Kansas Department of Transportation

TECHNICAL SUMMARY

Evaluation of High Friction Surface Locations in Kansas

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Introduction

In 2009, the Kansas Department of Transportation entered into an agreement with the Federal Highway Administration to fulfill the requirements of the High Friction Surface Materials Enhancing Safety at Horizontal Curves on the National Highway System project.

Four locations were chosen in Kansas, two on existing asphalt pavement and two on concrete pavement. The applications on asphalt were on highway segments and the concrete segments were medium to high volume ramps at two separate interchanges. Traffic volumes ranged from approximately 1,000 vehicles per day to 25,000 vehicles per day. In general, the surfaces are performing poorly; one of the lower trafficked surfaces, an asphalt application, failed in less than three years. The surfaces on the two applications on concrete are peeling off and skid resistance numbers are dropping.

High Friction Surface Location Showing Wear

Project Description

In late 2013 and early 2014, the surfaces were evaluated and several tests were performed to determine quality of the product with less than desirable results. Tests performed included bond testing of the High Friction Surface (HFS), rapid chloride permeability testing of the pavements with and without the HFS, and skid resistance testing. The skid resistance values were compared to skid testing that was performed immediately before placement, immediately after placement, and intermediate skid testing.

Project Results

Results of the testing were mixed; bond was generally poor and skid resistance was dropping rapidly. The results of the review have led to a rewrite of the application specification with an improvement in the surface preparation.

Project Information

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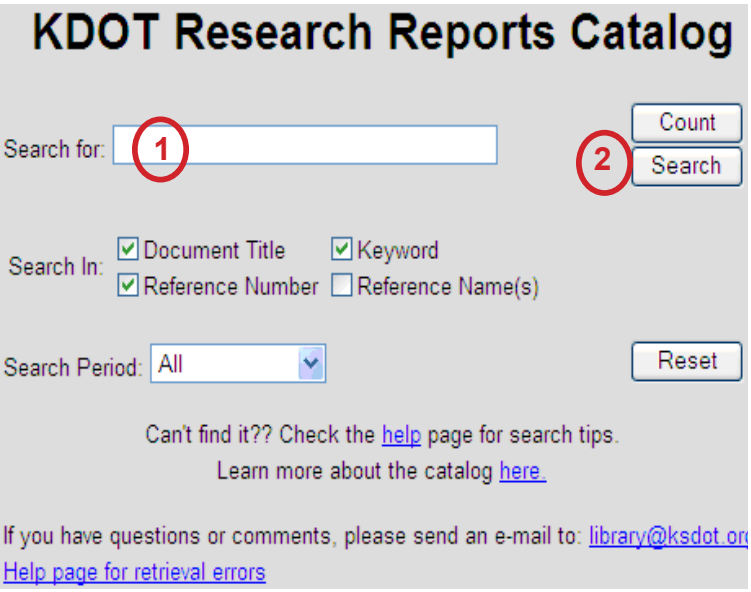

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