

BOQ cum Unpriced format for Thermal Insulation - Ancillary Material for Udangudi STPS Stage-I

Sl. No.	Item Code	Item Desc	UOM	Qty	Quoted (Y/N)	Rate of freight w.r.t. total basic price	Rate of GST on total basic price + freight
1	169-12009-A	Lacing wire, GS - 0.9 mm Dia	KGS	2080			
2	169-12021-A	Binding wire SS,0.9 mm Dia	KGS	360			
3	169-12023-A	CERAMIC FIBRE PAPER-3MM THICK	SQM	820			
4	169-12008-A	GI toggle clips -	NOS	2000			
5	169-12001-A	Anodised aluminium bands - 20mm x 0.6mm	KGS	6740			
6	169-12010-A	MS flats/straps - 20 mm x 3 mm	KGS	8440			
7	169-12003-A	Bolts & Nuts - 10 mm dia. & 25 mm long	SET	6600			
8	169-12004-A	Bolts & Nuts - 10 mm dia. & 40 mm long	SET	6600			
9	169-12022-A	Lacing wire SS,0.9 mm Dia	KGS	300			
10	169-12012-A	Sealing compound - Self setting paste	KGS	820			
11	169-12005-A	Bolts & Nuts - 10 mm dia. & 60 mm long	SET	6600			
12	169-12002-A	Binding Wire, GS - 0.9 mm Dia	KGS	2500			
13	169-12013-A	Seals for aluminium band-To suit Al band	KGS	580			
14	169-12014-A	ST screws with washers, zinc coated	SET	404400			
15	169-12011-A	MS rivets - 3 mm dia & 12 mm long	NOS	76000			


2x660MW UDANGUDI STPP

TECHNICAL SPECIFICATION
FOR
THERMAL INSULATION - ANCILLARY MATERIAL

SPECIFICATION NO: PE-TS-435-169-M038 (REV-00)



BHARAT HEAVY ELECTRICALS LIMITED, POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA, INDIA

	TITLE: TECHNICAL SPECIFICATION THERMAL INSULATION-ANCILIARY MATERIAL 2X660MW UDANGUDI STPP	SPECIFICATION NO. PE-TS-435-169-M038
		REV. NO.: 00
		DATE: 27.03.2023
		SHEET: 1 OF 1


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1 GENERAL

This specification covers the design, materials, manufacturing and testing of ancillary materials required for application of thermal insulation on piping and equipment at Vendor's or/ and sub-Vendor's works inclusive of packing requirements. In case of contradiction between Section-I and DataSheet-A of Section-II, DataSheet-A of Section-II will prevail.

2 MATERIALS


- 2.1 All the material to be supplied under this specification shall be new, unused and free from any defects.
- 2.2 Binding wires, stitching wires and lacing wires shall be of galvanized steel (Commercial Grade) conforming to IS:280 / stainless steel (SS304 or superior grade) conforming to IS:6528. All the wires shall be supplied in coil form.
- 2.3 Mild steel flats, lugs etc. shall be of commercial grade as per IS:2062. Flats and lugs shall be supplied in coil form.
- 2.4 Screws used for cladding sheet joints shall be self-tapping type with washers. Both screws and washers shall be zinc coated (Commercial Grade) or stainless steel (SS304 or superior grade) as per requirement of datasheet-A conforming to the applicable standards.
- 2.5 All other materials i.e. bolts & nuts, rivets, aluminium band & seals etc. shall be of commercial grade quality conforming to applicable standards.
- 2.6 Aluminium band & seals etc. shall be of commercial grade quality conforming to IS:737 standard.

2.7 SEALING COMPOUND

Joint sealing compound shall be used between the overlapping of the Protective Cladding Sheet of Thermal Insulation to make cladding joints vapour tight and to prevent Moisture & Water from entering into the insulation. They shall be of self-setting paste type. The sealing compounds shall be suitable for and comply with the following parameters:

- | | |
|-----------------------------|--|
| a) Service Temperature | : To Withstand 100°C |
| b) Approximate weight | : 1.5 Kg / litre |
| c) Viscosity | : Soft Paste |
| d) Drying Time | : 8 hours or as specified by the manufacturer. |
| e) Application | : Trowel or as recommended by the manufacturer |
| f) Average volatile matters | : To be specified by the manufacturer. |

The shelf-life of sealing compound being approximately 1 year, it should be dispatched only after getting clearance from site.

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2.8 CERAMIC FIBRE PAPER

The ceramic fibre paper shall be as per IS 15402 suitable for and comply with the following parameters:

- | | |
|--|--|
| a) Classification Temperature (°C) | : To be Suitable for a Minimum of 600°C. |
| b) Thickness (mm) | : 3 mm |
| c) Bulk Density (Kg / m ³) | : 128 Kg / m ³ (Minimum) |
| d) Size (mm) | : 1000mm x 500mm |


2.9 Pictorial view of ancillary material items is shown in ANNEXURE-1 for better clarity only and actual requirement shall be as per DATA SHEET-A and Technical specification.

3 INSPECTION AND TESTING

- 3.1 All the materials to be supplied under this specification shall be of good quality meeting requirements of applicable standards.
- 3.2 In case of all ancillary materials, supplier shall furnish a certificate that the materials supplied complies with the requirements of applicable standards.

4 PACKING & MARKING

- 4.1 Materials like binding wires and lacing wires shall be packed in Polythene lined hessian.
- 4.2 Bolt & nuts, rivets, screws etc. shall be packed in polythene bags and further shall be packed in wooded boxes. The wooden boxes should be marked with indelible ink.
- 4.3 Sealing compound shall be packed in metallic drums/tins.
- 4.4 Mild steel lugs shall be packed in polythene lined hessian. Mild steel flats shall be wrapped with polythene lined hessian.
- 4.5 Ceramic fiber paper shall be packed in such a way that no moisture can enter even if the packing is kept in the open atmosphere (exposed to rain), by suitably providing polythene covers.
- 4.6 The following details shall be legibly and indelibly marked on all the packages:
- BHEL Purchase order number
 - Project Name
 - Name of supplier
 - Material / Item.
 - Item details (Size / Thickness / Gauge / Dimension)
 - Weight of the package
 - A caution note "Always store under covered shed and on raised platform"

	SPECIFIC TECHNICAL REQUIREMENT FOR THERMAL INSULATION-ANCILLARY MATERIAL	SPECIFICATION NO:PE-TS-435-169-M038
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5 DOCUMENTS REQUIRED ON DISPATCH

Before dispatch of the material the vendor shall furnish the following in original for BHEL review and acceptance.

- Material Test certificates.
- Shop test reports and certificates.
- Vendor to provide soft copy of photos/snaps of duly packed insulation material. The soft copies to be provided by vendor after final inspection of Insulation material. Clearance for dispatch of insulation material will be given only after satisfactory packing conditions from vendor's work.

6 DOCUMENTS TO BE SUBMITTED ALONG WITH OFFER

Bidder shall submit the following documents duly filled, signed and stamped along with the bid:

- Compliance sheet
- Documents as per the list indicated in the NIT.

The above are the only documents which will be used for technical evaluation unless other documents are asked for during technical clarifications. Any other technical document enclosed with the bid shall be ignored for the purpose of technical evaluation. All other documents attached with the specification are for information of the vendor and no comments shall be marked on these.



ANNEXURE-1
Pictorial view of
Thermal insulation-Ancillary Material

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Pictorial view of Ancillary material items

Note: These are pictorial representation of items for better clarity only and actual requirement shall be as per datasheet-A and Technical specification.

1. BINDING & LACING WIRES



2. M.S. Straps/Flats



3. Self-tapping screw with washers - Zinc Coated





ANNEXURE-1
Pictorial view of
Thermal insulation-Ancillary Material

SPECIFICATION NO:PE-TS-435-169-M038

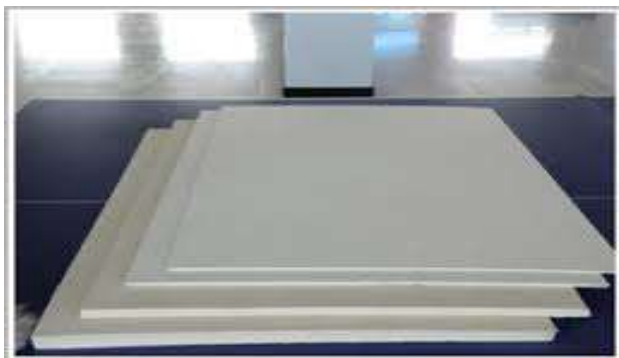
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4. Ceramic Fiber paper



5. MS rivets



6. Bolts & Nuts, MS, hexagonal head



7. Anodised Aluminium bands





ANNEXURE-1
Pictorial view of
Thermal insulation-Ancillary Material

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8. Seals for aluminium bands



9. GI toggle clips



	DATA SHEET- A ANCILLARY MATERIALS REQUIRED FOR APPLICATION OF THERMAL INSULATION 2x660MW UDANGUDI STPP		SPECIFICATION NO. PE-TS-435-169-M038	
			VOLUME :	
			SECTION: II	
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B.O.M.

Sl. no	ANCILLARY	SPECIFICATION	UNIT	QUANTITY (for ONE unit)	QUANTITY (for TWO units)
1	Binding Wire, Stainless Steel	0.9 mm dia. (20 SWG)	Kg	180	360
2	Lacing wire, Stainless Steel	0.9 mm dia. (20 SWG)	Kg	150	300
3	Binding Wire, Galvanised Steel	0.9 mm dia. (20 SWG)	Kg	1250	2500
4	Lacing wire, Galvanised Steel	0.9 mm dia. (20 SWG)	Kg	1040	2080
5	M.S. Straps/Flats	20 mm x 3 mm	Kg	4220	8440
6	Sealing compound	----	Kg	410	820
7	Self-tapping screws with washers –Zinc Coated	No. 8 x 19 mm long	Set	202200	404400
8	Ceramic Fiber paper	3 mm thick	SQM.	410	820
9	MS rivets	3 mm dia 12 mm long	Nos.	38000	76000
10	Bolts & Nuts	10 mm dia 60 mm long	Set	3300	6600
11	Bolts & Nuts	10 mm dia 40 mm long	Set	3300	6600
12	Bolts & Nuts	10 mm dia 25 mm long	Set	3300	6600
13	Anodised Aluminium bands	20 mm x 0.6 mm	Kg	3370	6740
14	Seals for aluminium bands	To suit Al. bands	Kg	290	580
15	GI toggle clips	----	Nos.	1000	2000

NOTE:-

- Bidder to quote/ fill all columns related to applicable taxes, freight etc. separately & individually. No cost is to be made inclusive in Ex.-works price or other heads. Non-compliance to this may lead to rejection of bid.
- Quantity Tolerance on total quantity of above items shall be as given below:
 - Item no. 1,2,3,4,6 &14:** (+)0 Kg / (-)20 Kg
 - Item no. 5 & 13:** (+)0 Kg / (-)50 Kg
 - Item no. 7,10,11 &12:** (+)0 Set / (-)50 Set
 - Item no. 8:** (+)0 SQM / (-)20 SQM
 - Item no. 9 &15:** (+)0 Nos. / (-)50 Nos.

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	COMPLIANCE SHEET THERMAL INSULATION - ANCILLARY MATERIAL 2X660MW UDANGUDI STPP	SPECIFICATION NO. PE-TS-435-169-M038
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I hereby comply/not comply (*) to all the requirements of this technical specification in totality.

* In case the bidder does not comply to the technical specification, the deviations shall be explicitly listed in

TABLE-1 below in case of procurement through GeM portal

Or else

Cost of Withdrawal sheet of GCC

TABLE – 1

S. NO.	VOLUME / SECTION	PAGE NO.	CLAUSE NO.	COMPLETE DESCRIPTION OF DEVIATION	REASON FOR QUOTING DEVIATION
TECHNICAL DEVIATIONS ONLY					

NOTES FOR TABLE-1:

1. All the bidders have to list out Technical deviations (if any) in detail in the above format.
2. Any deviation not mentioned above and shown separately or found hidden in offer, will not be taken cognizance of.
3. The final decision of acceptance/ rejection of the deviations quoted by the bidder shall be at the discretion of the Purchaser.
4. Bidders to note that any Technical deviation not listed above and requested after Part-I opening shall not be considered.

PARTICULARS OF BIDDER'S AUTHORISED REPRESENTATIVES		
NAME	DESIGNATIONS	SIGN & DATE




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	PRE - QUALIFYING REQUIREMENTS	DOCUMENT NO: PE-TS-435-000-M054
		REVISION NO: 00 DATE: 27.03.2023
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Standard document No.: PE-TS-999-000-M054

Project: 2X660MW UDANGUDI STPP**Package: Thermal Insulation- Ancillary Material****CRITERIA FOR EVALUATION (TECHNICAL / FINANCIAL):****1. Technical Pre-Qualifying Requirements:**

- 1.1 The bidder should have supplied Thermal insulation - Ancillary Material (E.g. Wire, Strap, Bands, Sealing compound, Ceramic fiber paper, Screws, Rivets, Bolts & nuts, Toggle clips) for application of thermal insulation on pipe and equipment in a power plant or for similar application.
- 1.2 The item(s) supplied should have performed successfully in similar installations for at least one year. To establish meeting this requirement, the bidder shall conform to any one of the following clauses:
- Execution of two purchase orders for different End-users with the item(s) performing successfully for one (1) year from date of commissioning to date of bid submission as defined in Notice Inviting Tender (NIT) by BHEL. Different projects of a customer shall be considered as different End-users.
 - Minimum one (1) repeat contract from two (2) different Purchasers (i.e. 2 Nos of Purchase orders from each purchaser). A contract shall be considered as repeat, when the second contract is given by the same purchaser after lapse of minimum one (1) year from purchase order date of first contract.
 - Execution of one (1) purchase order as per sl. no. (i) above from one End-user and one (1) repeat contract from another Purchaser as per sl. No. (ii) above.
 - Three (3) contracts from one (1) Purchaser. Second and third contract shall be after lapse of minimum one (1) & two (2) years respectively from purchase order date of first contract.
- 1.3 The bidder to furnish the following documents, as applicable, in support of the above:
- For point 1.2(i): Performance certificates from End-user (duly signed & dated) specifying that the product is performing successfully for one (1) year from date of commissioning along with correlated purchase order(s).
 - For point 1.2 (ii) & (iv): Purchase order(s).
- 1.4 To establish business continuity, bidder to submit minimum two (2) Purchase orders for item(s) as specified in points 1.1 in last 3 (three) years prior to the date of bid submission defined in NIT by BHEL-PEM.

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	PRE - QUALIFYING REQUIREMENTS	DOCUMENT NO: PE-TS-435-000-M054
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2.0 Bidder to also comply with general points mentioned below.

2.1 Offers of the JV companies/ Joint Bidders/ bidders having collaboration/ licensing agreement/ MOU/ Indian subsidiaries shall be evaluated as follows:

- If bidder happens to be an Indian subsidiaries of foreign OEM, then the credentials of the foreign OEM can also be considered for meeting PQR.
- If bidder happens to be the Joint Venture Company, then the credentials of any of JV partners can be also considered for meeting PQR.
- If bidder happens to be the having valid collaboration agreement/ MOU/ licensing agreement with some other company, then the credentials of collaborator/ MOU partner/ licensing company can also be considered for meeting PQR.

Note: If bidder(s) qualifies on the basis of credentials of his principal/ JV partner/ Collaborator/ joint bidder etc., then the principal/ JV partner/ Collaborator/ MOU partner/ joint bidder shall be responsible for overall design vetting and warranty/ guarantee of the package. The scope matrix clearly defining their respective roles including design vetting, manufacturing of critical component, E&C etc. and warranty/ guarantee shall be submitted along with the offer.

2.2 Bidder to note that the arrangement of bidding (joint bid partners/ collaborator/ MOU partner/licensing company etc.) once offered to BHEL as a part of bidding documents cannot be changed till the execution of contract(s).




2.3 Consideration of offer shall be subject to customer's approval of bidders, if applicable.

2.4 Bidder to submit all supporting documents in English. If documents submitted by bidder are in language other than English, a self-attested English translated document should also be submitted.

2.5 Notwithstanding anything stated above, BHEL reserves the right to assess the capabilities and capacity of the bidder/collaborators to perform the contract, should the circumstances warrant such assessment in the overall interest of BHEL.

2.6 After satisfactory fulfilment of all the above criteria/ requirement, offer shall be considered for further evaluation as per NIT and all the other terms of the tender.

2.7 Bidder to ensure that Third Party/ Customer issued certificates being submitted as proof of PQR qualification should have verifiable details of document/ certificate issuing authority such as name & designation of issuing authority and its organization contact number and email-id etc. In case the same found not available, purchaser has right to reject such document from evaluation.

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