

# CHIP SEAL

## Asphalt Emulsion + Aggregate

A chip seal is a surface treatment that consists of layer(s) of asphalt binder (emulsion or AC) with layers of embedded aggregate. Chip Seals provide a new skid-resistant wearing surface, stops raveling, seals minor cracks and slows deterioration of the existing surface. Chip seal treatments remain one of the most cost-effective methods to preserve infrastructure.



### THE PROCESS

An asphalt distributor applies binder to the prepared surface via a computer-controlled pump at a predetermined rate. A chip spreader follows closely behind applying a uniform predetermined rate of aggregate. These two operations are the heart of constructing the surface. It is important that not too much binder is applied that would cause bleeding and not too much aggregate is applied that would prevent a good bond between the two. Pneumatic rollers are then used to achieve proper embedment of the aggregate into the binder. Rollers are followed by brooms that remove excess aggregate from the finish. Once fully cured, a fog seal and striping can occur if desired.

### BENEFITS

- Reduces life cycle costs by 45-50% when compared to traditional HMA mill and fill.
- Reduces energy use and greenhouse gasses by 50%
- Returns traffic to roadways faster than HMA placement
- Extends the life of roadways five - seven years on average and reduces lifecycle costs of the roads

### ISSUES ADDRESSED WITH CHIP-SEALING

- Minor cracking (less than 1/4")
- Raveling
- Low friction

### MATERIALS USED

- **Binders:** There are many different binders that can be used in chip sealing and names changed based on state/local specifications, but essentially there are two categories: Emulsions and hot applied AC. Polymers can also be added for additional improved bonding
- **Aggregates:** Several types are used based on available resources. Granite, limestone and slag are the most common. Chip sizes range from 1/4" - 1/2".