

2009-17  
LAPEER COUNTY ROAD COMMISSION  
ANNUAL BID  
SLURRY SEAL SURFACE SPECIFICATIONS

DESCRIPTION

The Slurry Seal Surface shall consist of a mixture of emulsified asphalt, mineral aggregate and water, properly proportioned, mixed and spread evenly on the surface as specified herein and as directed by the Engineer. The cured slurry shall have a homogenous appearance and a skid resistant texture.

MATERIALS

1. ASPHALT EMULSION - The emulsified asphalt shall conform to the requirements of International Slurry Seal Association specification.
  
2. AGGREGATE - The mineral aggregate shall consist of natural or manufactured sand, slag, crusher fines and others or a combination thereof. Smooth-textured sand of less than 1.25 percent water absorption shall not exceed 50 percent of the total combined aggregate. The aggregate shall be clean and free from vegetable matter and other deleterious substances. When tested by ASTM D2419, the aggregate blend shall have a sand equivalent of not less than 45. When tested according to ASTM C88, the aggregate shall show a loss not more than 15 percent. When tested according to ASTM C131, the aggregate shall show a loss of not more than 30 percent.

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. They shall meet the gradation requirements of ASTM D242. Mineral fillers shall only be used if needed to improve the workability of the mix of gradation of the aggregate.

The combined mineral aggregate shall conform to the following gradation when tested by the previously mentioned test.

Sieve Size	Type II % Passing	Sieve Size	Type II % Passing
3/8	100	No. 30	30-50
No. 4	90-100	No. 50	18-30
No. 8	65-90	No. 100	10-21
No. 16	45-70	No. 200	05-15

Precautions shall be taken to insure that stockpiles do not become contaminated with oversized rock, clay, silt or excessive amounts of moisture. The stockpile shall be kept in areas that drain readily, segregation of the aggregate will not be permitted. The Contractor shall find suitable stockpile locations for stone and bituminous storage during the operation and shall restore area upon completion of contract.

## EQUIPMENT

1. **SLURRY MIXING EQUIPMENT** - Continuous flow slurry machines shall be provided and shall be capable of delivering accurately a predetermined proportion aggregate, water and asphalt emulsion to the mixing chamber and to discharge the thoroughly mixed product on a continuous basis. The aggregate shall be prewetted 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 proportion 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 the spreading equipment with a maximum application of 0.05 gallons per square yard.

Sufficient machine storage capacity to mix properly and apply a minimum of five (5) tons of slurry shall be provided.

2. **SLURRY SPREADING EQUIPMENT** - Attached to the mixer machine shall be a mechanical type squeegee box equipped with flexible material in contact with the surface to prevent loss of slurry from the box. It shall be maintained so as to prevent loss of slurry on varying grades and crown by rotating at center of box. There shall be a steering device and a flexible strike-off. The spreader box shall be adjustable for various widths. The Box shall be kept clean and build-up of asphalt and aggregate on the box shall not be permitted. The use of burlap drags or other drags shall be approved by the Engineer.

3. All equipment used shall be of sufficient size and in such mechanical condition as to produce a satisfactory job.

## PREPARATION OF SURFACE

Prior to construction, the Owner shall make any surface repairs it feels necessary.

Contractor will clean the area to receive the slurry.

All streets shall receive a tack coat of the same asphalt emulsion type and grade as specified for the slurry. This can be applied with an asphalt distributor or slurry machine adapted to apply tack coat. The normal application rate is 0.05 to 0.10 gallons of emulsion per square yard of surface.

### COMPOSITION AND RATE OF APPLICATION OF THE SLURRY MIX

The amount of asphalt emulsion to be blended with the aggregate shall be that as determined by the laboratory report after final adjustment in the field. A minimum amount of water shall be added as necessary to obtain a fluid and homogenous mixture. The Engineer shall give final approval to the design and rate of application used, however, a minimum of 14 pounds of aggregate and .28 gallons of emulsion per square yard shall be used. Weight slips shall be provided for these materials.

### WEATHER LIMITATIONS

The slurry seal surface shall not be applied if either the pavement or air temperature is 55 degrees or below and falling but may be applied when both the air and pavement temperature is 45 degrees or above and should not be applied if high relative humidity prolongs the curing beyond a reasonable time.

### TRAFFIC CONTROL

Suitable methods shall be used to protect the uncured slurry surface from traffic. The contractor shall coordinate the scheduling of roads to be surfaced with the Director of Operations.

### APPLICATION OF THE SLURRY SURFACES

1. GENERAL - 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 (4) minutes. A sufficient amount of slurry shall be carried in all parts of the spreader at all times so that complete coverage is obtained. No lumping, balling or unmixed aggregate shall be permitted. No segregation of the emulsion and aggregate fines from the course aggregate will be permitted.
2. HANDWORK - Approved squeegees shall be used to spread slurry in non-accessible areas to the slurry mixer. Care shall be exercised in leaving no unsightly appearance from hand work.
3. CURING - Treated areas will be allowed to cure until such time as the Engineer permits their opening to traffic.

### METHOD OF MEASUREMENT

Field measurements of the areas seal coated in square yards shall be determined by the Engineer in the presence of the contractor and or with his concurrence.

**DAMAGE LIABILITY AND INSURANCE**

The contractor shall save harmless and indemnify the Board of County Road commissioners of the County of Lapeer against all claims for damages to public or private property and for injuries to persons arising out of and during the progress and to the completion of the work.

The contractor, prior to execution of the contract, shall file with the department, copies of completed certificates of insurance as evidence that he carries adequate insurance satisfactory to the Road Commission, to afford protection against all claims for damages to property and injuries to persons arising out of and during the progress of the work. **The Road Commission shall be added to these policies as additionally insured, with a 10-day notice of cancellation clause.**

Minimum property damage and bodily injury liability covering each contract shall be:

<u>Bodily injury liability</u>		<u>Property damage liability</u>	
<u>Each person</u>	<u>Each accident</u>	<u>Each person</u>	<u>Each accident</u>
\$1,000,000	\$2,000,000	\$1,000,000	\$1,000,000

Operations shall not commence until insurance is in force and will cease if it is canceled.

**BASIS OF PAYMENT**

Double seal coat will be paid for at the contract price per square yard, which price shall be payment in full for furnishing, heating, hauling and applying the bituminous material, furnishing, hauling and placing the cover material, dragging, rolling, replacing disturbed material and constructing the surface complete.

ALTERNATE A

The undersigned bidder agrees that he will contract with the owner to furnish all materials, labor, equipment and all things necessary to complete the work in accordance with plans, specifications and related documents.

<u>DESCRIPTION</u>	<u>UNIT</u>	<u>AMOUNT</u>
Slurry Seal Surface	\$_____	\$_____

ALTERNATE B

County will pay for materials and contractor will order the materials.

Demurage will be paid for by the contractor.

<u>DESCRIPTION</u>	<u>UNIT</u>	<u>AMOUNT</u>
Slurry Seal Surface	\$_____	\$_____

COMPANY: \_\_\_\_\_

CONTACT PERSON: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

TELEPHONE: (\_\_\_\_) \_\_\_\_\_

By my signature on this document, I hereby state that all of the information I have provided is true, accurate and complete. I hereby state that I have not communicated with, nor otherwise colluded with any other bidder, nor have I made any agreement with, nor offered or accepted anything of value from any official or employee of the Lapeer County Road Commission.

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_