

BHEL :: BAP :: RANIPET						
PURCHASE DEPARTMENT						
<b>NOTICE INVITING TENDER</b>						
<b>ANNEXURE-A TO OPEN TENDER 7410120E/ 14.06.21</b>						
<b>Offers are invited from prospective suppliers/ manufacturers for supply of Titanium Cladded Plates (Base:7mm &amp; 8mm- Carbon Steel Plate to spec ASTM A36 / IS2062 Gr A / IS2062 E250 Gr.BR &amp; Titanium Cladding Sheet 2mm thick to spec ASTM B265 Gr 2 (UNS R50400) specification and Quantities as listed below.</b>						
ENQ SNO	SIZE	SUPPLY CONDITION (Lesser in Width & Length is not acceptable )	Specification & Applicable BHEL TDC	Qty in MT	DELIVERY PERIOD	Vendor's Quoted/ Not Quoted Status
01	CLADDED PLATE ( CARBON STEEL PLATE 7MM + TITANIUM 2MM ) X 2500 MM X6000 MM	Minimum 2804.0 number of Plates to be ensured.	Specification as mentioned above & TDC:RTS:003/ REV01.	2687.00	I Lot - 671.75 MT - 120 Days from PO II Lot - 671.75 MT - 150 Days from PO III Lot - 671.75 MT - 180 Days from PO IV Lot - 671.75 MT - 210 Days from PO	
02	CLADDED PLATE ( CARBON STEEL PLATE 8MM + TITANIUM 2MM ) X 2500 MM X6000 MM	Minimum 381.0 number of Plates to be ensured.		410.00	I Lot - 102.5 MT - 120 Days from PO II Lot - 102.5 MT - 150 Days from PO III Lot - 102.5 MT - 180 Days from PO IV Lot - 102.5 MT - 210 Days from PO	
<b>Total</b>				3097.00		
<b>Note:-</b>						
<b>"BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on <a href="http://www.bhel.com">www.bhel.com</a>) for this tender. Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of bidders in RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking."</b>						
<b>Quantity Split for both line items in the ratio of 70:30 is applicable for ordering between L1 &amp; next higher bidder (who accept the L1 price), excluding H1 and item wise evaluation will be applicable.</b>						
1.Prices are to be quoted on Per MT basis only.						
2.Partial quantity offered for a particular line item is not acceptable and such offers will not be considered for further process for that item.						
3. Quantity Tolerance: -0/ +5% for each line item. Supplies beyond this tolerance are liable to be rejected and returned back to the supplier.						
4. In case Integrity Pact is applicable, then two original signed copies (duly filled in, signed & stamped) of Integrity Pact to be sent directly to The Sr. Deputy General Manager, Purchase Department (Steel), BHEL, BAP, Ranipet - 632406 by superscribing the tender & NIT No on the envelope without fail and ensure that the same is reaching us on before the tender due date.						
5. Annexure A is to be duly signed, scanned and uploaded during submission of offer. Pointwise specific confirmation to BHEL TDC & SDDR to be given in the Techno-Commercial Bid without fail; otherwise offer may not be considered.						
6. Offer to be submitted through Enterprise Procurement System (EPS) only. In case of direct hard copy offers, the same will be returned to the supplier without opening.						
7. Bids will be opened on the tender due date and in case of any request for due date extension , the same will not be considered. Hence please ensure submission of bid on or before the due date specified in the tender.						
8. Incase of any clarification, kindly email to <a href="mailto:ssm@bhel.in">ssm@bhel.in</a> / <a href="mailto:gowthaman@bhel.in">gowthaman@bhel.in</a> / <a href="mailto:neelkantghode@bhel.in">neelkantghode@bhel.in</a> & contact @ 04172 284339 / 284694 / between 0900 hrs to 1730 hrs.						
<b>All corrigenda, addenda, amendments, time extensions, clarifications etc., to the tender will be hosted on BHEL website (<a href="http://www.bhel.com">www.bhel.com</a>) and EPS(<a href="https://eprocurebhel.co.in/nicgep/app">https://eprocurebhel.co.in/nicgep/app</a>). Bidders should regularly visit mentioned website to keep themselves updated.</b>						
<b>Registration process for items required by BHEL is always open at <a href="https://supplier.bhel.in">https://supplier.bhel.in</a>. Prospective suppliers (including M SEs &amp; Owned by SCs/ STs) may visit this site and apply for registration in the respective unit.</b>						
<b>SDGM / Purchase</b>						

SL.	CLAU SE	CLAU SE DETAIL / BHEL'S REQUIREMENT	SUPPLIER'S CONFIRMATION	Deviations, if any
1	PRICE	Firm till completion of order.		
2	DELIVERY TERM S	For Indigenous suppliers: F.O.R. DESTINATION (Destination: BHEL Stores, Ranipet)For Foreign suppliers: CFR Chennai Sea Port Basis only and insurance in BHEL's scope.		
3	PACKING CHARGE	To be included in Basic.		
4	FORWARDING CHARGE	To be included in Basic.		
5	FREIGHT CHARGES	Please mention in terms of 'PER UNIT' or include it with Basic.		
6	INSURANCE	Please mention in terms of 'PER UNIT' or include it with Basic.		
7	OTHER CHARGES	Please mention, if any.		
8	GST %	To be indicated by supplier.		
9	HSN CODE	To be indicated by supplier.		
10	GSTN NO. OF ORG.	To be indicated by supplier.		
11	BHEL'S PAYMENT TERMS	(i) Indigenous Vendors: 100% Direct payment through EFT within 120 days from receipt and acceptance of materials at our stores. (ii) Foreign Vendors: 100% Direct payment through EFT within 120 days from receipt and acceptance of materials at our stores. In case LC is insisted, it shall be 100% Irrevocable Unconfirmed Letter of Credit with 120 days usance period with all charges within India to BHEL account and outside India to Supplier's account.		
12	DELIVERY PERIOD	As per Annexure A		
13	L.D. CLAU SE	The applicable LD shall be at the rate of 0.5% per week to maximum of 10% for the undelivered portion and for the deliveries made beyond the agreed Delivery Period. Delivery being the essence of BHEL's contract requirements, in the event that a Supplier does not accept the above LD condition, the offer would be loaded to the extent of the shortfall with respect to upper limit specified above. Date of material receipt at our stores (Day Book date) will be considered as the "Delivery date as mentioned in purchase order for indigenous vendors and OBL date shall be reckoned delivery date for import vendors.		
14	OFFER VALIDITY	Minimum 90 days from the date of Technical Bid opening and 30 days from date of Reverse Auction.		
15	INSPECTION BEFORE DISPATCH	Inspection before dispatch at supplier's works		
16	TEST CERTIFICATE	To be submitted. With Chemical and Mechanical properties and dimensions as per Standards and our Technical Delivery Conditions		
17	RISK PURCHASE CLAU SE	Your confirmation to our standard risk purchase clause that 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 substitute therefor. The supplier shall be liable for any loss which the purchaser may sustain by reason of such risk purchases.		
18	BHEL STANDARD GUARANTEE CLAU SE	Your confirmation to our standard Guarantee clause that the materials are to be guaranteed for satisfactory performance for a period of twelve months from the date of commissioning / putting into use (or) eighteen months from the dispatch whichever is earlier and if any defect is noticed during the above period, the same shall be rectified/replaced free of cost on Ranipet/ Destination basis within a reasonable time. To this effect a Guarantee certificate should be sent along with the dispatch documents in the event an order.		
19	MSME / NON MSME STATUS	Please mention whether your company falls under the category " MSME or non MSME. If MSME - Micro, small or medium enterprise, copy of certificate attested by certified chartered accountant shall be submitted along with the offer. [IMPORTANT NOTE: - MSE suppliers can avail 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 of acknowledgement of EM II) or valid NSIC certificate or EM II certificate along with attested copy of a chartered accountant certificate applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed documents will lead to consideration of their bid at par with other bidders. No benefits shall be applicable for this enquiry if any deficiency in the above required documents are not submitted before price bid opening. Documents should be notarised or attested by a gazetted officer.]		
20	PLACE OF MANUFACTURING	Please mention your complete address of the place of manufacturing.		
21	ACCEPTANCE FOR REVERSE AUCTION- BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender.	To be confirmed by supplier		
22	CONTRACT EXECUTION BANK GUARANTEE (CEBG): THE SUPPLIER SHALL SUBMIT A BG FOR 2% OF THE CONTRACT VALUE VALID FOR THE AGREED DELIVERY PERIOD + 3 MONTHS. ATTACHED CEBG FORM AT IS TO BE SIGNED AND SUBMITTED AS A TOKEN OF ACCEPTANCE. PLEASE NOTE NO DEVIATION IS ALLOWED.	To be confirmed by supplier		
23	SUPPLIER REGISTRATION FORM- ONLINE SUBMISSION IS TO BE DONE AND SOFT COPY OF THE SAME TO BE UPLOADED ALONG WITH TECHNICAL BID BY NEW VENDORS.	To be submitted by supplier		

24	FOREIGN OFFERS: COUNTRY OF ORIGIN, MILLS LETTER OF AUTHORITY & AGENCY AGREEMENT	To be submitted by supplier		
25	WHENEVER THERE IS AN INDIAN AGENT TO REPRESENT A SUPPLIER, IT IS MANDATORY TO GIVE THE DETAILS OF SERVICES TO BE RENDERED BY INDIAN AGENT AND / OR THE DETAILS OF AGREEMENT BETWEEN SUPPLIER AND AGENT. SUPPLIER TO INDICATE THE AGENCY COMMISSION PAYABLE. INDIAN AGENCY COMMISSION WILL BE PAID ONLY IN INDIAN RUPEES, CALCULATED AT THE RATE OF EXCHANGE PREVAILING ON THE DATE OF PRICE BID OPENING. THIS IS PAYABLE ON SATISFACTORY COMPLETION OF THE CONTRACT. AGENCY AGREEMENT COPY SHALL BE SUBMITTED WITHOUT FAIL. NOTE: IN ORDER TO MAINTAIN SANCTITY OF THE TENDER SYSTEM, IT IS MANDATORY THAT ONE AGENT CANNOT REPRESENT TWO SUPPLIERS OR QUOTE ON THEIR BEHALF IN A PARTICULAR TENDER ENQUIRY. IF ANY AGENT REPRESENTS MORE THAN ONE SUPPLIERS ALL SUCH OFFERS WILL BE REJECTED.	To be confirmed by supplier		
26	TECHNICAL DELIVERY CONDITION (TDC)	As per TDC Attached. Clause wise / Point wise confirmation to be Submitted.		
27	CONTACT PERSON NAME, CONTACT NO. & E-MAIL ID.	Please mention		
28	ALTERNATE CONTACT PERSON NAME, CONTACT NO. & E-MAIL ID.	Please mention		
29	QUANTITY TOLERANCE	As per Annexure A		
30	INVOICING	Theoretical net weight basis only		
31	ANY OTHER DEVIATIONS	Please mention		
32	CURRENCY QUOTED	Please mention		
33	BIS registration certificate as per Ministry of Steel Order, DT:16.02.2018.	To be confirmed by supplier		



**TECHNICAL DELIVERY CONDITION  
FOR  
TITANIUM CLADDED CARBON STEEL  
PLATES TO SPECIFICATION  
ASTM B898**

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<b>1.0</b>	<b>Scope</b>																
<b>1.1</b>	This TDC specifies the additional requirements for the delivery of titanium clad on one side of carbon steel plates conforming to ASTM B898-11 and to the latest edition.																
<b>1.2</b>	The size and Quantity shall be as specified in the Enquiry/ Purchase order																
<b>2.0</b>	<b>Chemical composition and process</b>																
<b>2.1</b>	Titanium as per ASTM B265 Gr. 2 (UNS R50400)																
<b>2.2</b>	Carbon steel as per ASTM A36/ IS 2062 Gr. A/ IS 2062 E 250 Gr. BR																
<b>2.3</b>	The method of bonding of cladding metal to base plate shall be Explosion bonding or Hot rolling or combination of both to achieve the required quality as per ASTM B898-11.																
<b>2.4</b>	In the clad plate, there shall not be more than one number of joints in cladding metal sheet before cladding and no joint in Carbon steel base plate. 100% Radiographic testing of all such joints shall be done by vendor as per ASME, Sec. VIII, Div.1, UW-51. Weld seam location and orientation shall be provided by manufacturer before cladding.																
<b>3.0</b>	<b>Dimensional tolerances</b>																
<b>3.1</b>	The plates shall be supplied to the dimensions specified in the enquiry/PO. Enquiry/PO shall state the following <ul style="list-style-type: none"> <li>1) Length and width of plate.</li> <li>2) Base metal thickness</li> <li>3) Clad metal thickness</li> </ul> The following dimensional tolerances shall apply <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">a) Thickness</td><td>As per Enquiry/ PO</td></tr> <tr> <td>b) Cladded plate Thickness</td><td>Composite thickness should not be less than the specified thickness. (+) 3mm (or) (+)10% of composite thickness (whichever is greater), (-) 0mm</td></tr> <tr> <td>c) Clad Metal thickness</td><td><b>Thickness should not be less than the specified thickness.</b> Over tolerance on clad metal thickness shall be as per clad metal specification. Thickness of clad metal in Ti clad plate shall be measured as per ASTM E 376 or any other equivalent ASTM/ASME/ISO/EN/DIN standard. For the purpose of measurement, the Ti clad plate shall be divided into 4 equidistant grid lines (perpendicular to longitudinal axis) and 3 equidistant grid lines (parallel to longitudinal axis). Thickness of clad metal in Ti clad plate shall be measured at the intersection points of above referred grid lines.</td></tr> <tr> <td>d) Base metal thickness</td><td>Tolerance on thickness shall be as per Base plate specification and should fulfill sl no. (b) specified above</td></tr> <tr> <td>e) Length</td><td>(+) 5mm, (-) 0 mm</td></tr> <tr> <td>f) Width</td><td>(+) 5mm, (-) 0 mm</td></tr> <tr> <td>g) Flatness</td><td>5mm/m and 8mm/2m (max)</td></tr> <tr> <td>h) Requirement</td><td>Titanium plate shall be clad with carbon steel base plate with uniform gap of 5mm all around for welding at corners. (Refer Annexure-1 for specific requirements)</td></tr> </table>	a) Thickness	As per Enquiry/ PO	b) Cladded plate Thickness	Composite thickness should not be less than the specified thickness. (+) 3mm (or) (+)10% of composite thickness (whichever is greater), (-) 0mm	c) Clad Metal thickness	<b>Thickness should not be less than the specified thickness.</b> Over tolerance on clad metal thickness shall be as per clad metal specification. Thickness of clad metal in Ti clad plate shall be measured as per ASTM E 376 or any other equivalent ASTM/ASME/ISO/EN/DIN standard. For the purpose of measurement, the Ti clad plate shall be divided into 4 equidistant grid lines (perpendicular to longitudinal axis) and 3 equidistant grid lines (parallel to longitudinal axis). Thickness of clad metal in Ti clad plate shall be measured at the intersection points of above referred grid lines.	d) Base metal thickness	Tolerance on thickness shall be as per Base plate specification and should fulfill sl no. (b) specified above	e) Length	(+) 5mm, (-) 0 mm	f) Width	(+) 5mm, (-) 0 mm	g) Flatness	5mm/m and 8mm/2m (max)	h) Requirement	Titanium plate shall be clad with carbon steel base plate with uniform gap of 5mm all around for welding at corners. (Refer Annexure-1 for specific requirements)
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<b>4.0</b>	<b>Heat Treatment</b>																
<b>4.1</b>	Unless otherwise specified, the plates shall be supplied in heat- treated condition.																
<b>4.2</b>	Cladded plates shall be stress relieved by Heat treatment (as per supplier's procedure)																
<b>5.0</b>	<b>Mechanical Test</b>																
<b>5.1</b>	Test samples shall be selected and prepared as per ASTM A265. Number of tests and re-tests shall be carried out as per ASTM A265.																
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">a) Tensile test</td><td>The tensile test to be conducted as per Clause 7.1 of ASTM A265 with acceptance norms specified therein.</td></tr> </table>	a) Tensile test	The tensile test to be conducted as per Clause 7.1 of ASTM A265 with acceptance norms specified therein.														
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	b) Ductility	Two bend tests for ductility of clad plate shall be done, one with the cladding metal in compression and other with the cladding metal in tension. Specimen preparation and procedure for ductility bend test shall be as per ASTM E290 with bend angle and diameter as per Bend test. The convex surface of specimen shall withstand bending without cracking. Any cracks within one thickness of the edge of the specimen are not considered a bend test failure. Cracks occurring in the corners of the bent portion shall not be considered significant.
	c) Bond Strength:	
	c.1) Shear strength test	The shear strength test shall be carried out as per clause 7.2.1 of ASTM A265. The shear strength of the clad plate shall not be less than 140 MPa.
	<b>Vendor has the option of carrying out either Shear Strength Test (or) Bend Test</b>	
	c.2) Bend test	Three bend tests shall be made with the cladding metal in compression to determine the quality of the bond. These bend tests shall be made in the manner of the tension tests indicated in Fig.2 of ASTM A265 and shall be bent through an angle of 180° to the bend diameters provided in either ASTM A6/A6M or specification ASTM A20/A20M. At least two of the three tests shall show not more than 50% separation on both edges of the bent portion.
	d) Ultrasonic test	The clad plate shall be examined ultrasonically as per ASTM A578/A578 M, with acceptance level C. For the location of detonator in explosion bonded clad plate, acceptance level A shall be applicable.
<b>6.0</b>	<b>Freedom from defects</b>	
6.1	The material shall be clean, smooth, sound and free from injurious defects.	
6.2	Any repair work on the clad plate is not allowed as such.	
<b>7.0</b>	<b>Inspection at Supplier's works</b>	
7.1	BHEL's representative shall have free access at all times until work on contract of BHEL is being performed, to all parts of the manufacturer's works. The supplier shall offer BHEL's representative all reasonable facilities without any financial implication to satisfy the latter that the material is being furnished in accordance with this specification.	
<b>8.0</b>	<b>Packing and Marking</b>	
8.1	<p>The material shall be separated by size and prepared for shipment in such a manner as to ensure acceptance by common carrier transportation and to afford protection from the normal hazards of transportation by sea. Packing shall be of sea worthy packing.</p> <p>Each package shall be suitably marked with the following details. A metal label shall be securely attached to each package and shall bear the following information:</p> <ol style="list-style-type: none"> <li>1. Titanium clad Carbon steel plates</li> <li>2. BHEL PO no:</li> <li>3. Consignment and Identification No.</li> <li>4. Size, number and Weight</li> <li>5. Supplier's name</li> </ol>	
8.2	<b>Painting-</b> Non-clad portion of Carbon steel base plate shall be coated with one coat of Inorganic Zinc silicate primer, DFT- 20μ	
<b>9.0</b>	<b>Dispatch</b>	
9.1	It is the responsibility of the supplier to ensure that no damage occurs during transit.	



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<b>10.0</b>	<b>Inspection and Certification</b>
10.1	All tests shall be complied as per the specification for each heat and dimensional reports containing all elements of cl.3.1 & cl.5.1 shall be furnished for our verification. Despatch clearance will be issued after verification of reports and is mandatory before effecting despatch to BHEL stores.
10.2	<p>The test certificates shall be furnished with the following details legibly in English language only</p> <ol style="list-style-type: none"> <li>1. BHEL reference <ol style="list-style-type: none"> <li>a) BHEL PO no</li> <li>b) Titanium cladded carbon steel plates</li> </ol> </li> <li>2. Supplier's reference: <ol style="list-style-type: none"> <li>a) Supplier's name</li> <li>b) Test certificate no</li> <li>c) Quantity and Weight</li> <li>d) Identification marks</li> <li>e) Process of manufacture</li> </ol> </li> <li>3. Test results: <ol style="list-style-type: none"> <li>a) Material test certificates of base plate and cladding metal sheet</li> <li>b) RT report</li> <li>c) Heat treatment Batch no and details</li> <li>d) Clad metal thickness in cladded plate</li> <li>e) Mechanical properties</li> <li>f) Bond strength</li> <li>g) Ultrasonic test report</li> <li>h) Dimensional report</li> </ol> </li> </ol>
<b>11.0</b>	<b>End use</b>
11.1	These are intended for lining of ducts from absorber outlet to bypass duct in FGD system.
<b>12.0</b>	<b>Rejection and replacement</b>
12.1	In the event of any cladded plate proving defective in the course of rolling (forming), machining, testing, assembly or erection, such plates shall be rejected notwithstanding, any previous certification of satisfactory testing and/or inspection.
12.2	The supplier shall undertake to replace the rejected plates at his own cost and the rejected plates shall be sent back to the supplier after fulfilling the commercial terms and conditions.






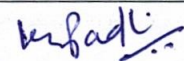
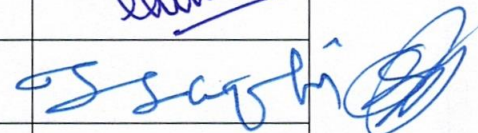
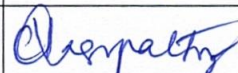
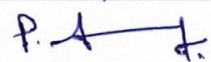
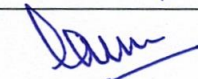
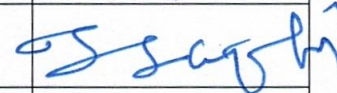


Ranipet

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RECORD OF REVISIONS

REV. NO	Clause revised	Details of revision	Date
00	--	Original issue	26.02.2019
01	1.1, 2.1 & 3.1	Revised Issue- Based on the feedback from Engg	20.05.2019

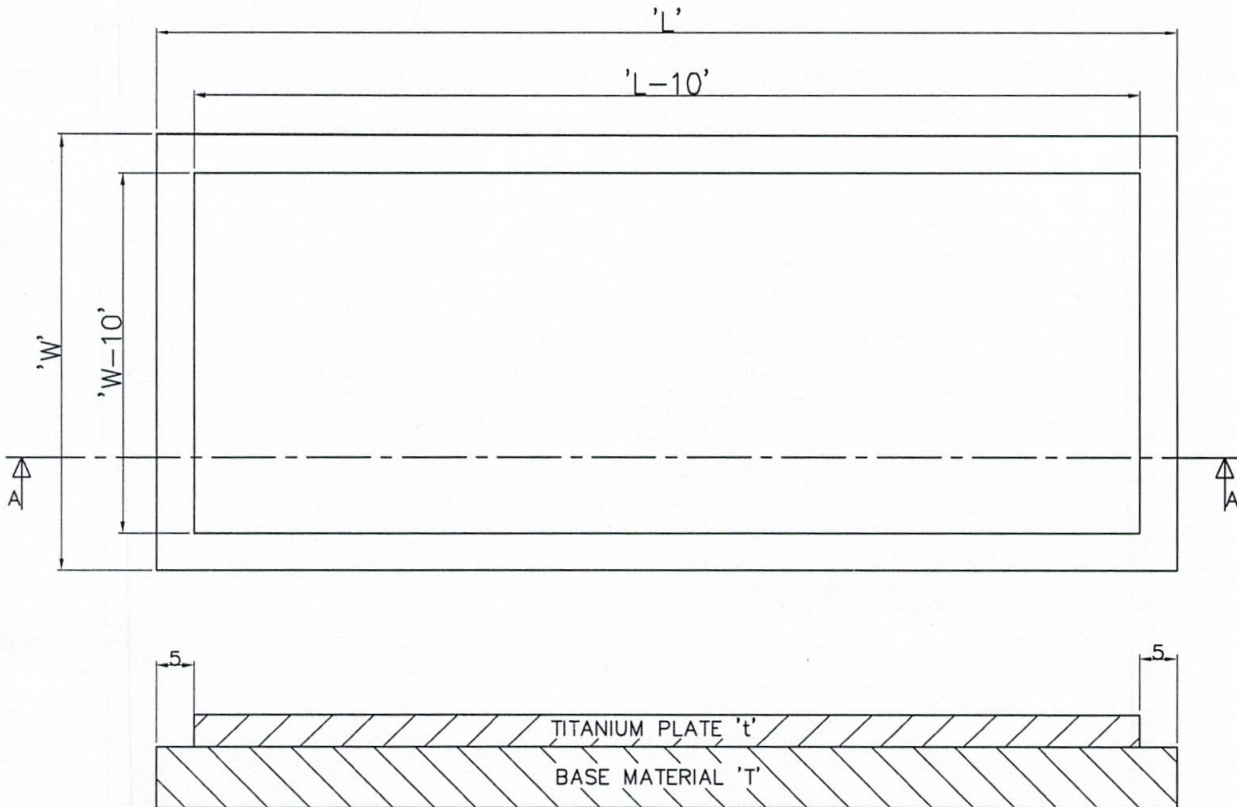
Prepared by	Reviewed by		Signature	Approved by
	Department	Name and Desig. (Shri/ S)		
 Rajamanickam.M Dy. Mgr/ QA	ENGG (FGD)	Kumuda Ballav Padhi DGM/ EDC- AQCS		 K.C. Gandhi Parimalam DGM / QA
	PURCHASE	V. Ragupathy SM/ Purchase		
	MATERIAL PLANNING	P. Annamalai Sr. Mgr/ MPL		
	QC/Proc.	R. Kesavan DGM/ QC- Proc		
	QC/Shops	K. Karunanidhi DGM/QC- Shops		
	QC/OLI	R. Arunachalam DGM/QC-OLI		
Issued by Quality Assurance				



CAUTION: THE INFMN ON THIS DOCUMENT IS THE PROPERTY OF BHEL. MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF BHEL

## ANNEXURE -1

- NOTE: 1. CLADDED PLATE OF TITANIUM & CARBON STEEL  
2. ALL ROUND 5MM GAP BETWEEN BASE MATERIAL AND TITANIUM SHEET



SECTION-AA

L : LENGTH OF PLATE  
W : WIDTH OF PLATE  
t : THICKNESS OF BASE PLATE  
T : THICKNESS OF TI PLATE

AS PER ENQUIRY/PO

TYPE OF PRODUCT  
OR NAME  
COSTOMER/PROJECT



**BHARAT HEAVY ELECTRICALS LTD.**  
UNIT: BOILER AUXILIARIES PLANT.  
RANIPET - 632 406.

DRN	NAME SURYA	SIGN	DATE
CHD	FELIX		10.05.2019
APPD	K.B.PADHI		10.05.2019

DEPT AQCS	GRADE OF UNTOL.DIM	SCALE	WEIGHT (KG).
CODE 862	PR: QA: 500	N.T.S	*****

TITLE  
**TITANIUM CLADDED PLATE**

REF TO ASSY / OLD DWG

DRAWING NO :  
**4-FW-000-00790**

REV  
00

Size A4




## TECHNICAL CONFIRMATION / DEVIATION REPORT

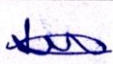
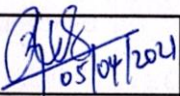
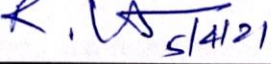
Sl.No	Description	BHEL's requirement	Supplier's comments
01	Sizes	Item wise size quoted in line with our requirement to be confirmed. Any deviation item wise to be mentioned.	
02	Specification	Quoted specification in line with our requirement to be confirmed. In case of offer with equivalent material grade, then copy of the entire specification of that equivalent grade shall be sent along with the techno-commercial bid without fail.	
03	TDC	Clause wise confirmation in line with our TDC to be confirmed. In case of any deviation, clause wise to be mentioned in the below SDDR.	
04	Specification deviation disposition report (SDDR)	Below SDDR to be filled & submit without fail. <b><u>(Even if no deviation is taken, NIL report to be submitted).</u></b>	

SPECIFICATION DEVIATION DISPOSITION REPORT			
Specn		Item	
Enq.No & Date			
Vendor Name			
TDC			
No	Clause	Details Of Deviation With Reason	Disposition By BHEL
Signature Of Vendor			Reviewed By
<p style="text-align: center;"><b>“ AGREED DEVIATION “</b> if any to be incorporated in the PO in the event of order.</p>		APPROVED BY	

DATE:

SIGNATURE WITH SEAL


SL. NO		COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK (6)	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS	
1		2	3	4	5	M   C/N	7	8	9	D*	M	C	N	11
<div style="display: flex; justify-content: space-between;"> <div style="width: 15%;">  </div> <div style="width: 40%;"> <b>MANUFACTURER'S NAME &amp; ADDRESS:</b>  M/s BHEL (BAP)  RANIPET - 632406  &amp; BHEL APPROVED VENDORS </div> <div style="width: 40%; text-align: center;"> <b>STANDARD QUALITY PLAN</b>  <b>PRODUCT : TITANIUM UNS R50400 CLADDED CARBON STEEL PLATES TO ASTM B898</b>  <b>SUB-SYSTEM : FGD Package</b> </div> <div style="width: 20%; text-align: right;"> <b>DOC NO: SQP:FGS:756</b>  <b>DATE: 02.04.2021</b>  <b>PAGE: 1 OF 3</b> </div> </div>														
<b>1.0 RAW MATERIALS:</b>														
1.1	CS Plates (Without Joint)	Chemical & Mechanical properties, Dimensions, Soundness	Major	Review	100%		Material Specification & BHEL TDC, PO, Approved Drawings	MTC	√	P	V			
1.2	TITANIUM COIL (ASTM B265 Gr 2 UNS R50400)	Chemical & Mechanical properties, Dimensions	Major	Review	100%		Material Specification (ASTM B265 Gr 2 UNS R50400) & BHEL TDC, PO, Approved Drawings	MTC	√	P	V			
<b>2.0 INPROCESS CONTROLS</b>														
2.1	Welding Qualification	Welding Procedure Qualification	Major	Review	100%		AWS D1.1 / ASME Sec IX / ISO / EN Std	WPS & PQR	√	P	V			
2.2	Personnel Qualification	Welder Qualification	Major	Review	100%		AWS D1.1 / ASME Sec IX / ISO / EN Std	WPQ	√	P	V			
2.3	De-Coiling of Titanium coils	Visual & Dimensional, Flatness, Transfer of Marking	Minor	Visual, Measure	100%		Supplier Internal Procedure	-	-	P	-			
2.4	Butt joint on Titanium Plates, if applicable#	Weld Soundness	Major	RT	100%		ASME Sec VIII Div 1 UW-51	RT Report	√	P	V		#Only one joint allowed per plate.	
2.5	Cladding By Explosion Bonding / Hot Rolling / Combination of both	Joining of Titanium with Base Metal	Major	Visual	100%		Supplier Internal Procedure	IR	√	P	V			
2.6	Cladded Plate	Heat Treatment	Critical	Review	100%		Supplier Internal Procedure, BHEL TDC and ASTM B898	HT Chart	√	P	V			

					
PREPARED BY		REVIEWED BY		APPROVED BY	
ABDUL GHANI SR. ENGR /QA		RENJITH K MANAGER / QA		R. ARUNACHALAM DGM / QC-OLI & QA (MECH)	
BHEL (BAP), RANIPET - 632 406					




**LEGEND: \* RECORDS** IDENTIFIED WITH "TICK" (√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION.


**\*\* M:** MANUFACTURER, **C:** BHEL / BHEL AIA, **N:** CUSTOMER, **P:** PERFORM, **W:** WITNESS, **V:** VERIFICATION;  
**WPS:** WELDING PROCEDURE SPECIFICATION; **PQR:** PROCEDURE QUALIFICATION RECORD; **WPQ:** WELDER PERFORMANCE QUALIFICATION, **MTC-** MILL /MANUFACTURER'S TEST CERTIFICATE; **IR-** INSPECTION REPORT



	<b>MANUFACTURER'S NAME &amp; ADDRESS:</b> M/s BHEL (BAP) RANIPET - 632406 & BHEL APPROVED VENDORS	<b>STANDARD QUALITY PLAN</b>							<b>DOC NO: SQP:FGS:756</b> <b>DATE: 02.04.2021</b> <b>PAGE: 2 OF 3</b>					
		<b>PRODUCT : TITANIUM UNS R50400 CLADDED CARBON STEEL PLATES TO ASTM B898</b>												
		<b>SUB-SYSTEM : FGD Package</b>												
SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK (6)		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS	
1	2	3	4	5	M	C/N	7	8	9	D*	M	C	N	10

3.0	FINAL INSPECTION														
3.1	Cladded Plate	Bonding Quality	Critical	UT	100 %	20%	ASTM A578/A578 M	TDC:RTS:003 (Latest)	UT Report	√	P	W			
3.2		Bonding Quality#	Critical	Shear Test	One / Heat*		TDC:RTS:003 (Latest)		IR	√	P	W		* per heat means with respect to Base material CS; # either shear or bend test.	
				Bend Test	Three / Heat*										
3.3		Chemical Test On Clad Plate	Major	Chemical	One / Heat		Material Specification & BHEL PO & TDC		IR	√	P	W			
3.4		Mechanical	Critical	Tensile Test	Two / Heat*		ASTM A265, BHEL PO & TDC, Approved Drawing.		IR	√	P	W			
3.5		Ductility	Critical	Bend Test@	Two / Heat*		ASTM E290, BHEL PO & TDC, Approved Drawing.		IR	√	P	W			
															@ One Bend Test with Cladding Metal in Compression and other bend test with Cladding Metal in Tension.
3.6		Dimensions including Thickness, Flatness	Major	Measure	100 %	10%	BHEL TDC [TDC:RTS:003 (Latest)] & PO		R	√	P	W		Refer TDC For Tolerances	
4.0	PAINTING, MARKING & PACKING														
4.1	Painting on CS plate	Painting DFT	Major	Visual & Measure	100%		BHEL TDC		IR	√	P	V			
4.2	Marking	BHEL PO, Size, etc.	Major	Visual	100 %	10%	BHEL TDC & PO		IR	√	P	V			
4.3	Packing	Protection from damage, scratches, deformation during storage, transportation & handling	Major	Visual	100%		BHEL TDC & PO		IR	√	P	V			

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<b>PREPARED BY</b>	<b>REVIEWED BY</b>	<b>APPROVED BY</b>	
ABDUL GHANI SR. ENGR /QA	RENJITH K MANAGER / QA	R. ARUNACHALAM DGM / QC-OLI & QA (MECH)	
BHEL (BAP), RANIPET – 632 406			


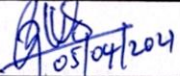

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SL. NO	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK (6)		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY			REMARKS	
					M	C/N					M	C	N	
1	2	3	4	5	M	C/N	7	8	9	D*	**	10		11

**Note:**

1. Chemical & mechanical testing shall be done at manufacturer in house facility / NABL approved lab in case of indigenous sources.
2. This QP shall be read along with relevant purchase order, BHEL Specification & Drawings and requirements to be complied.
3. Inspection / inspection waiver / approval by BHEL does not absolve supplier's responsibility for conformity of the specification as per the terms of P.O.
4. BHEL / BHEL authorized representatives shall have the right to witness the necessary inspection and testing of goods mentioned in the PO.
5. Inspection stage/ type of check/quantum of check may change in case of project/customer specific requirements(if applicable).

**RECORD OF REVISIONS**

Rev No	Date	Clauses revised	Description of Revision
00	02.04.2021	-	Fresh Issue

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