



TRICHY, BHEL, TRICHY, POSTAL CODE :620014, TIRUCHIRAPALLI, TAMIL NADU, INDIA

RFQ/NIT HEADER DETAIL

ORGANIZATION NAME TRICHY, BHEL RFQ FLOATED UNDER THE PURCHASE POLICY
RFQ/NIT REFERENCE 1901700235 POLICY
CODE/ENQUIRY NO RFQ OWNER/NIT MR RAJA PRAKASH K(ENGR/PUR)
RFQ/NIT TYPE OPEN TENDER OFFICER/ENQUIRY OWNER
NUMBER OF ITEMS ALREADY 6
ATTACHED
CURRENCY ANY
DESCRIPTION Supply of Non Asbestos Materials
DETAILED DESCRIPTION Supply of Non Asbestos Materials as per specification mentioned against each item.
NUMBER OF BID PART(S) 2 PUBLISHED DATE 28 Sep , 2017 9:40:52 AM

ATTRIBUTE(S)

ATTRIBUTE NAME	ATTRIBUTE VALUE
Delivery at	STORES, BHEL TRICHY
Inspection By	ENGINEER IN CHARGE, BHEL TRICHY
Validity of the offer	PRICE SHOULD BE FIXED AND VALID FOR 3 MONTHS FROM THE DATE OF TECHNICAL BID OPENING
Inspection	AT BHEL TRICHY
Pre-Bid meeting date	--

DATE-TIME DETAIL(S)

BID START DATE 27 Sep , 2017 5:00:00 PM BID DUE DATE 20 Oct , 2017 2:00:00 PM
BID OPEN DATE 20 Oct , 2017 2:30:00 PM
(SCHEDULED)

PRE-BID DISCUSSION DETAILS

PRE-BID DISCUSSION TYPE NOT REQUIRED

ALTERNATE BID DECRYPTOR(S)

USER DETAILS
MR Admin SANJEEVI B(SDGM/PUR)
MR ABRAHAM VICTOR P G(DGM/PUR)
MR KILLIVALAVAN R(SR.ENGR/PUR)
MR NARAYANAN R(SDGM/PUR)
MR RAJA PRAKASH K(ENGR/PUR)

SELLER DETAIL(S)

CODE	ORGANIZATION NAME
023505	TEST (Mr test ot test)

TERM AND CONDITION DETAIL(S) - SPECIAL TERM(S)

SL. NO.	CATEGORY	DESCRIPTION
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1	SPECIAL TERM(S)	SPECIAL TERM(S) 1. The Enquiry is a two part Enquiry through EPS. Offer from any other mode will not be accepted. 2. Suppliers should give acceptance for supply of non-asbestos materials as per plant standard issued by BHEL. 3. Delivery terms will be full quantity within 6 weeks from the date of PO. 4. Quantity tolerance of $\pm 3\%$ is included in this Enquiry. 5. OFFERS from Manufacturers will be accepted, offers from traders will summarily be rejected. 6. SUPPLIERS SHOULD ATTACH THE DULY FILLED & SIGNED SCANNED COPY OF ANNEXURE B_NON ASBESTOS. 7. NEW SUPPLIERS (NOT REGISTERED IN BHEL) SHOULD ATTACHED THE SCANNED COPY OF ANNEXURE-N. 8. Suppliers who belong to MSE category should submit attested copies of either EM II certificate having deemed validity (five years from the date of issue in acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed as per Annexure I where deemed validity of EM II certificate of five years have expired) applicable for the relevant financial year (latest audited) ATTACHMENT: 1. ANNEXURE A EPS 2. ANNEXURE B 3. ANNEXURE N 4. ANNEXURE I 5. TP SPECIFICATION
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RFQ SPECIFIC REQUIRED ATTACHMENT(S)

PREQUALIFICATION

SL. NO.	SUPPORTING DOCUMENT NAME	MANDATORY	ALLOW EXEMPTION	GROUP
1	Prequalification criteria	YES	NO	OTHER
2	Annexure B	YES	NO	OTHER
3	Annexure I (CA Certificate)	NO	NO	OTHER
4	MSE Certificate	NO	NO	OTHER

RFQ/NIT ITEM DETAILS

SL. NO.	CODE	DESCRIPTION	QUANTITY	RFQ/NIT U.O.M	OFFER U.O.M
10	000000220300070 000	MILL BOARD 25 MM - TP 23296/REV MILL BOARD 25 MM - TP 23296	3,700.00	KILOGRAMM	KILOGRAMM





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	ATTRIBUTE DETAILS	ATTRIBUTE NAME		ATTRIBUTE VALUE	
		MATERIAL CODE:		000000220300070000	
		MATERIAL GROUP:		NASBTS	
		KILOGRAM PER UNIT:		1.0	
		Cenvatable (Yes / No)		Yes	
		Delivery Location		TAMIL NADU	
		Vatable (Yes / No)		Yes	
		Delivery Date (i) :		15-NOV-2017	
		Delivery Qty (i) :		3700	
20	000000220300150000	GASKET-3MM TP 23292/REV 02.Gasket-3mm	8,000.00	KILOGRAMM	KILOGRAMM
	ATTRIBUTE DETAILS	ATTRIBUTE NAME		ATTRIBUTE VALUE	
		MATERIAL CODE:		000000220300150000	
		MATERIAL GROUP:		NASBTS	
		KILOGRAM PER UNIT:		1.0	
		Cenvatable (Yes / No)		Yes	
		Delivery Location		TAMIL NADU	
		Vatable (Yes / No)		Yes	
		Delivery Date (i) :		15-NOV-2017	
		Delivery Qty (i) :		8000	
30	000000220300160000	CARBON FIBRE/CERMC FIBRE GLAND PACKING-SQ 6mm TP-23299/REV 02CARBON FIBRE/CERMC FIBRE GLND PKNG 6MM	150.00	KILOGRAMM	KILOGRAMM
	ATTRIBUTE DETAILS	ATTRIBUTE NAME		ATTRIBUTE VALUE	
		MATERIAL CODE:		000000220300160000	
		MATERIAL GROUP:		NASBTS	
		KILOGRAM PER UNIT:		1.0	
		Cenvatable (Yes / No)		Yes	
		Delivery Location		TAMIL NADU	
		Vatable (Yes / No)		Yes	
		Delivery Date (i) :		15-NOV-2017	
		Delivery Qty (i) :		150	
40	000000220300190000	COMPRESSED FIBRE JOINTING SHEETS-3MM TP-23295 REV.COMPRESSED FIBRE JOINTING SHEETS-3MM	700.00	KILOGRAMM	KILOGRAMM
	ATTRIBUTE DETAILS	ATTRIBUTE NAME		ATTRIBUTE VALUE	
		MATERIAL CODE:		000000220300190000	
		MATERIAL GROUP:		NASBTS	
		KILOGRAM PER UNIT:		1.0	
		Cenvatable (Yes / No)		Yes	
		Delivery Location		TAMIL NADU	
		Vatable (Yes / No)		Yes	
		Delivery Date (i) :		15-NOV-2017	
		Delivery Qty (i) :		700	
50	000000220300400000	PACKING ROPE DIA-10MM TP-23299/REV PACKING ROPE DIA - 10MM	600.00	KILOGRAMM	KILOGRAMM
	ATTRIBUTE DETAILS	ATTRIBUTE NAME		ATTRIBUTE VALUE	
		MATERIAL CODE:		000000220300400000	
		MATERIAL GROUP:		NASBTS	
		KILOGRAM PER UNIT:		1.0	
		Cenvatable (Yes / No)		Yes	
		Delivery Location		TAMIL NADU	
		Vatable (Yes / No)		Yes	
		Delivery Date (i) :		15-NOV-2017	
		Delivery Qty (i) :		600	
60	000000220300500000	CARBON FIBRE/CERAMIC FIBRE CLOTH-3MM TP-23297/Rev 02	2,200.00	KILOGRAMM	KILOGRAMM
	ATTRIBUTE DETAILS	ATTRIBUTE NAME		ATTRIBUTE VALUE	
		MATERIAL CODE:		000000220300500000	
		MATERIAL GROUP:		NASBTS	
		KILOGRAM PER UNIT:		1.0	
		Cenvatable (Yes / No)		Yes	
		Delivery Location		TAMIL NADU	
		Vatable (Yes / No)		Yes	
		Delivery Date (i) :		15-NOV-2017	
		Delivery Qty (i) :		2200	





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IMPORTANT NOTICE

PLEASE READ THE FOLLOWING ATTACHMENT(S) [SEPARATELY DOWNLOADABLE] ALONG WITH THIS RFQ/NIT/ENQUIRY .

RFQ/NIT/ENQUIRY - ATTACHMENTS

LABEL	FILE NAME
ANNEXURE A	ANNEXURE A.pdf
ANNEXURE B	ANNEXURE B.pdf
ANNEXURE N TO EDIT	ANNEXURE N TO EDIT.pdf
ANNEXURE I - MSE FORMAT	ANNEXURE I - MSE FORMAT.pdf
Prequalification criteria	Prequalification criteria .pdf
TP 23292 Rev02	TP 23292 Rev02.pdf
TP 23296 Rev02	TP 23296 Rev02.pdf
TP 23295 Rev01	TP 23295 Rev01.pdf
TP 23299 Rev02	TP 23299 Rev02.pdf
TP 23297 Rev02	TP 23297 Rev02.pdf



Annexure A

QUOTATIONS:

1.
 - a. Interested bidders / Suppliers shall submit their offer through e-Procurement mode at <https://bheleps.buyjunction.in>. **Offers in any other mode will not be accepted.**

For Enterprise Procurement System (EPS) Bidders/Suppliers are requested to follow these steps.

REQUIREMENTS

1. A PC with Internet connectivity.
2. DSC (Digital Signature Certificate) (Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION)
3. The site is best viewed in Internet Explorer 9.0. If you are using Internet Explorer 10 or above then enable compatibility view available under Tools menu
4. Install Java 1.8 Update 67/72/79 (Both 32 & 64 Bit)

MANDATORY REQUIREMENT:

Suppliers interested for registration for BHEL Open Tenders should have a valid DSC (Digital Signature Certificate) before Proceeding forward for Registration. Herein a Valid DSC refers to an Active and unexpired Signing and Encryption Certificate, with specification Class III SHA 2 2048 bit.

UNREGISTERED SUPPLIER IN EPS:

Procedure for Online Registration in EPS for Open Tender Suppliers for BHEL

Please follow the below steps for registration

1. Click Register Button (Top of the Screen)
2. Please input your organization PAN No (in case of Indian supplier) or click "Foreign" in case you are an overseas Supplier.
3. Click on INTERESTED Button against the respective BHEL Unit
4. Key in your desired login id (Login Code should be 8 - 24 characters in length and can only use numeric values) If you have registered by keying in PAN No. then your desired login id will be prefixed by "OTI", In case of overseas suppliers it will be prefixed with "OTF"
5. Fill in the other details.
6. Fill in the Captcha code and click next
7. Register your Signing certificate and click next
8. Select atleast one procurement category you may be dealing in.

Once the above steps are completed, your profile will be activated by mjunction within 2 business hours. After registering follow the steps provided in "For Registered Supplier" to view RFQ.

In case of any assistance, please call the following nos for support:

033-6601 1717 (From 9:30am to 5:30pm)

NB:-

- 1 -- BHEL Administrator or user will have no role for approving Registration and Open Tenders and DSC for Any supplier who has registered himself from the front END which is in case of OT.

FOR REGISTERED SUPPLIER IN EPS:

- a. Supplier visits EPS home page
- b. Supplier signs in with their user id and password
- c. Selects the RFQ Code and views it.
- d. Attaches themselves to the RFQ by clicking the interested button
- e. Supplier fills the bid template and makes necessary attachments
- f. Supplier submits their bid by clicking CONFIRM.

In case of any assistance, please call the following Nos for support:

033-6601 1717 (From 9:30am to 5:30pm)

- b. Bidders are requested to quote their offer price on F.O.R Destination (BHEL/Stores) basis only (The basic price of the material quoted in the bid should be inclusive of Packing, Forwarding, freight and transit insurance, etc.,). Ex-works offers will be summarily rejected without further clarification.

- c. No charges shall be indicated as "Lumpsum" or "Approximate" in absolute value. All charges like taxes and duties should be clearly specified as "percentage" of the quoted rates.
- d. If any sales tax is payable as extra to the quoted price should be specifically stated in quotations along with CST & TIN no failing which the purchaser will not be liable for payment of sales tax. Our TIN No. 33243560005 Dated. 01.01.2007.
- e. Manufacturer's name, trademark or patent no. if any should be specified. Illustrative leaflets giving technical particulars are required along with quotation wherever necessary.
- f. Products with I.S.I. certification marks will be preferred.
- g. The Purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept in Part or full without assigning any reason whatsoever.
- h. The bidder has to keep track of any changes by viewing the addendum / Corrigendum's issued by the Purchaser on time-to- time basis in the E-Procurement platform. The Company calling for tenders shall not be responsible for any claims/problems arising out of this.
- i. The user should complete all the processes and steps required for bid submission. The successful bid submission can be ascertained once acknowledgement is given by the system through bid submission number after completing all the processes and steps. BHEL and mjunction Services Ltd. will not be responsible for incomplete bid submission by users. Users may also note that the incomplete bids will not be saved by the system and are not available for the Purchaser for processing.
- j. Before uploading scanned documents if any, the bidders shall sign on all the statements, documents, certificates uploaded by him, owning responsibility for their correctness / authenticity.

2. Offers should have a validity of minimum 90 days from the date of price bid opening. The quoted/Finalized rates shall be Firm till completion of the supplies including amendment / deviation / extension if any in quantity / date.

3. On the due date of tender opening, only technical bids will be opened. The opened technical bids will be evaluated by us and clarifications required, if any, will be called for from the bidders on technical and commercial points. If no reply is received from the vendor for the clarification raised by BHEL with in the final cut-off date those vendors offer will be processed with the documents available / submitted against this tender. Offers not meeting the required specification and technical condition will be summarily rejected. The price bids of technically suitable bidders will be opened on a later date with prior intimation to techno-commercially suitable bidders. If any difference is found in the terms in the Techno-commercial bid and price bid, the terms mentioned in the Techno-Commercial Bid will be considered.

4. Ranking L-1, L-2 etc. shall be done for individual items for the techno-commercially acceptable offers on landed cost to BHEL, Trichy basis and BHEL reserves the right to place order for individual items with different vendors. In the event of more than one vendor becoming L1 for the item, the enquiry quantity will be shared equally among all the L1 vendors. For such item / items splitting will be done among L1 vendors alone and not as mentioned in the point no 10 below.

5. BHEL reserves the right to negotiate with L1 vendor or re-float the tender for items where, L1 price is not the lowest acceptable price; BHEL reserves the right to increase or decrease the tender quantity.

6. TERMS OF PAYMENT: Payment will be made after 45 days from the date of receipt and acceptance of materials at BHEL Trichy. Offers quoting for Advance payment / LC / thro bank payment will be rejected. Any deviation in the payment terms below 45 days shall attract loading as below.

Base rate of SBI (as applicable on the date of bid opening; Techno-commercial bid opening in case of two part bids) +6%' will be considered for the loading for the period of relaxation sought by the bidder.

7. LD clause & Risk purchase clause are applicable.

Staggered delivery schedule

In case of staggered delivery schedule, if the Supplier fails to deliver the quantity of any line item of the P.O within the period specified in that line item, Purchaser shall deduct Liquidated Damages, 0.5% of the undelivered portion per week delay or part thereof subject to maximum of 10% of the total order value

Under GST regime, BHEL has to discharge GST liability on LD recovered from suppliers/contractors. Hence applicable GST shall also be recoverable from suppliers/contractors on LD amount. For this Debit note will be issued by BHEL indicating the respective supply invoice number.

Liquidated Damages (LD): (Any deviations shall attract loading to the extent of relaxation sought to which it is not agreed by the bidder at offered value).

RISK PURCHASE: Alternatively the purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitutes therefor. The supplier shall be liable for any loss, which the purchaser may sustain by reason of such risk purchases in addition to penalty at the rate mentioned in LD clause above.

8. GST: Response to Tenders for Indigenous supplier will be entertained only if the vendor has a valid GST registration no which should clearly mentioned in the offer. If any specific exemption is available, a declaration with due supporting documents need to be furnished for considering the offer.

- Supplier shall mention their GSTN registration number in all their invoices and invoices shall be in the format as specified/prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No which is linked/uploaded in GSTN network shall be clearly indicated), item description as per PO, Quantity, Rate, Value, applicable taxes with nomenclature (like IGST, SGST, CGST & UTGST) separately, HSN/ SAC Code, etc.
- All invoices shall bear the HSN Code for each item separately (Harmonized System of Nomenclature)/ SAC code (Services Accounting Code).
- A declaration to the effect that all invoice particulars are/were uploaded in the GSTN network/ portal & all tax liability as per GST rules and regulations have been and will be discharged, shall be mentioned in the invoice. If not mentioned in the invoice, a separate declaration shall be submitted as per the requirement of BHEL.
- All documents like Mill Test Certificate, LR copy, Guarantee/Warrantee certificate, work completion certificate, any other document mentioned in PO, shall be sent along with the vehicle/consignment. For all consignments received within the calendar month, input credit will be availed within that month in line with monthly returns filing cycle. In case of any discrepancy in the document or non-submission of documents mentioned in the PO, then BHEL will not be able to accept or account the material, in such case availing of tax credit will be deferred to next month or so.
- In case of discrepancy in the data uploaded by supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note (details to be uploaded in GSTN portal) for the shortages or rejections in the suppliers, within the calendar month notified by BHEL.
- For any such delay in availing of tax credit for reasons attributable to supplier (as mentioned above), interest (calculated @ SBI Base Rate + 6%) alongwith penalty if any will be deducted for the delayed period i.e. from the month of receipt till the month tax credit is availed, from the running bills.

9. PACKING AND MARKING: The supplier shall arrange for securely protecting and packing the stores to avoid loss or damages during transit. Test certificate and Guarantee certificate is required along with supply.

10. SPECIAL PROVISIONS FOR MICRO AND SMALL ENTERPRISES (MSE) BIDDERS:

- i. 20% of the tendered quantity is earmarked for MSE suppliers in this tender. (Applicable only for items whose Quantity is more than 5,000 Kg)
- ii. Out of the 20% tendered quantity reserved for MSE suppliers, 4% shall be earmarked for procurement from MSE owned by SC / ST entrepreneurs. In event of failure of such Micro and Small enterprises to participate in the tender process or meet the tender requirements and the L1 price, the 4% sub-target for procurement ear-marked MSE owned by SC / ST entrepreneurs shall be met with other MSE enterprise/s.
- iii. In case MSE vendor participating in the tender quotes within the price band of L1 + 15%, they will be allowed to supply the portion of the requirement subject to acceptance of L1 price by MSE vendor. In case of more than one such MSE, the supply shall be shared proportionately.

- iv. MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (five years from the date of issue in acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed as per **Annexure I** where deemed validity of EM II certificate of five years have expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bids at par with other bidders. No benefits shall be applicable for the enquiry if any deficiency in the above required documents is not submitted before the price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer. This provision for MSE will apply subject to the condition that the participating MSE meets the tender requirements.
- v. In case of any change in the MSE status of the bidder, it shall be the responsibility of the bidder to notify the change as a part of the bid document. If at a later date it comes to the knowledge of BHEL, that the change in the status has not been intimated by the bidder and the order is obtained under the premise of an MSE then BHEL would cancel the pending order against this tender and take necessary steps for suspension of the business dealing with the bidder as per the procurement policy of BHEL.
- vi. In case after the bid opening it is seen that no MSE has become L1, then depending on the nature of the item, if it is not possible to split the tendered items / quantities on account of reasons like customer contract requirements of supplying one make for a given project or technical reasons like tendered items being a system, tendered quantity being low etc., then BHEL would not counter offer the L1 prices even though there may be MSE bidders within the +15% band of L1.

10.1 Sharing of Quantity:

- a. 20% of the tendered quantity is earmarked for MSE suppliers in this tender. The earmarked 20% quantity will be counter offered to the MSE vendors whose rate is within L1+15% band & up to H1 of MSE. In case of non-acceptance of the counter offering of 20% reservation to MSE vendors, the total tender quantity will be ordered as mentioned in 10.1 (c). For the balance 80% of the tendered quantity, BHEL reserves the right to order in the ratio of 70:30 on L1, L2 / L3 vendors (at matched L1 F.O.R rate in the order of commercial ranking) irrespective of the category (MSE or NON MSE). Counter offering of L1 rate will not be made with any H1 vendor of Non-MSE
- b. If L1 is from a Micro / Small enterprise, the 20% earmarking provision is not applicable and order will be split in the ratio of 70:30 (between L1 , L2 / L3 at matched L1 F.O.R rate in the order of commercial ranking). Counter offering of L1 rate will not be made with any H1 vendor of Non-MSE.
- c. If there is no response from MSE vendors the above split up of 10.1 (a) & 10.1 (b) will not be applicable and the total tender quantity will be split and ordered in the ratio of 70:30 (between L1 , L2 / L3 at matched L1 F.O.R rate in the order of commercial ranking).
- d. In case of counter offering rate has not been accepted by the L2 as well as L3 vendor, such counter offer quantity also will be ordered on L1 vendor.
- e. The quantities indicated in this tender are tentative annual requirement of BHEL. Order will be placed on actual requirement basis.

12. For the enquired items, where the quantity is less than 5,000 Kg will not be split as mentioned in the Sl. No 10. Such items will be ordered on L1 vendor alone.

13. Conditional offers are likely to be rejected.

14. Disclaimer Clause: Neither the Organization (Bharat Heavy Electricals Ltd.) nor the service provider (mjunction Services Ltd.) is responsible for any failure of submission of bids due to failure of internet or other connectivity problems or reasons thereof.

15. Bidders participating in the tender should declare in their technical bid whether they have been black-listed / kept on hold / given Business holiday for a specified period by any Public Sector Undertaking or Government Departments. The reasons for such action with details and the current status of such hold shall be clearly furnished to BHEL. If no such details are mentioned in the offer, it will be construed that the bidder is not under

any such hold. However, at a later date if it comes to the notice of BHEL about any such hold under enforcement, BHEL reserves the right to reject the offer at any point of time and also under any stage of the finalization of the tender. Such bidders will not be permitted to participate in the further tender proceedings and will be communicated suitably.

16. BHEL reserves the right to negotiate or re-float the enquiry opened if L1 price is not the lowest acceptable price to them inter-alia other reasons.

17. The correspondence between the bidder and BHEL through email is considered as valid document legally though it is not signed. It is treated as valid confirmations made on behalf of the respective company and comes under the legal ambit of the business transaction and hence binding on both the parties.

18. In case of any quality rejection of materials, the supplier has to collect the materials at his own cost within the 10 days of rejection of advice. Otherwise the materials will be scrapped.

19. Unloading at BHEL has to be done by the suppliers and BHEL will not be in a position to provide any handling / unloading facilities.

20. Bidders not confirming to the enquiry specifications will be disqualified.

**TECHNO COMMERCIAL BID
TO BE SUBMITTED ALONG WITH PART – I (TECHNO COMMERCIAL BID)**

ANNEXURE –B

S. NO	DESCRIPTION	BHEL REQUIREMENTS	SUPPLIER CONFIRMATION / DEVIATION (STRIKEOUT WHICHEVER IS NOT APPLICABLE)
1	VALIDITY	90 DAYS FROM DATE OF TECHNICAL BID OPENING	NON DEVIATABLE
2	PRICE QUOTED	FOR-DESTINATION BHEL STORES / TRICHY	NON DEVIATABLE
3	LD CLAUSE	(For details please read S.No:07 of "Annexure – A")	NON DEVIATABLE
4	RISK PURCHASE CLAUSE	(For details please read S.No:07 of "Annexure – A")	NON DEVIATABLE
5	ACCEPTANCE FOR SUPPLYING MATERIALS AS PER PLANT STANDARD INDICATED FOR EACH ITEM		CONFIRM / NOT CONFIRM
6	DEIVERY SCHEDULE *	Delivery terms will be full quantity within 6 weeks from the date of PO.	CONFIRM / NOT CONFIRM
7	PREVIOUS EXERIENCE	Suppliers should enclose any one of the purchase order copy against their experience in supplying Non-Asbestos materials during past three years from Jan 2014.	ATTACHED / NOT ATTACHED
8	Whether the suppliers have been black listed by any PSU / Other units of BHEL.		BLACK LISTED / NOT BLACK LISTED
9	Offers from Manufacturers will be accepted, Offers from traders will summarily be rejected.		MANUFACTURER / TRADER
10	Suppliers should submit the test certificate from any approved lab and samples shall be identified by BHEL/TPI but final acceptance will be given on the basis of test conducted at BHEL Lab.		ACCEPTED / NOT ACCEPTED
11	CONTACT PERSON DETAILS	NAME: MOBILE NO: EMAIL :	

* Bidders are requested to adhere to BHEL Delivery schedule strictly.

SIGN AND SEAL OF AUTHORIZED PERSON

ANNEXURE - N (For NEW VENDORS only)

Sl No	Details	Document submission
1	Nature of ownership & relevant documents. (Proprietorship-Professional Tax Regn & Municipal Regn; Partnership firm – Partnership Deed; Co-operative society – Society rules & bye laws ; Private/Limited Company – memorandum & Articles of Association)	
2	Manufacturing range & facilities: • List down the product range & specification details. • List of Manufacturing facilities/equipment's (including material handling facility)	
3	Licence details of the factory	
4	• Permanent Account No • GST registration number • State sales Tax / TIN number • Excise duty registration number • Excise control code number • Service tax registration number • Regn number of category as per MSMED Act (If applicable)	
5	If registered with any other BHEL unit • Letter of registration with BHEL unit (If applicable) • Proof of successfully executed or executing purchase orders	
6	Accreditation certificate for ISO:9001 / TOC of Quality System manual / ISO:14000 / OHSAS ISO 18000 (If applicable)	
7	Balance Sheet for the last three years along with the audit report	
8	EXPERIENCE IN SUPPLYING Profile sealer or similar material TO VARIES INDUSTRIES (All the new vendors should enclose a Purchase Order copy against their experience in the supply of Profile sealer or similar material to various industry)	

ANNEXURE –I

Certificate by Chartered accountant on Chartered Accountant's letter head

This is to certify that M/s....., (hereinafter referred to as 'company') having its registered office atis registered under MSMED Act 2006, (Entrepreneur Memorandum No (Part-II) dated: Category: (Micro/Small) (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the latest audited financial year as per MSMED Act 2006 is as follows:

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No.S.O 1722 (E) dated October 5, 2006:
Rs..... Lacs
2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSM ED Act, 2006:
Rs..... Lacs

(Strike off whichever is not applicable)

The above investment of Rs..... Lacs is within permissible limit of Rs..... Lacs for..... Micro/Small (Strike off which is not applicable) Category under MSMED Act 2006.

Or

The company has been graduated from its original category (Micro/Small) (Strike off which is not applicable) and the date of graduation of such enterprise from its original category is..... (dd/mm/yyyy) which is within the period of 3 years from the date of graduation of such enterprise from its original category as notified vide S.O.No. 3322(E) dated 01.11.2013 published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

Name:

Membership number:

Seal of Chartered Accountant:

ANNEXURE - PQC

ENQ.NO:

	Material: NON ASBESTOS MATERIALS	
Sl.No	PRE QUALIFICATION CRITERIA —Points	Vendor to confirm
01	<i>Acceptance for supplying NON ASBESTOS MATERIALS as per standard indicated for Each item</i>	ACCEPTED / NOT ACCEPTED
02	<i>Bidders have to confirm whether they have been black-listed / kept on hold / given Business holiday for a specified period by any Public Sector Undertaking or Government Departments/any other units of BHEL. (With reference to S.No.15 of Annexure – A).</i>	YES / NO
03	<i>Offers from Manufacturers will only be accepted. Offers from traders will summarily be rejected.</i>	Manufacturer / Trader
04	<i>Suppliers should enclose any one of the purchase order copy against their experience in supplying Non-Asbestos materials during past three years from Jan 2014.</i>	ENCLOSED / NOT ENCLOSED

NOTE:

Offers meeting the above prequalification criteria points only will be evaluated further. Otherwise it will summarily be rejected.

SIGN AND SEAL OF AUTHORIZED PERSON



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**NON ASBESTOS COMPRESSED FIBRE JOINTING SHEETS
(HIGH PRESSURE STEAM & WATER)**

1. SCOPE

This specification governs the quality of non-asbestos compressed fibre jointing sheets for high pressure steam and water.

2. APPLICATION:

The supplied material shall be suitable for use in steam turbines, boilers, thermal insulation, packing & sealing purposes at maximum operating pressures of 14.0 N/mm² and temperature of 450 C.

3. DIMENSIONS AND TOLERANCES:

3.1. Dimensions: the material should be supplied to the dimensions specified on the order.

3.2. Thickness: the thickness of the sheets shall preferably be selected from the following,
0.40, 0.50, 0.75, 1.00, 1.50, 2.00, 3.00, 5.00 mm

3.3. Tolerance: Maximum permissible deviation on the nominal thickness of the sheets shall be as

Nominal thickness (mm)		Permissible deviation from nominal thickness $\pm$ mm	Max. Deviation between points not more than 250 mm apart, $\pm$ mm
Above	Up to & including		
-	0.50	0.05	0.05
0.50	1.00	0.10	0.10
1.00	2.00	0.15	0.10
2.00	3.00	0.20	0.15
3.00	5.00	0.20	0.15

4. MATERIAL

The material used for manufacturing this Non Asbestos Compressed Fibre Jointing Sheets is glass, ceramic or aramid fibre with suitable high temperature binder material.

Revisions 1. Requirement of withstanding Flue gas with 6% sulphur deleted. 2. Parameters and test revised as per discussion with MM.			Approved: STANDARDS SECTION ITS&S HPBP. TIRUCHIRAPPALLI		
Rev. No. 02	Amd. No.	Reaffirmed	Prepared:	Issued:	Dt. of 1 st issue
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5. FREEDOM FROM DEFECTS

- The sheets shall have uniform texture, smooth on both sides and free from irregularities such as blisters tears and lumps.
- The sheets shall have square and evenly cut edges and they shall be smooth flat, free from cracks, as well as foreign mechanical inclusions.
- The Non-Asbestos Compressed Fibre jointing sheets shall be of uniform thickness and suitable for easy shearing. The variations in thickness in one sheet should not exceed 10%.

6. TEST SAMPLE

Supplier shall supply a test sample to BHEL for acceptance before regular supplies.

7. PROPERTIES:

For Properties and Conditions refer TABLE-1 attached herewith.

Thickness(mm)	Material Code	**Weight/unit area(kg/m ²)
0.4	220300280000	-
0.5	220300290000	-
0.75	220300440000	-
1	220300310000	-
1.5	220300700000	2.85
2	220300300000	3.8
3	220300150000	5.7
5	220300020000	5.75

***weight indicated is approximate only. Vendor to provide actual weight per square meter.*

8. TYPE APPROVAL

Samples for the type approval shall be accepted only from those manufacturers whose manufacturing and testing facilities are considered satisfactory, to ensure continuous supply of good products.



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9. TEST CERTIFICATES.

Unless otherwise stated, three copies of the test certificate shall be supplied along with each consignment, giving the following information.

TP 23292-Rev No 01: Non-Asbestos Compressed Fibre Jointing Sheets for high pressure steam and water applications

BHEL Order No.

Manufacturer's /Supplier's Name

Trade mark , if any

Batch/ Lot No.

Date of manufacture

Quantity supplied

Test results of clause 3 and TABLE -1

10. PACKING AND MARKING

Unless otherwise stated, the material shall be supplied either flat or in rolls suitably packed to prevent damages during transit.

Manufacturer's name and grade shall be clearly marked on a piece of 300 x 300 mm cut from any position of the sheet.

Each package shall be legibly marked with following information,

TP 23292-Rev No 01: Non Asbestos Compressed Fibre Jointing Sheets for high pressure steam and water applications

BHEL Order No.

Manufacturer's /Supplier's Name

Trade mark , if any

Batch/ Lot No.

Date of manufacture

Quantity supplied



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TABLE – 1

Sl No	Characteristic	Requirement	Method of Test
1	Material (preferable. Better material meeting physical properties may be used. But must be certified in TC)	Glass, ceramic or aramid fibre with suitable high temperature binder.	The supplier shall certify the product as asbestos free by doing the test methods like FT-IR, XRD, Microscopic or any other standard test methods.*
2	Density gm/CC	1.57 to 2.20	ASTM C1185 [#]
3	Tensile Strength a) 0.4 to 1.0 mm thick b) Above 1 mm thick	14 N/mm ² minimum	ASTM F 152 [#]
4	Compressibility %	6-14	ASTM F36 [#]
5	% Recovery	40 minimum	ASTM F36 [#]
6	Water Absorption - % increase in mass. Duration – 24 hrs	10 max.	ASTM C1185 [#]
7	Loss of ignition at 500 °C ± 5 °C. Duration – 1 hr	30 % max	ASTM F495 [#]
8	Flexibility Test (after accelerated ageing)	No sign of cracking	ASTM C1185/ASTM F147 [#]
9	Stress relaxation – residual Stress	23 N/mm ² minimum	ASTM 6147/BS 7531 [#]
10	Moisture content 105 °C ± 5°C	2 max	ASTM C1185 [#]

- * - Test Report shall be submitted by the vendor along with materials as a compliance certificate to confirm the material supplied is asbestos free.
- # - Standard Methods along with applicable test and acceptance standard applied at test centres shall be declared in TC. Other international standard testing methods are also valid.
- The compressibility, tensile strength of the fibre shall not be sacrificed due to use of non-asbestos material. Vendor may guarantee the above and these properties shall be certified by Vendor on Test Certificate.



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CERAMIC FIBRE MILL BOARD

1. SCOPE

This standard covers asbestos free ceramic fibre mill board used as fire proof thermal insulating material.

2. MATERIAL

The material used for manufacturing this mill board is ceramic fibre base with suitable high temperature binder.

The mill board shall have uniform texture, smooth on both sides and free from irregularities such as blisters tears and lumps.

The mill board shall have square and evenly cut edges and they shall be smooth flat, free from cracks, as well as foreign mechanical inclusions.

The mill board should withstand the required temperature of steam or the flue gases of coal fired boilers containing 6% sulphur.

3. APPLICATION

Ceramic fibre mill board used as fire proof thermal insulating material.

4. TECHNICAL REQUIREMENTS

Properties and conditions refer table 1.

The ceramic fibre mill board shall be of uniform thickness and suitable for easy shearing. The variations in thickness in one sheet should not exceed 10%.

Tolerance on the size and thickness shall be as

On size : ± 10 mm

On thickness

Upto and including 2 mm : ± 0.2 mm

Above 2 mm : ± 0.3 mm

Revisions

- Description changed from silicon fibre to ceramic fibre.
- Parameters and test revised as per discussion with MM.

Approved:

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Thickness of mill board	Material code	**Weight kg/sq.m
5	220300600000	4.875
10	220300060000	9.750
25	220300070000	24.375

***weight indicated is approximate only. Vendor to provide actual weight per meter length.*

5. DESIGNATION

Ceramic fibre mill board thickness 10 mm, according to this specification shall be designated on drawings as:

- i. Material specification column : 220300060000
- ii. Description column : Ceramic fibre mill-board 10 mm.
- iii. drawing number column : **TP 23296**

6. ORDERING DESCRIPTION

For placing indents, issuing enquiries and on purchase order, for 1 meter length and width, the ordering description given below shall be followed:

ASBESTOS FREE MILL BOARD 10 mm THICK, 1 m X 1 m,
As per BHEL STANDARD **TP 23296**

7. ADDITIONAL INFORMATION

- i. Copies of this standard shall be enclosed along with purchase order.

8. FINISH

The millboards shall have uniform texture, smooth on both sides and free from irregularities such as blisters, tears and lumps.

* The FT-IR report shall contain the following.

- A) Spectral Range
- B) Resolution
- C) Finger print

** Standard methods along with applicable tests and acceptance standard applied at test canters shall be declared in TC.



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TABLE -1

1	Material (preferable. Better material meeting physical properties may be used. But must be certified in TC)	Ceramic fibre base with suitable high temperature binder.	The supplier shall certify the product as asbestos free by doing the test methods like FT-IR, XRD, Microscopic or any other standard test methods.*
2	Density (gm/cc)	0.5 to 1	ASTM C1185 #
3	Moisture at 105°C ± 5 °C	2 max	ASTM C1185 #
4	Loss on ignition at 550°C ±5°C after exposure for 30 minutes	20% max	ASTM F495 #
5	Continuous service temperature	450 °C	-----
6	Maximum resistance temperature	500 °C	-----
7	pH of water extract	7 to 8.5	Standard Method #
8	Chloride content of water extract ppm	200max	Standard Method #
9	Sulphur content of water extract ppm	50max	Standard Method #
10	Longitudinal tensile strength N/mm ²	10 (max)	ASTM F152 #
	Transverse tensile strength N/mm ²	9 (max)	ASTM F152 #
11	Shore hardness(A)	55 to 65	Standard Method #
12	Thermal conductivity at 800 °C (W/m °C)	0.17	ASTM F433 #
13	Linear shrinkage % (max)	3	Standard Method #

- * - Test Report shall be submitted by the vendor along with materials as a compliance certificate to confirm the material supplied is asbestos free.
- # - Standard Methods along with applicable test and acceptance standard applied at test centres shall be declared in TC. Other international standard testing methods are also valid.
- The compressibility, tensile strength of the fibre shall not be sacrificed due to use of non-asbestos material. Vendor may guarantee the above and these properties shall be certified by Vendor on Test Certificate.



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COMPRESSED NON ASBESTOS FIBRE JOINTING SHEETS (GASKETS)

1. Scope :

The specification governs the quality of oil resistant compressed non-asbestos fibre sheet manufactured from glass, ceramic or aramid fibre of the highest grade, suitably bonded with heat resisting compound. The material is suitable for use with oil.

2. Application:

Used in the manufacturing of pole washers, slot liners, other parts of electrical machines, control gear and flange joints etc.

3. Preferred thicknesses (mm) : 0.25, 0.4, 0.5, 0.8, 1, 1.5, 2, 2.5 and 3.

4. Tolerance on thickness :

Thickness x Width x Length of the sheet shall be stated on the order.

The maximum permissible variation from nominal thickness and the maximum deviation on thickness between points not more than 300 mm apart shall be as given below:

Sl. No.	Thickness (mm)		Max. permissible variation from nominal thickness ($\pm$)mm	Max. deviation on thickness between points not more than 300mm apart ($\pm$) mm
	Over	Up to & Including		
1.	-	0.5	0.05	0.025
2.	0.5	1.0	0.08	0.05
3.	1.0	1.5	0.13	0.08
4.	1.5	-	0.18	0.10

5. Test Methods :

Unless otherwise specified, the test shall be conducted in accordance with the relevant methods as adopted for asbestos.

6. Test samples :

Three sheets of ordered thickness and size 300 X 300 mm shall be supplied for testing and approval purposes.

Revisions

- Parameters and test revised as per discussion with MM.

Approved:

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7. Finish :

The surface of the sheet shall be of uniform texture smooth on both sides, free from visible defects like blisters, loose fibres, wrinkles and dents. The sheets shall be free from foreign inclusions, which is detriment during use.

8. Physical properties:

For Properties refer TABLE – 1 attached

Thickness(mm)	Material Code	**Weight/unit area(kg/m ²)
0.25	220300430000	-
0.4	220300220000	-
0.5	220300230000	-
0.8	220300240000	-
1	220300270000	-
1.5	220300180000	2.85
2	220300250000	-
2.5	220300260000	-
3	220300190000	5.7

***weight indicated is approximate only. Vendor to provide actual weight per square meter.*

9. Chemical properties :

Sulphur content (Extractable): The total amount of sulphur content shall not exceed 50 ppm.

10. Mechanical properties :

- Tensile strength:
The average value of eight test results of fibre joining shall be not less than the maximum values as given below:

Sl. No.	Nominal Thickness(mm)		Tensile Strength Min	
	Over	Up to & including	Longitudinal N/mm ²	Transverse N/mm ²
1.	-	0.5	35	14
2.	0.5	1.2	45	16
3.	1.2	-	60	18

- Cutting and punching :
Shall be capable of being cut or punched without cracking or flaking.



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11. Test certificate:

Three numbers of original test certificates shall be supplied with each consignment, giving the following information:

TP 23295 Rev-00: Compressed Non Asbestos Fibre jointing Sheet.

BHEL Order No :

Batch/Lot No :

Test values obtained/ certificates for compliance for clause 8 and 10.

12. Packing and Marking :

The sheets shall be packed in wooden boxes suitably wrapped in water proof paper / canvas so as to protect them from moisture and mechanical damage.

Each package shall be marked with the following information.

TP 23295 Rev-00: Compressed Non Asbestos Fibre jointing Sheet.

BHEL Order No :

Manufacturers or supplier's name & grade Batch/Lot No:

Thickness, width and Length.

Net volume.



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TABLE -1

Sl No	Characteristic	Requirement	Method of Test
1	Material of the fibre jointing	Glass, ceramic or aramid fibre	The supplier shall certify the product as asbestos free by doing the test methods like FT-IR, XRD, Microscopic or any other standard test methods.*
2	Density gm/cc	1.5 to 2.0	ASTM C1185 #
3	Tensile strength N/mm ²	10 min	ASTM F152 #
4	Compressibility %	6 to 15	ASTM F 36 #
5	% Recovery	50 min	ASTM F 36 #
6	Water Absorption - % increase in mass. Duration – 24 hrs	10 max.	ASTM C1185 #
7	Loss on ignition at 200 °C ± 5 °C Duration – 1 hr	30% max	ASTM F495 #
8	Flexibility Test(after accelerated ageing)	No sign of crack	ASTM C1185/ASTM F147 #
9	Stress relaxation – residual Stress	17.5 N/mm ² minimum	ASTM 6147/BS 7531 #
10	Moisture content 105 °C ± 5°C	2 max	ASTM C1185 #
11	Swelling Test in ASTM Oil No 3		
	1) % Thickness increase	25 max	ASTM F 146 #
	2) % Weight increase	20 max	ASTM F 146 #

- * - Test Report shall be submitted by the vendor along with materials as a compliance certificate to confirm the material supplied is asbestos free.
- # - Standard Methods along with applicable test and acceptance standard applied at test centres shall be declared in TC. Other international standard testing methods are also valid.
- The compressibility, tensile strength of the fibre shall not be sacrificed due to use of non-asbestos material. Vendor may guarantee the above and these properties shall be certified by Vendor on Test Certificate.



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CERAMIC FIBRE GLAND PACKINGS (Excluding those for Corrosive Acid Services)

1. SCOPE

1.1 This specification covers free ceramic fibre gland packing.

2. APPLICATION

2.1 Suitable for flanged joints of ducts and fans for leakage prevention, valves , expansions provisions for refractory, thermal insulation, furnace joints, air heaters and doors in boiler

3. DIMENSIONS & SIZES :

Dimensions and sizes shall be as per table-1 of this standard. For technical parameters, refer to Table-2.

4. DESIGNATION :

Carbon Fibre / Ceramic Fibre gland packing of sizes 10 mm, square shape shall be designated as :

ON DRAWING :

1. Description column : Packing Rope SQ 10 mm
2. Drawing number column : **TP 23299**
3. Material code column : 220300400000

4.1 Ordering description

For placing indents, issuing enquiries and on purchase order, the ordering description given below shall be followed.

Gland Packing carbon fibre/ceramic fibre, 6 mm round.

5. SAMPLING AND ACCEPTANCE

5.1 The density of packing rope shall be provided by vendor/supplier and shall be determined in dry condition.

6. ADDITIONAL INFORMATION.

6.1 For procurement purpose, this standard shall be enclosed along with purchase order.

Revisions 1. Lubrication requirements specified in table-2 (Sl. No.9 & 10) deleted & Sl. No. re-numbered. 2. Parameters and test revised as per discussion with MM. 40 mm SQ rope added.			Approved: STANDARDS SECTION ITS&S HPBP, TIRUCHIRAPPALLI		
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TABLE-1

SHAPE	SIZE	MATERIAL CODE	**WEIGHT (KG) PER METRE LENGTH
Round	10	220300400000	0.08
Square	6	220300160000	0.03
	8	220300170000	0.06
	10	220300030000	0.09
	12	220300050000	0.14
	15	220300080000	0.22
	20	220300040000	0.38
	40	220300460000	1.54

**** - Weight indicated is approximate only. Vendor to provide actual weight per meter length.**



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Table-2 (Technical parameters)

1	Material of the Gland Packings	Glass ply or Ceramic fibre	The supplier shall certify the product as asbestos free by doing the test methods like FT-IR, XRD, Microscopic or any other standard test methods.*
2	Density gm/cc (in Dry condition)	The density shall be indicated by vendor / supplier	ASTM C1185 #
3	Chloride content max	50 ppm	Standard Method #
4	Sulphur content max	50 ppm	Standard Method #
5	Temperature resistance	450 °C Min	----
6	Continuous service temperature	400 °C	----
7	Loss on ignition at 500 °C $\pm$ 5 °C for 30 minutes by mass %	To be specified by the supplier	ASTM F495 #
8	Moisture content at 105 °C $\pm$ 5 °C % by mass	2 max	ASTM C1185 #
9	The wire Dia of the reinforcement	0.15 to 0.2 mm	----
10	Reinforcement wire	Inconel/SS 304 Grade	----

- * - Test Report shall be submitted by the vendor along with materials as a compliance certificate to confirm the material supplied is asbestos free.
- # - Standard Methods along with applicable test and acceptance standard applied at test centres shall be declared in TC. Other international standard testing methods are also valid.
- The compressibility, tensile strength of the fibre shall not be sacrificed due to use of non-asbestos material. Vendor may guarantee the above and these properties shall be certified by Vendor on Test Certificate.

A. Finish: The Gland packing shall be smooth and it shall not have torn-out threads.

B. The compressibility, tensile strength of fiber shall not be sacrificed due to use of non-asbestos material. Vendor to guarantee the above and these properties shall be certified by Vendor on Test Certificate



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CERAMIC FIBRE CLOTH

1. SCOPE

This standard covers asbestos free ceramic fibre cloth.

2. MATERIAL

The material used for cloth is a ceramic fibre free from asbestos. The cloth shall have uniform texture, smooth on both sides and free from irregularities such as blisters tears and lumps.

3. TECHNICAL REQUIREMENTS

Refer Table-2 for technical requirements.

The cloth shall be fire resistant, vermin-proof and capable of withstanding required temperature.

Recommended thickness of cloth for BHEL's use shall be 2, 3 or 5 mm.

The cloth shall be supplied in rolls of nominal width 1 m and length 25 to 40 m.

4. DESIGNATION

Asbestos free ceramic fibre cloth, thickness 3 mm, according to this standard shall be designated on drawings as:

- i. Material specification column : 220300500000
- ii. Description column : Ceramic fibre cloth 3 mm.
- iii. Drawing number column : TP 23297

Revisions:

1. Plain Woven added in ordering description in addition to twill woven.
2. Parameters and test revised as per discussion with MM.

Approved:

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5. ORDERING DESCRIPTION

For placing indents, issuing enquiries and on purchase order, the ordering description given below shall be followed:

CERAMIC FIBRE CLOTH TWILL/PLAIN WOVEN 2 MM THICK, 1m X 25m, AS PER BHEL
STANDARD TP 23297

6. Thickness and weight

Recommended thickness	Density dry condition (gm/cm ³)	Material code	**Weight (kg/m ²)
3 mm	0.7-1.2	220300500000	2.85

***weight indicated is approximate only. Vendor to provide actual weight per meter length.*

7. ADDITIONAL INFORMATION

- i. For procurement purpose, this standard shall be enclosed along with purchase order.



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TABLE-2

1	Material of cloth		Ceramic fibre	The supplier shall certify the product as asbestos free by doing the test methods like FT-IR, XRD, Microscopic or any other standard test methods.*
2	Density gm/cc (dry condition)	2mm thick	0.5 to 1.2	ASTM C1185 #
		3 mm thick	0.5 to 1.2	ASTM C1185 #
		5 mm thick	0.5 to 1.2	ASTM C1185 #
3	Chloride content max		50 ppm	Standard method #
4	Sulphur content max		50 ppm	Standard method #
5	Service Temperature		500 °C	-----
6	Resistance Temperature		550 °C	Standard method #
7	Loss on ignition at 600 °C ± 5 °C after exposure for 30 minutes.		25% max	ASTM F495 #
8	Moisture content at 105 °C ± 5 °C		2.5% max	ASTM C1185 #
9	Thermal conductivity at 800°C (W/m°C)		0.17	ASTM F433 #

The supplier shall ensure that the tensile strength of the fibre and cloth shall not be sacrificed due to use of non-asbestos material. Vendor to guarantee the above and the strength properties shall be certified on Test Certificate.

- * - Test Report shall be submitted by the vendor along with materials as a compliance certificate to confirm the material supplied is asbestos free.
- # - Standard Methods along with applicable test and acceptance standard applied at test centres shall be declared in TC. Other international standard testing methods are also valid.
- The compressibility, tensile strength of the fibre shall not be sacrificed due to use of non-asbestos material. Vendor may guarantee the above and these properties shall be certified by Vendor on Test Certificate.