

Making Good on a Promise

Missouri Successfully Executes Crusade on U.S. 71

The Missouri Department of Transportation (MoDOT) is living up to its mission “to provide a world-class transportation experience that delights customers and promotes a prosperous Missouri” with help from companies like SemMaterials L.P. During the summer of 2005, MoDOT transformed a severely distressed section of U.S. Highway 71 into a smooth ride to Northwest Missouri State University, Kawasaki Motor’s plant and other sites near Maryville.

U.S. 71, a divided, four-lane highway, proved to be a perfect candidate for Missouri’s “Smooth Road Initiative.” In place since November 2004, the program commits \$400 million for surfacing the state’s 2,200 busiest highway miles.

Typically, MoDOT would have milled and replaced the 7-mile stretch. This time it chose two SemMaterials applications: ReFlex and Fortress. Doing so saved Missouri taxpayers 30-40% when compared with projected cost.



A Blaw-Knox PF220 paved the recycled cold mix.

The Fortress full-depth reclamation process rehabilitated the road’s shoulders. The ReFlex process recycled the existing pavement in place into an engineered base course on the driving lanes.

Using samples taken from U.S. 71, SemMaterials’ laboratory provided engineered design procedures for both processes. The designs include performance-related tests developed by SemMaterials to improve

reliability, early strength and resistance to raveling, rutting and thermal cracking. Next, Brown & Brown Inc., the project contractor, used its CMI RS-650 to reclaim 4 in. of base and the 2-in.-deep asphalt shoulders in the Fortress process. This stabilized the material with emulsion supplied by SemMaterials’ Salina, Kan., plant. After the reclaimer, the cold mix was compacted with a padfoot roller and leveled with a motor grader. It then was compacted with Dynapac pneumatic tire and Caterpillar double-steel drum rollers.

Following SemMaterials’ ReFlex emulsion cold in-place recycling design, a Caterpillar PR 1000 milled 4 in. of the pavement. The millings fed into a portable plant, were crushed and screened to 1.25 in. minus, then were pugmilled with ReFlex and other additives. A Blaw-Knox PF220 immediately paved the recycled cold mix. Dynapac and Caterpillar rollers compacted the mat.. St. Joseph-based Herzog completed the project with a 1.75-in. Superpave overlay.

“We were impressed with how well the reclaimed mix stands up to construction traffic immediately after construction,” said MoDOT Central Office Field Materials Engineer Joe Schroer. “SemMaterials people did a lot of investigation and have been on the job making sure everything is going right.”

According to Troy Slagle, MoDOT District 1 operations engineer, Missouri does not have a good source of quality virgin aggregate to meet all of the new initiatives, so CIR is a great solution. “We saved \$600,000 on the shoulders alone.”