



TECHNOLOGY DEVELOPMENT FUND (TDF) SCHEME



TITLE: RAPIDLY DEPLOYABLE SANDBAG ALTERNATIVE

1. Objective:

To design and develop a rapidly deployable alternative to traditional sandbags for emergency and defense applications. The proposed solution will provide quick deployment, high durability, and ease of use for protective measures in flood control, combat zones, and other emergency scenarios.

2. Background:

Traditional sandbags, though widely used, are labor-intensive and time-consuming to deploy. They also pose logistical challenges in transportation and storage. A modern alternative that is lightweight, reusable, and easy to deploy can significantly enhance readiness and response capabilities during emergencies.

3. Problem Statement: Presently sandbags are being utilized for providing blast protection whenever require/ Filling of sandbag is a laborious process and the sandbags deteriorate with time when deployed in open conditions. Moreover, availability of sand is also becoming a limitation. Therefore, there is a requirement for a rapidly deployable alternative to sandbags with the following innovative features:

- a. Provide the same or better level of protection than a sandbag.
- b. It should be modular so that the required shape and size can be generated quickly.
- c. It should be much lighter than a sandbag.
- d. Should have long life even when exposed to elements.
- e. Should allow compact storage when not in use

4. Proposed Solution:

1. **Material Innovation:** Develop lightweight, durable materials resistant to environmental factors such as water, UV rays, and extreme temperatures.
2. **Modular Design:** Ensure the alternative is stackable and capable of forming various protective configurations (e.g., walls, barriers).
3. **Ease of Deployment:** Incorporate mechanisms for rapid inflation, filling, or expansion to reduce setup time.
4. **Reusability:** Design for multiple uses with minimal maintenance requirements.

5. Expected Outcome:

1. A robust, rapidly deployable sandbag alternative that reduces deployment time and manpower requirements.
2. Enhanced operational efficiency in disaster management, defense operations, and infrastructure protection.
3. A cost-effective and sustainable solution compared to traditional sandbags.

6. Key Deliverables:

1. Functional prototypes tested under various operational conditions.
2. Performance reports validating durability, deployment time, and protective effectiveness.
3. Deployment guidelines and technical documentation.
4. Scalable production strategy for widespread adoption.

7. Strategic Relevance:

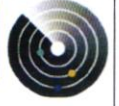
This project aligns with the national objectives of improving disaster response capabilities and bolstering defense readiness. It provides a strategic advantage by enhancing protection measures in critical situations while promoting innovation in emergency response technologies.

8. **Future Expectation:** The alternative system should aim to improve the protection level, enhance durability, and reduce both the weight and cost in comparison to traditional sandbags, providing a more efficient and long-lasting solution.
9. **Likely Order Quantity (MoQ):** An initial requirement of 1000 units is expected once the prototype is developed, and the technology proves viable.

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FEASIBILITY CUM RFI RESPONSE FOR THE PROJECT REQUIREMENT UNDER TDF SCHEME (PROFORMA)

1. **Name of the Institute** (Industry/Academia):
2. **Contact details:**
 - a. Email
 - b. PoC
 - c. Address
3. **Title of the project requirement:**
4. **Project Description** (Define broad understanding of the project requirement and proposed solution under the project).
5. **Briefly detail the proposed technical solution in terms of subsystem/submodule levels.**
6. **Road map for achieving the proposed outcome (Development Plan Phase wise -Max 5 phases).**
7. **Development and production Estimates:**
 - i. Estimated time required for development of the proposed technology /product (In Months).
 - ii. Estimated cost required for the for development of the proposed technology /product (BQs of submodules/subsystems if any pls attach).
 - iii. Estimated production cost of the end product after successful development (per unit or batch cost).
 - iv. Whether the industry has already done any Suo moto design and development of the proposed product/technology at Technology Readiness Level – Yes/No
 - v. Details of Suo moto design and development done if marked Yes in previous question (within 250 words).
 - vi. Essential infrastructure required for development of the proposed product/technology for which funding is required.
8. **Technical strength in terms of manpower.**
9. **Relevant Work Experience.**
10. **Any other relevant information**

Queries if any and the reply in PDF FORMAT to be submitted online addressing to;

TO,

THE DIRECTOR TDF, DRDO

DRDO BHAWAN, RAJAJI MARG, NEW DELHI 110011

Email to, arjunk.hqr@gov.in, CC to dir.tdf-drdo@gov.in.