



INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

Design Memorandum No. 16-31
Technical Advisory

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TO: All Design, Operations, and District Personnel, and Consultants

FROM: /s/Elizabeth W. Phillips
Elizabeth W. Phillips
Office of Standards and Policy Manager
Bridges Division

SUBJECT: Fiber Reinforced Polymer Composite Materials

REVISES: *Indiana Design Manual* Section 412-3.05(05)

EFFECTIVE: Immediately

For several years, it has been the Department's practice that externally bonded fiber reinforced polymer (FRP) materials or "fiber wrap" will not be considered for structural purposes. Fiber wrap may be used for concrete repair, but the application will not be considered as having improved the load carrying capacity of the bridge component.

Information to the contrary appeared in the recently published *Indiana Design Manual* Bridge Preservation chapter. The referenced section has been revised to reflect the Department's practice more clearly and is an attachment to this memo.

The revisions will be incorporated into the on-line version of the IDM at a later date.

412-3.05(05) Fiber Reinforced Polymer Composite Materials [Rev. Sep. 2016]

Externally bonded fiber reinforced polymer (FRP) composite materials or “fiber wrap” may be considered for bridge preservation and retrofitting. However, the Department currently does not allow the use of FRP systems to restore the structural capacity of bridge components.

Preservation may include the repair of deteriorated concrete components, such as concrete piers near leaking joints, or the repair of prestressed concrete girders due to vehicle impact. Seismic retrofitting of columns may include fiber wrap in conjunction with adding confinement reinforcement.

Considerations for the use of FRP composite materials should include the cost compared to conventional construction materials, along with the benefit of shorter construction duration and less impacts to the travelling public.

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