

SECTION 4.14 BITUMINOUS SURFACE TREATMENT

4.14.01--Description: This work shall consist of furnishing and applying a bituminous surface treatment with one or more covers of sand, where called for on the plans or directed by the Engineer. It shall also include sweeping, spotting, dragging, honing or manipulation of the surface after the application of the sand, distributing, mixing and smoothing the combination of bituminous material and sand in such manner as the Engineer shall direct.

Unless specifically authorized by the Engineer, this work shall be performed only when the surface to be treated is free of frost, dry and when the atmospheric temperature is not less than 5° C.

4.14.02--Materials: The materials for this work shall conform to the requirements of Article M.05.02.

4.14.03--Construction Methods: If the surface of the road is waterbound macadam, the Contractor shall sweep the surface free of screenings and any foreign materials, down to the large stone, before any bitumen is applied, care being exercised not to dislodge any stones. If the surface is gravel, it shall be dragged and honed, leaving the surface true to line and grade before the bituminous material is applied.

When the surface is in proper condition for surface treatment, bituminous material shall be applied at the rate of approximately 2.3 L per square meter, or as directed. All equipment used for applying bituminous material shall be in good mechanical condition and capable of distributing the bituminous material uniformly and as required by the Engineer. Operators of distributing equipment shall be competent, experienced and qualified.

All bituminous carriers used in delivering bituminous material shall be clean, free from dirt, foreign material and material from previous loadings. Such carriers shall contain no material which shall tend to clog pipe lines and pumps of distributors.

All bituminous distributors shall be equipped with satisfactory heating apparatus to insure proper application. They must also be equipped with approved tachometers or other acceptable equipment in good working condition to permit accurate determination of rate of application for all grades of tars and asphalts, for varying widths of spraybars, through coordination of vehicle speed and pump output. Distributor operators must be trained in the use of these devices. Distributors must be equipped with hand hose in operating condition for use in covering areas inaccessible to standard spray bars. The distributors shall also have equipment for the effective removal of excess bitumen at stops and starts.

Temperature of the material and method of application shall be as specified by the Engineer.

Roadway areas receiving an initial bituminous treatment, and areas where no sand cover is specified after the first application of bitumen, shall be dragged and honed as required by the Engineer after the first surface treatment with bituminous material.

The Contractor shall protect all curbs and structures from damage or disfigurement due to the application of bituminous material.

Sand cover shall be spread by such equipment and methods as will provide uniform application.

Unless otherwise directed, immediately after the first coat of bituminous material has been applied, sand cover shall be spread on the roadway in an amount sufficient to prevent the bitumen from seeping off the surface. If ordered by the Engineer, the road shall then be dragged with an approved drag until the bituminous material and sand are thoroughly mixed and uniformly distributed over the portions of the roadway that have received an application of sand. Care shall be exercised to prevent the dragging from cutting through the coat of bituminous sand mixture. Surplus sand shall be removed and disposed of as directed. Additional sand shall be applied if ordered by the Engineer.

When the surface receiving the bituminous treatment is in satisfactory condition, it shall be swept clean of all sand and foreign matter and then a second application of bituminous material, of the grade specified by the Engineer, shall be made at the rate of approximately 1.5 L per square meter.

After the second application of bituminous material is made, the application of sand cover and its manipulation as specified above shall be repeated. The Contractor shall apply a light coat of sand as a final cover in an amount specified by the Engineer. The light coat of sand used as a final cover is not considered to be a separate application and will not be paid for as such.

In cases where a single application of sand cover is indicated on the plans, and where the Engineer does not deem it necessary, the initial treatment of bituminous material shall remain uncovered. In these cases, sand cover will only be required on the second application of bituminous material.

4.14.04--Method of Measurement: Bituminous material will be measured as follows: The laboratory shall establish a mass per liter of the bituminous material, based on the specific gravity at 16° C, for the material furnished. The number of liters furnished will be determined by measuring the material on scales furnished by and at the expense of the Contractor.

The quantity of sand for cover to be measured for payment under this item will be the number of square meters of surface actually receiving a sand cover as specified above, after each treatment with bituminous material.

4.14.05--Basis of Payment: When asphalt or asphalt emulsion is ordered used by the Engineer, this work will be paid for at the contract unit price per liter for "Bituminous Material for Surface Treatment," furnished and applied, which price shall include all material, labor, equipment and work incidental thereto, including dragging, honing and preparation, as specified above, and all heating as required.

When tar is ordered used by the Engineer, payment will be made on the basis described above, except that the unit price per liter will be adjusted by the application of a predetermined cost differential. The amount of this cost differential will be stated in the contract.

Sand for cover will be paid for at the contract unit price per square meter measured as above for "Sand Cover for Bituminous Surface Treatment," complete in place, which price shall include all materials, equipment, tools, labor, dragging, honing and work incidental thereto.

| Pay Item | Pay Unit |
|---|----------------|
| Bituminous Material for Surface Treatment | L |
| Sand Cover for Bituminous Surface Treatment | m ² |