

# Why Routing Pavement is a Best Practice

Achieve more than twice the sealant service life when you rout & seal!



## Rout for a better seal

When preserving asphalt pavement, for sealant material to disperse evenly and adhere properly to the sidewalls of cracks—a clean, dry channel must be established prior to sealing.

**Prepare for a better seal.** Routing cracks prior to sealing provides clean surfaces for sealant application that enables the sealant to better adhere to the walls of the reservoir, and increases the capacity of the reservoir to hold more sealant, both providing proven results to extend sealant and pavement service life.

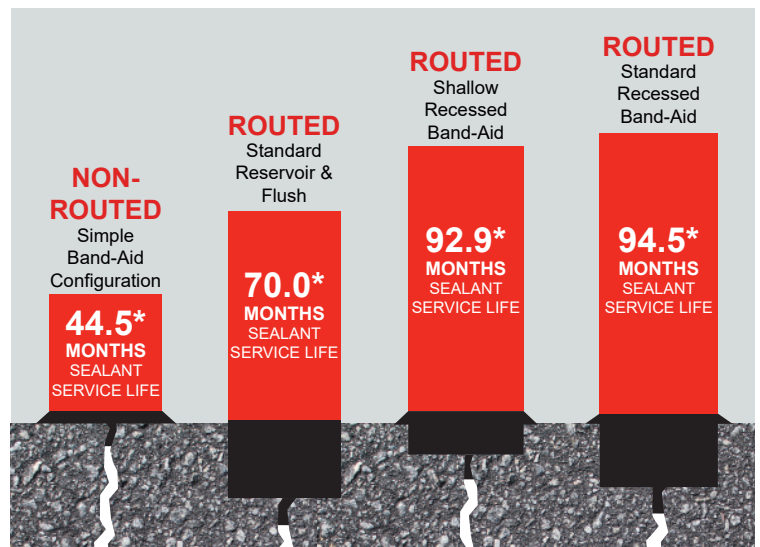
Cracks which are routed prior to sealing outlast “blow & go” applications and achieve more than twice the service life vs. non-routed and sealed cracks!

## The **PROOF** is in the pavement life-extending benefits

**NEW** - Per NCAT/MnROAD Pavement Preservation Group Study (Spring 2020):

- **7.7+ Years** when routing and crack sealing good pavement.
- **4.6 Years** when routing and crack sealing fair pavement.
- **1.1 Years** when routing and crack sealing poor pavement.

## The **PROOF** is in the sealant service life



Crack Treatment Experiment and subsequent FHWA Long-Term Monitoring project represented the most comprehensive pavement surface study ever conducted in asphalt pavement. (FHWA-RD-99-143)

# Protect your roads from potholes.

## Proven to last over 7 years.

Infiltration of water, impurities, debris and sunlight work to destroy the pavement surface and create cracks. Untreated cracks develop into potholes. Routing and sealing cracks prevents potholes and enables the pavement to carry-out its functions. Routing cracks cleans and strengthens the asphalt by removing crack debris and removing oxidized and contaminated surfaces of the crack. Routing also creates a reservoir with the appropriate width and depth to contain and protect sealant to achieve the longest service life. In short, a crack that as been routed provides longer-lasting protection and is proven to extend sealant and pavement service life.



A routed crack has clean, strong sidewalls and a reservoir with proper width and depth to sustain long-lasting protection. (7+ years service extension)



A non-routed crack does not provide the clean, strong sidewalls and a reservoir with proper width and depth to sustain long-lasting protection. (3+ years service extension)



A crack that is not treated will deteriorate when the temperature changes. As the crack expands and contracts, water and debris infiltrates the crack, contaminating the sub-base and causing potholes. (Zero life extension)

*Graphic shows treated and untreated cracks interacting with the natural seasonal expansion and contraction of pavement.*

## Crack routing and treatment:

- Proven by long-and short-term, independent studies to extend pavement service life 7 years and beyond.
- Proven to be the lowest-cost with the highest-benefit pavement treatment.
- Proven to slow the rate of cracking.
- Proven to extend pavement smoothness.
- Proven to reduce or eliminate the development of potholes.
- Proven to extend the service life of other surface treatments like chip seals and microsurfacing.
- Proven to be one of the most environmental-friendly pavement treatment.

# A successful sealant application starts with proper crack preparation.

Routing more than doubles sealant service life and is critical to the success of any crack sealing effort. Routing before sealant installation is a best practice to preserve pavement and extend pavement service life.

## When should I rout?

Routing has proven effective in adding pavement service life in all pavement conditions — **good, fair and poor**. Routing and sealing is better than providing no crack treatment.

Characterizing crack density (a factor that helps identify a pavement's condition) is the first step in determining whether or not routing is a necessary preparation measure.

- For pavement with less than 20% crack density; rout, clean and seal cracks between 1/8" (3mm) and 1.5" (38mm) wide.
- For pavement with greater than 20% crack density, routing has proven to be effective. If significant spalling is observed, routing should be discontinued. However, the best Return-On-Investment (ROI) is to not rout; instead clean and crack seal using a band-aid/overband configuration.

## Which cracks can I rout and seal?

**YES** Longitudinal cracks (center line, mid lane and wheel track)

**YES** Meandering cracks

**YES** Transverse cracks

**YES** Edge cracks

**NO** Alligator cracks (fatigue)

**NO** Cracks in pavement with crack density greater than 20% and observed spalling when routing

**NO** If pavement is scheduled for major rehabilitation and reconstruction within the next year

## Calculating Crack Density

- Crack density is calculated by measuring the linear footage of cracks present per square feet of pavement.
- The percentage of crack density helps indicate potential movement of cracks which in turn impacts sealant selection.
- Generally, the higher the crack density, the more cracks present in the pavement with less anticipated movement.
- A lower crack density implies less pavement cracking and therefore higher movement is expected.

## What additional routing factors do I need to consider?

Different climates require diverse reservoir configurations to achieve the longest service life. The table below uses the FHWA LTPP Bind Pavement Temperature Difference between the high and low to determine the ideal reservoir configuration. Talk to your CrafcO Representative to learn more.

Climate	LTPP Bind Pavement Temperature Difference	Reservoir Width (max)	Reservoir Depth (max)	Recommended Sealant Configuration
Very Cold	≥208°F (98°C)	1 1/2" (38mm)	1/2" (12mm)	Shallow Recessed Band-Aid
Cold	≤198°F (92°C)	1 1/8" (28mm)	1/2" (12mm)	Shallow Recessed Band-Aid
Moderate	≤187°F (86°C)	3/4" (19mm)	3/4" (19mm)	Standard Recessed Band-Aid
Hot & Coastal	≤176°F (80°C)	1/2" (12mm)	3/4" (19mm)	Standard Recessed Band-Aid

# Crack routing and treatment is the best business decision!



**Route**



**Clean**



**Seal**

**DID YOU  
KNOW**

The most expensive part of crack sealing is sealing the same crack again!

**UNDERSTANDING  
THE COST**

Labor makes up 80% of the cost of crack sealing. The combination of routing with crack sealing extends pavement life and is the most cost-effective preservation treatment for flexible pavements. (FHWA-RD-99-143)

**DID YOU  
KNOW**

Routing before sealant installation is recommended and in some cases a specification requirement for the job. But many industry professionals skip the step of routing because they think adding this process will affect productivity.

**UNDERSTANDING  
THE COST**

In the most comprehensive pavement maintenance study ever conducted by the Federal Highway Administration, the process of routing was examined and after review, was not found to be a rate-determining step and does not affect productivity of an experienced crew. Applying the material to the pavement is the constraining operation. (FHWA-RD-99-143)

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