MARKET VISION

for composite solutions

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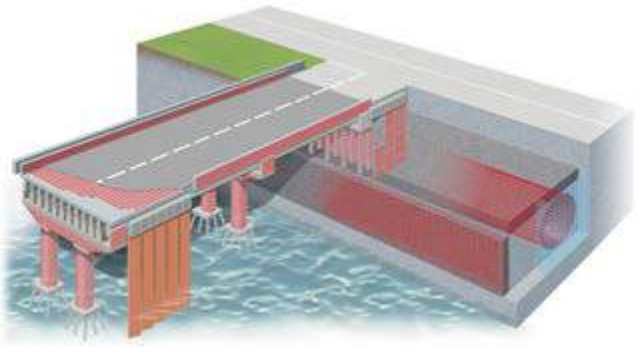
INFRASTRUCTURE

Composites to build tomorrow's bridges today

As part of the "Invitation for Innovation"[1] launched by the Florida Department of Transportation (FDOT), Owens Corning is collaborating on a project to build a bridge of the future over Halls River, in Homosassa springs, Florida. The initiative, led by the FDOT, include members of academia, consulting engineers and the FRP suppliers and manufacturing community. This project is a proof of concept for complete next generation bridge design solutions of the future using a variety of forms of Fiber Reinforced Polymers (FRP) and hybrid structural elements.

For the last five decades, researchers and experts have attempted to address the degradation of reinforced and pre-stressed concrete structural elements due to steel reinforcement corrosion by making concrete



better i.e. less permeable and reducing chloride limits, and by providing barriers to chloride exposure through steel coating/galvanizing and concrete covers. Focused on achieving new levels of durability, life-cycle cost reduction and long term performance, collaborative research and design development led in the clear direction to embrace FRP technology for the replacement of Halls River bridge.

Transformational approach

FDOT elected to standardize many of these FRP structural elements including pre-stressed concrete bearing piles; reinforced concrete sheet piles; gravity walls; traffic railings and approach slabs for use on the Halls River crossing.

> *"It is essential that the transportation industry begins to look hard at using more durable materials such as FRP to extend the life of structures. The FRP industry must come together to develop products that meet the unique demands of the transportation industry. There needs to be a catalyst in the industry to start and maintain momentum and Owens Corning seems to be capable of filling that role"*

states Robert Robertson, P.E., State Structures Design Engineer, FDOT.

Standard framework

The scope of deployment of FRP materials exemplified by the Halls River bridge replacement project means this next generation bridge could rapidly become the standard framework by which many other state or national transportation agencies and organizations respond. Standardization with substitution of multiple alternative components would be preferred for broader deployment across the infrastructure market. Once complete, this proof of concept project will support refinement of design criteria, develop standardization for consistent application and continue to boost the confidence of owners, designers, inspectors and the travelling public.

[1] http://www.dot.state.fl.us/structures/innovation/FRP.shtm

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