

CRACK SEALING/FILLING

Application of a specialized seal material in cracks to prevent the intrusion of water and particles.

Crack sealing and filling are effective ways to keep water and incompressible materials out of existing cracks. By sealing the pavement structure, pavement life may be extended significantly. Cracking is caused by a number of factors, including excessive traffic loading, oxidation (age hardening), and cold weather shrinkage. Sealants and fillers are effective materials for addressing specific problem areas, especially early in the deterioration process. They may be hot-applied or cold-applied, and many material types are commercially available. It is important that the product chosen has enough elasticity to withstand crack movement, and is resistant to abrasion by traffic.

PURPOSES:

- Seal cracks
- Waterproof the surface
- Prepare the surface for additional preservation or maintenance activities
- Reinforce adjacent pavement

Selecting the Project: Crack sealing should be used for 1/8" to 1" working cracks, or cracks that exhibit movement due to traffic or temperature changes. Fillers are acceptable for cracks that are more stable. Crack density is another consideration. For moderate to high crack density, a mass crack treatment may be more appropriate.

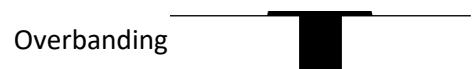


CAUTION: Crack preparation is critical to the success of the seal. Hot air blasting is most effective for cleaning cracks. Cracks with deteriorated edges should be cut or routed, then cleaned to provide maximum adhesion potential.

Materials: Hot-applied sealants and fillers may be special forms of rubber or polymerized asphalt. Sealants are more appropriate for working cracks, as they tend to have greater elasticity. Cold-applied sealants such as silicone-based or epoxy-type materials are also available, but may not provide adequate resistance to traffic abrasion. Follow manufacturer's instructions for temperature, handling, and storage requirements.

Equipment: An applicator wand and rubber squeegee are used to apply and smooth the sealant material. Check the squeegee frequently for wear, as this can lead to an uneven surface.

Construction: Place during dry, conditions: not too hot, not too cold. Flush fill or overband. Excessive sealant will create a "bump".



Do not place crack sealants during the summer. During the hotter months, crack are narrowest, preventing the application of adequate sealant. Spring or fall is best.



Cost:

\$0.50 - \$1.25 / linear foot
\$1200 - \$1800 / lane-mile

* Crack sealant must cure prior to an overlay, or the overlay heat can create a bump. If an overlay must be placed shortly after crack sealing, the use of warm mix asphalt may alleviate this problem.

PAVEMENT LIFE EXTENSION GENERATED BY CRACK SEALING	LOWER TRAFFIC	HIGHER TRAFFIC
Asphalt surface – up to 5 yrs old, good condition	3 – 5 yrs	2 – 4 yrs
Asphalt surface – aged, fair condition	2 – 4 yrs	1 – 3 yrs
Chip Seal – good to fair condition	2 – 5 yrs	1 – 3 yrs



Asphalt Surface Treatment Options

Arkansas Technology Transfer
University of Arkansas
www.cttp.org/t2

