

An evaluation of Texas roads provided surprising results when the best friction numbers came from a 10-year-old microsurfacing project. So when TxDOT had a new project that involved maximizing friction on a high traffic road (I-10 in Crockett County) they chose microsurfacing because it can yield greater long-term friction results throughout its service than an ultra thin lift overlay, and at a lower cost.

On average, an ultra thin lift overlay is \$6.50 per square yard - almost double the cost of micro surfacing.

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Micro surfacing treatments provide long-term results including a durable and high-friction surface that allows roads to withstand damage from heavy traffic loads as well as extreme weather, which helps to reduce the likelihood of vehicles skidding at accelerated speeds and/or hydroplaning.

#### BACKSTORY:

I-10 in Ozona, Texas, has a posted speed limit of 80 mph and an average daily traffic count of 11,000, with heavy truck traffic making up approximately 40% of this count. For safety reasons, the Texas Department of Transportation (TxDOT) works to ensure that friction on this interstate and similar roadways is always the best that it can be. The challenge centered on the many products available that yield the improved friction results TxDOT requires for their roadways; however, the agency needed a treatment that would provide exceptional friction numbers long term, with a budget-friendly benefit that would allow for more miles to be treated. **When checking friction numbers within their road network, TxDOT reps found that a 10-year-old micro surfacing treatment produced the best results, which led them to reconsider its use.**

#### PROBLEM:

"We checked friction numbers on many roadway surfaces including various seal coats (chip seals), hot mixes, LRA (limestone rock asphalt) and micro surfaced roads," said Lewis Nowlin, P.E., former Area Engineer, TxDOT, San Angelo District, Junction Area Office. "I was surprised to see that a section of I-10 with 10-year-old micro surfacing resulted in the best friction numbers. These results helped our district make the decision to go with micro surfacing to help improve friction on another section of I-10 in Crockett County."

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Evaluation of surface friction across their network convinced TxDOT that they should give micro surfacing another try. Once the I-10 project was let and awarded, Ergon Asphalt & Emulsions (EAE) proposed a session in which the contractor, Intermountain Slurry Seal, would conduct design, application and inspection training to help TxDOT become better acquainted with best practices for successful micro surfacing treatments. EAE was on hand to provide input and support during the session.

It was also decided that a fog seal would be applied on shoulders along I-10, which would restore essential properties to the asphalt on these sections that were lost over time due to exposure to high west Texas temperatures.

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*— Lewis Nowlin, PE, Former Area Engineer, TxDOT, San Angelo District*

#### SOLUTION:

On August 3, 2020, the contractor began the process of applying the micro surfacing solution, at 22 pounds per square yard along the 96 lane mile stretch of I-10. Exit and entrance ramps throughout the project also received micro surfacing. The treatment was applied in two-mile increments, with traffic shifted to one lane during application. The fog seal was applied on the shoulders at 0.10 gallons per square yard. Section by section, both treatments cured in less than an hour, at which time traffic was returned. The entire project was completed by September 1.

The contractor did not encounter any raw material challenges during application, and TxDOT continues to be pleased with the results. There are plans for 2021 micro surfacing applications on roads where improved friction is necessary to ensure driver safety, including more in the San Angelo district.

#### PHOTOS:



Micro Surfacing is being applied to Interstate I-10 in Ozona, Texas.



Completed Micro Surfacing project in Ozona, Texas maximized surface friction.