ACCELERATED TESTING FOR STUDYING PAVEMENT DESIGN AND PERFORMANCE (FY 2000)

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By

Hani G. Melhem, Roger Swart and Sandy Walker, all of Kansas State University

RESEARCH

Introduction

This report covers the projects conducted at the Accelerated Testing Laboratory at Kansas State University during fiscal year 2000. The project was funded by the Midwest States Accelerated Testing Pooled Fund Program, which includes Iowa, Kansas, Missouri and Nebraska.

Project Objective

The objective of the research was to compare the performance of fiber reinforced and plain Portland Cement Concrete (PCC) overlay when used as a thin non-dowelled overlay on top of a rubblized, distressed concrete pavement.

Project Description

The experiment consisted of constructing two pavements and subjecting them to full-scale accelerated pavement testing. The pavements were constructed in the environmental control pit so that heat-cool cycles could be imposed. The two pavements were subjected to 500,000 full-truck axle passes. Stresses and strains at several locations, as well as the expansion and contraction of the slabs were recorded periodically during the test.

Project Results

The stress-strain data, as well as the location, severity and extent of the cracking in the overlay clearly indicate that there is no benefit to including the plastic fibers in the concrete overlay. The full-scale accelerated test revealed that the thin, non-dowelled overlays are effective when used on top of distressed, rubblized pavements.

Report Information

For technical information on this report, please contact: Hani G. Melhem, Professor, Kansas State University, Department of Civil Engineering, 2127 Fiedler Hall, Manhattan, Kansas 66506; Phone: 785-532-1584; Fax: 785-532-7717; e-mail: melhem@ksu.edu.

For a copy of the full report, please contact: William L. Jacobs, P.E., Technology Transfer Engineer, Kansas Department of Transportation, Bureau of Materials and Research, 2300 Southwest Van Buren Street, Topeka, Kansas 66611-1195; Phone: 785-291-3847; Fax: 785-296-2526; e-mail: Bill.Jacobs@ksdot.org.