

# FAQs - Continuous Fiber Reinforced Additive Manufacturing Technologies

Last updated February 6, 2026

**The Continuous Fiber Reinforced Additive Manufacturing Technologies project has a submission date of Friday, February 13, 2026, but the Civil Works CSO has an expiration date of December 31, 2026. Is this a discrepancy? Which date is correct?**

This project is considered an Individual Program Requirement (IPR) supported by the ERDC Civil Works (CW) Commercial Solutions Opening. Posted under the authority of the CW CSO, the IPR will describe the desired end result, offer additional context for the needs that seek solutions, provide a funding profile, and stipulate a specific due date for solutions.

Please use the submission deadline date for the [Continuous Fiber Reinforced Additive Manufacturing Technologies](#) project as the close date.

**The solicitation mentions "Up to \$400,000 may be awarded in FY26 to cover materials cost for Federal lab testing." Are we to interpret that this is the maximum budget per award?**

The \$400,000 is the total for the effort, and may be split among multiple vendors, dependent upon the number selected and the cost associated with each bid to manufacture the requested samples in Phase 2.

**We have the ability to 3D print concrete with continuous steel rope or CF strands. Would this be responsive?**

This effort is focused on continuous fiber polymer additive manufacturing for Civil Works. The Government is not interested in concrete at this time.

**Given that Large Format Additive Manufacturing (LFAM) bead sizes often exceed the narrow section width of standard ASTM D638 coupons, what geometry does ERDC prefer for material characterization? Will ERDC accept modified ASTM D3039 rectangular coupons machined from printed plaques to ensure a Representative Volume Element (RVE) that captures multiple bead-to-bead interfaces? The solicitation mentions 'automated reinforcement placement.' Does ERDC consider hybrid structural solutions, such as post-tensioning (using integrated internal tendons), to be within the scope of this challenge? We have found that active Z-axis compression significantly improves the performance of LFAM components in structural applications; would ERDC evaluate such 'hybrid' reinforced systems? For Civil Works applications involving hydrostatic pressure, inter-layer (Z-axis) adhesion is critical. Does ERDC intend to perform through-thickness tensile testing (e.g., 'Type-Z' coupons machined vertically from printed walls), and if so, does the Government have a preferred block size for these extractions? ERDC is seeking solutions at TRL 5–7. Is there a preference for vendors who can provide in-situ validation? For instance, would a demonstration involving large-scale**

**components tested in a real-world low head micro-hydro environment be considered a high-value Expected Result for this RFI?**

Phase 1 of this process is focused on the request for information about the technologies and what they offer. ERDC personnel will use this information to determine the appropriate characterization techniques to competitively compare all solicitations during Phase 2. Phase 2 will include the requested geometries that the Government would like printed to effectively characterize all materials. Please include any relevant information in the Phase 1 solicitation, to allow us to accurately compare the technologies (i.e. bead size, fiber to polymer ratio/ orientations, limitations, past work, etc.)

**Are cementitious materials with continuous fiber of interest or only polymer-based systems?**

No. This effort is focused on polymer-based AM technologies, specifically continuous fiber additive manufacturing.

**What scale of printed component / soecime (minimum) is required for relevancy? Would 1-meter / 40-inch long segments be sufficient for the testing of interest?**

Yes. Please provide all relevant information about the technology and capabilities during Phase 1 RFI. Technologies that meet the requirements outlined in the RFI will be down selected to participate in Phase 2.

**In the past, we have seen the term “continuous fiber reinforced AM” to mean either embedding the continuous fiber into the polymer extrusion (what our technology does) or using a single-tow AFP system to wrap a printed part after the fact to reinforce it. So, can you clarify that this is in fact the type of technology you are looking for?**

Phase 1 of the RFI is focused on gathering any and all information regarding continuous fiber reinforced additive manufacturing processes, including geometries, volumes, technology specifics, and any relevant information highlighting the applications of the technology. This information will be utilized to down select for Phase 2. While the Government is interested in both continuous fiber embedded in polymer extrusion and single toe AFP systems, Phase 2 will work to identify technologies that meet the additive manufacturing criteria for complex and non-planar geometries.

**Can a researcher from another federal lab not associated with ERDC submit for funding consideration?**

All submissions will be evaluated for technical merit and capability of the CF-AM technology regardless of association. Down selection for Phase II will be based on that technical merit.

**Can procurement ready solutions be considered and money used for prototype testing?**

Phase I is targeted to off the shelf commercially available solutions, with Phase II providing limited funding for fabrication of component level coupons for characterization.

**As mentioned on the website, the estimated period will be for the Winter-Spring of FY26. Does it mean that the period is one year and the project will start in Winter 2026?**

The U.S. Government fiscal year (FY26) began October 1st, 2025, and ends September 30th, 2026. This period of performance began this winter and will conclude at the end of the coming spring. Exact dates for submission periods were included with the RFI.

**Several studies involving large-format additive manufacturing (LFAM) and in-situ automated fiber placement (AFP) have demonstrated that material coupon testing alone is insufficient to accurately characterize strength, crystallinity, and interlayer weld diffusion behavior, as these properties are highly sensitive to local part geometry and toolpath strategy. Integrated Computational Materials Engineering (ICME) workflows, incorporating thermal histories derived from AM process simulations, are therefore commonly employed to bridge the gap between non-representative material testing and component-level design and analysis, particularly for structurally loaded applications.**

**(Q1) In this context, what is ERDC's perspective on the early integration of such ICME workflows to assess the feasibility of continuous fiber-reinforced additive manufacturing (CFAM) beyond idealized conditions, in support of achieving predictable performance, durability, and manufacturability objectives?**

**(Q2) Additionally, how does ERDC view the role of this approach in informing and establishing robust material testing and qualification plans moving forward?**

ERDC is aware that coupon-level testing alone is insufficient to fully characterize LFAM and CFAM systems, particularly given the strong dependence of thermal history, interlayer bonding, and resulting properties on local geometry and toolpath strategy. ERDC also recognizes that, at this stage, comparisons across CFAM technologies are inherently imperfect, as many systems differ significantly in deposition approach, consolidation mechanisms, and achievable process control.

The current RFI is intended to establish a baseline understanding and to screen technologies that do not meet minimum criteria, rather than to make definitive performance comparisons. Any initial coupon-level evaluation would be used in conjunction with process-level insights gained in this phase to identify platforms that show promise, not to represent final structural capability.

ERDC anticipates that more meaningful assessment of CFAM feasibility beyond idealized conditions, including the use of ICME-based workflows and representative thermal histories, is best suited for a subsequent phase focused on component-level geometries and loading. That phase would provide the appropriate context for linking process, structure, and performance, and for informing more robust testing and qualification strategies moving forward.

**Does ERDC prefer that testing is conducted at our laboratories or yours? As this is technology that already exists at our facilities, we perhaps can accomplish more data collection for the same capital outlay than it may be for ERDC as it will need to procure equipment.**

ERDC's intent is to perform testing in a consistent and representative manner across all technologies under evaluation. While ERDC recognizes that some vendors are fully capable of conducting this testing at their own facilities, this will not be the case for all vendors. As a result, ERDC anticipates conducting testing under a standardized test plan across the technologies to ensure comparability, consistency, and relevance of the results.

**TAM already has equipment on the open market called the TALR system, currently it is capable of managing spools of up to 100m of reinforcement (approx 350'). Does the ERDC wish to develop a new system that can handle longer/heavier spools or perhaps a mechanism for autoloading and spool splicing for continuous reinforcement laying?**

At this stage, ERDC is focused on evaluating existing technologies that meet polymer Continuous Fiber Additive Manufacturing criteria. The intent is to understand how current commercial systems address continuous reinforcement handling, rather than to specify or develop new hardware solutions at this time.

**Currently the TAM TALR system is at TRL 9 and is a product in the public domain. Its main limitation is directly correlated to the quality of fiberglass roving, lower cost materials have inherent de-stranding properties that will cause more frequent down-time events, is the ERDC interested in developing beyond current state of the art to be able to use lower cost fiberglass supply?**

This effort is focused on identifying commercially available, off-the-shelf (COTS) solutions applicable to polymer-based additive manufacturing. ERDC is not currently seeking to develop capabilities beyond the existing state of the art, but rather to understand how commercially available systems perform. All responses describing existing, commercially available approaches are welcome and will help inform ERDC's understanding of the current technology landscape.

**The TAM TALR system used for laying spooled reinforcement (carbon fibre/kevlar, basalt, aramid weaves and fiberglass) into 3D printed concrete in real time is based on six axis robotic controls strategy, does ERDC have a robotic arm to fit our equipment to? Does it intend to purchase an entire printer based on robotic motion? Does it have its own printer that it wishes to install an attachment for fiber reinforcement and what kind of machine would that be?**

This effort is currently focused on polymer-based additive manufacturing. At this stage, ERDC is evaluating existing CFAM technologies to understand the current state of the art, rather than identifying specific equipment configurations or making procurement decisions. As such, ERDC is not seeking to fit vendor equipment to existing robotic systems, commit to a robotic-based

printer, or specify attachment-based integration at this time. The intent is to assess how current technologies are implemented and differentiated, not to define an acquisition path.