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POLARIS
Manufacturing Forward **MEP**

Composites in Transportation Infrastructure: Building for the Future*

Technical Expert Presentations

July 21, 2016 / Bristol, Rhode Island

“Introduction to Composites in Infrastructure”

**John P. Busel, FACI, Vice President, Composites Growth Initiative
American Composites Manufacturers Association (Arlington, VA)**

For over 20 years, Fiber-Reinforced Polymer (FRP) Composites have provided bridge engineers and owners with innovative and cost effective solutions to rebuild and retrofit bridge structures, demonstrating long-term durability especially in highly corrosive geographical regions. Features of FRP composites such as lightweight, corrosion resistance, and prefabrication have reduced assembly and installation time, resulting in lower installation costs and delivery for new construction. In retrofit and rehabilitation situations, FRP composites are faster to install and require minimal disruption to the structure while in service to extend the service life of bridge structures. This presentation will provide a broad overview of composites and products used in infrastructure.

“Infrastructure Repairs and Strengthening with FRP Composite Materials”

**Dave White, PE, Vice President of Technical Services, RSB
Sika Corporation (Lyndhurst, NJ)**

FRPs have become a viable and accepted means of upgrading, strengthening and rehabilitating civil engineering structures, especially for use on concrete bridges. Typical applications include external reinforcement, seismic upgrades, column wrapping, shear strengthening, near surface mounted reinforcement and post-tensioning installations. This presentation will cover the various composite materials that are being used for bridge repairs and compare them to the traditional methods of concrete repair and strengthening. Case studies will be presented to showcase the use of these materials in the field and demonstrate the economic viability available to bridge owners and maintenance departments.

“Pultruded Fender and Bearing Piles”

**Dustin L. Troutman, Director of Marketing and Product Development
Creative Pultrusions, Inc. (Alum Bank, PA)**

Attendees will discover how and why pultruded piles are being utilized to repair and replace bridge fender and bearing piles on many government, private and military infrastructure projects. Many agencies are eliminating future capital expeditors and significantly reducing maintenance costs while utilizing environmentally safe composite systems.

“Composite Beams”

**John R. Hillman, PE, SE, MASCE, President & CEO
HCB, Inc. (Wilmette, IL)**

This presentation will demonstrate the advantages of hybrid-composite structures to provide better value in bridge construction and rehabilitation. An emphasis will also be placed on the heritage of intellectual properties in the technological advancement of our nation’s infrastructure and the impact on jobs and economic development.

“FRP Rebar for a Longer Lasting Infrastructure”

**Doug Gremel, Director, Non-Metallic Reinforcing
Hughes Brothers, Inc. (Seward, NE)**

FRP rebar is a mature product, with complete standardization of codes, test methods and material specification that enable implementation through existing supply chains and contractors. Using FRP rebar, designers are able to give owners concrete structures with 75- to 100-year service lives. After evaluating structures in service over 15 years, degradation mechanisms are not being seen.

“Lightweight Decks for Vehicle Bridges”

**John P. Busel, FACI, Vice President, Composites Growth Initiative
American Composites Manufacturers Association (Arlington, VA)**

FRP decking offers the best solution when light weight is important for vehicle bridges. This includes movable bridges, historic steel truss bridges, and bridges with load restrictions. Unique uses are floating bridges and aerodynamic fairings. Shared-use paths can be added to vehicle bridges by attaching an FRP sidewalk to the side.

**NOTE: “Composites in Transportation Infrastructure: Building for the Future” takes place on July 21 at Roger Williams University (Bristol, R.I.). This first-time event is hosted by the Composites Alliance of Rhode Island and Polaris MEP, in conjunction with Senator Sheldon Whitehouse and the American Composites Manufacturers Association.*