

**BHARAT HEAVY ELECTRICALS LIMITED**

(A Government of India Undertaking)
HIGH PRESSURE BOILER PLANT
PURCHASE DEPARTMENT - FOSSIL BOILERS
THIRUCHIRAPALLI - 620014
TAMILNADU (INDIA)

PHONE :0431-2575731
GRAMS : BHARATELEC
FAX NO: 0431-2520719
E-mail: akumar@bheltry.co.in
Web:

Page
1/2

Enquiry No	Enquiry Date	Due Date for Quotation
2611700005 - 29	24.01.2017	24.02.2017
Please quote Enquiry No, Date and due date in all correspondences. This is only a request for quotation and not an order. Bid should be submitted in two parts. 1.Techno-commercial bid (Part-I) and 2.Price bid(Part-II) in a separate sealed cover and both covers must be placed in a third cover and sealed. Our Enquiry No., Enq. date & Enq. Due date must be written on all three covers.		

Item	Description	Unit	Quantity	Delivery Quantity	Schedule Date
10	54334271DBA EQ 309L SS STRIP 60X0.5 Batch testing at vendor's works as per BHEL spec WCPS 811A rev 04.	KG	740.000	740.00	15.09.17
20	54334571DBA EQ 347 SS STRIP 60X0.5 Batch testing at vendor's works as per BHEL spec WCPS 811A rev 04.	KG	1450.000	1,450.00	15.09.17
30	54354500DBA FLUX FOR SS STRIP Batch testing at vendor's works as per BHEL spec WCPS 811A rev 04. Batch testing at vendor's works as per BHEL spec WCPS 811A rev 04.	KG	4500.000	4,500.00	15.09.17

General Note:

The Enquiry is governed by terms and conditions as mentioned in Annexure-A and no modifications / alterations are allowed in any case. If any modification / alteration is proposed or any other condition advanced by the bidder, it shall be ignored and the bidder will be bound by the terms of Enquiry notwithstanding any modification / alteration etc. proposed by them.

Annexures :

WCPS 811 Rev. 04

Annexure A : TERMS AND CONDITIONS OF THE ENQUIRY

Annexure B : BHEL COMMERCIAL TERMS AND CONDITIONS

Annexure C : PRICE BID FORMAT

Annexure D : REQUIREMENTS OF TEST CERTIFICATE

All the tenders may be addressed to the following address:

**The Tender Opening Cell / MM
Room No: 26, Building 24, Ground Floor
Bharat Heavy Electricals Limited
TIRUCHIRAPALLI 620014**

In case personal delivery of the offer, it shall be dropped into the respective box kept in Room No: 26, after duly entering the data in the system.

The offers should reach us 30 minutes before the time of opening of tenders. The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening. Late and delayed offers are liable to be rejected.

Yours faithfully,
For **BHARAT HEAVY ELECTRICALS LIMITED**


MANAGER / PURCHASE
(FOSSIL BOILERS)
Yours faithfully,



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)
HIGH PRESSURE BOILER PLANT
PURCHASE DEPARTMENT - FOSSIL BOILERS
THIRUCHIRAPALLI - 620014
TAMILNADU (INDIA)

PHONE :0431-2575731
GRAMS : BHARATELEC
FAX NO: 0431-2520719
E-mail: akumar@bheltry.co.in
Web:

Page
2/2

2611700005 / 24.01.2017

23505

Offers will be accepted only up to 14.00 Hrs on the due date. Therefore, vendors shall ensure to submit the offers well before this time. All due date extension requirements should be addressed to the respective Purchase mail IDs. All the due date extension requests from vendors will be considered only up to 48 hours before the due date and time.

Vendors are requested to avoid submission of offers through e mail / fax. In case of any unavoidable situation, offers shall be sent through e mail to the following mail ID only
tender_cell@bheltry.co.in.

As tenders are being opened by Common Tender Opening Cell, offer covers should be sealed with tenderer's distinctive seal and super scribed with correct Tender No. item of supply and due date of opening.

The offers will be opened at 14.30 hrs on the due date of the tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening. Late and delayed offers are liable to be rejected.

The bidder along with its associate/ collaborators/ sub-contractors/ sub-vendors/ consultants/ service providers shall strictly adhere to BHEL fraud prevention policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.

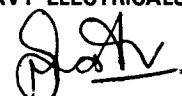
The supplier shall submit EI/EII forms to BHEL time to time as indicated by the BHEL and in case of inordinate delay in issuing EI/EII forms, then BHEL reserves the right to deduct 5% of the value of the supplied items against which EI/EII forms pending to be issued

Enclosures:

"LD clause has to be confirmed without fail."

The offers should reach us 30 minutes before the time of opening of tenders.
The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening. Late and delayed offers are liable to be rejected.

Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED


MANAGER / PURCHASE
(FOSSIL BOILERS)
Yours faithfully,



BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPALLI-620 014

WCPS - 811A /Rev. 04

WELDING CONSUMABLE PROCUREMENT SPECIFICATION FOR AUSTENITIC STAINLESS
STEEL STRIP ELECTRODES AND FLUX FOR CLADDING

WCPS 811 A					
Rev. No.	00	01	02	03	04
Prepared By MW	Sd	Sd	Sd	Sd	Pradeep Kumar
Reviewed By MW	Sd	Sd	Sd	Sd	Krishna Gupta 21/12/16
Reviewed By QA	-	-	-	-	11 08/12
Approved By (BHEL)	Sd	Sd	Sd	Sd	PN 8/12/16
Approved By (CUSTOMER)	Sd	Sd	Sd	Sd	Satish 15/12/16
Nature of Revision					

Send vids email
21/12/16



1.0 SCOPE

This specification prescribes the requirements for austenitic stainless steel strip electrodes of EQ309L & EQ347 with suitable flux for cladding and buttering on 20MnMoNi55 material by submerged arc welding (SAW) process, which will be subsequently subjected to post weld heat treatment (PWHT).

2.0 QUALIFYING CRITERIA

- 2.1** Copies of executed purchase orders and test certificate of the batch supplied should be enclosed with the offer. The test certificate should contain chemical analysis & mechanical properties for above welding consumables. Offers without the documents supporting previous supply will not be considered.
- 2.2** A test certificate of the batch supplied within the last five years should be enclosed with the offer. The test certificate should contain chemical analysis & mechanical properties for above welding consumables. Offers without such a test certificate will not be considered.
- 2.3** The vendor shall agree (para by para) to the requirements of this document. Any deviation from the requirements shall clearly be mentioned in the offer. Acceptance of any such deviation is subject to the approval of BHEL customer.
- 2.4** BHEL reserves the right for inspection of vendor's manufacturing works and testing center for evaluation, if required.
- 2.5** Offers from such vendors who have any unresolved issues with previous supplies at the time of offer will not be considered.

3.0 GENERAL REQUIREMENTS

- 3.1** The strip electrodes EQ309L & EQ347 and suitable flux shall be manufactured and controlled according to the latest revision of ASME Sec. II Part 'C' SFA 5.9 & ASME sec III NB and this specification.
- 3.2** The strip electrodes and flux shall have good usability. The arc strike shall be smooth and it shall be stable. The strip shall melt uniformly with good flat bead formation. It shall be suitable for cladding and buttering on low alloy steel material of grade 20MnMoNi55 with a thickness of about 50 mm with reverse polarity (DCEP) current.
- 3.3** The total quantity delivered shall be in the least possible number of batches. Single batch is preferred. Each batch shall be tested as per the quality assurance plan (QAP) given in the Annexure I.
- 3.4** The welding consumables shall be batch tested at manufacturer's works. Level of testing shall be as per schedule K of ASME section IIC SFA 5.01. Clearance for shipment will only be given when welding strip and flux meet all the requirement of this specification.



**BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPALLI-620 014**

- 3.5 An independent third party inspection (TPI) shall be engaged for inspection and certification of welding and testing of the batch. The preferred TPI agencies for inspection are M/s SGS, TUV and BVQI.
- 3.6 Inspection shall be carried out at stages including on raw materials and finished products as per the QAP.
- 3.7 Vendor shall submit TPI issued Certified material test report (CMTR) to BHEL and only on approval by BHEL, the items shall be dispatched.
- 3.8 All tested test samples shall be supplied to the purchaser along with consumable with proper identification.
- 3.9 Test coupon for purchaser as indicated in Figures 1 & 2 shall be supplied to the purchaser along with consumable with proper identification.
- 3.10 Purchaser will provide 20MnMoNi55 plates of size as per Figures 1 & 2 as free issue material for test coupons. Vendor on his own shall make suitable arrangements to collect the material from BHEL.

4.0 REQUIREMENTS FOR STRIP ELECTRODE

- 4.1 **Chemical composition of strip electrode** shall conform to ASME Section II Part 'C' SFA 5.9 EQ309L and EQ347.
- 4.2 Strip electrode size shall be 60 X 0.5 mm.
- 4.3 The strip electrode shall have a smooth finish, free from slivers, depressions, seams, laps, scratches, scales, oil, grease and other foreign matter that would adversely affect the welding equipment or the properties of the deposited weld metal.
- 4.4 The strip electrodes shall be suitable for uniform uninterrupted feeding on submerged arc welding machine.
- 4.5 **Strip Electrode Coils**
- 4.6 Liners used in coils with support shall be of such material and design to prevent damage or distortion during normal handling and use of the electrodes. Liners shall be sufficiently clean and dry to maintain the cleanliness of the strips.
- 4.7 Each coil shall be from the same heat and be of continuous length of strip and the coil size shall be as follows.

Inner diameter - 300mm
Width - 60mm
Weight of each coil – 25 Kg



- 4.8 A spooled strip electrode shall be closely wound in layers with or without gap between layers and without kinks, waves, sharp bends, which would interfere with the free feeding of the electrode or easy unwinding of the spool. The free end of the spooled electrode shall be secured and identified to enable easy location.

4.9 Packaging

- 4.9.1 The strip electrodes shall be suitably packaged to ensure against injuries during shipment or storage under normal conditions. The coils shall be wrapped with suitable polythene sheet / paper /cloth and sealed in thick polythene covers or any other moisture proof packing. Each of such packs shall contain in card board boxes; several such boxes crated in sea worthy wooden cases.

- 4.9.2 An identification tag shall be attached to each coil in addition to the label put on every spool and cardboard box

- 4.9.3 Vendor shall provide recommendations for storage and re drying of consumables as applicable.

4.10 MARKING

- 4.10.1 Each spool and the outside of each package shall be legibly marked with the following information:

- a) Strip electrode specification and classification
- b) Vendor name with address and brand designation
- c) Strip electrode size and net weight
- d) Heat and batch number with manufacturing date

5.0 REQUIREMENTS OF FLUX.

- 5.1 The flux shall be compatible to use along with strips as per para 4.0 and it shall be capable of producing weld chemistry, mechanical and metallurgical properties as per para 6.0. The flux classification as per BS EN ISO 14174-2012, composition, grain size and basicity shall be specified in the offer.

- 5.2 The entire quantity shall be from one batch only.

- 5.3 Each batch / lot of flux shall be subjected to chemical analysis and values to be reported. Constitution of the flux by weight percentage along with its basicity & mesh-size shall be reported in test certificates.

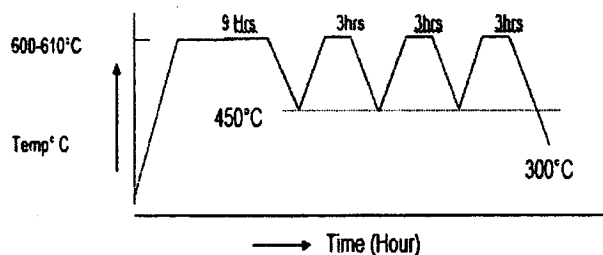
The slag shall be easily removable by normal means and the weld deposit shall be free from slag entrapment, depressions, cavities, blow holes, pores etc.

6.0 TESTING AND INSPECTION

- 6.1 All the tests for each batch of strip and flux in combination shall be carried out on test coupons clad with first layer of EQ309L and subsequent layers of EQ347 using the welding parameters given in Table 1. The base metal for test coupon shall be of grade 20MnMoNi55 supplied by purchaser.



- 6.2 The test coupon shall be subjected to PWHT as per para 6.4 and all the tests shall be carried out after PWHT.
- 6.3 Test samples for chemical, mechanical & metallurgical test shall be located as per the Material sampling Test plan (MSTP) given in Figures 1 & 2 and the number of samples for each test are given in Table 2. Any deviation in the Testing plan shall be approved by BHEL.
- 6.4 **POST WELD HEAT TREATMENT**
- 6.5 Post weld heat treatment (PWHT) of the welded test plate shall be carried out at 600 - 610 °C for 9 hours, followed by 3 cycles at 600 – 610 °C for 3 hours each as shown below. Rate of heating and cooling shall be 30°C±5°C / hour.



PWHT cycle for the welded test plate

6.6 **NON-DESTRUCTIVE TESTING**

6.7 **Visual Examination**

The welded surface shall be free from craters, cracks, slag, blow holes.

6.8 **Liquid Penetrant Testing (LPT)**

- 6.8.1 The final machined surface of weld deposit shall be subjected to surface crack examination by LPT as per Annexure II and test result shall be reported as per suggested format given in Annexure III. Tests shall be carried out in as welded and PWHT condition. Acceptance shall be as per Annex II.

6.9 **Ultrasonic Testing (UT)**

- 6.9.1 UT shall be carried out from cladding side by straight beam (using special dual crystal probes) and angle beam (using special TR longitudinal wave angle beam probes having maximum sensitivity in the cladding parent metal transition zone) scanning, refer Annexure IV. Tests to be done before & after PWHT.
- 6.9.2 Calibration shall be done as per Annexure V. All indications equal and above 50% of the reference level shall be recorded as per suggested format given in annexure VI. Acceptance shall be as per annexure IV.



6.10 CHEMICAL TEST

6.10.1 Strip electrode

The chemical composition shall be as per para 4.1.

6.10.2 Weld deposit

The chemical composition of machined weld cladding deposit at 5 mm & 7 mm thickness shall meet the requirements of Table 3. Chemical composition shall also be checked at a distance of every 1 mm beginning from the surface through the entire cladding thickness and reported.

6.11 MECHANICAL TEST

6.11.1 All the mechanical test shall be carried out as per SFA 5.9 & AWS-B4.0. The weld test coupons after PWHT shall be subjected to the mechanical tests described below and shall meet the corresponding specified requirements. The guaranteed values shall be furnished in the bid.

6.11.2 Tensile Test

6.11.3 The tensile properties shall meet the requirement of Table 4.

6.11.4 Charpy V notch impact test

Impact test of pure weld shall be carried out at +23°C and the values shall be 50J/cm² minimum of only one specimen out of three with an average of 3 specimen shall be 69J/cm².

6.11.5 Bend test

Bend test shall be carried out on specimens located transverse to the direction of cladding and bent through a mandrel of 4 times the thickness of specimen over 180°. The acceptance shall be as per Figure 3. Roll distance shall be as per ASTM E190.

6.12 METALLURGICAL TEST

6.12.1 The resistance against inter-granular corrosion (IGC) shall be determined as per ASME A262 Practice E with sensitization heat treatment. The location of specimens shall be at 7.0 mm and 5.0 mm above base metal top as shown in Figure 2. At least 4 samples are to be tested in transverse direction with 2 samples having finished machined surface at 7.0 mm (above base metal) kept in tension and for the other 2 specimens finished machined surface at 5.0 mm (above base metal) kept in tension. No crack is permitted.

6.12.2 Delta ferrite examination shall be done in as welded and PWHT condition. It shall be controlled in the range 4 to 10% in all layers in as welded condition. Delta ferrite after PWHT is only for information and shall be reported. The values shall preferably be controlled to the lower side in the above range. Inter- connected network is not acceptable.

6.12.3 Macro examination shall be done on full cross section as per ASTM E340 & E381. It shall be free from slag, porosity, cracks, gross inclusions, lack of fusion / penetration and shall show



proper buildup of layers and adequate fusion. Original photograph at 5-10X shall be provided

6.12.4 Micro examination shall be done as per ASTM-E340 & ASTM-E407 in regions of bead overlap, between two layers and weld metal base metal transition. The microstructure of weld metal must be free from micro fissures & sigma phase. Original photo micro graph at 200X to be provided and it shall show proper micro structural composition and grain formation.

6.12.5 Hardness survey shall be done across the full cross section (base metal, HAZ and cladding) as per Figure 4.

6.12.6 SURFACE CRACK EXAMINATION

6.12.7 Cladding shall be ground / machined in steps of 0.5 mm starting from 7 mm down to base metal (2 mm deep into base metal). The ground / machined surface shall be examined by liquid penetrant examination. No cracks are acceptable.

6.13 PACKING AND STORAGE

6.13.1 The flux shall be packed in watertight steel drums and sealed to ensure against damage during shipment or storage under normal tropical conditions.

6.13.2 The flux in the original unopened package shall withstand storage under tropical conditions for at least four years without such storage affecting its welding characteristics or the welding properties.

6.13.3 Vendor shall provide the instructions for flux drying, storage and conditions for recycling, re-baking etc.

6.13.4 Material safety data sheet (MSDS) for the consumable shall be sent along with CMTR.

7.0 MARKING

7.1 The outside of each drum and package in which the flux is furnished shall be legibly marked with the following information.

Vendor's name & address.

Flux classification and specification.

Brand designation (trade name).

Net weight.

Lot / Batch number, Date of manufacture.

Customer's production order number.



8.0 CERTIFIED MATERIAL TEST REPORT (CMTR)

8.1 Two copies of CMTR in English shall be dispatched along with each supply. It shall include the following information.

- 1) Purchase order number, specification number and test certificate number
- 2) Specification and classification of the consumables
- 3) Size and quantity
- 4) Batch number
- 5) Quality Assurance plan
- 6) Welding parameter used in test coupon welding.
- 7) Heat treatment chart
- 8) Material Sampling & Testing Plan indicating location of specimen
- 9) Reports of all testing & inspection as per QAP
- 10) Recommendations for reconditioning and storage

Table 1. Welding parameters for test plate

Welding sequence (WS)	Current	Voltage	Speed	layers
WS1	750 $\pm$ 50	24-28	150mm/min	1
WS2	750 $\pm$ 50	24-28	150mm/min	As required



BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPALLI-620 014

TABLE 2. MSTP FOR ELECTRODE EQ309L & EQ347 FOR CLADDING AND BUTTERING (REFER FIGURE 1 & 2 FOR SPECIMEN LAYOUT)

S. No.	Type of test	Orienta tion	Legend	Specimen size (width x thickness x length) mm	Qty Nos.	Remarks
1.	Side Bend Test	Transv erse	SB1 & SB2	40x 10 x 250	2	
2.	Corrosion Test at 5 mm from base metal top (IGCT)	Transv erse	IC1 & IC3	25 x 2 x 75	2	From pure weld metal
3.	Corrosion Test at 7 mm from base metal top (IGCT)	Transv erse	IC2 & IC4	25 x 2 x 75	2	From pure weld metal
4.	Impact Test @ +23°C	Transv erse	IP1 to IP3	10 x 10 x 55	3	Notch in pure weld metal as per Figure 1
5.	Impact Test @ +23°C	Vertica l	IP4 to IP6	10 x 10 x 55	3	Notch in middle of EQ309L layer as per Figure 1
6.	Round tensile test at Room Temperature	Longitu dinal	TR1	φ10 x 150	1	From pure weld metal
7.	Round tensile test at 350 °C	Longitu dinal	TH1	φ 10 x 150	1	From pure weld metal
8.	Round tensile test at Room Temperature	Vertica l	TR2 & TR3	φ 10 x 100	2	From transition. Gauge length center at base metal top
9.	Round tensile test at 350 °C	Vertica l	TH2 & TH3	φ 10 x 100	2	From transition. Gauge length center at base metal top
10.	Chemical Test	-	CH1	50 x 50X75	1	At every 1 mm depth from top layer
11.	Micro, Macro, Delta Ferrite Examination	Transv erse	M	50X50X100	1	Delta ferrite to be measured in each layer in as welded and PWHT conditions
12.	Hardness	Full cross section	M	Refer Figure 4	1	Base metal, HAZ and cladding
13.	Surface crack examination	-	H	150 x 100 X T	1	PT at every 0.5 mm up to 2 mm deep into the base metal
14.	Chemistry of strips EQ309L & EQ347	-	C	As per ASME Sec IIC SFA5.9	1 1	
15.	Test pieces for purchaser	Transv erse	-	100 x 400 70 x 120 100 x 210	1 1 1	Refer Figure 1 Refer Figure 1 Refer Figure 2



BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPALLI-620 014

TABLE 3. CHEMICAL COMPOSITION OF MACHINED CLADDING DEPOSIT AT 5.0 AND 7.0MM ABOVE THE BASE METAL

Element	%
Carbon	0.03 max
Manganese	2.0 max
Silicon	0.8 max
Sulphur	0.010 max
Phosphorus	0.015 max
Chromium	17.0 min.
Nickel	9.0 min.
Nitrogen	0.045 max.
Cobalt	0.05 max
Nb+Ta	8 x %C min
Molybdenum	To be reported
Copper	0.09 max
Trace Element	%
Aluminium	0.05 max.
Titanium	0.01 max.
Lead	0.001 max.
Arsenic	0.005 max.
Antimony	0.005 max.
Tin	0.005 max.
Zinc	0.005 max.
Tungsten	0.005 max.
Vanadium	0.005 max.

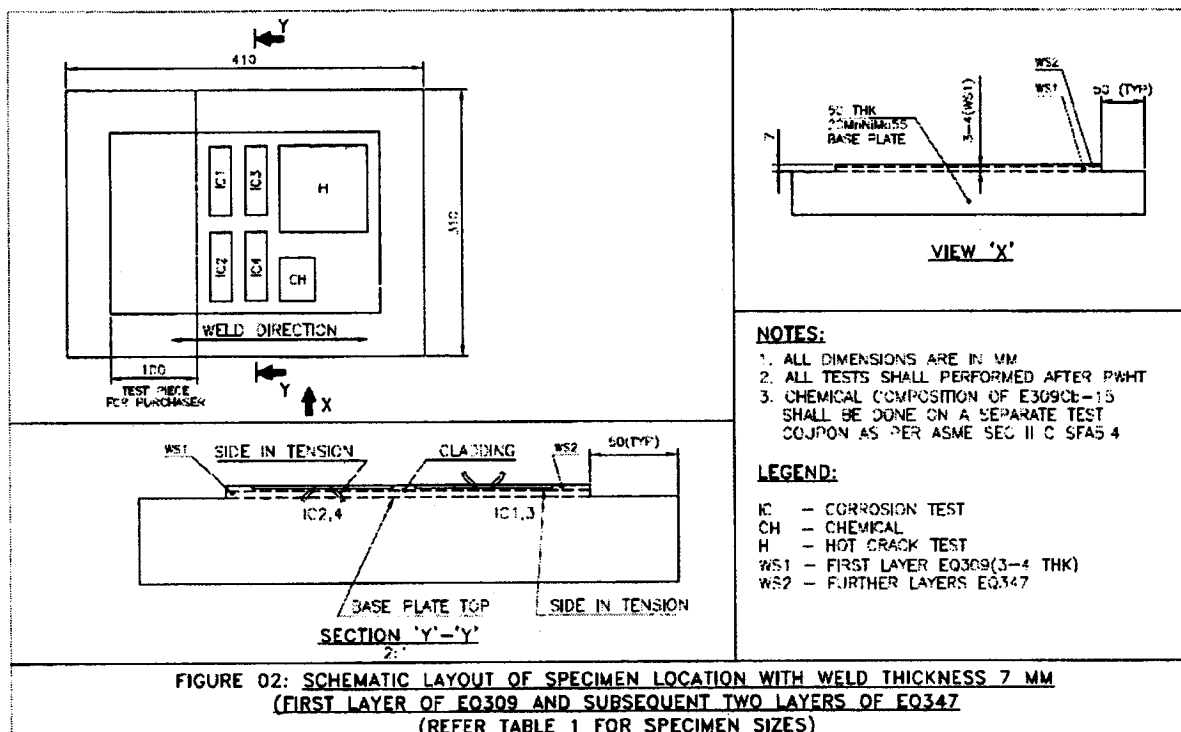
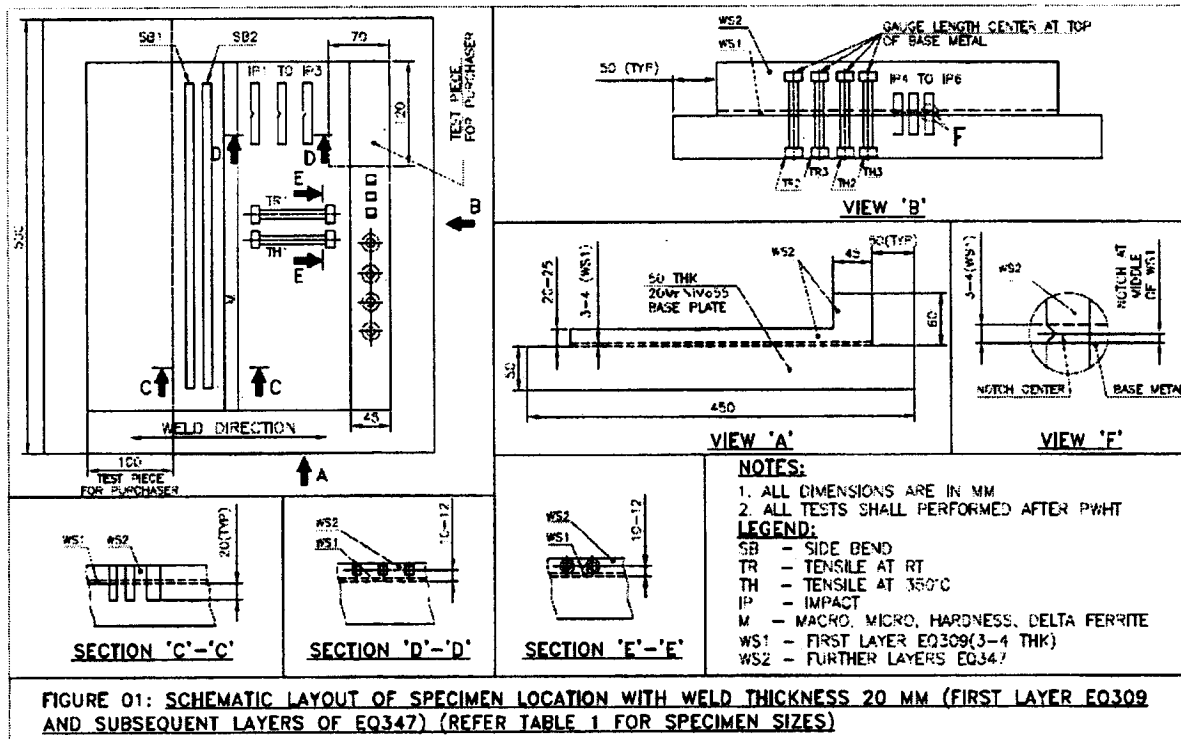
NOTE: Other trace elements like Oxygen & Hydrogen shall also be analysed & reported. These elements shall be left as low as possible. Guaranteed values of these elements shall also be indicated in the offer.

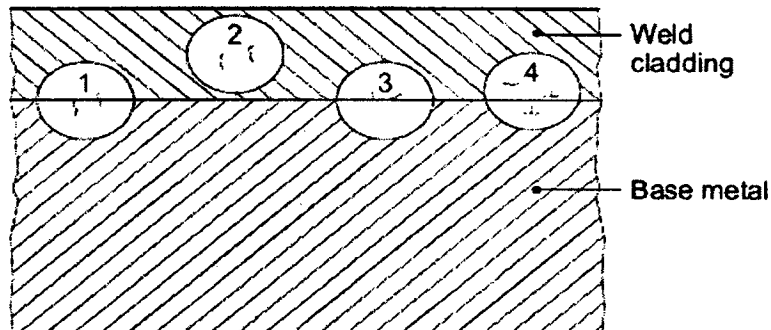
TABLE 4. TENSILE PROPERTIES OF WELD DEPOSIT

Sl. No.	Properties	RT	350° C
01	*UTS	515 MPa	452 MPa
02	*YS (0.2% Offset)	205 MPa	136 MPa
03	*Elongation on 5d(%)	30	To be reported
04	%RD	To be reported.	To be reported
*Minimum			



BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPALLI-620 014





- Defect type 1: Discontinuities affecting the base metal are not permitted if the empirical value for the elongation of the base metal is not exceeded.
- Defect type 2: Discontinuities in the weld cladding which do not contact the fusion line are permitted as isolated defects up to a length of 1.6 mm.
- Defect type 3: Discontinuities in the weld cladding which are in contact with the fusion line are permitted as isolated defects up to a length of 1.6 mm.
- Defect type 4: Discontinuities which are due to allowable structural discontinuities already existing in the unbent condition will not be rejected.

Fig. 3 –Criteria for bend test

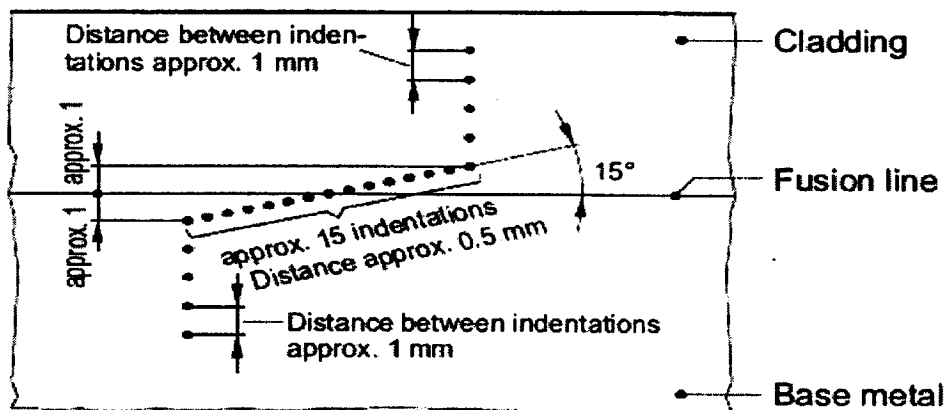


Fig.4 -Hardness measurement locations



BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPALLI-620 014

Annexure 1

QUALITY ASSURANCE PLAN

Product- Austenitic stainless steel welding strip				P.O No. & Dt		
Doc. No.						
Sl No.	Description	Type of check	Ref. document	Inspection/ Test by Vendor	TPI	Format of record
1.	Strip size	Dimension & surface finish	SFA 5.9	RR	RR	Inspection report
2.	Strip	Chemical analysis for each melt	WCPS 811A/ 04 & SFA 5.9	HP	HP	Test report
3	Flux	Dry mix / blend chemical analysis	Vendor doc.	HP	RR	-
	Flux	Particle size	WCPS 811A/04	HP	RR	Inspection Report
4.	Test plate material Spec.size-20MnMoNi 55	Chemical & mechanical properties	ASTM, WCPS 811A/ 04	RR	HP	Test Report
5.	Test assy. Welding	Welding parameters,	WCPS 811A/04 & SFA 5.14	WP	WP	Welding data sheet
6.		Bead uniformity for size & shape slag release characteristics	WCPS 811A/ 04	WP	RR	Welding data sheet
7	Simulated Heat Treatment	No. of cycles Rate of Heating / Cooling, Soaking temp. & Time	WCPS 811A/ 04	WP	Witness PWHT start & end; Review of HT Chart	HT chart



BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPALLI-620 014

Sl.No.	Description	Type of check	Ref. document	Inspection/ Test by Vendor	TPI	Format of record
8	NDE before & after PWHT	LPI on cladding machined top surface	BHEL Approved NDE procedure	WP	WP	NDE report
9.	NDE before & after PWHT	UT on Cladding	BHEL Approved NDE procedure	WP	WP	NDE report
10.	Cladding	Chemical analysis	WCPS 811A/04 , SFA 5.9	WP	WP	Test report
11.	Metallurgical tests	Tensile , side bend, macro, micro, hardness test for each batch	WCPS 811A/04 , SFA 5.9 , AWS B4.0	WP	WP	Test report
12	Surface crack examination	Sensitivity to cracking	WCPS 811A/04	WP	WP	Test report
13.	Strip, flux packing & shipping	Packing, identification	WCPS 811A/04 , SFA 5.9	HP	HP	Test certificate
14.	TC & Reports	Review	WCPS 811A/04	HP	HP	CMTR

RR- Review of reports / Records

WP- Witnessing of activity

HP- Hold point



Annexure II

LIQUID PENETRANT EXAMINATION

1.0 Scope

This specification covers procedure for liquid penetrant examination of cladding deposit.

2.0 Surface Condition

The surfaces to be examined shall be free from dirt, grease, scales, weld spatters, weld flux, oil and other extraneous matters that can interfere with the examination. The surface machined surface shall be better than 6.3 microns.

3.0 General remarks

Liquid penetrant examination shall be carried out using approved penetrants & developers. Suitability of the employed media, if not already established, shall be determined using ASME comparator block. Medium used for Liquid Penetrant Examination shall not contain halogen and sulphur more than 25 ppm each.

4.0 Procedure

4.1 Application of Penetrant

Penetrant shall be applied by means of brushing or spraying. In case, compressed air type apparatus is used for spraying the penetrant filters shall be placed on the upstream side near the air inlet to preclude contamination of the penetrant by oil, water or dirt sediments that may have collected in the lines. The entire surface shall be covered by the penetrant.

4.2 Penetration Time and Temperature

Duration of penetration and test temperature shall be in accordance with ASTM E165. Penetrant shall be applied during the period of the test to prevent drying of penetrant upon surface.

4.3 Cleaning of the test surface

When chemical solvent is being used as the cleaner. Care should be taken to ensure the penetrant is not removed from the flaws. When the cleaner is water, the pressure of the jet should be kept low. (Not exceeding 3-5 kgf/cm², and temperature below 43°C).

4.4 Application of the Developer

The developer shall be applied with spray nozzle of a spray gun. The developer shall be sprayed on the entire, test surface in such a way that a uniform thin layer is deposited.

4.5 Cleaning of the tested object

All the residual media of the liquid penetrant test shall be removed before subsequent welding operation.

4.6 Interpretation of Test results

When using the Liquid Penetrant Inspection, the interpretation shall be restricted to citing the absence or presence of flaws, their general nature, magnitude and location. Evaluation of cladding shall be performed after the time intervals of ½ hr, 1hr, 3hr & 4hr besides the initial examination after applying the developer. All the results shall be recorded in the test report.



6.0 Acceptance Standards

6.1 All indications shall be examined in terms of the acceptance standards of the referencing "Examination and Testing Specification".

6.2 Broad areas of pigmentation which could mask Indications & discontinuities are unacceptable and the areas should be cleaned and re-examined.

6.3 a) Imperfections producing the following indications are not acceptable.

- i) Any Crack or linear indications.
- ii) Rounded Indications with dimensions greater than 0.8 mm.
- iii) Chains or accumulation of pores, slags or other inclusion.

b) Rounded indication with size of 0.6 mm or more are relevant. Maximum two isolated or single indications upto 0.8 mm in 100mm weld seam shall be accepted.

c) The indication shall be considered single if the distance between defect is at least 5 times of the maximum linear length of the longer defect.

7.0 Procedure Qualification

Before application of the procedure, the vendor shall demonstrate that the procedure strictly conforms to the stipulation laid down in the preceding paragraphs.

8.0 Personnel Qualification

The examination shall be performed and the results evaluated by qualified personnel only. The personnel shall be qualified to comparable levels of competency by subjection to examination on the particular method adopted.

9.0 Report

Final report, describing the details of the technique adopted together with the analysis of the results shall be submitted by the vendor



BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPALLI-620 014

Annexure III

LIQUID PENETRANT EXAMINATION REPORT

Sl. No.	Description	Remarks
1	Certificate No. & Date	
2	Purchase Order No. & Date	
3	Customer Name	
4	Procedure reference	
5	Description of test piece	
6	Identification of test piece	
7	Material specification	
8	Description of filler metal	Specification & Brand
9	Stage of test	Before SHT/ After SHT
10	Surface condition	
11	Details of chemical used	
12	Dwell time of penetrant	
13	Dwell time of developer	
14	NDE operator level	
15	Test results	
16	Approved by - NDE level	



Annexure IV

ULTRASONIC EXAMINATION

1.0 Scope

- 1.1 This specification provides the technical requirements for the straight beam and angle beam ultrasonic examination of weld deposited cladding.
- 1.2 This specification is intended to detect defects parallel to surface and also perpendicular to surface.

2.0 Time of Examination

The final acceptance examination shall be carried out after the cladding has been subjected to heat treatment.

3.0 Surface Condition

The surface of the cladding shall be plane, free of notches and machined to a finish to ensure acoustical contact of the search unit. Waviness of surface shall be such that distance between surface and probe does not exceed 0.5 mm.

4.0 Scanning zones

Scanning shall be done over 100% of the surface with at least 10% overlap.

5.0 Examination

5.1 Equipment

- 5.1.1 Pulse Echo type of equipment generating frequencies over the range of 1 to 5 MHz shall be used.
- 5.1.2 Equipment shall be calibrated as per Cl. 5.3 before testing.
- 5.1.3 The equipment shall have proven accuracy and stability.

5.2 Search Units

The transducer dimensions shall not exceed 12 mm x 25 mm. Transmitter receiver probes (SE probes) of test frequency 2 to 4 MHz shall be used for straight beam examination.

Angle beam search units type SEL MHz "System BAM" or equivalent shall be used for angle beam examination.

The use of the search units requires Purchaser's approval. The search units shall have their maximum sensitivity at the clad/base metal interface.



5.3 Calibration

The adjustment of the pulse energy and gain shall be carried out using a Standard calibration block. The calibration block shall be made by cladding On a similar base material as that of test assembly overlaid with the same Technique as on the test assembly. A flat bottom Hole 1.5 mm in diameter.

By 38 mm minimum depth shall be drilled into the block at the clad interface as shown in sketch I for straight beam cladding. For angle beam cladding, 2mm FBH is used as shown in sketch II. The probe shall be placed over the Cladded surface and directed towards the hole. The settings of the unit shall be adjusted so that the amplification of the peak is 80% of the screen height.

5.4 Calibration of the equipment shall be done at every half an hour of the testing. When significant deviations occur, all areas which are examined after the last calibration control shall be re-examined.

5.5 After calibration of the equipment as above, the component shall be examined. Contact method and manual scanning shall be used.

5.6 The Couplant (glycerin or SAE 30 or equivalent) shall not have halogens and sulphur exceeding 25 ppm each. The same couplant shall be used for calibration and examination.

5.7 The maximum speed of testing shall be 150 mm/sec.

5.8 As far as possible, scanning shall be done at twice the amplitude setting of the calibration of defect standard.

6.0 Recording and acceptance criteria

6.1 All indications having an amplitude equal to or greater than 50% of the reference level shall be recorded. If the signal: noise ratio is less than 10dB, this is to be recorded and further activities have to be agreed upon.

6.2 All indications with a signal amplitude equal to or greater than the reference level are unacceptable.

6.3 For straight beam scanning, 30 recordable indications with a maximum continuous length of 10 mm subject to a total length of 250 mm/meter length of the scanned area are acceptable.

6.4 Whenever the indications are interpreted as cracks or debond they are Unacceptable regardless of the length and amplitude.

7.0 Final Cleaning

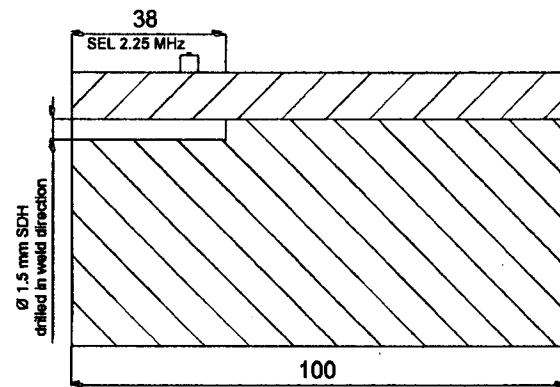
After the examination is over, the couplant shall be thoroughly cleaned and removed from the surface.

8.0 Report

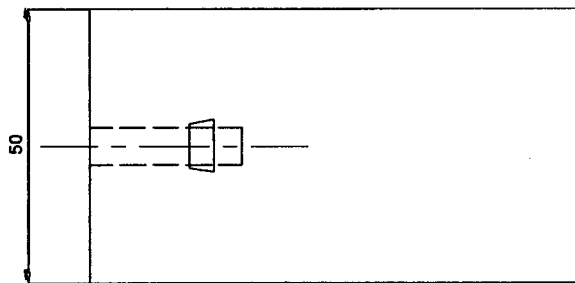
Final report describing the details of the technique adopted together with the analysis of results shall be submitted by the manufacturer.



Annexure V

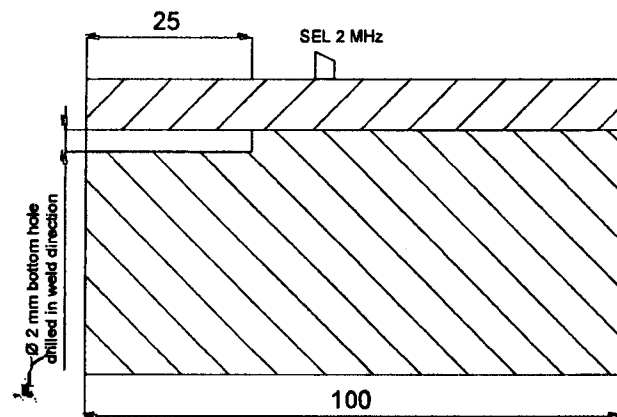


CALIBRATION BLOCK

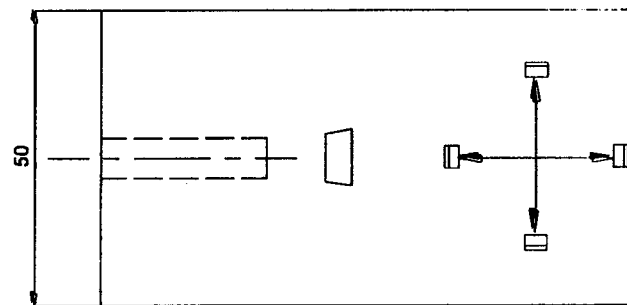


ULTRASONIC STRAIGHT BEAM EXAMINATION OF WELD DEPOSITED CLADDING

Sketch I



CALIBRATION BLOCK



ULTRASONIC ANGLE BEAM EXAMINATION OF WELD DEPOSITED CLADDING

Sketch II

	BHARAT HEAVY ELECTRICALS LIMITED TIRUCHIRAPALLI-620 014
---	--

Annexure VI

ULTRASONIC EXAMINATION TEST REPORT

S No	Description	Remarks				
1	Certificate No. & Date					
2	Work Order No.					
3	Purchase Order No.					
4	Customer Name					
5	Description of test piece					
6	Material specification					
7	Welding filler metal specification					
8	Stage of testing					
9	Ultrasonic Test Method					
10	Details of the Equipment					
Item No.	Component	Drg. No./Size (in mm)	Qty.	Job Sl. No.	Group No.	Material Specification
	Surface Condition		Type of Couplant used & Brand Name			
	Search Unit (including Sl. No.)		Scanning			
	Search Unit Size		Range (mm) of CRT			
	Frequency		Pulse Energy			
	Ultrasonic Test Standard		Amplitude			
	Acceptance Standard		Suppression			
	Applicable Procedure, Specification with Rev. No.		Type of Cable and length			
	Identification of Calibration Block		Operator Name			
	Examination Conducted Surface		NDE Qlfn LEVEL			
11	Attenuator Setting					
11a.	Attenuator Reference Standard:					
11b.	Attenuator Testing Sensitivity:					
12	Test Result					
13	Operator Name & level					
14	Approver Name & level					
15	Inspection agency remark					

TERMS AND CONDITIONS OF THE ENQUIRY

Bidders are requested to read the following points / guidelines / instructions and ensure that the offer is prepared and submitted strictly as per the requirements. Offers with insufficient details would not be considered for evaluation.

(A) SCOPE OF SUPPLY :

- Supply shall be made strictly as per the technical specifications and Pre-Qualification criteria mentioned in WCPS.

(B) PRE BID MEETING :

- A pre bid meeting will be conducted on 10th February 2017 at 2.00 PM at the following address:
Purchase Conference Hall
4th Floor, Building 24
Bharat Heavy Electricals Limited
Tiruchirapalli – 620014
Tamilnadu, India
- All prospective bidders, who intend to participate in the tender, may attend the pre bid meeting at their own cost. BHEL will not provide any lodging or boarding facilities to the bidders coming to attend the pre bid meeting
- The purpose of the pre bid meeting is to clarify any concerns of bidders about the tender requirements.
- The bidder, if interested to attend the pre bid meeting, shall send the details of the representatives by Email before 9th February 2017, 2.00 pm to create visitor entry pass :
The Email must be sent to the following two Email IDs only:
shrivastava@bheltry.co.in
akumar@bheltry.co.in

The details required are Name, Company name, Designation, Mobile No., Company name and address and scanned photograph etc. All representatives must carry the authorisation letter from their company. The authorisation letter must be signed and stamped on the company letter head. No representatives will be allowed to attend the meeting without authorisation letter.

- No bidder will be allowed to attend the pre bid meeting without prior intimation.

(C) TWO PART BID SYSTEM :

- The Bidders shall submit the offer in Two Part Bid System i.e. (i) Techno-Commercial Bid and (ii) Price Bid.
- Techno-Commercial Bid should contain the following details:
Complete scope of supply and confirmation to all points of WCPS
Confirmation of Tender Quantity
Duly Filled Annexure-B

Techno-Commercial bid shall be put in a cover (1) and super scribed as "Techno-Commercial Bid" for Enquiry No:Dt:Due Dt:

- Price Bid: Containing the price details as per ANNEXURE –C shall be put in a separate cover (2) and superscripted as "Price Bid" for Enquiry No:Dt:Due Dt: (Submitted in your company letter head).
- You are requested to put the above two envelopes (Techno-Commercial Bid & Price Bid) inside a separate larger sealed envelope and this envelope shall be super scribed as "Techno-Commercial Bid and Price Bid" for Enquiry No:Dt:Due Dt: Bidder's name and address shall be mentioned clearly on this envelope.
- Tenders should be free from CORRECTION AND ERASURES. Corrections if any must be attested; all amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall only be considered.

TERMS AND CONDITIONS OF THE ENQUIRY

- Please submit point wise compliance to our specifications, terms and conditions as per Annexure-B. Otherwise it will be presumed that you are accepting BHEL's terms and conditions. Please Ensure That All Terms & Conditions Should Be Indicated in The Un-Priced Bid To Be Attached With The Techno-Commercial Bid Positively.
- All pages of the bid shall be signed and stamped by the bidder

(D) LANGUAGE OF BID :

- The bid prepared by the Bidder shall be written in English language only.
- The Supplier shall bear all costs of translation, if any, to the English language and all risks of the accuracy of such translation, for documents provided by the Supplier.

(E) SUBMISSION OF OFFER :

- Your Offers should be sent to the following address only :
The Tender Opening Cell / MM
Room No. 26, Building 24, Ground Floor,
Bharat Heavy Electricals Limited
Tiruchirapalli – 620014
Tamilnadu, India
- In case personal delivery of the offer, it shall be dropped into the respective tender box after duly entering the data in the system kept in room no. 26
- Vendors are requested to avoid submission of offers through Email/Fax. In case of any unavoidable situation, offers shall be sent through E-mail to the following ID only :

tender_cell@bheltry.co.in

The Enquiry No. shall be clearly mentioned in the subject of E-mail.

- Offers received after due date and time: 02:00 pm will not be considered under any circumstances. Therefore Vendors shall ensure to submit the offers before this time.

(F) OPENING OF BIDS :

- The Purchaser will open all bids one at a time in the presence of Bidder representatives who choose to attend, as per the schedule given in invitation for bids. In the event of the specified date of Bid opening being declared a holiday for the Purchaser, the Bids shall be opened at the appointed time and location on the next working day.
- In two part system, the Price bid shall be opened only for technically acceptable (short listed) bids, found ACCEPTABLE after technical evaluation.
- Price bids of only short-listed ACCEPTABLE bidders will be opened in presence of the representatives of the bidders who decide to remain present during the bid opening. The date of opening of the price bid will be notified by Email, three days prior to price bid opening date.
- It may be noted that the dates of opening of Technical bid (Part I) and Price bid (Part II) are DIFFERENT.

(G) OFFER VALIDITY :

- Validity of offer should be minimum 120 days from the date of Tender opening. The quoted / finalized prices shall be Firm till completion of the supplies

(H) DELIVERY TERMS :

- **For Indian Bidders :**
 - The prices are to be quoted on F.O.R. BHEL Stores basis (Inclusive of Packing & Forwarding Charges). Freight and Insurance Charges shall be quoted extra in %. All the items should be supplied at BHEL Stores at your own cost. Offers with any other delivery conditions will be rejected
 - Delivery condition like Ex-works / Ex - godown / Transportation of materials through transport carriers from your works up to the transport carrier's office and taking delivery of goods by BHEL from such office of transport carriers is not acceptable to us.
- **For Foreign Bidders :**

TERMS AND CONDITIONS OF THE ENQUIRY

- Bidders should submit their offer for CFR / Chennai Seaport basis with freight break up details and Place of delivery – INTVT6 – CONCOR ICD.
- PORT OF LOADING SHOULD BE INDICATED WITHOUT FAIL.
- PORT OF DISCHARGE should be CHENNAI and PLACE OF DELIVERY - INTVT6 – CONCOR ICD

CONTAINERIZED CARGO

- For CFR terms, moved through CONTAINERS (Suppliers should clearly specify this in their offer) it would be presumed by BHEL that the freight charges quoted is on LILO (LINER IN LINER OUT) basis including extra charges, if any, like Container Imbalance Charges, Trade Imbalance charges or any other charges payable to the Liner. No other charges other than the quoted Freight rate will be paid by BHEL excepting applicable Terminal Handling Charges, Container cleaning Charges, DO charges to Shipping Liner at Discharge Port. 14 FREE DAYS FOR Container detention shall be provided. If any deviation is taken by Tenderer, a loading of 22% on the freight rate per MT shall be considered by BHEL for arriving at the Total landed Cost.
- In case of shipment through Containers on CFR basis, the BL should bear the endorsement that "14 free days for Container Detention is applicable".
- Place of delivery – INTVT6 – CONCOR ICD should be clearly specified in the Bill of Lading.

BREAKBULK CARGO

- For CFR terms, moved through BREAK BULK BASIS (Suppliers should clearly specify this in their offer) it would be presumed by BHEL that the freight charges quoted is on LILO (LINER IN LINER OUT) basis.
- Place of delivery – INTVT6 – CONCOR ICD should be clearly specified in the Bill of Lading.

(I) PAYMENT TERMS :

▪ **For Indian Bidders :**

- Payment term is "100% direct EFT payment after 45 days from the date of receipt and acceptance of materials at BHEL Stores".
- The duplicate copy of the invoice meant for the transporters should accompany the material as stipulated under C.E. rules 52a and 173c (or) 57gg. A Photostat copy of the above invoice for each Delivery Chelan should be submitted along with the original bills routed through bank or submitted directly to BHEL finance department.
- Any deviation in the above payment term will attract loading as mentioned below. "Base rate of SBI (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders.
- Payment through bank is not preferred. In case of payment through bank is opted by supplier, BHEL prefers documents submission through bank with copy of LR and door delivery of goods to site/stores with consignee copy attached. In this case loading will be 3% on the offered value.
- Offers of indigenous Suppliers with payment terms as LC / Advance Payment etc. will be rejected.

▪ **For Foreign Bidders :**

- BHEL Payment term is 100% payment on CAD basis after 45 days from the date of receipt of documents, specified in PO, at BHEL bank. Respective bank charges to respective account.

TERMS AND CONDITIONS OF THE ENQUIRY

- Any deviation in the above payment term will attract loading as mentioned below :
"Base rate of SBI (as applicable on the date of bid opening. Techno Commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders.
- If the LC payment is insisted, TWO sets of original TCs to be submitted prior to dispatch and a certificate to that effect from BHEL should form a part of the documents to be negotiated. If this condition is not complied by the vendor, the offer is liable for rejection.
- In the case of Usance LCs the loading will be considered @ 1.5% on the offered Value.
- For LC at sight the loading will be considered @ 3.5% on the offered Value.
- Offers with payment terms as Advance payment, CAD at sight and Confirmed LCs will be rejected.

(J) LIQUIDITY DAMAGES / PENALTY :

The delivery of the goods specified in the purchase order should be made within the time prescribed. Where the seller supplies or despatches the goods beyond the delivery period, Liquidity damages will be applicable as mentioned below:

- Liquidated damages shall be 0.5% of the total order value per week or part thereof subject to a maximum of 10% of the total order value
- For staggered delivery schedule, LD shall be 0.5% of the undelivered portion per week of the delay or part there of subject to a maximum of 10% of the total order value.
- Any deviation from the above LD clause, loading will be applied to the extent to which it is not agreed by the bidder (at offered value)

(K) RISK PURCHASE CLAUSE :

- 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 therefore. 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 our LD clause. Offers with Non-acceptance to Risk Purchase Clause will be rejected

(L) TENDER EVALUATION :

- Tender evaluation will be carried out on the basis of Technical Specifications and Commercial Terms and Conditions specified in the tender documents and changes thereof (if any) will be communicated to all bidders before Price Bid Opening.
- The Tender will be evaluated on total package basis.

(M) COST EVALUATION :

- Evaluation will be done on the basis of "Total landed cost to BHEL".
- For evaluation, the exchange rate (TT selling rate of SBI) on the date of Part-I bid opening shall be considered. If the relevant day happens to be a bank holiday, then the forex rate as on the previous working day shall be considered.
- For Indian bidders, the cost of BHEL witnessing for batch testing & inspection at vendor's works will be loaded during cost evaluation.
- BHEL will consider the ranking after the loading is applied as referred above, wherever deviations are observed
- Ranking (L-1, L-2 etc.) will be done only for the Techno-Commercially acceptable offers.
- In the event of more than one vendor becoming L-1 the enquiry quantity will be shared equally among all the L1 vendors.

TERMS AND CONDITIONS OF THE ENQUIRY

- BHEL reserves the right to increase or decrease the tender quantity and split up the tender quantity among more than one vendor at the lowest acceptable price to BHEL and place order accordingly in any proportion at our own discretion.

(N) TAXES AND DUTIES :

All Taxes, Duties, Service Taxes etc. payable as extra to the quoted price should be specifically stated in offers along with CST & TIN No / Tariff No. etc., failing which BHEL will not be liable for payment of such Taxes and Duties. Our TIN No. , CST No. BHEL ECC No. IE Code and Assessment circle for the particular BHEL Unit will be notified at the time of ordering. The original Excise Duty Gate Pass will be required to be furnished in case Excise Duty is applicable.

(O) TEST CERTIFICATE :

The supplier shall submit the Test Certificate as per WCPS and Annexure-D during order execution.

(P) INDIAN AGENTS OF FOREIGN SUPPLIERS :

- BHEL shall deal directly with foreign vendors, wherever required, for procurement of goods. However, if the foreign principal desires to avail of the services of an Indian agent, then the foreign principal should ensure compliance to regulatory guidelines - which require mandatory submission of an Agency Agreement
- It shall be incumbent on the Indian agent and the foreign principal to adhere to the relevant guidelines of Government of India, issued from time to time.
- If the offer is submitted by Agents, duly signed agency agreement shall be submitted along with the offer in Techno-Commercial bid. The Agency Agreement should specify the precise relationship between the foreign OEM / foreign principal and their Indian agent and their mutual interest in the business. All services to be rendered by agent/ associate, whether of general nature or in relation to the particular contract, must be clearly stated by the foreign supplier/ Indian agent. Any payment, which the agent or associate receives in India or abroad from the OEM, whether as commission or as a general retainer fee should be brought on record in the Agreement and be made explicit in order to ensure compliance to laws of the country.
- Any agency commission to be paid by BHEL to the Indian agent shall be in Indian currency only.
- Tax deduction at source is applicable to the agency commission paid to the Indian agent as per the prevailing rules.
- In the absence of any agency agreement, BHEL shall not deal with any Indian agent (authorized representatives / associate / consultant, or by whatever name called) and shall deal directly with the foreign principal only for all correspondence and business purposes.
- The supply and execution of the Purchase Order (including indigenous supplies/ service) shall be in the scope of the OEM/ foreign principal. The OEM/ foreign principal should submit their offer inclusive of all indigenous supplies/ services and evaluation will be based on 'total cost to BHEL'. In case OEM/ foreign principal recommends placement of order(s) on Indian supplier(s)/ agent on their behalf, the credentials/ capacity/ capability of the Indian supplier(s)/ agent to make the supplies/ services will be checked by BHEL, before opening of price bids. It will be the responsibility of the OEM/ foreign principal to get acquainted with the evaluation requirements of Indian supplier/ agent as per SEARP available on www.bhel.com.
The responsibility for successful execution of the contract lies with the OEM/ foreign principal.
- Either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item in the same tender. If offer is received by both Indian agent and Principal/OEM, then the offer from Principal/OEM only will be considered.

TERMS AND CONDITIONS OF THE ENQUIRY

- If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit bid on behalf of another Principal/OEM for the same item. If an agent submits bid on behalf of more than one Principal/OEM for a single item, his offer will be completely rejected for the concerned item.

(Q) PACKING AND MARKING :

- The supplier shall arrange for securely protecting and packing the material to avoid loss or damages during transit.

(R) ARBITRATION :

Any dispute arising out of or in connection with this Tender shall be finally settled by binding arbitration in accordance with the Arbitration and Conciliation Act, 1996 as may be amended from time to time. Executive Director / BHEL, Trichy – 620 014 or his authorized representative shall be the Sole Arbitrator and his decision shall be final and binding on both the parties. The place of arbitration shall be Tiruchirapalli, and the language shall be English. The courts at Tiruchirapalli shall have exclusive jurisdiction on any dispute arising out of or in connection with this Agreement, if intervention of court is warranted, subject to the arbitration provided above.

(S) FRAUD PREVENTION POLICY :

The bidder along with its associate/ collaborators/. sub-contractors/ sub-vendors/ consultants/ service providers shall strictly adhere to BHEL fraud prevention policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.

(T) OTHER TERMS AND CONDITIONS :

- No revision of prices will be entertained at any circumstances after tenders are opened.
- On the due date of tender opening, only the Techno-commercial bids will be opened. Techno-commercial bids will be evaluated by us and clarifications required, if any, will be called from the bidders on technical and commercial points.
- 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.
- BHEL reserves the right to negotiate or refloat the tender opened, if L1 price is not the lowest acceptable price to BHEL due to inter-alia other reasons.
- The correspondence between the bidder and BHEL through Email is considered as valid document Legally though 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.
- The quality of the supplies should strictly conform to Technical specifications applicable for the item. The offer should specifically confirm this.
- If any quality problem is pointed out by BHEL w.r.t. supplied material, the same shall be settled and corrected immediately by the supplier. If the material cannot be accepted by BHEL, supplier has to replace the material with no extra cost. Collection of rejected material will be sole responsibility of the supplier.
- BHEL shall be at liberty to accept any tender, part or in full, at their discretion without giving any reason.
- BHEL shall be at liberty to cancel the tender at any stage, without giving any reasons.
- BHEL reserves its right to reject a tender due to unsatisfactory past performance in the execution of a contract at any of BHEL projects / Units.
- For any clarifications, you may contact to the following Email IDs :
akumar@bheltry.co.in
shrivastava@bheltry.co.in

ANNEXURE – B

BHEL COMMERCIAL TERMS AND CONDITIONS

(a) TECHNICAL TERMS CONFIRMATION (TO BE SUBMITTED IN COVER NO: 1)

ENQ S. NO.	BHEL SPECIFICATIONS	VENDOR'S SPECIFICATION	Quantity (Kg)	Consignment weight against each item separately	whether quoted/ not quoted
10					
20					
30					

(b) COMMERCIAL TERMS CONFIRMATION (TO BE SUBMITTED IN COVER NO: 1)

SL NO	DESCRIPTION	BHEL REQUIREMENTS	SUPPLIER CONFIRMATION
1	VALIDITY	MINIMUM 120 Days from Date of tender opening	
2	PRICE QUOTED	As per Clause (H) of Annexure-A	
3	EXCISE DUTY WITH CESS (Whether inclusive (or) extra) Clearly mention the percentage	SUPPLIER TO QUOTE. ED Invoice to be submitted for availing CENVAT benefit.	
4	VAT % Clearly mention the percentage	SUPPLIER TO QUOTE	
5	CST % against form 'C' Clearly mention the percentage	SUPPLIER TO QUOTE	
6	FREIGHT & INSURANCE CHARGES FOR DELIVERY AT BHEL STORES – FOR INDIAN BIDDER	SUPPLIER TO QUOTE IN % OF BASIC PRICE ONLY	
7	FREIGHT & INSURANCE CHARGES FOR DELIVERY AT CHENNAI SEAPORT – FOR FOREIGN BIDDER	SUPPLIER TO QUOTE IN % OF BASIC PRICE ONLY	
7	DEIVERY SCHEDULE FROM THE DATE OF PURCHASE ORDER / LETTER OF INTENT	SUPPLIER TO QUOTE IN NO. OF DAYS / WEEKS	
8	PAYMENT TERMS	As per Clause (I) of Annexure-A	
9	LIQUIDATED DAMAGES CLAUSE	As per Clause (J) of Annexure-A	
10	RISK PURCHASE CLAUSE	As per Clause (K) of Annexure-A	

ANNEXURE – B**BHEL COMMERCIAL TERMS AND CONDITIONS**

11	TEST CERTIFICATE	To be submitted during order execution	
12.	ORIGIN OF DISPATCH	SUPPLIER TO QUOTE	
13.	PORT OF LOADING – FOR FOREIGN BIDDER	SUPPLIER TO QUOTE	
14	CURRENCY – FOR FOREIGN BIDDER	SUPPLIER TO QUOTE	
15.	CONTACT PERSON DETAILS	NAME:	
		MOBILE NO:	
		LAND LINE NO:	
		EMAIL :	
		FAX:	

NOTE:

a). It is confirmed that all the terms and conditions stipulated in the Enquiry have been fully understood by us and all clarifications & details have been obtained.

b). No row shall be left blank. Please indicate NA, in case the item is "not applicable"

Full postal Address:

Signature & Office Seal of the Vendor

ANNEXURE – C
PRICE BID FORMAT

ENQ SL NO	BHEL SPECIFICATIONS	VENDOR'S SPECIFICATION	Quantity (Kg)	Basic Price per Piece	Total Value
10					
20					
30					

NOTE :

**IF YOU HAVE NOT QUOTED FOR ANY ITEM, YOU SHOULD MENTION AS “NOT QUOTED”
AGAINST THAT ENQ SL NO. (SUBMITTED IN SEPARATE COVER NO: 2)**

Full postal Address:

Signature & Office Seal of the Vendor

ANNEXURE - D
REQUIREMENTS OF TEST CERTIFICATE

1. A Test Certificate for every batch of consumable, indicating the actual results of the testing for that batch, shall be submitted by the vendor. The TC, in general, shall comprise of Certified Material Test Report (CMTR), supported by test reports for each test.
2. Each page of the Test Certificate shall be signed by vendor's quality representative and the inspecting agency. The inspection authority shall clearly indicate whether the test has been witnessed/reviewed. The name and designation of the signing authority and date shall be clearly visible below the signature.
3. Each test report shall compulsorily list the following:
 - 3.1. Identifying reference number of the test report
 - 3.2. Batch number and/or Heat number and quantity
 - 3.3. Classification of consumable as per ASME Sec IIC, Brand name and size of the consumable
 - 3.4. Buyer's Purchase Order(PO) reference
 - 3.5. Identification of testing center/Laboratory where the test is conducted
 - 3.6. Date of conduct of test
 - 3.7. Standard/Code followed for that test
 - 3.8. Test done in As Welded (AW) or Post Weld Heat Treated (PWHT) state
 - 3.9. Testing Equipment make/model and its capacity
 - 3.10. Calibration status of testing equipment
 - 3.11. Specimen identification and size
 - 3.12. Acceptance criteria
 - 3.13. Actual test results obtained during the test
 - 3.14. Remarks – indicating whether the test results are acceptable/not acceptable.
4. Each test report shall be linked to the Quality Assurance Plan (QAP) against the relevant stage of testing. The QAP shall be signed by inspection authority to ensure that all stages of testing and inspection have been completed before giving final clearance for the batch.
5. The Heat Treatment (HT) chart shall be signed by inspecting authority at the start and end of the heat treatment.
6. The TC for the base material used for the consumable qualification shall also be attached along with the consumable TC.