be covered with aggregate and rolled all in accordance with the prescribed schedule contained in the following sections.

E. Application of Cover Aggregate:

Cover aggregate shall be spread immediately following application of the asphalt. Under calm wind conditions, approximately five (5) miles per hour or less, the spread of cover aggregate shall follow within eight (8) minutes of the application of the asphalt. When the wind velocities are greater, the maximum time between applications of asphalt and cover aggregate shall be reduced as determined by the Engineer.

The spreading of cover aggregate following the application of "High Float" Emulsified Asphalt may be adjusted by the Engineer from the time limitations as shown above to fit project conditions.

The Contractor shall protect the treated surface from damage by traffic by continually maintaining a complete aggregate coverage, except that a strip of asphalt application approximately (4) four inches wide along that side of the spread forming a longitudinal joint with the adjacent spread shall be left uncovered. The adjacent asphalt and cover aggregate application shall overlap this strip. In lieu of this procedure, a butt joint may be constructed using special end nozzles.

Longitudinal joints, other than at centerline, will not be permitted within the center twenty-four (24) feet.

The cover aggregate shall be loaded in trucks to minimize segregation, eliminate oversize, and effectively break up or discard material bonded into chunks. When required, aggregate shall be uniformly moistened before or during loading.

Specified rates shall be applied unless otherwise ordered by the Engineer. Unauthorized increases in rates will not be eligible for payment.

Prior to rolling operations, the Engineer may order the Contractor to adjust inequalities in the spread of Type 3 cover aggregate by means of a drag broom.

F. Rolling Operations:

Rolling shall begin immediately behind the spreader and shall consist of four (4) complete coverages using pneumatic tired rollers. Operations shall be scheduled to complete the rolling within forty (40) minutes after the cover aggregate is applied. Rollers shall not be operated at a speed in excess of five (5) miles per hour. The weight and tire pressures of the rollers shall be varied as directed by the Engineer to obtain the most satisfactory embedment of the cover material without undue crushing of the aggregate. Turning of rollers on the freshly treated surface is prohibited. Rolling at night or when light conditions would create a traffic hazard will not be allowed.

Alternate rolling procedures that provide complete roller coverage directly behind the aggregate spread and completion of the four (4) complete roller coverages within the maximum time of forty (40) minutes may be used if approved by the Engineer.

G. Traffic Control:

Construction operations shall be coordinated to result in the least delay of traffic. If traffic is permitted, it shall be controlled by flaggers or pilot car, during application of the surface treatment on driving lanes. The traffic shall not exceed twenty (20) miles per hour for a period of four (4) hours after application. The minimum four (4) hour traffic control period may be reduced if ordered by the Engineer.

The width, arrangement, and sequence of the parallel application strips shall be governed so as not to unduly inconvenience traffic.

H. Maintenance and Repair:

Areas of the surface treatment, which may peel or otherwise be unsatisfactory for any reason shall be repaired with additional asphalt, cover aggregate, and rolling. Additional compensation for repair due to causes not the fault of the Contractor will be paid at the contract unit price for asphalt surface treatment.

The finished surface of the surface treatment shall be smooth riding and of uniform color. Lack of uniformity such as transverse or horizontal ridges, raveled spots, wheel marks, depressions, abrupt color changes, and other inequalities shall be corrected by the Contractor, as ordered by the Engineer. Payment will not be made for this correction work.

Special attention shall be given to the transverse and longitudinal joints during the process of the rolling work in order to insure a uniform appearance and smooth riding surface. The Contractor shall smooth and correct the appearance of these joints, as ordered by the Engineer, without additional compensation.

Any splatter of asphalt on roadway appurtenances, shall be satisfactorily cleaned off by the Contractor.

The loose material left on the surface shall be lightly vacuumed off three (3) to five (5) days after sealing the road.

Vacuumed-off material shall be removed and disposed of by the Contractor without additional compensation.

37.4 METHOD OF MEASUREMENT

A. Asphalt for Surface Treatment:

Asphalt for surface treatment will be measured to the nearest one-tenth (0.1) ton. Contractor shall provide Engineer with valid weigh tickets for asphalt, furnished and installed.

B. Cover Aggregate:

Cover aggregate will be measured to the nearest one-tenth (0.1) ton. Contractor shall provide Engineer with valid weigh tickets for cover aggregate, furnished and installed.

37.5 BASIS OF PAYMENT

A. Asphalt for Surface Treatment:

The accepted quantities of asphalt for surface treatment will be paid for at the contract price per ton, complete, in place. Weigh tickets will not be considered valid if received more than forty-eight hours after placement.

B. Cover Aggregate:

The accepted quantities of cover aggregate of the type specified will be paid for at the contract price per ton, complete, in place. Weigh tickets will not be considered valid if received more than forty-eight hours after placement.

END OF SECTION