

UTC Project Information

Project Title	Determination of Field Performance of Thin Overlays Relative to Alternative Preservation Techniques
University	The University of Texas at Austin
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Agency ID or Contract Number	TxDOT Project 0-6822 – Task Order 1
Start and End Dates	December 1, 2014 to August 31, 2016
Brief Description of Research Project	Various overlay materials and preservation techniques are available that are applied specifically to extend the service life of pavements in Texas. These techniques include thin overlays, chip seals, micro-surfacing, ultrathin friction course, slurry seals, Cape seals, scrub seals, etc. While some of these are interim measures applied as stop-gaps before full rehabilitation, others are designed to provide extended service lives. This is the case of the thin overlays that have been gaining increased popularity in recent years due to the budget constraints. In contrast to conventional rehabilitation strategies using thicker traditional overlay, thin overlay and other preservation techniques are used on existing pavements to extend their remaining life. Therefore, these techniques will be subject to the pre-existing failure mechanisms of the underlying pavement, which may serve to accelerate deterioration and reduce their effectiveness. The rate of deterioration of these thin overlays and other alternative treatments will vary depending on the condition or state of the underlying pavement but also other factors including the quality of the treatment applied (type of treatment and material properties) and external influences with regards traffic (in terms of volume, axle loads, and speed) and climate (temperature and rainfall). For this reason, research is needed

to provide a better understanding of the effectiveness thin overlays (such as ultra-thin overlay mixes (TOM) and bonded wearing courses (UTBWC), crack attenuating mixes (CAM) and ultra-thin porous friction courses, etc) relatively to other preservation techniques (such as seal coats, slurry seals and micro-surfacing) and how these are impacted by different influence factors. This will serve to optimize the application of preservation techniques and provide proper quantification of the expected lives of various treatments under different operating conditions.

The objective of this project is to quantify the field performance of thin overlays relatively to various other popular preservation treatments under varying pavement, traffic and climate conditions towards optimizing the design and application of these treatments in Texas.

Describe Implementation of Research Outcomes (or why not implemented)

N/A

Place Any Photos Here

Impacts/Benefits of Implementation (actual, not anticipated)

There is lack of factual information on the relative performance of different preventive maintenance treatments. Therefore, the implementation of the findings of this research will provide the Texas Department of Transportation (TxDOT) and other state transportation agencies with a data and models to estimate the performance of different treatment, which in turn will enable more accurate pavement and maintenance management of the road network.

Web Links

- Reports
- Project website

<www.chpp.egr.msu.edu>