

August 15, 2024

NEx Request for Proposals Notice

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

NEx RFP Id: SG25.02

Proposal Title: Development of a Guideline for Detecting FRP Reinforcing Bars in Concrete

Background

Reinforced concrete structures that are being inspected, retrofitted, repaired, or expanded will often require trades to use rebar detection methods to locate existing bars in concrete. Though this process is well established for steel reinforcement, detection of Fiber Reinforced Polymer (FRP) reinforcing bars in concrete using non-destructive methods remains a challenge. This uncertainty limits the broader application of non-metallic reinforcing materials in construction. Current detection techniques are either insufficiently accurate or too invasive which makes the use of FRP bars less appealing, particularly in critical concrete infrastructure such as bridges.

There is a pressing need for accurate, repeatable, and easy-to-use non-destructive testing (NDT) methodologies that can detect and locate FRP bars within concrete. Addressing this need benefits Departments of Transportation (DOT) and other stakeholders in the construction and engineering communities, including those aligned with the American Concrete Institute (ACI). A recent report “A Framework for Field Inspection of In-service FRP Reinforced/Strengthened Concrete Bridge Elements” from projects conducted by the Federal Highway Administration (FHWA) and Florida International University (FIU) highlight the significant impact that improved detection methods can have on the safety and maintenance of bridge structures.

Proposal Request

We are seeking proposals to develop a guideline for the detection of FRP reinforcing bars in concrete using non-destructive testing (NDT) methodologies. The goal of this project is two-fold:

1. To evaluate existing NDT methodologies for detecting FRP bars in concrete.
2. To develop a guideline that presents methodologies and steps to allow for the accurate detection and location of FRP bars in reinforced concrete.

The project should focus on evaluating and comparing various NDT technologies and methodologies for detecting Glass Fiber Reinforced Polymer (GFRP) bar reinforcement in concrete structures. Proposals should explore multiple NDT techniques to identify the most effective and practical solution(s).

This project will address critical issues faced by DOTs and will be instrumental in advancing the use of FRP materials in construction. The outcomes should be communicated with the relevant committees (i.e. ACI 440, ACI 228) and stakeholders to ensure the findings are integrated into industry standards and practices, such as those of ACI.

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.

NEx is committed to achieving its mission through Research and Development, Standards and Guidelines, Professional Development, and Advocacy and Awareness.

Funding Policy

NEx will impose a limit of 15% on indirect costs (overhead) by project organizations for any project 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 \$50,000 to \$75,000. 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 project 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 awarded 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 project funding requested from NEx. Any overhead over the maximum allowed 15% that is waived by the awarded 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 project, 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 project 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](#).