



UTC Project Information	
Project Title	EVALUATING POLYMER CONCRETE AS A BONDING AGENT IN SEGMENTAL BRIDGE CONSTRUCTION.
University	University of Nevada Reno
Principal Investigator	Sherif Elfass
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Funding Source(s) and Amounts Provided (by each agency or organization)	IBT- ABC-UTC funds : \$32,375 Match funds : \$37,625
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>Segmental bridge construction is a widely used technique that enables efficient assembly and cost-effective infrastructure development. However, its long-term performance depends on the bonding material used to connect individual segments. Traditional grout, while commonly used, lacks the flexibility and durability required to withstand cyclic loading and environmental stressors. This research investigates polymer concrete (PC) as an alternative bonding agent, aiming to enhance structural resilience, load distribution, and long-term durability in segmental bridge construction.</p> <p>The study will evaluate the performance of five scaled bridge specimens: one bonded with grout and four with different polymer concrete formulations. These include Epoxy Polymer Concrete, Polyester Polymer Concrete, Polymethyl Methacrylate Polymer Concrete, and Poly Vinyl Ester Polymer Concrete, all of which are currently used in bridge deck overlays. Through laboratory testing and large-scale cyclic load testing, the study will assess their bonding strength, stress distribution, flexibility, and resistance to permanent deformation compared to traditional grout.</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/evaluating-polymer-concrete-as-a-bonding-agent-in-segmental-bridge-construction/