



ACCELERATED BRIDGE CONSTRUCTION
UNIVERSITY TRANSPORTATION CENTER

UTC Project Information	
Project Title	Development of ABC Course Module: Design of Link Slabs
University	ISU
Principal Investigator	Shafei, Behrouz
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Funding Source(s) and Amounts Provided (by each agency or organization)	\$20,000 Office of the Assistant Secretary for Research and Technology University Transportation Centers Program Department of Transportation Washington, DC United States 20590 \$10,000 match from ISU
Total Project Cost	\$30,000
Agency ID or Contract Number	Accelerated Bridge Construction University Transportation Center (ABC-UTC) 69A3551747121
Start and End Dates	2019/01/01- Active
Brief Description of Research Project	<p>One of common techniques in Accelerated Bridge Construction (ABC) is using Prefabricated Bridge Elements and Systems (PBES). The bridge components are built outside of the construction area, transported to the site, and then rapidly installed. This helps significantly reduce the time lost due to concrete placement, curing in the construction zone, and formwork erection/removal. Another benefit to using the PBES is the improved quality control. Damaging effects due to weather is minimized because elements are built in a controlled environment. However, there is a standing question on how the long-term performance and durability concerns associated with the joints that connect high-quality bridge elements can be addressed. One approach that has gained significant attention is to eliminate the joints through revised design strategies. While such strategies have been successfully developed for integral abutments used for ABC applications, no systematic approach is available on removing the expansion joints between bridge girders. To address this issue, the current project builds on the findings from a former ABC UTC-sponsored research project on link slabs and develops a short course module to provide the design guidelines and practical recommendations necessary to properly implement a link slab in jointless bridges. This project benefits from the outcome of experimental tests and numerical simulations performed on link slabs at Iowa State University to explain their structural performance under various loading conditions. A design guide will be presented for the implementation of link slabs in</p>

	appropriate bridges. This will cover a range of practical aspects, including crack criteria, bonding/debonding requirements, and rebar details.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	This is an active research project. Upon completion, outcomes will be reported.
Impacts/Benefits of Implementation (actual, not anticipated)	This is an active research project. Upon completion, outcomes will be reported.
Web Links <ul style="list-style-type: none"> • Reports • Project website 	https://abc-utc.fiu.edu/research-projects/isu-research-projects/development-of-abc-course-module-design-of-link-slabs/