

Best Management Practices for Sealcoating

This guidance outlines the necessary practices for application of pavement sealers to assure the integrity of the sealcoat after installation and to protect surrounding areas from accidental contact during application and while the applied film dries and hardens.

Conditions for Sealcoating Application & Protection from the Environment

All pavement sealers dry and harden through evaporation and exposure to heat generated by sunlight. Accidental exposure to water before this process is complete can result in delayed curing, discoloration and loss of film integrity. It can also lead to the material being washed into the surrounding environment including storm water drainage and retention areas. Successful application and protection of the environment depend on **protecting the freshly applied sealcoat** from accidental exposure to water and **assuring the correct conditions exist** during and after application for proper film formation and drying.

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Conditions Necessary for Application

Sealcoating is designed for pavement surfaces open to sunlight and free air circulation. It is not recommended for enclosed or permanently shaded parking areas such as underground garages. Ideal conditions are temperatures in excess of 70° F., direct sunlight, and relative humidity of less than 60%. Marginal conditions (i.e. overcast skies; high humidity) significantly increase the time needed for the film to dry and harden enough that it can withstand a rain event, up to 24 hours may be required.

The following conditions must be met for successful application:

- Ambient temperature will be a minimum of 50° F. and rising.
- Pavement temperature will be 60° F. and rising.
- Sealer will not be applied if rain is imminent or likely.
- Work will be performed so that there is a minimum of two hours of daylight remaining after completion.
- UNDER NO CIRCUMSTANCES will work be performed in cold (less than 50° F.) or wet conditions.
- UNDER NO CIRCUMSTANCES will an emulsion-based sealer that has been subjected to freezing temperatures be applied.

Applicator Safety

Make sure that you and your applicator team(s) are familiar with the products being applied on the job and have access to product specifications and information distributed by the supplier including the Safety Data Sheet (SDS). The applicator team should wear appropriate clothing (i.e., long pants, closed toed shoes) and have appropriate PPE (personal protection equipment) as recommended by the material supplier, which may include gloves, safety glasses / face shield, and long sleeves.

Surface Preparation

- 1. Allow New Asphalt to Cure.** Cure time varies with type of asphalt, aggregate, weather conditions, and construction procedures. Hot mix asphalt will usually cure in 30 – 90 days. Cold mix pavements should have at least 90 days to cure. The manufacturer of the crack treatment being used is a source of information about determining the final cure time before moving on to the next phase of your project.
- 2. Evaluate Larger Cracks.** Wide cracks, extensive alligator cracking patterns, soft or sunken spots indicate that the pavement and/or base should be repaired or replaced. Extensive patching shall be allowed to cure prior to seal coating in accordance with #1 above.
- 3. OPTIONAL: Evaluate Smaller Imperfections.** Thoroughly inspect the pavement for minor cracks and other imperfections. Ignore hairline cracks. Cracks of approximately 1/4 -3/4 inch-wide should be cleared of debris and filled with an approved crack sealant in accordance with manufacturer's specification.
- 4. Address Oil and Grease Spots.** Remove oil and grease spots that have not permanently damaged or softened the pavement by scrubbing with a detergent and flushing with water until a water-break-free surface is obtained. Oil and grease spots with deeper penetration will be treated by burning with hand held propane torch, and then coating the spot with an approved oil spot primer. If the oil spot is so severe as to cause permanent deterioration of the pavement, or if the pavement has failed due to other causes, the pavement shall be removed to the full depth of the damage and replaced with new asphalt pavement in accordance with #1 above.
- 5. OPTIONAL: Address Old Traffic Control Lines.** Old traffic control lines may be blackened with black epoxy or black acrylic coatings. Excessive build-up of lines should be abraded before any prime coats of asphalt or tar emulsion are applied.
- 6. OPTIONAL: Prime Surfaces.** Highly oxidized or weathered surfaces shall be primed. Prime with SS-1, SS-1h, CSS-1, CSS-1h asphalt emulsions or with an acrylic primer. The prime shall be allowed to cure for 24 hours before applying pavement sealer.
- 7. Clean Surface.** Immediately before application of sealer, clean the surface of all loose dust, dirt, leaves, and any other foreign materials by sweeping, blowing, flushing with water, or any combination of the three.

Application

Sealer must be applied uniformly over the entire pavement surface and be free of voids and pinholes. When pavement surface temperatures are in excess of 120° F, fog spraying the pavement with clean, potable water prior to application may be performed to achieve better bonding and facilitate even spreading by brush or squeegee. If fog spraying is performed, the pavement should be damp with no standing water or puddles to begin applying the sealcoat.

- Sealer may be applied by squeegee, brush or spray.
- Subsequent coats will be applied only after the previous coat has thoroughly dried.
- Subsequent coats should be applied at right angles to the previous coat(s), if possible.
- Spray application should not be attempted if it is windy.
- Edging work will be performed prior to main application with care taken to protect adjoining surfaces.

Overspray and Sealer Removal

Cleaning off / removing pavement sealer that has gotten onto undesired areas (i.e. sidewalks, walls, cars, etc.) is easiest when the sealer hasn't dried yet.

Wet sealer can be removed with soapy water. If the sealer has dried, potential techniques for removal include: apply a strong citrus cleaner / tar remover, allow some time to penetrate and soften the sealer, then power-wash. Citrus cleaners and tar removers can be found in auto parts or hardware stores. Hot water power-washers can be more effective. Test on a small area first to test effectiveness and ensure the surface being cleaned is not impacted negatively.

Water Point Source Control

Potential point sources of water intrusion onto the pavement surface must be identified prior to commencing work. Potential sources include:

- Lawn sprinkler systems – sprinklers used to maintain grounds often can overspray onto the pavement surface. Automated sprinklers must be turned off until work is completed and the job site is open for traffic.
- Drainage points for gutter systems must be identified. These can continue draining even days after a heavy rain and may need to be diverted or blocked in case of unexpected rain during application.
- Washing of cars, trucks or any other cleaning operations in the immediate vicinity of the job site should be suspended until work is completed and the job site is open to traffic.

Protection of Storm Water Drainage

Prevention of liquid sealer from entrance to storm drains must be ensured during application and while sealer dries and hardens.

- All storm drains in and surrounding the immediate job site must be identified.
- Incidental entrance of sealer into storm drains during application must be prevented by carefully edging prior to main application, covering storm drains during application or both.
- UNDER NO CIRCUMSTANCES is sealer to be applied directly to a storm drain grate or cover.
- In the event of an unforeseen rain event, all drainage points must be blocked using absorbent materials such as effluent filter strips.

Conclusion

The job site must be properly barricaded before, during and after sealer application and until striping is complete. Barricades must remain in place until the sealer and any striping or other pavement markings are dry and hard enough to withstand traffic or any potential rain event. Give your customer clear instructions about how long to wait before allowing traffic to the newly sealcoated surface. Clean up after completion of the job. The pavement may be swept one to two weeks after application.

References

NOTE: As of the date of this writing, ASTM standards pertaining to pavement sealing application and performance generally refer to coal tar-based sealers, which has been an industry standard for many years. The standards listed here-in are solely for the purpose of referencing industry standards.

- ASTM D 140 Standard Practice for Sampling Bituminous Samples
- ASTM D 5727 Standard Specification for Emulsified Refined Tar (Mineral Colloid Type)
{replaces Federal Specification R-P-355e}
- ASTM D 6945 Standard Specification for Emulsified Refined Tar (Ready to Use, Commercial Grade)
- ASTM D 6948 Standard Practice for Application of Refined Tar (Ready to Use, Commercial Grade)
- ASTM D-3423 Standard Practice for Application of Emulsified Refined Tar Pitch
- ASTM D-2939 Standard Methods of Testing Emulsified Bitumen Used as Protective Coatings
- ASTM D-4866 Standard Performance Specification for Refined Tar Pitch Emulsion Pavement Sealer Formulations (sp.) Containing Mineral Aggregates and Optional Polymeric Admixtures
- FAA Advisory Circular 150/5370-10B, Item P-630 Refined Tar Emulsion, Without Additives Slurry Seal Surface Treatment; and Item P-631 Refined Tar Emulsion, With Additives Slurry Seal Surface Treatment
- FAA Engineering Brief No. 46 Item P-625 and No. 46A, Item P-627 - Refined Tar Pitch Emulsion Seal Coat