



UTC Project Information	
Project Title	UHPC CONNECTION FOR SDCL STEEL BRIDGE SYSTEM
University	Florida International University
Principal Investigator	Fray F. Pozo-Lora
PI Contact Information	aazizina@fiu.edu
Funding Source(s) and Amounts Provided (by each agency or organization)	IBT-ABC-UTC funds : \$35,000 Match funds : \$35,000
Total Project Cost	\$ 70,000
Agency ID or Contract Number	69A3552348322
Start and End Dates	January 1, 2025 - Active
Brief Description of Research Project	<p>This research investigates the development of optimized ultra-high-performance concrete (UHPC) connections for simple for dead load and continuous for live load (SDCL) steel bridge systems. SDCL bridge systems eliminate field splices, reduce inspection costs, and improve service life by protecting steel girder ends with a cast-in-place concrete diaphragm. While previous designs utilize normal-strength concrete (NSC), this study explores the advantages of UHPC, including superior compressive and tensile strength, durability, and minimal steel reinforcement and detailing requirements. The research consists of experimental validation through cyclic and ultimate load testing, finite element modeling, and comparative analysis with NSC-based designs. The proposed UHPC connection simplifies girder-end detailing, reduces diaphragm size significantly, and minimizes on-site construction time and disruptions, which aligns with the principles of accelerated bridge construction (ABC). The outcomes of this study will contribute to devise refined design guidelines, promoting practical implementation of UHPC in SDCL steel bridge applications for improved structural efficiency and long-term performance with minimal maintenance and inspection.</p>

Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	The outcomes will be tracked and reported once they are identified.
Impacts/Benefits of Implementation (actual, not anticipated)	The impacts will be tracked and reported once they are identified.
Web Links <ul style="list-style-type: none">• Reports• Project website	https://abc-utc.fiu.edu/uahpc-connection-for-sdcl-steel-bridge-system/