

September 14, 2022

NEx Request for Proposals Notice

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

Project ID: RD23.06.

Project Title: Developing a Fire Testing Program for FRP Structural Concrete

Background

Conducting, evaluating, and applying fire tests of concrete elements is a complex and often confusing problem. This is compounded by the limited number of facilities that can conduct loaded fire tests. Additionally, full-scale, loaded fire tests are costly. Before embarking on a program to establish fire resistance and fire ratings (these are distinctly different parameters), it is critical to have a well-established test plan that delineates the test specimens, properties of constituent materials at elevated temperatures, test specimen geometry, structural loading, degree of restraint (if any), and test evaluation criteria.

Proposal Request

NEx invites proposals for developing a detailed fire testing program for FRP structural concrete. This will help to understand the behavior and the subsequent impact on fire ratings of concrete elements made with FRP in a systematic and organized approach. The fire testing program shall be designed to support FRP structural concrete and possible adoption by International Building Code (IBC).

Below are some of the factors that impact the performance of a loaded concrete element in a fire test and the subsequent evaluation of test data:

- Concrete strength
- Internal moisture condition of the concrete (this is prescribed by the test standard)
- Means and duration of pre-conditioning (drying) the test specimen
- Concrete aggregate type (carbonate, silicious, lightweight)
- Reinforcement detailing (cover)
- Location and number of internal temperature measurement locations
- Loading details (restrained v unrestrained)
- Test element size as compared to anticipated size in use
- Use of resulting fire endurance data (comparative or used to establish fire ratings)

The above list is representative, not exhaustive, of the factors that should be considered when designing a fire test program to understand the behavior and the subsequent impact on fire ratings of concrete elements made with FRP.

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 maximum budget for this project is \$25,000. Proposals with higher budget estimates 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, cost and time, proposed deliverables, and outcome.

Awarded Proposals

- The awarded proposal is expected to commence within the first quarter of 2023.
- 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. Progress reports, if required, 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 research that involves the use of proprietary products if the goal of the research 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 obtain approval from NEx before publishing any results.

Where and How to Submit Proposals

Submitted proposals will be evaluated by the NEx Steering Committee and the NEx Staff. 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 5, 2022. The subject line shall include project ID (see top of page 1) and the name of the proposing organization (For example: "RD23.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).

Required Proposal Content

Proposals submitted to the NEx shall be provided in one unprotected pdf file and shall contain:

- Contact information of the Principal Investigator (PI), co-PI (*if applicable*) and administrative persons that may submit on behalf of the PI;
- Proposal Title;
- Executive summary to be used for promotional purposes:
 - Total project budget amount including up to 15% overhead, if any;
 - Value of any co-funding, identified as monetary or in-kind (monetary value of donated materials, consulting or testing services);
 - Amount of waived institution overhead;
 - Description of objectives of the proposal (300 words or less);
 - Description of significance/impact of the project (300 words or less).

Main body of the proposal (*maximum of 5 pages in 12-point font*) must include:

- Objectives;
- Significance/Impact;
- Project description to include enough detail to understand how the research will be performed;
- Matrix of tasks and schedule of completion, including progress and final reports;
- List of anticipated products, such as new material specifications, new documents, published papers, presentations, or conference proceedings;
- Table of funding that includes all support such as:
 - Total budget;
 - Any co-funding from organizations other than NEx;
 - Net value of waived institution overhead or planned co-funding (if not in place yet).

Supporting information should include:

- References cited;
- Qualifications of the investigator(s) and/or institution(s). Biographical sketches are limited to two pages per investigator.