

S-119

**STANDARD SPECIFICATION FOR MATERIALS
AND CONSTRUCTION OF SLURRY SEAL IN
THE CITY OF SANTA MARIA, CA
(CITY ADMINISTERED PARKING LOTS)**

SECTION 1. GENERAL REQUIREMENTS

The work herein provided for is to be done in accordance with the plans and the general and special provisions on file in the Engineering Office of the Department of Public Works in the City of Santa Maria, and these specifications are intended to cover all items necessary for the construction of a slurry seal on the areas shown. All proposed equipment schedules and materials lists must be submitted in quadruplicate and approved prior to installation. This specification includes the application of asphaltic emulsion paint binder and the application of a slurry seal coat to certain specified areas. "Standard Specification" means the Standard Specifications of CalTrans the State Department of Transportation, State of California, as last revised.

SECTION 2. MATERIAL REQUIREMENTS

A. ASPHALTIC EMULSION

Asphalt emulsion shall be mixing type, SS-1h conforming to the provisions of Section 94, "Asphalt Emulsions" of the Standard Specifications, plus being pumpable by the machinery herein specified.

B. WATER

Water shall conform to Section 37-2.02B of the Standard Specifications. Water shall be available to the Contractor at fire hydrants near work site. Contractor shall make arrangements with The City's Water Utility in Administrative Services Department for placement of the water meter and payment of the water.

C. AGGREGATE

Mineral aggregate shall consist of a blend of rock dust and sand or crushed rock. The material shall be durable and sound, and free from vegetable matter and other deleterious substances. When tested in accordance with the methods described in Section 37-2.02C of the Standard Specifications, the combined mineral aggregate shall conform to these requirements, including the following gradations:

% Passing	Limits	Optimum %	Retained %
#4	100	100	0
#8	95	95	5
#16	75-80	75	20
#30	50-60	50	25
#50	25-35	30	20
#100	10-20	15	15
#200	5-10	5	10
			5
			100%

Sand equivalent 45 minimum, no silt, clay or other natural fines permitted.

All materials supplied must pass the wet track abrasion test specified under "Proportioning", Section 37-2.04.

SECTION 3. CONSTRUCTION METHODS

A. GENERAL

Contractor shall have five years successful slurry seal experience and submit a list with this proposal showing locations, dates and contracting agencies of previous slurry seal applications. He shall also maintain a working foreman on the project at all times with three years equivalent experience.

The Contractor shall be responsible to furnish all materials, equipment, labor and tools for the application of paint binders and slurry seal, and provide all hand work required to touch up small areas and to clean up the entire site.

The City will be responsible for all cleaning and preparation of work area, barricading and traffic control and notification to the public.

The City reserves the right to increase or decrease all quantities and adjust application rate or mix without change of the various bid unit prices.

This contract is contingent on suitable weather conditions for successful slurry application and should unsuitable weather, as determined by Section 37-2.06 of the Standard Specifications or as determined by the City, prevail, a delay may be ordered before continuance or starting of the work. In any event, work under this contract shall be performed only during the time of year specified or approved by the City.

B. PAINT PRIME COAT BINDER APPLICATION

Prior to the slurry sealing operations the surface to be sealed shall receive a prime coat consisting of mixing emulsion Type SS1 diluted approximately seventy-five percent (75%) with water, twenty-five percent (25%) emulsion, and applied at the rate of approximately one-tenth (0.10) of a gallon per square yard. No slurry seal shall be placed until the prime has broken. The exact rate will be determined by the City, and this item of work shall comply with Section 37-2.06 of the Standard Specifications.

C. SLURRY SEAL PLACEMENT

1. Proportioning

The mineral aggregate, asphalt emulsion and water shall be proportioned to provide a mixture that will show not more than seventy-five (75) grams loss per square foot when subjected to a standard wet track abrasion test or a similar test as approved by the City. Final blend of mineral aggregate and percentage of asphaltic binder to be used shall be approved by the City, based on test results. Fifty-three (53) gallons per ton of aggregate shall be used for bidding purposes for the specified slurry mixture.

The mineral aggregate must be weighed by means of certified scales at the aggregate plant and measured by volume through a calibrated gate opening on a traveling conveyer registering total revolutions. This conveyer shall be provided with a continuous check weighing system to verify a constant weight per revolution.

Asphalt emulsion and water may be weighed by means of certified scales. Water shall not exceed that specified but may be reduced when a true hot asphaltic concrete type of pug mill is used. Uniformity of distribution of asphalt will be determined as specified in Section 37-2.03 of the Standard Specifications, except the allowable variation shall not exceed plus or minus two pounds (+ 2#) of emulsion per one hundred pounds (100#) of aggregate.

2. Slurry Mixing Machines

The slurry shall be mixed by equipment complying with the provisions of Section 37-2.04 of the Standard Specifications as relating to continuous type pug mill mixers, and as further qualified by these special provisions. Rotating drum truck mixers may not be used.

The mixing machine shall meet all provisions of Division 15 of the Vehicle Code of the State of California, relating to size, weight and loads. Overweight equipment may be used on this project provided the gross laden weight does not exceed the weight permitted by Chapter 5 of Division 15 of the Vehicle Code of the State of California.

The mixing machine must have volume or weight control devices for proportioning each material as it goes into the final mix. This control device must be accurately calibrated and marked, and be readily observed and easily adjusted while the machine is in operation.

The machine must also be equipped with a water pressure system and spray bar to

provide a water spray immediately ahead of and outside the material application box.

3. Spreading Equipment

The slurry mixture shall be spread uniformly by means of a mechanical type spreading machine, equipped with flexible material in contact with the road to prevent loss of product from the spreader. The rear flexible seal shall act as a strike-off and shall be capable of automatically self-applying and relieving with a constant controllable pressure to surfaces varying plus or minus four inches (+ 4"). It shall be able to provide uniform application of the slurry material in a range of paint thickness to one-half inch (1/2") thickness. The strike-off shall also automatically adjust to the pavement surface cross section to maintain a uniform application which shall not vary more than plus or minus one third (+ 1/3) of designated thickness across any specific pavement surface section passing under the strike-off.

The spreader shall be capable of spreading a traffic lane width as great as twelve feet (12') in a single pass. The spreader shall not be permitted to move when there is less than four-inches (4") depth of product against any portion of the rear strike-off.

The spreader must be capable of wiping out to paint thickness over concrete valley cross gutters. Run-over into gutters will not be permitted.

4. Construction Details

Application shall be at any approximate rate of ten-fourteen pounds (10-14#) aggregate per square yard for slurry seal. For bidding purposes, slurry seal shall be twelve pounds (12#) per square yard. The maximum permissible sieve size shall not exceed the desired average thickness of rough textured surfaces. Smooth surfaces call for the reduction of at least one screen size.

Prior to slurry sealing operations, the surface to be sealed shall receive a prime coat consisting of mixing emulsion Type SS1, diluted approximately seventy-five percent (75%) with water, twenty-five percent (25%) emulsion and applied in compliance with Paragraph B of Section 3, above.

The City shall approve all seal coat materials and methods prior to use and shall designate the proportions to be used as provided under "Proportioning".

Hand finishing in the cross gutter area except at side runners will not be permitted.

All valves and manholes will be prepared by the City in order that slurry will not adhere. City will clean-up manhole water and valve monument, sewer clean out boxes. Any gutter, or other clean-up work, shall be made by Contractor.

The Contractor shall be required to provide all materials, labor, tools and equipment and perform all work necessary to complete and fulfill the contract and intent of these

specifications.

The Contractor shall pre-wet the existing road surface immediately prior to the application of the seal. Water used in pre-wetting surface shall be applied at the approximate rate of none to one-fifteenth (0.15) gallons per square yard of surface, or as directed by the City. One-tenth (0.10) gallons per square yard shall be used for bidding purposes.

The Contractor shall furnish sufficient equipment to produce and spread a minimum of one-hundred and fifty (150) tons of mixed product per day. Temperature provisions of Section 37-2 may be amended if the following equipment is provided:

A spreader truck which meets State specifications as to having a single person operated spreader bar of the remote controlled, fully recirculating, non-drip type. The pump used on this truck shall be of the centrifugal type (to allow low temperature handling) with a maximum spreading pressure available of not less than eighty (80) psi when spreading at a minimum speed of one thousand feet per minute (1,000'/min) at a width of twelve feet (12'). In addition, this equipment shall have nozzles spaced not less than twelve inches (12") apart and adjusted to strike the ground at an angle of approximately thirty degrees (30°) of vertical.

These nozzles shall have internal orifices constructed on a smooth change of sizes (from pipe size to orifice size) to minimize the effects of minor amounts of emulsion separating due to the low mixing temperature. The City shall stop the spreading of prime (until corrected) in the event of an impractical amount of nozzle plugging. The judgment of the City shall prevail.

If the above equipment is provided, prime may be mixed and spread at temperatures as low as forty-five degrees (45°). Slurry may be placed in the morning at temperatures as low as forty-five degrees (45°) provided the U.S. Weather Bureau's projected afternoon high temperature for that area is not less than sixty-five degrees (65°) with not worse than broken clouds for cover. The City's judgment shall be final in any interpretation.

In the event that this type equipment is not available, Section 37-2.06 of the Standard Specifications shall prevail.

SECTION 4. MEASUREMENT FOR PAYMENT

Measurement and payment shall be made under three separate items, as specified below:

Item 1: Application

Paint binder and slurry seal, when mixed and applied in compliance with specifications will be paid for on a square yard basis, as determined by actual field measurement upon completion of the project. Wipe over of intersection and all other work not specifically delineated on the plans or in the specifications, shall not be considered for payment.

Item 2: Aggregate

Aggregate shall be paid for as actually delivered and utilized on the project, on a per ton basis, F.O.B. job site.

Item 3: Emulsion

Mixing emulsion shall be paid for as actually delivered and incorporated in the project, on a tonnage basis, F.O.B. job site.

All material under Items 2 and 3, above, shall be weighed on a platform scale, and weights certified by a public weighmaster, registered by the State of California, all at the expense of the Contractor.

Loading, pumping, haul back, rejections or delivery delays, of either or both emulsion or aggregate, shall be included in the above payments, as no further claims for the three aforementioned bid items will be acknowledged.

All weight tickets shall be presented to the representative of the City, at time of delivery to the job site. Delinquent tags will not be honored.