

NON-METALLIC CONCRETE REINFORCEMENT: GFRP MATERIALS, BUILDING CODE, FIELD APPLICATIONS AND R&D

Antonio Nanni

ABSTRACT

The presentation is subdivided into three parts. First, it will discuss key provisions of ACI's recently developed "Building Code Requirements for Structural Concrete Reinforced with Glass Fiber-Reinforced-Polymer (GFRP) Bars and Commentary". This ACI 318-19 dependent-code is the steppingstone for the deployment of the technology for designers and building officials. It has the potential of revolutionizing the use of non-metallic reinforcement for concrete structures; thus, allowing to permanently address the degradation of concrete elements due to steel reinforcement corrosion. Second, participants will be exposed to some field applications of non-metallic reinforcement as examples of its use and potential. New technology for concrete construction has the primary objective of addressing durability challenges with materials having a lower carbon footprint. Finally, some current R&D work undertaken at the University of Miami will conclude the presentation. This part will highlight relevant topics in need of investigation to address gaps in knowledge.

Presenter

Antonio Nanni is the Inaugural Senior Scholar, Professor of Civil Engineering at the University of Miami. He currently served as the ACI President for the term 2023-24. His research interests are in construction materials, structural performance, and field application. His research in materials and structures has impacted the work of technical committees in the US and abroad, including professional and standards-writing agencies such as AASHTO, ACI, ASCE, ASTM, and ICC-ES. He has published extensively in refereed journals, conference proceedings and co-authored two books. He is a registered PE in Italy, FL, PA, MO, and OK.