

	Technical Specification and Terms & conditions of Supply & Installation of PUF Insulation and FRP Resin	E-Tender Notice No.
		I-I/ET/25002/25-26

Annexure-A Supply & Installation of PUF Insulation and FRP Resin

1. INTRODUCTION

ITER-India is the Indian domestic agency, a specially empowered project of the Institute for Plasma Research (IPR), an aided organization under Dept. of Atomic Energy, Govt. of India.

225 TR HVAC system is installed and functional at ITER-India Lab, IPR Campus, Gandhinagar. Wooden supports of existing chilled water pipes are decomposed & broken due to ageing effect and needs to be replaced with new PUF (Poly Urethane Foam) Insulation supports to enhance the life of pipes and to reduce thermal losses.

There are 11 Air Handling Unit of this HVAC system, whose base needs FRP (Fiberglass Reinforced Plastic) Resin coating to enhance their life and prevent rusting.

The detailed Scope of Work is given in Section 3 of this document.

Note: 1. The bidder needs to submit documents as per Sr. No. 2 for compliance to the evaluation criteria as per Section 2 of this document, failing which the bid shall not be considered for further evaluation.

2. Before quoting the rate, contractor may visit the site to judge the conditions of existing system as per attached Annexure (Visit is optional). You can contact Mr. Mehul Chodavadiya (M. 9328910232) before visiting the site.

2. EVALUATION CRITERIA:

The evaluation criteria for the evaluation of bid is as under: -

Sr. No.	Evaluation Criteria	Documents required to submitted by bidder in bid
1.	<p><u>Completed Contract</u> Minimum value of similar* work/s completed within the last three years from the date of tender publication shall be as per following:</p> <ol style="list-style-type: none"> 1. At least one work with minimum value of Rs. 2,50,000/- (including taxes) OR 2. At least two works with minimum value of Rs. 1,50,000/- each (including taxes) OR 3. At least three works with minimum value of Rs. 1,20,000/- each (including taxes) <p><u>*Definition of "Similar Work/s":</u> Similar Work includes Insulation of Air Ducts/ Piping/ Equipment</p>	<p>Bidder shall submit following documents as proof:</p> <ol style="list-style-type: none"> (i) Copy of unpriced work order/s with complete technical details and (ii) Copy of completion certificate/ invoice from the purchaser for each work

3. SCOPE OF WORK

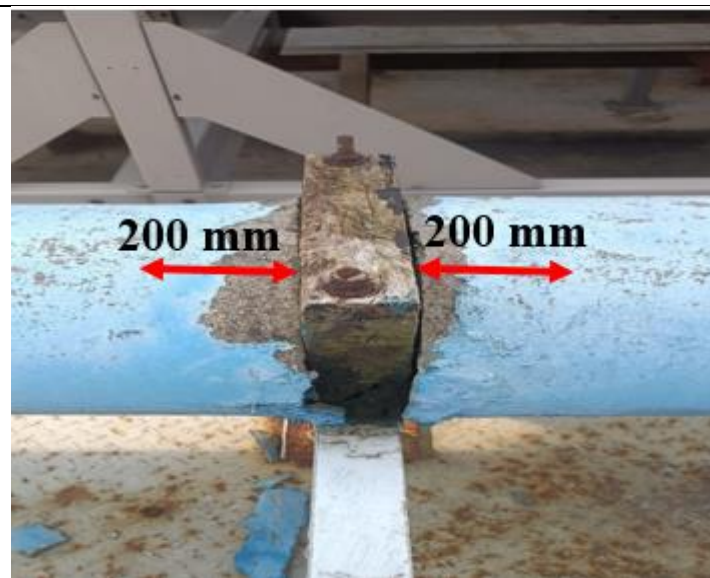
3A. Scope of Work for Supply and Installation of PUF Insulation

- 1) **There are 177 Wooden Block pairs** installed for various chilled water pipes sizes that needs to be replaced with PUF Block pairs. The pipe size details and locations are given in Table 1. The maximum height of pipe line is 3.2 m from ground level.

Sr.No.	Pipe Size	Location	Wooden block pairs
1	200 mm	Main Headers	19 nos.
2	150 mm	Chillers & Pumps lines	24 nos.
3	125 mm	Main header out to AHU	34 nos.
4	100 mm	Main Header out to AHU 2.1/2.2/2.3/4/5	46 nos.
5	80 mm	AHU – AHU 1.1/ 1.2/ 2.1/2.3/3.1/3.3/4/5	19 nos.
6	50 mm	AHU – 1.3/2.2/3.2	4 nos.
7	50 mm	Drainage	31 nos.
Total			177 Nos.

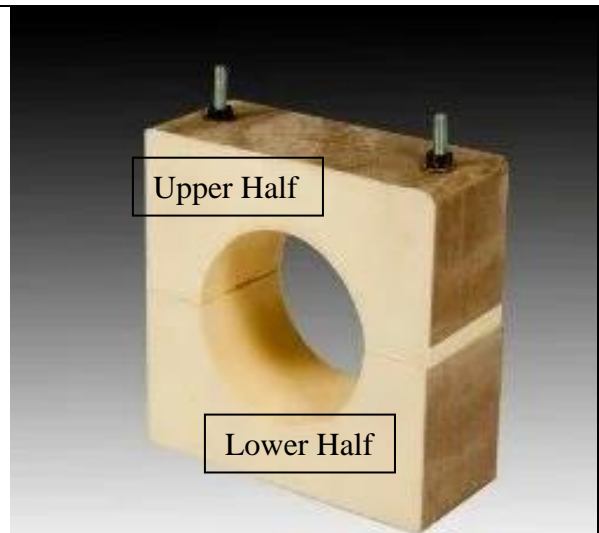
Table 1: Location and Size of Insulation Blocks.

- 2) **Old existing Wooden Block to be removed** by removing small patch of old sand-plaster, wire mesh and thermocol around wooden supports in a way that new PUF Square Set support can be installed. Approx. 200 mm from each side of wooden block to be cleared and cleaned for this work as shown in figure 1a.



Old wooden support, 200 mm from each side to be cleared and cleaned

Fig 1a



New PUF Square Insulation Support with bolts, total 177 pairs of various sizes, (upper half and lower half make 1 pair)

Fig 1b

Figure 1: Old Wooden Square Support to be replaced with New PUF Square Support

- 3) **Supply and installation of new PUF Insulation Square pipe support** (50mm thick and 120 kg/m³ density) for chilled water piping support with suitable rods, bolts, nuts etc to lock it with the pipe support structure. The suitable size to be selected based on the pipe size as per Table-1. New PUF Square support is shown in Figure-1b.
- 4) Drilling for bolts in the PUF sets is in the scope of contractor.
- 5) After installation of PUF Square set support, the exposed pipe needs to be insulated with expanded polystyrene (Thermocole- manufacturer recommended adhesive to be used to stick insulation material with pipe). Insulation to be entirely covered with black polyethylene sheet (vapour barrier), GI chicken wire mesh & 15 mm thick sand plaster (to seal all the joints including PUF blocks).
- 6) Polystyrene to be used is 50 mm thick for up to 150 mm dia pipes and 75 mm thick for 200 mm dia pipes. Insulation density should be 16 kg/m³ or higher.
- 7) To confirm the technical specifications, Data sheet and other certificates for PUF Square set pipe support need to be submitted for prior approval.
- 8) Total 177 **PUF Insulation square support pairs** to be supplied and installed.

Note: Scrap material generated during removal of existing Wooden Blocks, such as Thermocol, old sand-plaster and old wooden supports, safe disposal and removal of such material is in the scope of contractor. Disposal should not be within IPR premises.


3B. Scope of Work for Fiberglass Reinforced Polymer (FRP) Coating on AHUs Base

- 1) There are 11 nos. Air Handling Units (AHU) of the HVAC System. All AHUs are double skin modular type. Top skin of AHU Base (Figure 2) is getting rusted due to ageing and needs FRP (Fiberglass Reinforced Plastic) Resin coating.



Figure 2: Pics showing inside of the AHU

- 2) Before starting the coating work, Rust and other dust need to be cleaned with wired/ suitable brush carefully without damaging the AHU.
- 3) FRP Resin with all required chemicals to be applied on the AHU Base surface equally and entirely to make it leakage proof. Flame Spread Rating required is Class A.
- 4) Approx. AHU Base size is mentioned in Table-2.

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- 5) Thickness of the applied FRP is to be 5 to 7 mm approx.
- 6) Contractor should arrange for measurement of coating thickness using calibrated coating thickness meter.
- 7) All the corners and sides to be sealed to prevent any water leakage to the bottom of AHU Base.
- 8) To confirm the technical specifications, Data sheet and other certificates for FRP Resin need to be submitted for prior approval.
- 9) Approx. area where FRP coating required is around 225 Sq. Feet and payment will be made on actual measurement.

Sr. No.	Location	Base area in MM (feet)
1	AHU 1.1	1700 x 500 (5.5 x 1.6)
2	AHU 1.2	2900 x 650 (9.5 x 2.1)
3	AHU 1.3	2900 x 650 (9.5 x 2.1)
4	AHU 2.1	1750 x 500 (5.7 x 1.6)
5	AHU 2.2	2900 x 650 (9.5 x 2.1)
6	AHU 2.3	2900 x 650 (9.5 x 2.1)
7	AHU 3.1	1650 x 500 (5.4 x 1.6)
8	AHU 3.2	2950 x 650 (9.6 x 2.1)
9	AHU 3.3	2900 x 650 (9.5 x 2.1)
10	AHU 4	2600 x 650 (8.5 x 2.1)
11	AHU 5	3000 x 650 (9.8 x 2.1)
12	Other area	35 sq. Feet
	Total Area	225 Sq. feet Approx.

Table 2: AHU Base Dimensions

Note:

- 1 Bidders are suggested to visit II Lab and discuss with ITER India representative regarding any issue related to this work before quoting.
- 2 All the necessary arrangement for work has to be done by bidder. It includes Scaffolding, Personal Protective Equipment (PPE), man power and tools and or other equipment /material required for execution of the work order.
- 3 Contractor should adopt standard methods of working. In case of any damage to nearby part/equipment/system due to the fault/ negligence of contractor, appropriate amount will be recovered from his bill.
- 4 Contractor must take necessary safety precaution (like use of safety harness etc.) during carrying out the activity. Arrangement of such safety equipment is the responsibility of the contractor
- 5 Contractor will be in charge of cleaning the areas in premises where work was performed, removal of all materials, left overs, debris and garbage from premises every day by the end of the day.
- 6 The complete installation shall be inspected by ITER India representative after completion of work for final acceptance.

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4. Work completion Time

Work completion should not be delayed in any case beyond **12 weeks** after getting confirmed order from ITER-INDIA.

Note: All Works shall have Warranty of 1 years after the date of final acceptance. If anything is required to rework within this warranty period the vendor shall do it free of cost. Any material required for this has to be arranged by the vendor free of cost within warranty period.

5. Payment Terms:

Payment shall be made on actual quantity supplied for PUF Insulation support (Sr. No. 1 of Price bid format) & actual quantity supplied and installed of fiberglass reinforced polymer FRP Resin (Sr. No. 2 of Price bid format). Joint measurement sheet signed by both the parties shall be submitted along with invoice for release payment.

6. Site

ITER-India Lab,
Institute for Plasma Research
Near Mother Dairy, Bhat Village,
Gandhinagar-382 428, Gujarat, India

Other Terms & conditions applicable to Installation & commissioning:

- **Accident/Third Party Liability:** The Service Provider will take all possible precautions to avoid damage to the Purchaser's property during its onsite activities. Service Provider shall also take insurance covering third party liability for the personnel and equipment and/or tools deployed at Purchaser's site against all risks, such as injuries, loss of life etc. Service Provider will be fully responsible for payment of compensation. In the event of loss and/or damage to Purchaser's property / any item(s) / equipment and/or injury or loss of life to Purchaser's personnel during the course of onsite activities due to the Service Provider's default. Service Provider will be fully responsible and liable for such damages and/or losses and payment of appropriate compensation as assessed by the Purchaser. Service Provider will relieve the Purchaser from all the risk and liabilities under this clause.
- **Safety Requirement:** The Supplier shall take all necessary precautions to ensure safety of personnel deployed for the said work. As the work is to be executed in a restricted area, the Supplier / contractor shall strictly observe all safety, security and labour regulations prevailing in the campus. The Contractor shall be responsible for the proper behaviour of the staff employed by him and also for any breach of security regulations, thefts, sabotage etc. The Contractor shall withdraw any person so desired by ITER-India, if in the opinion of the representative of ITER-India it is not desirable to permit that particular person to work inside the campus.
- **Site clearance:** The Supplier shall clear the site and remove all the scrap & their own material/tools from site after successful completion of ordered work only.

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- Facilities to be provided by purchaser. Power & Storage space will be provided.

Bidder Signature		
Name of the signatory & Title	Name	Title
Bidder's Official seal		
Place & Date	Place	DD-MM-YYYY

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Annexure-I: Self-declaration by Bidder of a country sharing/not sharing land border with India

[ON THE LETTER HEAD OF THE COMPANY]

Ref: 1) Our bid/offer No. dated
2) E-Tender No.: I-I/ET/25002/25-26

Restrictions on procurement from Bidders from a country or countries, or class of countries under Rule 144(xi) of the General Financial Rules 2017.

We have read the clause regarding restrictions on procurement from Bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries, and solemnly certify that we fulfil all requirements in this regard and are eligible to be considered. We certify that:

- (a) *we are not from such a country or, if from such a country, we are registered with the Competent Authority (copy enclosed). and;*
- (b) *we shall not subcontract any work to a contractor from such countries unless such contractor is registered with the Competent Authority and solemnly certify that we are not from such a country or, if from such country, we are registered with the Competent Authority (copy enclosed). We hereby certify that we fulfil all requirements in this regard and are eligible to be considered."*

Penalties for false or misleading declarations:

We hereby confirm that the particulars given above are factually correct and nothing is concealed and also undertake to advise any further changes to the above details. We understood that any wrong or misleading self-declaration by us would be violation of Code of integrity and would attract penalties as mentioned in this tender document, including debarment.

Signature

Bidder's stamp

Name:

Position:

Address:

Tel:

Fax:

Email ID:

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Annexure – III

Price Fall Clause Certificate

(To be submitted in the bidder's company letter head)

I/We undertake that we have not offered to supply / supplied / are not supplying same or similar products / systems or sub systems at a price lower than that offered against the Tender No.....dtd..... in respect of any Organization/Ministry/Department of the Govt. of India or its Subsidiaries or other PSU or any other private organization during the currency of the contract and if it is found at any stage that same or similar product/systems or sub systems was supplied by the bidder to any Organization/Ministry/Department of the Govt. of India or its Subsidiaries or other PSU or any other private organization at a lower price during the currency of the contract, then that very price will be applicable to the present case and the difference in the cost would be refunded by the bidder to buyer, if the contract has already been concluded.

Date:

Signature of the Tenderer
Seal of the Firm