

UTC Project Information	
Project Title	MPC-563 – Optimized Adhesive Performance in Electronic Transportation Sign Construction
University	South Dakota State University
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Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT, Research and Innovative Technology Administration \$74,153  Daktronics and SDSU Faculty Time and Effort \$102,719.33
Total Project Cost	\$176,872.33
Agency ID or Contract Number	69A3551747108
Start and End Dates	January 3, 2018 to July 31, 2022
Brief Description of Research Project	The ultimate objective of this project is to provide comprehensive knowledge of structural behavior of Dynamic Message Signs (DMSs) with adhesive bonding. To that end, we will conduct the following: 1) the effects of adhesive and environmental characteristics on joint performance of adhesive-based specimens will be studied; 2) the structural performance of DMSs with chemical adhesive joints will be examined; and 3) the optimized adhesive performance in terms of fatigue life and strength will be determined. It is hoped that outcomes from this project will aid transportation engineers and agencies in taking advantage of adhesive joints in future DMSs and the associated reasonable cost of production and high water permeability resistance at the joints.
Describe Implementation of Research Outcomes (or why not implemented)  Place Any Photos Here	We achieved a better understanding of the ultimate and fatigue strength of one dynamic message sign with adhesive joints and one dynamic message sign with welding connections through its full-scale load tests.
Impacts/Benefits of Implementation (actual, not anticipated)	The researchers will ensure the findings from load and fatigue testings can be transferred to transportation engineers. The findings will help existing DMS producers better design adhesive bonded DMSs at a lesser cost with higher efficiency instead of using the traditional welded connected DMSs involving high cost and complicated manufacturing processes.
Web Links <ul style="list-style-type: none"> <li>• Reports</li> <li>• Project Website</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">MPC Research Report</a></li> <li>• <a href="#">SDSU Master's Thesis</a></li> </ul>