



ACCELERATED BRIDGE CONSTRUCTION  
UNIVERSITY TRANSPORTATION CENTER

<b>UTC Project Information</b>	
Project Title	Synthesis of Available Methods for Repair of Reinforced Concrete and Prestressed Concrete Girders
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Funding Source(s) and Amounts Provided (by each agency or organization)	ABC-UTC Fund: \$45,000 from ABC-UTC Match Fund: \$22,500
Total Project Cost	Total Fund: \$67,500
Agency ID or Contract Number	Accelerated Bridge Construction University Transportation Center (ABC-UTC) 69A3551747121
Start and End Dates	01/01/2019-12/31/2020
Brief Description of Research Project	<p>The bridge structures nationwide and in the United States are aging, and in need of repair or in some cases replacement. Depending on the state of the damage to the bridge and other project specific requirements, the decision makers will choose either repair or replacement. Given the higher cost of replacement of the bridge or even the damaged girders in the bridge compared to most of the available repair techniques, the repair option has gained popularity among the decision makers. This is because using a proper repair approach, as a long-term or even a short-term solution, can lead to benefits that could not be achieved otherwise. The main benefits are considerable savings in both time and cost. Additionally, an appropriate repair approach can also help to avoid adverse environmental impacts, interruptions to service, overburdening of nearby infrastructure, and local opposition to construction. The objective of this report is to provide a synthesis of the available methods on the repair of reinforced concrete bridge girders used in practice and/or in research studies. Commonly utilized repair materials are briefly described. Different applications of the repair methods (i.e. repair for shear, flexure, or fire) are then described in detail, while providing information on the causes of damage for each case in addition to typical solutions and case studies. Step by step procedure of the typical solutions mentioned earlier is then described in detail. Finally, recommendations on the proper material and appropriate repair procedures for specific applications are provided by the authors. This is intended to enable researchers, engineers, and decision makers to</p>

	compare the available repair methods more conveniently to find the optimal repair approach for specific projects based on the economic, environmental requirements as well as structural and construction conditions.
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"> <li>• Reports</li> <li>• Project website</li> </ul>	<a href="https://abc-utc.fiu.edu/research-projects/unr-research-projects/synthesis-of-available-methods-for-repair-of-prestress-girder-ends/">https://abc-utc.fiu.edu/research-projects/unr-research-projects/synthesis-of-available-methods-for-repair-of-prestress-girder-ends/</a>