

SEALCOATING PRINCIPLES & PRACTICES FOR THE PROTECTION & PRESERVATION OF ASPHALT SURFACES

PART II SPECIAL NOTES (D0 & DON'T, TROUBLESHOOTING) FREQUENTLY ASKED QUESTIONS

PRESENTED BY -Girish C. Dubey President, STAR, INC. April 2021

SEALCOATINGS- DO & DON' Ts

	DO	DO NOT
General	1. Sell for intended purpose	Oversell. Sealcoating will not repair deteriorated pavements.
	2. Follow manufactures recommendations for Application, safety in handling, compliance to regulations, and personal safety.	FLY BY THE SEAT OF YOUR PANTS. -Ignore instructions and safety instructions. -Indulge in reckless practices.
Inspection & Bidding	Walk through, Measure, Pavement Prep steps. Calculate, Material, Labor, overheads (direct and general), profits.	Depend on sketches, GPS maps, Property owners estimates and cost calculation for previous jobs.



SEALCOATINGS- DO & DON' Ts

	DO	DO NOT
Technical Details	 Sealer shall meet appl. Specs. Mix design- Follow recommendations Water- clean and potable Sand-Clean, Quartz 50-70 mesh. Additives- As recommended. Mixing shall be thorough 	 Miscalculate the mix design. Sealer is 100 base. a. Sand- no used foundry or sand blasting spent sand b. Mix additives from diff. suppliers. Always seek sealer suppliers approval. Incomplete/improper mixing shall result in poor performance.



SEALCOATINGS- DO & DON' Ts

	DO	DO NOT
APPLICATION	 Follow manufacturers recommendation for ; a. Pavement preparation. b. Selection of application tools, brush, squeegee, spray, etc. c. No. of coats and coverage rates. d. Ambient application conditions and drying times 	 a. Take Short cuts in pavement preparation. b. Over or under apply. c. Open the lot too soon. Have a disclaimer signed by the property owner if they want the lot opened sooner. d. Let the wash water go into storm sewer. e. Do not apply if there is any chance that rain will wash away the sealer into the bodies of water.
	Do a professional Job. Be a professional	Leave dirt and debris, etc. on the job after finishing. DO NOT SHORTCHANGE YOUR CUSTOMER

TROUBLE SHOOTING

Problems, Causes & Remedies

Problems	Causes	Remedies
 Pre-mature wear, Un-even wear, Sand knocked off 	 Thin coat application Too much water in the mix. Too much sand and large size, sand roll out that will abrade the sealcoating. Inadequate mixing of components in the sealer Improper cure conditions, too cold or freezing overnight temps. Get weather report for analysis. Dirty, over-oxidized pavement. Inadequate drying and cure, job was rushed and lot opened too soon. Inferior Product-Quality Issues. 	 1. Right coverage rate 2.Right Mix design 3.Mix thoroughly. 4. Prepare the pavement right. 5. Do not apply under cold, high humid or foggy conditions. 5. Select the right products. Ask for performance reports from your manufacturer.

TROUBLE SHOOTING

Problems, Causes & Remedies

Problems	Causes	Remedies
Un-even color	1. Cure under improper ambient conditions.	1.Must apply under the right
0	2. Curing under sun and shade.	cure conditions.
& appearance	3. Inadequate mixing of the components in the mix	2. Allow more cure time, the
problems	design.	color will blend in.
p	4. Changing mix designs for the same project.	3. Use the same mix design for
	5. No or very little sand in the mix. Also sand un-	the entire project.
	evenly suspended in the mix.	4. Check the accuracy of the
	6. Streaky appearance- sand falling in the	appl. Rate on a test area.
	windrows. Poor sand suspension in the mix.	5.Follow uniform windrows.
	7. Uneven rate of application, machine mal-	6.Make property owner aware
	function or in-experienced applicator.	about inconsistent pavement.
	8. Inconsistent pavement condition (smooth,	
	rough, patchy, oxidized)	
	9. Changing direction of application, uneven brush	
	or squeegee patterns.	
	10. Landscape irrigation run off.	6

TROUBLE SHOOTING Problems, Causes & Remedies

Problems	Causes	Remedies
Adhesion	1. Pavement not sufficiently cured	1. Test the
failura	(surface oily).	pavement to make
Tallure	2. Pavement too old and oxidized,	sure the pavement
	not properly cleaned and	is aged (cured
	primed	enough)
	3. Oil Spots not properly primed.	2. Clean and prime
	4. Dirty pavement Excessive oil,	with oil spot sealer
	grease, etc.	or specialty
	5. Polished aggregates	coatings.
	6. Excessive sand loads (>8lb./gal)	3. cure conditions
	7 Applied under cold or o/n	must he right



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PART III FREQUENTLY ASKED QUESTION

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Sealer Performance



Q.1. Why are two (2) thin coats better than one thick coat?

A.1. Sealer applied in two coats dries and cures much better than one thick coat application. Remember sealers are water-based coatings, which cure through the process of water release (evaporation). A thin coat will release water much faster than a thick coat. If applied in one thick coat, sealer will have a tendency to hold water and stay soft for a longer period of time, possibly causing tracking.

Q.2. Why did the sealer fail or peel?

A.2. Peeling is caused by sealer not bonding to oil spots or any other surface contaminants like dirt, grease, etc. or oxidized pavements. All the areas shall be thoroughly cleaned; oil spots shall be primed with specialty primers. Oxidized pavements shall be treated with a diluted coat of sealer or a specialty coating or a diluted asphalt emulsion.

Q.3. What causes white streaks in the sealer?

A.3. Streaks in the cured sealer film are possibly caused by incomplete mixing of clays and fillers in the manufacturing process of the sealer. The Sealcoating manufacturer should be able to rectify this problem.



Q.4. Why does the sealer dry gray?

A.4. Due to less than ideal conditions: High Humidity, Cooler temperatures , Shade. Mostly it is temporary, it will cure to a darker color.

Remedy- Use of fast drying additives- helps sealer dry faster and at a uniform rate.

Q.5. Why does the sealer wear out faster in traffic lanes, entrances and exits?

- A.5. More traffic More Wear.
 Excessive wear- Indication of adhesion problem to smooth/polished aggregates. Such
- **Remedy-** Use of specialty primers to penetrate the smooth polished aggregates and allow the sealcoating to bond, effectively. *Prime faster traffic lanes, exits and entrances.*





APPLICATION

Q.6. How soon I can sealcoat a freshly laid asphalt pavement?

- A.6. As soon as the surface rids of light oils through oxidation. Allow 90 days or more, depending upon locations.
 Perform a simple test called "water break test". - Spread some water on the surface. If the water sheets out without beading, you are ready to sealcoat.
 Remedy- For fresh patches, etc. *prime with a specialty primer.*
- Q.7. While spraying how do I know if I am applying at the recommended coverage rate e.g. 0.12-gallon/sq. yard?
- **A.7**. 1. Select 10' x 10' area of the pavement and place a 3"x 6" metal plate in the center.
 - 2. Spray Sealcoating in this area.
 - 3. Lift the metal plate before the Sealcoating dries.

4. Use the film thickness gauge to determine the wet film thickness. The reading will be in mils (1/1000 of an inch). Compare this reading with the desired film thickness for 0.12 gallon/ sq. yard coverage which is 21 mils.





APPLICATION

- Q. 8. What type of striping paints should be used and how soon can the lot be striped?
- A. 8. Water based Acrylic Traffic Paints are preferred.Alkyd (oil) based paints are also used.



a. Allow the sealer to dry and cure at least 24 hr. after the application of the final coat of the sealer, prior to striping.

b. If applied sooner, traffic markings may turn brown and blotchy.

Note: -Most of the water borne traffic paints contain some fastevaporating solvents. -These solvents extract lighter fractions from the binder (coal tar or asphalt) portion of the partially cured film of the sealer. -The extract floats to the surface of the paint film, thus rendering it brown and blotchy.

Mix Designs- Sand/Aggregate

Q. 9. Can you explain sieve size, % retained, % passing, etc.?

A. 9 a. Sieve sizes- Sand/aggregates must fall within a range of particle sizes, neither too coarse nor too fine.
 The sand is sifted through a set of screens with varying mesh sizes (openings in the screen).



b. Percent retained means how much of 100 grams of sand was retained on the screen and,

c. Percent passing is how much passed through the screen.

Use your manufacturers recommended grades.

Q.10. Why should we use sand?

A.10. a. Traction/ skid resistance,

Note- *Be aware of the liability issues* before making claims sealcoating will improve the skid resistance or make a surface slip resistant.

- b. Toughness of the cured coating film,
- c. A uniform textured, non-glare surface.
- D. It fills minor hairline cracks. Do not claim that it will fill larger cracks.



Mix Designs-Additives

Q.11. Why use latex additives?

A.11. The use of latex additives is very common. There are many latex additives to impart all types of performance advantages. For example;

- a. Rubberizing additives improve flexibility, durability, toughness, etc.
- b. Faster drying additives help sealers dry fast.

c. Water repellent additives improve water resistance of the cured sealer

d. Thickening additives build the viscosity of sealcoatings diluted with large amounts of water. Suspend large amount of sand.

Follow the manufacturer's recommendations.

Mix Designs-Additives

Q.12. What happens when you use different additives (different suppliers) in the same tank? Why did the viscosity go haywire?

A. 12. The viscosity went haywire because the additives were not compatible with each other. Do not mix different additives and stick to manufacturer recommendations. Also, the manufacturers' warranty may be void if you use other additives. Additionally, use the additive recommended by your sealcoat manufacturer. Additive made by someone else may not be compatible with the sealer made by another manufacturer.

Q.13. Why apply two coats, when one coat looks good enough?

A. 13. Appearance is only part of the benefits. The sole purpose of sealcoating is to protect and preserve the asphalt. One coat may not last even half as two coats. It will provide only half (or less) of the protection and will wear out, prematurely. You will have to sealcoat more frequently if you used only one coat.

Mix Designs

Q.14. How much water can I use?

A.14. Follow the manufacturers' recommendations. Normally 25-30 gallons per 100 gallons of concentrated sealer are recommended. Higher percentages are recommended for mix designs that use additives and larger amounts of sand.

Q.15. What is the deal with specifications using excessive amounts of sand, e.g. 18 lb. of sand in one of the FAA Specifications?

A.15. Those are special sand slurry specifications and not used commonly for sealcoating specifications. The industry recommends a maximum of 8 lb. of sand per gallon. Very high sand loading (18 lb. for example) will result in a coating that will be poor in flexibility, adhesion and chemical resistance.

Q. 16. Where can I get straight, objective answers?

A. 16. From your supplier.Trade organizations and magazines.







Thanks for watching this presentation.

For questions, comments or suggestions, Please contact your local STAR PLANT professionals or Contact

