

SECTION 025419
SLURRY SEAL (S-37)

1. SCOPE: The work covered by this specification consists of furnishing all plant, labor, equipment and material and performing all operations necessary in connection with the application of a slurry seal surface upon designated areas.

2. DESCRIPTION: The slurry seal shall consist of a mixture of emulsified asphalt, mineral aggregate, and water; properly proportioned, mixed and spread on the surface as specified here in and as directed by the Engineer.

3. MATERIALS:

A. Asphalt Emulsion. The emulsified asphalt shall be type SS-1h conforming to A.S.T.M. D-977 except that the viscosity requirement shall be changed to range of 20-50.

B. Aggregate. The mineral aggregate shall consist of natural or manufactured sand, slag, crushed fines, or a combination thereof. The aggregate shall be clean and free of vegetable matter and other deleterious substances. The aggregate blend shall have a minimum sand equivalent value of not less than 45 when tested by AASHTO T176-56. Smooth textured sand of less than 1.25% water absorption shall not exceed 50% of the total combined aggregate.

C. Mineral Filler. Mineral filler shall be any recognized brand of Portland cement that is free of lumps.

D. Water. All water used with the slurry seal mixture shall be potable and free from harmful soluble salts.

4. EQUIPMENT: All equipment, tools, and machines used in the performance of this work shall be maintained in satisfactory working condition.

A. Mixer. The slurry seal mixing machine shall be a continuous flow mixing unit and be capable of delivering water and also capable to deliver accurately a predetermined proportion of aggregate and asphalt emulsion to the mixing chamber and to discharge the thoroughly mixed product on a continuous basis. The aggregate shall be pre-wetted immediately prior to mixing with the emulsion. The mixing unit of the mixing chamber shall be capable of thoroughly blending all ingredients together. No violent mixing shall be permitted.

The mixing machine shall be equipped with an approved fines feeder that provides an accurate metering device or method to introduce a predetermined amount of mineral filler into the mixer at the same time and location that the aggregate is fed. The fines feeder shall be used whenever added mineral filler is a part of the aggregate blend.

The mixing machine shall be equipped with a water pressure system and fog type spray bar, adequate for complete fogging of the surface preceding spreading equipment, with a maximum application rate of 0.05 gallons per square yard. A calibrated control for aggregate and asphalt emulsion shall be provided and capable of proportioning accurately the materials.

The machine shall be capable of a minimum speed of 60 feet per minute and shall not be allowed to exceed 180 feet per minute while in operation. Sufficient machine storage capacity to mix properly and apply a minimum of five tons of the slurry shall be provided.

B. Spreading Equipment. Attached to the mixer machine shall be a mechanical type squeegee distributor equipped with flexible material in contact with the surface to prevent loss of slurry from the distributor. It shall be maintained so as to prevent loss of slurry on varying grades and crown by adjustments to assure uniform spread. There shall be a steering device and a flexible strike-off.

C. Auxiliary Equipment. Hand squeegees, shovels, and hand equipment shall be provided as necessary to perform work.

5. PROPORTIONING: The Engineer shall approve all slurry seal materials and methods prior to mixing and application. The proportions of the mixture to be used shall be as follows unless variations are approved by the Engineer. The Contractor shall make trial batches for evaluation at this expense to determine the final blend of mineral aggregate and residual asphalt.

Aggregate:

The combined mineral aggregate shall conform to the following gradation when tested by the previous mentioned test:

<u>Sieve Size</u>	<u>Percent Passing</u>
3/8	100
#4	85 - 100
#8	65 - 90
#16	45 - 70
#30	30 - 50
#50	18 - 30
#100	10 - 21
#200	5 - 15

Emulsified Asphalt:

The amount of asphalt emulsion to be blended with the aggregate shall be such to result in a residual asphalt content of 7.5 to 13.5 percent by weight of dry aggregate.

Mineral Filler:

Mineral filler shall not exceed 3.0 percent by weight of the dry aggregate.

Water:

A minimum amount of water shall be added as necessary to produce the proper consistency and obtain a fluid and homogeneous mixture.

6. CONSTRUCTION REQUIREMENTS:

The slurry shall not be applied when either atmospheric pavement temperature is 55 F and falling but may be applied when either the atmospheric or pavement temperature is 45 F and rising. The slurry shall not be applied during period of abnormally high relative humidity.

Immediately prior to applying slurry seal, the surface shall be cleaned of all loose material, silt spots, vegetation, and other objectionable material.

All existing pavement markings shall be removed by grinding.

Any depressions, large cracks, etc., shall be patched before applying the

slurry seal surface.

The rate of application of the slurry seal shall be between 8 and 12 pounds per square yard based on dry aggregate weight.

The surface shall be fogged with water directly preceding the spreader. The slurry mixture shall be of the desired consistency when deposited on the surface and no additional elements shall be added. Total time of mixing shall not exceed four minutes. A sufficient amount of slurry shall be carried in all parts of the spreader at all times so that complete coverage is obtained, and the maximum allowable speed shall be 180 feet per minute.

Approved squeegees shall be used to spread slurry in non-accessible areas to the slurry mixer.

Excess build up of slurry on longitudinal or transverse joints will not be permitted.

The slurry seal surface shall be rolled by a pneumatic roller having a tire pressure of 50 pounds per square inch. The paved area shall be subjected to a minimum of five passes with the roller.

7. MEASUREMENT AND PAYMENT:

Unless indicated otherwise in the Proposal, **SLURRY SEAL** shall be measured and paid for by the square yards of material installed and accepted. Such payment and price shall constitute full compensation for all labor, materials equipment and incidentals necessary to complete the item as specified.