 An ISO Company	<b>BHARAT HEAVY ELECTRICALS LIMITED</b> (A Government of India Undertaking) பாரதமிகுமின் நிறுவனம் <b>BOILER AUXILIARIES PLANT,</b> Indira Gandhi Industrial Complex, <b>RANIPET- 632 406 (Tamil Nadu)</b>	Ph: 04172-284030, 284158,284323, 241170 Email:- <a href="mailto:bsmanian@bhel.in">bsmanian@bhel.in</a> <a href="mailto:ssvasan@bhel.in">ssvasan@bhel.in</a>
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## **SECTION I**

### **NOTICE INVITING TENDER (NIT)**

(This is only a request for an offer and not a Contract)

**Sealed Tenders are hereby invited from experienced Firms located within 350 km by Road from BHEL, Ranipet for Rolling (Shell formation) and welding of 45 mm & 63 MM plate in accordance with the Technical Specification and Scope as per Annexure-H / BHEL Engineering Drawings/Quality Documents. Fabricated/Rough Machined Components will be supplied by BHEL/ Ranipet as free issue.**

<b>Enquiry No. &amp; Date</b>	<b>667170E - Date 11 October 2019</b>
<b>Due Date &amp; Time for Submission Of Offer</b>	<b>01.11.2019 Prior to 09.45 AM</b>
<b>Date &amp; Time for Tender Opening (Other than Price Bid)</b>	<b>01.11.2019 by 10.00 AM</b>
<b>Place Of Submission Of Offer</b>	At <b>Tender Box</b> located in Outsourcing department, Third Floor, Administrative Building, BAP/BHEL/Ranipet-632406.
<b>Place Of Tender Opening</b>	Outsourcing Department at Third Floor, Administrative Building, BAP/BHEL/Ranipet

Tender specifies a set of prequalification criteria defining the eligibility for the vendors to quote against a particular item of this tender. The Bidders are advised to go through all the enclosed Tender documents terms & conditions detailed under **Sections I to VI, Annexures- A to L**, carefully before submitting their Offer.

All the **Annexures A to Annexure-L** should be filled, wherever applicable by the bidders without fail for evaluation of their offer and **all necessary supporting documents** as required are to be attached.

The bid shall be submitted in Two parts namely (1) Techno Commercial Bid and (2) Price Bid.


Kindly refer to the **Section-IV** – General Terms and Conditions of the tender for detailed procedure for submission of offers.

**Kindly refer to Annexure-B and Annexure-H for the detailed eligibility criteria and scope. If vendor is not meeting the eligibility criteria as per Annexure-B, they are not eligible to quote and need not quote for this tender.** Sealed Tenders are hereby invited from experienced firms for the above scope.

#### **Contact details / address for any clarification and for Offer submission.**

Manager-(Contracts-LDPP)  
Outsourcing Department, Boiler Auxiliaries Plant  
Bharat Heavy Electricals Limited, ,Ranipet-632406  
Phone : 04172-284030, 284158, 241170, 284323  
E-Mail : [bsmanian@bhel.in](mailto:bsmanian@bhel.in) , [ssvasan@bhel.in](mailto:ssvasan@bhel.in)

Manager(Contracts)/OS

	<b>Bharat Heavy Electricals Limited</b> (A Government of India Undertaking) Boiler Auxiliaries Plant, Ranipet – 632 406		<b>☎: 04172-284030, 284158, 284323</b> <b>241170</b>
	<b>OUTSOURCING DEPARTMENT</b>		E-Mail : <a href="mailto:bsmanian@bhel.in">bsmanian@bhel.in</a> , <a href="mailto:ssvasan@bhel.in">ssvasan@bhel.in</a>
AN ISO 9000 COMPANY			
Enquiry No	<b>667170E</b>	Due Date & Time for submission of offers	<b>Prior to 09.45 Hrs</b> <b>On 01.11.2019</b>
Enq-Dated	<b>11 October 2019</b>	Date & Time of Tender opening	<b>By 10.00Hrs</b> <b>On 01.11.2019</b>
<b>SECTION II</b> <b>Techno Commercial Terms &amp; Conditions</b>			

**Sealed Tenders are hereby invited from experienced Firms located within 350 km by Road from BHEL, Ranipet for Rolling (Shell formation) and welding of 45 mm & 63 MM plate in accordance with the Technical Specification and Scope as per Annexure-H / BHEL Engineering Drawings/Quality Documents. Fabricated/Rough Machined Components will be supplied by BHEL/ Ranipet as free issue.**

**1.0 Eligibility of Vendor :** Vendor must meet the Eligibility Criteria given as **Annexure-B** else their offer will not be considered. Vendor must have the facilities specified in the **Annexure-B**.

- 1.1 For study (if required) and quoting of rates for the items given in the tender, Drawings, QWI against are kept at BHEL office for vendor study on all working days from Monday to Saturday from 09.00 Hrs to 16.00 Hrs. (up to 3 days prior to the due date for submission of tender).
- 1.2 Vendors are requested to have a perusal of these drawings, QWI, etc., before submitting their offer. **The offer has to be submitted Only in Technical Bid format** duly signed therein by the authorized person of the Firm with rubber stamp in the space provided in the format. No deviation or change from the Tender conditions will be entertained and BHEL reserves the right to reject such offers.
- 1.3 Based on the Rate finalized, the Firms shall accept and undertake all jobs awarded to them and execute to the satisfaction of BHEL. Failure to comply with this requirement will be viewed seriously.
- 1.4 BHEL will conclude that the offer has been submitted by the firm, fully understanding all the requirements both explicit and implied and other conditions and accepting the same. After tender opening, vendors do not have any right to change / alter any of the conditions either partly or fully. Offers of any such firms doing so, will be rejected.

## **2.0 FIRM RATES :**

- 2.1 Please quote **FIRM** rates per Number as called for in **Price Bid format**.
  - (a) Vendor has to quote rates for **Ex-Works** basis only.
  - (b) The rate shall be **exclusive** of the Transport Charges. Delivery of semi finished components to vendor works and Dispatch of finished goods to Shipping/Stores at BHEL, Ranipet is to BHEL scope.
  - (c) The rate shall include for protecting machined/threaded areas to avoid physical damages while handling, transportation and storage.
  - (d) The rate shall include offering the jobs for inspection to BHEL /Customer of BHEL or their authorized inspection agencies.

- 2.2 The rates shall be FIRM and not subject to any variation/escalation on any account during the validity period.
- 2.3 It may be noted that timely delivery of components is the essence of the Contract.
- 2.4 In case if the quantum of load is beyond the capacity of vendors in the opinion of BHEL or for shorter delivery requirements, BHEL reserves the right to extend/award the contract for manufacture of items covered herein to other probable new or alternative sources, without prior intimation to the vendors and BHEL's decision is final in this regard.
- 2.5 The Vendors are responsible till the Finished/Semi-finished components are safely deposited to BHEL, Ranipet. They should carefully pack, load, stack by providing wooden reapers, etc. for avoiding damage during transit and lash the consignment properly at the time of despatch so that the consignment reach the destination safely.

### **3.0 Raw Material Issues and Accounting :**

- 3.1 The weight indicated in GMS/DRG/ and or as per Scope indicated in the PO addendum will be the basis for accounting of raw materials issued. For billing conversion charges if any the weight indicated in GMS/Drawing only will be considered.
- 3.2 Any act of Vendor resulting in dishonest misappropriation or conversion of the materials so issued for his own use shall constitute the offence of Criminal Breach of Trust under Indian Penal Code and /or such other offences under any other provisions of law and the Contractee shall have every right to proceed against the Vendor under Criminal Law in order to ensure proper punishment to such perpetrator/s for the said offence/s. In such cases, BHEL shall take all necessary steps to recover the material available with those firms.
- 3.3 Movement of BHEL materials from Vendor's premises to any other Firm(s), if necessary, for the purpose of production related work shall be documented properly, signed by the sender & receiver and the same to be authenticated by the concerned OS official, otherwise such materials will be treated as shortage by BHEL Accounts.
- 3.4 Protecting the material issued by BHEL under safe custody until completing the delivery as required is vendor's responsibility.

### **4.0 Recovery for Turning and Boring Scrap:**

- 4.1 Normally the difference between the issued-weight and the net-weight is considered as off-cut/scrap. Wherever machining operation (including Drilling) is involved the difference between individual-piece-weight (ie. Blank weight ) and the finished-weight will be considered for T-and-B calculation.
- 4.2 For this tender T&B scrap is negligible and recovery may not be applicable.
- 4.3 The materials rejected due to reasons attributable to vendors like (a). Faulty workmanship, (b). Improper storage of raw material issued by BHEL (c) improper handling (d) improper packing etc. will entail recovery at prime material's cost.
- 4.4 The materials rejected due to BHEL reasons shall be returned to BHEL,Ranipet Stores failing which recovery will be made.
- 4.5 The material supplied by BHEL, Ranipet. shall properly be utilized as per the Scope in Contract/drawings/QWIs in job work order to meet the design and quality requirements of the product.

- 4.6 Failure to return the materials will entail recovery of the value of the materials plus departmental/administrative charges fixed from time to time. Currently the departmental/administrative charges are 25% for indigenous material and 50% for Imported materials on the material value. In addition, statutory taxes, duties & levies as applicable will also be recovered and no claim for refund will be admitted by BHEL, Ranipet. The rate of departmental and administrative charges as applicable from time to time irrespective of the date of failure will be applicable. Besides penal interest will be levied on the material value, for the period starting from date of issue of material.
- (a) Once the IP is closed as mentioned above no re-opening of IP except recovery from running bills will be entertained.
- (b) For this item vendor need not submit Vendor/Firm MAS (Where (a) The Unit of Issue is in "Numbers" (b) the Material type is semi-finished-components/Castings/Forgings (c) The PO Qty, Issue Qty and DC-Qty are same and (d) Not involving addition of material through MIV for the same RS-NO.
- (c) The vendor shall be bound by the accounts, statements acknowledgement of materials, BHEL material issue documents, receipts etc., wherever signed by their representative.
- 4.7 The raw material/semi finished components issued to the Vendor as free issue shall remain the property of BHEL, Ranipet. The Vendor shall use the above material only for the execution of BHEL'S contract/addenda and for no other purpose whatsoever. The Vendor shall be responsible for the full value thereof to be assessed by BHEL, Ranipet whose decision shall be binding on the Vendor. The Vendor shall be liable for the loss or damage to such property while such property is in the possession or under the control of the Vendor, their employees, workmen, representatives or agents or any other person connected with the Vendor.
- 4.8 All the materials of BHEL, Ranipet shall under no circumstance be hypothecated/leased/liened /encumbered to any bank or to any lending Institution or to any party whomsoever. It should not also be shown as the Vendor's assets in any of the statements of the Vendor to any party.
- 4.9 The Vendor shall, whenever required, produce the materials supplied as free issue by BHEL, Ranipet in the form of raw material, semi finished or fully completed boiler components to BHEL officials visiting the Vendor's unit for verification purposes. If the Vendor fails to produce or properly account the material so issued, BHEL, Ranipet will have the right to take further action as deemed fit including recovery of the value of materials along with the respective administrative charges and statutory levies from the running bills of the Vendor (with BHEL,Ranipet and with other Units of BHEL) and also any or all of the actions such as, Suspension of business dealing, temporary suspension of loading, termination of Contract, holding the payment due etc., Similarly for the claim made by any units of BHEL (on account of such vendor) to the BHEL,Ranipet, the Bank Guarantee submitted to BHEL,Ranipet will be encashed.
- 4.10 As and when required/applicable, BHEL, Ranipet will transfer(or advice for returning u/RSV) the balance material available from one Vendor to the other vendor/other IP of the same vendor. For this, necessary credit will be given in material accounting, the material transfer emanating from Outsourcing, BHEL, Ranipet is to be honored by the Vendor within 15days or otherwise recovery will be made at the prime material cost., Any difficulty for effecting such transfer shall be brought to the knowledge of OS/ BHEL, Ranipet officials immediately.
- 4.11 Raw materials will be loaded by BHEL, Ranipet either in lorries/trailers/ bullock carts and can be overseen by Vendor's representative at BHEL Stores / Shop. Shortage or variation in quantity, size and weight shall not be accepted once the material leaves BHEL, Ranipet Stores. Raw materials will be issued by BHEL, Ranipet, only after the receipt of necessary Bank Guarantee.
- 4.12 Where an entity (whether a proprietorship, partnership, company, Hindus Undivided Family or otherwise) commits a default or breaches the Contract and the proprietor/ partner/ director/

member of such entity is also a proprietor/ partner/ director/ member of another entity that is registered with BHEL (in Ranipet or any other unit of BHEL), BHEL shall have the right to recover losses due to the default or breach, whether direct, indirect or consequential, either from the defaulting/ breaching entity or the other said entity or both. Such right shall also include the right to encash any security (in any form such as but not limited to bank guarantee, demand draft, FDR, etc.) furnished by either or both entities. Without limiting the applicability of the foregoing, it shall not be a defence to the other said entity for enforcement of such a right that:

(a) Both entities are legally distinct/ separate entities, or

(b) The management of the entity/ partners/ directors/ members of such other entity were not aware that the proprietor/ partner/ director/ member of the defaulting/ breaching entity was also a proprietor/ partner/ director/ member of the other said entity.

- 4.13 The Vendor shall be bound by the accounts, statements acknowledgement of materials, receipts etc., wherever signed by their representatives.

**5.0 TRANSPORT CHARGES :** Tender calls for the offers on Ex-Works basis (ie. Freight charges are in BHEL scope and shall not include in the quoted price), hence No Transport Charges payable extra for the Raw Materials / Components collected from BHEL and return of finished items vice-versa.

- 5.1 Incase of transfer of raw material/semi-finished items from one vendor to another vendor, through IUWTV, the responsibility for collection of materials including the cost of transportation and handling etc.. shall wrest with Second Vendor.

- 5.2 No extra charges towards transport will be allowed for collection & deliveries by the vendor , since the tender is alled for Ex Works basis.

- 5.3 **Additional Transport Charges:** Transport Charges incurred by the vendor for any special intermittent operations other than specified in the Tender scope or any additional movement requested by BHEL officials in writing, the transport charges payable extra as per the Extra Rate Schedules available in Main OS contract.

- 5.4 For return of PDO materials thro RSV (PDO due to BHEL reasons like issue of faulty materials, non suitable materials, any drawing revision etc), transport charges are to BHEL account.

**6.0 PACKING:** The Vendor shall do at his cost the necessary packing for easy & safe handling and transportation as per BHEL drawing wherever specific packing arrangements are applicable and normal packing for the other items required for transit by rail/road transport wherever necessary.

**7.0 TERMS OF DELIVERY:** The price should be on "EX-WORKS" basis only (Inclusive of packing charges). The finished machining / fabrications on acceptance by BHEL, Ranipet inspector or by their authorized inspection agency shall be delivered ( transport arrangement by BHEL) to BHEL, Ranipet Stores / Shipping immediately.

## **8.0 TECHNICAL REQUIREMENTS :**

- 8.1 The fabrication shall strictly confirm to the dimensions and tolerances indicated in the drawings/QWI/Standard quality pan as Listed under Section VI. Care must be taken to adhere strictly to the NOTES given in the drawings/Contract. It should be ensured that actual dimensions, and deviations if any, are recorded properly in the D.R. books and preserved at least for 5 years. The same shall be made available to BHEL Officials or their authorized agencies.

- 8.2 **Welders and welding procedures are to be qualified as per AWS D1.1 before commencement of production welding.**
- 8.3 **Conducting MPI/LPI & other NDT wherever called for in the Drawings/QWIs/ Quality Plans are in the scope of vendor (cost is in the scope of vendor)**
- 8.4 **Ultrasonic Testing & Radiographic testing if required are to be carried out in BHEL approved agency. List of approved agencies for MPI/RT and consumables are given in Section VI. In case there is no approved agency near vendor's works, vendor has to locate suitable agency for RT, MPI, LPI and UT and get them approved by BHEL before commencing the job. The Vendor shall have in house LPI, MPI facilities (equipment's and qualified personnel).**
- 8.5 Any other work carried out outside the requirements of drawings/QWIs shall have the prior approval of the competent authority of Outsourcing / BHEL, Ranipet.
- 8.6 Adequate facilities like welding equipment's, baking oven, handling facilities, measuring instruments as called for, must be available duly calibrated and kept with the Vendor for the manufacture of boiler components. All the above basic machining / fabrication facilities/equipments must be under working condition and the same be made available for verification by the BHEL officials or their authorized agencies whenever they are called for.

The instrument/gauges are to be calibrated periodically

Calibration status shall be displayed at the Vendors works in a conspicuous location. Calibration can be performed either at BHEL or at any Govt. approved labs traceable to National Standards.

#### 9.0 **INSPECTION:**

- 9.1 Inspection of fabrications/Machinings (conversion work) shall be by BHEL Quality control department and/or by the customers and/or by an agency or persons authorized by BHEL, Ranipet at the Vendor's works including Self Inspection firms. Selected firms shall be approved by competent authority authorizing self inspection. The concerned Engineer/supervisor/Authorized Official of the firm authorized by the firm to carry out all Inspection activities and their authority/activities shall be on par with any other Inspection agency approved by BHEL. All facilities and equipments, calibrated instruments like tapes, thread checking gauges upto M20, and bore dial gauges and bits up to 100 mm. and standard gauges required for inspection shall be provided by the Vendor free of cost.
- 9.2 BHEL representatives/authorized agencies will have free access to the Vendor's works at any time during the execution of job work orders as well as for verification of requisite documents/materials. (The requirement of Customer approved quality plan will be indicated in the PO/Addenda).
- 9.3 The semi-finished components are deemed to have been accepted as ready for delivery only after IR is released by the Inspecting Agency.
- 9.4 Statutory inspection requirements such as IBR/External Inspection agency requirements if any, are to be met by the Vendor.

#### 10.0 **PAYMENTS :**

- 10.1 Payment will be made for IP wise 100% for the supplies made against submission of Vendor invoices in duplicate to Finance section furnishing the job work order Sl. No., W.O., IR & DC No. along with IR, giving details of work carried out as per Extra Rate Schedule applicable, if any supported by
- (a) Stores Receipt Voucher in case of Stock Work Order items.
  - (b) Delivery challan acknowledged by BHEL Stores.
  - (c) Inspection Report (IR)



(d) If the claim is made for more than one job work order Sl. No., only one invoice have to be submitted with annexure giving the above details.

(e) Wherever finished goods are dispatched directly to site (DTS) from fabricators works as per BHEL instructions, necessary formalities to be followed as per BHEL conditions stipulated from time to time . Also in such DTS cases, the documents like copy of DC, Lorry Way Bill etc shall be submitted along with their invoices for payment purposes.

- 10.2 The amount due to BHEL, Ranipet, if any, will also be recovered from the Vendor's running bills. No request for the refund of penalty/recovery will be entertained after final material accounting is done. Payment will make only through 'Electronic Fund transfer/RTGS Transfer'. Acceptance for the same may be submitted in the prescribed format if not done already.
- 10.3 Payment will be restricted to two bills per Work Order or Job Work Order Sl. No. only However, one more bill per month against any one of the pending Work Orders will also be permitted as a special case and this should have the prior approval by competent authority.
- 10.4 The payment shall be subject to the deduction of any amount for which the firm is liable indirectly under this contract or any other contract of the firm or any other firm's contract where the proprietor / any of the partners / directors of the present firm is / are proprietor/director/s/partner/s, in respect of which BHEL / Ranipet is a contractee.
- 10.5 Request for delivery extension is to be made if there is a valid reason, in the format for that particular job work order Sl. No., failing which liquidated damages will automatically be levied. No request for extension/refund of penalty will be entertained there after.
- 10.6 Payment will be made in about 45 days after receipt of valid invoices raised and supported by full set of necessary documents at Accounts Department. No interest shall be payable by BHEL on any money due to the Vendor by BHEL.

#### **11.0 PROGRESS REPORT:**

The Vendor shall submit progress report from time to time and also discuss with our officials concerning the progress of the work and commitment as may be required by BHEL, Ranipet. The submission, receipt and acceptance of such reports shall not prejudice the rights of BHEL, Ranipet under the Contract nor shall operate as an estoppels against BHEL, Ranipet merely by reason of the fact that they have not taken notice of/or objected to any information contained in such reports. Action as deemed fit will be taken if the progress of the work is not satisfactory.

#### **12.0 BANK GUARANTEE :**

- 12.1 The Vendor shall execute a Bank Guarantee for the value of **Rs.2 Lakh** from any one of the Scheduled or Nationalized banks on behalf of the Vendor for the safe custody of the materials supplied by the BHEL, Ranipet as free issue and for the satisfactory performance of the Contracts. The guarantee shall be executed on a non-judicial stamp paper or value Rs. 100/- as per our standard Bank Guarantee clauses and shall be kept valid for One year & Claim period of additional THREE MONTHS over one year and extensible till final settlement of supply and payment **and BG to be submitted directly by Bankers to BHEL in a Standard format. BG format will be given by BHEL and it has to be filled in that format only. Sample form, Bankers list and Instructions for filling BG is given in Section V.**
- 12.2 In place of Bank guarantee, Fixed Deposit Receipt (FDR) drawn in favour of BHEL, Ranipet can also be furnished. **In any case BG/FDR shall be available at the time of loading the item.**
- 12.3 The Bank Guarantee should cover the recoveries to be made by BHEL towards Safe custody of Material Supplied , Scrap / Faulty workmanship, etc. also for which proper material accounting

is not made within the stipulated time and shall cover all Contracts past, present and future placed / to be placed by the BHEL, Ranipet. If the recovery amount is more than the pending bills, the difference amount to be settled immediately submitting Demand Draft in favour of BHEL/ Ranipet.

- 12.4 Loading on the vendor shall be restricted in such a way that the value of the materials to be issued and the stock of BHEL materials already available with the vendor.

### **13.0 BANK GUARANTEE NORMS ;**

- 13.1 Necessary Bank Guarantee(BG) / Fixed Deposit Receipt(FDR) should be furnished. The BG shall be kept **valid through one year PLUS 3 Months as claim period** and must be renewed in-time. It is also to be noted that the BG for the value indicated for each Firm shall be made available with BHEL at the time of loading, failing which Firm will not be considered.

The required Bank Guarantee shall be submitted with in 7 Days of finalization of the order, else the non submission of BG will be treated as " *not honoring his own offer or any of the condition* " stated/agreed in the tender and declared fit for taking penal action by BHEL as per "*Suspension of Business dealings*".

- 13.2 The release of orders by BHEL, Ranipet shall be on the strength of Bank Guarantee for the safe custody of raw materials issued by BHEL, Ranipet as free issue.
- 13.3 BHEL reserves the right to increase the value of BG/FDR depending on the material availability with the vendor from time to time. For placement of PO/addendum, if available BG is short of the required BG value, the same will be intimated to the vendor to submit additional BG. The vendor shall arrange for the required BG within 15 days from the date of receiving such intimation from BHEL. If the vendor does not submit the required BG within 15 days, then the loading quantity may be reduced / diverted to other firms. After completion of that particular order, the vendors can request for return of BG (other than base BG) and the same shall be considered by BHEL.
- 13.4 The base BG shall be returned by BHEL after 90 days from the date of final bill submission or ARC validity period whichever is later.

### **14.0 GUARANTEE OF FABRICATION / MACHINING:**

The Vendor shall warrant that the conversion work comply fully with the drawings and other technical conditions. If the jobs are found defective owing to reasons attributable to the vendors like faulty workmanship / incomplete work within a period of eighteen months from the date of handing over to BHEL, the Vendor shall make good of it / replace the same free of cost. Alternatively, the rework / replacement charges will be recovered from the Vendor.

### **15.0 LIQUIDATED DAMAGES and RISK PURCHASE:**

- 15.1 The semi-finished jobs/fabrications/Machining on acceptance by BHEL, Ranipet inspector or by their authorized inspection agency, shall have to be delivered to BHEL, Ranipet Stores / Finishing Bay immediately on or before the delivery date stipulated in the addendum. Where the Vendor supplied the finished machining / fabrications beyond the delivery date stipulated in the addendum, liquidated damages at the rate of **½%** of the value (Conversion Cost) of the assemblies delayed for each week or part thereof will be levied subject to a maximum of **10%** value of the particular Work Order in the addendum to the Contract without prejudice to any other relief or compensation to the BHEL, Ranipet under any other conditions of the Purchase Contract.
- 15.2 Further, BHEL, Ranipet will get these items fabricated elsewhere, without notice to the Vendor on the account and at the cost and risk of the Vendor, the jobs not so delivered without canceling the Contract in respect of installments of machining / fabrications not yet due for delivery or cancel the Contract or a portion thereof and, if so desired, fabricate elsewhere at the cost and risk and account of the Vendor. Any additional expenditure incurred by BHEL on this account shall be recovered from the Vendor.



- 15.3 Delivery shall be fixed by BHEL for each JWO on project requirement and product lead time.
- 15.4 Where delivery extension is sought with waiver of penalty, the same should be applied to OS with justification and approval to be obtained before submission of bills and two copies of such letters (One for Accounts & One for OS Department) are to be enclosed along with all the bills. Failure to comply with this requirement will result in recovery of penalty while processing the bills for payment from the same bill and no claims for refund of liquidated damages will be entertained there after.
- 15.5 Reasons like power cut, Labour Issue, Machine Break-down etc., which are controllable by the vendors shall not be accepted as reasons for delay for delivery extension purposes. No compensation shall be given to the Vendors, in case of cancellation/diversion of POS beyond the delivery Due Date, even if the Jobs have been processed partly.

**16.0 ACTION AND COMPENSATION IN CASE OF BAD WORKMANSHIP:**

If any work has been executed with unsound, imperfect or bad workmanship or with materials of inferior quality, the Vendor shall on demand in writing from BHEL specifying the work, material/articles complained of, notwithstanding that the same may have been passed, certified and paid for, forthwith, rectify the work so specified in whole or in part as the case may require, at their own cost and in the event of his failure to do so within reasonable period. BHEL will rectify or remove and re-execute the work at the risk and expense of the Vendor.

**17.0 COMPENSATION AGAINST DAMAGE OF MACHINERY/TOOLS AND GAUGES SUPPLIED:**

- 17.1 BHEL reserves the right to claim adequate compensation from the Vendor on account of any damage caused to the machinery / equipment / tools and gauges supplied to them for execution of work, due to careless or faulty handling or negligence on the part of the Vendor. The total cost of recovery will be decided by BHEL.
- 17.2 BHEL shall have general supervision and direction over the work, BHEL has the authority to stop the work, whenever such stoppage may be necessary to ensure the proper execution of the Contract. BHEL shall also have the authority to reject all the works which do not confirm to the specification, to direct the application of forces to any portion of the work as, in their judgment is required, and order the force increase or decrease and to decide on the issues which arise in the execution of the work.
- 17.3 BHEL reserves the right to suspend the work or part thereof put a hold on further loading to the Vendor at any time for any reason at its discretion and no claim whatsoever on this account will be entertained.

**18.0 SUBLETTING :**

- 18.1 The Vendor shall not sublet or assign this Contract or any part thereof without the written permission of BHEL, RANIPET. Subletting or assigning this Contract or any part thereof without such permission BHEL, Ranipet shall be entitled to cancel the Contract and to execute the conversion work elsewhere at the risk and cost of the Vendor and the Vendor shall be liable for any loss or damage which BHEL, Ranipet may sustain in consequence of or arising out of such machining / fabrication elsewhere and also cancellation of registration/temporary suspension of further loading.
- 18.2 "Movement of BHEL materials from our Vendor's premises to any other Firm(s), if necessary, for the purpose of production related work shall be documented properly, signed by the sender & receiver and the same to be authenticated by the concerned OS official, otherwise such materials will be treated as shortage by Accounts".
- 18.3 These intermediate operations are to be carried out only at the approved sources and addition/deletion to this list will be indicated to the vendors then and there.

## **19.0 TAXES AND DUTIES:**

- 19.1.1 Taxes and duties as applicable from time to time, shall be paid extra over the quoted rates. (as per latest GST guidelines)
- 19.1.2 Vendors should provide a valid GST registration number and the same should be clearly mentioned in the offer. If any specific exemption is available, a declaration with due supporting documents need to be furnished for considering the offer. Vendor should get themselves registered and obtain a valid GST registration number as per the GST guidelines.
- 19.1.3 In case any changes in GST guidelines as per Gov. Notification , the same shall be applicable from time to time.
- 19.1.4 Taxes applicable if any will be reimbursed at actual on submission of necessary tax invoice mentioning the GSTN registration number and proof of payment to the statutory authorities.

19.2 BHEL will recover applicable GST along with cost of prime material, off cut, scrap including Turning & Boring (T and B) as per clause 5.1 at the time of finalizing MAS wherever the property in the goods passed on to the Contractor. An Invoice will be issued under relevant rules of GST.

19.3.1 Wherever GST is claimed by Contractor as above BHEL shall reimburse the applicable GST presently @ 12% against submission of the following documents:-

- i. GST Registration Certificate
- ii. Original Tax Invoice (as per GST Rules)
- iii. Certificate for payment of GST
- iv. Abstract of GSTR-I & GSTR-3B or any other returns as prescribed from time to time

19.4 In case BHEL is not able to get input Tax credit (ITC) for the payment made by vendor for any of the reason attributable to vendor , the same shall not be reimbursed/recovered from the bills/claims of the vendor (if reimbursed). GST TDS deduction at such percentage as prescribed under GST Law from time to time will be made on the value of invoices

19.5 Income Tax deduction and surcharge on IT at source at such percentage as prescribed in the Income Tax Act from time to time will be made on the value of the invoices in the absence of Income Tax Exemption Certificate from the concerned Income Tax Officer received and submitted by the Contractor. Contractor has to submit photocopy of PAN Card along with original for verification.

**19.6** All statutory documents required for execution of contract to be finalized against this enquiry and required from time to time by State/central Govt. Authorities shall be submitted to BHEL, failing which appropriate recovery/actions as deemed fit will be levied from the running bills of the contractor.

19.7 Contractors are exempted from payment of GST as they are job workers as prescribed under Section 143(1) of GST Law as amended from time to time for the purpose of free issue of raw materials/semi finished goods to them for carrying out necessary operation and return the finished components without payment of duty to the BHEL RANIPET's factory for further processing. This is subject to subsequent statutory modifications and amendments in force from time to time. Contractors shall comply with the requirements of the said Section and also rules made under GST LAW . This is subject to subsequent statutory modifications and amendments in force from time to time. Besides, Taxes, duties, levies and any other govt. special levies as applicable from time to time, through notifications/amendments to original notification/orders, during the tenure of the rate contract, shall be extra as applicable against valid documentary evidence. Any increase or decrease in this regard will be effected accordingly against valid documentary evidence.

- 19.8 The required raw materials will be issued under the cover of Delivery challan as prescribed under GST Law. The Contractor receiving the materials under above said challan (2 Copies) have to complete the work order and return the finished components and scrap under the cover delivery challan issued by BHEL within 3 months from the date of first issue of materials unless otherwise extended by BHEL and all materials shall be fully accounted for in FMAS. For this purpose Duplicate (ONE) copy of all the Challan shall be returned back to BHEL after duly signing in with seal with FMAS and DC copy. If the materials are not returned/ fully accounted for within three months or such extended period as may be allowed by BHEL, any financial implication on BHEL will be recovered from the Contractor's bills.
- (i) In case of failure of non submission of challan due to reasons not attributable to Contractor, (like non matching of materials, hold informed by BHEL, delay due to cycle time etc., ) is to be intimated to BHEL every month by the Contractor.
  - (ii) Incase of direct dispatch to customer site (or) returning of material back to BHEL store, necessary GST formalities have to be complied with by Contractor and also necessary records as per GST Law have to be maintained by the Contractor.
  - (iii) FMAS is to be prepared immediately on dispatch in all cases based on which applicable GST on scrap/Off cut will be recovered from Contractor and paid to GST Dept.
  - (iv) BHEL, RANIPET will not be responsible for payment of any taxes and duties wrongly paid on account of ignorance of law or otherwise and also duty paid at a later date based on litigation.

## **20.0 GENERAL :**

- (a) BHEL reserves the right to recover the dues if any, from the Vendor from any one of the running bills of this contract or any other contract with the vendor or from any other division of BHEL. Vendors disqualify themselves to be an approved vendor of BHEL, in the event , it is found that they carryout activities / business which are in direct competition to BHEL business and accordingly they will be delisted. Vendors / Firms indulging in business practices detrimental to BHEL, will be severely dealt with by the due process of law. In addition to the above conditions the following specific conditions also bound under this contract.
- (b) The Vendor is liable for all statutory obligations, including but not limited to taxes and duties, ESI, PF, ED/ST, Labour Acts, Factories Acts, Workmen Compensation Act, etc., for their workers. BHEL, RANIPET will have no liability in respect thereof. Notwithstanding the above, if any demand notice is served by the concerned Statutory authorities for recovery of any of their dues on BHEL, BHEL shall have the right to pay the same without notice to the Vendor and recover the same plus administrative charges of 15% of such amount from the Vendor either from the pending/future bills of the Vendor or otherwise. Such act of repeated default is liable for suspension/stoppage of further business till such time the default/violations get vacated. Notwithstanding anything to the contrary, BHEL shall not be liable for any penalty or interest imposed by any statutory authority due to the action of the Vendor or his employees, workers, agents, etc. .
- (c) The Vendor has to devise suitable scheme whereby the employment of child labour should be regulated in line with the child Labour Act ( prohibition and Employment Act 1986).
- (d) All the safety precautions and use of safety equipments are to be followed while carrying out the fabrication and despatch of the same. The Vendor must have proper tools and handling equipments. There should always be a responsible person available at the Vendor's works to oversee the operation and compliance of safety regulations. If any non-compliance with respect to proper safety conditions/requirements, BHEL may withhold visit/inspection, instruct stoppage of work till such time the desired safety requirements/conditions are met with.

- (e) All the documents (Inclusive of Drawings, GMS and Standards ) of BHEL made available to the Vendor should be kept in a strict confidence and under no circumstance be made available to others or allow others to make use of them for any other commercial purpose whatsoever. This secrecy clause is binding on the employees of the Vendors also. Any contravention will be subjected to legal action besides suspending business with BHEL. Such documents should be returned to the BHEL, RANIPET destroyed with the prior approval of Outsourcing, BHEL, RANIPET.
- (f) Unauthorized act of engagement of any individual who is a full time employee of BHEL for part time/full time work by the Vendor will be viewed very seriously and such act is liable for suspension/total stoppage of further business dealings with the Vendor by BHEL, RANIPET.
- (g) Should a Vendor has a relation or relations in the case of a firm or a company of the Vendor, one or more of its shareholders or relation or relations of the shareholders employed in BHEL or any ex employee who has retired/resigned within a period of two years as on date of the Contract or at any subsequent date after award of this contract, BHEL shall be informed of the fact at the time of signing the contract and thereafter as applicable and obtain the permission of BHEL for such engagement, failing which BHEL may in its own discretion rescind the contract.
- (h) The Vendor shall not attempt any unethical acts and if they are found indulging in such acts, they are liable to be blacklisted apart from other actions. Vendor indulging in any business practices detrimental to BHEL either directly or Indirectly, will be dealt with severely by the due process of law.
- (i) In case of any internal dispute of the Vendor, such as but not limited to disputes between partners of the Vendor, dispute between Vendor and its employees, the same shall be intimated to BHEL within One Month from the date of dispute. Notwithstanding anything to the contrary, BHEL shall not be made a party any suit or legal proceeding in respect of such internal dispute. In case BHEL is made a party to the same, the Vendor and other party(ies) to the dispute, if signatories to this Agreement, shall indemnify BHEL for (a) all direct and indirect costs expended towards such legal proceedings immediately on the issue of a claim notice to that effect from BHEL and (b) any liability that may be imposed in such legal proceedings against BHEL.
- (j) Payment for all the invoices shall be effected by a crossed A/C payee cheque /EFT/RTGS in favor of the Banker which should be indicated in all invoices of the Vendor.
- (k) In order to ensure safe custody of our materials, leasee of those firms under lease shall ensure that their lease period is valid for minimum of 3 years.
- (l) In addition to the above, our standard General Conditions enclosed shall also apply.
- (m) The entire terms and Conditions contained in this tender shall be deemed to form an integral part of the Contract to be entered.

#### 22.0 **BHEL reserves the right to :**

- (a) Negotiate with the Vendor who has submitted the Lowest offer.
- (b) Distribute the requirements on more than one vendor at the Lowest acceptable rate.

23.0 Vendors are requested to indicate their own email-Id as "Primary e-Mail-ID", which will only be used for all correspondences.

#### 24.0 **Arbitration and Jurisdiction:**

- (a) Any dispute between BHEL and the Vendor arising out of or in connection with this Contract, other than those for which BHEL decision is final, shall be referred to arbitration by a sole arbitrator.

- (b) The parties hereto agree that the Sole Arbitrator shall be the Unit Head of BHEL, BAP, Ranipet or his nominee. The venue of Arbitration shall be Ranipet, Tamil Nadu. The arbitrator may hold meetings for convenience at such places as per his discretion.
- (c) The award of the Arbitrator shall be final, conclusive and binding on both parties to the Contract.
- (d) Subject to the above, the courts at Ranipet alone have the jurisdiction to decide any dispute arising out of or in respect of the Contract.

Vendors are requested to quote only for the items applicable to their firm as per the Technical Bid and Price Bid format enclosed.

The offers should be submitted as detailed in **Section I to Section VI and Annexures A to K**

BHEL, Ranipet is not responsible for any type of delay in receipt of tender.


BHEL, Ranipet reserves the right to reject any or all the tenders either in full or part thereof at their discretion without assigning any reason thereof.

Thanking you,

Yours truly,

For and on behalf of  
BHARAT HEAVY ELECTRICALS LIMITED,

**MANAGER (CONTRACTS) / OS**

	<b>Bharat Heavy Electricals Limited</b> (A Government of India Undertaking)		<b>☎: 04172-284030, 284158, 284323, 241170</b>
	Boiler Auxiliaries Plant, Ranipet – 632 406		
AN ISO 9000 COMPANY	<b>OUTSOURCING DEPARTMENT</b>		E-Mail : <a href="mailto:bsmanian@bhel.in">bsmanian@bhel.in</a> , <a href="mailto:ssvasan@bhel.in">ssvasan@bhel.in</a>
Enquiry No	<b>667170E</b>	Due Date & Time for submission of offers	<b>Prior to 09.45 Hrs On 01.11.2019</b>
Enq-Dated	<b>11.10.2019</b>	Date & Time of Tender opening	<b>By 10.00 Hrs On 01.11.2019</b>
<div><div><b>SECTION III</b></div><div><b>Technical Information</b></div></div>			

Sealed Tenders are hereby invited from experienced Firms located **within** 350 km by Road from BHEL, Ranipet for Rolling (Shell formation) and welding of 45 mm & 63 MM plate in accordance with the Technical Specification and Scope as per Annexure-H / BHEL Engineering Drawings/Quality Documents. Fabricated/Rough Machined Components will be supplied by BHEL/ Ranipet as free issue.

1. **Tender Items** : The tender requirement is for Rolling to Shell and welding of 45 MM & 63 MM Plate . The descriptions of the Items are given in the following table. The scope of operations required is given under **Annexure-H**. Technical Bid and Price Bid formats are given in **Annexure-C** and **Annexure-D** separately for submission of tender.

Sl.No	Item Description & Drawing Number	Qty (Nos.)	Weight in Kgs per No
1	Rolling of PI 45 X 1805 X 3733 as per Scope indicated in the Annexure-H	2	2380.220
2	Rolling of PI 45 X 2147 X 4927 as per Scope indicated in the Annexure-H	6	9707.700
3	Rolling of PI 63 X 1780 X 3676 as per Scope indicated in the Annexure-H	6	11210.310

2. **Scope of the Operation**: Scope of operation required on the job is deliberated in **Annexure-H**. Vendor has to confirm the Scope of Operations and submit the signed scope sheet along with Techno Commercial Bid in cover-I else their offer is liable for rejection.
3. **Facilities Required** : To carry out the operations required on the job, the manufacturing Facilities required like General manufacturing facility ,Welding Equipment, Rolling machine with capacity to roll plate thickness 45 MM and above etc. are mentioned in the Eligibility Criteria as **Annexure-B** and the same has to submitted along with Technical Bid in Cover-I.
4. **Eligibility of Vendors** : The vendors who are all having the Facilities required mentioned in the Eligibility Criteria Sheet as **Annexure- B** and sufficient experience in the manufacturing field can quote for this tender.



5. **Distance Eligibility Criteria- Vendors Location :** Firms located within 350 KM by road are only eligible to quote for this tender.
6. **Quantity and Splitting the Order Quantity:** Quantity requirement is mentioned against each item. The total quantity will be split among maximum up to 2 Vendors in the ratio of 60:40 .
7. **Method of Splitting the Order Quantity:** After Price Bid opening, lowest offers for each item will be finalized by comparing BHEL's estimate straightaway or through negotiation. Then for ordering quantity will split among Two vendors (L1 & Vendor accepting our counter offer) in the ratio of 60:40. In case NO VENDOR is accepting our counter offer order for 100% of the enq Qty will be placed on L1 ranked vendor .
  - a. Initially 60 of the Enq Qty will be ordered for L1 ranked vendors for all items covered in the enquiry
  - b. Counter offering the L1 rates to the next higher ranked vendors except H1 will be made. Maximum up to 2 vendors is required . Counter offering will be made according to the individual item rank.
  - c. For ordering purpose, combination of items can be made to meet minimum ordering quantity.
  - d. If counter offer is not acceptable by other vendors for any of the item, then ordering on L1 vendor will be made for their full capacity.
8. **Method of Arriving L1 Vendor:** Offers called for this tender is on Ex-Works basis. Freight will be arranged by BHEL on both ways. To arrive L1 offer on landed cost basis, the following freight amount will be added to the Ex-Works offer. Two numbers will be transported per trip, accordingly the freight charges will be arrived per number.

SL NO	WORK	Rate per Trip(per KM) Rs.
01	BHEL, Ranipet to various places Rate per KM	81.84

9. **Technical Bid :** Technical Bid is given as **Annexure – C**. Vendors can download the format and fill the details as requested.  
  
Existing Vendors who have executed similar type of jobs has to mention completed PO/IP number released on them. If no PO/IP is not mentioned in the Technical Bid, then the vendor will be evaluated for the facilities required.
10. **Price Bid:** Price Bid is given as **Annexure-D**. Simultaneously Vendor has to download the Price Bid Format along with Technical Bid Document to quote and fill the same.

**Note: Unit rate only to be mentioned in the price bid. Any Rates indicated other than in Price Bid Cover III shall not be considered.**

11. **Drawings:** The drawings are indicated in Section VI . However the drawings referred in the tender will be displayed at BHEL for the Vendors who are willing to study to quote for the tender.

Drawings available for study purpose (if required) to the Vendors at BHEL Outsourcing Department, conference hall from 09.00 Hrs to 16.00 Hrs on all working days from Monday to Saturday till 3 days before the tender opening due date. No soft copy of the drawings will be given. Vendors can get the drawings by giving written request to study and estimate the cost of operations for submitting offer.

12. **Quality Documents:** Quality documents mentioned in the tender will be given along with drawings.

**Care:** Offers received other than the format hosted in the web site will be summarily rejected.



Enquiry Number: 667170E

Dt. 11.10.2019

**SECTION IV**  
**GENERAL TERMS & CONDITIONS OF THE TENDER**

**Before preparing the offer, vendors are requested to go through the following details carefully**

**A] Eligibility of Vendors**

**i) New Firm (So far not Registered with BHEL, Ranipet as Outsourcing Vendor)**

Sealed Tenders are hereby invited from experienced Firms located **within** 350 km by Road from BHEL, Ranipet for Rolling (Shell formation) and welding of 45 mm & 63 MM plate in accordance with the Technical Specification and Scope as per Annexure-H / BHEL Engineering Drawings/Quality Documents. Fabricated/Rough Machined Components will be supplied by BHEL/ Ranipet as free issue.

**Filled-in Vendor Registration form as in Annexure-K** is mandatory for all new firms. For tender documents in online through internet access the relevant website ,

**BHEL registered Vendors (Other BHEL units) :** Vendors registered with any unit of BHEL for the similar jobs , shall give details of their registration along with the category registered for. Such Vendors also treated as new vendors for evaluation purpose.

**ii) Existing Firm (Registered with BHEL, Ranipet as Outsourcing Vendor having Vendor Code)**

Firms already registered with Outsourcing (OS) BHEL/BAP/Ranipet and having facilities to machine this item shall also be evaluated if required. At least one PO / IP number for any one of the item shall be indicated in the Technical Bid as proof for the items already executed by them.

If an existing vendor is quoted newly for this tender, fresh assessment shall be done by BHEL to check the eligibility criteria with respect to Machines, experience available with them.

**B] Vendors Not Eligible to Quote**

Vendors declared / notified as defaulters / poor performers on quality / delivery grounds are not eligible to quote. The vendors with whom the material shortages were found during stock verification and not settled at the time of price bid opening will not be considered. Offers if any received such vendors shall not be considered.

Vendors under Hold/Delisted/Banned by BHEL are not eligible to quote.

**C] Eligibility of Vendors Regarding Facilities (Mandatory) :** The vendors must have the facilities given in the **Annexure-B** to quote for this tender else their offer will be rejected. And also they must have sufficient experience in the manufacturing field to quote for this tender.

**D] Distance Criteria for the New Firms**

Firms located within 350 KM by road are only eligible to quote, the firms located beyond this distance will not be considered.

**E] VACANT**

**F] Validity of Offer**

Price validity shall be One Year from the date of release of Purchase order; however the validity date of the offer is 180 days from the date of tender opening for ordering. (Note: If Supplier does not honour his own



offer or any of its conditions within the validity period, penal action deemed fit as per Cl.P of Section IV - Suspension of Business Dealings with vendors).

### **G] MSME Documents**

As per the Public Procurement Policy notified by the Central Government, Micro and Small Enterprises quoting within the price band of L1+15% shall be allowed to supply the requirement up to 20% of the tender value subject to condition that such Enterprises bring down their price to L1 price where L1 price is from other than a Micro and Small Enterprise. If L1 offer is from a Micro / Small Enterprise, this provision will not be applicable. In case more than one Micro and Small Enterprise is there within this span, the supply shall be shared proportionate to the tender quantity. (70:30 or 50:30:20 of the eligible quantity). To apply this condition MSME vendor has to submit the following document along with offer in cover I.

- i. Self Attested Copies of either EM II (Entrepreneur Memorandum Part II) having deemed validity Five years from the date of issue of acknowledgement in EM II from the date of acknowledgement of the EM II certificate **(or)**
- ii. Valid NSIC Certificate **(or)**
- iii. EM II Certificate along with attested copy of a CA Certificate (Format enclosed as **Annexure-G** where deemed validity of EM II certificate of five years has expired ) applicable for the relevant financial year (latest audited).

Date to be reckoned for determining the deemed validity will be the date of Bid opening. Non submission of such documents will lead to consideration of their bids at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier till the supplier submits these documents.

### **H] Submission of Offer**

#### **TENDERS**

**The Bids shall be submitted in two parts** namely (i) Techno Commercial Bid Cover and (ii) Price bid cover. All these two covers should be sealed individually and to be put in a single envelope.

Sealed tenders super-scribed with Tender Number with date, Supplier's Name, Vendor Code/Reference Code shall be addressed to Manager / Contracts, Outsourcing Department, Bharat Heavy Electricals Limited, Ranipet – 632 406, Tamilnadu, INDIA, so as to reach him on or before the date and time specified in the tender.

The details of contents of the offer covers are as under:-

**Sealed Single Envelope super-scribed, with Tender Number & Date, Vendor's Name & Vendor Code / Reference Code containing:**

#### **Cover I: Techno-Commercial Bid**

**Sealed Cover super-scribed "Cover I – Techno-Commercial Bid" with Tender Number & Date, Vendor's Name & Vendor Code / Reference Code containing:**

- a) **Basic Details as per Annexure-A**
- b) **Eligibility Criteria confirmation Format as per Annexure-B**
- c) **Signed in Technical Bid (without Price) as per Annexure-C.**
- d) **Signed in Standard Commercial Terms & Conditions format given as Annexure-E.,**
- e) **Manufacturing Facilities Available with Firm as per format given in Annexure-F .**



- f) **MSME Document as per Annexure-G**
- g) **Signed in scope of operations for confirmation in Annexure-H**
- h) **Affidavit in Stamp Paper value Rs.100 as per Annexure-I**
- i) **Vendor Registration Form** given as **Annexure-K** along with all necessary documents **(For New Firm)**
- j) **Experience** - Documentary proof for having experience.
- k) **Form 'A' for partnership firm as on 01.04.2019** with partnership deed
- l) **Own land** - Document copy **along with EC for 20 years / Lease Land** – Self attested Copy of Registered Lease Agreement **for minimum period of 3 Years from the date of tender opening along with EC for past 20 years**
- m) **Documents to be enclosed for Partnership Firm – Self attested Copies**
  - i) Latest Form- A, issued after 01.04.2019.
  - ii) Partnership Deed Copy (AT WILL).
- n) **Documents to be enclosed for Limited Firm (Private Firm) – Self attested Copies**
  - i) Latest resolution by Board of Directors.
  - ii) Memorandum of Article of Association.
  - iii) Company's Affidavit for existence
  - iv) Latest Annual Report.
  - v) Directors Share details

**Note:**

- (i) All new firms submitting the offer shall be subjected to assessment of vendor registration forms **(Annexure-K)** along with supporting documents & spot evaluation (if applicable) for considering their offer. Price bids of firms failing to meet the Technical Qualification / Eligibility Criteria of the quoted Rate Schedules shall not be considered for further processing in the tender.
- (ii) Offers shall be submitted along with PAN No., GST No. etc, failing which BHEL will not be liable for payment. BHEL GST No. 33AAACB4146P2ZL.
- (iii) Money values shall not be indicated anywhere in the Technical Bid.
- (iv) All Annexure to the Techno-Commercial bid should be serially numbered.
- (v) Tenders not submitted in the prescribed formats given in the Annexure like *Standard Commercial Terms & Conditions, Technical Bid* etc. and *incomplete offers* are liable for rejection.
- vi) **Documents shall be annexed in the order specified above (clause a to J)**

**Cover-II : Price Bid**

**Sealed Cover super-scribed "Cover II – Price Bid" with Tender Number & Date, Vendor's Name & Vendor Code / Reference Code containing:**

**Price Bid** - Price duly filled-in the Price Bid format provided in the tender document in conformance with the commercial terms as per Cover-I.

The Prices shall be indicated in both figures and words. Unit rate only to be mentioned in the price bid.

**Any Rates indicated other than in Price Bid cover II shall not be considered.**

**Put both Cover I and Cover II in a Single envelope.**



**Note:**

- i) The price should be on “Ex-Works” basis Inclusive of packing only, No other delivery terms shall be acceptable.
- ii) While quoting their rates, the Bidders are advised to take into account the likely expenditure, escalations, statutory requirements & levies, labour laws, safety requirements, taxes etc. No price escalation/ variations shall be entertained after opening of price bid.
- iii) Tenderer shall bear all cost incidental to preparation, submission and negotiations of the tender.
- iii) If BHEL withdraws the Tender before or after the receipt of offers, whether the offer is accepted or not, tenderer shall not be entitled to claim any costs, charges, expenses incidental or incurred by him through or in connection with the submission of the offer.
- iv) In case, there is a discrepancy in the term quoted in techno-commercial bid and price bid, the term as per the techno-commercial bid (Cover I) shall hold good and the commercial term quoted in the Price Bid (Cover II) shall not be considered.
- v) In their own interest, all Tenderers are advised to double check their prices before submitting the offer.
- vi) The quotation should be valid at least for a period of 180 days from the tender opening date.
- vii) Offers should be submitted One Set in original only.
- viii) The offers should invariably contain Signature (ink-signed) & Office Stamp of the Supplier. Any corrections / erasures in the offers should be initialled and stamped.
- ix) Bidders should submit the prices in Indian Rupees only.
- x) Offers in Hard-copy are only expected.

**I] Persons Authorized for Signing the Offers:**

The Tender documents shall be signed by the Authorized Signatory Only.

**J] Opening of Offers**

**a) Tenders shall be received up to 09.45 Hours (A.M) on the said due date and be opened on the same day at 10.00 Hours (A.M). Tenders received after 10.00 Hours (A.M) would not be opened. The times indicated are Indian Standard Time (IST).**

- b) It is bidder's responsibility to ensure that the Tenders are submitted before the specified date and time. BHEL shall not be responsible for any postal delay.
- c) If a Supplier submits only one envelope / cover containing techno-commercial bid & price bid together, the bid is liable for rejection. The decision to accept such bids shall be the sole discretion of BHEL, which may be done by BHEL after segregating the bids so received.
- d) First Cover I containing Techno Commercial bid will be opened.
- e) Price bids – Cover II of Technically qualified bidders alone shall be opened on a later date. The date / time of Price Bid opening will be communicated to the technically qualified Bidders separately.

**K) Witnessing the Tender opening**

- i) Such of those Tenderers who wish so, may participate in the Tender Opening by deputing their representatives. The representatives would be allowed to participate in the Tender opening only on submission of a signed and stamped authorization letter issued by the Supplier. Representatives without the Authorization Letter would not be allowed to participate in the Tender Opening.





ii) Representatives who turn up after the Tender opening time / start of the Tender opening would not be allowed to participate. After tender opening the details would not be given to such suppliers who choose to be absent at the Tender opening.

iii) Authorizations received by fax / e-mail would not be acceptable.

iv) Details of the vendors participated alone would be read out during Technical Bid opening and details of Price alone would be read out during Price Bid opening by the Tender Opening Officer.

#### **Note**

(i) Offers sent by e-mail / fax or any other mode other than the three cover system specified above shall be avoided. .

(iii) At its option, BHEL may consider extending the due date/s for the tender openings. Sufficient notice would be given by BHEL for such extensions.

#### **L] Evaluation of Techno Commercial Offers**

**a) For New Firm:** The Techno commercial bids and Registration forms submitted by the firm will be scrutinized and if the firm is meeting the pre-qualification & mandatory requirements, then the firm will be visited by BHEL team for spot assessment of their works. Based on the assessment, BHEL assessors will communicate the technical suitability of the vendor and the same will be informed to the firm. Subsequently vendor code will be generated for the qualified Vendor and will be considered for Price Bid opening.

**b) For Existing Firm:** The Techno commercial bids submitted by the firm will be scrutinized and evaluation if required will be carried out to check the eligibility of the vendor to proceed further for price bid opening.

c) The eligibility of the firms will be verified based on the pre-qualification criteria of the tender and compliance / confirmation to the tender requirements for the items quoted. Only those firms complying with the pre-qualification criteria shall be considered for participation in the tender. Once the vendor is found to be technically suitable meeting all the technical and commercial requirements of BHEL, price bid of those qualified vendors will be considered for further processing.

d) Offers of vendors not technically qualified will be rejected and the same will be communicated to those vendors with reasons.

e) No deviation or change from the Tender conditions will be allowed and BHEL reserves the right to reject such offers.

#### **M] Evaluation of Price Bid**

i) The rates quoted shall be evaluated on Item wise landed cost to BHEL basis only.

ii) If the rates of Two vendors are equal resulting in same ranking, among the equal ranked vendors, the sub-ranking will be done to decide the L1-vendor eligible for negotiation.

The sub-ranking will be done in-the-order by providing lower ranking for vendors

- (1) Nearer to BHEL by location
- (2) Earlier date of commencement of activity as in MSME certificate and/or
- (3) Become Sole-L1 for more number of items,
- (4) Not having listed as defaulter,
- (5) Less count of Pending IPs for more than 30 days
- (6) More the BG value for OS-LDPP,
- (7) Draw of lots as a final measure (in presence of such vendors, who may like to be present).



iii) Tenderer contacted in this tender does not automatically qualify for consideration just because they are found to be the lowest in Tender. BHEL reserves the right to reject any offers without assigning any reasons. BHEL also reserves the right to negotiate or counter offer the rates to any of the parties at their discretion.

iv) If the L1 rate against any item is found not acceptable to BHEL, then the L1 firms may be called for negotiation before finalizing the rate.

v) BHEL has the right to refloat or short-close the Tender if L1 price is not the lowest acceptable price, or for other reasons.

vi) *Higher ranked (H1) vendors for each item will not be considered under any circumstances for ordering.*

vii) The rates shall be quoted only in the Price Bid format both in words and figures. Wherever there is a difference between the words and figures, the following guidelines will be followed.

a) If there is a difference between unit price and the total price ( which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of BHEL there is an obvious misplacement of decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.

b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected.

c) If there is a discrepancy between word and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

d) If there is such discrepancy in an offer, the same will be conveyed to the bidder with target date up to which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of BHEL, the bid is liable to be ignored.

viii) All bidders shall submit their offers by filling-in the format of the BHEL tender documents. Offers received in any other format are liable to be rejected. Offers are asked in BHEL's format for purpose of standardisation - to help in the offer evaluation.

ix) Offer with any pre-conditions (like conditional discounts) for price are liable for rejection.

x) BHEL reserves the right to reject without assigning any reasons other than already specified for such offers having deviations to BHEL Specifications, Standard Terms & Conditions at its discretion. The decision of BHEL in this regard shall be final.

xi) In case of any discrepancy between the description of the Item, quantities, specifications, drawings and for other tender documents, the decision of BHEL in writing is final, binding and conclusive for the purpose of this tender.

xii) BHEL reserves the right to reject an offer due to unsatisfactory past performance during tender finalisation / execution of a contract at any of BHEL projects / units.

xiii) BHEL reserves the right to conduct negotiations on the "Price" and "Other Commercial Terms and Conditions" with the lowest ranked offeror and

xiv) If so required by BHEL, Supplier may have to share their cost data / costing sheet with BHEL.

#### **N] Abnormally Low Offers**

If the prices offered by L1 Bidders are found to be unrealistic, unworkable with respect to BHEL's estimate or prevailing market rates, BHEL will ask for justification also demand the break up cost element for such rates from the vendors with appropriate documentary evidence and if not submitted it will be construed that the

vendor has offered the rates with an intention to sabotage BHEL Tender process/ tamper Tendering procedure, affecting the ARC process. In such cases, BHEL will have the discretion to reject the offer in line with BHEL procedures. Hence the bidders are advised to exercise abundant care in submitting a correct genuine offer.

#### **O] Counter offer**

- i) Once the L1 rate for each item is finalised, then the L1 rate shall be counter offered to the other technically qualified vendors for the quoted items for their acceptance.
- ii) Based on the acceptance of vendors PO will be issued for the concerned item.
- iii) Counter offering will not be extended to top higher ranked vendor.
- vi) If none of the vendors are accepting for the counter offer given by BHEL, then BHEL will place orders on the L1 ranked vendor for the quantity mentioned in the tender subject to the capacity availability indicated by the vendor.

#### **P] Placement of Orders and Loading**

Purchase orders will be issued after finalizing rates against each item on L1 vendors and further to the other vendors those who are accepting counter offered rates. Discrepancy in the PO's if any, has to be settled immediately then and there within 10 days from the date of release of PO.

#### **M] Execution of the Order**

- a) Once the order is released, vendor can view the orders in B2B portal of BHEL, Ranipet. However vendor has to collect hard copies of the Purchase order, IP (issue position), Engineering Drawings and relevant documents from BHEL through their authorised representative.
- b) Vendor has to collect Raw materials / Components from BHEL stores / Shop to their works on clearance. BHEL will arrange vehicle for transportation to the vendor works.
- c) Vendor has to study the Drawings, Standard Quality Plan (SQP), any Customer Hold Points (CHP), any stage inspection requirement etc. carefully before start of manufacture.
- d) During manufacturing, wherever stage inspection is required, vendor has to offer for inspection to BHEL QC / BHEL approved Inspection Agencies for clearance to proceed further.
- e) All measuring Instruments to be calibrated as per standards at BHEL Metrology / any approved Labs on chargeable basis and manufacturing / inspection will be carried out with calibrated instruments only.
- f) On completion of Job, final inspection is to be offered to BHEL QC / BHEL approved Inspection Agencies with relevant Dimensional Report (DR). After clearance from the above agencies, Inspection Report (IR) has to be obtained for the same.
- g) Despatch the items to BHEL, Stores / Shipping along with Delivery Chalan (DC), Inspection Report (IR), and Dimensional Report (DR) each 6 copies and shall get Inward Entry on Delivery Chalan (DC) from the Gate In charge. BHEL will arrange vehicle for collection of finished components from vendor works.
- h) On delivery, authorised representative of vendor shall follow Stores /Shipping to control the DC's/Stores Receipt Voucher(SRV).
- i) Intimation of controlled DC's/SRV will be mailed by Finance to vendors for submitting the Invoices.
- j) Vendors have to submit the invoice and relevant documents to finance in stipulated time for the release of payments.
- k) In case of new vendors, The Inspection report on **First-of-trial** of First-addendum-PO shall be submitted. Further loading of jobs will only be considered after the successful completion of the First-addendum-PO.

l) The Vendors are responsible till the finished components are safely deposited with BHEL / Ranipet. They should carefully pack, Load, and stack as per QWIs, for avoiding damages during transit and lash the consignment properly at the time of dispatch so that the consignment reach the destination safely.

**O] Termination of Inquiry / Orders:**

- a) BHEL reserves the right to cancel any inquiry before opening of the tender, without assigning any reason.
- b) BHEL reserves the right to cancel any tender and refloat a fresh tender, at any time after opening of the tender, in case it finds the response to its tender as not meeting its requirement. This shall be at the sole discretion of BHEL.
- c) In the event of non-performance of the contract by the Supplier, BHEL reserves the right to cancel the order with issue of a written notice. BHEL would provide a curing period of 30 days, for the Supplier to rectify the situation. If the Supplier fails to rectify the reason/s that led to the issue of cancellation notice by BHEL, then the cancellation order would be issued automatically by BHEL, without further recourse to the Seller. BHEL will not pay any cancellation charges or any other charges / damages to the Supplier, arising out such cancellation.
- d) In the event of the non-performance of the contract, by the Supplier, the rights of BHEL include, in addition to cancelling the order, to take alternate action at the cost and risk of the supplier. The additional expenditure to be incurred by BHEL in such alternate action would be to the account of the supplier.
- e) BHEL reserves the right to cancel the order for delay in supply beyond penalty period without any monetary or legal obligations and at the risk and cost of the Supplier. and
- f) BHEL will levy penalty as Liquidated Damages (LD), for delay in delivery. The damages shall be at the rate of ½% per week or part thereof subject to a maximum of 10%. Delivery for purpose of L.D, will be reckoned as the date of clearance of the equipment for dispatch by BHEL.

**P) Suspension of Business Dealings with vendors**

**1) A Supplier may be put on hold for a period of ONE YEAR for future enquiries for specific material categories items/ works for Ranipet unit on the basis of one or more of the following reasons:**

- a) Supplier does not honour his own offer or any of its conditions within the validity period.
- b) Rejection of three consecutive supplies of a specific material category , average Quality Rating (Quality rating as at the end of the previous calender month falls below 80% of the quality weightage. This is irrespective supplies against PO(s) having single/multiple delivery schedules) due to reasons attributed to supplier (Once a lot is rejected, is repaired and accepted, it still constitute rejection).
- c) Two consecutive delays, for reasons of delay attributed to the supplier in execution of the contracts, where delay occurred is such that
  - (i) Prescribed Maximum LD time limit of the contracts is reached/exceeded.
  - (ii) Delay period as equaled / exceeded the original delivery period specified in the contracts, which ever among the above is earlier.
- d) Supplier performance rating in line with SEARP falls below 60% of the specific material category
- e) Supplier fails to respond against three consecutive tenders. The Regret letter from supplier with a valid reason will be considered as a response
- f) Supplier fails to settle any outstanding on account of material ( including short returned) / Scrap OR on any other account
- g) Supplier works are under strike/ lockout for SIX months or more



**2) A Supplier may be de-listed ie. Removed from the list of registered suppliers of our Unit for all category of the material for a period of TWO YEARS on the basis of one or more of the following reasons:-**

- a) Supplier tampers with tendering procedure affecting ordering process
- b) Supplier has misused BHEL documents/ Drawings OR has breached the confidentiality agreements with BHEL and
- c) After placement of order, supplier fails to execute a contract.

**3) A Supplier can be banned for a period of THREE YEARS from doing any business with all Units of BHEL on the basis of receipt of authentic evidence of one or more of the following reasons:**

- a) Supplier is found to be responsible for submitting fake/ false/ forged documents, certificates, or information or has resorted to unethical, illegal means in getting the contract.
- b) In spite of warnings, the Supplier persistently violates or circumvents the provisions of labour laws/ regulations/ rules and other statutory Requirements.
- c) Supplier is found to be involved in cartel formation or in any act so as to influence the bidding process OR influence the price.
- d) The supplier has indulged in malpractices or misconduct such as bribery, corruption and fraud, pilferage etc.
- e) The Supplier is found guilty by any court of law for criminal activity/offences involving moral turpitude in relation to business dealings.
- f) The Supplier is declared bankrupt, insolvent, has wound up or been dissolved; i.e ceases to exist for all practical purposes.
- g) Supplier is found to have obtained any internal information / documentation of BHEL by unauthorised means
- h) Communication is received from the administrative Ministry of BHEL to ban the Supplier from business dealings.
- i) The foreign principles along with the representing agent shall be banned together if information submitted by them about their precise relationship, commission/ remuneration etc., payable/ receivable and other particulars as asked by BHEL, as per the extant guidelines regarding dealing with agents of foreign suppliers is found false/incorrect
- j) Supplier has substituted, damaged, failed to return, short returned or unauthorized disposed off materials/ documents/ drawings/ tools etc of BHEL.

**4) The decision of suspension will be intimated to the vendors citing the reasons. The respective vendors shall attach importance to the issue and immediately acknowledge receipt of the communication and reply for the aspects raised.**

#### **Q] Force Majeure**

i) If at any time during the currency of this contract, the performance in whole or in part, by either party of any obligations under this contract shall be prevented or delayed by reason, of any war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, explosions, epidemics, quarantine, restrictions or acts of GOD (hereinafter referred to as events), then provided notice of happening of any such events is given by either party to other within ten days from the date of occurrence thereof, neither party shall reason of such events be entitled to terminate this contract nor shall either party have any such non performance and delay is resumed as soon as practicable after such events has come to an end or ceased to exist. If the performance in whole or part of any obligation under this contract is prevented or delayed by reason or any

such event claims for extension of time shall be granted for period considered reasonable by the purchaser subject to prompt notification by the seller to the purchaser of the particulars of the events and supply to the purchaser if required of any supporting evidence. Any waiver of time in respect of partial installment shall not be deemed to be a waiver of time in respect of remaining deliveries.

ii) If as a result of difficulty in procurement of raw materials or due to force majeure reasons or any other reasons what-so-ever the contractor is unable to keep the delivery schedule of the contractee, extension of time may be granted by the contractee at their discretion as may be necessary to the extent considered necessary should there be delay in supply beyond the extended date of delivery, it shall be open to the contractee to terminate the contract in part or full and make other arrangements for executing fabrication elsewhere at the cost and risk of the contractor.

## **R] Others**

a) The Firms are advised to study and understand the scope of work and the entire process of Contract execution involved before quoting. Any technical clarifications required can be sought in person or by e-mail three days before the due date of Tender opening.

b) In case of any contradiction in the terms and conditions given here and elsewhere in the other documents of the tender or any omissions in the Tender documents or for any clarifications in the tender conditions, it shall be the responsibility of the tenderer to get it clarified from BHEL. The officer authorized to provide such clarifications is the Manager / Contracts, Outsourcing Department, Phone: 04172 – 284030, e-mail bsmanian@bhel.in,ssvasan@bhel.in

c) Alterations to the conditions of the Tender can be done only by the authorized officer, at any time before the date and time of tender opening. Such changes, if any, would be communicated in writing and / or hosted in the BHEL web-page.

d) BHEL will conclude that the offer has been submitted by the firm fully understanding all the requirements both explicit and implied and other conditions and accepting the same. After tender opening, the bidders are not allowed to change / alter any of the conditions either partly or fully. Offers of any such firms doing so, will be rejected.

e) Conditional and late Tenders, Tenders which are incomplete or otherwise considered defective with respect to Tender conditions and Tenders not in accordance with the Tender conditions herein contained and the Tenders not in original shall be rejected outrightly, at any point of time during the Tender processing.

f) Should the tenderer or the vendor have a relation or relations in the case of a firm or company of Vendors, one or more of its shareholders or relations or relations of the share holders employed in BHEL or any ex-employee who has retired / resigned within a period of two years as on date of quotations or at any subsequent date after the award of the contract, the authority inviting the Tender shall be informed of the fact at the time of submission of the tender and there after as applicable and obtain the clearance of BHEL for such engagement failing which, BHEL may in its own discretion reject the tender or rescind the contract.

g) If a Bidder is found to have given false information / documents as a part of their offer, such offers shall be rejected / the contract shall be terminated and the firm shall be banned from getting business from all BHEL units.

h) If any Supplier attempts to bribe, or pay commission, gift or any advantage or bring in undue influence either by himself or on his behalf any one including a stranger to the tender, in addition to instituting legal proceedings as per the extant laws prevailing, will disqualify the supplier from this tender and all future tenders of BHEL. Decision of the Purchaser would be final in this matter.

i) The laws governing this transaction shall be the laws in India.





- j) The tenderer shall acquaint himself with the conditions/limitations and official regulations under which or conforming to which the jobs are to be performed and shall examine carefully at the information as may be furnished to them in writing from time to time.
- k) The tenderer shall acquaint himself with applicable Acts.
- l) As a policy BHEL is not registering any power of attorney issued by Vendors/Vendors in favour of their bank for the collection of Invoice amounts on behalf of Vendors/Vendors and merely because BHEL had acted upon any such request by the party or their bankers does not constitute any legal right or binding on BHEL for any acts of omissions and commissions or failure to act upon it or for any payment made directly to the party. If any banker includes BHEL also as a party to any such dispute between the banker and the party, all legal and incidental expenses thereof will be recovered from the concerned parties only.
- m) In the event of an order, Supplier shall agree to settlement of disputes or differences, if any, by way of arbitration, in accordance with the "Rule of Arbitration" of the Indian Council of Arbitration.
- n) The offer/s of such of those bidders who do not accept for levy of liquidated damages (LD) for delay in delivery and who do not accept for submission of the BG for the value and period specified herein above is likely to be summarily rejected. No correspondence would be entertained by BHEL in this regard, on this subject. BHEL specifically draws the need of this mandatory requirement to the notice of all Bidders. The Price Bid of such of those offerers failing to meet this requirement, would not be considered for the Price-Bid Opening.*
- o) The language in the tender downloaded by the Bidders shall at no point of time be changed, altered or modified in any manner by the Tenderer. If such changes are made by any tenderer, it shall be considered as tampering with BHEL's specifications and the offer shall be summarily rejected, whenever it is noticed by BHEL. Such Bidders would be disqualified from the Bidding Process and their offers would be forfeited / Bank Guarantees invoked. They would not be allowed to participate in future tenders of BHEL.*

## **S] General :**

**1.0 Definitions :** Throughout these conditions and in the specifications the terms :

- (a) **"The Contractee"** means the Bharat Heavy Electricals Limited, acting through the Additional General Manager, Outsourcing Department ,Boiler Auxiliaries Plant, Ranipet – 632 406 unless the context otherwise provides.
- (b) **"The Contractor"** means the person, firm or company with whom the order for machining / fabrication is placed and shall be deemed to include the Contractor's successor (approved by the Contractee), representatives, heirs, executors and administrators, as the case may be, unless excluded by the terms of the Contract.
- (c) **"The Drawings"** means the drawings exhibited or provided for the guidance of the Contractor.

## **2.0 Execution :**

The whole contract is to be executed in the most approved substantial and workman like manner to the entire satisfaction of the contractee, or the inspecting officer, who shall have power to reject any of the fabrication of which he may disapprove; and his decision thereon and on any question as to the true intent and meaning of the specifications of drawings or of the work necessary for the proper completion of the contract, shall be final and conclusive. The contractee may require alterations if any to be made during the progress of machining /fabrication, and should these alterations be such that either partly to the contract considers an alteration in the changes justified such alteration shall not be carried out until amended cost of machining /fabrication charges have been submitted by contractor and accepted to fabricate without

obtaining the consent of the contractee in writing to an amended cost of machining /fabrication charges, the contractor shall be deemed to have agreed to execute fabrication at such charges as may be considered reasonable by the contractee.

### 3.0 Interpretation :

Any dispute or difference of opinion in respect of the interpretation, effect or application of this particular condition of the contract or of the amount recoverable here under from the contractor shall be decided by the contractee and the decision shall be final and conclusive.

### 4.0 Book Examination Clause :

(a) The contractor shall, whenever required, produce or cause to be produced for examination by any officer of the contractee authorized in that behalf any cost or other account book or account voucher, receipt letter, memorandum, paper or writing or any copy of extract from any such document and also furnish information and returns verified in such a manner as may be required in any way relating to the execution of this contract or relevant for verifying, ascertaining, the cost of execution of this contract (the decision of such officer of the contractee on this question or relevancy of any document, information or return being final and binding on the parties). The obligation imposed by this clause is without prejudice to the obligation of the contract/Job-Work-Order or under any statutory rules or orders binding the contractor.

(b) The contractor shall, if the authorized officer of the contractee so requires (whether before or after the prices have been finally fixed), afford facilities to the officer of the contractee concerned to visit the contractor's works for the purpose of examining the process of manufacture and estimate of ascertaining the cost of production of the articles. If any portion of the work be carried out by a Contractor or any subsidiary or an allied firm or company, the authorized officer of the contractee shall have power to secure the books of such Contractor or any subsidiary or an allied firm or company shall be open to this inspection.

### 5.0 Set – Off Clauses :

Payment shall be subject to the deduction of any amount, for which the contractor is liable under this contract, or any contract in respect of which Bharat Heavy Electricals Limited, Ranipet 632 406, Tamilnadu **or any other Unit/ Office of BHEL** is the **Contractee**.

### 6.0 Laws Governing the Contract :

(a) The contract shall be governed by the laws of Government of India in force.

(b) Irrespective of the place of execution of the contract, place of delivery, place of payment under the contract, the contract shall be deemed to have been made at Ranipet.

### 7.0 The Global Compact :

Global compact is a signature initiative of United Nations Security General and four United Nation Agencies

- Office of the High Commissioner for Human rights
- International Labour Organization
- United Nations Environment Programme
- United Nations Development programme

This is a board based initiative and engages:

- Individual Companies
- Business Associations
- International Labour
- Human Rights, Environment and development Organisations
- Academic & Public Policy Instructions and United Nations

**The Contractee (BHEL) is a member of this Global Compact. As a participating Company, We have the obligation to**

- \*\* Support and respect Human rights with in our spheres of influence.
- \*\* Make sure we are not complicit in Human right abuses.
- \*\* Make sure we are not employing forced or compulsory labour.
- \*\* Refrain from employing child labour
- \*\* Eliminate discrimination in our hiring and firing policies
- \*\* Support a precautionary approach to Health, Safety of employees and society and environmental challenges.
- \*\* Undertake initiatives to promote greater environmental responsibility
- \*\* Encourage development and diffusion of environmentally friendly technologies.

**Contractor shall also ensure to fall in line with the above principles.**


## **8.0 Occupational Health and Safety Management System (OHSAS 18001) and Environmental Management System (EMS 14001)**

BHEL/BAP/RANIPET got accreditation Occupational Health and Safety Management System (OHSAS 18001) and Environmental Management System (EMS 14001). As per this, OS Contractors are requested to meet the requirements of EHS (Environmental Health & Safety) guidelines (mentioned below), while engaging and using Vehicles for incoming/outgoing transportation.

- To have valid Driving licence and RC book for the Transports
- To load the vehicle/bullock cart within the Safe Working Load (S.W.L.) The S.W.L. is to be displayed/painted on the vehicle/bullock cart.
- To load the material in such a way that it should not project outside the dimensions of the Vehicle/bullock cart.
- To stack the material in a manner that the material should not slide/fall during transportation.
- During manual lifting with an Adult, the weight should not exceed 50 kg.
- To attempt to adopt OHSAS 18001 / ISO 14001 requirements in their manufacturing process at Contractor's work place.
- To comply with applicable provisions of the Central Motor Vehicles Rules 1989 (Rule:136 and if any). List of important Phone Nos: (given by OS) should be available with the driver while transporting BHEL materials.
- To train drivers to handle emergency situation during transportation.
- To follow the Various Acts/Rules and Regulations (particularity Factories Act 1948 and Tamil Nadu Factory Rules 1950) applicable to them.
- To maintain valid PUC (Pollution Under Control) certificates and produce while vehicle is in this company premises.

**Contractors are requested to meet the requirements of OHSAS 18001 / ISO 14001 as given below:**

- \*\* To adopt OHSAS 18001 / ISO 14001 requirements in their manufacturing process at Contractor's work place.
- \*\* To comply with applicable provisions of the Central Motor Vehicles Rules 1989 (Rule: 136 and if any).
- \*\* To follow the applicable Acts/Rules and Regulations (like Factories Act 1948 and Tamil Nadu Factory Rules – 1950) applicable to them.
- \*\* In addition to this, they should follow the day to day communication of OS on this regard.

 An ISO Company	<p align="center"><b>BHARAT HEAVY ELECTRICALS LIMITED</b>          (A Government of India Undertaking)</p> <p align="center"><b>பாரதமிகுமின் நிறுவனம்</b></p> <p><b>BOILER AUXILIARIES PLANT,</b> Indira Gandhi Industrial Complex,  <b>RANIPET- 632 406 (Tamil Nadu)</b></p>	Ph: 04172-284030, 284158,284323, 241170 Email: <a href="mailto:bsmanian@bhel.in">bsmanian@bhel.in</a> <a href="mailto:ssvasan@bhel.in">ssvasan@bhel.in</a>
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**BHEL-BAP-OS-LDPP- Enquiry : 667170E** **dt 11.10.2019**

**SECTION – V**

**BANK GUARANTEE DETAILS**

**(Instructions to Fill the Bank Guarantee Format to be issued by BHEL)**

**Minimum base BG value of Rs. 2 Lakhs should be provided by the vendor before release of Purchase order.**

- Bank Guarantee shall be issued by any one of BHEL's Bankers or any Nationalized Bank. Please refer to List of BHEL's Bankers enclosed.
  - If it is not possible, then BG can be issued by a Scheduled Commercial Bank with the prior approval of BHEL.
  - BG from Co-operative Banks are not acceptable.
- Pre-printed BG Form of BHEL only shall be used. Should not retype the format.
  - Only the relevant information like Supplier Name, BG Value, Contract No., Validity etc. shall be typed in the pre-printed form and executed by Bank.
  - Special adhesive stamp of the required value shall be affixed on the 1st page of the Form.
  - If Special Adhesive stamps are not available, then applicable stamp duty shall be paid at the Bank / Agency nominated by the concerned State Government to collect stamp duty, who" will affix their signature, date and seal in the first page of the BG Form clearly marking it as "SPECIALADHESIVE" & "STAMP DUTY".
  - Stamp Duty for the BG shall be at the rate as applicable in the State where the BG is executed.
  - Bank seal shall be affixed on the special adhesive stamp.
- The executing officer of the Bank shall indicate his name, designation and power of attorney number/signing power number etc. on the BG.
  - Any correction / overwriting on the BG shall be duly authenticated under the Seal and signature of the executing officer of the Bank.
  - Each page of the BG shall be duly signed/initialed by the executing officer of the Bank and the last page is to be signed with full particulars under the seal of the Bank.
  - Fax number, e-mail Address, contact person, phone number and complete postal address shall be indicated in the covering letter of the BG from Bank.
- The validity of the BG shall cover a period of 18 months (or such other period as per purchase Order, if otherwise specified) from the last date of dispatch as per Purchase Order or actual date of last dispatch under the Purchase Order, whichever is later.

- a. The BG shall have a claim period of 3 months. If no separate claim period is indicated in the BG, then the validity shall be 18 months (or such other period as per Purchase Order, if otherwise specified) plus 3 months.
  - b. No clause of the BHEL BG Form shall be altered, deleted or new clauses added by the issuing Bank under any circumstances. Bank Guarantees with altered/deleted/added clauses will not be accepted by BHEL under any circumstances.
  - c. If the issuing bank wants to add any additional clauses, it shall be intimated to BHEL well in advance with exact text of clause, which shall be subject to approval by BHEL Law department. Those clauses specifically accepted by BHEL- Law department can be added in the last page of the BG form and executed by Bank.
5. Bank Guarantee shall be forwarded by issuing Bank directly to AGM(OS)/BHEL/BAP/Ranipet-632406.
    - a. If it is not directly forwarded to BHEL due to unavoidable circumstance, then the issuing bank shall send a letter directly to BHEL confirming the issue of the BG enclosing a photocopy of the original BG
    - b. The bank guarantee should not be routed through Bank along with other dispatch documents under any circumstances.
  6. In case of any extension of BG the same shall be executed on non-judicial stamp paper of the required value.
    - a. Only the due date and claim period shall be extended
    - b. The extension should not result in alteration of any material facts of the BG.
  7. Bank Guarantees executed as per the above instruction only shall be accepted at our end. Hence kindly ensure compliance with the above instructions for yearly processing of the bills and to avoid hold up of the bills

**List of Bankers from whom Bank Guarantee is to be obtained.**

	<b>Nationalised Bank</b>				
1	Allahabad bank	13	State Bank of Hyderabad		Banking Corporation Limited
2	Andhra bank	14	Syndicate Bank	24	Standard Chartered Bank
3	Bank of Baroda	15	State Bank of Travancore	25	The Royal Bank of Scotland N.V.
4	Canara Bank	16	UCO Bank	26	J P Morgan
5	Corporation bank	17	Union Bank of India		<b>Private bank</b>
6	Central bank	18	United Bank of India	27	Axis Bank
7	Indian Bank	19	Vijaya Bank	28	The Federal Bank Limited
8	Indian Oversea Bank		<b>Public Sector Banks</b>	29	HDFC
9	Oriental bank of Commerce	20	IDBI	30	Kotak Mahindra Bank
10	Punjab National Bank		<b>Foreign bank</b>	31	ICICI
11	Punjab & Sindh Bank	21	CITI Bank N.A	32	Indusind Bank
12	State Bank of India	22	Deutsche Bank AG	33	Yes Bank
		23	The Hongkong and Shanghai		

Bank Guarantee No : ..... Date..... Banker Name : .....

Bank Guarantee Value Rs.....Lakh(s)

FIRM CODE : .....

Please affix Rs.80/- Non Judicial  
Stamp here

1. THIS DEED OF GUARANTEE made this.....day of.....20.....  
by ..... (hereinafter called the Bank) in favour of  
M/s. BHARAT HEAVY ELECTRICALS LIMITED, BOILER AUXILIARIES PLANT,  
RANIPET-632 406 having its Registered Head office at BHEL HOUSE, SIRI FORT, NEW DELHI,  
Pin - 110 049.
2. WHEREAS M/s. BHARAT HEAVY ELECTRICALS LIMITED, hereinafter called the "COMPANY"  
have placed Purchase Orders / Work Orders which are pending as on date and also future  
Purchase Orders / Work Orders to be placed by the company upto the expiry of this Guarantee  
(hereinafter called the "CONTRACT") for machining fabrication supply of pressure and non-  
pressure parts with .....  
..... (hereinafter called the  
CONTRACTOR/SUPPLIER) and the said machining / fabrication / supply of pressure and non-  
pressure parts shall be made from the supply of raw materials and components by the company  
to the Contractor / Supplier in pursuance of the Contract(s) already placed but pending execution  
as on date and the Contract(s) to be placed from time to time by the company on the contractor/  
supplier.
3. AND WHEREAS one of the conditions for placing such Contract(s) is that contractor / supplier  
shall provide the company with a Bank Guarantee to the extent of Rs.....  
(Rupees.....) as a security for the raw  
materials and components supplied and to be supplied in pursuance of the contract(s) already  
placed and pending as on date/and the contract(s) to be placed from time to time upto the  
expiry of this Guarantee and also for the satisfactory performance and completion of work/supply  
and the terms and conditions of the said contract.
4. AND WHEREAS the contractor/supplier have approached the Bank and at their request and in  
consideration of arrangements arrived at between the said contractor/supplier and the said  
Bank. We, the Bank have agreed to give such guarantee as hereinafter mentioned in favour of  
the aforesaid company.

Sign & Seal of issuing Bank



Bank Guarantee Value Rs.....Lakh(s)

5. NOW, THEREFORE, these present witness that we, the Bank by the hand of Branch Manager its lawfully and duly constituted attorney, do hereby undertake irrevocably and unconditionally to pay without demur to the aforesaid company a sum of Rs..... (Rupees.....) on demand being made by the said company and to keep the said company indemnified to the extent of Rs..... (Rupees.....) by virtue of this guarantee against any loss/damage caused to/suffered by the said company, by reason of any breach by the aforesaid contractor/supplier of any of the terms and conditions, stipulations or undertakings or any one of them contained in the said contract(s) and the tender documents if any attached there to and for the payment of any money payable by the said Contractor/Supplier to the said company under the terms and conditions of the said contract(s) (the decision regarding the breach, loss, damage or payment due being solely in the discretion of said company). We further undertake to pay the aforesaid amount in lumpsum on demand without demur or such part thereof as the company may demand from time to time, irrespective of the fact whether the said Contractor/Supplier admits or denies such claim or questions its correctness in any court, Tribunal Arbitrations proceedings or before any authority. The liability or obligation of Bank under this guarantee would not wait till the disputes have been decided by any Court or Tribunal or in the Arbitration proceedings or by any other authority. It shall not be necessary for the said company to proceed against the Contractor / Supplier before proceeding against the Bank and its Guarantee herein contained shall be enforceable notwithstanding any security, which the said company may have obtained or obtain from the Contractor / Supplier. Further any payment made by the Bank to the company under this guarantee shall be deemed to have been duly and lawfully made.
  
6. The liability under this guarantee is a continuing one covering all contracts, already placed and pending as on date to be placed upto the expiry of this Guarantee and should any loss or damage occur on account of the breach of the terms and conditions of the said Contract(s) by the Contractor/Supplier or should any surplus raw materials and components become due to the Company under Contract(s) and remain undelivered to company, the Bank shall indemnify the Company for loss/damage for the value of raw materials and components, to an extent of Rs..... (Rupees.....) and this is without prejudice to any other remedies which may be otherwise available to the company against the Contractor/Supplier by way of deduction from any sum due or any sum which at any time hereafter become due from the Contractor/Supplier under this or any other contracts.

Sign & Seal of issuing Bank

Bank Guarantee Value Rs ..... Lakh(s)

7. THE AFORESAID Guarantee will remain in force and the Bank shall be liable under the same irrespective of any concession or time being granted by the said company to the Contractor/Supplier in or for fulfilling the said contract(s) between Contractor/Supplier and the Company and the guarantee will remain in full force irrespective of any change of terms, conditions or stipulations or any variations in the terms of the said Contractor(s) and irrespective of whether notice of such change and/or variation is give to us or not and claim to receive such notice of any change and/or variation is given to us or not and claim to receive such notice of any change and /or variation of the terms and /or conditions of the said Contract(s) is hereby specially waived by us. Further, we shall not be released from this guarantee by any forbearance or the exercise or non exercise of any of the power or rights under the said contract(s) by the said company against the Contractor/Supplier irrespective of whether, notice of such forbearance enforcement or non enforcement of any powers or rights, modifications or changes made in the said contract(s) or concession shown to Contractor/Supplier by the Company is given to us or not.
8. THE GUARANTEE herein contained shall not be determined or affected by the liquidation or winding up or insolvency of or change in the constitution of the Contractor/Supplier and shall in all respects and for all purposes be binding and operative until all payments of all money due or that may hereafter become due to the said company are settled irrespective of any liability or obligation of the Contractor/Supplier under the said Contract(s).
9. A REFERENCE to this Bank Guarantee in the contract(s) placed already and pending as on date and to be placed upto the expiry of this Guarantee shall be sufficient to bind the Bank in respect of their liability under this Bank Guarantee and this Bank Guarantee shall be read as an integral part of the contract(s) already placed but pending as on date and to be placed upto the expiry of this Guarantee.
10. WE, THE BANK, further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said contract(s) and that it shall continue to be enforceable till all the dues of the company under or by virtue of the said contract(s) have been fully paid and its claims satisfied that the terms and conditions of the contract(s) have been fully and properly carried out by the said Contractor/Supplier and accordingly discharge the Guarantee, subject, however to the condition that the company shall have no rights under this guarantee unless a claim or demand in writing in respect of this guarantee has been preferred by the company with the Bank on or before ...../...../..... (including a claim period of 3 months). For the purpose of this clause any letter making the demand on the Bank by M/s.BHEL despatched by R.P.A.D. or by telegram or by FAX or by any electronic media addressed to the above mentioned address of the Bank shall be deemed to

Sign & Seal of issuing Bank

Bank Guarantee Value Rs.....Lakh(s)

be the claim/demand in writing referred to above irrespective of the fact as to whether or when the said letter reached the Bank, as also any letter containing the said demand or claim is lodged with the Bank personally.

11. Any CLAIM OR DISPUTE arising under the terms of this document shall only be enforced or settled in the Courts at Ranipet, Vellore District only.
12. THE BANK undertake not to revoke this Guarantee during the currency except with the previous consent of the Company in writing.
13. THE BANK declares that it has powers to issue this Guarantee and the undersigned has full powers to do so on its behalf under the power granted to him by the proper authorities of the Bank.
14. Notwithstanding anything contained herein before, our liability under this guarantee shall be limited to a sum of Rs..... and stand completely extinguished and discharged if no demand or claim is made upon us in writing on or before ...../...../..... (including a claim period of 3 months).

DATE THIS..... DAY OF .....20

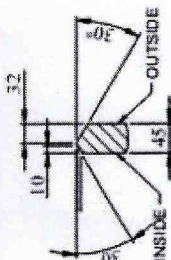
Seal of the Bank

Signature of the Bank Manager

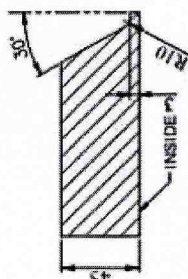




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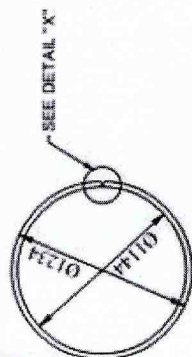


**PARTIAL SECTION "A-A"**  
**(TYP. BOTH ENDS)**

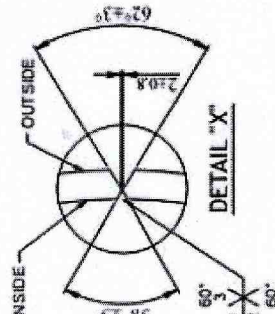


**PARTIAL SECTION "B-B"**  
**(SUPPORT FLANGE END)**

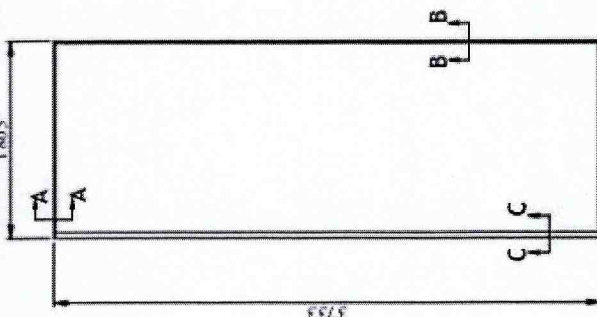
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ITEM NO	DESCRIPTION	UNIT	TOTAL QTY PRICE	AMOUNT QTY PRICE	DATE



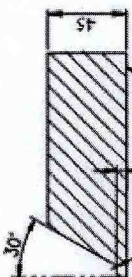
FORMED END VIEW





COMPLETE PENETRATION  
SEP. APR. 105  
RADIOGRAPHIC



OUTSTRETCHED VIEW



PARTIAL SECTION "C-C"  
(POST END)



TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		 <b>BHARAT HEAVY ELECTRICALS LTD.,</b> UNIT BOLLAR AUSTRALIANS PLANT. RAIPUR - CHH. COG.		DOWN CHD APPRO KT	NAME HRSNA HRSNA	SIGN  	DATE 01.08.17	NO. OF ITEM
DEPT AP CODE -		GRADE OF (UNPLD BN) PR-QR-300	 SCALE N15	WEIGHT (KG) 2380.220	REF TO ASST/OLD DNG <b>3-52-011-02994</b>			PART NO
TITLE <b>SUPPORT TRUNNION SHELL PLATE</b>		CARD CODE U 01	DRAWING NO <b>3-52-011-03111</b>					KEY

CAUTION: The information on this document is the property of HEAVY ELECTRONICS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

DATE	ATTEMPT :	DATE	ATTEMPT :	DATE	ATTEMPT :
DATE	CHUCKED :	DATE	CHUCKED :	DATE	CHUCKED :

REF.: PR  
REF.: PR

REV	DATE	ALTERED
		CHECKED

		<b>BHARAT HEAVY ELECTRICALS LTD.</b> UNIT - BOILER AUXILIARIES PLANT, RAIPUR - 832 406.	
DEPT	GRADE OF		SCALE
AP	UNROL DIM		
CODE	PR-4500	NIS	3/36.
TITLE		ROTOR POST SHELL	

ROTOR POST SHELL

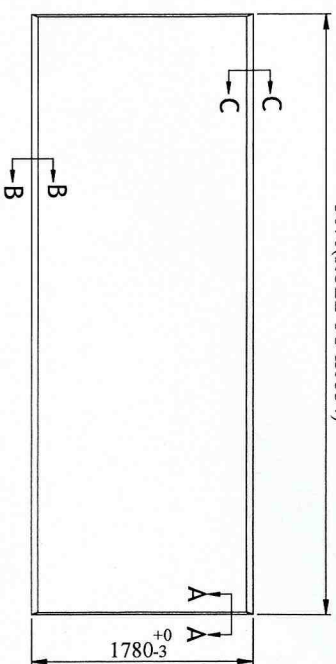
U 01

3-52-011-03114

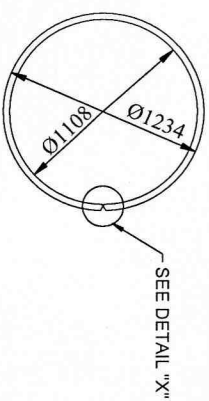
Size A3



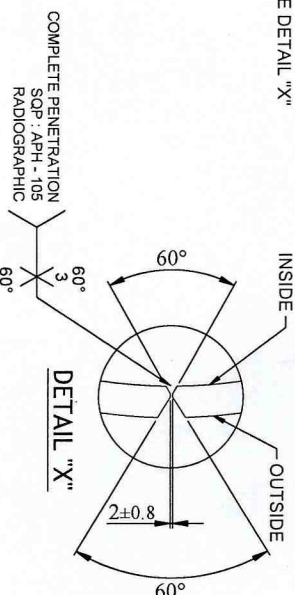
3676(ROLL TO IR 554)



### OUTSTRETCHED VIEW



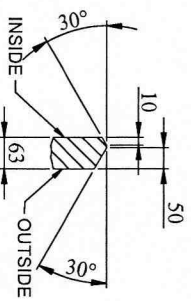
**FORMED END VIEW**



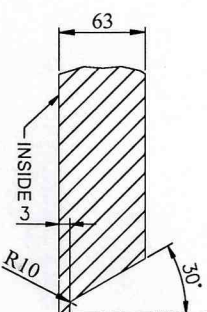
DETAIL "X"

ALL DIMENSIONS ARE IN MILLIMETRES

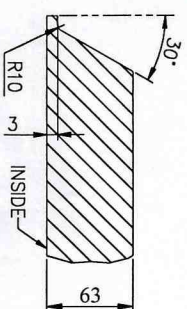
FOR PRODUCTION  
REF: PRQA : 580 FOR PAINTING



PARTIAL SECTION "A-A"  
(TYP. BOTH ENDS)



PARTIAL SECTION "B-B"  
(SUPPORT FLANGE END)



PARTIAL SECTION "C-C"  
(POST END)

REV	DATE	ALTERED :	REV	DATE	ALTERED :
		CHECKED :			CHECKED :
ZONE			ZONE		

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01	PL 63X1780X3676 ROLL TO IR. 554		AA1011819236	IS 2062 Gr B		3235.900	
VAR NO	DESCRIPTION	CAT	DRAWING No.	ITEM NO	MATL CODE	UNIT WT	GS
				VAR NO	MATL SPECN	QTY	ZONE
					A, P, C		
					DI		

<p><b>CAUTION:</b> The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.</p>									
<p>TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT</p>									
<p><b>BHARAT HEAVY ELECTRICALS LTD.,</b> UNIT. POWER AUXILIARIES PLANT. BANDER - 682 406.</p>									
<p>DEPT AP GRADE OF UNVOL DIM</p>									
<p>SCALE NTS</p>									
<p>WEIGHT (KG).</p>									
<p>CARD CODE</p>									
<p>DRAWING NO.</p>									
<p>REF. TO ASSY/OLD DRG.</p>									
<p>DATE</p>									
<p>NAME</p>									
<p>SIGN</p>									
<p>11.06.19</p>									
<p>CRD</p>									
<p>KRISHNA</p>									
<p>KRISHNA</p>									
<p>APPD</p>									
<p>KT</p>									
<p>REV</p>									
<p>TITLE</p>									
<p>SUPPORT TRUINNION SHELL PLATE</p>									
<p>U 01</p>									
<p>3-52-011-03113</p>									

Size A3-R05-280

**I LUG ASSEMBLY:**

1. Machining of all sides of upper lug and also drilling of holes shall be done carefully.
2. Machining of all sides of lower lug and also the radius shall be done using a fixture.
3. Full welding of lug shall be carried out in the lug welding fixture after tack welding on lug assembly fixture.
4. LPI is to be carried out on all fillet welds.
5. Step machining shall be carried out by taking center line passing through the center of the hole of top lug and center of slot of bottom lug as reference.
6. Twist of lug assembly shall be maximum of 0.8 mm.

**II MODULE ASSEMBLY**

1. Assembly of modules shall be done in the module assembly fixture and tack welded.
2. Ensure proper seating of diaphragm plate and also its end square ness to the module assembly fixture.
3. Ensure that the accepted lug assembly is placed in the fixture without doing any rework on lug assembly and also ensure that the pins are inserted on to the holes in the
4. lug plate smoothly without hammering.
5. The divisional plates shall be tack welded to the diaphragm plate without gap and also ensure the edge preparation of basket support bar, parallel to the diaphragm plate.
6. The complete module assembly shall be thoroughly checked for all dimensions and Shell plate radius, Rotor angle radius as per the relevant drawing.


**III ROTOR POST ASSEMBLY**


1. Rotor/Support Shell plate shall be checked for length, width, diagonal with in 1 mm before it is taken for rolling.
2. Ovality of rolled shell ( in tacked condition) shall be maximum of 5 mm and after completion of full welding the shell shall be re rolled and the maximum ovality shall be 3 mm .
3. Header plate shall be pre machined & dimension shall be checked as per drawing and Lathe center shall be drilled to ensure proper alignment of the Rotor post.
4. Backing ring inside the shell to be properly fit to ensure correct root gap between header plate and shell welding.
5. Back grind LPI for all joints to be carried out before doing further welding. And NDT requirements are as per the Clause 2.2 of SQP.
6. Ensure the Face out shall be with in 3 mm before machining
7. Holes drilling for Guide end of Rotor post Trunion bolt hole and support trunion holes shall be drilled in Jigs.
8. All tapped holes shall be thoroughly cleaned and protect with plastic plugs.
9. The bottom flange pins shall be fixed in place by metallic adhesive and this shall be inspected.
10. Ensure Proper packing & Handling to protect the machined surfaces of the Rotor post as per drawing.

**IV Rotor Housing assembly**

1. Ensure the Height ,width diagonal with in 1 mm and Radius of the axial seal plate checked with template with in 1.5 mm.
2. Ensure the Height , Straightness and Hole pitch as per drawing and no gas gutting of holes is accepted other than mentioned in the drawing.
3. Panels are lifted with using lifting lugs only and ensure the lifting Hook side shall face the top while shipping to shop/site.



STANDARD QUALITY PLAN									
MANUFACTURER'S NAME & ADDRESS			ITEM/SUB SYSTEM:			SQP APH 105			
 Ranipet M/S BHEL / BAP / RANIPET TAMIL NADU-632 406			<b>Rotor Post / Module/Housing Assembly</b>			Doc. No	00		
						Rev. No	01 02 03		
						Date	03 of 04		
						Page No			
Sl no 1	Component & operation 2	Characteristics 3	Type Of Check 4	Quantum of Check 5	Reference Documents 6	Acceptance Norms 7	Format Of Records 8	Agency 9	Remarks 10
2.5	Rotor Post Assy (Fit up)	Dimension	Measurement	100 %	Drawing / Ref note III 1-5		HC	P	W
2.5.1	Machining	Run out/Face out, Shell Length, Flange Thickness, Header Dia, Hole Size, Pitch, Pin Hole Pitch, Hole Size, Pitch for Upper Rotor Post, Over All Length, Surface Finish	Measurement	100%	Drawing/Ref Note III- 6,7,8		HC	P	W
2.6	Lug plate	Dimension	Measurement	100%	Drawing / Ref note I		HC	P	W
2.6.1	Machining	Dimension	Measurement	100 %	Drawing		HC	P	W
2.7	Module assy	Dimension	Measurement	100 %	Drawing /refer note II		HC	P	W
2.8	Rotor Housing	Dimension	Measurement	100%	Drawing/refer note IV		HC	P	W
2.9	Guide Trunnion To Adaptor Sleeve	a) Taper Match With Adapter Sleeve & Guide trunion b) Taper Match With Adapter Sleeve & Guide trunion	Blue match	100%	Drawing		DO	P	W
3.0	Final Inspection	a)Over all Dimensions	Pressure Test	100%	No Leakage / PRQA:014/latest		HC	P	W
		b) Painting And Preservation	Measurement	100 %	Drawing		HC	P	W
			Visual & Measurement	10 %	PRQA :590/latest		--	P	W

STANDARD QUALITY PLAN											
<div> Ranipet</div>		MANUFACTURER'S NAME& ADDRESS M/S BHEL / BAP / RANIPET TAMIL NADU-632 406		ITEM/SUB SYSTEM: <b>Rotor Post / Module/Housing Assembly</b>		Doc. No		SQP APH 105		Remarks 10	
						Rev. No		00			
						Date		01 02 03			
						Page No		02 of 04			
SI no 1	Component & operation 2	Characteristics 3	Type Of Check 4	Quantum of Check 5	Reference Documents 6	Acceptance Norms 7	Format Of Records 8	Agency 9			
								M	B		
2.2	NDE ( Rotor post)	Support Trunnion Shell Butt Weld Support Trunnion Shell To Common Header Plate Rotor Post Butt Weld Header Plate To Rotor Post Shell Rotor Post Shell To Common Header Plate Support trunnion shell to Header plate Lifting Lug Welding Lower Post Pin (*)	RT UT /MT PT/ MT ---DO--- ---DO--- -DO- -DO- PT	100 % 100 % 100 % 100% 100% 100% 100% 100 %	BHE:NDT:RP:RT:01 / latest  BHE: NDT: RP: UT: 05/ Latest BHE: NDT: RP: MT: 01/ Latest  BHE: NDT: RP: PT: 01/ Latest BHE: NDT: RP: MT: 01/ Latest  -DO- -DO- -DO- -DO- BHE: NDT: RP: PT: 01/ LATEST		NDT Report -DO- -DO- -DO- -DO- Do Do Do Do Do	P P P P P P P P P	W W W W W W W V W W	(*) Verification of NDT Reports	
2.3	Module Assy	Lug plate Vs Diaphragm plate	PT	10%	DO						
2.4	Housing assy	Butt Joint of Plates	PT	10 %	DO						

MANUFACTURER'S NAME & ADDRESS		STANDARD QUALITY PLAN						ITEM/SUB SYSTEM:	
M/S BHEL / BAP / RANIPET TAMIL NADU-632 406		Rotor Post/ Module/Housing Assembly						SQP APH 105	
Ranipet								00	
								01 02 03	
								01 of 04	
Sl no	Component & operation	Characteristics	Type Of Check	Quantum of Check	Reference Documents	Acceptance Norms	Format Of Records	Agency	Remarks
1	2	3	4	5	6	7	8	M	B
1.0	Raw Materials	Chemical & Mech. Prop.	Chemical & Tensile / Bend	Each Heat	Respective material specification		TC	P	V
1.1	Plates, Sheets .coils	-----Do----	Chemical & Tensile, UT	---Do--	TDC: RTA: 403/Latest		TC	P	V
1.2	Forgings	-----Do----	Chemical & Tensile, UT	-do-	-Do-		TC	P	V
1.3	Header Plate	Soundness	UT For Thickness >=25mm	100%	-Do-		TC	P	V
1.4	Lower Post Pins	Chemical & Mechanical Properties	Chemical, Tensile, Hardness	100 %	Engineering Specification		TC	P	V
2.0	In Process Control	Soundness	UT for Rod Dia > 63	100 %	TDC: RTG: 500/latest		TC	P	V
WELDERS ARE QUALIFIED TO AWS D1.1 & PROCEDURES ARE PREQUALIFIED.									
2.1	Welding	Weld Size	Measurement	100%	Drawing		DR	P	W
		Finish	Visual	100%	--		--	P	W
LEGENDS:									
M - Manufacturer, ( BHEL Shop / Subcontractor, )									
B - BHEL QC/ Authorised Inspection agency									
P - Performed By, V - Verification Of Reports/ Records									
W - Witness T C - Test Certificate R- report,									
Record of revision		Rev No	Date	Changes made					
		00	01 02 03	Requirement of QCP: A:001,A:002, A- 007,A -007 S and 2:4:256 are merged and this SQP is Formed.					
				Prepared by	Reviewed by	QA	QC	APPROVED BY :	
								( Head/QA)	

MASTER COPY

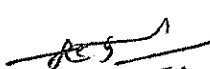

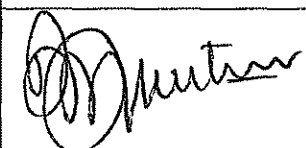


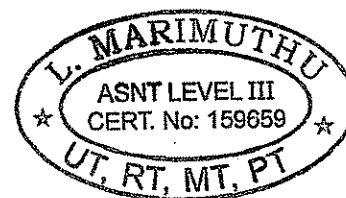


BHARAT HEAVY ELECTRICALS LIMITED  
RANIPET – 632406  
NON - DESTRUCTIVE TESTING

BHE:NDT:RP:MT:01  
REVISION 03  
PAGE 1 of 15

**PROCEDURE  
FOR  
MAGNETIC PARTICLE EXAMINATION  
OF  
FERRITIC MATERIALS AND WELDED COMPONENTS**

Prepared by	Reviewed by	Approved by
K Velladurai Dy. Engineer Level II	Kaushal Kumar Engineer Level II	Level III
		



Effective Date: 30.08.2016



RECORD OF REVISION

Revision NO	Date of Revision	Reason for Revision
01	28 07 1999	Revision in entirety
02	14 08 2003	Clause modified Clause 8.2 added
03	30 08 2016	Revised in entirety based on latest standards.



## **1.0 SCOPE**

- 1.1 This procedure describes the method, techniques and acceptance standards for Magnetic particle Examination of all shapes of ferromagnetic product forms in Boiler components Boiler Auxiliaries, pressure vessels, Heat Exchangers and Structural.
- 1.2 The examination shall include all Gas cut openings, attachment welds with a throat thickness over 6mm and on finished surface of welds as required by referencing code/section. The examination includes base material 13mm on each side of the welds.

## **2.0 REFERENCE**

- 2.1 ASME Section V (Article 7), I & VIII (Division 1 & 2) - 2015
- 2.2 ASTM B31.1- 2012
- 2.3 ANSI / AWS D 1.1 (2010)

## **3.0 EQUIPMENT**

- 3.1 Equipment generating half-wave rectified alternating current employing prods at the end of magnetizing cables shall be used for examination by circular magnetization method.
- 3.2 Direct / alternating current electromagnetic yokes shall be used to detect discontinuities that are open to the surface of the part by longitudinal magnetization method and to examine the surface where arcing is not permitted or prod method is not practicable.

## **4.0 EXAMINATION MEDIUM**

- 4.1 The ferromagnetic particles used as examination medium shall be either wet or dry. Wet Particles shall be non - fluorescent type.
- 4.2 Dry magnetic particles black, gray or red in color shall be used as examination medium for examination of welds and other product forms to provide adequate contrast with the surface being examined. Particle shall be used within temperature range limitation set by the manufacturer of the particle.
- 4.3 Non fluorescent wet particles will be black or reddish brown in color that provide adequate contrast with the surface being examined. Wet particles shall be suspended in kerosene for application to the test surface by flowing or spraying. Suitable conditioning agents shall be added to the water to provide proper wetting and corrosion protection for the parts being examined.
- 4.4 The bath concentration shall be determined by measuring the settling volume through the use of pear-shaped centrifuge tube. The settling volume shall be within 1.2 ml to 2.4



ml for non- fluorescent particles per 100mL bath sample and for 0.1 to 0.4mL for fluorescent particle in 100mL bath sample.

## **5.0 SURFACE CONDITIONING**

### **5.1 Preparation**

5.1.1 As welded, as rolled, as cast or as forged surface is generally acceptable provided the surface irregularities will not mask the indication due to discontinuities. Otherwise surface preparation by grinding or machining may be necessary. Undercuts, Overlaps or abrupt ridges and valleys in the welds and opening shall be smoothly merged with the parent metal.

5.1.2 Prior to magnetic particle examination, ensure that the surface to be examined and adjacent area within at least 25mm of the area of interest shall be dry and free of any dirt, grease, lint, scale, welding flux, spatter, oil or other extraneous matter that would interfere with the examination.

5.1.3 Cleaning may be accomplished by detergents, organic solvents, descaling solution and paint removers, sand or grit blasting method.

5.1.4 Thin nonconductive coating such as painting will not normally interfere with the formation of indications. If nonmagnetic coatings are left on the part in the area being examined, it shall be demonstrated that indications can be detected through the existing maximum coating thickness applied.

### **5.2 Surface contrast Enhancement**

5.2.1 When coating are applied temporarily to enhance particle contrast or if coating are left on the part being examine, it must be demonstrated that indications can be detected through the enhanced coating thickness on a test plate with machined grooves as in 16.0

5.2.2 If indications of required sensitivity could not be detected, the coating shall be removed.

## **6.0 METHOD OF EXAMINATION**

6.1 Examination shall be made by continuous method.

6.1.1 Dry continuous magnetization method : The magnetizing current remains on while the examination medium (Dry particle) is being applied and while the excess of the examination medium is being removed.





- 6.1.2 Wet continuous magnetization method: The magnetic particle application involves bathing the surface of the part with examination medium and terminating the bath application immediately prior to cutting off the magnetizing current with two or more shots given to the part. The duration of the magnetizing current is typically on the order of 1/2 seconds.

## **7.0 TECHNIQUES**

- 7.1 One of the following magnetization techniques shall be used.

- a) Prod Technique
- b) Yoke Technique
- c) Head shot and Coil Technique

## **8.0 TYPE OF CURRENT FOR MAGNETISATION**

- 8.1 Single phase half-wave rectified current (HWDC) shall be employed for Testing with prod techniques.
- 8.2 The amperage required with single - phase Half-wave rectified current shall be verified by measuring the average current during the conducting half cycle only.
- 8.3 For Yokes, the current shall be either AC or DC.
- 8.4 For Head shot and Coil, the current shall be either HWDC or AC.

## **9.0 CALIBRATION**

- 9.1 Ammeter of magnetizing equipment shall be calibrated as per NDT work Instruction at least once a year, or after each time it has been subjected to major electrical repair, periodic overhaul or damage. If equipment has not been in use for a year or more, calibration shall be done prior to first use.
- 9.2 Lifting power of yokes
- 9.2.1 The magnetizing power of yokes shall be verified prior to use each day the yoke is used. The magnetizing power of yokes shall be verified whenever the yoke has been damaged or repaired.
- 9.2.2 Each alternating current electromagnetic yoke shall have a lifting power of at least 4.5 kg and direct current / permanent magnetic yoke shall have a lifting power of 18.kg, at the maximum pole spacing that will be used or the pole distance shall be the spacing at which the yoke lifts the stipulated weight.
- 9.2.3 Each weight shall be weighed with a scale from a reputable manufacturer and stenciled



with the applicable nominal weight prior to first use. A weight need only be verified again if damaged in a manner that could have caused potential loss of material.

## **10.0 EXAMINATION**

### **10.1 Direction of magnetization**

10.1.1 At least two separate examination shall be carried out on each area. During the second examination the prods/poles are spaced so that the lines of flux are approximately perpendicular to those used during the first examination. A different technique for magnetization may also be used for the second examination.

10.2 Examination Coverage: Examination shall be made with sufficient overlap to assure 100% coverage of testing.

## **11.0 PROD TECHNIQUE: (Fig. 1,2&3)**

11.1 Magnetizing procedure: The prod electrodes are pressed firmly against the surface in the area to be examined. In order to avoid arcing a remote control switch shall be built in to the prod handles, to permit the current to be turned on after the prods have been properly positioned and to be turned off before they are removed.

### **11.2 Magnetizing current**

11.2.1 The current shall be 100(minimum) to 125 (maximum) amperes/25mm of prod spacing for sections 19mm thick or greater.

11.2.2 For sections less than 19mm thick, the current shall be 90 to 110 amperes / 25mm of prod spacing.

11.3 Prod spacing: Prod spacing shall not be less than 75mm nor exceed a maximum of 200 mm. The prod tips shall be kept clean and dressed and the contact areas of the test surface shall be free from dirt, scale, oil etc, to minimize electrical arcing. In the open circuit voltage of the magnetizing current is greater than 25 volts, Lead, steel or Aluminum rather than copper tipped prods shall be preferred to avoid copper deposits on the part being examined.

## **12.0 YOKE TECHNIQUE**

12.1 The pole spacing shall be between 100 mm to 150mm. The field indicator will be used to check the direction of the part magnetization.

## **13.0 Head shot and Coil Technique**



**Head shot:**

**13.1 Magnetizing Procedure**

For this technique, magnetization is accomplished by passing current through the part to be examined. This produces a circular magnetic field that is approximately perpendicular to the direction of current flow in the part.

**13.2 Magnetizing current:** The current shall be 12 A/mm to 31 A/mm of outer diameter.

**Coil/Longitudinal Technique:**

**13.3 Magnetizing Procedure**

For this technique, magnetization is accomplished by passing current through a multi-turn fixed coil (or cables) that is wrapped around the part or section of the part to be examined. This produces a longitudinal magnetic field parallel to the axis of the coil. If a fixed, prewound coil is used, the part shall be placed near the side of the coil during inspection.

**13.4 Magnetizing current**

A) Parts with L/D Ratios Equal to or Greater Than 4.

The magnetizing current shall be within 10% of the ampere-turn value determined as follows:

$$\text{Amperes Turn} = \frac{35,000}{L/D+2}$$

B) Parts with L/D Ratios Less Than 4 but Not Less Than 2

The magnetizing ampere-turns shall be within 10% of the ampere-turns' value determined as follows:

$$\text{Amperes Turn} = \frac{45,000}{L/D}$$

C) Parts with L/D Ratios Less Than 2. Coil magnetization technique cannot be used.

Where, L is Length of the Job to be tested and D is outside Diameter of the job.

**14.0 APPLICATION OF DRY PARTICLES**

**14.1** The dry particles shall be applied in such a manner that a light uniform dust-like coating



Settles on the surface of the area being examined. The application technique shall be such that the particles are suspended in air and reaches the examination surface in a uniform cloud with a minimum force, using a hand powder applicators (Squeeze bulb) or specially designed mechanical blower or by a spray nozzle.

- 14.1.1 Dry particles shall not be applied to a wet surface nor when there is excessive wind. The particles shall not be applied by pouring, throwing, or spreading with fingers.
- 14.1.2 Any excess powder shall be removed while the magnetization current is on and shall be with a gentle air stream without removing or disturbing particles attracted by a leakage field that may prove to be a relevant indication.

#### **14.2 APPLICATION OF WET PARTICLES**

- 14.2.1 The application of wet particles involves the bathing of the area to be examined, by Spraying or flowing during the application of magnetizing current.
- 14.2.2 Two or more shots shall be applied, but the last shot shall be applied while the bath still remains on the area to be examined and after the particles flow has been stopped. Care shall be taken to cut off the bath application before removing the magnetic field, to prevent high-velocity particle flow that wash away or remove fine or weakly held indications.

#### **15.0 MAGNETISING FIELD ADEQUACY AND DIRECTION**

- 15.1 By using the Pie shaped Magnetic Field Indicator, the magnetizing field adequacy and direction may be verified.

#### **16.0 LIGHTING**

- 16.1 Visible Light Intensity
- 16.2 The examination and evaluation of indications shall be performed under minimum light intensity of 100 fc (1000 lx). The light intensity shall be measured with white light meter prior to evaluation of indications or verified light source shall be used. Verification of light sources is required to be demonstrated only one time, documented, and maintained.

#### **17.0 SYSTEM PERFORMANCE CHECK (Fig. 4)**

- 17.1 For prod magnetization with HWAC, performance sensitivity shall be checked at least once in a shift before start of the examination on a test plate that contains machined grooves to different depths. The indication of a groove at 3mm depth from the surface of the test plate will indicate adequate sensitivity.



- 17.2 If the part is to be tested with contrast coat, the sensitivity shall be checked with the contrast coat on the surface of the test block.
- 17.3 For electromagnetic yokes, the adequacy or direction of the magnetizing force shall be verified by positioning the 'Magnetic Field Indicator' on the surface to be examined. The pattern in the indicator should be clearly developed on the surface of the block.
- 17.4 For Head shot and coil, The Ketos (Betz) ring specimen shall be used in evaluating and comparing the overall performance and sensitivity of both dry and wet, fluorescent and nonfluorescent magnetic particle techniques using a central conductor magnetization technique.

#### **18.0 DEMAGNETISATION**

- 18.1 The job to be tested using Head shot and coil technique demagnetization to be carried out.
- 18.2 The job to be tested using Yoke/Prod no demagnetization is required.

#### **19.0 EVALUATION OF INDICATION**

- 19.1 Mechanical discontinuity at the surface would be indicated by the retention of the powder or medium.
  - 19.1.1 All the indication are not necessarily discontinuity indications since certain metallurgical discontinuities and magnetic permeability variation may produce similar unacceptable discontinuity indication. These non-relevant indications shall be reexamined by any other suitable NDT methods such as Liquid penetrant or macro etching.
- 19.2 Relevant indications are those which result from unacceptable mechanical discontinuities.
  - 19.2.1 Linear indications are those indications in which length is greater than three times the width.
  - 19.2.2 Rounded indications are circular or elliptical with the length equal to or less than three times the width.

#### **20.0 ACCEPTANCE STANDARDS AS PER ASME (SEC I,VIII Div 1&2 and B 31.1) AND OTHERS**

- 20.1 Welds and Materials
- 20.2 An indication of an imperfection may be larger than the imperfection that causes it: however, the size of the indication is the basis for acceptance for evaluation.



- 20.3 Only indications with major dimension greater than 1.5mm shall be considered relevant.
- 20.4 All surface to be examined, except as mentioned in 19.5, 19.6 and 19.7 shall be free of
- 20.4.1 Relevant linear indications
- 20.4.2 Relevant rounded indication greater than 5 mm
- 20.4.3 Four or more relevant rounded indications in a line separated by 1.5mm or less edge to Edge.
- 20.4.4 Ten or more rounded indications in any 3870 mm<sup>2</sup> (6 inch<sup>2</sup>) of surface with the major Dimension of this area not to exceed 150mm with the area taken in the most unfavorable location relative to the indication being evaluated.
- 20.5 Cut edges and openings:
- 20.5.1 All surface to be examined shall be free of
- (a) Cracks
  - (b) Laminations exceeding 25mm in length.
- 20.6 In welds joining nipples to drums, spheres or headers, all slag or porosity indications Shall be investigated to assure that no leak - path exists.
- 20.7 In attachment welds of non-load carrying class, indications from crack or due to material separation are unacceptable.
- 21.0 ACCEPTANCE STANDARD FOR STRUCTURAL COMPONENTS AS PER AWS D1.1**
- 21.1 The magnetic particle acceptance criteria is based on the size of the actual discontinuity and not the size of the discontinuity as indicated by the magnetic particle inspection medium. Where discontinuity cannot be visually seen (with magnification if required) after removal of the indicating medium, evaluation shall be based on size and nature of the magnetic particle indication.
- 21.0 Statically loaded Non tubular connections
- 21.1 Cracks, Lack of Fusion, and Incomplete penetration are not acceptable.
- 21.2 Undercut-for material with thickness less than 25mm undercut shall not exceed 1.0 mm, except that a maximum 2.0 mm is permitted for a accumulated length of 50mm in any 300mm. For material equal to or greater than 25.0 mm thick, undercut shall not exceed 2.0 mm for any length of weld.



21.3 Porosity - a complete joints penetration groove welds in butt joints transverse to the direction of computed tensile stress shall have no visible piping porosity. For all other groove welds and for fillet welds, the sum of the visible piping porosity 1 mm or greater in diameter shall not exceed 10mm in any linear 25mm of weld and shall not exceed 20mm in any 300mm length of weld.

**22.0 Cyclically Loaded Non tubular Connections**

22.1 Undercut - In primary members, undercut shall be no more than 0.25mm deep when the weld is transverse to tensile stress under any design loading condition. Undercut shall not be more than 1.0mm deep for all other cases.

22.2 Porosity - The frequency of piping porosity in fillet welds shall not exceed one in each 100 mm of weld length and the maximum diameter shall not exceed 2.5mm. Exception for fillet connecting stiffeners to web, the sum of the diameter of the piping porosity shall not exceed 10mm in any linear 25mm of weld and shall not exceed 20mm in any 300 mm length of weld.

22.3 Complete joint penetration groove welds in butt joints transverse to the direction of computed tensile stress shall have no piping porosity.

22.4 PIPING POROSITY - (General) is elongated porosity whose major dimension lies in a direction approximately normal to the weld surface. Frequently referred to as pin holes when the porosity extends to the weld surface.

**23.0 EDGE DISCONTINUITIES IN CUT MATERIALS**

23.1.1 No crack is acceptable.

23.1.2 Mill induced discontinuity

23.1.3 Length 25mm and less- Acceptable

23.1.4 Length over 25mm and depth up to 3mm- Acceptable

23.1.5 Length over 25mm and depth between 3mm and 25mm ~ indications to be removed.

23.1.6 Length over 25mm and depth greater than 25mm - indications to be removed to a depth up to 25mm.

**24.0 REPAIR AND RE-EXAMINATION**

24.1 Whenever an imperfection is repaired by chipping or grinding or and subsequent repair





by welding is not required, the excavated area shall be blended into the surrounding surface so as to avoid sharp notches, crevices, or corners.

24.2 After a defect is thought to have been removed and prior to making weld repairs, the area will be examined by suitable method to ensure that the defect has been removed or reduced to an acceptable size of an imperfection.

24.3 where welding is required after repair of an imperfection the area shall be cleaned and repair carried out. After repairs have been made the repaired area shall be blended into the surrounding surface so as to avoid sharp notches, crevices or corners.

24.4 After repairs have been made, the repaired area shall be re-examined by methods of examination that weld originally required for the affected area.

#### **25.0 PERSONNEL QUALIFICATION**

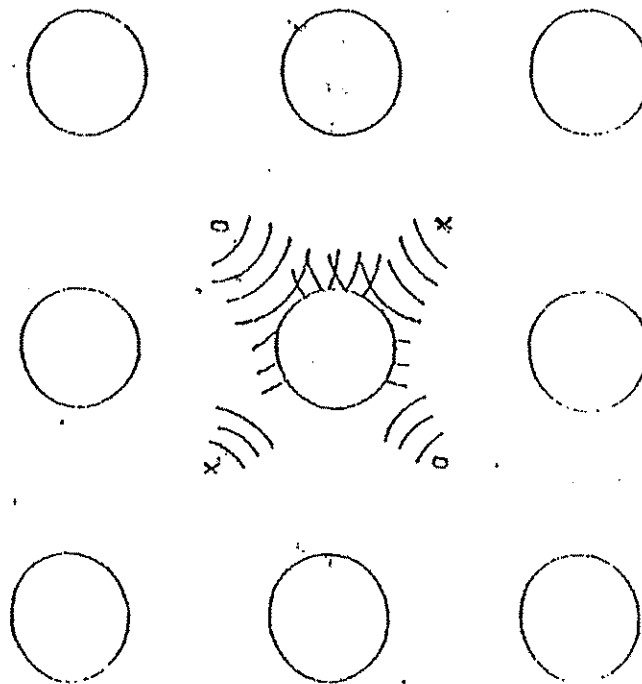
25.1 All personnel carrying out the examination and evaluation shall be qualified to minimum Level - II as per ASNT:SNT - TC -1A Edition 2006.

#### **26.0 FINAL CLEANING**

26.1 When the inspection is concluded, the magnetic particles shall be removed by any suitable means, leaving the product in a dry and clean condition.

#### **27.0 REPORT**

27.1 Copies of the report in a standard format R 49-719-B or equivalent duly signed by a Minimum Level - II personnel shall be issued after the test.



**FIG (3). TECHNIQUES FOR EXAMINATION OF FILLET WELDS**

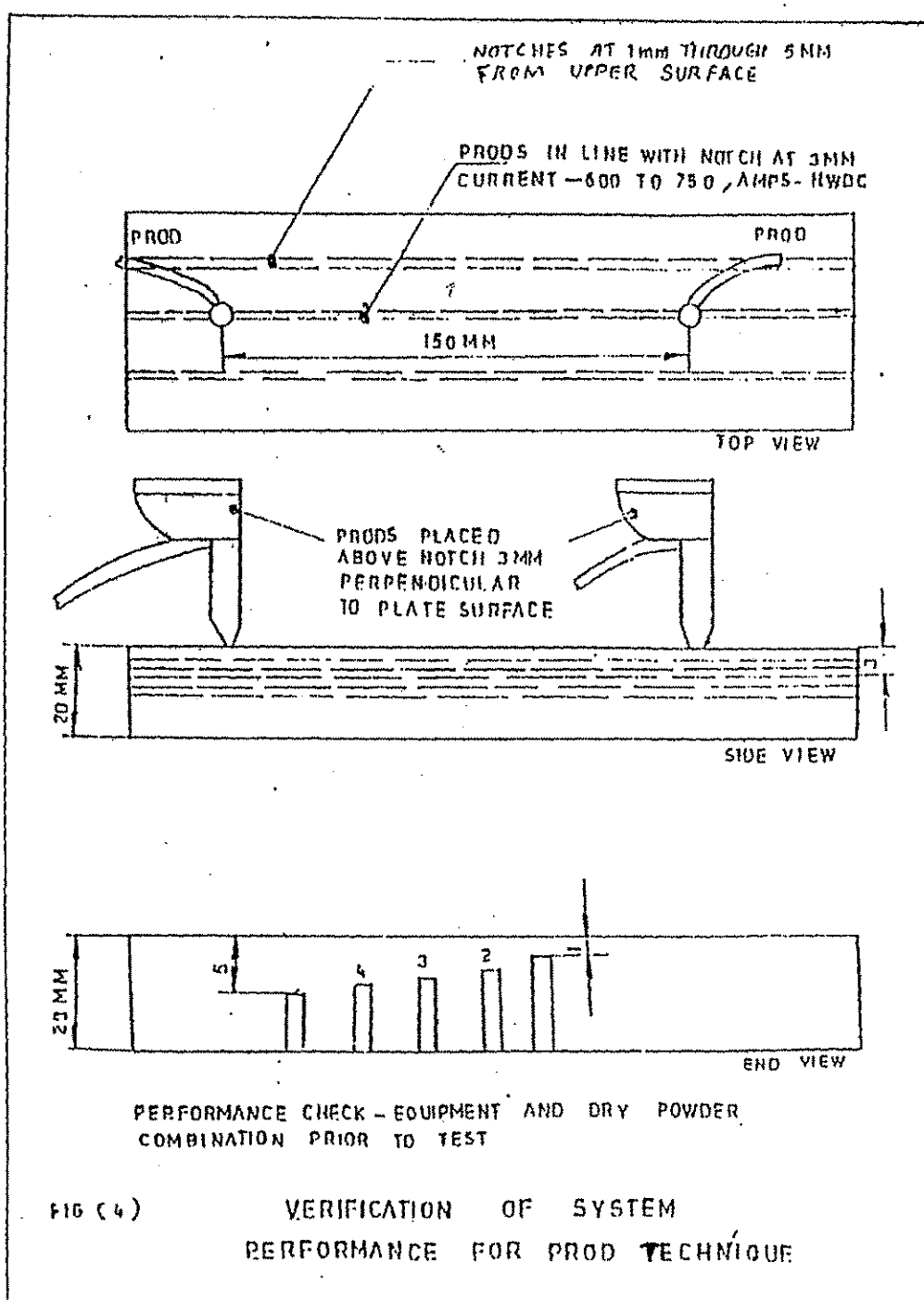
**0 - POSITION - 1**

**X - POSITION - 2**

**ARC BREAK LOCATION**

**NOTE :**

- 1) PRODS must be placed on drum / header perpendicular to plate surface.
- 2) Inspection will be 100% of weld for each shot.





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RANIPET - 632406  
NON - DESTRUCTIVE TESTING

BHE:NDT:RP:MT:01  
REVISION 03  
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BHARAT HEAVY ELECTRICALS LIMITED

BAP / RANIPET - 632 406

NON - DESTRUCTIVE TESTING

MAGNETIC PARTICLE EXAMINATION

R49-719/B

REPORT NO

REF NUMBER

WORK ORDER

CUSTOMER

PART NAME

PART NUM

DRAWING NO.

STAGE OF TEST

MATL SPECIFICATION

WELDER NAME

SURFACE PREPARATION

QP NUMBER

INSPECTOR NAME

REMARKS

DATE OF TEST

PROCEDURE REFERENCE

METHOD

MAGNETISING CURRENT

TYPE OF MAGNETISATION

DEMAGNETISATION

REMARKS

REQ DT : 02-NOV-16

BAY :

DU :

QTY :

REV :

THICKNESS :

CHP:

PROD SPACING :

AMPERAGE :

(LEVEL-II)

OPERATOR NAME & LEVEL

ASNT LEVEL-II PT,MT,UT,RT

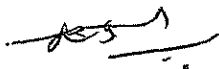
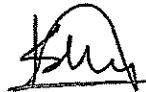
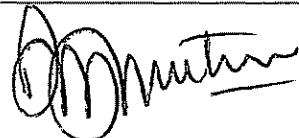
APPROVED BY EXTERNAL INS

BHEL/BAP - RANIPET

APPROVED BY NDT



## PROCEDURE FOR RADIOGRAPHIC EXAMINATION OF BUTT WELDS IN STRUCTURES OF BOILER COMPONENTS

Prepared by	Reviewed by	Approved by
K Velladurai Dy. Engineer Level II	Kaushal Kumar Engineer Level II	Level III
		



Effective from 21.09.2016



## **RECORD OF REVISION**

<b>Revision No</b>	<b>Date of Revision</b>	<b>Reason for Revision</b>
<b>01</b>	<b>11-02-2005</b>	<b>Revision in entirety</b>
<b>02</b>	<b>21-09-2016</b>	<b>Revision in entirety based on latest standard</b>



## **1.0 SCOPE**

- 1.1 This procedure describes the testing method and acceptance standards for the radiographic examination of butt welds in structures having thickness up to 75mm of boiler components, rotating parts and is applicable wherever specified in the concerned quality control procedures.

## **2.0 REFERENCE**

- 2.1 ASME Section V 2015 (Article 2)
- 2.2 AWS D.1.1. Structural welding code - Steel 2015
- 2.3 ASTM E 94
- 2.4 ASME SECTION VIII DIV 02

## **3.0 SURFACE PREPARATION**

- 3.1 The finished surface of the weld may be flush with the plate or have a reasonably uniform reinforcement, not to exceed 3.0 mm. Both surfaces of the test assembly in the area of the weld shall be smooth enough such that the resulting radiographic contrast due to any remaining irregularities cannot mask or be confused with that of any objectionable defect or the contract documents require the removal of weld reinforcement.

## **4.0 EQUIPMENTS AND MATERIALS**

### **4.1 Radiation Sources**

- 4.1.1 Iridium-192 Source may be used for radiography.

### **4.2 Film**

- 4.2. The film used for radiography shall be generally the following brands of film.

- Kodak - Industrex AA 400 /T 200/ M
- Agfa Gevaert – Agfa D7 / D5 / D4
- Laser D7 / D5 / D4

- 4.2.2 Other brands of films shall be used subjected to approval as per procedure No: NDT: WI: 010.

- 4.3.1 Lead Intensifying Screens shall be used to improve the quality of the radiograph. Screen shall be of thickness not less than 0.13mm. Suitable lead backing shall be used to avoid back scatter wherever required. Fluorescent screens shall not be used.
- 4.3.2 All intensifying screens shall be handled carefully to avoid dents, scratches, dirt or grease on the active surfaces and shall not cause any false indications due to the defective screens. Screens shall be in direct contact with the film. Screens showing evidence of physical damage should be discarded.

## **5.0 TECHNIQUES OF RADIOGRAPHY**

- 5.1 Radiographs shall be made with single source of radiation and the source is positioned so that the center of the cone of the radiation beam falls normal to the axis of the weld and centered with respect to the length and width of the weld being examined.
- 5.2 A single-wall exposure technique shall be used for radiography. In single-wall technique, the radiation passes through only one wall of the weld (material) which is reviewed for acceptance of the radiograph. The film being exposed shall be close to the surface of the weld, opposite to the radiation source and parallel to the front surface of the work to avoid enlargement and distortion of image. As Gamma radiations are divergent in nature the radiographic image or the structure within the weld will be larger than the object or structure itself.
- 5.3 The width of the film shall be sufficient to depict all portions of the weld joint including the heat affected zones and shall provide sufficient additional space for required IQI and film identification without infringing upon the area of interest in the radiograph.
- 5.4 The source object distance, the perpendicular distance from the radiation source to the object, shall be as large as possible as the degree of enlargement will decrease with the increase in distance.
- 5.5 The source to object distance shall neither be less than seven times the maximum thickness of the weld plus reinforcement and backing if any, under examination nor the length of the film being exposed in a single plane.
- 5.6 Films shall have sufficient length and shall be placed to produce at least 12.5 mm of film exposed to direct radiation from the source beyond each free edge where the weld is terminated.

## **6.0 IDENTIFICATION OF RADIOGRAPHS**

- 6.1 Each butt weld will have an identification number to identify the weld and segments. These number and location marker will appear as a permanent image on the radiographs.
- 6.2 Location markers shall be placed on the source side of part. Outer edges of the weld shall be identified by keeping segment numbers or alphabetic letters on one edge and the arrows on the other edge beneath the segment number or letter, but clear from the

edges, using lead markers.

- 6.3 The weld shall be divided into suitable segments in such a way that the density at the extremities of the radiographs shall not be less than 15% of the density at the middle.
- 6.4 Radiographs shall be taken with sufficient overlap, such that no area will be left untested.
- 6.5 Information required to show on the radiograph shall include the contract identification, initials of the radiographic inspection co., initials of the fabricator, the radiography identification marks, date of radiography and weld repair number, if applicable. These identification numbers shall be placed 19 mm away from the weld edge.

- 6.6 To identify repairs, letters R1,R2,R3 etc. shall be placed in addition to the original system of identification. Suffix RT will represent retake without repair and GRE or MRT for grind and retake.

#### **7.0 DENSITY OF RADIOGRAPHS**

- 7.1 The transmitted radiographic film density through the body of appropriate hole type IQI and the area of interest shall be 2.0 minimum and 4.0 maximum for single wall viewing. A step wedge comparison film or a densitometer will be used for judging film density. A tolerance of 0.05 in density is allowed for variation between densitometer readings
- 7.2 If the ratios of thicker weld section to thinner weld section is 3 or greater radiographs shall be exposed to produce a density of 3.0 to 4.0 in thinner section. When this is done densities less than 1.8 will be accepted in the thicker section.
- 7.3 If the density of radiograph anywhere through the area of interest varies by more than minus 15 % or plus 30% rounded to the nearest 0.1 from the density through the body of the IQI within the minimum/ maximum allowable density ranges specified in the para 7.1, then an additional IQI shall be used for each exceptional area, one shall represent the lightest area and the other the darkest area of interest.

#### **8.0 STEP WEDGE FILM**

- 8.1 The density of step wedge comparison films calibration shall be verified by calibrated densitometer.

#### **9.0 SCATTERED RADIATION**

- 9.1 Back scattered radiation shall be checked by attaching lead letter 'B' of 13mm in height and 1.5 mm in thickness on the back of each film holder during exposure. If the lighter image of 'B' appears on the radiograph as an image on darker background, the radiograph shall be considered unacceptable. A dark image of 'B' on a lighter background is not a cause of rejection.

## 10.0 IMAGE QUALITY INDICATORS (IQI) as per AWS D1.1

- 10.1 IQI shall be of plate and hole type. The Designated hole type IQI with essential hole shall be as given in Table-1, below:

**TABLE-1**

Material thickness, IQI Nominal Single Wall Thickness range mm	Designations and Essential Holes.			
	IQI			
	Source side		Film side	
	Design.	Essn. Hole	Design.	Essn. Hole
Upto 6 inclu.	10	4T	7	4T
Over 6 thru 10	12	4T	10	4T
Over 10 thru 16	15	4T	12	4T
Over 16 thru 20	17	4T	15	4T
Over 20 thru 25	20	4T	17	4T
Over 25 thru 32	25	4T	20	4T
Over 32 thru 38	30	2T	25	2T
Over 38 thru 50	35	2T	30	2T
Over 50 thru 65	40	2T	35	2T
Over 65 thru 75	45	2T	40	2T

- 10.2 IQI shall confirm to fig 6.9 of AWS D1.1 and shall be made of carbon steel or type 304 stainless steel. For welds, the thickness on which the IQI is selected shall be the nominal single wall thickness plus the reinforcement.

- 10.3 The hole type IQI shall be placed adjacent to the weld except for instances where the weld material or the geometrical configuration makes it impracticable to place the IQI, in which case the IQI shall be placed on the weld metal itself.

## 10.4 Number of IQI

- 10.4.1 For welds joining nominal equal thickness:

10.4.2 Where a radiograph represent 255 mm or greater of weld length, IQI shall be placed at the ends of the segment, one on either side of the weld. Where a radiograph represents less than 255 mm of weld, one IQI shall be placed at the center away from the weld edge.

10.4.3 For welds at a transition in thickness:

10.4.4 Where a radiograph represent 255mm or greater of weld length, two IQI on either end of the weld on thinner side and one IQI on thicker side at the center of the weld shall be placed 10mm away from the weld. The IQI on the transition thickness shall be based on the maximum thickness under the IQI. Similarly for weld length less than 255mm one IQI shall be placed on thinner side and one on transition side.

10.5 A shim of material radiographically similar to the weld metal shall be placed under the IQI, if needed, so that the radiographic density throughout the area of interest is not more than minus 15 % from the radiographic density through the designated IQI adjacent to the essential hole. The dimension of the shim shall be 3mm more than the IQI at least in 3 sides.

#### **11.0 GEOMETRIC UNSHARPNESS (Ug)**

11.1 The maximum value for geometric unsharpness will be

0.51 mm for thickness up to 50 mm

0.76 mm for thickness from 50mm to 75mm

11.2 Final acceptance of the radiographs shall be based on the ability to see the prescribed IQI image and the specified hole or a designated wire.

#### **12.0 QUALITY OF RADIOGRAPHS**

12.1 All radiographs shall be free from mechanical, chemical or other blemishes to the extent that they do not mask and are not confused with image of any discontinuity in the area of interest of the being radiographed. Such blemishes include, but are not limited to

- (a) fogging
- (b) Processing defects such as streaks, watermarks or chemical stains.
- (c) Scratches, finger marks, crimps, dirtiness, static marks, smudges or tears
- (d) False indications due to defective screens.

#### **13.0 ACCEPTANCE STANDARD**

13.1 For welds subject to cyclically loaded non-tubular tension member

13.1.1 The following type of discontinuities shall not be acceptable.

- a. Any type of crack.

- b. The greatest type of any porosity or fusion type discontinuity (such as slag, lack of fusion and incomplete penetration) that is 2mm or larger, in greatest dimension shall not exceed the size 'B' indicated in figure 1 for the effective throat or weld size involved. The maximum size limitations 13 mm shall apply to all weld effective throat of greater than 38mm also.
- c. The distance from any porosity or fusion type discontinuity described above to another such discontinuity, to an edge, or to the toe or root of any interacting flange to web weld shall not be less than the maximum clearance allowed 'C' indicated in fig I for the size of discontinuity under examination.
- d. Discontinuities having a greatest dimension of less than 2mm shall be unacceptable if the sum of their greatest dimension exceeds 10 mm in any 25mm length of weld.
- e. Adjacent discontinuities spaced less than the minimum spacing required by fig I shall be measured as equal to the sum of total length of discontinuities plus the length of the space between them and evaluated as a single discontinuity.

13.2 For welds subject to cyclically loaded non-tubular compression member:

13.2.1 The following type of discontinuities shall not be acceptable.

- a. Any type of crack.
- b. The greatest dimension of any porosity or a fusion type discontinuity that is 3mm or larger, in greatest dimension shall not exceed the size 'B' nor shall the space between adjacent discontinuities be less than the minimum clearance allowed 'C' indicated by figure II, for the size of discontinuity under examination. The maximum size limitation 19 mm applicable to weld thickness 38mm as shown in fig II shall apply to all weld sizes greater than 38 mm.
- c. Discontinuities having a greatest dimension of less than 2mm shall be unacceptable, if the sum of their greatest dimension exceeds 10mm in any 25mm length of weld.
- d. Adjacent discontinuities not separated by two times the length of the largest discontinuity shall be measured as one length equal to the total length of discontinuity inclusive of the space in between and evaluated as a single discontinuity.

13.3 Welds in different parts of Impeller Assembly and other Rotating Machineries.

- 13.3.1 a. Any indication which is interpreted to be a crack or lack of fusion or lack of penetration is not acceptable regardless of their length.
- b. Indications of slag inclusions are not acceptable if the length is more than 5mm.



- c. Successive indication of slag inclusions less than 5mm in length shall be separated by at least 5 times the length of the longer of the two indications.
- d. The aggregate length of successive slag inclusions shall not exceed 't' in a length of 12't' ('t' is the thickness of the thinner of the section joined)
- e. Rounded indications whose major dimension is greater than 0.8 mm are considered to be relevant.
- f. Rounded indications whose major dimension is greater than 3.2 mm are not acceptable.
- g. Isolated indication of maximum size of 3.2 mm is permissible provided it is separated from the adjacent indications by at least 25 mm (fig III).
- h. Randomly distributed rounded indications are acceptable as per chart in figure III (Figure 4-5 of ASME Section VIII, Appendix 4)
- i. No cluster of rounded indication is acceptable.

#### **14.0 PERSONNEL QUALIFICATION**

14.1 Personnel performing examination shall be qualified in accordance with NDT:WI:006

- |                    |                  |
|--------------------|------------------|
| 1) Operator        | Minimum Level I  |
| 2) Film Evaluation | Minimum Level II |

#### **15.0 REPORT**

15.1 After the evaluation, report shall be issued in the radiographic examination report form no:R49-718/A or equivalent. Wherever required, approval shall be obtained from the concerned external inspection agency.

15.2 The tests, reports and radiographs will be preserved for five year or till the documents are signed, whichever is earlier.

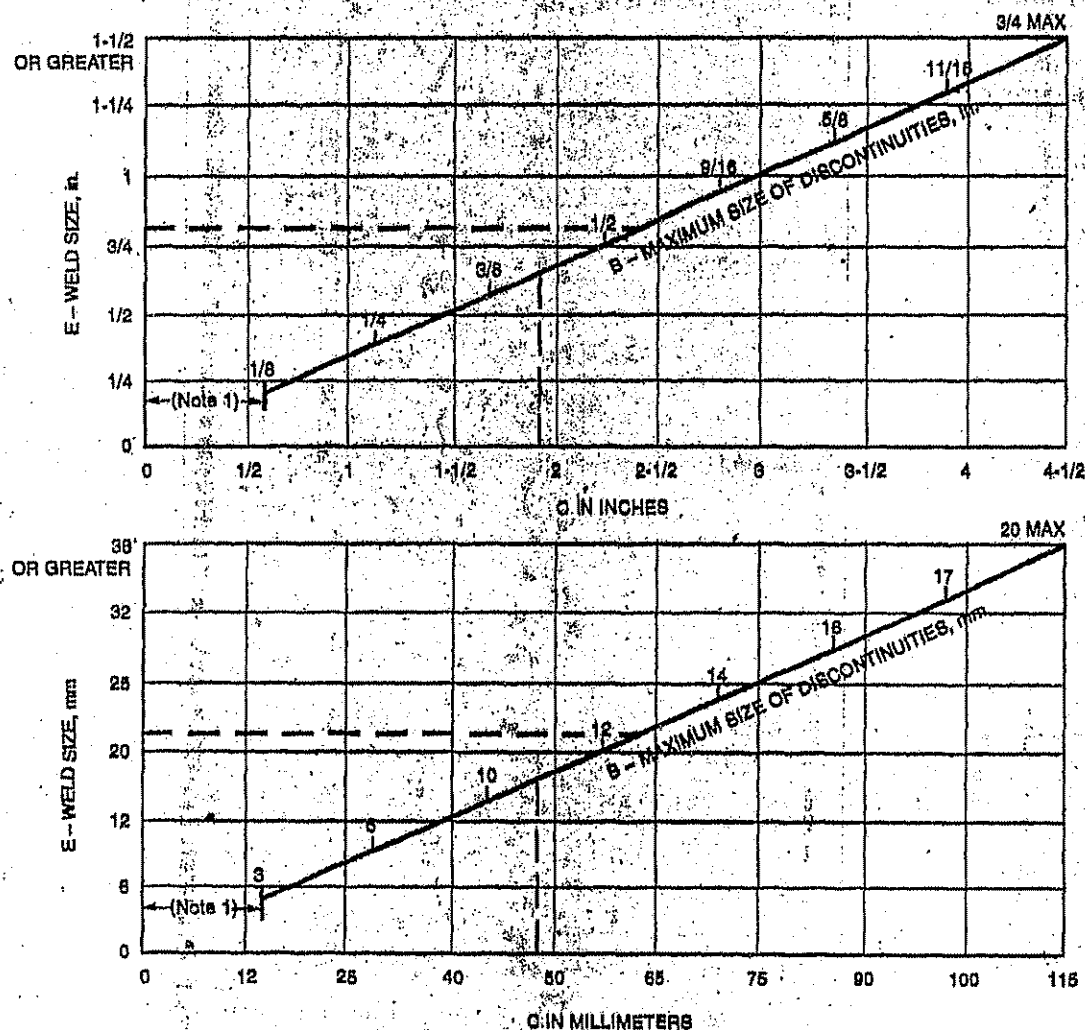
#### **16.0 SAFETY**

16.1 Radiography shall be performed in accordance with all applicable safety requirements as specified in Safety Procedure BHEL: NDT: RP: SAF: 01

\*\*\*\*\*



**FIGURE I**



**General Notes:**

- To determine the maximum size of discontinuity allowed in any joint or weld size, project E horizontally to B.
- To determine the minimum clearance allowed between edges of discontinuities of any size, project B vertically to C.
- See Legend on page 225 for definitions.

**Note:**

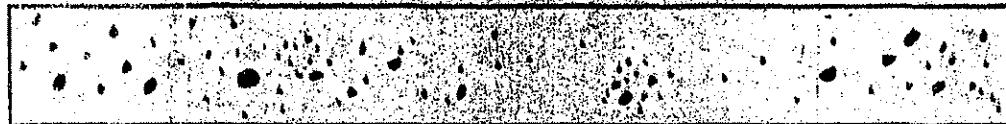
1. The maximum size of a discontinuity located within this distance from an edge of plate shall be 1/8 in. [3 mm], but a 1/8 in. [3 mm] discontinuity shall be 1/4 in. [6 mm] or more away from the edge. The sum of discontinuities less than 1/8 in. [3 mm] in size and located within this distance from the edge shall not exceed 3/16 in. [5 mm]. Discontinuities 1/16 in. [2 mm] to less than 1/8 in. [3 mm] shall not be restricted in other locations unless they are separated by less than 2L (L being the length of the larger discontinuity); in which case, the discontinuities shall be measured as one length equal to the total length of the discontinuities and space and evaluated as shown in Figure 6.5.

**Figure I — Weld Quality Requirements for Discontinuities Occurring in Cyclically Loaded Nontubular Compression Welds (Limitations of Porosity or Fusion-Type Discontinuities)**

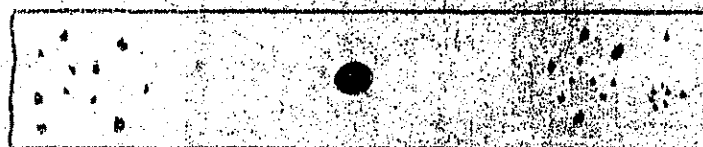
230

229

FIGURE II



(a) Random Rounded Indications [See Note (1)]



(b) Isolated Indication [See Note (2)]



(c) Cluster

NOTES:

- (1) Typical concentration and size permitted in any 6 in. (152 mm) length of weld.
- (2) Maximum size per Table 4-1.

FIG. 4-5 CHARTS FOR  $t$  OVER  $\frac{3}{8}$  in. to  $\frac{3}{4}$  in., INCLUSIVE



BHARAT HEAVY ELECTRICALS LIMITED

RANIPET - 632406

NON - DESTRUCTIVE TESTING

BHE:NDT:RP:RT:01 REV 02

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## BHARAT HEAVY ELECTRICALS LIMITED

BAP RANIPET - 632 406

NON-DESTRUCTIVE TESTING

RADIOGRAPHIC EXAMINATION

R49-718/A

REPORT NO :  
REF NUM :  
WORK ORDER :  
CUSTOMER :  
PART NAME :  
PART NUM :  
DRAWING NUMBER :  
MATL SPECIFICATION :  
WELD PROCESS :  
WELDER NAME :  
SURFACE CONDITION :  
QP NUMBER :  
REMARKS :  
QC\_INSPECTOR NAME :  
DATE OF TEST :  
PROCEDURE REFERENCE :  
SOURCE & STRENGTH :  
TECHNIQUE :  
EXP TIME :  
LEAD SCREEN :  
(FRONT & BACK) :  
FILM DENSITY :  
IQI / SENSITIVITY :

REQ DATE :  
BAY :  
DU :  
QTY :  
REV :  
THICKNESS :  
TYPE OF JOINT :  
CHP :  
SIZE :  
FILM USED :  
SFD :  
CAMERA NO :  
RADIOGRAPH NO :

## RT READINGS

SL	LOCATION	FILM SIZE	SEGMENT NO	FINDINGS	REMARKS
1					
2					
3					
4					
5					

TEST STATUS : ☐ ACCEPTED

(LEVEL II)

OPERATOR NAME &amp; LEVEL

ASNT LEVEL-II PT, MT, RT, UT  
BHEL/BAP - RANIPET

APPROVED BY NDT

EXTERNAL INS

**SECTION - VIII**  
**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
DRMFL	WELDING FLUX-DRUM	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		11712	TAPADIA ENGINEERS & TRADERS P.LTD.	2, INDUSTRIAL ESTATE,BHANPURI, CHATTISGARH.RAIPUR	tet_tgirpr@rediffmail.com	0770 - 4090636
FINFL	WELDING FLUX-FIN	11712	TAPADIA ENGINEERS & TRADERS P.LTD.	2, INDUSTRIAL ESTATE,BHANPURI, CHATTISGARH.RAIPUR	tet_tgirpr@rediffmail.com	0770 - 4090636
		19371	NDT FLUXES.	SURAJ,35,VIVEKANANDA NAGAR,RAIPUR		
GVW01	WELDING ELECTRODES	11378	MAILAM INDIA LIMITED	MAILAM MAIN ROAD,SEDARAPET,PONDICHERRY	mailam@mailanindia.com	0413-2677311
		80019	ESAB INDIA LTD.	KIRTI NAGAR		
		80018	D & H INDIA LIMITED	182/75, INDUSTRIAL AREA PH- 1CHANDIGARH	dnhindiachd@yao.co.in	0172- 2653063
		80020	HONAVAR ELECTRODES PVT LTD	Industrial Complex, 9, LBS Marg, Kurla (West)Mumbai	honavarelectrodes@gmail.com	9820249301
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		80291	Bharat Heavy Electricals Limited ,T	TiruvaramburTrichy		
		80218	M/s Modi Arc Electrodes Co.	G.T. Road, Oil Mill Gate, Modinagar		
		80126	Ador Welding Limited	C-116, Naraina Industrial Area, Phase-1New Delhi	delhi@adorwelding.com	1141411049
		10936	AHURA WELDING ELECTRODE MANUFACTURE	SF 139 & 144/3 THIRUMALAYAMPALAYAMPALGHAT ROADPALGHAT ROADCOIMBATORE	sunarc@md2.vsnl.net.in	0422 - 822232
GVW02	WELDING WIRE	80291	Bharat Heavy Electricals Limited ,T	TiruvaramburTrichy		
GVW03	WELDING ELECTRODE OT	80291	Bharat Heavy Electricals Limited ,T	TiruvaramburTrichy		
GVW04	COBALT POWDER	80291	Bharat Heavy Electricals Limited ,T	TiruvaramburTrichy		
GVWFX	WELDING FLUX	10785	ADOR WELDING LIMITED	CORPORATE MARKETING OFFICE,P.B. NO. 2, CHINCHWAD,PUNE	acegasindia@gamail.com	
		10015	ANITA FLUXES ALLOY SPECIALITY	24, 3RD PHASEPEENYA INDUSTRIAL ESTATEBANGALOREBANGALORE		080/ 839 4411
MIGA1	GMAW WIRE ER80S-B3L	20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680

**SECTION - VIII**  
**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		22391	AIR-LIQUIDE WELDING FRANCE,	13,RUE D'EPLUCHES-BP70024 SAINT-OUEN I'AUMONE,95315 CERGY PONTOISE CEDEX	jean-paul.shmitt@airliquide.com	1342 13480
MIGA2	GTAW WIRE FOR T92	20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
MIGA4	ER80S-B2 BPGMAW WIRE	21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
MIGN1	GMAWWIRE ERNiCRFe-7A	21991	SPECIAL METALS WELDING PRODUCTS	1401,BURRIS ROAD,NEWTON,NORTH COROLINA 28658	rphillips@smwpc.com	828-465-0352
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
MIGS1	GMW WIRE ER308H	20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA-CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
		20067	UTP SCHWEISS MATERIAL GMBH & CO	ELSASSER STR 10D-79189, BAD KROZINGENGERMANY.		49(0) 07633 / 40
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
MIGS2	GMAW WIRE ER309LSi	20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA-CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20067	UTP SCHWEISS MATERIAL GMBH & CO	ELSASSER STR 10D-79189, BAD KROZINGENGERMANY.		49(0) 07633 / 40
		22391	AIR-LIQUIDE WELDING FRANCE,	13,RUE D'EPLUCHES-BP70024 SAINT-OUEN I'AUMONE,95315 CERGY PONTOISE CEDEX	jean-paul.shmitt@airliquide.com	1342 13480
		22391	AIR-LIQUIDE WELDING FRANCE,	13,RUE D'EPLUCHES-BP70024 SAINT-OUEN I'AUMONE,95315 CERGY PONTOISE CEDEX	jean-paul.shmitt@airliquide.com	1342 13480
		20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA-CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	

**SECTION - VIII**  
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**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
MIGS3	GMAW WIRE ER309L	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20067	UTP SCHWEISS MATERIAL GMBH & CO	ELSASSER STR 10D-79189, BAD KROZINGENGERMANY.		49(0) 07633 / 40
MIGW1	ER 70S-A1 GMAW WIRE	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20011	BOHLER SCHWEISSTECHNIK AUSTRIA	WERK DEUCHENDORF,A 8605, KAPPENBERG, POSTFACH - 9,AUSTRIA.AUSTRIA.		0043/3862301
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
MIGW2	ER 80S-B2 GMAW WIRE	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
MIGW3	ER 90S-B3 GMAW WIRE	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		21461	INDUSTRIA NAZIONALE ELETTRODI S.p.A	Via.FACCA 10,CITTADELLA, 35013ITALY.		
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
MIGW4	WELDG.WIRE-MIG ER347	22391	AIR-LIQUIDE WELDING FRANCE,	13,RUE D'EPLUCHES-BP70024 SAINT-OUEN I'AUMONE,95315 CERGY PONTOISE CEDEX	jean-paul.shmitt@airliquide.com	1342 13480
		11784	VENUS WIRE INDUSTRIES PVT LTD	19, RAGHUVANSHI MILL COMPOUNDS.B.MARG, LOWER PARELMUMBAI	sales@venuswires.com	022 - 4978840
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680

**SECTION - VIII**  
**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
MIGW5	WELDG.WIRE-MIG ERNiC	22391	AIR-LIQUIDE WELDING FRANCE,	13,RUE D'EPLUCHES-BP70024 SAINT-OUEN I'AUMONE,95315 CERGY PONTOISE CEDEX	jean-paul.shmitt@airliquide.com	1342 13480
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20067	UTP SCHWEISS MATERIAL GMBH & CO	ELSASSER STR 10D-79189, BAD KROZINGENGERMANY.		49(0) 07633 / 40
MIGW6	WELDG.WIRE-MIG ER90S	20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		22391	AIR-LIQUIDE WELDING FRANCE,	13,RUE D'EPLUCHES-BP70024 SAINT-OUEN I'AUMONE,95315 CERGY PONTOISE CEDEX	jean-paul.shmitt@airliquide.com	1342 13480
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		20011	BOHLER SCHWEISSTECHNIK AUSTRIA	WERK DEUCHENDORF,A 8605, KAPPENBERG, POSTFACH - 9,AUSTRIA.AUSTRIA.		0043/3862301
		91270	VEEPEES INDIA,	C-52, 4TH AVENUE ROAD,GUINDY INDUSTRIAL ESTATE,GUINDY.CHENNAI	veepeesindia@gmail.com	044-43534354
		14428	SHAKUNT ENTERPRISES PRIVATE LIMITED	G.T.ROADSANWALKA BHAWANMILLER GANJLUDHIANA	shakunt@satyam.net.in	161 2538323
		18705	MODI HITECH INDIA LTD.,	1400,MODI TOWER98,NEHRU PLACE,NEW DELHI	gmmelectrode@gmail.com	011 4250 4577
		16661	KLINWELD WIRES PVT. LTD.,	207,TIMMY ARCADE,MAKWANA NAKA, ANDHERI ( EAST )MUMBAI	wires@vsnl.net	022 28504848
		17841	PRASHANTH CYLINDERS PVT. LTD.,	35-B,VEERASANDRA INDL. ESTATE,19th K.M.HOSUR ROAD,ELECTRONIC CITY POST,BANGALORE		
		17842	PRECISION DRAWEL PVT., LTD.,	KHASARA NO.221&222/2,VILLAGE TEKADI,TAH. PARSEONI,NAGPUR		
		16548	WELD EXCEL INDIA LTD.,	D-230,PHASE VII,FOCAL POINT,LUDHIANA		
		11288	JAGSHAAN INDUSTRIES	94 FRIENDS COLONYKATOL ROADNAGPUR	jagshaan@nagpur.dot.net.in	0712 - 581557
		10758	ALPHA ARC INDUSTRIES,	B-5,SECTOR A5/6 TRONICA CITYLONIGHAZIABAD, UP	alphaarc@yahoo.com	0 99114 41441
		16662	NATIONAL ENGINEERING ENTERPRISES,	C-9,1st PHASE,INDUSTRIAL AREA,ADITYAPUR,JAMSHEDPUR	nationaljsr@redifmail.com	0657 6539875
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		13763	CLASSIC ELECTRODES ( INDIA ) LTD.,	1, BONFIELD LANE2 ND FLOORKOLKATA	classicelectrodes@yahoo.co.in	033 22429581



**SECTION - VIII**  
**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
MIGW7	GMAW WIRE ER70S-6	13743	UNIQUE WELDING PRODUCTS PVT.LTD.,	PLOT NO.1205,G.I.D.C. PHASE-IVVITTHAL UDYOGNAGAR,ANAND-388121GUJARAT	ump_vvn@rediffmail.com	02692-236 092...
		11528	RAAJRATNA ELECTRODES LTD	11, SONAROOPA, OPP.LALBANGLOWC.G.ROAD, NAVARANGPURA AHMEDABAD	mktg@gnahd-rel.global.net.in	079 - 6445258
		14575	WELD ALLOY PRODUCTS,	C - 33, SECTOR - IV, NOIDANOIDA DIST.GAUTAM BUDH NAGAR (UP)	wap2005@airtelmail.in	0120-2557183
		17644	VARUN ELECTRODES PVT. LTD.,	H-56,INDUSTRIAL AREA,PANIPAT	kapoor@varunelectrodes.com	0180 2653085
		10737	SRI DHARAANI STEEL,	1060/463,SIVAKASI- VIRUDHUNAGARROAD,THIRUTHANGAL- 626130VIRUDHUNAGAR DIST.	wire@sridharaanisteel.com	98943-88857
		16575	STANDARD WIRE PRODUCTS	219, SIDCO INDUSTRIAL ESTATE,AMBATTUR,CHENNAI		044 26254946
		17813	K.M.CROWN WELDING CONSUMABLES PVT.,	BLOCK NO.16A,16B & 17A,INDUSTRIAL AREA NO.1,A.B.ROAD,DEWAS	kmcrownwelding@dataone.com	07272 259384578
		13911	ROYAL ARC ELECTRODES PVT. LTD	ROYAL HOUSE, PLOT NO.26,VILLAGE VALIV,VASAI ( EAST )THANE	royalarc@vsnl.com	0250 2480520
		13693	RASI ELECTRODES LTD.,	21, RAJA ANNAMALAI ROAD,FLAT NO A / 14, THIRD FLOOR,CHENNAI	rele@airtellmail.in	044 26424523
		17814	CALCUTTA ELECTRODES PVT. LTD.,	SARDAR PATEL TIMBER MARKET,BHANPURI,RAIPUR	calcutta_electrodes2006@yahoo.com	0771 4090615
		13986	B&H ELECTRODES PVT. LTD,	VILLAGE SAIDPURA, BARWALA ROAD,DERABASSI,MOHALI		
		15085	VOLTARC ELECTRODES ( P ) LTD,	10-77, FIRST MAIN,ROYAL NAGAR,H.O.SURYAJYOTHI,R.C.ROAD, P.B.NO.33,TIRUPATHI	voltarc@rediffmail.com	0877 2241462
		14455	WIRE AND WIRE PRODUCTS	SIDCO INDUSTRIAL ESTATEAMBATTURCHENNAI	wwp@vsnl.net	044 26242378
		15810	NOUVEAUX INDUSTRIES (P) LTD.,	NO.2,SOWDAMBIGA NAGARTIRUPUR ROAD.KANGAYAM		
		14340	NALLI ARC INDUSTRIE,	SF NO. 340,NALLIPALAYAM,PADIYUR POST,KANGAYAM TALUKERODE Dt.	nalliar@yaho.com	04257 245185
		13906	MARUTI WELD LIMITED,	I-1, KIRTI NAGARNEW DELHI	marutiweld@marutiweld.com	25913411
		15101	PRECISION WELDARC LTD,	49,B.T. ROAD, PANIHATI24,PARGANAS ( NORTH )KOLKATA.	pwires@yahoo.co.in	033 25634753
		15100	MANTEK WIRES	24,SIDCO INDUSTRIAL ESTATE,P.VADUGAPALAYAM,PALLADAMCOIMBAT ORE		

**SECTION - VIII**  
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Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
		16166	EVERSHINE WIRES	178/2-A3, THURAIYUR ROAD,PULIVALAM,MUSIRI TALUK,TRICHY	evershinewires@rediffmail.com	04327 235527
		13549	ATHARVE WELDING TECHNOLOGIES (INDIA	PVT.LTD.,A 192,M.I.D.C.CHINCHOLI,SOLAPUR	atharv.wt@hotmail.com	0217-273 7029
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		11378	MAILAM INDIA LIMITED	MAILAM MAIN ROAD,SEDARAPET,PONDICHERRY	mailam@mailanindia.com	0413-2677311
		14791	ANAND ARC LTD.,	NO.22(OLD.31),RAILWAY COLONY,III STREET,AMINJIKARAI,CHENNAI		044 23746379
		10785	ADOR WELDING LIMITED	CORPORATE MARKETING OFFICE,P.B. NO. 2, CHINCHWAD,PUNE	acegasindia@gamil.com	
		13487	MAGNARC ELECTRODES PVT.LTD.,	PENDUTHIVISAGAPATNAM	magnarc@hotmail.com	0891-276 4381...
		13211	D&H INDIA LIMITED	PLOT 'A', SECTOR 'A'INDUSTRIAL AREA,SANWER ROADINDORE	dhindia@sancharnet.in	0731-4273501-...
		14458	M W WIRETECK PVT. LTD.	GF-9, GURU ARJUN DEV BHAWAN,RANJIT NAGAR COM. CMPLX,NEW DELHI.	wire@wireteck.in	011 4540 7712
		13690	GEE LIMITED,	PLOT E-1, ROAD NO. 7,WAGLE INDUSTRIAL ESTATETHANE		
MIGW8	GMAW WIRE ER80S-G	21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
MIGW9	GMAW WIRE ER90S-G	21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
MIGWA	GMWA WIRE FOR T23.	20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA-CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		

**SECTION - VIII**  
**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
P91FL	WELDING FLUX-P91	22391	AIR-LIQUIDE WELDING FRANCE,	13,RUE D'EPLUCHES-BP70024 SAINT-OUEN I'AUMONE,95315 CERGY PONTOISE CEDEX	jean-paul.shmitt@airliquide.com	1342 13480
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		20011	BOHLER SCHWEISSTECHNIK AUSTRIA	WERK DEUCHENDORF,A 8605, KAPPENBERG, POSTFACH - 9,AUSTRIA.AUSTRIA.		0043/3862301
P92FL	SAWFLUX FOR SA335P92	20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
SAWA1	SAWWIRE FOR SA335P92	21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
SSOFL	WELD:SS-OVERLAY FLUX	10785	ADOR WELDING LIMITED	CORPORATE MARKETING OFFICE,P.B. NO. 2, CHINCHWAD,PUNE	acegasindia@gmail.com	
		10015	ANITA FLUXES ALLOY SPECIALITY	24, 3RD PHASEPEENYA INDUSTRIAL ESTATEBANGALOREBANGALORE		080/ 839 4411
		13833	SUN FLUX,	PUTHUKUDI ROAD,RAYAMUNDANPATTITANJORE		
		15082	ROYAL WELDING WIRES PVT. LTD.,	7,KARANAI PUDUCHERRY VILLAGE,VIA.URAPAKKAM,KANCHIPURAM DIST,	royal@royalwires.co.in	044-3741 1610
		12184	LAKSHMI CHEMICAL INDUSTRIES	D-52, DEVELOPED PLOT ESTATETHUVAKUDITIRUCHIRAPALLI	lakshmi.chem@yahoo.com	9842550538
		13534	RUPA INDUSTRIES,	2-2-105 to 180/10,GANESH CHAMBERSRANIGUNJ,SECUNDERABAD	rupaent@vsnl.net	040-2771 3714
		13484	OSCAR AUTO FLUX,	3/216,INAMKULATHUR ROAD,AMMAPETTAI,POOLANGULATHUPATTY(PO), TRICHY	oscarautoflux@gmail.com	0431-2914567
		13691	MANTEK WELDAIDFLUX CO.	32, FIRST STREETGANDHI NAGARTHIRUVERUMBURTIRUCHIRAPPALLI	mantek@eth.net	2501540
		14593	R.M.H.CHEMICAL INDUSTRIES	C-12-A,DEVELOPED PLOTS ESTATE,THUVAKUDY,TIRUCHIRAPALLY	rmhfbbricators@vsnl.net	2500498

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**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
STRFL	SAW FLUX STRUCT.WELD	14309	S.CHEMS & ALLIED PRODUCERS PVT LIMI	PLOT NO.197,JANKIDEVI SCHOOL ROAD,MHADA BUNGALOW CSHEME,Nr. VARSOVA TEL. EXCHANGE,ANDHERI ( W )MUMBAI	s chems@yahoo.co.in	022 26368557
		11701	SUPER WELD PRODUCTS	91/1 THINNANUR ROADPULIVALAM,MUSIRI TKTIRUCHIRAPALLI		0431 - 765626
		19114	WELMET TECHNOLOGIES PVT. LTD.,	34,P.N.MAIDU INDUSTRIAL ESTATE,M.I.D.C. HINGNA,NAGPUR		
		10785	ADOR WELDING LIMITED	CORPORATE MARKETING OFFICE,P.B. NO. 2, CHINCHWAD,PUNE	acegasindia@gamil.com	
		15099	THERMIT ALLOYS (P) LTD,	PLOT NO.7, INDUSTRIAL ESTATE,B.H.ROAD,SHIMOGA	thermit@vsnl.net	08182 250431
		17381	NOUVEOFLUX CHEMICAL COMPANY	1 /B 83 & 85, TIRUPUR ROADKANGAYAM		
		13211	D&H INDIA LIMITED	PLOT 'A', SECTOR 'A'INDUSTRIAL AREA,SANWER ROADINDORE	dhindia@sancharnet.in	0731-4273501-...
		11712	TAPADIA ENGINEERS & TRADERS P.LTD.	2, INDUSTRIAL ESTATE,BHANPURI, CHATTISGARH.RAIPUR	tet_tgirpr@rediffmail.com	0770 - 4090636
		13486	A V WELDTECH PVT.LTD.,	NO.206/12,CIVIL LINES,NEAR G.P.O. SQUARENAGPUR.	products@aveasyweld.com	0712-252 1727
		11288	JAGSHAAN INDUSTRIES	94 FRIENDS COLONYKATOL ROADNAGPUR	jagshaan@nagpur.dot.net.in	0712 - 581557
		15084	DWEKAM ELECTRODES LTD,	TALAWALI CHANDA,A.B.ROAD, P.O.MANGILAINDORE (MP)	vk.khandelwal@dwkam.org	0731 422 9500...
		15085	VOLTARC ELECTRODES ( P ) LTD,	10-77, FIRST MAIN,ROYAL NAGAR,H.O.SURYAJYOTHI,R.C.ROAD, P.B.NO.33,TIRUPATHI	voltarc@rediffmail.com	0877 2241462
		19695	SUBMER FLUX TECHNOLOGIES,	178/2A1,THURAIYUR ROAD,PULIVALAM,TRICHY		
		10466	SUN AUTO WELD INDUSTRIES,	SF NO.137/2,GANAPATHY NAGAR,ARIYAMANGALAM,TRICHY		
		19735	RENUKA FLUXES COMPANY,	3-227 - A, SEMMANKUDAL ( PO ),OMALUR TALUK,SALEM		04290 313331
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		14791	ANAND ARC LTD.,	NO.22(OLD.31),RAILWAY COLONY,III STREET,AMINJIKARAI,CHENNAI		044 23746379
		15101	PRECISION WELDARC LTD,	49,B.T. ROAD, PANIHATI24,PARGANAS ( NORTH )KOLKATA.	pwires@yahoo.co.in	033 25634753

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**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
		11528	RAAJRATNA ELECTRODES LTD	11, SONAROOPIA, OPP.LALBANGLOWC.G.ROAD, NAVARANGPURA AHMEDABAD	mktg@gnaht-rel.global.net.in	079 - 6445258
TIGA1	GTAW ROD - T92 / P92	21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESY,SURREY KT169LL,		
		20563	BOHLER SCHWEISSTECHNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
TIGA2	GTAW ROD ER80S-B3L	20563	BOHLER SCHWEISSTECHNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESY,SURREY KT169LL,		
		22391	AIR-LIQUIDE WELDING FRANCE,	13,RUE D'EPLUCHES-BP70024 SAINT-OUEN I'AUMONE,95315 CERGY PONTOISE CEDEX	jean-paul.shmitt@airliquide.com	1342 13480
TIGS1	GTAW ROD ER316H	20067	UTP SCHWEISS MATERIAL GMBH & CO	ELSASSER STR 10D-79189, BAD KROZINGENGERMANY.		49(0) 07633 / 40
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA-CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
TIGS2	GTAW ROD ER309L	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA-CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
		20067	UTP SCHWEISS MATERIAL GMBH & CO	ELSASSER STR 10D-79189, BAD KROZINGENGERMANY.		49(0) 07633 / 40
		22391	AIR-LIQUIDE WELDING FRANCE,	13,RUE D'EPLUCHES-BP70024 SAINT-OUEN I'AUMONE,95315 CERGY PONTOISE CEDEX	jean-paul.shmitt@airliquide.com	1342 13480
TIGS3	GTAW ROD ER308H	20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA-CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20067	UTP SCHWEISS MATERIAL GMBH & CO	ELSASSER STR 10D-79189, BAD KROZINGENGERMANY.		49(0) 07633 / 40

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**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
TIGW1	ER 70S-A1 GTAW ROD	10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		15083	MARUTHI ELECTRODES (P) LTD.,	138,5TH FLOOR,MARUTHI TOWERAIRPORT ROAD,KODIHALU,BANGALORE	meplelec@bgl.vsnl.net.in	080 25275848
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		20011	BOHLER SCHWEISSTECHNIK AUSTRIA	WERK DEUCHENDORF,A 8605, KAPPENBERG, POSTFACH - 9,AUSTRIA.AUSTRIA.		0043/3862301
		22456	I.A.BARNES & CO. LTD,	UNIT E,GUNNELS WOOD PARK,GUNNELS WOOD ROAD,STEVENAGE, HERTFORDSHIRE, SG1 2BH,		
TIGW2	ER 80S-B2 GTAW ROD	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		21461	INDUSTRIA NAZIONALE ELETTRODI S.p.A	Via.FACCA 10,CITTADELLA, 35013ITALY.		
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
TIGW3	ER 90S-B3 GTAW ROD	21461	INDUSTRIA NAZIONALE ELETTRODI S.p.A	Via.FACCA 10,CITTADELLA, 35013ITALY.		
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
TIGW4	WELDG.WIRE-TIG ER347	20067	UTP SCHWEISS MATERIAL GMBH & CO	ELSASSER STR 10D-79189, BAD KROZINGENGERMANY.		49(0) 07633 / 40
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680

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**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
TIGW5	WELDG.WIRE-TIG ERNiC	20067	UTP SCHWEISS MATERIAL GMBH & CO	ELSASSER STR 10D-79189, BAD KROZINGENGERMANY.		49(0) 07633 / 40
		15083	MARUTHI ELECTRODES (P) LTD.,	138,5TH FLOOR,MARUTHI TOWERAIRPORT ROAD,KODIHALU,BANGALORE	meplelec@bgl.vsnl.net.in	080 25275848
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
TIGW7	WELDG.WIRE - TIG ER9	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		22391	AIR-LIQUIDE WELDING FRANCE,	13,RUE D'EPLUCHES-BP70024 SAINT-OUEN L'AUMONE,95315 CERGY PONTOISE CEDEX	jean-paul.shmitt@airliquide.com	1342 13480
		20011	BOHLER SCHWEISSTECHNIK AUSTRIA	WERK DEUCHENDORF,A 8605, KAPPENBERG, POSTFACH - 9,AUSTRIA.AUSTRIA.		0043/3862301
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
TIGW9	ER80S - D2 GTAW ROD	20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA-CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
TIGWA	GTAW ROD T23 / P23	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA-CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
TIGWR	GTAW ROD SUPER304H	20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		



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**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
TIGWB	GTAW ROD SUPERSONIC	20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA-CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
TIGWD	GTAW ROD	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		21991	SPECIAL METALS WELDING PRODUCTS	1401,BURRIS ROAD,NEWTON,NORTH COROLINA 28658	rphillips@smwpc.com	828-465-0352
WCA08	WELDG.ELECTRODES:SMA	10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		15090	RAJ KESARI ELECTRODES,	35,RAVINDRA NAGAR,(PRATAP NAGAR)UDAIPUR	rajkesari@yahoo.com	0294 2490193
WCA10	WELDG.ELECTRODES:SMA	14040	MANTEK ELECTRODS PRIVATE LTD,	D-74A, DEVELOPED PLOT ESTATE,THUVAKUDITRICHY		2501540
		13690	GEE LIMITED,	PLOT E-1, ROAD NO. 7,WAGLE INDUSTRIAL ESTATETHANE		
		18705	MODI HITECH INDIA LTD.,	1400,MODI TOWER98,NEHRU PLACE,NEW DELHI	gmmelectrode@gmail.com	011 4250 4577
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		11227	HONAVAR ELECTRODES PVT. LTD.,	305-309,3RD FLOOR,DAMJI SHAMJI INDUSTRIAL COMPLEX ,9,L.B.S MARG, KURLA(WEST)MUMBAI	hel@vsnl.com	022-25020317
		11378	MAILAM INDIA LIMITED	MAILAM MAIN ROAD,SEDARAPET,PONDICHERRY	mailam@mailanindia.com	0413-2677311
		11420	MODI ARC ELECTRODES CO.	MODINAGARUTTAR PRADESHGHAZIABAD	modiarc@ndb.vsnl.net.in	01232 - 242427
WCA12	WELDG.ELECTRODES:SMA	10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		11227	HONAVAR ELECTRODES PVT. LTD.,	305-309,3RD FLOOR,DAMJI SHAMJI INDUSTRIAL COMPLEX ,9,L.B.S MARG, KURLA(WEST)MUMBAI	hel@vsnl.com	022-25020317
		13690	GEE LIMITED,	PLOT E-1, ROAD NO. 7,WAGLE INDUSTRIAL ESTATETHANE		
		11420	MODI ARC ELECTRODES CO.	MODINAGARUTTAR PRADESHGHAZIABAD	modiarc@ndb.vsnl.net.in	01232 - 242427
		11378	MAILAM INDIA LIMITED	MAILAM MAIN ROAD,SEDARAPET,PONDICHERRY	mailam@mailanindia.com	0413-2677311
		20011	BOHLER SCHWEISSTECHNIK AUSTRIA	WERK DEUCHENDORF,A 8605, KAPPENBERG, POSTFACH - 9,AUSTRIA.AUSTRIA.		0043/3862301

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**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
WCA23	SMAW ELECTRODE E9015	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		22391	AIR-LIQUIDE WELDING FRANCE,	13,RUE D'EPLUCHES-BP70024 SAINT-OUEN I'AUMONE,95315 CERGY PONTOISE CEDEX	jean-paul.shmitt@airliquide.com	1342 13480
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
WCA24	SMAW ELECTRD T23/P23	21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA-CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
WCA25	SMAW ELECD - T92/P92	21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
WCA26	SMAW ELEC E8018-B3L	10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		11227	HONAVAR ELECTRODES PVT. LTD.,	305-309,3RD FLOOR,DAMJI SHAMJI INDUSTRIAL COMPLEX ,9,L.B.S MARG, KURLA(WEST)MUMBAI	hel@vsnl.com	022-25020317
WCA27	SMAW ELEC E7018-B2L	11227	HONAVAR ELECTRODES PVT. LTD.,	305-309,3RD FLOOR,DAMJI SHAMJI INDUSTRIAL COMPLEX ,9,L.B.S MARG, KURLA(WEST)MUMBAI	hel@vsnl.com	022-25020317
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		15080	SUNCRAFT ELECTRODES	BYE PASS ROAD,MUSIRI		04326 60525
		15085	VOLTARC ELECTRODES ( P ) LTD,	10-77, FIRST MAIN,ROYAL NAGAR,H.O.SURYAJYOTHI,R.C.ROAD, P.B.NO.33,TIRUPATHI	voltarc@rediffmail.com	0877 2241462
		18433	NUCOR WELD(INDIA)PVT.LTD.,	NO.223,KONAPPANA AGRAHARA,ELECTRONIC CITY POST,BANGALORE	nucorweldinida@yahoo.com	080-2852 2057
		15083	MARUTHI ELECTRODES (P) LTD.,	138,5TH FLOOR,MARUTHI TOWERAIRPORT ROAD,KODIHALU,BANGALORE	meplelec@bgl.vsnl.net.in	080 25275848

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**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
		11881	FUSION ENGG. PRODUCTS LTD.,	B-16,Vith PHASE, POST.GAMARIA(JAMSHEDPUR)SERAIKELA- KHARSAWAN,GAMARIA	info@fusionweld.co.in	0657-6542444
		13538	WELDCOM ELECTRODES PVT.LTD.,	T-357,ASHIRWAD PALACENR.BHATAR CHAR RASTA,JIVKOR NAGAR,SURAT		0261-305 4555
		13693	RASI ELECTRODES LTD.,	21, RAJA ANNAMALAI ROAD,FLAT NO A / 14, THIRD FLOOR,CHENNAI	rele@airtellmail.in	044 26424523
		15102	SOLARC WELD RODS,	OLD NO.12,NEW NO.14,65th STREET12th AVENUE,ASHOK NAGAR,CHENNAI	soarcweldrods@gmail.com	044-24891173
		15081	ANNAI SIVAKAMI AMMAL INDUSTRIES,	5/1C,M.M.K.COMPLEX,(OPP. TO S.I.T.)ARIYAMANGALAM.TIRUCHIRAPALLY		0431 2441696
		11378	MAILAM INDIA LIMITED	MAILAM MAIN ROAD,SEDARAPET,PONDICHERRY	mailam@mailanindia.com	0413-2677311
		13663	ORION WIRE MANUFACTURING CO.,	POST BOX NO.7,PLOT NO.56A & 44A,GIDC ESTATE,NARNADA NAGAR,BHARUCH	info@sunarcindia.com	02462-246419
		17820	SETH ELECTRODES PVT. LTD.,	SHRIMANT BHAWAN,KHURAI	sepl@sethindia.com	07581 240704
		11380	MALU ELECTRODES PVT.LIMITED	111, RAMAKRISHNA APPARTMENT,CHHAPRU NAGAR SQUARE,CENTRAL AVENUE NAGAR,NAGPUR	meploffice@rediffmail.com	0712 - 2734895
		11420	MODI ARC ELECTRODES CO.	MODINAGARUTTAR PRADESHGHAZIABAD	modiarc@ndb.vsnl.net.in	01232 - 242427
		17661	ALPHA WELDING & ALLIED	#B-10,VEERASANDRA INDUSTRIALESTATE, HOSUR ROAD,BANGALORE		
		17664	ELMARC ELECTRODES PVT. LTD.,	118,SISIDCO INDUSTRIAL ESTATE,AMBATTUR,CHENNAI		
		17813	K.M.CROWN WELDING CONSUMABLES PVT.,	BLOCK NO.16A,16B & 17A,INDUSTRIAL AREA NO.1,A.B.ROAD,DEWAS	kmcrownwelding@dataone.com	07272 259384578
		17812	VICTOR ELECTRODES LIMITED ,	T-1/ 113-114,MANGOLPURI INDUSTRIAL AREA,PHASE - I,NEW DELHI	victor@del2.vsnl.net.in	011 43860025
		17802	SRI VARSHA ELECTRODES,	SHED NO. 55,PHASE V,SIDCO INDUSTRIAL ESTATE,KAKKALUR,THIRUVALLUR DIST.CHENNAI		0 98402 60618
		17643	SUNDEEP ELECTRODES PVT. LTD.,	BULANDSHAHR ROAD,HAPUR		
		17801	JAIN WELDING ELECTRODES PVT. LTD,	G-1-318(C).INDRAPRASTHA INDUSTRIAL AREA,ROAD NO.6,RAJASTHAN,KOTA	info@jainelectrodes.com	0744 2490177
		11227	HONAVAR ELECTRODES PVT. LTD.,	305-309,3RD FLOOR,DAMJI SHAMJI INDUSTRIAL COMPLEX ,9,L.B.S MARG, KURLA(WEST)MUMBAI	hel@vsnl.com	022-25020317

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WCC01	WELDG.ELECTRODES:SMA	13729	ORANGE ELECTRODES INDUSTRIES,	PLOT NO.9,SHIV SHAKTI LAGHU UDYOGSANKUL,OPP.NEEL ENGG.CO.MUMBAI-NASIK HIGHWAY,ASANGAON	orangeelectrodes@gmail.com	02527-271 995
		13690	GEE LIMITED,	PLOT E-1, ROAD NO. 7,WAGLE INDUSTRIAL ESTATE,THANE		
		15087	V.N.C.ELECTRODEES,	3, INDUSTRIAL ESTATE,S.VELLALAPATTIKARUR	kru_vnc@sancharnet.in	04324 242774
		19906	BAGHERWAL ELECTRODES PVT.LTD.,	20-23,VAIBHAV CHAMBER,7/1,USHAGANJ CHHAWANI,INDORE	bagherwal13@yahoo.com	0731-2905067
		13986	B&H ELECTRODES PVT. LTD,	VILLAGE SAIDPURA, BARWALA ROAD,DERABASSI,MOHALI		
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOOR,NEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		19875	ABIRAMI ELECTRODES,	SF NO.107-A,SARAVANAMPATTI ROAD,VELLAIKINARU,COIMBATORE	sun_weld@yahoo.com	0422 3232724
		14457	BALAJI ELECTRODES	4A / 1A, N.G. NARAYANASAMY STREET,NEW SIDHAPUDUR (PO),COIMBATORE.	sonyaarc6013@gmail.com	0422 438 7817
		19751	FINE WELD ELECTRODES INDIA (P)LTD.	2/630,PERUMAL KOIL THOTTAM,VENKATAPURAM (PO),COIMBATORE	fineweldcbe@yahoo.com	0422-6581990/...
		19745	MEGA WELD TECHNOLOGIES,	3/219,AVINASHI ROAD,NEELAMBUR (PO),COIMBATORE	megaweldcbe@yahoo.com	0422-658 1989
		14449	IDEAL ELECTRODES	7 - A, SITRA ROAD,KALAPPATTI,COIMBATORE.	idealelectrode@gmail.com	0422 262 7710
		14447	UPARC ELECTRODES COMPANY.	BEHIND NAV BHARAT INTER COLLEGE,KHASRA No.1, INDIRA PURAM COLONY,PARTAPUR,MEERUT.		0121 244 0203
		10667	EUREKA SYSTEMS AND ELECTRODES P.LTD	11/15A,SELVARAJAPURAM,CHINTHAMANIPUDUR, COIMBATORE	info@eurekaelectrodes@gmail.com	0422-268 7199...
		12893	RUHKMANI ELECTRODES PVT.LTD.,	31,THAKURPUKUR (N.W) ROAD,P.O.BADU,DIST:24 PARGANAS(N)KOLKATA	rukhmanielectrodes@rediffmail.com	033-2526 2039
		14448	BRIGHT WELD TECHNOLOGIES	9 / 9, SAKTHI NAGAR,UPPILIPALAYAM POST,COIMBATORE.	brigtweld13@gmail.com	0422 257 4756
		10785	ADOR WELDING LIMITED	CORPORATE MARKETING OFFICE,P.B. NO. 2, CHINCHWAD,PUNE	acegasindia@gamil.com	
		15086	SRI RENGAS ELECTRODES (P) LTD,	137/3, GANAPATHY NAGAR,ARIYAMANGALAMTRICHY		0431-25501173

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		13911	ROYAL ARC ELECTRODES PVT. LTD	ROYAL HOUSE, PLOT NO.26,VILLAGE VALIV,VASAI ( EAST )THANE	royalarc@vsnl.com	0250 2480520
		11528	RAAJRATNA ELECTRODES LTD	11, SONAROOPA, OPP.LALBANGLOWC.G.ROAD, NAVARANGPURA AHMEDABAD	mktg@gnahd-rel.global.net.in	079 - 6445258
		17644	VARUN ELECTRODES PVT. LTD.,	H-56,INDUSTRIAL AREA,PANIPAT	kapoor@varunelectrodes.com	0180 2653085
		17814	CALCUTTA ELECTRODES PVT. LTD.,	SARDAR PATEL TIMBER MARKET,BHANPURI,RAIPUR	calcutta_electrodes2006@yahoo.com	0771 4090615
		19111	SPECTRA SUPER ALLOYS LTD,	324 / 325, 3RD FLOOR,ASHIANA TRADE CENTER,ADITYAPUR,JAMSHEDPUR	ss_alloys@yahoo.co.in	0657 6577148
		18846	COSMOS ELECTRODES PVT., LTD,	9/2,KIBE COMPOUND,CHHOTI GEALTOLI CHOURAHA,INDORE		0731 2707946
		18705	MODI HITECH INDIA LTD.,	1400,MODI TOWER98,NEHRU PLACE,NEW DELHI	gmmelectrode@gmail.com	011 4250 4577
		10758	ALPHA ARC INDUSTRIES,	B-5,SECTOR A5/6 TRONICA CITYLONIGHAZIABAD, UP	alphaarc@yahoo.com	0 99114 41441
		18300	SUPERON SCHWEISSTECHNIK INDIA LTD.,	191-D,SECTOR-IV,PHASE-II,IMT MANESAR,GURGAON,HARYANA		011-24647199
		15089	WELDCRAFT PRIVATE LIMITED,	72, INDUSTRIAL SUBURB,2ND STAGE, TUMKUR ROAD,BANGALORE.	weldcraft@vsnl.net	080 3373351
		18597	SHIELDARC EQUIPMENTS PVT. LTD,	85,ELLIOT ROAD,KOLKATA		
		18540	KOLLIPARA ELECTRODES PVT.LTD.,	KRISHNA NAGAR,PENAMALURUKRISHNA DIST.(AP)		
		14575	WELD ALLOY PRODUCTS,	C - 33, SECTOR - IV, NOIDANOIDA DIST.GAUTAM BUDH NAGAR (UP)	wap2005@airtelmail.in	0120-2557183
		14429	ALPHA FLUX & ELETRODES,	178/2-A2,THURAIYUR ROAD,PULIVALAM, MUSIRI - T.K.TRICHY DISTRICT	t.vasanthan@sify.com	04327 294169
		13211	D&H INDIA LIMITED	PLOT 'A', SECTOR 'A'INDUSTRIAL AREA,SANWER ROADINDORE	dhindia@sancharnet.in	0731-4273501-...
		14040	MANTEK ELECTRODS PRIVATE LTD,	D-74A, DEVELOPED PLOT ESTATE,THUVAKUDITRICHY		2501540
		13906	MARUTI WELD LIMITED,	I-1, KIRTI NAGARNEW DELHI	marutiweld@marutiweld.com	25913411
		13763	CLASSIC ELECTRODES ( INDIA ) LTD.,	1, BONFIELD LANE2 ND FLOORKOLKATA	classicelectrodes@yahoo.co.in	033 22429581
		15088	NIVETHA ELECTRODES,	195,PUDUKKOTTAI ROAD,TAMILNADU TANNREY'S BUILDING,SEMPATTU,TIRUCHIRAPALLY		0431 2341377
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		13549	ATHARVE WELDING TECHNOLOGIES (INDIA	PVT.LTD.,A 192,M.I.D.C.CHINCHOLI,SOLAPUR	atharv.wt@hotmail.com	0217-273 7029

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		13487	MAGNARC ELECTRODES PVT.LTD.,	PENDUTHIVISAGAPATNAM	magnarc@hotmail.com	0891-276 4381...
		14523	JINDAL DUROWELD	BN / 19 & 20,KALUNGA INDL. ESTATE,ROURKELA.	jdplrkl@yahoo.co.in	0661 266 0621
		15082	ROYAL WELDING WIRES PVT. LTD.,	7,KARANAI PUDUCHERRY VILLAGE,VIA.URAPAKKAM,KANCHIPURAM DIST,	royal@royalwires.co.in	044-3741 1610
		15090	RAJ KESARI ELECTRODES,	35,RAVINDRA NAGAR,(PRATAP NAGAR)UDAIPUR	rajkesari@yahoo.com	0294 2490193
		14584	SUN ELECTRODE	SF No.119/3, RAYAMUNDANPATTI,PUDHUKUDI ROAD,TANJORE.	sunenterprises2011@gmail.com	0 88256 36464
		14534	AARYA ELECTRODES PVT.LTD.	JOHN'S MILL NO.3,JEONI MANDI,AGRA.	vibhor@aaryaelectrodes.com	0562 262 2121
		18433	NUCOR WELD(INDIA)PVT.LTD.,	NO.223,KONAPPANA AGRAHARA,ELECTRONIC CITY POST,BANGALORE	nucorweldinida@yahoo.com	080-2852 2057
		18846	COSMOS ELECTRODES PVT., LTD,	9/2,KIBE COMPOUND,CHHOTI GEALTOLI CHOURAHA,INDORE		0731 2707946
		13487	MAGNARC ELECTRODES PVT.LTD.,	PENDUTHIVISAGAPATNAM	magnarc@hotmail.com	0891-276 4381...
		11380	MALU ELECTRODES PVT.LIMITED	111, RAMAKRISHNA APPARTMENT,CHHAPRU NAGAR SQUARE,CENTRAL AVENUE NAGAR,NAGPUR	meploffice@rediffmail.com	0712 - 2734895
		11227	HONAVAR ELECTRODES PVT. LTD.,	305-309,3RD FLOOR,DAMJI SHAMJI INDUSTRIAL COMPLEX ,9,L.B.S MARG, KURLA(WEST)MUMBAI	hel@vsnl.com	022-25020317
		15102	SOLARC WELD RODS,	OLD NO.12,NEW NO.14,65th STREET12th AVENUE,ASHOK NAGAR,CHENNAI	soarcweldrods@gmail.com	044-24891173
		15086	SRI RENGHA ELECTRODES (P) LTD,	137/3, GANAPATHY NAGAR,ARIYAMANGALAMTRICHY		0431-25501173
		18432	VIJEY ELECTRODES AND WIRES PVT.	83/1,THIRUNEERMALAI ROAD,NAGELKENI, CHROMPET,CHENNAI	vjelect@yahoo.co.in	044-2238 1098
		19305	MURLI ELECTRODE PVT. LTD,	EL. 30,M.I.D.C.INDUSTRIAL ESTATE,HINGNA ROAD,NAGPUR	sudhir_0408@rediffmail.com	0712 2769347
		18540	KOLLIPARA ELECTRODES PVT.LTD.,	KRISHNA NAGAR,PENAMALURUKRISHNA DIST.(AP)		
		18705	MODI HITECH INDIA LTD.,	1400,MODI TOWER98,NEHRU PLACE,NEW DELHI	gmmelectrode@gmail.com	011 4250 4577
		15085	VOLTARC ELECTRODES ( P ) LTD,	10-77, FIRST MAIN,ROYAL NAGAR,H.O.SURYAJYOTHI,R.C.ROAD, P.B.NO.33,TIRUPATHI	voltarc@rediffmail.com	0877 2241462



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WCC05	WELDG.ELECTRODES:SMA	15091	MAGNA ENGINEERING	CHINNAVUTAPALLIGANNAVARAM MANDAL,VIJAYAWADA		08676 252181
		11378	MAILAM INDIA LIMITED	MAILAM MAIN ROAD,SEDARAPET,PONDICHERRY	mailam@mailanindia.com	0413-2677311
		17643	SUNDEEP ELECTRODES PVT. LTD.,	BULANDSHAHR ROAD,HAPUR		
		13763	CLASSIC ELECTRODES ( INDIA ) LTD.,	1, BONFIELD LANE2 ND FLOOR KOLKATA	classicelectrodes@yahoo.co.in	033 22429581
		16548	WELD EXCEL INDIA LTD.,	D-230,PHASE VII,FOCAL POINT,LUDHIANA		
		10758	ALPHA ARC INDUSTRIES,	B-5,SECTOR A5/6 TRONICA CITYLONIGHAZIABAD, UP	alphaarc@yahoo.com	0 99114 41441
		12893	RUKHMANI ELECTRODES PVT.LTD.,	31,THAKURPUKUR (N.W) ROAD,P.O.BADU,DIST:24 PARGANAS(N)KOLKATA	rukhmanielectrodes@rediffmail.com	033-2526 2039
		18300	SUPERON SCHWEISSTECHNIK INDIA LTD.,	191-D,SECTOR-IV,PHASE-II,IMT MANESAR,GURGAON,HARYANA		011-24647199
		10785	ADOR WELDING LIMITED	CORPORATE MARKETING OFFICE,P.B. NO. 2, CHINCHWAD,PUNE	acegasindia@gamil.com	
		14575	WELD ALLOY PRODUCTS,	C - 33, SECTOR - IV, NOIDA DIST.GAUTAM BUDH NAGAR (UP)	wap2005@airtelmail.in	0120-2557183
		15083	MARUTHI ELECTRODES (P) LTD.,	138,5TH FLOOR,MARUTHI TOWERAIRPORT ROAD,KODIHALU,BANGALORE	meplelec@bgl.vsnl.net.in	080 25275848
		15089	WELDCRAFT PRIVATE LIMITED,	72, INDUSTRIAL SUBURB,2ND STAGE, TUMKUR ROAD,BANGALORE.	weldcraft@vsnl.net	080 3373351
		13906	MARUTI WELD LIMITED,	I-1, KIRTI NAGAR NEW DELHI	marutiweld@marutiweld.com	25913411
		15082	ROYAL WELDING WIRES PVT. LTD.,	7,KARANAI PUDUCHERRY VILLAGE,VIA.URAPAKKAM,KANCHIPURAM DIST,	royal@royalwires.co.in	044-3741 1610
		13211	D&H INDIA LIMITED	PLOT 'A', SECTOR 'A'INDUSTRIAL AREA,SANWER ROADINDORE	dhindia@sancharnet.in	0731-4273501-...
		13911	ROYAL ARC ELECTRODES PVT. LTD	ROYAL HOUSE, PLOT NO.26,VILLAGE VALIV,VASAI (EAST )THANE	royalarc@vsnl.com	0250 2480520
		17813	K.M.CROWN WELDING CONSUMABLES PVT.,	BLOCK NO.16A,16B & 17A,INDUSTRIAL AREA NO.1,A.B.ROAD,DEWAS	kmcrownwelding@dataone.com	07272 259384578
		13388	THE INDIAN SEEL & WIRE PRODUCTS LTD	PO INDIRA NAGAR,JAMSHEDPUR - 831 008JHARKAND	upshar@tatasteel.com	0657- 6512744
		14791	ANAND ARC LTD.,	NO.22(OLD.31),RAILWAY COLONY,III STREET,AMINJIKARAI,CHENNAI		044 23746379
		10667	EUREKA SYSTEMS AND ELECTRODES P.LTD	11/15A,SELVARAJAPURAM,CHINTHAMANIPUDUR, COIMBATORE	info@eurekaelectrodes@gmail.com	0422-268 7199...

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		15087	V.N.C.ELECTRODEES,	3, INDUSTRIAL ESTATE,S.VELLALAPATTIKARUR	kru_vnc@sancharnet.in	04324 242774
		11881	FUSION ENGG. PRODUCTS LTD.,	B-16,Vith PHASE, POST.GAMARIA(JAMSHEDPUR)SERAIKELA-KHARSAWAN,GAMARIA	info@fusionweld.co.in	0657-6542444
		15084	DWEKAM ELECTRODES LTD,	TALAWALI CHANDA,A.B.ROAD, P.O.MANGILAINDORE (MP)	vk.khandelwal@dwekam.org	0731 422 9500...
		17814	CALCUTTA ELECTRODES PVT. LTD.,	SARDAR PATEL TIMBER MARKET,BHANPURI,RAIPUR	calcutta_electrodes2006@yahoo.com	0771 4090615
		17644	VARUN ELECTRODES PVT. LTD.,	H-56,INDUSTRIAL AREA,PANIPAT	kapoor@varunelectrodes.com	0180 2653085
		14040	MANTEK ELECTRODS PRIVATE LTD,	D-74A, DEVELOPED PLOT ESTATE,THUVAKUDITRICHY		2501540
		15833	THIRUMALA ELECTRODES CO.,	S1-17B,'S' TYPE,SIDCO INDUSTRIAL ESTATE,THUVAKUDI,TRICHY	tec_sevenarcs@yahoo.co.in	0431-6573566
		17451	WELDWELL ELECTRODES,	D-59 M.I.D.C.,HINGNA INDUSTRIAL AREA,NAGPUR	weldwellngp@gmail.com	07104 232211/...
		13693	RASI ELECTRODES LTD.,	21, RAJA ANNAMALAI ROAD,FLAT NO A / 14, THIRD FLOOR,CHENNAI	rele@airtellmail.in	044 26424523
		11420	MODI ARC ELECTRODES CO.	MODINAGARUTTAR PRADESHGHAZIABAD	modiarc@ndb.vsnl.net.in	01232 - 242427
		19111	SPECTRA SUPER ALLOYS LTD,	324 / 325, 3RD FLOOR,ASHIANA TRADE CENTER,ADITYAPUR,JAMSHEDPUR	ss_alloys@yahoo.co.in	0657 6577148
		15090	RAJ KESARI ELECTRODES,	35,RAVINDRA NAGAR,(PRATAP NAGAR)UDAIPUR	rajkesari@yahoo.com	0294 2490193
		11528	RAAJRATNA ELECTRODES LTD	11, SONAROOA, OPP.LALBANGLOWC.G.ROAD, NAVARANGPURA AHMEDABAD	mktg@gnaht-rel.global.net.in	079 - 6445258
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		19906	BAGHERWAL ELECTRODES PVT.LTD.,	20-23,VAIBHAV CHAMBER,7/1,USHAGANJ CHHAWANI,INDORE	bagherwal13@yahoo.com	0731-2905067
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		13690	GEE LIMITED,	PLOT E-1, ROAD NO. 7,WAGLE INDUSTRIAL ESTATETHANE		
		18432	VIJEY ELECTRODES AND WIRES PVT.	83/1,THIRUNEERMALAI ROAD,NAGELKENI, CHROMPET,CHENNAI	vjelect@yahoo.co.in	044-2238 1098
		11378	MAILAM INDIA LIMITED	MAILAM MAIN ROAD,SEDARAPET,PONDICHERRY	mailam@mailanindia.com	0413-2677311

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**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
WCC06	WELDG.ELECTRODES:SMA	10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		11227	HONAVAR ELECTRODES PVT. LTD.,	305-309,3RD FLOOR,DAMJI SHAMJI INDUSTRIAL COMPLEX ,9,L.B.S MARG, KURLA(WEST)MUMBAI	hel@vsnl.com	022-25020317
		13690	GEE LIMITED,	PLOT E-1, ROAD NO. 7,WAGLE INDUSTRIAL ESTATETHANE		
WCC09	Welding Consumable	20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA-CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
WCF01	WELDG.WIRE:FLUX CORE	21065	HYUNDAI WELDING CO. LTD.,	15F, 137-37 GANGNAM KU,INSONG BUILDING,SAMSUNG DONG,SEOUL	alex@hdweld.co.kr	82-02 6230-6077
		20970	THE SHANGHAI LINCOLN ELECTRIC	LANE 5008,HU TAI ROAD,BOASHAN, SHANGAI-201907		86 21 560 26664
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		91270	VEEPEES INDIA,	C-52, 4TH AVENUE ROAD,GUINDY INDUSTRIAL ESTATE,GUINDY.CHENNAI	veepeesindia@gmail.com	044-43534354
		14676	ITW INDIA LIMITED: WELDING GROUP.	CORPORATE HOUSE,NO.1, SUN CHAMBERS,NEAR SOLA BRIDGE, S.G. HIGHWAY,AHMEDABAD.	fredric.prabhu@itwindia.com	079 3315 4009
WCF02	WELDG.WIRE:FLUX CORE	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
WCF03	WG:WIRE.FC.E309LMoTO	20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20033	KISWEL LTD.,	HEUNGKOOK B/D, 43-1,JUJA-DONGCHUNG-GU, C.P.O.BOX 8641SEOUL, KOREA.SEOUL,KOREA.	export@kiswel.com	82-2-2270-9400
WCF04	WELDG: WIRE: FLUX CO	91270	VEEPEES INDIA,	C-52, 4TH AVENUE ROAD,GUINDY INDUSTRIAL ESTATE,GUINDY.CHENNAI	veepeesindia@gmail.com	044-43534354
		21065	HYUNDAI WELDING CO. LTD.,	15F, 137-37 GANGNAM KU,INSONG BUILDING,SAMSUNG DONG,SEOUL	alex@hdweld.co.kr	82-02 6230-6077

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**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
WCF05	WELDG: WIRE: FLUX CO	91270	VEEPEES INDIA,	C-52, 4TH AVENUE ROAD,GUINDY INDUSTRIAL ESTATE,GUINDY.CHENNAI	veepeesindia@gmail.com	044-43534354
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
WCF06	WELDG. WIRE: FLUX CO	91270	VEEPEES INDIA,	C-52, 4TH AVENUE ROAD,GUINDY INDUSTRIAL ESTATE,GUINDY.CHENNAI	veepeesindia@gmail.com	044-43534354
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20011	BOHLER SCHWEISSTECHNIK AUSTRIA	WERK DEUCHENDORF,A 8605, KAPPENBERG, POSTFACH - 9,AUSTRIA.AUSTRIA.		0043/3862301
		20067	UTP SCHWEISS MATERIAL GMBH & CO	ELSASSER STR 10D-79189, BAD KROZINGENGERMANY.		49(0) 07633 / 40
WCF09	E71T-1 MARATHON PACK	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		91270	VEEPEES INDIA,	C-52, 4TH AVENUE ROAD,GUINDY INDUSTRIAL ESTATE,GUINDY.CHENNAI	veepeesindia@gmail.com	044-43534354
		20970	THE SHANGHAI LINCOLN ELECTRIC	LANE 5008,HU TAI ROAD,BOASHAN, SHANGAI-201907		86 21 560 26664
		14676	ITW INDIA LIMITED: WELDING GROUP.	CORPORATE HOUSE,NO.1, SUN CHAMBERS,NEAR SOLA BRIDGE, S.G. HIGHWAY,AHMEDABAD.	fredric.prabhu@itwindia.com	079 3315 4009
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		21065	HYUNDAI WELDING CO. LTD.,	15F, 137-37 GANGNAM KU,INSONG BUILDING,SAMSUNG DONG,SEOUL	alex@hdweld.co.kr	82-02 6230-6077
WCF11	ER70S - 6 BULK PACKS	20970	THE SHANGHAI LINCOLN ELECTRIC	LANE 5008,HU TAI ROAD,BOASHAN, SHANGAI-201907		86 21 560 26664
		14676	ITW INDIA LIMITED: WELDING GROUP.	CORPORATE HOUSE,NO.1, SUN CHAMBERS,NEAR SOLA BRIDGE, S.G. HIGHWAY,AHMEDABAD.	fredric.prabhu@itwindia.com	079 3315 4009

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**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
WCFA1	BULKPACK :E551T1-B2C	14676	ITW INDIA LIMITED: WELDING GROUP.	CORPORATE HOUSE,NO.1, SUN CHAMBERS,NEAR SOLA BRIDGE, S.G. HIGHWAY,AHMEDABAD.	fredric.prabhu@itwindia.com	079 3315 4009
		91270	VEEPEES INDIA,	C-52, 4TH AVENUE ROAD,GUINDY INDUSTRIAL ESTATE,GUINDY.CHENNAI	veepeesindia@gmail.com	044-43534354
WCH03	WELD:SMAW:HF-ECrA	20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA-CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
		20018	KENNAMETAL STELLITE	L.P. 1201 Eisenhower Drive N.Goshen ,IN 46526 USAUSA	asiasales@stellitesales.com	44-0-1793 498...
WCH05	SMAW ELECTRO ECoCr-E	20073	WEARTECH INTL INC	13032, PARK STREETSANTA FE SPRINGS , CA 90670USAUSA		001-562 945 7847
WCL07	WELDG.ELECTRODES:SMA	10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		20067	UTP SCHWEISS MATERIAL GMBH & CO	ELSASSER STR 10D-79189, BAD KROZINGENGERMANY.		49(0) 07633 / 40
		21991	SPECIAL METALS WELDING PRODUCTS	1401,BURRIS ROAD,NEWTON,NORTH COROLINA 28658	rphillips@smwpc.com	828-465-0352
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
WCL08	SMAW ELECTRODE	21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESSY,SURREY KT169LL,		
		21991	SPECIAL METALS WELDING PRODUCTS	1401,BURRIS ROAD,NEWTON,NORTH COROLINA 28658	rphillips@smwpc.com	828-465-0352
		22391	AIR-LIQUIDE WELDING FRANCE,	13,RUE D'EPLUCHES-BP70024 SAINT-OUEN I'AUMONE,95315 CERGY PONTOISE CEDEX	jean-paul.shmitt@airliquide.com	1342 13480
WCS20	WELDG.ELECTRODES:SMA	10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		11420	MODI ARC ELECTRODES CO.	MODINAGARUTTAR PRADESHGHAZIABAD	modiarc@ndb.vsnl.net.in	01232 - 242427
		11378	MAILAM INDIA LIMITED	MAILAM MAIN ROAD,SEDARAPET,PONDICHERRY	mailam@mailanindia.com	0413-2677311
WCS22	WELDG.ELECTRODES:SMA	10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343

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**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
WCS27	WELDG.ELECTRODES:SMA	10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
WCS28	WELDG.ELECTRODES:SMA	10036	BHARAT HEAVY ELECTRICALS LTD	WELDING CONSUMABLE MFG CENTRETIRUCHIRAPALLITIRUCHIRAPALLI		
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
WCS29	WELDG.ELECTRODES:SMA	10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		10036	BHARAT HEAVY ELECTRICALS LTD	WELDING CONSUMABLE MFG CENTRETIRUCHIRAPALLITIRUCHIRAPALLI		
WCS30	WELDG.ELECTRODES:SMA	11378	MAILAM INDIA LIMITED	MAILAM MAIN ROAD,SEDARAPET,PONDICHERRY	mailam@mailanindia.com	0413-2677311
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		11420	MODI ARC ELECTRODES CO.	MODINAGARUTTAR PRADESHGHAZIABAD	modiarc@ndb.vsnl.net.in	01232 - 242427
WCS31	WELD:SMAW:SS E410-15	10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		10036	BHARAT HEAVY ELECTRICALS LTD	WELDING CONSUMABLE MFG CENTRETIRUCHIRAPALLITIRUCHIRAPALLI		
		11378	MAILAM INDIA LIMITED	MAILAM MAIN ROAD,SEDARAPET,PONDICHERRY	mailam@mailanindia.com	0413-2677311
WCS32	WELD:SMAW:SS E430-15	10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		11378	MAILAM INDIA LIMITED	MAILAM MAIN ROAD,SEDARAPET,PONDICHERRY	mailam@mailanindia.com	0413-2677311

**SECTION - VIII**  
**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
		10036	BHARAT HEAVY ELECTRICALS LTD	WELDING CONSUMABLE MFG CENTRETIRUCHIRAPALLITIRUCHIRAPALLI		
WCS38	SMAW ELECTRD 253MA	22515	BOHLER WELDING GROUP NORDIC SALES A	BOX 501, SE - 774 27 AVESTA,SWEDEN.	INFO@BWGNORDIC.COM	46022685750
		22516	AB SANDVIK PROCESS SYSTEM,	SE 811 81 SANDVIKENSWEDEEN.	donald.anderson@sandvik.com	4602626 5600
WCS39	SMAW ELEC E308H-16	10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
WCS40	SMAW ELEC E316H-16	10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
WCT01	WELD:HF-HAY.ALLY 25	20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA- CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
		10313	ZIRCAST LTD	UNIT -2, NO.37,JIGANI INDUSTRIAL AREABANGALORE - 562 106BANGALORE	jsuresh@zircast.com	08110 /26238
WCT02	WELD:HF-HAY.ALLY 21	20073	WEARTECH INTL INC	13032, PARK STREETSANTA FE SPRINGS , CA 90670USAUSA		001-562 945 7847
		20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA- CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
WCT03	WELD:HF-RCO CRA	20018	KENNAMETAL STELLITE	L.P. 1201 Eisenhower Drive N.Goshen ,IN 46526 USAUSA	asiasales@stellitesales.com	44-0-1793 498...
		20073	WEARTECH INTL INC	13032, PARK STREETSANTA FE SPRINGS , CA 90670USAUSA		001-562 945 7847
		20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA- CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
		10313	ZIRCAST LTD	UNIT -2, NO.37,JIGANI INDUSTRIAL AREABANGALORE - 562 106BANGALORE	jsuresh@zircast.com	08110 /26238
WCT04	WG:PWD:HF:TYP COCRA	20011	BOHLER SCHWEISSTECHNIK AUSTRIA	WERK DEUCHENDORF,A 8605, KAPPENBERG, POSTFACH - 9,AUSTRIA.AUSTRIA.		0043/3862301
		20073	WEARTECH INTL INC	13032, PARK STREETSANTA FE SPRINGS , CA 90670USAUSA		001-562 945 7847
		20018	KENNAMETAL STELLITE	L.P. 1201 Eisenhower Drive N.Goshen ,IN 46526 USAUSA	asiasales@stellitesales.com	44-0-1793 498...
		20067	UTP SCHWEISS MATERIAL GMBH & CO	ELSASSER STR 10D-79189, BAD KROZINGENGERMANY.		49(0) 07633 / 40



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**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
		20130	ALCONIX CORPORATION	SANNO PARK TOWER,12TH FLOOR,2-11-1 NAGATA-CHO,CHIYODA-KU,TOKYO ,JAPAN	Inamori.khei@alconix.com	
		20321	HOGANAS BELGIUM SA	COLDSTREAM DIVISIONRUELLE GROS PIERRE 10B-7800 ATHRUELLE GROS PIERRE 10B-7800 ATH		
WCW01	EL-8 SAW WIRE	14791	ANAND ARC LTD.,	NO.22(OLD.31),RAILWAY COLONY,III STREET,AMINJIKARAI,CHENNAI		044 23746379
		15085	VOLTARC ELECTRODES ( P ) LTD,	10-77, FIRST MAIN,ROYAL NAGAR,H.O.SURYAJYOTHI,R.C.ROAD, P.B.NO.33,TIRUPATHI	voltarc@rediffmail.com	0877 2241462
		15084	DWEKAM ELECTRODES LTD,	TALAWALI CHANDA,A.B.ROAD, P.O.MANGILAINDORE (MP)	vk.khandelwal@dwekam.org	0731 422 9500...
		13693	RASI ELECTRODES LTD.,	21, RAJA ANNAMALAI ROAD,FLAT NO A / 14, THIRD FLOOR,CHENNAI	rele@airtelmail.in	044 26424523
		19905	T.M.INDUSTRIES,	PLOT NO.26-27,PHASE-I,SILTARA GROWTH CENTRE,SILTARA RAIPUR	tmtapadia@rediffmail.com	0771-2100524
		10774	D&H SECHERON ELECTRODES PVT LTD.	P.B.NO.344-46,INDL.ESTATE,KILAMAIDANINDORE	sales@dnhsecheron.net	0731-4229222
		19114	WELMET TECHNOLOGIES PVT. LTD.,	34,P.N.MAIDU INDUSTRIAL ESTATE,M.I.D.C. HINGNA,NAGPUR		
		11528	RAAJRATNA ELECTRODES LTD	11, SONAROOPA, OPP.LALBANGLOWC.G.ROAD, NAVARANGPURA AHMEDABAD	mktg@gnaht-rel.global.net.in	079 - 6445258
		13534	RUPA INDUSTRIES,	2-2-105 to 180/10,GANESH CHAMBERSRANIGUNJ,SECUNDERABAD	rupaent@vsnl.net	040-2771 3714
		13211	D&H INDIA LIMITED	PLOT 'A', SECTOR 'A'INDUSTRIAL AREA,SANWER ROADINDORE	dhindia@sancharnet.in	0731-4273501-...
		11378	MAILAM INDIA LIMITED	MAILAM MAIN ROAD,SEDARAPET,PONDICHERRY	mailam@mailanindia.com	0413-2677311
		17813	K.M.CROWN WELDING CONSUMABLES PVT.,	BLOCK NO.16A,16B & 17A,INDUSTRIAL AREA NO.1,A.B.ROAD,DEWAS	kmcrownwelding@dataone.com	07272 259384578
		16166	EVERSHINE WIRES	178/2-A3, THURAIYUR ROAD,PULIVALAM,MUSIRI TALUK,TRICHY	evershinewires@rediffmail.com	04327 235527
		10785	ADOR WELDING LIMITED	CORPORATE MARKETING OFFICE,P.B. NO. 2, CHINCHWAD,PUNE	acegasindia@gamil.com	
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		11288	JAGSHAAN INDUSTRIES	94 FRIENDS COLONYKATOL ROADNAGPUR	jagshaan@nagpur.dot.net.in	0712 - 581557

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**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
		15100	MANTEK WIRES	24,SIDCO INDUSTRIAL ESTATE,P.VADUGAPALAYAM,PALLADAMCOIMBAT ORE		
		14340	NALLI ARC INDUSTRIE,	SF NO. 340,NALLIPALAYAM,PADIYUR POST,KANGAYAM TALUKERODE Dt.	nalliar@yahoo.com	04257 245185
		15101	PRECISION WELDARC LTD,	49,B.T. ROAD, PANIHATI24,PARGANAS ( NORTH )KOLKATA.	pwires@yahoo.co.in	033 25634753
		14455	WIRE AND WIRE PRODUCTS	SIDCO INDUSTRIAL ESTATEAMBATTURCHENNAI	wwp@vsnl.net	044 26242378
		15810	NOUVEAUX INDUSTRIES (P) LTD.,	N0.2,SOWDAMBIGA NAGARTIRUPUR ROAD.KANGAYAM		
WCW02	WELDING WIRE:SAW EB3	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		20011	BOHLER SCHWEISSTECHNIK AUSTRIA	WERK DEUCHENDORF,A 8605, KAPPENBERG, POSTFACH - 9,AUSTRIA.AUSTRIA.		0043/3862301
WCW04	WG:WIRE:SAW ER430	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20033	KISWEL LTD.,	HEUNGKOOK B/D, 43-1,JUJA-DONGCHUNG-GU, C.P.O.BOX 8641SEOUL, KOREA.SEOUL,KOREA.	export@kiswel.com	82-2-2270-9400
WCW05	WG:WIRE:SAW ER410	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20033	KISWEL LTD.,	HEUNGKOOK B/D, 43-1,JUJA-DONGCHUNG-GU, C.P.O.BOX 8641SEOUL, KOREA.SEOUL,KOREA.	export@kiswel.com	82-2-2270-9400
WCW06	WELDING WIRE:SAW EB2	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		20011	BOHLER SCHWEISSTECHNIK AUSTRIA	WERK DEUCHENDORF,A 8605, KAPPENBERG, POSTFACH - 9,AUSTRIA.AUSTRIA.		0043/3862301

**SECTION - VIII**  
**LIST OF APPROVED VENDORS**

**1 ) WELDING CONSUMABLES SUPPLIERS LIST**

Mat Group	Material Group Description	Vendor No	Vendor Name	Vendor Address	EMAIL	PHONE1
WCW08	WELDING WIRE:SAW EA4	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		20011	BOHLER SCHWEISSTECHNIK AUSTRIA	WERK DEUCHENDORF,A 8605, KAPPENBERG, POSTFACH - 9,AUSTRIA.AUSTRIA.		0043/3862301
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
WCW09	WELDING WIRE:SAW EM1	20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		15810	NOUVEAUX INDUSTRIES (P) LTD.,	NO.2,SOWDAMBIGA NAGARTIRUPUR ROAD.KANGAYAM		
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
WCW12	WELDING WIRE:SAW 3 B	20011	BOHLER SCHWEISSTECHNIK AUSTRIA	WERK DEUCHENDORF,A 8605, KAPPENBERG, POSTFACH - 9,AUSTRIA.AUSTRIA.		0043/3862301
		20563	BOHLER SCHWEISSTECHNNIK	UNIONSTRASSE-1,D-59067 HAMM,DEUTSCHLAND GmbH.,GERMANY		
		20047	KANEMATSU TRADING CORPORATION	6th FLOOR,AKEBONO NIHONBASHI BLDG,19 - 5,NIHONBASHIKOAMI-CHO,CHUO - KU, TOKYO, 103 - 0016.	nikko-bocki@kgt.kanematsu.co.jp	81 3 5283 3680
		10081	ESAB INDIA LTD	KARUMUTTU CENTRE, 6TH FLOORNEW NO.634(OLD NO.498)ANNA SALAI, NANDANAM,CHENNAI-35CHENNAI	jagdeesh.ds@esab.co.in	044-826 9343
		22391	AIR-LIQUIDE WELDING FRANCE,	13,RUE D'EPLUCHES-BP70024 SAINT-OUEN I'AUMONE,95315 CERGY PONTOISE CEDEX	jean-paul.shmitt@airliquide.com	1342 13480
		21411	METRODE PRODUCTS LIMITED,	HANWORTH LANE,CHERTESY,SURREY KT169LL,		



Section-VIII- 3) PENETRANT TESTING CHEMICALS AND  
MAGNETIC TESTING CONSUMABLES

**PENETRANT TESTING**

**PENETRANT TESTING CHEMICALS**  
**DYE (SOLVENT REMOVABLE, FLUORESCENT, WATER WASHABLE, POST**  
**EMULSIFIER) , DEVELOPER, CLEANER**

Sl.No	Vendor address	Approved by
1.	P-MET HIGH-TECH COMPANY (P) LTD. 1-5/6,INDUSTRIAL ESTATE, GORWA, BARODA (GUJARAT) INDIA-390016 PHONE NO.: 0265-282326/281125 FAX : 0265-2793868 E-MAIL : <a href="mailto:P-MET@ICENET.NET">P-MET@ICENET.NET</a>	TRICHY HYDERABAD RANIPET HARIDWAR
2.	ORIENTAL CHEMICAL WORKS (P) LTD 23 SATTANA NAICKEN STERRET 1ST LOOR,SRIVISHAKANYA NILAYAM, ADJACENT STREET, NATRAJ THEATRE CHENNAI 600 112	TRICHY RANIPET
3.	ITW SIGNODE INDIA LTD 3RD FLOOR,MERCHANT TOWERS, 5,ROAD NO.4,BANJARA HILLS HYDERBAD 500 034 E MAIL : <a href="mailto:VARDA@TCH.ITWSIGNODE.CO.IN">VARDA@TCH.ITWSIGNODE.CO.IN</a> Ph.No: 044 -24723956	TRICHY HYDERABAD RANIPET
4.	ITW SIGNODE INDIA LTD PLOT NO 34-37, IDA , APIIC, PASHAMNYLARAM, PHASE-II, MEDAK INDIA -502307 PHONE NO.: 08455- 26089, 26055 , 26328 FAX : 08455-26336 EMAIL: <a href="mailto:dst@fps.itwsignode.co.in">dst@fps.itwsignode.co.in</a>	TRICHY HYDERABAD RANIPET HARIDWAR
5.	ITW SIGNODE INDIA LTD. 10, COMMUNITY CENTRE, EAST OF KAILASH, NEW DELHI , INDIA -110065 PHONE NO.: 01126424984, 01126424990	TRICHY HYDERABAD RANIPET HARIDWAR
6.	PRADEEP METAL TREATMENT CHEMICALS (P) LTD. PLOT NOS A-488/489, ROAD U, WAGLE INDUSTRIAL ESTATE, THANE ,INDIA -400604 PHONE NO.:022-5598 8781 / 82 , FAX : 022-2582 7460 E-MAIL : <a href="mailto:pradeepndt@mtnl.net.in">pradeepndt@mtnl.net.in</a>	TRICHY HYDERABAD RANIPET HARIDWAR
7.	FERROCHEM, 1,GURUPRASAD KUNU 1122/6 ERANDAWAANA PUNE 411 004	TRICHY HYDERABAD RANIPET

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Section-VIII- 3) PENETRANT TESTING CHEMICALS AND  
MAGNETIC TESTING CONSUMABLES

8.	FERROCHEM NDT SYSTEMS PVT. LTD 6, PRAGATI INDUSTRIAL COMPLEX, 17/1-B, KOTHRUD, PUNE (MAHARASHTRA) INDIA -411004 PHONE NO.: (020)5465258/5432528/5437339 FAX : 5463038 E-MAIL : <a href="mailto:ferro@pn2.vsnl.net.in">ferro@pn2.vsnl.net.in</a>	TRICHY HYDERABAD RANIPET HARIDWAR
9.	ANDHRA SPARES COMPANY SHOP NO: 5-5-80/2, 1ST FLOOR, SRI SRINIVASA COMMERCIAL COMPLEX, RANIGUNJ, SECUNDERABAD- 500 003	HYDERABAD
10.	CHECKMATE CHEMICALS LTD. 13, MODERN INDUSTRIAL ESTATE, ROHTAK ROAD, BAHADUR GARH, HARYANA 124 507	TRICHY HYDERABAD RANIPET
11.	CHECKMATE CHEMICALS PVT. LTD. EC-11, 2ND FLOOR, INDER PURI, NEW DELHI , INDIA , 110012 PHONE NO.: 011-2585889/25835870 FAX : 011-25833160 E-MAIL : <a href="mailto:dlsharma@vsnl.com">dlsharma@vsnl.com</a>	TRICHY HYDERABAD RANIPET HARIDWAR
12.	NDT CHEMICAL PRODUCTS, 5-7-9/6, SANGEETH NAGAR, KUKATPALLY, HYDERABAD-500 072. EMAIL: <a href="mailto:ndtcp787_hyd@dataone.in">ndtcp787_hyd@dataone.in</a> WEB: <a href="http://WWW.NDTCPHYD.COM">WWW.NDTCPHYD.COM</a> PHONE: 09246530958	HYDERABAD
13.	THE ORIENTAL CHEMICAL WORKS, KOLKATTA 1/1B, GOBINDA AUDDY ROAD, CHETLA, KOLKATA-700 027	HYDERABAD
14.	M/S KRISH MET TECH PVT LTD 10 /1ST FLOOR, ARUNACHALAM ROAD,(OPP.SURRYA HOSPITAL) SALIGRAM,CHENNAI 600 093 EMAIL <a href="mailto:KRISHMETTECH@ETH.NET">KRISHMETTECH@ETH.NET</a> PH 23761491, 23764450	TRICHY RANIPET

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Section-VIII- 3) PENETRANT TESTING CHEMICALS AND  
MAGNETIC TESTING CONSUMABLES

**MAGNETIC TESTING CONSUMABLES**  
**DRY POWDER**

Sl.No	Vendor address	Approved by
1.	ITW SIGNODE INDIA LTD 3RD FLOOR, MERCHANT TOWERS, 5, ROAD NO.4, BANJARA HILLS HYDERABAD 500 034 E MAIL: varda@tch.itwsignode.co.in 044 -24723956	TRICHY HYDERABAD
2.	FERROCHEM NDT SYSTEMS PVT. LTD 6, PRAGATI INDUSTRIAL COMPLEX, 17/1-B, KOTHRUD, PUNE (MAHARASHTRA) INDIA-411004 PHONE NO.: (020)5465258/5432528/5437339 FAX : 5463038 E-MAIL : ferro@pn2.vsnl.net.in	TRICHY HYDERABAD
3.	EAST COAST ENTERPRISES 33, BRABOURNE ROAD, P.BNO. 2217 GPO CALCUTTA 700 001	TRICHY HYDERABAD
4.	ELECTRO MAGFIELD CONTROLS & SERVICES 561 G.M.T.H ROAD (NEAR TELEPHONE EXCHANGE) AMBATHUR CHENNAI 600 098 EMAIL: emcs@eth.net PH 625 4327, 652 1041	TRICHY HYDERABAD
5.	EAST WEST ENGG. & ELECTRONICS CO 204, ACHARYA COMMERCIAL CENTRE DR. C. G. ROAD, CHEMBUR MUMBAI 400 074	TRICHY HYDERABAD
6.	KIRAN ENTERPRISES PLOT NO 175, PRAGATHINAGAR, OPP. JNTU KUKATPALLY, HYDRABAD 500 072	HYDERABAD
7.	PARADEEP NDT PRODUCTS REGIS. OFFICE: 32 WESTMINSTER, MANIKIKAR MARG, CHUNABHATTI, SION, MUMBAI-400 022 WORKS: SHED NO.3, CHANDRASAKHA ESTATE SURVEY NO.1, AMBEGAON BUORUK TAL.HAVELI DIST. PUNE 411 046 PHONE NO. 020 -24210699	TRICHY HYDERABAD

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Section-VIII- 3) PENETRANT TESTING CHEMICALS AND  
MAGNETIC TESTING CONSUMABLES

8.	PRADEEP METAL TREATMENT CHEMICALS (P) LTD. PLOT NOS A-488/489, ROAD U, WAGLE INDUSTRIAL ESTATE, THANE ,INDIA-400604 PHONE NO.: 022-5598 8781 / 82, FAX : 022-2582 7460 E-MAIL : <a href="mailto:pradeepndt@mtnl.net.in">pradeepndt@mtnl.net.in</a>	
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**MPI CHEMICALS (WET)**

Sl.No	Vendor address	Approved by
1.	CHECKMATE CHEMICALS PVT. LTD. EC-11, 2ND FLOOR, INDER PURI, NEW DELHI , INDIA -110012 PHONE NO.: 011-2585869/25835870 FAX : 011-25833100 E-MAIL : <a href="mailto:dbsharma@vsnl.com">dbsharma@vsnl.com</a>	TRICHY HYDERABAD BHOPAL HARIDWAR
2.	P-MET HIGH-TECH COMPANY (P) LTD. 1-5/6,INDUSTRIAL ESTATE, GORWA, BARODA (GUJARAT) INDIA -390016 PHONE NO.: 0265-282326/281125,FAX : 0265-2793868 E-MAIL : <a href="mailto:p-met@icenet.net">p-met@icenet.net</a>	TRICHY HYDERABAD BHOPAL HARIDWAR
3.	K ELECTRONICS G11 ,RAJMAHAL, 55-E,M. VASANJI ROAD ANDHERI(EAST) MUMBAI 400 089 PHONE:020-25432528,25437339 FAX:020-25463038 E-MAIL: <a href="mailto:ferro@pn2.vsnl.net.in">ferro@pn2.vsnl.net.in</a>	TRICHY HYDERABAD BHOPAL
4.	PRADEEP METAL TREATMENT CHEMICALS (P) LTD. PLOT NOS A-488/489, ROAD U, WAGLE INDUSTRIAL ESTATE, THANE , INDIA, 400604 PHONE NO.: 022-5598 8781 / 82 , FAX : 022-2582 7460 E-MAIL : <a href="mailto:pradeepndt@mtnl.net.in">pradeepndt@mtnl.net.in</a>	TRICHY HYDERABAD BHOPAL HARIDWAR
5.	PRADEEP NDT PRODUCTS PVT. LTD. 32, WESTMINISTER, MANKIKAR MARG, SION, MUMBAI - 400 022 PHONE:022-24073309, 24093116 <a href="mailto:pradeepndt@vsnl.net">pradeepndt@vsnl.net</a> <a href="mailto:vardeji@bol.net.in">vardeji@bol.net.in</a>	TRICHY HYDERABAD BHOPAL

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Section-VIII- 3) PENETRANT TESTING CHEMICALS AND  
MAGNETIC TESTING CONSUMABLES

6.	ITW SIGNODE INDIA LTD PLOT NO 34-37, IDA , APIIC, PASHAMNYLARAM, PHASE-II MEDAK, INDIA -502307 PHONE NO.: 08455- 26089, 26055 , 26328 ,FAX : 08455- 26336 EMAIL: <a href="mailto:dst@fps.itwsignode.co.in">dst@fps.itwsignode.co.in</a>	TRICHY HYDERABAD BHOPAL HARIDWAR
7.	ITW SIGNODE INDIA LTD 3 RD FLOOR, MERCCHANT TOWERS, 5, ROAD NO 4, BANJARA HILLS,HYDERABAD-500034 PHONE:040-23353781 E-MAIL: <a href="mailto:itwindia@hdl.vsnl.net.in">itwindia@hdl.vsnl.net.in</a>	TRICHY HYDERABAD BHOPAL
8.	ITW SIGNODE INDIA LTD. 10, COMMUNITY CENTRE, EAST OF KAILASH, NEW DELHI, INDIA -110065 PHONE NO.: 01126424984, 01126424990	TRICHY HYDERABAD BHOPAL HARIDWAR
9.	FERROCHEM NDT SYSTEMS PVT. LTD 6, PRAGATI INDUSTRIAL COMPLEX, 17/1-B, KOTHRUD, PUNE (MAHARASHTRA) ,INDIA-411004 PHONE NO.: (020)5465258/5432528/5437339,FAX : 5463038 E-MAIL : <a href="mailto:ferro@pn2.vsnl.net.in">ferro@pn2.vsnl.net.in</a>	TRICHY HYDERABAD BHOPAL HARIDWAR

<b>RATE CONTRACT 2014 – Ranipet :: Outsourcing Department</b> <b>SECTION – VIII</b> <b>4) LIST OF NDT APPROVED VENDORS</b>		
Sl.No	NDT Agency Address	Methods
1.	M/s. G.B. NdtEngg. Services, E-52,Industrial Estate,Thuvakudi, Tiruchy, Tamilnadu-620015 Phone:(0431)2501112,2500891, 09842450112(Vivek) Email:gbdnt.xrayengg@yahoo.com	RT,UT,MT,PT
2.	M/s. Super Quality Services, 95,Sqs Building, Near Police Station, Palakkarai Main Road, Trichy-620001 Phone (0431)2415087,2414218, 09843054218(Tamilselvan) FAX-0431-2464218 Email:sqsndt@yahoo.co.in	RT,UT,MT,PT
3.	M/s. Kgb Inspection Services, P-16, Electrical&Electronics Industrial Estate, Thuvakudi, Tiruchirappalli 620015 Ph(0431)2500164, 09842453258(Kumaran) email:kgbist2002@yahoo.co.in	RT,UT,MT,PT
4.	M/s. Supreme Excel Ndt Services, li Floor, Vairam Memorial Complex 24-A/B, Jeeva Street, Subramaniapuram, Tiruchirappalli - 620020 Phone:(0431)2333528, 2501241,09842452075(Subramanian) e-mail:ndtsrvcs2008@yahoo.co.in	RT,UT,MT,PT
5.	M/s. Bharat Inspection Services, 1-19,Electrical & Electronics Industrial Estate, Thuvakudi, Trichy-620015 Phone:0431-2500550 MOBILE: 9444435196 (Ramasamy), 9842536801(Shanmugavel) e-mail: ramasamyndt@rediffmail.com	RT,UT,MT,PT
6.	M/s. J K Inspection Services, Plot No. 47, Sidco, Bhel Ancillary Estate, Ranipet ,Tamilnau-632406.	RT,UT,MT,PT
7.	M/s. Scaanray Metallurgical Services, C-12, Industrial Estate,Mogappair (West) Chennai 600 037 Phone: 044-26250651, 23762613 FAX 26358741, 9840104928(Pari),9840050651(Nakkeran) Email: scaanray@vsnl.com	RT,UT,MT,PT
8.	M/s. Ascent NdtServices, F-3, 1st Floor, P.S.Paradise, 73/34, 7th Avenue, Ashok nagar, Chennai-600083, Phone:044-24740075, 42033696, e-mail: qitcschennai@yahoo.co.in, qitcschennai@gmail.com	RT,UT,MT,PT
9.	M/s. GLOBAL NDT SERVICES, 22, Thuthipet, Thuthipet Post, VELLORE, Tamilnadu-632 011 Ph:09944726802, 09442261909(Mohanraj), 9865911211(Robert) , Email:gns.ndt@gmail.com	RT,UT,MT,PT
10.	M/s. Baroda Equipment And Vessels (P) Ltd Block 241-242, Muvai-Mobha Road, Muvai P.O, Ta-Padra, Vadodara, Gujarat State-391430 , Phone:02662-243100 9 email:info@barodaequip.com	RT,UT,MT,PT
11.	M/s. International Radiography Services, A-75 / 3 / 5, General Block, M.I.D.C, Telco- BhosariRoad,Bhosari, Pune, Maharashtra State- 411 026 Phone:020-27129659, 27129660, Mobile:09922194031Borkar) Email:irsndt@rediffmail.com	RT,UT,MT,PT
12.	M/s. Bequerel Industries Pvt.Ltd., Plot 33, Rushikesh, Ingole Nagar, Modern Coop. Housing Society, Wardha Road, Nagpur, Maharashtra State- 440 005 Ph: 0712-2284352, FAX: 0712-2286665, Mobile: 09822565879 Email: becquerel-ndt@rediffmail.com, Becquerel-ndt@gmail.com, www.info.apliedndt.com	RT,UT,MT,PT
13.	M/s. Sakthi Radiographic Inspection Company, No 1 / 1-14, Rajiv Gandhi Nagar, Walajapet,Tamilnadu-632 513 Phone 04172-230344, 245264, Cell:9443246128 email:srico_ndt@yahoo.com	RT,UT,MT,PT
14.	M/s. Evergreen Ndt Engineers, No. 7, I Floor, Vairam Memorial Complex , 24-A/B, Jeeva Street, Subramaniapuram, Tiruchirappalli20- 620020 Phone(0431) 2333095, Cell- 9842425765(Chockalingam), 9842435765(Ravichandran) email:enetry20@eth.net	RT,UT,MT,PT
	M/s. Metal Care Engg. Services Plot 13,14, B-1 Kether Manor, 3rd Cross, North Extension, ThillaiNagar,Trichy 620018 Phone(0431) 2762190, 2481593 9942904651(Selvaraj) Email: mces_try@yahoo.co.in	RT
16.	M/s. Institute Of Inspection Technology And Ndt Resources, 31, Rubin Complex, las Nagar, Thiruverumbur, Trichy-620013 Phone 0431-2512269, Cell:Rajendran-09865007583, Shareef-9865407475 Email:info@iitndt.com	RT
17.	M/s. Madras Radiography Engineers Ramanathapuram Road, Eranthangal Village & Post, Vellore Dist, Tamilnadu-632519 Ph: 09448040882(Damodaran), Email:Mre.India@Gmail.Com 705, 3rd Cross, Hrbr I Block, Kalyan Nagar, Bangalore-560 043 Ph:080-25453228, 25453229 E-MAIL: mre@dataone.in, mre.ndt@gmail.com	RT

18.	M/s. National Radiographic Inspection Co No 5 / 1, Sidco Industrial Estate, Thuvakudi, Trichy-620015. Phone:0431-6522046, Mobile: 750964404(Mariappan) e mail:snmoorthy64@yahoo.com, snmoorthy@nricndt.com H.O A22,F/1, Brindavanam Flats, 5th Avenue, Banu Nagar, Pudur, Chennai- 600 053 Phone:9445745193(Moorthy) 044-26862363, Email:snmoorthy64@yahoo.com, snmoorthy@nricndt.com	RT
19.	M/s. Sitas 472 / 1,2,3,Sendampalayam MgcPalayam Village, AvinashiTaluk, SsKulam Via Coimbatore-641107, 9442233493(Saravanan) e-mail: sitascbe@yahoo.co.in	RT
	M/s. H.O C-72, Iii Stage,Peenya Industrial Area, Bangalore- 560058 Ph: 080 28368899,41171123,Fax:08028365544 e-mail:teamsitas@yahoo.com, info@sitasndt.com, Web:www.sitasndt.com	
20.	M/s. Gb Engineering Enterprises (P) Ltd, D99, Developed Plot Estate, Thuvakudi, Trichy-620015 Phone:0431-3041000, Fax:0431-3041050 Mobile: 9345121115 gb@gb.resurgent.in	RT,UT,MT,PT
21.	M/s. Shanmukandt& Inspection Services, 701, Avoor Road, Mathur, Pudukottai District-622515, Phone:04339- 250822 Mobile:9486675664(Saravanan)9443179425(Muthuku mar), Email:shanmukandt@gmail.com	RT
22.	M/s. Sievert India Pvt.Ltd, Plot No 24, Haji Ismail Nagar, Thiruverumbur, Trichy- 620013, Phone&Fax:0431-2511545, Mobile:9500811003(Hariprasad) email:cbala@sievert.in. hariprasadj@sievert.in, H.O 16&17,PLOT NO 2 SECTOR-2,PHASE II, NERUL, NAVI MUMBAI-400706 Ph:022 27732003,27732004, Fax:022-22727076 email:venkat@sievert.in	RT
23.	M/s. Industrial X-Ray Inspnection Company, Test House, 26, 2nd Street, Kalaimagal Nagar, Eekkattuthangal, Chennai 600 032 Phone: 044- 22251091, 22250690 , 9840076744(Venkatesh)9003075206(Baskar) e-mail: ixicoc@gmail.com	RT
24.	M/s. Industrial Radiographic Inspection Company Sp-111, South Avenue, Ambattur Industrial Estate, Chennai 600 058 Phone: 044- 26253235,26250790,26255602,Fax-044-26255838, Mobile9444418045(Sathyan) e-mail : iricondt@airtelmail.in	RT
25.	M/s. United Inspection And Engineering Services, New No 9, Old No 22, Parthasarathypuram, North Usman Road, T.Nagar, Chennai 600 017. Phone:044- 42123180, Fax: 044-28142268, Cell:Leeladhar 9444062268, E-mail:uies@sify.com.	RT
26.	M/s. Engineering Quality Inspection Services, 2 / 166 A, Mettukuppam Road, Vanagaram, Chennai- 600 095. Phone:044-24764770, Fax:044-24764773, E-mail: jstephenraj.eqis@gmail.com, 9884716100(Stephenraj)	RT,UT,MT,PT
27.	M/s. Jai Inspection Agencies, Plot No 21, Natesan Nagar, Ayanampakkam, Chennai- 600 095, Phone: 044-26533028,Fax: 044-26531770, Mobile9444376055(Duraiaraj) email: jai_ ndt@yahoo.com	RT
28.	M/s. Industrial X-Ray &Allied Radiographers(I) Pvt.Ltd, Plot 53, 4-457, 1st Street, Rayalanagar, Ramavaram, Chennai-600089 Phone 04422493387, 04427291026 Mobile 9865069804(Palanivel) Email:gpalanivel@ixar.in	RT
29.	M/s. Ascent Ndt Services, F-3, 1st Floor, P.S.Paradise, 73/34, 7th Avenue, Ashok Nagar, Chennai-600083, Phone:044-24740075, 42033696, e-mail: qitcschennai@yahoo.co.in, qitcschennai@gmail.com	RT,UT,MT,PT
30.	M/s. Global Ndt Services, 22, Thuthipet, Thuthipet Post, Vellore, Tamilnadu-632 011 Ph:09944726802, 09442261909(Mohanraj), 9865911211(Robert) Email:gns.ndt@gmail.com	RT,UT,MT,PT
31.	M/s. Testrade Technical Services, Vishnu Vihar,217, Dr. Ambedkar Road, P.O. Velandipalayam, Coimbatore 641 025. Phone: 0422-2450440 email:testradexray@gmail.com Site Office: 165, SidcoIndl.Estate, Malumichampatti, Coimbatore-641021 Phone:0422-2655772 Cell:9363242722	RT
32.	M/s. Everest Industrial Radiographer, 1/25, Arisipalayam, Coimbatore-641032 Phone:0422-2638148,2638348, Cell:9843011031 (A.Rathinam) email: everestndt@sify.com)	RT

33.	M/s. Sri VinayagaNdt Inspection Services, Sf 303, PeriaThottam, Kadathur Road, Coimbatore- 641 107. Phone 0422-2653640, 9443027274(Shanmugam) email:svndt@yahoo.co.in	RT
34.	M/s. Technical Inspection Services 513-A6, Bharathi Road, Chinnavedampatti, Ganapathy, Coimbatore-641 006. Phone:0422-2667971 Email:tisnssasi@yahoo.com	RT
35.	M/s. HitecNdt Systems S.F.No 350 / 2c, Near Rosver Steels Ltd,) KattampattiVillage, Ganesapuram P.O ,S.S.Kulam (Via) Coimbatore-614 107 Phone:0422-2653446 Mobile:9994975097(Ravikumar)Email: hitecndt@yahoo.in )	RT
36.	M/s. Escon Technical Services (P).Ltd 32, Bharathy Park Cross Road 8 , Coimbatore, 641011 Phone:0422-2451263, 2450737 Fax- 2437271 e-mail:indiaesconin@dataone.in	RT,UT
37.	M/s. Visvesvaraya Industrial Engineering Works,, Sf 238 / 2b & 2c , MasagoundanChettipalayam Village Telungupalayam Road, Annur, AvinasiTaluk, Coimbatore-641 653 Fax0422-2677725, Mobile:9444418051: 9444954613(N.S.Ravi) 9444418046 (N.Ananthakrishnan) e-mail: view_ndt@yahoo.com	RT
38.	M/s. Sri Amman Ndt System, 76/ 2a,2b,Thirumalayampalayam Village, Madukkarai P.O. Coimbatore-641105 Phone;0422-2402456, 2656290 Mobile:9865270800(Devaraj) email:sriammanndt@yahoo.in	RT
39.	M/s. Test Ray's Inspection Services, S.F 413 / 3b, MopperiPalayam, PalladamTaluk, Coimbatore-642654. Ph:0421-3269845, Mobile9600944001, 02,03. Email:tiesndt@gmail.com	RT
40.	M/s. Coimbatore Industrial Radiographers, S.F.No 221, Therkkuthottam, OthakkalMandapam, Coimbatore-641032. Mobile:99443243201, email:cirndt@gmail.com	RT
41.	M/s. Curie Best Services, 359 / 1,2 Kanthampalayam, Sembianallur(Village), Avinashi-641654 Mobile:9486774627(Balakrishnan) 9942984241(Murugappan) email:curiebestservices@gmail.com	RT
42.	M/s. Industrial X-Ray & Allied Radiographers ( I ) Pvt.Ltd. 102, Faizan Apartments, 1st Floor, S.V.Road, Jogeshwari(West), Mumbai. 400102.	RT
43.	M/s. Isotope Teknica Ltd., Anjaney,, Plot No.3,Road-16, New Panvel,Navi Mumbai-410206.	RT
44.	M/s. Technical Testing Services, G.K.House, Harichand Mill Compound, Vikroli (West), Mumbai-400072.	RT
45.	M/s. International Radiography Services, A-75 / 3 / 5, General Block, M.I.D.C, Telco- Bhosari Road, Bhosari, Pune, Maharashtra State- 411 026 Phone:020-27129659, 27129660, Mobile:09922194031Borkar) Email:irsndt@rediffmail.com	RT,UT,MT,PT
46.	M/s. Essteeam Enterprises 42, Surendra Nagar, Nagpur, Mharashtra State-440015 Phone:071-2224362 Mobile:09422147029(PravinV.Pande E-Mail:essteeam.27@rediffmail.com	RT
47.	M/s. Seam(Sunil Hitech Engineers & Manufacturers P Ltd,) 97, East High Court Road, Ramdaspath, Nagpur, Maharashtra State-440010 Phone: 0712-2562087 / 88 , Mobile-Devarajan- 09923755592 E-mail:seamngp@gmail.com, <a href="mailto:info@seamlimited.com">info@seamlimited.com</a> Works-K-43 / 2, Five Star Industrial Zone, MidcButibori, Nagpur, Maharashtra State-441122 Works: 07104-265468, 321968 :Fax:07104265467	RT,UT
48.	M/s. MetalfabHightech (P) Ltd E 21-25, Midc, Industrial Area, Hingna Nagar, Nagpur-440 028 Ph:07104-234240 E-Mail:mfhpl@hotmail.com	RT,UT
49.	M/s. Becquerel Industries Pvt.Ltd (Applied Ndt& Technical Services), 33, Rushikesh, Ingole Nagar, Wardha Road, Nagpur, Maharashtra State- 440 005 Phone: 0712-2284352, Fax: 0712-2286665, Mobile: 09822565879(Jhime0 Email:becquerel_ndt@rediffmail.com, becquerel_ndt@gmail.com Website:info.apliedndt.com	RT,UT,MT,PT
50.	M/s. Metalscan Techniques, 302,Saraswati Sadanam Complex, Dharampeth, Nagpur-Maharashtra.440010 Phone:0712-2560989, 09422339219 email:metalscantechiques@rediffmail.com, kulkarnidinesh1@rediffmail.com	RT
51.	M/s. Purvanchal Inspection & Radiography Services, 758, Prem Nagar, Street No.7, Yamuna Nagar. Haryana- 135001	RT

52.	M/s. Modern Fabricators Engg. &Ndt System, Shop No. 2, Modern Colony, Kansepur Road, Yamuna Nagar. Haryana- 135001	RT
53.	M/s. Northern Industrial Radiography Services M-31, Industrial Area, On 200 Quarter Road,, Yamuna Nagar-135 001 Ph: 01732-251128, 253286 :FAX:01732-253286 EMAIL:nirsndt@yahoo.co.in CELL:09896330186 (SANJAY GUPTA)	RT,UT
54.	M/s. IrcEngg. Services India Pvt. Ltd. 612, Chiranjiv Tower, Nehru Place New Delhi- 110019.	RT
55.	M/s. Satyakiran Engineers Pvt.Ltd. Flats 3 & 4, Bu-Sfs, UttariPitampura, Delhi – 110088.	RT
56.	M/s. GlobalEngineering&Ndt Services Hasimpur, Patuligram P.O, Hoogly District, West Bengal-712 501 Cell 09831609926(S.Das) 9831626059(S.Sarkar) email:globalenggnndt@gmail.com	RT
57.	M/s. Perfect Inspection Services, Plot No 3, Gole Market, Vaishali Nagar, Bhilai-490 023 PH:0788-2221729 E-MAIL:pisbhillai@sify.com dkdutta7@yahoo.com	RT
50.	M/s. Metalscan Techniques, 302,Saraswati Sadanam Complex, Dharampeth, Nagpur-Maharashtra.440010 Phone:0712-2560989, 09422339219 email:metalscantechiques@rediffmail.com, kulkarnidinesh1@rediffmail.com	RT
51.	M/s. Purvanchal Inspection & Radiography Services, 758, Prem Nagar, Street No.7, Yamuna Nagar. Haryana- 135001	RT
52.	M/s. Modern Fabricators Engg. &Ndt System, Shop No. 2, Modern Colony, Kansepur Road, Yamuna Nagar. Haryana- 135001	RT
53.	M/s. Northern Industrial Radiography Services M-31, Industrial Area, On 200 Quarter Road,, Yamuna Nagar-135 001 PH: 01732-251128, 253286 :FAX:01732-253286 EMAIL:nirsndt@yahoo.co.in CELL:09896330186 (SANJAY GUPTA)	RT,UT
54.	M/s. IrcEngg. Services India Pvt. Ltd. 612, Chiranjiv Tower, Nehru Place New Delhi- 110019.	RT
55.	M/s. Satyakiran Engineers Pvt.Ltd. Flats 3 & 4, Bu-Sfs, UttariPitampura, Delhi – 110088.	RT
56.	M/s. GlobalEngineering&Ndt Services Hasimpur, Patuligram P.O, Hoogly District, West Bengal-712 501 Cell 09831609926(S.Das) 9831626059(S.Sarkar) email:globalenggnndt@gmail.com	RT
57.	M/s. Perfect Inspection Services, Plot No 3, Gole Market, Vaishali Nagar, Bhilai-490 023 Ph:0788-2221729 E-MAIL:pisbhillai@sify.com dkdutta7@yahoo.com	RT
58.	M/s. Infra Test House, 143 / D, Light Industrial Area, Bhilai-490026 ChattisgarhState Cell: 09993785454 e-mail: infratesthome@gmail.com, ssarbbajna@rediffmail.com	RT
59.	M/s. Inspection & Testing Engineers D-155, Sector 49, Noida, Up 201307. Ph; 0120-250065 Fax:0120-4310675 Cell:09810059715-A.K.Pawar E-Mail: lte.Noida@Hotmail.Com	RT
60.	M/s. Nde Inspections, 50,Raja Colony, 4th Cross, Collector Office Road, Trichy-620001. Phone (0431)2416388 , 9345499916 e-mail:ndeinspections@gmail.com, www.rla-ndeinspections.com	UT,MT,PT
61.	M/s. Scientech Inspection Services No 64-B, PanchaliammanKoil Street, Arumbakkam, Chennai-600 106 PH:044 6461720 FAX: 044 24750173 CELL: 9884022861, 9884022862 E-MAIL:scientechinspection@gmail.com	UT,MT,PT
62.	M/s. Baroda Equipment And Vessels Pvt Ltd, Block 241-242, Muvai-Mobha Road, Muvai P.O, Ta-Padra, Vadodara, Gujarat State-391430 Phone:02662-243100 Fax:02662-243099 email:info@barodaequip.com	RT,UT,MT,PT
63.	M/s. Ndts India (P) Ltd, 612, The Great Eastern Galleria, Plot No 20, Sector 4, Nerul, Navi Mumbai-400 076. PH:022-27703913, 27703923, 09321730516 (MukeshArora), 09322308492(Prasad Kunder) E-MAIL:info@ndts.co.in & prasad@ndts.co.in	MT,PT
64.	M/s. Metalab 42 A,Industrial Area, Govindpura Bhopal-462023	RT,UT,MT,PT
65.	M/s. Kwality Technical Services 245,Sector 9b, Saket Nagar, Bhopal-462024	UT,MT,PT
66.	M/s. Qualisurance Services & Consultancy, Plot No 3, BhawaniMohini, Bhawani Nagr,Bhopal-462021	UT,MT,PT
67.	M/s. PetromarinesNdt Engineers, F-31,32, RajatJayanti Complex, Sheme No 54, Indore-10	UT,MT,PT

68.	M/s. Technical Testing Services Site: Lig-100, Bhel, R.C.Puram, Hyd-502 032 H.O:G.K.House, Harichand Mills Compound L.B.S.Marg, Vikroli (W), Mumbai-400 079 Mr.M.R.Krishna 241323, 56294182 Mr.Mohan-9246590730, 23523448	RT
69.	M/s. Gamma Weld Inspection Services B5, Cis, Balanagar, Hyderabad- 500 037 Mr.Kaganalli 040-55572240 9391046437, Fax.No.040-23777469	RT,UT,MT
70.	M/s. S.M.S. Metallurgical Services 1-18, Behind Gati Transport, R.C.Puram, Hyd-32. Mr.Riaz 55642240, 9849075709 Mail Id: smslabs @yahoo.com	UT,MT
71.	M/s. Hyderabad Engineering Labs 5-36/26/B, Prasanthinagar, I.E.Kukatpalli, Hyd-500 072 Mr.Kaganalli 23075850, 55277870 9391048538, Fax.No. 040-23079235	RT,UT,MT
72.	M/s. Kumar Inspection Services H.No.23-28/2, Sri SaiSadan Complex, Beside Andhra Bank, Jyothi Nagar, Hyd-502 032 Mr.SamojiAnand.B 08455241323, 9963439251, 9396229170	RT
73.	M/s. EnconNdt Services 3-12-122, Ganesh Nagar, Ramanthpur, Hyderabad-13 Mr.NagendraBabu 040-27036665, 9849009103	RT,UT,MT
74.	M/s. Industrial X-Ray And Allied Radiographers (Pvt) Ltd 102, FaizanAppartments, 1st Floor, S.V.Road, Jogeswari (W), Mumbai-400 102 Mr.O.Jacinti/ M.R.Krishna 09323843448 Mail Id : ixar@ yahoo.com	RT
75.	M/s. Jyothi Spectra Analysis Balanagar, Hyderabad Mr.Santosh-9849003761	UT,MT
76.	M/s. Quality Inspection Technologies, B-88, Auto Nagar, Visakhapatnam-530 012. Andhra Pradesh Mr.S.N.Moorthy 9000253935, 9849677299 Mail id : info@qindt.com snmoorthy@qindt.com	RT,UT,MT
77.	M/s. N.S.Engineering Company Pvt.Ltd, Unit No: B-28, Bhel, A.I.E, R.C.Puram, Hyd. G.Mallikarjunarao, 09399948488, 040- 20347989	UT,MT
78.	M/s. Ge Godavari Engineering Ltd, Mumbai National Highway-9, Patancheru,-502 319 B.K.Karande, 08455248500, 08455248501 mail id: geigodavari@sancharnet.in	RT
79.	M/s. Iso Tech Services B-89, Autonagar, Visakhapatnam- 530 012 P.Prabhakar 891 2512833(O), 891 2513178, 98499 16876	RT
80.	M/s. Axis Inspection Solutions, 201, Krishna Residency, Plot-15, Nizam Pet, Kukat Pally, Hyderabad- 500 072. V.Venkat Reddy 0919866324742, 09490426403 mail id : axis.ndt@gmail.com; hyd@axis-inspection.com	RT,UT,MT
81.	M/s. Industrial Radiographic Corporation Plot No: 115&116, Autonagar, Visakhapatnam-530 012 V.R.K.Murthy, Ph.No: 2512374 Fax.No: 0891-2514793	RT,UT,MT
82.	M/s. Kalva Engineers Pvt.Ltd Plot No: 17, #2-1-112 / 1 Mamatha Nagar Colony, Nagole, Hyderabad- 500 068. K.S.R.Chandra Murthy 9849005027 040 65216871 kalva @vsnl.com	UT,MT
83.	M/s. Test Well Private Limited Plot No:16, Snehitha Hills, PeranCheruvu, Ap Police Acdamy, Rajendra Nagar Mandal, RdDist, Ap. mr.nagababu ph. no:9000423888	UT,MT
84.	M/s. Engineering Inspection Logistics, H.No.-1180, Sector-8, Faridabad-121006 Haryana.	RT,UT