Virtual Technology Tour:
Glass Fiber Production for Structural Application

GFRP rebar for deck & substructure of Halls River Bridge (2017-18)

GFRP Secant-Pile Shaft cages for A1A-Flagler Beach seawall (2019)

FRP-PC FSB’s US-1/Cow Key span replacements (2020)
VIRTUAL TOUR AGENDA

11.30 am – 11.45 am
FDOT Prospective Use Of GFRP In State Projects
Steven Nolan, P.E. Advanced Materials
for Structural Durability & Resiliency

12.15 pm – 12.30 pm
Quality Assurance & Material Characterization
Alexis Green – Advanced Engineer R&D

12.30 pm – 12.45 pm
FDOT & Industry Collaboration
Dr. Dave Hartman - Senior Principal Scientist

11.45 am – 12.00 pm
The Science Behind the Glass Making
Dr. Michelle Korwin-Edson - Senior Scientist

12.45 pm – 1.00 pm
Questions & Answers
All speakers & attendees

12.00 pm - 12.15 pm
Fiberglass Rebar Types And Manufacturing Process
James Priest – Senior R&D Leader
Glass Fiber Production for Structural Application

During the 1919 Transcontinental Motor Truck Convoy, then-Lt. Col. Dwight D. Eisenhower saw the poor condition of U.S. roads firsthand. Faced with one gully after another as they crossed Wyoming, engineers rolled up their sleeves and reinforced unstable wood bridges with planks (left). Then, they held their breath as the first truck lumbered across (right). This arduous journey—plagued by vehicles overturned in ditches and mired in mud—inspired later President Eisenhower to sign the Federal-Aid Highway Act of 1956 into law.

It makes a difference where the technology is applied in the complex system of transportation and land use, whether it be in vehicles, the infrastructure that carries and serves vehicular movement, or passenger or freight payloads.


Virtual Technology Tour: Glass Fiber Production for Structural Application

TR News 330 November-December 2020: Living with Transformational Technologies and Other Surprises

British–Hungarian Nobel Prize physicist Dennis Gabor wrote: “The future cannot be predicted, but futures can be invented.”
Durability & Structural Advancement Needs

**Durability needs** – low-maintenance, extended service-life, cost-effective solutions.

**Structural needs** – Inspectable, repairable, robust, extended span lengths (light-weighting and/or high-strength & high-endurance):

- HSSS-Prestressed Concrete *(2205 Duplex SS)*
- CFRP-Prestressed Concrete *(Carbon strands)*
- FRP-Reinforced Concrete *(Glass & Basalt)*
- Ultra-High Performance Concrete *(UHPC)*
- Light-weight Concrete or FRP *(Longer spans and/or less shipping cost)*
Non-Corrosive

Highly Corrosion-Resistant

The Florida Department of Transportation (FDOT) continually strives to enhance all areas of its operations. In support of these efforts, the department recently moved into a bold new era for innovative ideas, research and accelerated implementation. Success will depend on our ability to carefully evaluate or implement the products and services provided to the users of Florida’s transportation system. Our goal is to utilize newly developed technology or employ creative thinking to generate greater value for every transportation dollar invested.

After researching and evaluating many innovative ideas, the Central Office has developed a list of concepts, products and services that may be the best solution to the project's needs or design challenges. Some items on the list are completely developed, and only need tailoring to your project. We encourage you to propose one or more of these innovations for project specific solutions with confidence of approval by the Districts. Other items are not fully detailed and will require coordination with and approval by the District’s Design Office. Many of these innovations have been successfully implemented in other states and countries. Not all projects benefit from these innovations and the Department is not advocating the general use of new products or designs where an economical well proven solution exists and is the most appropriate solution for the situation.

FDOT Transportation Innovation Challenge

Virtual Technology Tour: Glass Fiber Production for Structural Application

https://www.fdot.gov/design/innovation/
Durability & Structural Advancement Applications

Where are HCR material systems used in Bridges & Structures?

Virtual Technology Tour: Glass Fiber Production for Structural Application
ANNOUNCEMENT

Infrastructure Summit
March 3rd (11am - 5pm)
Join the American Society of Civil Engineers as they release their 2021 Report Card for America's Infrastructure. The quadrennial assessment will grade the condition and performance of 17 categories of infrastructure – including drinking water, roads, levees, dams, and much more. After the grades are unveiled, ASCE will convene a program of elected officials, decisionmakers, and thought leaders to discussion solutions to raising our infrastructure GPA.

Find out more at: https://www.infrastructurereportcard.org/

Let the Tour Begin…