

Lightweight High Strength Flexible Radar Absorbing Rubber Sheet (LHSF-RAbS)

The Radar reflection of an object is dominated by the radar energy returned from various scattering centers of complex shaped targets. The application of Radar Absorbing Materials (RAMs) to attenuate the back reflected radar energy, is an effective way of reduction of Radar energy. Add-on Radar absorbing materials not only have the required functional properties of radar absorption at the desired frequency bands, but are also constrained to be thin and to carry minimum weight penalty and meet the operational requirements. These add-on materials are developed in the form of flexible radar absorbing rubber sheets to cover the surface.

DRDO has developed Radar Absorbing Rubber sheet for application on targets to reduce Radar reflection. The developed rubber sheet is flexible, light weight and has high strength with wide thermal stability. The functional dielectric filler has been used in appropriate ratio in rubber matrix to obtain maximum absorption properties in microwave frequency.

Advantages of Technology: The developed Radar absorbing rubber sheet has following advantages:

- Exhibit microwave absorption more than 90%
- Light weight with Specific gravity
- High Tensile and Tear strength
- Temperature thermal stability
- less time consuming for covering large area
- Flexible, cut and paste type, easy to apply on curved surface
- Custom molded to any shape
- Resistance to Hydraulic Oil and Water
- Can be pasted on Al/Al alloy, MS and CFRP composite surface using compatible rubber based adhesive
- Compatible for application of epoxy based color coating on surface of sheet
- capable for outdoor application on airborne, land and sea based targets.

Interested Industries are requested to forward their Expression of Interest (Eoi) (with an attachments of supporting documents) to Director DL, Jodhpur with a copy to Director DIITM, DRDO HQ (without attachment) on following address:-

Director

Defence Laboratory

Ratanada Palace

Jodhpur

Rajasthan-342011

Phone : 0291-2510275

Fax : 0291-2511191, 0291-2510260

Email : director[dot]dl[at]gov[dot]in

Copy to

Director

Directorate of Industry Interface & technology Management (DIITM)

Room No. 447, DRDO Bhawan, DRDO HQrs, Rajaji Marg, New Delhi-110011

Phone: 011-23013209/23015291

Fax: 011-23793008

Email: diitm[dot]hqr[at]gov[dot]in

All industries interested in seeking ToT are requested to apply in the format given below along with supporting documents (as applicable). Kindly provide reference of page no. of supporting document in the relevant field also. The list of documents to be attached is provided in Annexure - I.

PART-1

General Information

1.	Name of the Technology requested for Technology Transfer (Technology name and concerned Lab, Category)	
2.	Name of the industry/ organization	
3.	Complete Address and other details	
	Registered Office State Phone No Fax Email Website	
	Factory State	

	Phone No Fax Email Website	
4.	Point of Contact Name Designation Address Mobile No Ph No Email ID	
5.	NAME OF CMD/ MD /PARTNERS/ PROPRIETOR/ etc Name Designation Address Mobile No Ph No Email ID	
6.	Date of Incorporation of company	
7.	Foreign Direct Investment in company (if any in %)	
8.	Shareholding pattern	
9.	Turn over as per Audited Balance Sheet for the preceding three years. Year ____ Year ____ Year ____	
10.	Annual budget for R&D during last three years (if any) Year ____ Year ____ Year ____	
11.	Income Tax returns for the preceding three years period Year ____ Year ____ Year ____	
12.	Nature of company DPSU, Private Limited, Public Limited, Partnership, Proprietary, Ex- Serviceman Unit	
13.	Category of industry Large Scale, Medium Scale, Small Scale, Micro, Startup	
14.	MSME Registration No	
15.	Certificates of registration as a manufacturing unit, if any.	

16.	If Startup, DPIIT Registration No	
17.	UDYOG AADHAR No	
18.	PAN Number	
19.	Details of Industrial license for defence manufacturing issued by DPIIT (if any)	
20.	Details of PESO license (if any)	
21.	GST Number	
22.	Nature of business Manufacturing/ Sole Selling or Authorized Agent/ Assembler/ Traders/ Dealer/ Processor/ Repacker/ Others	
23.	Details of current products and services Products and services Supplied (please specify Govt/ Domestic market/ Export)	
24.	Record of past performance (e.g., Supply orders executed against of Ministry of Defence orders, Public Sectors and Paramilitary Forces, if any).	
25.	Details of registration with NSIC / SSI, DGS&D, other Defence Department, other Govt. Dept, membership of FICCI/ASSOCHAM/CII or other Industrial Association (Attach relevant copies of registration letters)	
26.	Have you already taken any technology from DRDO (If yes, give details attaching separate sheet) Name of the Technology, Lab, Year, License number & Status	
27.	ISO/ ISI certification or any other certification (If yes, give details)	
28.	Relevant clearances form the authorities/ ministries (if any)	
29.	Capacity and capability to undertake developmental work and to accept attendant financial and commercial risks.	
30.	Capacity/capability to market the product through the marketing network, sales and service network, reliability to maintain confidentiality.	

PART-2

Infrastructure and other Information

- **Total area of factory**
Covered (m²),
Uncovered (m²),
Bonded space available (m²)
- **Ownership of factory**

- Self-owned, partnership, rental
- **Electric power**
Sanctioned
Installed
Standby (if any)
- **Availability of adequate infrastructure** (List of machines and their production capacities) and technical expertise
- **Name of bank & A/c No**
Name of bank
A/c type
A/c no
Address of the bank
Phone: Email:

Details of current products:

Sl.no	Type	Description	Licensed/installed capacity	Annual production for preceding 3 years
.				

Details of foreign collaboration, if any

Sl.no	Product	Name & address of collaborator	Year	Remarks
.				

Details of products developed for services

Sl.no	Nomenclature of stores	Order no and date	Remarks
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Please give details of important facilities & infrastructure as per following format for:

- a) Production
- b) Unconventional, special m/c
- c) Testing & quality control facilities

Sl.no	Description of m/c	Make & model	Qty	date of purchase	Remarks
.					

Furnish the following details with relevant certificates and documents

- a) R&D facilities available :
- b) Inspection quality control of raw material components :
- c) Assistance from central agency for testing / calibration etc. :

d) laboratory and drawing office facility :

Principal customers:

Sl.no	Name & address	S.O No. & date	Date of last supply	Products supplied	Value

Future plan (if any) in respect of expansion programme installation of additional machines/ test facilities etc.

Name of the technology requested for transfer (give self-assessment of your capability to absorb the technology)

Details of employee as on date on firm's pay roll

PERMANENT				
Category	Post Held	Number	Qualification	Total Service
Technical	Prod. Manager Q.C. Manager Supervisor Testing Staff (Qc) Skilled workers Unskilled workers, etc.			
Administrative	Purchase Manager Accounts Officer Office Superintendent Clerical Others etc			

TEMPORARY				
Category	Post Held	Number	Qualification	Total Service
Technical	Prod. Manager Q.C. Manager Supervisor Testing Staff (Qc) Skilled workers Unskilled workers, etc			
Administrative	Purchase Manager Accounts Officer Office Superintendent Clerical Others, etc			

DECLARATION :

I / we confirm that the information furnished in Part 1 & 2 above is correct. In the event of any information given by me / us is found incorrect / false at any time, I / we understand our EoI for ToT will be cancelled/ rejected without notice, beside any other appropriate action against me / us.

Industry seal

Authorized signatory

Name(s) in capital
designation and seal of authorized
signatory

dated:

Place:

Annexure - I

List of Support documents to be attached with EoI

- (a) Memorandum and Articles of Association (Should be incorporated as per Indian Companies Act, as amended time to time)
- (b) Certificates of registration as a manufacturing unit, if any.
- (c) Audited Balance Sheet for the preceding three years.
- (d) Income Tax returns for the preceding three year period
- (e) Details of shareholding/ownership pattern especially foreign partners/ shareholders, foreign employees, directors, etc. The company must adhere to the prevailing Govt of India policies and regulations on Foreign Direct Investment (FDI)/DIPP norms as applicable.
- (f) Annual budget for R&D during last three years.
- (g) Numbers and details of IPR or patents, etc., held by the company.
- (h) Number of technically or professionally qualified personnel.
- (i) Record of past performance (e.g., Supply orders executed against of Ministry of Defence orders, Public Sectors and Paramilitary Forces, if any).
- (j) Availability of adequate infrastructure (List of machines and their production capacities) and technical expertise.
- (k) List of Testing and Support equipment's
- (l) ISO/ ISI certification or any other certification
- (m) Relevant clearances form the authorities/ ministries (if any)
- (n) Capacity and capability to undertake developmental work and to accept attendant financial and commercial risks.

- (o) Capacity/capability to market the product through the marketing network, sales and service network, reliability to maintain confidentiality.
- (p) PESO and DPIIT license for explosive handling if ToT is for high energy Material, explosives, propellants, and component/ system dealing with it etc.
- (q) Under taking form company seeking ToT that none of its Directors, Independent Directors, non-executive Directors, Key management personnel are involved in any corrupt practices, unfair means and illegal activities.
- (r) Details of the industrials license for defence manufacturing be provided by the industry seeking ToTs.