Crack Sealing: Best Practices

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Why Do Cracks Need To Be Sealed?

#1 – To seal out water. Water entering the ground below the pavement softens the soil, creating a pocket for the water to collect. Next, the weight of traffic on the pavement will displace the water. This is how potholes are created. Stopping water from entering into and under the pavement keeps the base stable and the pavement strong.
Why Do Cracks Need To Be Sealed?

Untreated cracks continue to deteriorate. Oxidization of the crack edges leads to erosion. Thermal movement of cracks filled with incompressibles cause the cracks to grow in size. This deterioration is natural and if left untreated, continues to destroy the pavement.
Why Do Cracks Need To Be Sealed?

Do you know that Roads are the largest public capital investment in this country?

Sealing cracks will protect this public investment by stopping the imminent failures they cause and extending the service life of the pavement.

What GOOD crack treatments do for you?

~ Perform effectively for up to 7-9 years
~ Reduce Pavement Life Cycle Cost
~ Reduce vehicle maintenance for the traveling public.
~ Reduce Traffic Interruptions
~ Reduce Worker’s Exposure to Traffic

Roads are an investment and Crack Treatments are the most cost effective preservation tool available.
Crack Sealing Best Practices

Two Primary Methods:

✔ Clean & Seal
  ✔ Longitudinal Cracks, High Crack Density or Cracks >3/4” and <1½”

✔ Rout & Seal
  ✔ Transverse Cracks <3/4” wide.
Two basic options for crack sealing:
1) Capping the crack by filling the existing crack opening and applying a cap of sealant on the pavement surface.
2) Cutting a reservoir in the pavement to accept a greater amount of sealant. Overbanding can also be done.

Both of these applications have their place and can provide a quality seal for the crack. The science of making the right choice is what we are going to review.
How To Choose The Best Option
Capping Done Right

So what is a quality crack capping application to seal the pavement?

Don’t over do it!

Approximately 1/8 inch of sealant on the pavement surface and only 1 inch wider than the crack on each side is all that is required. Over application of sealant does not improve the results.
Proper Time For Capping

What is NOT a QUALITY APPLICATION when capping a crack?
Think About The Movement

Creating a reservoir in the pavement to accept the sealant is how you assure that the movement the sealant is subjected to is within the range that the sealant is designed to perform.
Pavement Cutting/Routing

Key to success:

- Good Pavement
Important Factors In Routing

Key to success:

• Well-maintained equipment
Stay On Route With The Rout!

Key to success:

- Keep centered over the crack

*This rout was next to the crack placing all the stress on one side of the sealant.*
Follow It!

Key to success:

- Hit the crack
Cleaner Routing IS Possible!
Keys To Successful Routing

Recap:

• Stay centered over the crack
• Hit the crack
• Use well-maintained equipment
• Focus on good quality pavements first

• OTHERS
  • Rout through minor surface treatments into sound pavement
  • If you get extreme spalling when routing, STOP!
Sealant Application

Key to Success

• Clean & Dry

• Correct Temperatures
  • Pavement
  • Sealant

• Tidy Application
Cleaning
Heat Lance
Weather...What’s In Common?
Sealant Temperature

Typical Melter/Applicator Configuration

- Agitator
- Pump
- Control Panel
- Engine
- Hose
- Double Jacketed Insulated Boiler
- Burner
Sealant Application
Detackifiers
Preferred Detackifiers
Stretch and Relax
Sealant Choices

Sealant Specification:

- MnDOT 3725 – 200% extension at -20^0F
- MnDOT 3723 – 100% extension at -20^0F
- MnDOT 3719 – 50% extension at 0^0F
Sealant Choices

- MnDOT 3725 – 200% extension at -20°F (Roadsaver 522)
  - Designed for reservoir sealing in high moving transverse cracks.

- MnDOT 3723 – 100% extension at -20°F (Roadsaver 535/515MN)
  - Designed for reservoir sealing in moving transverse cracks.
  - Designed to use in overband applications in low moving cracks.

- MnDOT 3719 – 50% extension at 0°F (Asphalt Rubber Plus)
  - Designed for maintenance sealing on low moving and high density cracking.
What is MOST important?
THANK YOU