TESTING TO FAILURE OF RC BRIDGE DECK STRENGTHENING WITH MF-FRP STRIPS

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Sponsored by: University Transportation Center

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Objectives:
Demonstrate that the constructability and performance of MF-FRP system can improve the load carrying capacity in existing deteriorated bridge structures by testing to failure Edgerton Bridge.

Background:
Deterioration and under-capacity bridges has motivated new and efficiency ways to strengthen existing structurally deficient structures.

Test Matrix:

<table>
<thead>
<tr>
<th>Slab</th>
<th>Characteristics</th>
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<tbody>
<tr>
<td>RC</td>
<td>4-foot reinforced concrete slab</td>
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</tbody>
</table>
| MR-FRP | 4-foot reinforced concrete slab
  strengthening with 4 strips MF-FRP |

Edgerton Bridge
P – 53702
Madison, WI

Materials:
- Hybrid Strip of E-glass roving and carbon tow
- Mechanical fasteners
- Anchors
- Powder Actuated Fastening Gun

Advantages:
Use of simple hand-tools, lightweight materials and unskilled labor.
No surface preparation and immediate use of the strengthened structure

Test Setup:

Anticipated Benefits:
The test is expected to confirm an increment in the load capacity around 40%.