



EVALUATION OF THE RUTTING POTENTIAL OF KDOT MIXTURES USING THE ASPHALT PAVEMENT ANALYZER

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Introduction

Pavement deformation of hot mix asphalt mixtures (HMA) is one of the major distresses affecting pavement performance. With the current Superpave mix design method, there is no strength or permanent deformation testing of the HMA mixture.

Project Objective

The objectives of this study were to evaluate KDOT mixtures, obtained from in-place pavements, at various test temperatures and rutting cycles in the Asphalt Pavement Analyzer (APA) and develop a test method to evaluate the rutting potential of Kansas mixtures.

Project Description

Six different pavements in Kansas with heavy truck traffic were sampled for testing and evaluation. Both 150 mm diameter core samples and laboratory compacted samples from each site were evaluated in the APA. Laboratory compacted samples were recovered from the pavement cores using an ignition furnace. The samples were tested in the APA at various test temperatures and the rut depths recorded. The APA rut depths were correlated to field rut depth measurements to assist in developing a threshold limit for HMA permanent deformation evaluation.

Project Results

The results indicate that the APA can identify the rutting susceptibility of Kansas HMA mixtures. Laboratory compacted samples proved superior to pavement cores. Threshold limits for laboratory compacted samples were established to prevent code 1 rutting (>6.35 mm) and code 2 rutting (>12.7 mm).

Report Information

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