

<b>UTC Project Information</b>	
Project Title	MPC-581 – Structural Fiber Reinforcement to Reduce Deck Reinforcement and Improve Long-Term Performance
University	Utah State University
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Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT, Research and Innovative Technology Administration \$66,500  LTAP \$66,500
Total Project Cost	\$133,000
Agency ID or Contract Number	69A3551747108
Start and End Dates	October 19, 2018 to July 31, 2022
Brief Description of Research Project	<p>Repair of reinforced concrete bridge decks represents a large portion of bridge manager's budgets. A survey of 52 transportation agencies identified more than 100,000 bridges across the United States that have exhibited early age bridge deck cracking. Reducing the amount of cracking on bridge decks would likely lead to better infrastructure resilience and lower long term costs. While various reinforcing materials are available to reduce or eliminate corrosion, they are often considered near cost prohibitive (e.g., stainless steel) or difficult to procure (carbon fiber rebar) or come with significant design challenges (e.g., glass fiber rebar). Epoxy coated mild reinforcement is the steel corrosion protection of choice among many Departments of Transportation, however its performance is highly dependent on the initial condition of the coating which is historically easy to damage during the manufacture, transport and construction. Other coating options like galvanized reinforcement or stainless clad reinforcement are often seen as not worth the cost as evidenced by their relative lack of use.</p> <p>By combining SFRC with various types of reinforcement (black steel, stainless steel, GFRP rebar), the total amount of steel can be reduced, limiting the total amount of damaged caused to a bridge deck. Potentially, the entire top mat of reinforcement could be eliminated or even all discrete reinforcement and the SFRC will provide additional crack control.</p>

Describe Implementation of Research Outcomes (or why not implemented)  Place Any Photos Here	Currently being investigated a new bridge deck system that will reduce risk of steel corrosion in bridge structures in various states through our partnership with ReforceTech and Owens Corning.
Impacts/Benefits of Implementation (actual, not anticipated)	The HRC decks, which are shown to be cost-neutral with traditional epoxy coated decks, provide acceptable structural performance and cost and may greatly reduce long term maintenance costs through elimination of corrosion.
Web Links <ul style="list-style-type: none"><li>• Reports</li><li>• Project Website</li></ul>	<a href="https://www.ugpti.org/resources/reports/details.php?id=989">https://www.ugpti.org/resources/reports/details.php?id=989</a>