

UTC Project Information	
Project Title	MPC-391 – Implementation of Low Temperature Test for Asphalt Mixtures to Improve the Longevity of Road Surfaces
University	University of Utah
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Funding Agencies	USDOT, Research and Innovative Technology Administration
Agency ID or Contract Number	DTRT12-G-UTC08
Project Cost	\$75,515
Start and End Dates	January 1, 2012 – December 31, 2013
Project Duration	2 Years
Brief Description of Research Project	<p>Asphalt concrete pavements make up over 90% of the transportation network’s surface. Recent demands for increased use of environmentally sustainable materials have resulted in mixtures with different additives, including Recycled Asphalt Pavement (RAP) and Recycled Asphalt Shingles (RAS). However, for these materials to be truly sustainable, they must provide some long-term benefit or, at the very least, not be detrimental to the performance of the asphalt mixture. To deal with this issue the Utah Department of Transportation (UDOT) has been implementing the use of mechanical tests such as the Hamburg Wheel Tracking Device (WTD) to screen asphalt mixtures that might not have adequate high-temperature performance due to either mixture instability or incompatibility between components. The implementation of the Hamburg WTD as a screening test has significantly benefited the high temperature performance of asphalt pavements. However, it has not addressed the low and intermediate temperature performance reflected as thermal and fatigue cracking. Premature pavement failures have been observed that can be directly linked to inadequate intermediate and low temperature properties resulting in millions of dollars in maintenance cost. This proposal seeks to address this problem by developing a set of performance tests and specification to address the intermediate and low temperature properties of asphalt mixtures.</p> <p>A significant effort was undertaken during the past years to measure low temperature properties of asphalt mixtures by using the Bending Beam Rheometer (BBR) to test small beams made out of asphalt concrete (http://www2.udot.utah.gov/main/uconowner.gf?n=4493029359845211). While the work showed how the device can successfully be used in a</p>

	laboratory environment, analysis of field samples are needed to develop the required specification limits and establish a balance between the high and the low temperature properties of asphalt mixtures thus ensuring longer lasting, cost effective, sustainable pavements no matter what additives are used.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	
Impacts/Benefits of Implementation (actual, not anticipated)	
Web Links <ul style="list-style-type: none"> • Reports • Project Website 	https://www.ugpti.org/resources/reports/details.php?id=758