

EMULSIFIED ASPHALT SLURRY SEAL**PART 1 - GENERAL****1.01 SECTION INCLUDES**

Emulsified Asphalt Slurry Seal

1.02 DESCRIPTION OF WORK

Includes the requirements for surface treatment of an existing pavement with an application of an emulsified asphalt slurry seal.

1.03 SUBMITTALS

Follow the General Provisions (Requirements) and Covenants.

1.04 SUBSTITUTIONS

Follow the General Provisions (Requirements) and Covenants.

1.05 DELIVERY, STORAGE, AND HANDLING

The various aggregate products used shall be kept separate, and adequate provisions shall be made to prevent intermingling. Stockpiling and processing shall be handled in a manner that will ensure uniform incorporation of the aggregate into the mix.

1.06 SCHEDULING AND CONFLICTS

Follow the General Provisions (Requirements) and Covenants.

1.07 RESTRICTIONS ON OPERATIONS

- A. Wet / Night Conditions:** Slurry seal shall not be placed when rain is predicted or on a surface with visible free water in front of the slurry machine. However, the pavement surface should always be kept damp. The mixture shall not be applied if high relative humidity prolongs the curing beyond a reasonable time. Slurry seal shall not be applied during night conditions.
- B. Surface Temperature Restrictions:** The mixture may be applied if both the pavement and air temperature are above 50° F and rising.

1.08 MEASUREMENT FOR PAYMENT

The slurry seal shall be measured and paid by the square yards of work computed, and accepted in place by the Engineer or authorized representative.

PART 2 - MATERIALS AND EQUIPMENT**2.01 MATERIALS**

- A. Asphalt Emulsion:** The emulsified asphalt shall conform to the requirement of ASTM D 2397 Specification, for type cationic CSS1h or anionic SS1h emulsion.
- B. Aggregate:** The mineral aggregate shall consist of natural or manufactured sand, slag, crusher fines, and others, or a combination thereof. Smooth-textured sand shall not exceed 50% of the total combined aggregate. The aggregate shall be clean and free from vegetable matter and other deleterious substances. When tested according to ASSHTO 96, the aggregate shall show a loss of not more than 40.

Mineral fillers such as Portland cement, limestone dust, fly ash, and others shall be considered as part of the blended aggregate and shall be used in minimum required amounts. Fillers shall only be used if needed to improve the workability of the mix or gradation of the aggregate.

- C. Mixture Gradation:** Crushed aggregate and mineral filler shall be combined to obtain a mixture that meets the following gradations for the type of slurry seal specified in the contract documents or by the Engineer.

| Sieve Size | Percent Passing Sieve | | |
|------------|-----------------------|--------|--------|
| | Type 1 | Type 2 | Type 3 |
| 3/8 in | 100 | 100 | 100 |
| No. 4 | 100 | 90-100 | 70-90 |
| No. 8 | 90-100 | 65-90 | 45-70 |
| No. 16 | 65-90 | 45-70 | 28-50 |
| No. 30 | 40-65 | 30-50 | 19-34 |
| No. 50 | 25-42 | 18-30 | 12-25 |
| No. 100 | 15-30 | 10-21 | 7-18 |
| No. 200 | 10-20 | 5-15 | 5-15 |

- D. Water:** All water used in the slurry mixture shall be potable and free of harmful soluble salts.

2.02 COMPOSITION OF THE SLURRY MIX

- A.** The amount of asphalt emulsion to be blended with the aggregate shall be as specified in the contract documents and as adjusted in the field.
- B.** A minimum amount of water may be added as necessary to obtain a fluid and homogeneous mixture. The mixture shall be of a consistency such that it "rolls" in the spreader box in a continuous mass.
- C.** Slurry that segregates in the spreader box, so that flowing of liquids (water and emulsion) is evident, is not acceptable and shall not be applied.

2.03 EQUIPMENT

- A. The slurry mixing machine continuous flow mixing unit, capable of delivering a predetermined proportion of aggregate, water, and asphalt emulsion to the mixing chamber and discharging the thoroughly mixed product on a continuous basis. The equipment shall be capable of prewetting the aggregate immediately prior to mixing with the emulsion. The mixing unit shall be capable of thoroughly blending all materials together.
- B. Whenever mineral filler is required for the mixture, the mixing machine shall be equipped with an approved fines feeder that includes an accurate metering device or method to introduce a predetermined proportion of mineral filler into the mixer. The mineral filler shall be fed into the mixer at the same time and location as the aggregate.
- C. The mixing machine shall be equipped with a water pressure system and fog type spray bar, adequate for complete fogging of the surface receiving slurry treatment.
- D. A mechanical type squeegee distributor with flexible material in contact with the surface of the pavement to prevent loss of slurry from the distributor shall be connected to the mixing machine. It shall be maintained so as to prevent loss of slurry on varying grades and crown. There shall be a steering device and flexible strike off. The spreader box shall have an adjustable width and shall be capable of placing the slurry mixture to the width specified in the contract documents.
- E. Cleaning equipment in the form of power brooms, power blowers, air compressors, water flushing equipment, and hand tools shall be provided to clean the surface and cracks as required prior to slurry sealing operations

PART 3 - EXECUTION**3.01 CLEANING AND PREPARATION OF THE SURFACE**

- A. Immediately prior to applying the slurry, clean the surface of all loose material, mud spots, vegetation, and other objectionable material.
- B. Any standard cleaning method used to clean pavements such as power brooms, compressed air, high-pressure water, and hand tools will be acceptable, except water flushing will not be permitted in areas where considerable cracks are present in the pavement surface. The surface preparation shall be subject to approval of the Engineer.

3.02 APPLICATION OF THE SLURRY MATERIAL

- A. When directed by the Engineer, fog the surface of the pavement with water immediately preceding the pass of the spreader. The water fog shall be applied at such a rate that the entire surface is damp with no apparent flowing water in front of the slurry box.
- B. The slurry mixture shall be of the desired consistency upon deposit on the surface. The total time of mixing shall not exceed 4 minutes.
- C. A sufficient amount of slurry shall be carried in all parts of the spreader at all times so that complete coverage is obtained. Overloading of the spreader shall be avoided.
- D. No lumping, balling, or unmixed aggregate shall be permitted. No segregation of the emulsion and aggregate fines from the coarse aggregate shall be permitted. If the coarse aggregate settles to the bottom of the mix, the slurry shall be removed from the pavement.
- E. Buildup on longitudinal or transverse joints will be avoided.
- F. Approved squeegees shall be used to spread slurry in areas inaccessible to the slurry machine.
- G. Apply a burlap drag to the surface when required by the contract documents.

3.03 CURING AND OPENING TO TRAFFIC

The treated area shall be allowed to cure until it may be opened to traffic without pickup or raveling of the slurry mixture. Any damaged caused to the slurry surface by premature opening to traffic shall be repaired or replaced at the Contractors expense.

END OF SECTION