

CHAPTER 10. FREQUENTLY ASKED QUESTIONS ABOUT CHIP SEALING

1. **Q)** I have a locally produced chip that does not meet any of Mn/DOT's gradation specification for the different sizes (FA-2, FA-2 1/2, or FA-3). Can I still successfully use these chips?

A) Yes, as long as there is less than 1 percent passing the # 200 sieve, you should be able to successfully use the chips. If you have more than 1 percent passing, check with your binder supplier to see what it recommends. The Mn/DOT chip seal design program will give you application rates for the chip and asphalt binder (see Mn/DOT website).
2. **Q)** Is there a good way to determine if I have placed enough asphalt binder on my chip seal project?

A) Determining if you have the proper embedment is a little bit like playing poker; if you look closely, there are always signs for you to follow. One sign in chip sealing is to look closely at crack seals that exist in your pavement. These areas have almost no absorption when compared to a normal HMA surface. If you do not see signs of the crack seal shadowing through the chip seal, then you are probably low on embedment.
3. **Q)** A surprise rain shower caught us when we were laying down our chip seal. What can we do to limit the amount of damage done by the rain?

A) Getting caught in a surprise shower is one of the joys of chip sealing in the Midwest. One of the first things to do is increase the aggregate cover rate by 100 percent as you finish covering the asphalt binder. If you have a truck with a sander on the job to repair damaged areas, have it sand the fresh chip seal. Any extra covering you can place on the chip seal helps to protect it from the rain. If you are lucky and have aggregate lime available, use it to blot the chip seal. This will cause the Cationic emulsion to break faster. Of course, the best case scenario is for you to watch the weather closely and suspend operations if you believe there is a chance of rain.
4. **Q)** My starts and stops to change trucks on the chip spreader result in spots that are rough and very dark. What can I do to improve them?

A) One successful method of dealing with starts and stops is to use roofing felt as a launching pad. Place one or two pieces of felt across the lane. The distributor can start spraying on the felt and then the felt can be removed after the application is complete, leaving a clean and straight edge.
5. **Q)** Does fog sealing on a chip seal reduce the friction number to an un-safe level?

A) The answer is "no", assuming you've properly designed your fog seal. The macro texture available on chip seals yields such high friction numbers (> 50) that a slight reduction from a newly placed fog seal still results in the friction numbers that achieve a safe level (<30).
6. **Q)** What is a good way to adjust chip and emulsion in the field for changing conditions (ie: more porous pavement conditions), after calibrating the equipment and setting the rates?

A) See response to question # 2 above.
7. **Q)** How do pavement and air temperatures affect seal coat operations?

A) If the air and pavement temperature are low during construction, the chip seal will take much longer to develop enough strength to withstand traffic. One other point to consider

is the time of day. For example, it may be forecast to be 60°F at 6:00 AM on July 1 which is a very different indication than if you had a 60°F at 4:00 PM. Now if it is 60°F at 4:00 PM, applying a chip seal is not recommended because the temperature will fall after sunset.

8. Q) How does ADT affect seal coat design and is there a maximum ADT on a roadway to be considered for seal coating?

A) ADT affects chip seal design in the following way: as the ADT goes up, the chip seal needs less asphalt binder. The reason for this is that increased traffic causes a higher percentage of the chips to be orientated on their least-dimension side. The inverse is that as ADT decreases, the asphalt binder must be increased. This is because there is less chance for the chips to be orientated on their least-dimension side with lower traffic volumes.

Roadways with ADT of 20,000 have been successfully chip sealed in Minnesota; however, most agencies use 10,000 ADT as their cut-off point when considering a chip seal application.

9. Q) Will ADT or anticipated truck traffic volumes affect the type of oil or aggregate used in a seal coat?

A) The answer is “yes.” Increased ADT or truck traffic requires using a stronger binder. Mn/DOT recommends using CRS-2p (Cationic Rapid Set polymer modified) because it builds strength in a matter of hours while it can take weeks for non-modified asphalt to develop strength. The aggregate will also be affected on a high-volume or high truck traffic roadway, with a more durable aggregate required.

10. Q) How many times can you chip seal the same pavement?

A) You can chip seal a structurally sound pavement an unlimited number of times if you want. There are some counties that have placed as many as four chip seals on a roadway and they are planning on continuing to chip seal the roadway every seven to ten years as long as the roadway is structurally sound.

11. Q) What is the maximum rut depth a seal coat can fix?

A) If the average rutting is over 1/4-inch, the roadway is marginally sound as a candidate to receive a chip seal.

12. Q) What do I need to know about protecting pavement markings during operations and/or re-applying markings after operations?

A) If you have pavement markings that need to be saved, there is cover-up tape available that can be placed over the marking to preserve it during the chip seal application. As for re-applying pavement markings, if you are using latex paint, you can apply as soon as the sweeping is completed. Epoxy paint requires a minimum of 14-days of curing before it can be used.

13. Q) Can I successfully re-use the sweepings from a seal coat application on another seal coat?

A) Yes, sweepings can be re-used. It is recommended that, at a minimum the chips be re-screened. If possible, re-washing the chips would be the best-case scenario. If you are using sweepings that have not been washed, use a high-float emulsion such as HFMS-2. If you are re-using sweepings, you should test them and design accordingly, making sure you select the appropriate binder.