

Crack Sealing Benefits and Techniques

WATER IS THE MOST DESTRUCTIVE element to our pavements. If it rained and snowed everywhere but on our roads and bridges, 90 percent of highway and street work would be eliminated. Since that is not likely to happen any time soon, we need to prevent water intrusion into our pavements. Filling or sealing pavement cracks to prevent water from entering the base and subbase will extend the pavement life by three to five years. Filling cracks and joints with asphalt materials (such as AC 20 or asphalt emulsions) is not new. These pavement repair techniques have been commonplace practices for decades. The asphalt materials are intended to fill the crack and keep most of the water out of the pavement. When water is kept out, pavement deterioration is slowed.

DURABLE AND ECONOMICAL PAVEMENTS EXPAND and contract with seasonal temperature changes. Consequently, cracks and joints are expanding and contracting when the pavements move. Fillers do not expand or contract. Sealing the cracks with a flexible rubberized asphalt that bonds to the crack walls and moves with the pavement will prevent water intrusion. Sealing is better than filling. Sealing will last longer and cost less. As part of a pavement management system, crack sealing can reduce pavement deterioration by restricting water penetration into underlying base and subbase layers. This restriction helps to maintain pavement structural capacity and limits future degradation. Simply stated, sealing cracks and joints in pavements extends the service life of the surface treatment and the pavement. Crack sealing will not improve initial pavement rideability. The benefits are realized in three to five years when it becomes obvious that the pavement has not deteriorated. In fact, roads that have been crack sealed have better rideability five years later than other surface treatments, such as chip seals, micropaving, thin overlays and slurry seals. In five years these other treatments have come to the end of their life cycle. Roads and bridges that are crack sealed last longer than those that are not. Sealing prior to surface treatments enhances the treatment and further extends the pavement life. At a time when highway crew manpower is shrinking, along with the funds to support road maintenance, crack sealing stands out as an economical maintenance technique. The overall success of pavement maintenance systems that include crack sealing, combined with the generally low cost, make crack sealing a desired maintenance program. Crack sealing provides the most cost-effective use of dollars over time compared to other pavement maintenance techniques.

Original article can be found at: <http://www.usroads.com/journals/rmej/9908/rm990801.htm>