Designation: ~~D6948/D6948M – 03 (Reapproved 2011)ε1~~ D6948/D6948M – 03 (Reapproved 2017)

Standard Practice for Application of Refined Coal Tar (Ready to Use, Commercial Grade)[1]

This standard is issued under the fixed designation D6948/D6948M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

~~ε1 NOTE—Units information was editorially revised in June 2011.~~

1. Scope

1.1 This practice covers the application of emulsified refined coal tar slurry meeting the requirements of Specification ~~D6945~~D6945/D6945M Types I and II, by mechanized equipment as a weather protection and petroleum (aliphatic) solvent resistant sealer for use on bituminous concrete pavements. In order to clarify the differences between Types I and II, see 3.3 for standard definition of terms.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D490 Specification for Road Tar

~~D5727~~D5727/D5727M Specification for Emulsified Refined Coal Tar (Mineral Colloid Type)

~~D6945~~D6945/D6945M Specification for Emulsified Refined Coal-Tar (Ready to Use, Commercial Grade)

3. Terminology

3.1 Two types of mixtures are defined in Specification ~~D6945~~D6945/D6945M. The ingredients for both types of mixtures are normally combined at the contractor's yard or at the job site. Refined coal tar emulsion meeting Specification ~~D5727~~D5727/D5727M is concentrated when shipped from the manufacturer to the applicator.

3.1.1 *Specification ~~D6945~~D6945/D6945M Type I material*—is Specification ~~D5727~~D5727/D5727M material diluted with water typically by the applicator after which aggregate is added.

3.1.2 *Specification ~~D6945~~D6945/D6945M Type II material*—is Specification ~~D5727~~D5727/D5727M material diluted with water typically by the applicator after which additive and aggregate is added.

3.2 The mixtures described in 3.1.1 and 3.1.2 can be submitted to a laboratory approved by the owner for testing of their conformance to Specification ~~D6945~~D6945/D6945M Type I or Type II prior to their actual use on the job.

3.3 *Definitions:*

[1] This practice is under the jurisdiction of ASTM Committee D08 on Roofing and Waterproofing and is the direct responsibility of Subcommittee D08.09 on Bituminous Emulsions.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

3.3.1 *additive*—one or more ingredients that can be added to a specific refined coal tar emulsion, water, or sand (or combination thereof) mixture to improve the coatings' durability, fuel resistance, drying time, color uniformity, or length of time required before opening the surface to traffic, or combination thereof. This material can also be used to modify the wet mixture's viscosity to improve aggregate suspension. Because there is such a wide variance of additives on the market, the aforementioned results may not take place. If an additive is used, it is recommended that it be supplied by the same manufacturer as the refined coal tar emulsion.

3.3.2 *application rate*—the volume of mixed materials applied per area of pavement surface, usually expressed in liters per square meter (~~l/m~~(L/m^2) [gallons per square yard (gal/yd^2)].

3.3.3 *applied mixture*—the combination of all ingredients mixed together and ready for application to the pavement. Also referred to as *seal coat* or *sealer*.

3.3.4 *bituminous concrete pavements, new*—pavements that have been placed less than 90 days.

3.3.5 *bituminous concrete pavements, aged*—pavements that weathered over at least one summer season and have shown signs of one or more of the following: cracking, raveling, aggregate polishing or graying due to oxidation, or combination thereof.

3.3.6 *brush applicator*—a hand type or mechanized brush used to apply pavement sealer.

3.3.7 *crack filler*—a material that is placed in a pavement crack or joint to fill but not necessarily seal the void created by the crack or joint.

3.3.8 *crack sealant*—a material that has adhesive and cohesive properties to seal cracks, joints or other narrow openings (less than 38.5 mm [1-½ in.] wide) in pavements against the entrance or passage of water or other debris.

3.3.9 *crude coal tar*—condensed material taken from the coking process (high temperature heating of coal under a vacuum) and containing all of the volatile constituents.

3.3.10 *cure, final (of the seal coat)*—the process of evaporation of water and volatiles of the applied seal coating mixture over the period of days resulting in the coating reaching its ultimate strength. The duration of this process is dependent upon ambient conditions.

3.3.11 *cure, initial (of the seal coat)*—the condition of an applied seal coating material that enables it to withstand vehicle traffic without damage to the seal coat.

3.3.12 *drying (of the seal coat)*—the process of evaporation of water of the applied seal coating mixture resulting in the coating being able to sustain light foot traffic.

3.3.13 *mechanized application equipment*—equipment used to mix and apply the refined coal tar emulsion mixture either with a spray or squeegee unit.

3.3.14 *priming*—application of an initial coat of a material designed to assist the adhesion of the additional coats of seal coating materials. Primers are always used as under coatings and are not designed to be used by themselves.

3.3.15 *refined coal tar*—a selectively distilled coal tar meeting the requirements of Specification D490, grade RT-12.

3.3.16 *refined coal tar emulsion*—a stable and homogeneous dispersion of refined coal tar, clay, mineral fillers, and specialty chemicals in water.

3.3.17 *seal coating*—process of applying a protective coating to a bituminous concrete pavement.

3.3.18 *spray unit*—a piece of equipment equipped with a mixing tank and positive displacement pump that can homogeneously mix and apply protective coatings uniformly over the entire width of a spray bar or wand type application device.

3.3.19 *squeegee unit*—a piece of equipment equipped with a mixing tank and squeegeeing mechanism that can homogeneously mix and apply protective coatings uniformly over the entire width of a rubber squeegee or brush type application device.

3.3.20 *trafficability*—the ability of an applied seal coating material to withstand vehicle traffic without damage to the seal coat, except for wear from traffic.

3.3.21 *uniform coated surface*—a surface that has an even distribution of seal coating material free of pinholes, streaks, or other uneven characteristics, or combination thereof.

4. Significance and Use

4.1 This practice is designed as a guide for architects, engineers, property owners or their representatives, or combination thereof. Its use helps ensure the satisfactory performance of the protective coating system when applied over bituminous concrete pavements.

5. Materials

5.1 *Refined Coal Tar Emulsion (Seal Coating) Mixture*—A mixture of concentrated refined coal tar emulsion water and sand, with or without an additive, as specified in Specification ~~D6945~~D6945/D6945M.

5.2 *Crack Sealant*—As specified by the refined coal tar emulsion manufacturer.