

Bituminous Sealer Binder Specifications

PART I – GENERAL

1.00 DESCRIPTION

The work shall consist of cleaning, preparing and applying the bituminous sealer binder treatment in accordance with these specifications on existing asphalt pavement to areas specified by the owner. All procedures necessary to correctly perform the work as required in these specifications shall be incidental to the project.

1.10 SUBMITTALS

Contractor shall furnish and submit to the owner, manufacturers certification that the material is the type, grade, quantity, and quality specified for each load of material delivered. The certification shall show the shipment number, refinery, consignee, destination, contract number, and date of shipment. Contractor shall submit two 1-gallon samples of ready to apply bituminous material for each load delivered.

2.00 MATERIALS

- A. **2.10 BITUMINOUS GSB-78 SEALER BINDER.** Contractor shall install chemically engineered bituminous sealer binder comprised of Gilsonite Ore, plasticizers and diluents, manufactured by Asphalt Systems, Inc., (ASI) P.O. Box 25511, Salt Lake City, Utah. The bituminous sealer binder will conform to the following properties:

Specifications:

Kinematics Viscosity at 60° C (140°F)	10-30
Percent Water, maximum	0.5
Percent residue by distillation	30-40

Tests on Residue from distillation

Penetration at 25° C (77° F) dmm	2-12
Softening point, F	180-200
Solubility in 1,1,1 Trichloroethane	99 min.
HC 1 precipitation value	18-25

The Contractor shall submit manufacturer certifications as described above for review at or prior to the pre-construction conference for approval.

2.20 FRICTION MATERIAL The sand material shall be a dry, clean, angular, dust-free with a Mohs hardness of 6-8. The sand shall meet the following gradation analysis per ASTM D 451:

<i>Sieve Size</i>	<i>% Retained By Weight</i>
No. 16	0-1
No. 20	0-1
No. 30	5-20
No. 40	40-65
No. 50	20-40
No. 60	0-5
No. 100	0-3
Pan	0-0.2

The Contractor shall submit gradation and manufacturer's specification for review at or prior to the pre-construction conference for approval. Gilsonite is the active ingredient of the sealer binder specification and no substitutions that alter the percentage of this component will be considered or allowed.

Contractor shall be an ASI trained and approved distributor of GSB-78, using manufacturer approved installation equipment. Contractor shall have at least five years experience in application of GSB-78 in similar applications with customer references. A current manufacturer M.S.D.S. shall be provided with the bid forms.

3.00 APPLICATION.

- A. The bituminous sealer binder shall be uniformly applied using equipment as Described in Section 6.1 and in accordance with the manufacturer's recommendations. Contractor shall apply the bituminous sealer binder material only when the existing surface is clean and dry. The application target rate is 0.12 gallons per square yard.
- B. A manufacturer's representative may be required to be present in the field to assist the contractor in carrying out spot tests and/or test strips on the pavement to be treated to determine the optimum application rate. This shall be done just prior to the application or any time there is a change in the consistency of the pavement surface.
- C. Bituminous sealer binder shall applied in ready to use form only. Material dilution is not allowed.
- D. The bituminous sealer binder application shall be initiated only after the ambient air temperature is 50°F (10°C) and rising.
- E. Contractor shall provide written authentication from the manufacturer that he is an authorized ASI applicator, fully trained and using manufacturer approved application equipment and practices for application of the specified bituminous sealer binder with the bid documents.
- F. Contractor shall have at least five years experience in application of the bituminous sealer binder on similar projects and provide the owner with a list of at least five project references and contacts similar in size and scope along with the bid documents.

G. The bituminous sealer binder shall be uniformly applied at the rate of 0.08 to 0.14 gallons per square yard. Complete coverage must be obtained so the surface is positively sealed. The contractor shall provide to the owner information and data as required, reporting the volume of sealant material applied or being applied to a given section or project area. The permissible tolerance will be 95% to 105% of the coverage rate specified. It is the Contractors responsibility to visit the site to evaluate the condition of the asphalt prior to bidding. It should be assumed that porous asphalt surfaces might require the maximum rate of coverage.

H. The owner will collect batch samples from the distributor vehicle for independent evaluation and testing to verify compliance with these specifications. The cost of testing, analysis and certification of the applied material will be borne by the Owner. IF the sealant material applied does not meet product specifications as delineated in this section and/or as defined in the specification submittal, Contractor may be required to remove non-complying material and recoat with material meeting specification parameters without additional cost to the Owner. Contractor will assume additional costs incurred for requiring testing, analysis and certification for specification compliance of materials used for re-coating.

4.00 FRICTION MATERIALS APPLICATION

A. Friction material shall be applied immediately to the bituminous sealer binder material. The rotational speed of the sanding unit shall be such that sand is broadcast evenly across the entire width of the spraybar, and insure the correct amount of sand is applied to the surface, prior to the time when the bituminous sealer binder begins to film over. Sand will be applied at the rate of 0.50 to 0.75 pounds per square yard as determined by the bituminous sealer binder Manufacturer Representative.

B. Friction materials application shall be accomplished using a drop-type sander equipped with a full broadcast spreader to ensure even distribution of the sand. The sanding unit must have the ability to apply sand in the forward direction of the distributor in to prevent driving on the freshly applied bituminous sealer binder, and to enable negotiating sand application onto areas where turning around is not possible. The sand spreader must have variable controls to regulate both broadcast distance and volume of sand distribution. Push-type hand sanders will not be allowed.

C. Contractor shall ensure the sanding work is applied simultaneous to the bituminous sealer binder operation work as a cohesive unit. The sanding unit will be mounted directly on the rear of the bituminous sealant distributor. Sanding will be done in a manner so as to prevent any sand from going onto any pavement prior to the sealant being applied.

PART 2 EXECUTION

5.10 SURFACE PREPARATION

A. Contractor shall prepare the asphalt surface to be treated so that it will be free of all dirt, sand, weeds, grass, and excessive grease will be required to remove dust, dirt,

sand, leaves, plants and debris from the asphalt surface, as well as cleaning nearby adjacent surfaces where cleaning operations overlap. The surface shall be cleaned with a power broom, air brooms, supplemented by hand sweeping, power vacuum, or any other means required to remove deleterious matter to achieve penetration and bonding of the bituminous material.

6.10 EQUIPMENT

A. The bituminous sealer binder material shall be placed by manufacturer-approved standard bituminous distributors and shall be in good working order and contain no contaminants. Spreader tips must be clean and free of burrs, and of a consistent size to maintain even distribution of bituminous material. The distributor vehicle shall be equipped with a positive displacement gear pump. The operator of the vehicle shall be able to adjust and monitor the pump speed and bituminous sealer binder application rate from the vehicle cab and accurately control the amount of material being applied to asphalt surface. Material distribution rate shall be monitored by a computer-controlled system, or tachometer correlated to the ground speed of the vehicle to provide a uniform consistent application within the coverage rate parameters specified.

B. The distribution vehicle shall be equipped with an adjustable spray bar. The spray bar shall be full circulating, with individual shut off valves for each nozzle. The nozzles shall be spaced on the spray bar so as to provide a minimum double overlap spray pattern allowing for complete and even application of the bituminous sealer binder. Spray bars with single coverage spray pattern shall be approved upon request with the following stipulation: the owner shall inspect and approve the quality and uniformity of bituminous material distribution at the beginning of material application. The Contractor shall at this time, if required, make adjustments as and if deemed necessary material volume coverage rate will be adjusted so that the spray bar distribution will apply materials at the rate specified.

C. Hand application of bituminous sealer binder may only be used in certain locations inaccessible to the distributor application vehicle, or to control over-spray. The use of a hand spray wand will be required on returns or any other location where complete coverage cannot be obtained using the distributor spray bar to prevent overlapping previous work. Contractor is responsible to protect all surfaces not being treated from over-spray as needed.

D. The bituminous sealer binder material shall not be applied to wet surfaces, nor shall it be applied during rainy, damp weather. It shall be the Contractors responsibility to contain any material run off in the event of such conditions.

E. Application of bituminous sealer binder near buildings and other structures will be accomplished with a hand spray wand using a suitable shield as needed to prevent material over-spray from collecting. Curbs, gutters, drives and walks are to be protected from over-spray or spillover.

F. The bituminous sealer binder application is to be made with all signs and bumper blocks in place.

G. If it is necessary for pedestrians to cross the wet asphalt at any place, the Contractor shall anticipate such a necessity and provide a suitable walkway of boards or sand.

H. The Contractor shall be responsible for roping off, barricading, and protecting work areas to prevent vehicular or pedestrian traffic onto uncured bituminous sealer binder.

PART 3 – MEASUREMENT AND PAYMENT

7.00 Payment

- A.** FREIGHT AND WEIGH BILLS. Before the final estimate is allowed, the Contractor shall file with the Owner certified weigh bills of the emulsion materials actually used in the construction covered by the contract. Copies of weigh bills shall be furnished to the Owner during the progress of the work.
- B.** Square yardage or square footage measurements of completed work will be used to compute the final payment for the single bituminous sealer binder and sanding application.

END OF SECTION