FAQs – Blast Overpressure Protection

Last updated December 12, 2025

The solicitation states that "two functional exits must remain accessible." Is this intended to preclude the use of lightweight blast-resistant doors or panels that may cover the two open ends of the bunker structure? Or are the two exits considered accessible if lightweight doors or panel covers are in place?

Blast-resistant doors/panels may be used as long as they are operational and remain operational for exits.

Is the Government seeking mitigating solutions to explosions originating outside of the building/bunker or explosive charges detonating inside the same space as the occupants?

Both. The first test case will be a bunker with a large explosion at least 50 ft away. Additional test cases will consider smaller charges in the same space as the occupants. Solutions do not have to work in both scenarios. Solutions will be considered for the scenarios with applicability.

Is the motivation of this effort focused on limiting overpressure exposure to personnel inside the bunker through openings and/or shock reflections? Or would solutions intended to limit potential for structural collapse be part of this effort as well?

The current effort aims to limit overpressure exposure. Blast loadings where structural collapse is possible will not be considered.

Could you please share the blast parameters used for the testing—specifically the charge weight, charge type, and stand-off distance—as well as the wall/ceiling section details?

The Government is looking for commercial solutions that reduce blast pressure and impulse within the structure to reduce blast-induced injuries to occupants. Structural damage is not a concern. The Government will be measuring pressure and impulse reductions within the enclosed/semi-enclosed space.

Are wearable, pocket-carried, or individual-use technologies that protect the Warfighter from the physiological effects of blast overpressure considered within the scope of this CSO, provided they mitigate the primary health outcome of concern (e.g., TBI)? Will testing only measure physical overpressure reduction inside the structure, or will physiological protection outcomes (e.g., reduction of biomarkers or indicators associated with blast-induced TBI) also be accepted metrics for evaluation? Is the Government's primary interest in: a) reducing the magnitude of overpressure within structures, or b) reducing the blast-related health effects on personnel, or are both viewed equally?

Wearable, pocket-carried, or individual-use technologies that protect the Warfighter from the physiological effects of blast overpressure are not within the scope of this CSO. Testing will only measure the physical overpressure reduction and changes to the blast environment inside the structure. Physiological protection outcomes (e.g., reduction of biomarkers or indicators associated with blast-induced TBI) will not be evaluated. The Government's primary interest for this CSO is reducing the magnitude of overpressure within structures and manipulating the blast environment.

Would technology and capability to reduce overpressure be considered if it would be an addition to already existing structures (i.e., attached to the interior walls, floors, ceilings of a bunker or shoot house)?

Yes.

Is it acceptable to only cover one wall (15' L x 7' H) instead of all sides of the bunker?

Yes.

Will the contractor be responsible for installing these panels, or should we pass them to the ERDC team for installation and testing?

Either as long as the installation isn't difficult or specialized.

Can we use a frame structure for installing our modular panels?

Yes.

Is it necessary for us to paint our modular solution?

No.

Can a contractor witness the test?

Yes.

Is it possible for the contractor to retrieve the remaining test panels for further investigation?

No, we will have purchased the materials so they will belong to the government.

Do you allow the contractor to bolt or install the proposed solution onto the exterior wall of your bunker directly?

Yes.

To clarify, do you want us to add blast mitigation to existing structures, or would you like us to build the actual structures?

Add blast mitigation to existing structures.

Can these structures be man portable or are they intended to be set up with machinery?

Either is acceptable for adding the mitigation to existing structures.

What's the acceptable level of pressure inside the building and for how long?

Unknown. The Government is looking for a reduction in pressure and duration.

What are the expected standoffs and charge weights?

There is a range of charge weights and standoffs. Scaled standoffs of 15-50+ $ft/lb^{1/3}$ are of interest.

If these are existing structures—what is the makeup/material of existing structures? Is this a set structure type (current singular design) or do you want this to apply to any and all types of structures?

Concrete, CMU, timber, steel, corrugated metal, etc. It is any type of structure. The Government is specifically looking at bunkers and training facilities (buildings with multiple rooms).

May a single offeror submit multiple independent Solution Briefs presenting different technical approaches, each compliant with the 3-page limit and formatting requirements?

Yes.

Does the customer have any ballistic requirements or needs attached to the blast overpressure issue? Is a dual use/function system of interest to the customer/user?

Not at this time.

Is there a standard attachment system in place that must be utilized or is the attachment mechanism open for design?

Open for design.

Does the solution require environmental protection coatings/outer materials?

No.

Can the basis for evaluation be provided? What metric will be used for evaluation of overpressure reduction and how will entrants be scored?

Percent reduction in peak pressure and percent reduction in duration.

Are there any system dimension limitations, specifically thickness?

No, but the solutions have to be logistically feasible to be put on the walls of the room and the room still be usable.

Are there any prohibited materials or requirements for materials to be flame retardant/proof?

No.

Will you be accepting ROM proposals from Canadian suppliers?

Yes.

If available, please provide the worst-case blast conditions at the barrier location (e.g., peak incident or reflected overpressure in psi, number of events, TNT equivalence and standoff distances, and any relevant impulse or duration information).

Right now, the Government is concerned with 1-5 psi. The duration could be long; as much as 25 msec for the positive phase. Scaled standoffs of 15-50+ ft/lb$^{1/3}$ are of interest. This could vary in the future so present the information that you find relevant.

For the initial bunker scenario (8.5 ft × 7 ft × 15 ft), does ERDC prefer that vendors propose barrier sizes, coverage areas, and quantities based on our understanding of the use case, or does ERDC have specific desired sizes, coverage locations (walls/ceiling/entrances), and quantities that should be assumed for planning and ROM pricing?

Vendors propose barrier sizes, coverage areas, and quantities based on understanding of the use case.

Are there any constraints on allowable barrier thickness, installed weight, or maximum deflection (e.g., clearance to personnel, equipment, or walls) that we should take into account when proposing configurations for interior applications?

No.

For future scenarios beyond the initial bunker, does ERDC anticipate using similar overpressure ranges and event counts, or should vendors assume that solutions may be subjected to a broader range of blast loads and structural geometries (e.g., trenches, shoot houses, and barracks entrances) when describing modularity and scalability?

Solutions may be subjected to a broader range of blast loads and structural geometries.

Attachment and Installation: Is the retrofit product intended for permanent installation, or is a temporary or modular attachment method permissible (or both)?

Both.

Assembly Constraints: Are there any limitations or specifications regarding the attachment method, the composition of the interior assembly, or the use of air gaps within the system?

No constraints.

Weight Restrictions: What is the maximum allowable weight or weight per unit area for the proposed protection system?

No constraints.

Blast Overpressure Requirements: What is the specified overpressure on the detonation side (incident pressure) for the exterior blast scenario (bunker door)?

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What is the desired or maximum acceptable overpressure on the protected side for the interior blast scenario (shoot house reverberation mitigation)?

The Government would like to reduce exposures, so it is looking for a reduction compared to when no technologies are used. Ideally, the exposure gets down to zero.