ASMA USA

ASPHALT SEALCOAT MANUFACTURERS ASSOCIATION

ASMA-USA SEALCOAT SPECIFICATION

REVISION 2 | 2/24/21

ASMA-USA Specification

Asphalt Sealcoat Manufacturers Association (ASMA-USA), a professional Association comprising of manufacturers, material suppliers, contractors, consultants and governmental professionals, was formed with the expressed objective for promoting the use of asphalt emulsion-based sealcoats for the preservation and protection of asphalt surfaces, with a special emphasis on safeguarding human and environmental health. All ASMA-USA sealcoat manufactures must be in compliance with local, state and federal regulatory agencies for developing products with minimal environmental impact. The current USGS PAH's recommendation is 1000 ppm or less.

1-3.00 ASPHALT SEALCOATS

1-3.01 DESCRIPTIONS - The work by this specification includes the design, testing, and quality control required for the proper production of an Asphalt Sealcoat product and all material, equipment and workmanship required for application of an Asphalt Sealcoat to an existing asphalt concrete pavement were shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer.

Asphalt sealcoats are recommended for minor repairs and maintenance and for the protection of existing asphalt concrete pavements such as low volume city streets, parking lots, highway shoulders, airport taxiways, tarmacs, and aprons, bike paths, driveways, or any asphalt concrete pavement.

Asphalt sealcoats under this specification shall be manufactured by uniformly blended asphalt emulsions, aggregates, water and various addmixtures in a central plant capable of producing minimum of 750 gallons per hour of finished product. Components shall be measured by electronic or mechanical controls that consistently add all additives as required by these specifications. Blending the addmixtures with the base asphalt emulsion shall be by mechanical means 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.

1-3.02 MATERIALS – The materials for Asphalt Sealcoat immediately prior to mixing shall conform to the following requirements:

- Asphalt Emulsion shall be SS1h or CSS1h, conforming to the requirements in Section 94 of the California Standard Specification, "Asphaltic Emulsions," Table 1 or 2, with the exception of penetration on residue from distillation which will conform to a value of 20 to 60. Clay stabilization emulsion, with pH not greater than 7.0, and solids content not less than 45% may be used.

- The properties of the SS1h shall be determined in accordance with AASHTO designation T59 “testing emulsified asphalt.”

- 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 #16 mesh sieve. These components shall be a 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 Material Aggregate components shall be determined in accordance with A.S.T.M. test method C136 or Cal Test 202.

1-3.03 **MIX CERTIFICATION** – At least 7 days before asphalt sealcoat placement commences, the Contractor shall submit to the Engineer for approval a laboratory report of test and Manufacture’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 Manufactures Association – USA (ASMA-USA) recommended test set forth in Table 1.

1.3.04 **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 blower, 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 bounding of the sealcoat to the existing surface and may require extraordinary cleaning measures.

Cracks in excess of ¼ inch, but less than one inch in width must be sealed prior to application of the sealcoat. Cracks must be cleared of all weeds and debris prior to crack sealing with crackfiller. The crackfiller shall be applied per manufacturer’s recommendations and must be dry to the touch prior to applications of the sealcoat. Cracks that contain weed or other live vegetable matter must be treated with a locally approved non-oil based sterilant prior to application of crackfiller.

Cracks wider than one inch shall be filled with a fine aggregate hot, dense graded asphalt concrete conforming to Section 39 of the California Standard Specification for 3/8” Maximum Asphalt Concrete.

Crackfiller shall be a hot or cold applied product designed for use in asphaltic concrete made from petroleum asphalt, modified polymers, and suitable inert filler. The properties of the Crackfiller shall be such as to be compatible with Asphalt Sealcoat.

Prior or application of sealcoat, deposits of grease or oil shall be cleaned by scrapping, burning, and/or the use of approved detergents in order to promote adhesion of the sealcoat. After cleaning the areas described above, the area shall be sealed with an oilseal. Oilseal shall be a quick drying latex emulsion with suitable addmixtures specifically for the purpose of isolation the Asphalt Sealcoat from any residual oils. Petroleum grease, and gasoline-stained pavement.

The properties of the Oilseal 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 directed above is not effective, the affected area shall be removed to the depth necessary but not less than ¾ inch. The removed asphalt concrete shall be replaced with new asphalt concrete conforming to Section 39 of the California Standard Specification.

On excessively weathered surfaces or areas such that cleaning operation leaves a film of dust, a tack coat of SS1h conforming to Section 94 of the California Standard Specifications shall be applied. The tack coat shall consist of One (1) part SS1h with Four (4) parts water or Two (2) parts Asphalt Sealcoat with One (1) part water applied at a rate of 0.05 to 0.10 gal/sq. yd. The tack coat must 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 prior to placement of the Asphalt Sealcoat. (Refer to Asphalt Institute Publication MS-16).

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

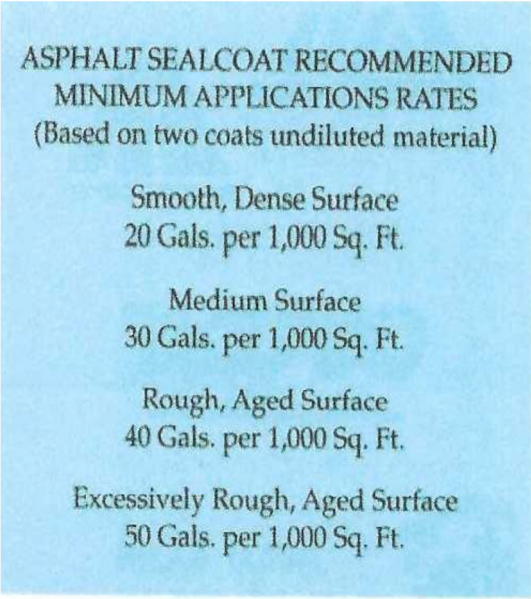
1-3.05 APPLICATON – Application of the Asphalt Sealcoat shall be by mechanical means using rubber faced squeegees, brooms, distributorbar/wand or combinations of these or other techniques approved by the Manufactures and by the Engineer.

The Asphalt Sealcoat being applied shall be uniform and freeflowing, free of lumps and other inconsistencies. Potable water may be added as necessary as per manufacture's recommendation, for consistency and spread ability but not to exceed 15% by volume or as directed by Engineer. If, after the addition of the maximum allowable water volume the sealcoat is unsuitable, the material shall be rejected and removed from the site.

Asphalt Sealcoats generally consists of two applications 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 temperature in excess of 80 degrees Fahrenheit shall require pretreatment 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. The treatment is also recommended for the application non porous surfaces where the water within the sealcoat my be absorbed too quickly by existing pavement surfaces.

Asphalt Sealcoat shall be applied uniformly over the prescribed are 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 requiring more than smooth surfaces. The following application rate are guide-lines only.



When the Asphalt Sealcoat is to be placed on severely weathered pavement surface with a very rough texture, the addition of #30 mesh sand with additional binders is recommended for the first coat. The addition of sand shall not exceed 3 pounds per gallon without the approval of the Engineer. Additional binder shall consist of 1/10 gallon of SS1h or 1-3% Liquid Latex binder per gallon of undiluted Asphalt Sealcoat or as directed by Engineer.

The properties of the sand 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.

Asphalt Sealcoat shall not be applied when the ambient temperature is less than 55 degrees for the surface temperature is less than 60 degrees Fahrenheit. Sealcoat shall not be applied within 24 hours prior to forecasted rain, freezing temperatures, during rain, or when the surface contains standing water.

1.3.06 MISCELLANEOUS – Traffic shall not be tallowed 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.

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

Upon request, Contractor shall supply owner with scale tags for the project containing the following information: Product name, Project name or location, Gallons/Tons supplied for the project.

A tack coat is recommended when using Asphalt Emulsion based sealcoat over pavement previously treated with Coal Tar (a test section is recommended and /or consult an Engineer).

Striping for parking and traffic flow should be done after the sealcoat has thoroughly dried. For best results, a high-quality Traffic Line paint is recommended.

1-3.07 MEASURMENT – Asphalt Sealcoat will be measured by the gallon. This may be determined by weight/gallon factors provided and certified by the manufacturer at point of sales. The quantity of the sealcoat to be paid for will be by the gallon before dilution with water or any addmixture not included in the manufacturing process.

1-3.08 PAYMENT – The contractor price paid per gallon for Asphalt Sealcoat shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing the work involved in the application of the sealcoat, complete in place, including testing and certificates of compliance, cleaning the surface, furnishing added water, additives, and maxing for the coating the pavement, and protecting the seal until it has set, as shown on the plans, and as specified in these specifications and special provisions, and as directed by the Engineer.

The contract price paid per ton for dense graded hot mix asphaltic concrete shall conform to Section 39 of California Standard Specification.

The contract price paid per linear foot for crack filling shall include full compensation for furnishing all labor, materials, tools, equipment, chemical sterilant, and incidental, and for doing the work involved in the Crackfiller, complete in place, including testing and certificates of compliance, cleaning the surface, routing cracks (if applicable), furnishing added water, asphaltic concrete, and additives.

1-3.09 METHOD OF TESTING – The properties and performance of the Asphaltic Sealcoat given in Table 1 shall be determined in accordance with corresponding A.S.T.M designation unless otherwise noted.

TABLE 1

The Asphalt Sealcoat Materials, as manufactured, undiluted, except as noted, shall conform to the following requirements;

	MIN	MAX	METHOD
Weight (per gallon)	9.0 lbs.		A.S.T.M. D244
Cone Penetration	340mm.	700	A.S.T.M. D217
% Non-Volatile	50		*ASMA A-1
%Non-Volatile Soluble in Tri-Clorethylene	10	35	A.S.T.M. D2042
Wet Track Abrasion		35 gram loss	A.S.T.M. D3910
Mineral Aggregate Components	#16 Sieve 100% passing		A.S.T.M. C136
Dried Film Color	Black		
Viscosity	75 KREB		A.S.T.M. D562
Accelerated Weathering	No Deterioration		Fed Spec TT-C-555B

*weigh 10 grams of homogenous product into a previously tared, small ointment can. Place in a constant temperature oven at 325 degrees F for 90 minutes. Coo, reweigh and calculate non-volatile components.

Due to the wide range of variables affecting the results of application, such as weather conditions, application methods, equipment, and quality of other materials, there is no warranty expressed or implied by ASMA-USA that following this specification, or using materials covered thereby, will assure satisfactory results.