

SLURRY SEAL

A thin mixture of aggregate, mineral filler, and asphalt emulsion placed with a slurry surfacing machine.

A slurry seal is a surface treatment that can be used to correct surface deficiencies and increase skid resistance. Slurry seals are a mixture of asphalt emulsion, fine aggregate, mineral filler, water, and other additives. The components are held separately within a slurry surfacing machine and mixed in a continuous flow pugmill. A spreader box then distributes the mixture over the existing roadway at a thickness equal to the largest aggregate in the mixture. After the mixture cures by water loss, it bonds tightly to the existing surface. Because slurry seals are relatively thin, they are useful on roads with existing curb and gutter or areas with height restrictions, yet also effective preservation treatments capable of correcting surface deficiencies, sealing minor cracks, and providing an impermeable surface. They are not intended to alleviate structural problems such as fatigue cracking, rutting, or potholes. Slurry seals provide a visually pleasing surface that can be opened to traffic in just a few hours.

PURPOSES:

- Waterproof the surface
- Seal small cracks
- Provide surface texture
- Add skid resistance
- Slow surface aging
- Repair raveling
- Improve surface appearance

Selecting the Project: A slurry seal is an excellent preservation tool that is best used for addressing minor cracking or surface deficiencies, and can significantly extend the life of an asphalt pavement at a relatively low cost. Significant cracking and localized structural failures should be addressed prior to the slurry seal application, using crack sealing or full-depth patching.



CAUTION: Depending on the bituminous material choice, slurry seals may take several hours to cure, and may not be practical for high traffic areas or intersections where traffic cannot be feasibly restricted during that time. Also, slurry seals may not effectively mask significant areas of unevenness, such as utility cuts or sunken patches.

Materials: Slurry seals utilize emulsion, aggregates, mineral fillers, and additives to create the most appropriate mixture for the project. The most common **fillers** are Portland cement, hydrated lime, and fly ash. Other **additives** may be used to adjust the emulsion set time based on temperature. **Aggregates** should be selected according to the needs of the project. Finer aggregate gradings are best for penetrating and sealing minor cracks, while coarser ones are better for correcting raveling and adding skid resistance for heavier traffic loads. All materials should come from an approved source.



Cost:
 \$ \$1.10 - \$3.15 / sy
 \$7,000 - \$20,000 / lane-mile

Equipment: A **slurry machine** with a pug mill and drag box must be used to place a slurry seal. No rolling is necessary, as the slurry material is somewhat self-leveling. Equipment **calibrations** should be performed using project materials.

Construction: Place during dry, **warm** conditions when no rains or high winds are forecasted – (April to Sept.) The surface must be clean and dry. **Consistency** in the paving process is critical, as the emulsion must be continuous and provide complete coverage. Use roofing felt or similar material to cover inlets and manholes, and to form clean construction joints. Open to traffic after 4 – 6 hours.



| PAVEMENT LIFE EXTENSION GENERATED BY SLURRY SEAL | LOWER TRAFFIC | HIGHER TRAFFIC |
|---|---------------|----------------|
| Asphalt surface – 3 to 5 yrs old, good/fair condition | 8 – 10 yrs | 6 – 8 yrs |
| Asphalt surface – aged, fair condition | 6 – 8 yrs | 5 – 7 yrs |



Asphalt Surface Treatment Options

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

