

August 15, 2024

NEx Request for Proposals Notice

NEx encourages you to submit proposals focused on the research topic described below:

NEx RFP Id: RD25.02

Proposal Title: Phase 2 Fire Testing of Reinforced Concrete Members with FRP Bars in Concrete

Background

The use of Glass Fiber Reinforced Polymer (GFRP) bars in reinforced concrete (RC) structures has gained interest due to their high strength-to-weight ratio, corrosion resistance, and ease of installation. However, the fire performance of FRP-reinforced concrete remains a concern. Phase 1 of this project: "State of the Art: Fire Performance of Concrete with FRP Reinforcement" (NEx RD23.06 (24) State of the Art: Fire Performance of Concrete with FRP Reinforcement), provided a review of existing literature and identified knowledge gaps regarding the fire performance of FRP-reinforced concrete.

Findings from Phase 1 highlight the need for additional fire testing to develop a design guideline with Phase 2 of this project aiming to address this gap. These gaps will be filled via fire tests that follow ASTM E119 on RC members reinforced with FRP bars.

Proposal Request

While FRP bars offer numerous advantages for reinforcing concrete structures, their performance under fire conditions remains not well understood. Phase 1 identified knowledge gaps and emphasized the need for additional testing to quantify the fire resistance of FRP-reinforced concrete members. This Phase 2 project seeks proposals to conduct fire tests on RC members reinforced with FRP bars compliant with ASTM E119, analyze results, develop analytical and/or numerical modelling approaches, and develop design guidelines to enhance the fire safety of these structures. Particular tests where data is lacking relate to recommendations for fire protection methods contained within ACI 440.11's commentary and the performance of FRP bar splices.

NEx envisions that the research test plans and outcomes be communicated with the ACI 440 committee over the course of the project. A proposal with suggested code language and commentary should be made to the ACI 440.11 code committee for further consideration.

NEx Mission Statement

Collaborate globally to expand and accelerate the use of nonmetallics in the built environment to drive innovation, research, education, awareness, adoption, and deployment.

Research and Development within NEx are among its core missions, and it supports and facilitates the development of new nonmetallic technologies to address challenges with effective solutions.

Funding Policy

NEx will impose a limit of 15% on indirect costs (overhead) by research organizations for any research it funds. The organization must waive the remainder of the indirect costs.

Award Amount

NEx does not impose any limit on the overall funding request; however, the anticipated budget for this project is to be around \$80,000 to \$110,000. Proposals with higher budget estimate will be accepted with information on budget spending relevant to the value added to the project scope. Co-funding and co-sponsoring proposals with other organizations are welcomed.

Proposal Evaluation

NEx research proposals will be evaluated by the NEx Steering Committee. A winning proposal will be forwarded to the NEx Board of Directors with recommendations for funding.

Proposal evaluation criteria will include technical content, methodology, PI's relevant experience, potential impact/ industry adoption, budget and time, proposed deliverables, and outcome. Typically, NEx funded project duration ranges from 6 to 24 months.

Awarded Proposals

- The awarded proposal is expected to commence within the first quarter of 2025
- NEx will enter into a contract with the researching entity. As part of the contract, it is mandated that the overhead or indirect return be set at no more than 15% of the direct cost of the research funding requested from NEx. Any overhead over the maximum allowed 15% that is waived by the researching entity shall be considered as cost sharing and shall be indicated on the budget table as waived overhead, separate from other co-funding. Non-compliant proposals in this regard shall be returned without review.
- The schedule of payments contingent upon milestone deliverables will be contained in the contract and will include, at a minimum, a final report deliverable to NEx. Quarterly progress reports will be identified in the final contract.
- If principal investigators (PI) from two organizations are collaborating on the research, the award must be to a single organization, which will then subcontract with the second organization.
- NEx will only consider funding projects that involves the use of proprietary products if the goal of the project is to advance knowledge in a particular area of study and not solely on a proprietary product.
- In case of any co-funding arrangement with other organization(s), commitment letter(s) from co-funding organization(s) is required before funds are dispersed from NEx.
- The results of NEx-funded research will be owned by NEx, and possibly by other co-founding organization(s). PI should notify NEx before publishing any results.

Where and How to Submit Proposals

Submitted proposals will be evaluated by the NEx Steering Committee and subject matter experts. Anyone who evaluates a proposal is required to agree and abide by NEx policies on confidentiality and conflict of interest.

Please email the proposal and supporting information to info@nonmetallic.org, by end of the day, **October 7, 2024**. The email subject line and file name shall include project ID (see top of page 1) and the

name of the proposing organization (For example: "RD24.xx University of xyz").

If you have any questions regarding the proposal requirements or process, please contact NEx Technical Director, Aparna Deshmukh (aparna.deshmukh@nonmetallic.org).

Proposals submitted to NEx shall be provided in **one unprotected PDF** using [NEx provided template](#).