

FOG SEAL

A thin coating of a dilute asphalt emulsion that is sprayed onto the pavement surface.

Asphalt is a flexible material, but aging of the surface results in oxidation, causing the pavement to become brittle and more likely to crack. These cracks then allow air and water to enter, causing accelerated deterioration of the pavement structure. All asphalts age and become brittle over time, and this process may be quicker for conventional binders. Fog seals can delay the aging process and seal small age-induced cracks, prolonging the life of the pavement. Rejuvenating emulsions can even soften aged binders and help to reverse the aging process.

PURPOSES:

- Waterproof the surface
- Seal small cracks
- Rejuvenate asphalt binder
- Slow surface aging
- Prevent aggregate loss
- Improve surface appearance
- Increase visibility of pavement markings

Selecting the Project: Fog seals are most successful when used as a preservation treatment (before there is a problem) rather than as a corrective treatment (after there is a problem). They should be used when the seal material can penetrate, or soak into, the existing surface, such as:

- Aged and/or raveled hot mix surfaces
- Open graded asphalt mixes
- Chip-sealed surfaces



CAUTION: Surfaces with minimal surface texture, such as a tightly compacted hot mix or a pavement that has experienced bleeding/flushing, are not appropriate for fog seals and can result in a loss of surface friction.

Materials: Fog seals are placed rapidly, with minimal traffic interruption. In optimal conditions, a rapid set emulsion will allow for return of traffic in 1 to 2 hours. Emulsions should come from an approved source.



Use a **rejuvenating fog seal** for premature aging.
Use a quick-breaking **high performance fog seal** for quick return to traffic and raveling resistance.

Equipment: A distributor truck with a calibrated spray bar should be used to apply fog seals. The spray bar height should allow for overlap, creating a consistent application. Nozzles should be angled, with the outer nozzle knife-edged. Contact your supplier for appropriate nozzle size.



Typical Application Rates: 0.03 – 0.11 gal/sy for tight surfaces (traditional hot mix), and 0.09 – 0.22 gal/sy for open surfaces (chip seals). Emulsion should absorb into the surface within 2 – 3 minutes.

Construction: Place during dry, warm conditions when no rains or high winds are forecasted – (April to Sept.) Surface must be clean and dry. If flushed, allow 24 hours for drying.

Cost:
\$ \$0.30 - \$1.00 / sy
\$1760 - \$7040 / lane-mile

- * Do not fog over new crack sealant.
- * Do not fog a new asphalt pavement.

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



Asphalt Surface Treatment Options

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

