

UTC Project Information	
Project Title	MPC-609 – Durable Bridges Using Glass Fiber Reinforced Polymer and Hybrid Reinforced Concrete Columns
University	University of Utah
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Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT, Office of the Assistant Secretary for Research and Technology \$74,173 Owens Corning and Corebrace LLC \$104,045
Total Project Cost	\$178,218
Agency ID or Contract Number	69A3551747108
Start and End Dates	February 18, 2020 to July 31, 2022
Brief Description of Research Project	The objective of this project is to investigate alternative methods for constructing bridge columns in high seismic regions using longitudinal Glass Fiber Reinforced Polymer (GFRP) bars and GFRP spirals; in addition, self-centering in terms of Carbon Fiber Reinforced Polymer (CFRP) post-tensioning of bridge columns and damage-resistant end joints as rocking devices will be utilized. Hybrid systems of reinforcement promote sustainable performance, long service life, and cost-effective maintenance of bridge columns in harsh weather. In addition, analytical models will be developed for self-centering in terms of post-tensioning of columns in bridges with CFRP corrosion-free tendons. The proposed hybrid systems consist of two cast-in-place (CIP) columns: one with two layers of all-GFRP longitudinal bars and spirals, and one with an inner layer of conventional steel longitudinal bars and a GFRP spiral, and an outer layer of longitudinal GFRP bars and spirals. In addition, two precast post-tensioning columns with resilient end joints will be investigated with the same hybrid reinforcement. Post-tensioning accommodating self-centering will be designed with high-strength CFRP tendons.
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	