

<b>UTC Project Information</b>	
Project Title	MPC-546 – Field Performance of Asphalt Pavements at Low and Intermediate Temperatures
University	University of Utah
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Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT, Research and Innovative Technology Administration \$60,000  Utah Department of Transportation \$120,000
Total Project Cost	\$180,000
Agency ID or Contract Number	69A3551747108
Start and End Dates	November 15, 2017 to July 31, 2022
Brief Description of Research Project	The overall objective of this work is to determine if the Bending Beam Rheometer (BBR) and the Semi-Circular Bending/Fracture Energy (SCB) test, based on AASHTO TP125 and 126, respectively, can be used to predict the short-term (first year) low- and intermediate-temperature field performance of asphalt mixtures (i.e., cracking). At the conclusion of this project, we will be able to know if these tests could be used as practical alternatives to screen, or even eliminate, asphalt mixtures that result in poor cracking performance once placed in the field.
Describe Implementation of Research Outcomes (or why not implemented)  Place Any Photos Here	A material specification can be established by using the bending beam rheometer to test asphalt mixtures at low temperatures. Mixtures having a high creep modulus and low relaxation capacity should not be used in highway projects as they are likely to result in premature failure due to thermal cracking.  More research is needed to develop a test for intermediate temperature cracking.
Impacts/Benefits of Implementation (actual, not anticipated)	Adoption of performance related tests will allow to select asphalt mixtures for optimal performance thus significantly reducing maintenance costs.
Web Links <ul style="list-style-type: none"> <li>• Reports</li> <li>• Project Website</li> </ul>	<ul style="list-style-type: none"> <li>• MPC Research Report – <a href="#">Field Performance of Asphalt Pavements at Low and Intermediate Temperatures</a></li> </ul>

- Journal Article – [Physicochemical Characterization of Short and Long-Term Aged Asphalt Mixtures for Low-Temperature Performance](#)
- Technical Paper – [Practicality of Driven Parameters of Semicircular Bending Test at Intermediate Temperature](#)
- Research Article – [Methods to Evaluate Intermediate Temperature Properties of Asphalt Mixtures by the Semicircular Bending Test](#)
- Research Article – [A Long-Term Field Study of the Ability to Predict Thermal Cracking of Asphalt Mixtures Tested by the Bending Beam Rheometer](#)
- UDOT Report – [Balanced Asphalt Concrete Mix Performance in Utah, Phase V: Field Evaluation for Intermediate and Low-Temperature Cracking](#)
- UDOT Report – [Balanced Asphalt Concrete Mix Performance in Utah, Phase IV: Cracking Indices for Asphalt Mixtures](#)
- UDOT Report – [Balanced Asphalt Concrete Mix Performance in Utah, Phase III: Evaluation of Field Materials Using BBR and SCB-IFIT Tests](#)