



Field Friction Testing

Research Objectives

- Develop performance curves for high-friction surface treatments.

Research Benefits

- Improve pavement surface friction characteristics.
- Reduction in run off the road crashes.

WisDOT Project Contact

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Background

Certain geometrics of a roadway can be factors contributing to an increase in run off the road crashes. These crashes can result in injuries to the traveling public.

High-friction surface treatments (HFST) have been shown to increase the friction characteristics of roadways and can reduce the frequency of run off the road crashes.

The department, as a continuation of project 20-50, continues to conduct friction testing on surfaces applied to roadways intended to reduce run off the road crashes.

Methodology

Research funding was used to take friction readings following AASHTO T242 *Standard Method of Test for Frictional Properties of Paved Surfaces Using a Full-Scale Tire*. Friction readings continue to be collected over time on HFST as well as other candidate treatments of the roadway. Performance models will be developed based on the readings.



Figure 1: Typical Test Equipment for Skid Testing

Various types of HFST materials were evaluated and will continue to be monitored to determine the performance of the system. Systems were both asphalt, and epoxy resin binders with both local aggregate sources and imported calcinated bauxite aggregate.

Results

Initial analysis has indicated HFST as the preferred alternative for skid characteristic enhancement. HFST have shown an average

“Application of high-friction surface treatments has proven to be an effective safety mitigation practice when pavement surface friction has been identified as a contributing factor in run of the road crashes.”
– Pete Kemp, Pavement Unit, BTS

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increase over 40% in the effective skid number (SN40) rating initially after installation in monitored sections. After 4 years in service the HFST has maintained an average increase in the SN40 rating of 15%.

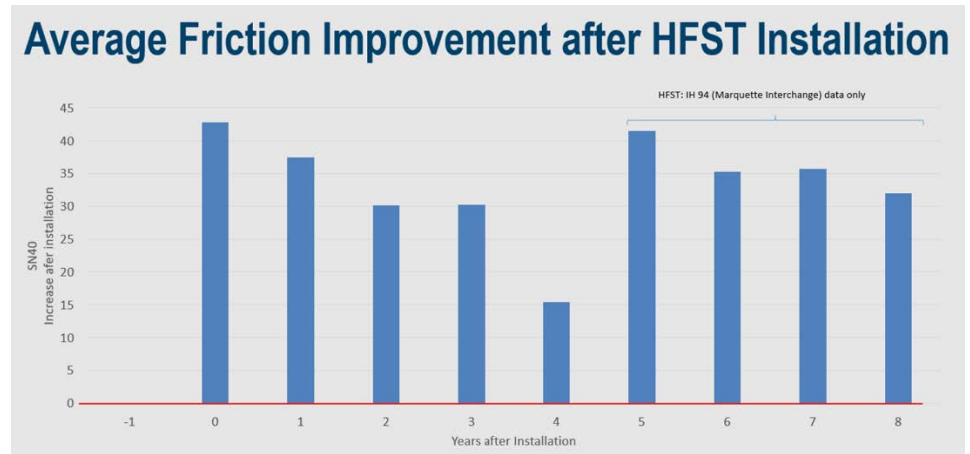


Figure 2: Ave Sn number (2021 data)

Recommendations for implementation

The Bureau of Project Development should adopt HFST as a safety improvement for road treatments. The Bureau should also develop a set of specifications and guidance for the site selection and application of HFST.