

Microsurfacing and Flexible Microsurfacing

OPERA PROJECT PROFILE

General Project Information

Wright County uses Microsurfacing to seal and protect their pavements. Microsurfacing is a thin treatment which provides a smooth ride and skid resistance surface. While the maintenance properties of Microsurfacing meet the pavement preservation needs of the County, improved properties are always a goal to improve performance of County Roadways.

A desired performance property improvement of the traditional Microsurfacing product is to improve crack resistance of the surface treatment. A new Flexible Microsurfacing product was used on portions of two County Routes to evaluate it in relation to traditional Microsurfacing. These roadways were candidates for microsurfacing due to their condition and slight rutting. The flexible system consists of an emulsion formulation enhanced with a performance additive intended to improve crack resistance of the surface treatment. The Texas Overlay Test was used in the lab mix design to provide assurance that better crack resistant properties could be achieved. The two County routes used for this research project are County State Aid Highways (CSAH) 18 & 37. Traditional microsurfacing was placed on the majority of these roadways with a short 1500 foot section of Flexible Microsurfacing placed for comparison and evaluation on each route.

Construction Information

Contractor : Asphalt Surfacing Technologies Corp. St. Cloud, Mn.

Construction : July 2010 , Daytime, Traffic returned same day

Surfacing : Type II micro with 18 lbs per square yard

Photos

CSAH37 before



CSAH37 during





CSAH 18 before



CSAH 18 during



Performance additive in mix



Performance Additive machine

Design and Performance Result

There was some construction difficulty with the flexible microsurfacing on CSAH 37. The set time of one hour was not met. The problems were associated with retarder pump and pugmill performance issues that affected the cure of the flexible microsurfacing product. Surface Treatment blemishes caused by the equipment problems were fixed by the contractor at no cost to the County. Also, the Performance Additive was sporadically clogging the additive machine. A shorter fiber additive was used in the Contractors fix and the problem was eliminated. Martin Marietta granite aggregate was used for both roads.

The Texas Overlay Tester was used in Flexible Microsurfacing Design and has shown greater than five times the cycles to failure vs traditional microsurfacing. These laboratory results must be validated in the field so the CSAH 37 and CSAH 18 projects will be monitored to determine the additional crack resistance provided by the flexible microsurfacing as compared to traditional microsurfacing. These results will be reported back at a later date as part of this research.

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