

Problem Pavement Gets Permanent Patch

Riverview Blvd. in along the Mississippi River in far north St. Louis is a problematic pavement, requiring frequent re-repair.

The Missouri Department of Transportation (MoDOT) maintains this stretch of roadway that connects a long-haul truck terminal area with I-270, linking east-west I-70 and north-south I-55 in the metro area. The resulting heavy traffic has mercilessly punished the pavement.

A particular area of degradation lies at the base of a bluff, from which water seeps, and the pavement is continually wet. In addition to this surface water, the roadway is subjected to water permeating up through the road material due to hydrostatic pressure.

Locally available cold mix and hot mix asphalt had been used previously on this area, with premature failure, and constant re-repairs every 10 days. MoDOT was interested in finding a permanent solution that would alleviate the labor and equipment commitment this single location was eating up.

Having experienced previous success with UPM permanent pavement repair material from Unique Paving Materials Inc., on Nov. 28, 2012 MoDOT personnel from its Bellefontaine and St. Charles maintenance sheds mobilized to repair the site. After setting up a work zone and marking the area, the crew used a milling head mounted to a skid steer loader to remove 1.5 to 2 in. from the road surface.

After removing the millings, sections of existing hot mix asphalt were left in place to use as a control for the performance evaluation. Using a pre-qualified aggregate, UPM was used from a local producer, NB West Contracting of St. Louis. The product was shoveled off the truck, raked to a uniform height and compacted using a commercial vibratory plate compactor. During the compaction process, water from under the road surface was forced out of the repair. The repair was dusted with available road dust and sand to blend the repair into the surrounding road.

This repair was monitored by MoDOT officials, and after three weeks, showed no sign of material loss raveling or pushing. The repair area remains wet, due to the flow of water down the hillside, but no damage to the repair area could be seen.

After 11 weeks, UPM was still performing above the expectations with no sign of raveling, dishing or loss of material, despite the stress of constant water. During the



Existing damaged pavement is marked and work zone established prior to patching




During compaction of patches with plate compactor, water is forced out of the road's subgrade



Seven weeks after installation patch is intact, even with water on pavement

monitoring period, St. Louis experienced several freeze thaw cycles, as well as 30 days of snow and 30 days of rain as the winter wore on.

“MoDOT considers this area to be the greatest problem pavement in the greater St. Louis area,” said Rich Schneider, maintenance supervisor for the Bellefontaine maintenance shed. “The repair with this product has lasted longer than others used previously in this location.”

UPM was able to outlast the other repair materials due to its high-performance engineering and flexibility, the manufacturer says. It’s designed to outlast the existing surrounding pavement, when properly applied, which the maker states in writing. 

Edited by PAVEMENT PRESERVATION JOURNAL from information provided by Unique Paving Materials Corp.



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