

NEX: An ACI Center of Excellence for Nonmetallic Building Materials

A catalyst for global collaboration on the use of nonmetallic building and construction materials

Nonmetallic polymer-based materials are being increasingly deployed across multiple industries and offer new possibilities for construction. NEX was established to accelerate the use of nonmetallic materials and products in the building and construction sector. Due to excellent properties of nonmetallic materials, their use is growing rapidly in the construction sector. As corrosion is one of the major deterioration mechanisms, noncorrosive properties of nonmetallic materials make them an ideal solution to minimize or eliminate frequent maintenance and repair activities. In addition, as the global trend to support environment-friendly materials and design is receiving attention, incorporation of nonmetallic materials and products in the built environment may contribute to improved sustainability, durability, and resilience of structures. With more industries such as oil and gas, construction, automotive, packaging, and renewables beginning to explore nonmetallic materials, NEX focuses on global collaboration to drive education, awareness, research, and technology adoption of nonmetallic building and construction materials. Nowadays, nonmetallic construction materials cover vast aspects of applications including, but not limited to, fiber-reinforced polymer (FRP) reinforcement, polymer concrete, FRP pultruded structural members, construction chemicals, building components and systems, soil and foundation stabilizing agents, and additive manufacturing.

The construction industry needs accelerated development of new technical documents, educational resources, certification programs, and awareness initiatives and to support research for greater recognition of the benefits of the applications previously mentioned. In addition, there is an immediate need to develop new workshops, seminars, chapter

talks, and webinars to bridge the limited information available for the industry.

Establishment of NEX

NEX was launched in collaboration between ACI and Aramco Americas, the U.S.-based subsidiary of Aramco. NEX is a stand-alone subsidiary of ACI with its own Board of Directors and Steering Committee. As a subsidiary of ACI, NEX leverages ACI's role as a world-leading authority and resource for the development, dissemination, and adoption of consensus-based standards for concrete design, construction, and materials, and its professional network to further NEX's mission.

Aramco is a leader in the use of nonmetallic materials in oil and gas facilities to reduce corrosion and the cost of construction and operation. This initiative with ACI is part of the company's broader strategy to support the industry by developing and adopting more sustainable materials.

Building on ACI's efforts over the past four decades to advance nonmetallic technologies with numerous published guides, reports, and specifications, coupled with Aramco's more than 20 years of developing and deploying nonmetallic solutions within its operations, NEX is uniquely positioned to accelerate the knowledge and use of nonmetallic materials and technology.

NEX Partners

Companies and organizations across the value chain are needed to support and collaborate on executing the core functions and meeting NEX's objectives. NEX membership is growing; current NEX partners include ACI, Aramco Americas, ExxonMobil, MST Rebar Inc., Owens Corning,

Neuvokas Corporation/GatorBar, and ICC Evaluation Service (ICC-ES). Prospective partners include manufacturers and suppliers of nonmetallic products, standards bodies, technical societies and institutes, oil and gas companies, research centers, construction companies and developers, training centers, and specifying agencies.

Goals of NEX

The strategic goals of NEX include:

- **Standards and specifications**—identify and facilitate the development and adoption of design and construction codes and specifications;
- **Education and technology transfer**—supply or facilitate the creation of the knowledge needed for designers,

contractors, and owners to use nonmetallics in their structures;

- **Quality and competency**—help the industry in assuring the manufacturing quality of nonmetallics and of the competent installation, testing, and inspection of those products;
- **Research and development**—support and facilitate research needed for new technologies in nonmetallics to resolve challenges with effective solutions; and
- **Outreach**—work with material suppliers, manufacturers, designers, owners, government agencies, and standards developers to bring nonmetallics into wider use in construction.

NEX has already funded 12 projects to support nonmetallic initiatives. The next NEX *insights* will cover more details, including all projects funded in 2022. To learn more about NEX and its activities, visit www.nonmetallic.org.

Meet the NEX Staff



Jerzy Zemajtis, Executive Director, oversees all NEX operations and identifies and recruits new members interested in advancing nonmetallic building materials. He also establishes initiatives to cultivate awareness and technology adoption related to nonmetallic building materials.



Gusai AlAithan, Aramco Liaison Director, directs and supports NEX overall operations and is a liaison with sustaining funding members to facilitate project funding, development, and execution. He is also a member of the NEX Steering Committee responsible for providing technical

recommendations to the Board of Directors for project selections.



Aparna Deshmukh, Technical Director, manages the technical and educational efforts of NEX. She also develops proposals for NEX projects, directing development of special engineering or educational products, reviewing NEX technical documents, and serving as a liaison for assigned

committees and industry partners.

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