(January 5, 2004)

Coal Tar Pitch Emulsion Seal Coat

Equipment

The mixing equipment shall be composed of three independent units capable of holding and storing mineral aggregate, water, and emulsion in separate holding tanks or containers. The system shall be designed with volume controls capable of accurately proportioning each component into a mixing chamber/applicator to obtain a homogeneous mixture. The mixing chamber/applicator shall have a minimum capacity of 300 gallons and be equipped with a power driven agitator capable of thoroughly mixing the sealer.

The mixing equipment shall be designed to maintain and adjust the mix formula. The use of equipment or applicator designed to hold and dispense sealer shall be equipped with volume controls to adjust the mix formula.

Surface Preparation

The pavement surface shall be pavement repaired, crack sealed and cleaned to the satisfaction of the Engineer prior to the application of the seal coat.

The pavement surface shall be free of oil and grease spots, clay, dust, and other objectionable materials that might adversely affect bonding of the emulsion. Oil or grease spots penetrating slightly below the pavement surface shall be removed by scarifying or abrasive means to the depth of penetration. Oil and grease spots penetrating deeply into the pavement shall be removed and repaired as determined by the Engineer. Surfaces that are impacted with hard clay, dust, and or silt that cannot be removed by mechanical sweepers or blowers must be pressured washed.

Solvents shall not be used for cleaning.

All pavement surfaces where coal tar pitch emulsion is applied shall be cleaned by flushing with a high pressure water truck prior to the initial seal coat application. Runoff shall be prevented from entering any water or drainage basins.

New hot mix asphalt shall be allowed to age for a minimum of 30 days or as determined by the Engineer prior to seal coating.

Any moisture sources that could potentially dampen the surface during the seal coating process shall be secured or eliminated. The Contractor shall cover and seal off drainage and runoff locations to prevent coal tar pitch emulsion materials from entering any nearby drainage basins.

Prime and Seal Coat Mixture

The coal tar pitch emulsion seal coat aggregate shall be mixed with the emulsion at the rate listed below based on the oven-dry weight of the aggregate and undiluted emulsion volume.

Application	Aggregate/Emulsion (Pound(s)/Gallon)
First Seal Coat	3-6
Second Seal Coat	1-3 (depending on surface texture)

Water mixed by volume into the undiluted emulsion shall include the moisture content of the aggregate and shall not exceed the following:

Mixture	Maximum Water (percent)
Prime Coat	50
First Seal Coat	30
Second Seal Coat	25

Mixing of Coal Tar Pitch Emulsion, Aggregate, and Water

Undiluted emulsion shall be charged into the mixer followed by the addition of minimal amounts of water to obtain mixture workability. The blending of the water and emulsion shall continue for not less than two (2) minutes before introducing the aggregates. Aggregate shall be introduced at a rate preventing segregation or lumping. Once the aggregates introduction is completed the mixing shall continue for a minimum of two (2) minutes. The slurry mixture shall be uniform and homogeneous and no slurry shall be accepted in which the emulsion has broken prior to spreading operations.

Application

The pavement surface shall be dampened as required by the engineer with a fog spray of water prior to the application of the seal coat.

The prime coat shall be applied first followed by the first and second seal coats.

The seal coats shall be applied by a self-propelled applicator. Hand tools such as brushers, nylon or plastic bristled brooms, and squeegee may be used to spread this application uniformly in areas not accessible by the applicator. Each application shall be applied perpendicular to the previous application when practical.

The following application rates for the coats specified shall be based on undiluted gallons of emulsion:

Application	Rate (Gal/SY undiluted emulsion)
Prime Coat	0.05 to 0.10
First Seal Coat	0.13 to 0.18
Second Seal Coat	0.12 to 0.15

The prime coat shall dry to the touch prior to the application of the first seal coat. The first coat and second coat shall be cured a minimum of 24 hours or as determined by the Engineer before subsequent applications or traffic use.

Each application shall be applied so that coverage is uniform and any pinholes or unsealed areas shall be repaired prior to subsequent coats.

Weather Limitations

Coal tar pitch emulsion seal coats shall be constructed in dry weather and only when the ambient temperature is between 60° and 95°F and rain or fog is not expected for 24 hours.