SPECIFICATIONS FOR THE APPLICATION OF ASPHALT EMULSION SEALCOAT

GENERAL

The work covered by this specification includes the design, testing, and quality control required for the proper production of an Asphalt Sealcoat product and all materials, equipment and workmanship required for the application of an Asphalt Sealcoat to an existing asphalt concrete pavement where shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer.

Asphalt sealcoats under this specification shall be manufactured by uniformly blending asphalt cement, water, aggregates and various admixtures in a central plant capable of producing a minimum of 2,400 gallons per hour of finished product. Components shall be measured and recorded by weight controls that consistently incorporate all additives as required by these specifications. Blending the admixtures with the base asphalt emulsion shall be accomplished through the use of a high shear mechanical mixer to provide a uniform mixture.

Asphalt Sealcoat shall be stored in a tank equipped with power driven mixing or agitation equipment capable of keeping the Asphalt Sealcoat thoroughly and uniformly mixed. The stored material shall be protected from freezing in cold weather conditions.

MATERIALS

The materials for Asphalt Sealcoat immediately prior to mixing shall conform to the following requirements:

The asphaltic cement shall have a penetration rating of 15 to 35 pen and an SHRP rating of PG-70-10. The asphaltic cement shall be modified to contain a minimum of 8% recycled crumb tire rubber incorporated into the asphalt cement by use of a high shear Siefer mill. The modified asphalt cement shall be combined with slate, clay, water, and admixtures to form a stable emulsion, with a pH not greater than 7.0 and solids content not less than 49%.

Water shall be potable and of such quality that the water will not separate from the emulsion before the sealcoat is applied.

Mineral Aggregate components shall be 100% passing the #50 mesh sieve. These components shall be natural or manufactured, consisting of clean, hard, durable, uncoated particles that are clean and free from decomposed materials, organic materials and other deleterious substances. The sieve analysis of the Mineral Aggregate components shall be determined in accordance with A.S.T.M. test method c136.

MIX CERTIFICATION

At least 7 days before asphalt sealcoat placement commences, the Contractor shall submit to the Engineer for approval a laboratory report of tests and Manufacturer's certificate of compliance covering the specific materials to be used on the project.

The tests shall be performed by a laboratory capable of performing the applicable Asphalt Sealcoat Manufacturers Association (ASMA) recommended tests set forth in Table 1.

SURFACE PREPARATION

The surface to receive Asphalt Sealcoat must be free of all foreign material and dry immediately prior to sealcoat application. Cleaning may be by air blowing, vacuum, mechanical sweeper, washing, or other techniques as approved by the Engineer. If washing the existing surface is used, the surface shall not have any standing water prior to application of the sealcoat. Salt, deicing agents, fertilizers, hard water deposits and other such chemicals will promote lack of bonding of the sealcoat to the existing surface and may require extraordinary cleaning measures.

Cracks in the asphalt surface shall be treated in accordance with “Crack Sealing Specifications” contained in this bid document.

Prior to application of sealcoat, deposits of grease or oil shall be cleaned by scraping, burning and/or the use of approved detergents in order to promote adhesion of the sealcoat. After cleaning the areas described above, the areas shall be sealed with an oil seal. Oil seal shall be a quick drying latex emulsion with suitable admixtures manufactured specifically for the purpose of isolating the Asphalt Sealcoat from any residual oils, petroleum, grease or gas stained pavement.

The properties of the oil seal shall be such as to be compatible with the Asphalt Sealcoat.

In areas where the foreign oil or grease has penetrated the asphalt concrete such that cleaning as described above is not effective, the affected areas shall be removed to the depth necessary but not less than 3/4 inch. The removed asphalt concrete shall be replaced with new asphalt concrete conforming to Appendix A, “Surface Repairs” contained in this bid document.

On excessively weathered surfaces, areas such that cleaning operations leave a film of dust, or on areas previously sealed with coal tar, a tack coat of SS1h (CSS1h) asphalt emulsion conforming to ASHTO T56, shall be applied. The tack coat shall consist of One (1) part SS1h (CSS1h) with Four (4) parts water applied at a rate of 0.05 to 0.10 gal/sq yd. The tack coat must be dry prior to application of the Asphalt Sealcoat.

Areas of structurally unsound asphalt concrete such as alligator cracking, low spots (bird baths) or rutting must be properly repaired according to Appendix A “Surface Repair” or Appendix B “Removal and Replacement Repairs” contained in this bid document, as required by the Engineer, prior to placement of the Asphalt Sealcoat.

Asphalt Sealcoat shall not be placed on new asphalt concrete until after a 30 day minimum cure period or as directed by the Engineer.

APPLICATION

Application of the Asphalt Sealcoat shall be by mechanical means using rubber faced squeegees, brooms, distributor bar/wand or combinations of these or other techniques approved by the manufacturer and by the Engineer.

The Asphalt Sealcoat being applied shall be uniform and free flowing, free of lumps and other inconsistencies. Potable water may be added for dilution as necessary as per manufacturer's recommendation for consistency and spread-ability but shall not exceed 20% by volume or as

directed by Engineer. If, after the addition of the maximum allowable water volume the sealcoat is unsuitable, the materials shall be rejected and removed from the site.

The Asphalt Sealcoat shall consist of two application coats of material. Additional applications may be required as directed by the Engineer. The sealcoat must be thoroughly dry prior to application of the second or subsequent coats.

Application of Asphalt Sealcoat in ambient temperatures in excess of 100 degrees F shall require pre-treatment of the asphalt concrete surface with a water mist. The water must not be standing, but the surface should be damp prior to sealcoat application. This treatment is also recommended for application on porous surfaces where the water within the sealcoat may be absorbed too quickly by the existing pavement surface.

Care will be taken to ensure that the sealcoat material is kept off of all structures and appurtenances (concrete pads or curbs, light standards, wheel stops, buildings, etc.) on or surrounding the asphalt surface. Any material that is sprayed or splashed onto these structures shall be immediately removed by whatever means necessary, without damaging the structure, at the contractor's expense.

Asphalt Sealcoat shall be applied uniformly over the prescribed area in continuous parallel lines in a manner so that no ridges or uncoated areas shall exist, application rates will vary depending on the texture of the existing asphalt surfaces, with rough surfaces requiring more material than smooth surfaces. **The following application rates are guidelines only:**

Smooth, dense surfaces	20 gals/1,000 square feet	(.18 gal/yd2)
Medium surfaces	30 gals/1,000 square feet	(.27 gal/yd2)
Rough surfaces	40 gals/1,000 square feet	(.36 gal/yd2)

When the Asphalt Sealcoat is to be placed on a severely weathered pavement surface with a very rough texture, the inclusion of ground copper slag additive is recommended for the first coat. The ground copper slag additive shall be 100% passing the #50 mesh sieve. The addition of the ground copper slag additive shall not exceed 4 pounds per gallon without approval of the Engineer. The inclusion of the ground copper slag additive may require the addition of 1-3% Liquid Latex binder (Micro-lock) per gallon of undiluted Asphalt Sealcoat or as directed by Engineer.

The properties of the ground copper slag additive shall be determined in accordance with Cal Test 202 testing methods described in section 1-3.02 of this specification.

The properties of the Liquid Latex shall be such as to be compatible with sealcoat product, and approved by the manufacturer.

WEATHER

Asphalt Sealcoat shall only be applied when the ambient temperature is at least 50 degrees F and rising. Sealcoat shall not be applied when there is an imminent threat of rain, freezing temperatures, during rain, or when the surface contains standing water.

MISCELANNEOUS

Traffic shall not be allowed on the Asphalt Sealcoat until the sealcoat is thoroughly cured, which in warm weather conditions, is approximately 24 hours. Minor scuffing or power steering marks may occur on a newly applied surface in warm weather.

All homeowners and businesses affected by the paving shall be notified in advance of the surfacing. The notifications shall state the time and date that the surfacing will take place. Suitable tow-away signs may be posted prior to the surfacing. Should work not occur on the specified day, a new notification shall be distributed.

Irrigation watering shall be kept off for at least 24 hours prior to and 48 hours after the application of Asphalt Sealcoat.

Upon request, the contractor shall supply the owner with scale tags for the project containing the following information: product name, project name or location, gallons/tons supplied for the project.

Striping for parking and traffic flow should be done only after the sealcoat has thoroughly dried.

MEASUREMENT

Asphalt Sealcoat will be measured by the square foot in place.

PAYMENT

The contract price paid per square foot in place for Asphalt Sealcoat shall include full compensation for furnishing all labor, materials, tools, equipment, incidentals and for doing the work involved in the application of the sealcoat, complete in place, including certificates of compliance, cleaning the surface, furnishing added water, additives, and mixing for coating the pavement, protecting the seal until it has set as shown on the plans and as specified in these specifications and the special provisions, as directed by the Engineer.