

Two New NEX/ACI Publications Supporting FRP Bars

ACI has taken a significant step toward advancing the industry’s development by establishing three Centers of Excellence. NEX: An ACI Center of Excellence for Nonmetallic Building Materials has already demonstrated its value to the industry.

NEX has collaborated with ACI to support the applications of glass fiber-reinforced polymer (GFRP) bars. The growing momentum around the development and use of GFRP bars is driven by their potential benefits, including corrosion elimination, cost reduction, and support for reducing carbon emissions.

In addition to extensive awareness and training initiatives sponsored by NEX, the collaboration with ACI has resulted in the publication of two pivotal documents addressing GFRP bars—*Recommended Practice Guidelines for FRP Bars in Pre-Engineered Projects* (MNL-6(23)) and *GFRP-Reinforced Concrete Design Handbook* (MNL-7(23)). Available at the ACI Store, these documents offer valuable insights into the advancements and applications of GFRP bars within the construction industry. This edition of NEX *insights* discusses the documents and outlines NEX’s strategy to provide further support to FRP bar applications.

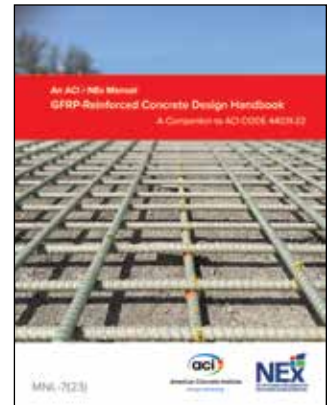
MNL-6(23) primarily serves as a valuable resource to the residential construction sector. It provides practical insights into working with nonmetallic GFRP reinforcement. The manual outlines key considerations for GFRP reinforcement use, explores available types, and guides seamless installation planning. Additionally, it includes prescriptive design tables for common applications such as residential foundation walls and slabs-on-ground. The appendix offers a quick reference to available bar properties from various manufacturers.

MNL-7(23) is an essential reference for design professionals interested in using nonmetallic GFRP reinforcement for concrete structures. Intended to provide

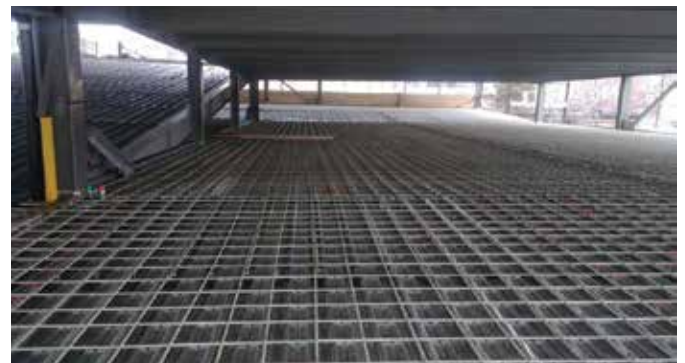
valuable insights to structural engineers, the handbook facilitates understanding and use of the provisions outlined in ACI CODE 440.11-22, “Building Code Requirements for Structural Concrete Reinforced with Glass Fiber-Reinforced



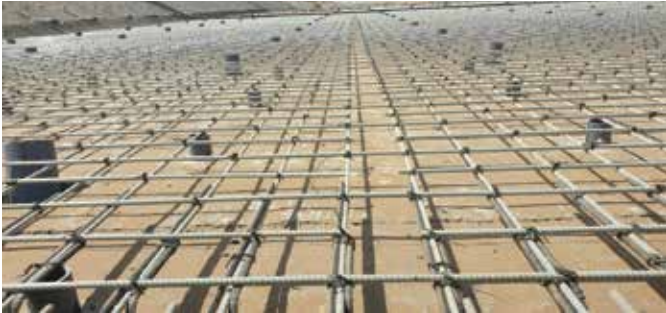
Cover of MNL-6(23)



Cover of MNL-7(23)



This parking structure uses GFRP reinforcement as the top mat to minimize corrosion issues (photo courtesy of Owens Corning Infrastructure Solutions)



The Jizan Flood Mitigation is currently the largest single project to use GFRP reinforcement (photo courtesy of IKK Mateenbar)

Polymer (GFRP) Bars—Code and Commentary.” The handbook includes engineering design examples for various concrete members reinforced with GFRP bars, such as beams, one-way slabs, two-way slabs, and slender columns. Additionally, it offers general information about the appropriate use of GFRP reinforcement, its material and durability characteristics, typical applications, and considerations for fire resistance. MNL-7(23) also highlights key differences between designing GFRP reinforced concrete

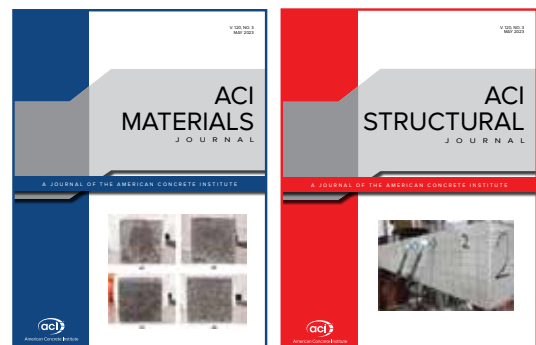
and traditional steel-reinforced concrete. The appendix to this handbook provides detailed information from FRP bar manufacturers on commercially available products, bar design properties, and typical solutions.

The use of nonmetallic FRP reinforcement for concrete structures has gained widespread acceptance. This reinforcement is not only noncorrosive but also lightweight and easy to handle, contributing to increased productivity and the health and safety of workers. As FRP bars prove to be a great material for the industry, NEx remains committed to supporting the building and construction sector, with more standards publications in the pipeline. NEx is sponsoring projects to investigate the use of FRP in fire and seismic applications, including FRP composite mesh, FRP certificate, and FRP inspector certification programs.

For more information about MNL-6(23) and MNL-7(23) and NEx projects, visit www.nonmetallic.org and www.concrete.org/store. NEx extends sincere appreciation to Aramco for its invaluable sponsorship of our projects. In addition, NEx expresses gratitude to ACI and our member companies for their continued support and contributions, which have played a pivotal role in the success and impact of our initiatives.

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