



HARIDWAR

PRE-QUALIFICATION REQUIREMENTS**ITEM: LEAD DIAPHRAGM**

PQR No. STE-BI045-02

Rev.00

PGMA-10740

Description of item:**A) Item Detail: Lead Diaphragm**

A pressure relief diaphragm (Lead Diaphragm) is an item which is associated with a turbine housing and is operable to relieve excessive pressure within the turbine housing to prevent damage to turbine blades & turbine.

B) Technical details:

Raw material for the Lead Diaphragm shall be Lead (Pb) sheet.

The Lead Diaphragm shall be subjected to 100% Dye Penetrant Test to ensure freedom from crack.

Outer diameter of Lead Diaphragm shall be in range of 753 to 1003 mm having thickness 0.8mm and above.

Mandatory requirement for Pre-Qualification**1) Experience Requirement -**

The Vendor should be a manufacturer / supplier / authorised dealer (in case of authorised dealer valid authorization certificate from principal to be submitted) of Lead Diaphragm and vendor should have supplied at least two Lead Diaphragm to OEM (Original Equipment Manufacturer) of Steam Turbine or Gas Turbine or Nuclear Manufacturer or Thermal, Gas or Nuclear Power Plant application or any other industry during the last 10 years as on the date of issuance of enquiry with following technical details –

SL. No.	Product features	Details
1.	Item Description	Lead Diaphragm
2.	Raw Material of Diaphragm	Lead (Pb)
3.	Size (Outer Diameter requirement)	Dia. 500 and above
4.	Thickness	2 mm and below

In support of above specified experience requirement, supplier has to furnish the following:

- A. At least 1 no. copy of Un-Priced Purchase Orders executed with details as per Table-1. However, if total quantity is less than 2 nos. in one PO then vendor to submit multiple POs to justify the supply of 2 nos. of quantity.

Table-1

Sl. No.	Name of Customer	Detailed Address	Name, Phone no. and email - Id of contact person	Purchase order No.	Date of Supply	Size of Lead Diaphragm (Outer Diameter & Thickness)	Raw material of Diaphragm (in % of Pb)	Qty.

- B. Test certificate (as given below) for Lead Diaphragm for any one of the submitted PO.

- Material Test certificate
- Dimensional reports



PRE-QUALIFICATION REQUIREMENTS

ITEM: LEAD DIAPHRAGM

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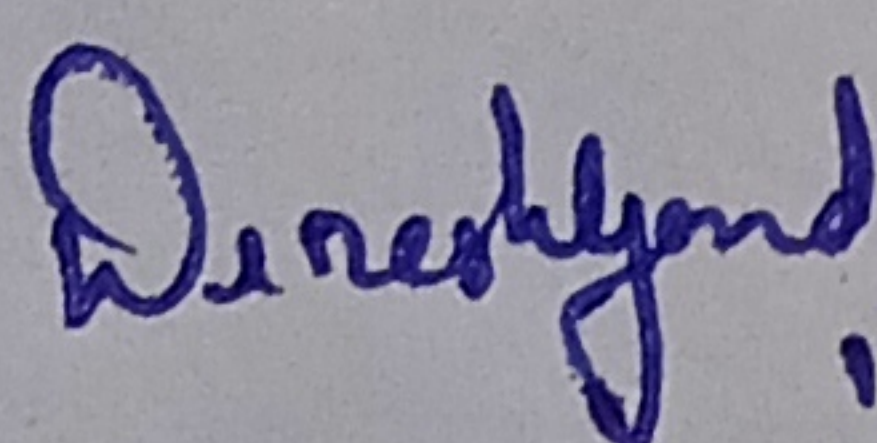
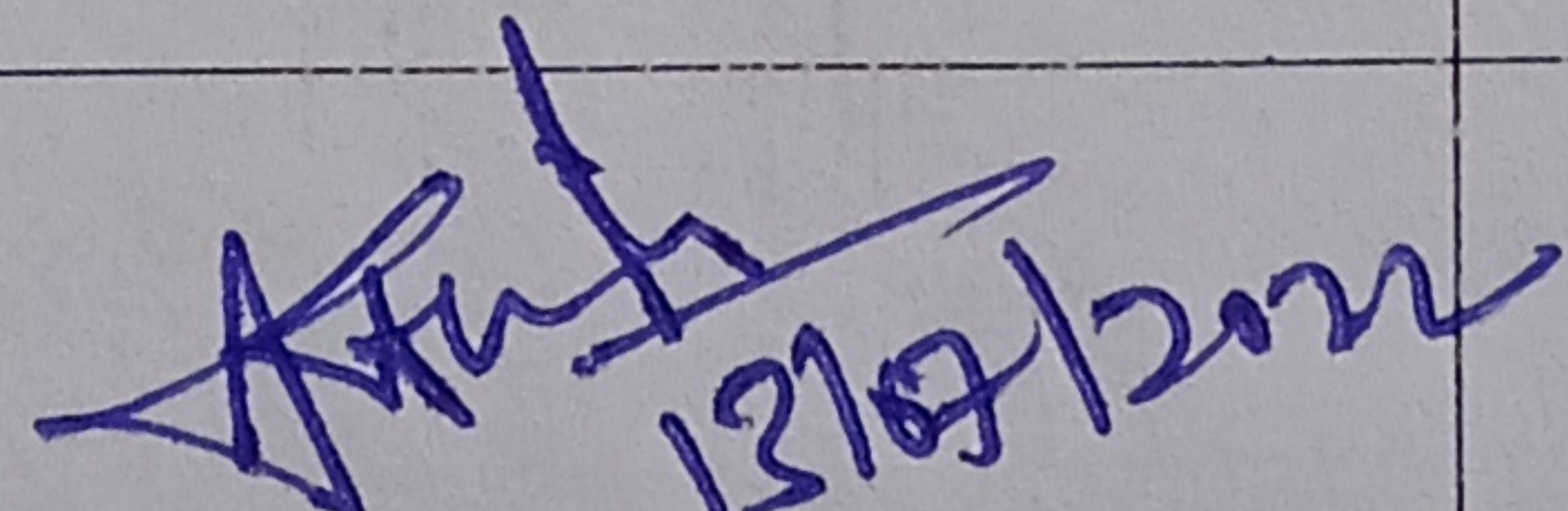
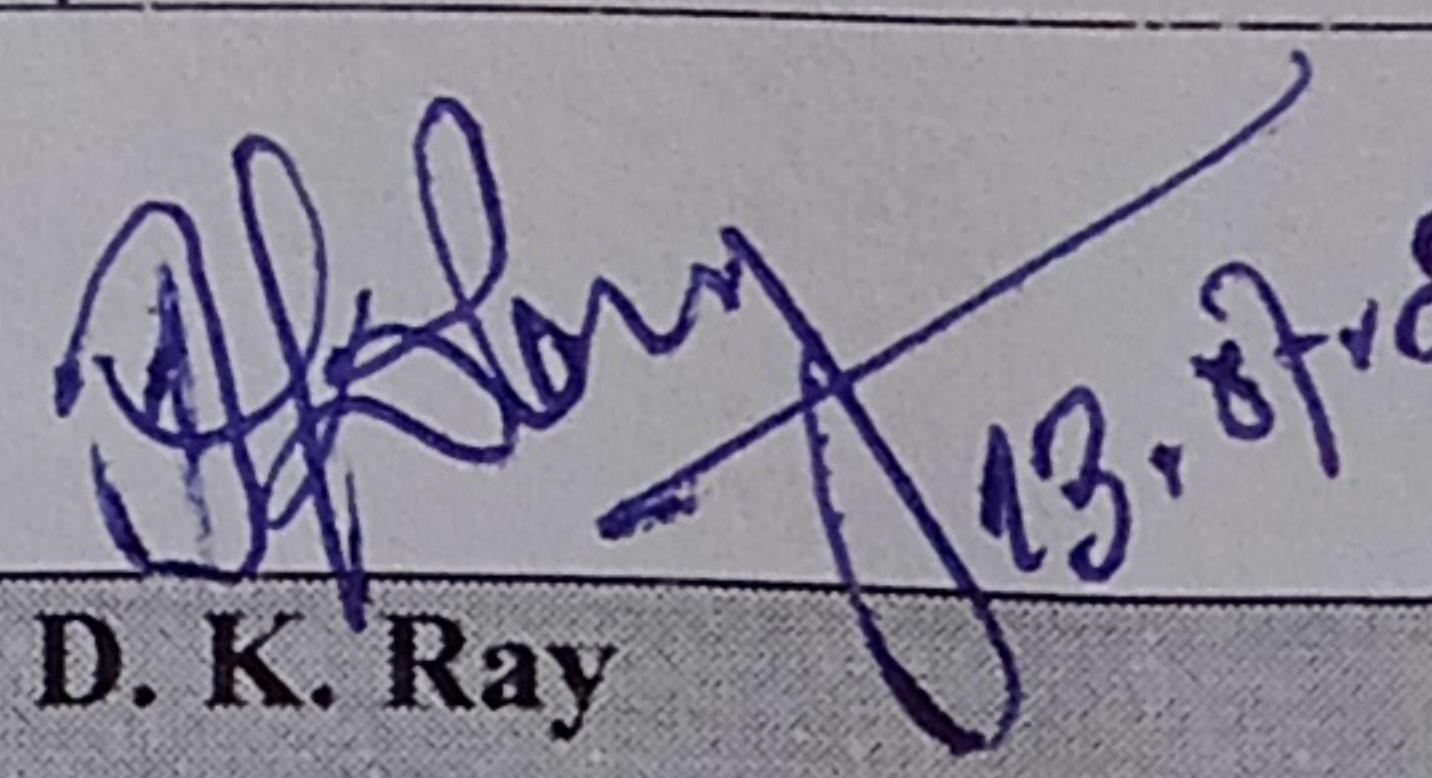
Rev.00

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- 2) Acceptance certificate/dispatch document for any one of the submitted PO.
- 3) Supplier to confirm that delivery of Item-Lead Diaphragm shall be as per BHEL drawing / specification and all the technical requirements mentioned in drawings & mentioned documents shall be met completely.

General Notes:

1. Against vendor's replies, BHEL reserves the right to ask for more information / documents / clarifications.
2. BHEL reserves the right to cross verify information's submitted by vendor. In case any of the information is found to be false / incorrect at any stage, the offer shall be rejected.
3. Vendor's offer shall not be considered if vendor fails to furnish the document / information / clarifications as mentioned above or vendor doesn't meet the acceptance criteria.
4. The vendor should furnish all the documents in English language only. If the documents are not in English, then they must be accompanied by duly certified English translations of the same.
5. BHEL team may visit Supplier works to assess Supplier's manufacturing and testing facilities, if required

Prepared by	Checked by	Approved by
 13/07/2022	 13/07/2022	 13.07.2022
Dinesh Gond (Dy. Manager / STE-TE)	Alok Kumar Singh (DGM / STE-TE)	D. K. Ray (Sr. DGM / STE-TE)



PLANT PURCHASING SPECIFICATION

HEEP — HARDWAR

HW 12599

PAGE 1 OF 3

LEAD SHEETS (Pb 99.99)

1. **GENERAL:** This specification governs the requirements of sheets of material Pb 99.99.
2. **APPLICATION:** The sheets shall be used for diaphragm of Steam Turbine.
3. **COMPLIANCE WITH NATIONAL STANDARD.** This specification is a based on IS: 405-61.
4. **DIMENSIONS AND TOLERANCE.** The dimensions of the sheets shall be as stated in the order.
The thickness shall not vary from the values specified in the order by more than $\pm 5\%$
5. **FREEDOM FROM DEFECTS:** The sheets shall be sound, free from inclusions, lamination and other defects.
6. **CHEMICAL COMPOSITION:** The chemical analysis of the material shall conform to the following:

Element	Percent
Lead	99.99 Min.
Antimony	0.002 Max.
Bismuth	0.005 Max.
Copper	0.003 Max.
Iron	0.003 Max.
Nickel and Cobalt	0.001 Max.
Silver	0.002 Max.
Zinc	0.002 Max.
Tin, Arsenic, Sulphur and Cadmium	Traces
Total indicated impurities.	0.01

SIGN & DATE

SUPERVISOR'S INVENTORY NO

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SIGN & DATE

INVENTORY NO.

				NAME	SIGN & DATE
			DRAWN		
			WORKED	H. SHARMA	Hsharma 19.11.80
			CHECKED	K. K. GUPTA	K.K.Gupta
AGREED DEPTT.	NAME	SIGN & DATE	SUPERVISED	K. K. GUPTA	K.K.Gupta
Revision :	REAFFIRMED-2022	Work By:- NARAJ	Approved :	PLANT	PS
		Check By:- GAURAV		STANDARDIZATION COMMITTEE	
		C/A NO. TSX(STE)-22-45			
		Date - 10/02/2022			
SKUMAR	MS		STE	Issued	Date
S. KUMAR	N. CHANDRA	PRAKASH SINGH		STANDARDS DIVISION	4-3-81



PLANT PURCHASING SPECIFICATION

HEEP — HARDWAR

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SIGN & DATE

SUPERSEDES
INVENTORY NO.

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SIGN & DATE

INVENTORY NO.

7. SELECTION OF TEST SAMPLES:

One check sample for chemical analysis shall be taken from each melt.

8. TEST FOR THICKNESS:

Sheets with specified thickness shall be tested by measuring the thickness of the sample at not less than four points across the rolled width at equally spaced intervals and then taking an average.

9. TEST CERTIFICATES:

The test certificate to be sent along with the material by the supplier shall contain the following information:

9.1 BHEL Reference
Specification No.
Order No.

9.2 Supplier's Reference.

Name of the Supplier Material Designation.

9.3 Test Results.

9.3.1 Chemical analysis.

9.3.2 Conformation of freedom of defect as per clause-5.

9.3.3 Conformation of compliance of thickness as per the order.

10. CLEARANCE FOR SUPPLY:

10.1 The total results of the tests carried out are decisive for clearance for delivery.

10.2 BHEL evaluates the total results taking into consideration, the intended use of material and examines the permissibility of deviation(if any)from the specified properties.

10.3 The clearance however, does not relieve the supplier of his responsibility for the hidden non-permissible defects which are found later.

11. MARKING AND PACKING:

The thickness in millimeters and the Supplier's name or symbol shall be marked on each sheet. Plates/Sheets shall be suitably packed to avoid damaged during transit.

1-2317

RECORD OF CHANGES

REV CODE	NO. OF CHGS	DOCU NO	SHEET NO.	SIGN	DATE	REV CODE	NO. OF CHGS	DOCU NO.	SHEET No.	SIGN	DATE
a	1.	75X(mtg) 87-07	1	CMH	4.28.77						

DISTRIBUTION OF PRINTS

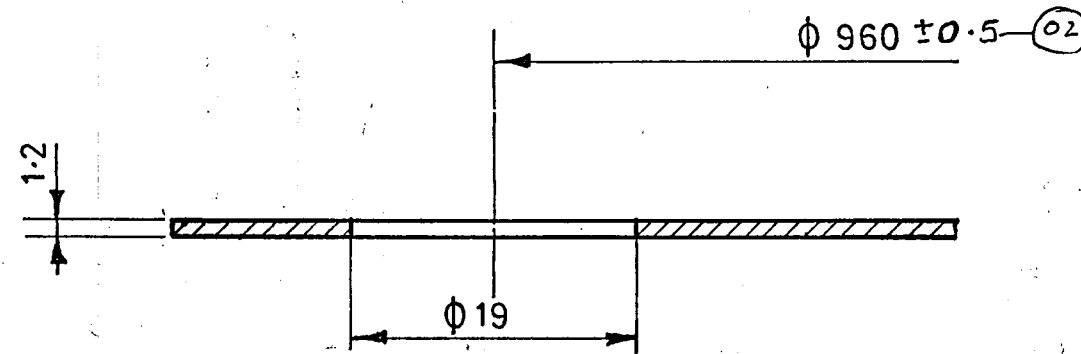
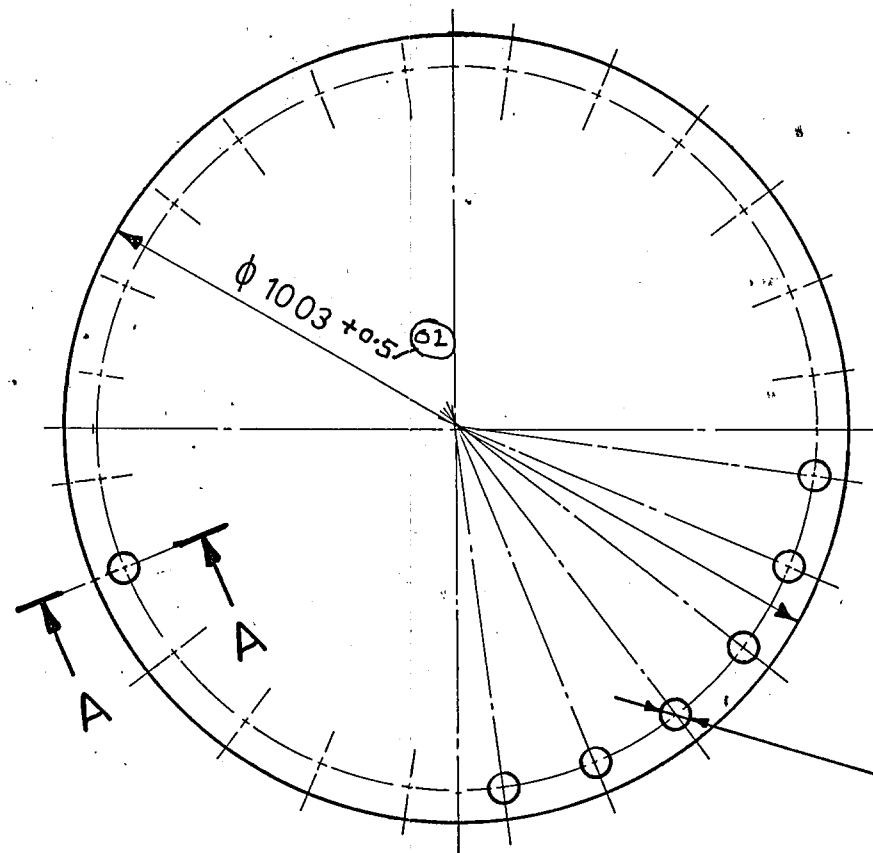
DEPTT.	TGE	STE	AME	DME	HGE	HTE	ACE	HXE	MTE	CPX	IN-SUL SYS.	HLE	TSX	THC	PPX	MCX	CSX
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		.	✓		✓	✓	✓
DEPTT.	AIX	MSX	CCX	FAX	TFX	TLX	TTX	TTX-ST	TTX-HT	TTX-EM	WT	OAX	QCX	PCM	WC 202	wc. 205	WC. 227
	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	.		
DEPTT.	FEM BL II	HTM	STM	W C. 632	ACM	CIM	FBM BLV	SUM	WWM	FBM BL VIII	WEX	ESX	HY	BP			
			✓			✓	✓		✓	✓	✓		✓	✓			

REVISION

							DRAWN	R. PRASAD.	By N.J.	13/2/81
							WORKED	S. KUMAR	Skumar	12-2-81
							CHECKED			

70970-07401-3

DRAWING NO.

✓ ALL OVER EXCEPT
OTHERWISE STATEDSECTION A A
SCALE 2:124 HOLES $\phi 19$ EQUALLY
SPACED ON PCD $\phi 960$

PB-PB-99.9

VAR. 00	REMARKS	ITEM NO.	DESCRIPTION	DRAWING NO.	MATERIAL CODE	UNIT WT. (Kg.)
001			DIAPHRAGM		HW 12599	1060
59	64 65	75 25 27 29	58 59 60	77 32 33 46	54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72	73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99

CARD TYPE-3

CARD TYPE-1

CARD TYPE-2

IDENTIFICATION ACCORDING TO HW. 0400397.

GMS/GR. SP. NO.			STATUS OF PRG.
0 1074 002000			U
AGREED DEPT.	NAME	SIGN.	DATE
S.T.T.	K. L. B. A. N.	[Signature]	10.12.81
WT.	R.K. Jain	R.K. Jain	17.6.81

TYPE OF PRODUCT

OR

NAME OF CUSTOMER/PROJECT

STEAM TURBINE 500M.W.

BHARAT HEAVY ELECTRICALS LTD.
RANIPUR - HARDWAR.

DRN.	NAME	SIGN.	DATE	NO. OF VAR.
CHD.	KUNDU. S	Kundu	18.3.81	
APPD.	NARAIN. A	ANarain	24.9.81	73 74

REV.	DATE	ALTERED
02	27/4/2009	CHECKED AKG

DIM. $\phi 1003 \pm 0.5$ WAS $\phi 1003$
DIM. $\phi 960 \pm 0.5$ WAS $\phi 960$

CHG. / A. NO STE - 00 - 135

REV.	DATE	ALTERED
01	31-5-84	CHECKED Raul

IN BOM MATL. CODE
W97310740033 WAS HW1251799027

(STE-K-84-264)

DEPT STE	GRADE OF UNFOLD DIM	SCALE	WEIGHT (Kg)	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITEMS
4091	2/M/F	1:10	10.60	1-10740-02500	004	75 77
TITLE	CARD CODE	DRAWING NO.	SHEET NO. 1	NO. OF SHEETS - 1	REV.	
DIAPHRAGM		3-10740-02504				

SIZE A3

MANUFACTURER'S NAME AND ADDRESS			QUALITY PLAN					TO BE FILLED BY BHEL		TO BE FILLED BY BHEL			
BHEL	VENDOR'S NAME	ITEM			QP NO.								
				REV									
		DRG. NO.	AS PER PO										
		SPEC.	AS PER PO										
		REV				Page 1 of 1							
SL. NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS		AGENCY			REMARKS
										M	B	N	
1	2	3	4	5	6	7	8	9	D	10			11

MANUFACTURER/SUBCONTRACTOR		LEGEND:	FOR CUSTOMER USE	APPROVED BY
		! RECORDS IDENTIFIED WITH ‘TICK’ SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION.		
		M: MANUFACTURER / SUBCONTRACTOR B: BHEL / NOM. INSPECTION AGENCY N: CUSTOMER INDICATE ‘P’ PERFORM ‘W’ WITNESS AND ‘V’ VERIFICATION ALL ‘W’ INDICATED IN COLUMN ‘N’ SHALL BE ‘CHP’ OF CUSTOMER		

Buyer Specific Special Terms and conditions (In addition to GTC & ATC of GeM)**Item name: Lead Diaphragm, Project: Tuticorin STG-IV**

E-bids on GeM are invited from bidders for the supply of Lead Diaphragm for projects Tuticorin STG-IV as per requirement mentioned below:

Sl. No.	Project	Material Code & Item Description	Total Quantity (Nos)	Site Requirement	Date for Supply Completion
1.	Tuticorin STG-IV	Material Code W97310740033 Lead Diaphragm as per Spec Rev.00 HW 12599 & Drg. No. 31074002504 Rev-02	12 Nos	30.04.2023	01 Months from the date of issue of PO/ Manufacturing Clearance, Whichever is later

A. Buyer Specific Special Terms and Conditions:

S. N.	Terms	Description	Your confirmation
1.	Compliance of GTC on GeM	In addition to the terms & conditions mentioned in below table, General terms and conditions on GeM shall be applicable against this enquiry. Kindly confirm same is acceptable to you.	
2.	Basis of quotation:	The item is required for Tuticorin STG-IV project site. Prices are to be quoted on FOR destination / site basis . Kindly confirm that price has been quoted on FOR destination/Site basis i.e. including all taxes, duties, local levies/ transportation / loading & unloading charges, packing & forwarding charges etc.	
3.	Technical Requirements:	1. Lead Diaphragm required as per technical requirement given in BHEL Spec Rev.00 HW 12599 & Drg. No. 31074002504 Rev-02 . Please quote your valuable offer accordingly. 2. The Lead Diaphragm shall be sent to project site subsequent to clearance of inspection report from BHEL Haridwar. Please ensure that documents submitted with the offer/bid shall be signed and stamped in each page by authorized representative of the bidder.	
4.	Evaluation criteria:	Evaluation of tender shall be done on the basis of total landed cost to BHEL up to project sites basis.	
5.	Engineering Documents Approval:	Drawings/Data sheets/documents/QAP as called in the specifications/drawing shall be submitted for approval to BHEL for BHEL/customer approval within 30 days of purchase order. BHEL will arrange the approval of these drawings/data sheets/documents/QAP within 30 days of their receipt provided those are complete in all respect. Any delay in delivery on account of late submission of drawings/other documents/QAP shall be to vendor's account. Kindly confirm.	
6.	MDCC (Material dispatch clearance certificate) Clause:	Please note that material shall be dispatched only after issue of Material dispatch clearance certificate (MDCC) by BHEL. For issue of MDCC, you are required to submit all test certificates (TCs as per QAP) & IRs to BHEL. BHEL will issue MDCC within 7 days of receipt TCs & IRs, if complete & clear in all respects. Any delay in submission of complete reports (i.e. TCs as per QAP & IR) will be to vendors account. Material shall be dispatched within 7 days of issuing dispatch clearance by BHEL.	
7.	Quality Requirements:	a). Kindly submit the quality plan in enclosed QP format for BHEL approval. b). Kindly confirm to follow finally customer approved quality plan. c). Kindly confirm that Inspection of material shall be done by BHEL nominated inspection agency "M/s Intertek" as per final BHEL & customer approved QP .	
8.	Payment Terms:	Payment terms shall be as per clause no. 12 of General terms and conditions on GeM 4.0 version (1.80). Please note that the payment period of 90 days for non MSME vendors in the concerned GeM functionality. However, for MSE vendors, payment period shall be 45 days & for Medium enterprises payment period shall be 60 days, this will be mentioned in ATC.	

9.	Guarantee/ Warranty Clause:	Guarantee Certificate shall be 18 months from the actual delivery or 12 months from the date of commissioning, whichever is earlier. In case of any failure or trouble reported from site, the supplier shall depute their representative immediately to attend the problem and replace the defective component/ parts if required.	
10.	Delivery:	Kindly quote your minimum delivery period in no. of weeks/months from the date of issue of purchase order/manufacturing clearance.	
11.	Documents Submissions:	Confirm that all the documents/test certificates shall be provided as per BHEL specification no. Rev.00 HW 12599 & Drg. No. 31074002504 Rev-02 for Tuticorin Stg-IV project. Kindly confirm that quoted offer by you have been complied all technical requirements as given in tender documents and submit all documents to BHEL as per tender specifications and drawings without any deviations.	
12.	Manufacturing clearance	In case of ordering, vendor has to take manufacturing clearance from BHEL before starting manufacturing of material. No manufacturing is to be started without getting clearance from BHEL. Kindly confirm.	
13.	Gem Charges:	GeM user charges (i.e. for buyers & sellers) for the various transaction on GeM portal as decided and notified on the GeM portal would be either side. Kindly confirm.	
14.	Penalty / LD Clause :	LD shall be as per clause no. 15 (iii) of General terms and conditions on GeM 4.0 (Version 1.8) dt 13th Feb 2023. Date of LR shall be treated as actual delivery date for all purposes	
15.	Arbitration Clause:	Arbitration shall be as per clause no. 16 of General terms and conditions on GeM 4.0 (Version 1.8) dt 13th Feb 2023	
16.	Insurance:	The Transit Insurance will be arranged by BHEL. Please send your offer keeping this in view.	
17.	Firm prices	Price will remain firm and fixed during entire execution of tender/supply.	
18.	Right of Acceptance:	BHEL reserves the right to cancel tender or reject any or all the quotations without assigning any reasons thereof. BHEL also reserves the right to Increase or decrease the tendered quantities. Vendors should be prepared to accept order for reduced Quantity without any extra charges. Vendor should also be prepared for giving discount in case of Increase in Quantity.	
19.	Validity:	Confirm that your offer shall be valid for 120 days from the date of tender opening. BHEL will reserve the right to reject any or all quotations, quoting validity less than 120 days.	
20.	General Terms:	Kindly confirm no technical deviation taken in submitted offer with respect to requirements mentioned in BHEL Spec Rev.00 HW 12599 & Drg. No. 31074002504 Rev-02 (copy enclosed). The requirement of material at sites is at the earliest. Kindly quote your minimum delivery period for all 04 projects.	
21.	Risk Purchase:	Risk Purchase: In case of abnormal delays (beyond the maximum late delivery period as per Penalty clause) in supplies / defective supplies or non-fulfillment of any other terms and conditions given in Purchase Order, BHEL may cancel the Purchase Order in full or part thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier. BHEL will take all reasonable steps to get the material from alternate source at optimum cost. If bidder does not agree to the above Risk Purchase Clause, BHEL reserves the right to reject the offer. In case for compelling reasons BHEL accepts the offer without acceptance of this clause by the bidder and in the eventuality of Risk Purchase, appropriate action will be taken as per BHEL extant rules. This will be without prejudice to any other right of BHEL under the contract. Please note that deviation in Risk purchase clause shall not acceptable.	

SPECIAL NOTE FOR BIDDERS: -

Following documents are an integral part of this tender enquiry and endorsed copies of these documents (duly signed and stamped on each page, as a consider of acceptance) are to be uploaded along with offer on e-procurement portal.

1. Please submit replica of Price schedule (without prices) showing “quoted” in place of price along with techno-commercial bid (Part-I).
2. Please submit signed & Stamped copy (each page) of duly filled of confirmation column of “Buyer Specific Special Terms and conditions (In addition to GTC & ATC of GeM) (Annexure-2)” and its clause wise supporting documents where required.
3. Please submit signed & stamped copy (each page) of PQR documents with proper filled information and related supporting documents as mentioned in PQR.
4. Please submit signed & stamped copy (each page) of General terms and conditions on GeM 4.0 (Version 1.8) dt 13th Feb 2023 with Tender documents.
5. Please submit signed & stamped copy (each page) of BHEL Spec Rev.00 HW 12599 & Drg. No. 31074002504 Rev-02.

(Signature and seal of supplier)