

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt of India Undertaking)

RAMACHANDRAPURAM :: HYDERABAD-502 032 (TS)

Ph No.23183304/23182129, e-mail: tapas@bhelhyd.co.in

(Logistics)

Ref No.: HY/ LOGISTICS/ OS/ 16 -12/ 01

Date: 06.12.2016

TENDER NOTICE

Name of the department : **LOGISTICS**

Tender No. / Date : **HY/ LOGISTICS/ OS/ 16 -12/ 01, Date: 06.12.2016**

Sealed tenders in two part bids (Techno commercial & Price bid) in sealed covers, subscribing the Tender Notice Number & name of the work are invited by **Sr. Manager/ LOGISTICS, 07 - Annexe. M/s. BHEL, Ramachandrapuram, Hyderabad-502032** from reputed contractors preferably Regd. with Govt. of India, Govt. of Telangna / Andhra Pradesh, Railways, Military Engg Service or Bharat Heavy Electricals Limited, RC Puram, Hyderabad-32 for the following works and the same are to be dropped in the Tender Box which is kept at the Vendor Complex near Admn. Bldg. Tenders will be opened by the undersigned or his nominee at vendor complex near Admn. Bldg, BHEL Ramachandrapuram, Hyderabad in the presence of bidders or their authorised agents.

| | | | |
|----|---------------------------------|---|--|
| 1. | Name of work | : | Outsourcing the packaging contract at TCGT, EM, Switchgear, HE & F, Open Items, DS, Pulverisers, Oil Rigs, Pumps and Spares areas along with packaging material supply and addressing. |
| 2. | Sale / closure of Tenders | : | 06.12.2016 to 27.12.2016 09.00 Hrs. to 11.00 Hrs. |
| 3. | Last date for receipt of tender | : | 27.12.2016 up to 11.30 Hrs. |
| 4. | Date and time of tender opening | : | 27.12.2016 at 13.00 Hrs. |
| 5. | Period of contract | : | 24 Months from the date of award of contract or from a stipulated time |
| 6. | Earnest Money Deposit (EMD) | : | Rs.1036000/- (Rupees ten lakhs thirty six thousand only) |
| 7. | Cost of the tender document | : | Rs. 500/- (Non refundable) |

Tender forms (containing the detailed schedule of activities to be carried out) can be obtained from [06.12.2016](#) to [27.12.2016](#) from the office of the Sr. Manager/Logistics, 07 - Annexe, G-Floor, BHEL, RC Puram, Hyderabad-502032 (inside the factory) between 09.00 Hrs. & 11.00 Hrs. on all working days. An amount of Rs 500/- (Non refundable) should be paid for each tender form in BHEL cash office through a "pay-in-slip" supplied by the office of the undersigned. The cost of the tender forms will not be refunded and the tenders are not transferable under any circumstances. Tender documents can also be downloaded from BHEL website [http:// www.bhel.com](http://www.bhel.com). Tender cost should be payable even if it is downloaded from BHEL website in which case tender cost can be made by Demand Draft payable at Hyderabad. You are requested to visit the undersigned in order to accurately assess the quantum of service to be rendered and take them into account while quoting for the enquiry. No subsequent claim for any reason whatsoever will be entertained by BHEL and it will be deemed to have been included in the tender quotation. All the bidders are requested to resolve pre-bid queries before quoting. All corrigenda, addenda, time extensions clarifications, etc., to the tender will be hosted on BHEL website (www.bhel.com) only. Bidders should regularly visit website(s) to keep themselves updated.

Sd/-

Sr. Manager / LOGISTICS

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TENDER NOTICE

Ref No.: HY/ LOGISTICS/ OS/ 16 -12/ 01

Date: 06.12.2016

PROCEDURE FOR SUBMISSION OF SEALED TENDER

Quotations are invited by Sr. Manager / Logistics, Bharat Heavy Electricals Limited, Ramachandrapuram, Hyderabad-502032.

The quotations shall be submitted in Two Parts i.e. (a) Techno Commercial Bid and (b) Price Bid in two separate covers along with tender cost and EMD in separate cover as detailed below:

The covers should be addressed to **Sr. Manager/ Logistics, 07- Annexe, Ground Floor, BHEL, RC Puram, Hyderabad-32** to reach on or before by **11.00 Hrs.** on **27.12.2016** and the same are to be dropped in the Tender Box which is kept in the Vendor Complex near Admn. Bldg., BHEL, RC Puram, Hyderabad-502032. **BHEL is not responsible for any postal delay.**

THE FIRST COVER shall be super scribed as "Earnest money deposit for Outsourcing the packaging contract at TCGT, EM, Switchgear, HE & F, Open Items, DS, Pulverisers, Oil Rigs, Pumps and Spares areas along with packaging material supply and addressing" against TENDER NOTICE NO: **HY/ LOGISTICS/ OS/ 16 -12/ 01** dtd **06.12.2016**. The cover shall contain EARNEST MONEY. One time EMD (lump sum amount) for exemption of EMD with each tender is not permissible. **Bids without EMD are liable for rejections.**

THE SECOND COVER shall be super scribed as "Techno-commercial bid for Outsourcing the packaging contract at TCGT, EM, Switchgear, HE & F, Open Items, DS, Pulverisers, Oil Rigs, Pumps and Spares areas along with packaging material supply and addressing" against TENDER NOTICE NO: **HY/LOGISTICS/ OS/ 16 -12/ 01** Dtd. **06.12.2016**. The cover shall contain Documents of evidence (self-certified in each page) as per qualifying criteria asked for enclosing as in Annexure-B, Copy of Partnership Deed / Sole Trader Registration Deed Or Any Other Deed Evidencing The Existence Of The Firm, Power of Attorney in favour of the signatory if the tender is submitted on behalf of a firm/Company or the authority of transacting, Copy of Chartered Accountant certified Balance sheets, Profit / Loss Statements, Computation of income, Income Tax Returns for last 3 financial years, Experience certificates, Labour License, PF Code, ESI Code and VAT Registration, No deviation certificate as per Annexure- E, Bidder's certificate as enclosed, original copy of tender document duly signed and stumped as token of your acceptance of tender conditions, FILLED CHECK LIST FOR THE ABOVE AS PER ANNEXURE – A.

THE THIRD COVER shall be super scribed as "Price bid for Outsourcing the packaging contract at TCGT, EM, Switchgear, HE & F, Open Items, DS, Pulverisers, Oil Rigs, Pumps and Spares areas along with packaging material supply and addressing" against TENDER NOTICE NO: **HY/ LOGISTICS/ OS/ 16 -12/ 01** Dtd. **06.12.2016**. THE FILLED IN TENDER SCHEDULE - **PRICE BID** IN THE PRESCRIBED PROFORMA AS PER ANNEXURE – F ONLY SHALL BE PLACED IN THIS COVER.

THE ABOVE THREE SEALED COVERS SHOULD BE PUT IN ONE SEALED ENVELOPE AND SUPERSCRIBED THE DETAILS AS UNDER. "Tender for outsourcing of packaging of consignments of Pumps, Switchgear, DS items, Spares, Pulverisers, Oil rigs and a small portion of TCGT & TG areas along with packaging

material supply and addressing” against TENDER NOTICE NO: **HY/ LOGISTICS/ OS/ 16 -12/ 01 dtd. 06.12.2016.**

Bidders are requested to go through the tender documents and submit their quotation. The sealed tenders shall be dropped in Tender Box at new vendor complex at Administrative Building. The tenders will be received up to **11.00 Hrs. on 27.12.2016** only. The techno commercial bids along with the EMD covers will be opened on **27.12.2016** at 13.00 Hrs. in presence of the bidder’s representatives who choose to be present. Quotations received late, not containing EMD, Tender cost or not in the prescribed procedure / formats are liable to be rejected.

A self-declaration that the price bid is in the format given by BHEL is to be enclosed with Techno-commercial Bid.

L1 rate will be evaluated on total cost to BHEL. The work is to be distributed between 2 (two) successful bidders with the lowest bidder L1 getting about 60% share and L2 will be getting about 40%. This shall be done provided the L1 rate is accepted by the L2 bidder. The L1 rate will be offered to L2 bidder. In case L2 does not agree with L1 rates, L1 rates will be offered to L3 and if L3 also refuses, the same will offered to L4, L5 up to L(N-1) bidder (N is no. of technically qualified bidder). If all refuses then the whole work will be awarded to L1.

Reverse auction (RA) shall be carried out according to revised guidelines for conducting Reverse Auction w.e.f. **27.11.2016** as per BHEL Circular no **11 of 2016-17** with up to date amendments (if any). According to the guidelines, at least four Techno-commercially qualified bidders should respond in RA to make it successful. Only those bidders who have submitted the “online sealed bid” within the scheduled time shall be eligible to participate further in RA process. However, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process. BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. Detailed Reverse auction guidelines will be informed by BHEL after completion of Techno- Commercial Evaluation of all tenders received.

The tender shall be signed by a partner authorized by the firm, who shall also sign his own name. If the tender is made by a Company / Corporation, it shall be signed by a duly authorized Officer who shall produce with the tender, satisfactory evidence of his authorization. Such tendering Company / Corporation / Firm are required to furnish evidence of its existence along with techno commercial bid. Proprietary certificate with attestation by notary is to be enclosed in case of proprietary firm.

BHEL reserves the right to accept or reject any tender without citing reason thereof.

Thanking You,

For BHARAT HEAVY ELECTRICALS LIMITED

Sr. Manager / LOGISTICS

Enclosures :-

1. Check list Annexure-A
2. Qualifying requirements Annexure B
3. General terms / conditions & instructions Annexure C
4. Estimates of items Annexure D
5. Scope of contract and Special conditions of contract Annexure E
6. No deviation certificate Annexure F
7. Price bid Annexure G
8. The following Certificate on bidder’s letter head:

“THIS IS TO CERTIFY THAT I/WE HAVE READ THE TERMS AND CONDITIONS OF THE TENDER AND AGREE FOR ALL THE CONDITIONS IN TO WITH OUT EXCEPTION INCLUDING PENALTY CLAUSE, PAYMENT OF SECURITY DEPOSIT, ETC. THE RATES QUOTED ARE ALL INCLUSIVE OF TAXES (EXCEPT VAT ON MATERIAL AND SERVICE TAX ON LABOUR PORTION), DUTIES AND ALL OTHER ALLOWANCES, STATUTORY 20% BONUS AND DA (VARIABLE AT AN INTERVAL OF 6 MONTHS AS PER GOVT. NOTIFICATION) PAYABLE FOR ALL THE EMPLOYEES DEPLOYED AS PER LABOUR LAWS AND ARE FIRM DURING THE PERIOD OF CONTRACT”

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Annexure-A

Job work : Outsourcing the packaging contract at TCGT, EM, Switchgear, HE & F, Open Items, DS, Pulverisers, Oil Rigs, Pumps and Spares areas along with packaging material supply and addressing

Tender No : **HY/ LOGISTICS/ OS/ 16 -12/ 01, Dt. 06.12.2016.**

Contractor should furnish the following information here

CONTRACTOR NAME : _____

ADDRESS : _____

E-Mail ID : _____

Phone/Mobile No. : _____

1. PF Code: : _____

2. ESI Code : _____

3. Labour License & Validity : _____

(If submitted for renewal copy of acknowledgement is to be enclosed)

4. PAN (Copy to be enclosed): _____

5. Contractor Code No. (BHEL issued No.) ,if any _____

6. Service Tax No. (copy to be enclosed) _____

7. Service Tax on labour portion _____

8. VAT on material _____

9. **EXPERIENCE** : _____

Work details : _____

Value of work : _____

Year/s in work executed : _____

Firm Name : _____

Turnover : _____

10. **Tender Cost** : Rs. 500/- (non refundable).

| CR/ Bankers Ch. No. | Date | Amount Rs. | Name of the Bank |
|---------------------|------|------------|------------------|
| | | | |

11. Earnest Money Deposit : Rs. 10,39,000/- (Rupees Ten lakh thirty nine thousand only)

| CR/ Banker's Cheque / DD No. | Date | Amount Rs. | Name of the Bank |
|------------------------------|------|------------|------------------|
| | | | |

12. Acceptance of *penalty* clause and Security deposit clause : _____

13. TERMS OF PAYMENT : Progressive for the work completed: _____

14. Acceptance for WORK COMPLETION in 24 Months : _____

15. Acceptance to undertake all activities as per the schedule of work Annexure-F (Price bid) : _____

16. Acceptance to obey all clauses like minimum wages 20% Bonus Payment to contract labour as per R&A 1970 act. : _____

17. Whether submitted power of attorney (if any) : _____

18. Whether quoted the PRICE BID as per NIT : _____

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ANNEXURE-B

PRE – QUALIFYING CRITERIA

- 1) Bidders should have workshop facility in twin cities (Hyderabad, Secundrabad) or vicinity of the same, which is hereby defined as locations lying within a 10 km radius from the boundary of the above twin cities.
- 2) Average Annual financial turnover during the last 3 years ending 31st March'16, should be at least 86.28 lakhs i.e. 10% of the estimates of the packaging tender.
- 3) Experience of having successfully completed packaging contracts during last 7 years ending 31st October'16 should be either of the following:-
 - I. Three similar completed works each costing not less than the amount equal to of 86.57 lakhs (10% of the estimates of the packaging tender) in 2 years' time or less
 - II. (Or) Two similar completed works each costing not less than the amount equal to 129.43 lakhs (15% of the estimates of the packaging tender) in 2 years' time or less
 - III. (Or) One similar completed work costing not less than the amount equal to 172.56 lakhs (20% of the estimates of the packaging tender) in 2 years' time or less.
- 4) Supplying wooden packing cases and execution of packing work will be considered as similar works as mentioned above in Clause 3. The bidder shall submit the necessary documentary evidence which is subject to verification by BHEL as a proof of having experience in reputed organizations preferably with Government Departments/ Public Sector Undertakings. Bidders can submit their bid jointly with any existing firm who fulfils such eligibility criteria. However, a MOU should be executed between them and the lead partner shall sign the tender documents. Such tie-ups should be in existence prior to the submission of tender with latest updation and the bidder should have joint experience with the lead partner for not less than three years in similar activities of the subject tender.
- 5) The bidder should be registered with designated authorities under the following acts
 - i) Employees provident fund act, 1952
 - ii) Central Govt. Contract labour (regulation and abolition) act, 1970
 - iii) Employees state insurance act, 1948
 - iv) Should be registered under service tax
- 6) STATUTORY CODES:
 - a. ESI Code.
 - b. P. F. Code No.
 - c. Labour license (Central / State Government) should be submitted before commencement of work.

- d. PAN (In case not available, proof of having applied with Acknowledgement from concerned authorities)
- e. Service Tax (whether applicable or not should be indicated in the offer); in case applied for Service Tax Registration, proof of having applied with acknowledgement from Concerned authorities)
- f. Offer without EMD & tender cost will be rejected. One-time-EMD is not permissible.
- g. Mode of EMD Deposit:
 - i) Cash deposit as permissible under the extant Income Tax Act (before tender Opening)
 - ii) Electronic Fund Transfer credited in BBHEL account (before tender opening)
 - iii) Banker's cheque/pay Order / Demand draft, in favour of BHEL (along with offer)
- h. Payment should be through EFT (Electronic Fund Transfer). Hence, necessary formalities should be completed in consultation with Finance / F&Sprior to enter into an agreement.

7) DOCUMENTS REQUIRED

The bidder shall submit documents in respect of possessing Qualifying requirements as under duly certified and stamped by his authorized signatory:

- a) Documentary evidence in support of bidder's qualification mentioned as per clause (1) above.
- b) Chartered Accountant certified Profit & Loss Account, Balance Sheet, Computation of Income and IT Return for last three financial years in support of Average Annual financial turnover as per clause (2) above.
- c) Completion certificates in support of the qualifying criteria mentioned at clause 3 above.
- d) Photocopies of registration in support of qualifying criteria mentioned at clause 4 above.
- e) Photocopies of registrations in support of qualifying criteria mentioned at clauses 5 & 6 above.

All copies of documents should be self certified with stamps.

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ANNEXURE-C

GENERAL TERMS & CONDITIONS

1. BHEL shall have the privities of the contract with the contractor only and will give instructions to the contractor or his authorized representative. BHEL will have nothing to do or be concerned with the employment of employees working for the contractor. The relationship between BHEL and the Contractor will be that of independent entities and nothing herein contained will amount to joint venture, partnership or an employer-employee relationship.
2. The contractor shall maintain regular contact with the designated employee(s) of BHEL and will interact on matters relating to the work awarded under this contract.
3. In case the Contractor does not carry out the Contractual / Statutory obligations or the services rendered by him are found to be unsatisfactory, BHEL shall bring the same to his notice and he will be obliged to discharge the obligations and rectify the deficiency / anomaly within three days time failing which, BHEL reserves the right to terminate the contract without assigning any reason whatsoever. In such an event, no damages will be payable for short closure of the contract.
4. Upon acceptance of tender, the successful tender must deposit the required amount of security deposit within the time specified in the Letter of Intent for satisfactory completion of work.

Security Deposit should be collected from the successful bidder. Amount of Security Deposit is 5% of contract value. EMD of successful bidders shall be converted and adjusted towards the required amount of Security Deposit.

4.1 Mode of Deposit:

The balance amount to make up the required Security Deposit of 5% of Contract value may be accepted in following forms:

- i) Cash (as permissible under the extant Income Tax Act)
- ii) Local Cheques of Scheduled Banks (subject to realization) / Pay Order / Demand Draft / Electronic Fund Transfer in favour of BHEL
- iii) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL
- iv) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the companies Act (FDR should be in the name of the contractor, a/c BHEL)
- v) Securities available from Indian Post offices such as National Savings Certificates, Kishan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated / pledged, as applicable in favour of BHEL)

(Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of documents or any other mater connected therewith)

4.2 At least 50% of the required Security Deposit including the EMD, should be collected before start of the work. Balance of the Security Deposit can be collected by deducting 10% of the gross amount progressively from each of the running bills of the Contractor till the total amount of required Security Deposit collected.

If the value of the work done at any time exceeds the contract value, the amount of Security Deposit shall be correspondingly enhanced and additional Security Deposit shall be immediately deposited by the Contractor or recovered from payment/s due to the Contractor.

The recoveries made from running bills (cash deduction towards balance SD amount) can be released against submission of equivalent Bank Guarantee in acceptable form, but only once, before completion of work.

4.3 Security Deposit shall be released to the Contractor upon fulfilment of contractual obligations as per term.

4.4 The security deposit shall not carry any interest

5. The decision of BHEL regarding interpretation of any of terms and conditions set forth in this agreement shall be final and binding on the Contractor.
6. All disputes arising in connection with the contract shall be settled by mutual consultation. If no agreement is reached the dispute shall be settled in accordance with the provisions of the Arbitration and Conciliation Act, 1996 and the rules made there under. The dispute shall be referred for arbitration to arbitrator. The award of the arbitrator shall be final and binding on both the parties. The venue of the Arbitration shall be R.C.Puram, Telangana State in India. All questions, disputes, differences arising under, out of or in connection with this contract shall be to the exclusive jurisdiction of Sangareddy Courts.
7. Notwithstanding anything contained in this Agreement, the contract may be terminated by BHEL without assigning any reason thereof by giving a notice of 30 days to the contractor.
8. The contract shall be valid for a period of 2 (two) years from the date of LOI / award of the work or from a stipulated time and BHEL may extend at its discretion the contract further for a period of 3 months on the same terms and conditions. BHEL reserves the right to terminate the contract without assigning any reason during the tenure of the contract period by giving 30 days notice to the contractor, in writing.
9. Contractor shall obtain complete Bio-Data of the Labour, employment certificate and Antecedent verification in the prescribed form for each labour and supervisor engaged by him, and shall submit the same to the Personnel Department/IR Section, through the contract Executing Officers before commencement of the work.
10. The Entry permits are to be issued to the Contract Labour by Assistant Commandant / CISF (Plant), based on the requisition submitted by Contract Executing Officer and forwarded by HR-IR personnel.
11. Contractor shall submit a notice regarding commencement and completion, of work in form – VI A&B [Rule 25 (VIII) & 81 (3)] to HR Department, IR section through his contract executing officer, for forwarding the same to State Labour Department.
12. The Contractor or his authorized representative will supervise the work allotted to him and being carried out by his employees. Alternatively the Contractor shall post a Supervisor for this purpose. He shall interact with BHEL officials daily to appraise the completion of the works allotted for the day.
13. The contractor shall attend to all inspections notified / conducted by the HR Department, Labour department, P.F. authorities, Factory Inspectors ESI Inspectors or any other such authorities under the act.
14. Non – compliance of any provisions under the act/ rule/ instructions/ guidelines shall make the contractor liable for penal action including termination of contract.

15. Bidder shall furnish in his tender his place of residence and postal address. The delivery at the above named place or posting in a post box regularly maintained by the Posts and Telegraphs Department or sending letters by registered post for acknowledgement of any notice, letter, other communication to the Contractor shall be deemed sufficient service thereof upon the Contractor. Change in address shall come into force at any time by an instrument executed by the Contractor and delivered to Engineer.
16. The bidders must satisfy themselves by personal study and examine the drawings/specifications furnished and understand thoroughly the scope of proposed work in detail and all conditions affecting the work before entering into the contract. There shall not be at any time, after submission of the tender, dispute/complaint of any nature regarding the scope of work and interpretation of specifications or any misunderstanding with regard to nature or omission of the work to be done nor shall be any application for compensation in terms of time and money shall be accepted by BHEL in regard to the above.
17. Contractor shall, in his absence, keep competent agent constantly on the works and any directions or explanations given by the Contract signing officer or his representative to such agent shall be held to have been given to the Contractor himself.
18. Contractor, on the advice of the Company official shall immediately remove any person employed by him, who may, in the opinion of the official is incompetent or misconducts himself and such persons shall not be again employed on the works without written permission of the Company official.
19. The Contractor shall give information required under various statutory laws, regulations, bye-laws, legal acts and pay all fees in connection there with to all concerned. He shall also ensure that no attachments are made against materials or work forming part of or for the use of the Contractor. In all such cases, contractor shall protect and indemnify BHEL against any claim or liability arising from or based on the violation of any such laws, ordinances, regulations, orders, decrees, or attachment either by himself or by his employees.
20. Work will be carried out in a protected area and all the Rules and Regulations of BHEL which are in force from time to time will followed by the contractor. Contractor shall indemnify BHEL against all claims and losses under various Labour Laws, statutes or any civil or criminal law in connection with employees deployed by him. The liability for any compensation on account of injury sustained by an employee of the contractor will be exclusively that of the contractor.
21. It shall be the sole responsibility of the contractor to insure his workmen against risks of accidents and injury while at work as required by the relevant Rules and to pay compensation, The work shall be carried out in a protected area and all the Rules and Regulations of BHEL/ its client in the Project Area which are in force from time to time will followed by the contractor. The contractor shall arrange for such safety devices as are necessary for this type of work and carry out the requisite site tests of handling equipment, lifting tools, tackles etc., as per usual standards and practices.
22. No works shall be done on Sundays or on other declared Holidays of BHEL without the written permission of the Contract executing officer. The Contractor shall comply with the provisions of the Factories Act if the same are applicable.
23. The contractor shall keep the area of work clean and shall remove the debris etc. while executing day - to - day work. Upon completion of work, the contractor shall remove from the vicinity of work, all scrap, packing materials, rubbish, unused and other materials and deposit them in places specified by the Company official. The contractor will also demolish all the hutments, sheds, offices, etc., constructed and used by him and shall clean the debris. In the event of his failure to do so, the same will be arranged to be done by the Engineer and the expenses recovered from the contractor.
24. On the occurrence of an accident which results in the death of any of the workmen employed by the Contractor or which is so serious as to be likely to result in the death of any such workmen, the Contractor shall within 24 hours of the happening of such an accident intimate

in writing to the LOGISTICS Engineer or his representatives. In case of a fatal or disabling injury / accident to any person at construction sites due to lapses by the contractor, the victim and / or his / her dependents shall be compensated by the contractor as per statutory requirements. However, if considered necessary, BHEL shall have the right to impose appropriate financial penalty on the contractor and recover the same from payments due to the contractor for suitably compensating the victim and / or his / her dependents. Before imposing any such penalty, appropriate enquiry shall be held by BHEL giving opportunity to the contractor to present his case. In case of any damage to property due to lapses by the contractor, BHEL shall have the right to recover the cost of such damages from the payments due to the contractor after holding an appropriate enquires. In case of any delay in the completion of a job due to mishaps attributable to lapses by the ton tractor, BHEL shall have the right to recover cost of such delay from the payments due to the contractor, after notifying the contractor suitably and giving him opportunity to present his case.

25. The Contractor shall ensure that no damage is caused to any person / property of other parties working at site. If any such damage is caused, it shall be the responsibility of the contractor to make good the losses and compensate them. The contractor shall fully indemnify and keep indemnified BHEL / its customer against all claims of whatever nature arising during the course of execution of this contract.
26. The Contractor shall comply with all state and central Laws, Statutory Rules, Regulations, etc., such as : The payment of wages Act, The Minimum Wages Act, The Employee Compensation Act, The Minimum bonus act, The employer's Liability Provident fund Act, Employees, State Insurance Scheme, The Contract Labour (Regulations and Abolition Act, 1970), Maternity benefit act and other Acts, Rules and Regulations for labour as may be enacted by the Government during the tenure of the contract and having force or jurisdiction at site. The contractor shall give to the local Governing Body, Police and other concerned Authorities all such notice as may be required under law. The contractor shall pay wages to the workmen as per BHEL Fair wadges as deleared by BHEL RCPuram time to time. Any increase of DA/ wages to the contract labour shall be absorbed by the contractor himself during the period of contract.
27. Notwithstanding the clause, in case of any financial loss incurred by the company on account of contravention of the Provident Fund regulations or any regulations of rule touching the same by the contractor, the contractor shall submit an undertaking to indemnify the company to the extent of the loss incurred by the company.
28. The Contractor should engage labourers who should be, not less than 18 (eighteen) years of age. The Contractor will ensure that the employees deployed by him in the premises of BHEL are physically and mentally fit preferably in the age group of 25 to 40 years and do not have any criminal record.
29. The contractor shall not resort to subcontracting under any circumstances. BHEL reserves the right to get the work done through another agency at the risk and cost of the contractor, in the event of poor progress or the contractor's inability to progress the work for completion as stipulated in the contract poor quality of work, persistent disregard of instruction of BHEL, assignment, transfer, subletting of the contracted work without written permission of BHEL, non-fulfillment of any contractual obligations etc, and to claim/ recover compensation for such losses from the contractor including BHEL's supervision charges and overheads from Security Deposit/other dues.
30. The contractor shall provide to its work force and ensure the use of the following Personal Protective Equipment as found necessary and as directed by the authorized BHEL officials.
 - (i) Safety Helmets conforming to IS- 2925
 - (ii) Safety Belts conforming to IS- 3521
 - (iii) Safety Shoes conforming to IS- 1989
 - (iv) Eye & Face Protection devices conforming to IS- 8520 and IS- 8940.
 - (v) Hand & body protection devices conforming to IS-2573, IS- 6994, IS- 8807 & IS- 8519.

31. Contractor to provide employment card/identity card with photograph duly verified and attested by the Contractor to his employees. Contractor to indicate the name of the proprietary / partnership firm /company, place of work, contract number and duration of validity of contract.
32. The contractor shall be responsible to settle all disputes & grievances of the labour deployed by him. The payment to labours is to be made directly through their bank account if available.
33. Whenever the term "CONTRACTOR" is used, it shall be understood to refer to the particular person, firm or corporation with whom an agreement has been made by the concerned company official for executing the work defined in the concerned agreement and for the purpose of instructions regarding compliance with contract conditions, it shall include the contractor's authorised agents, who are entrusted with the work by contractor.
34. The company shall have the privilege of ordering modifications, omissions, or additions at any time before completion of the work.
35. The decision of the "Contract Signing Officer" or any officer deputed by him duly authorized on his behalf, in respect of the rate of progress and the quality of work or material shall be final.
36. If at any time, during the progress of work or any part of it, such methods or appliances appear to the "Contract executing officer" to be insufficient or inappropriate for ensuring the quality of work required or rate of progress, he may order the contractor to increase their efficiency or to improve their character of work and the Contractor shall comply with such order and in failure of which the "Contract executing Officer" may take such action as he deems it fit to improve the quality of work or the rate of progress required from the contractor and all such actions taken by the "Contract executing Officer" shall be at the cost and risk of the Contractor.
37. The company shall have power to reject at any stage, any work which is considered to be defective in quality of materials of workmanship and shall not be debarred from rejecting wrong material by reasons of having previously passed them in an un-worked condition. Any portion of the work or materials rejected or pronounced to be inferior or not in accordance with specifications shall be taken down and removed from the work site at the contractor's expenses. Any failure or breakage of loaded box / case shall be viewed seriously.
38. Any sums due from the Contractor on account of tools and plants, stores, or any other items provided by BHEL shall be deducted from the respective invoices due to him. The Engineer shall from time to time certify the sum payable to the Contractor after recovering the dues from the contractor.
39. In case the contractor does not execute the work awarded to him as per the terms and conditions of the agreement, the same shall be got executed by some other contractor and the excess cost incurred shall be recovered from the contractor's security deposit/pending bills.
40. In case of breach of any of the terms and conditions of the Contract by the contractor a claim will be lodged under the bank guarantee with the guarantor by BHEL at the discretion of the competent authority of BHEL. Normally on successful completion of the Contract to the satisfaction of BHEL, the bank guarantee shall be released after due claim period.
41. The company reserves the right to enter into parallel agreement with one or more contractor at their discretion.
42. The labour employed by the contractor, if found in abetting the fellow labour or contractors or any BHEL employee, the same shall be considered as an act of indiscipline. Such labours shall be removed from the services of the contractor, on the advice of BHEL. Further the contractor shall initiate every necessary action in accordance with the relevant Laws, Rules & Regulations and enactments of State and Central Government.
43. Nothing contained in the agreement and its contract conditions shall be deemed to preclude or render inoperative the service of any notice, letter or other communication upon the contractor personally.

44. The decision of the "Contract executing Officer" shall be final and binding on the Contractor on all technical questions which may arise touching the contract with respect to materials, workmanship, removal of improper work, interpretation of the working drawings, specifications, notes, procedures etc.
45. The contractor shall be responsible for observance of local laws, employment of personnel, payment of taxes etc. As far as possible, workers shall be engaged from the local areas in which the work is being executed.

CONTRACTOR'S OBLIGATIONS

I) CONTRACTUAL:-

- a) Contractor shall decide the number of employees to be deployed for execution of the work awarded to him and he or his authorized representative will be solely entitled to dictate such workers about the manner of carrying out the work within the time schedule of 24 hours of assigning the job work or handing over the product for packing as per the prescribed specifications and quality plan.
- b) Contractor shall supervise the work allotted to him and to be carried out by his employees.
- c) Contractor to ensure that the employees deployed in the premises of BHEL are physically and mentally fit and do not have any criminal record. Such employees should possess requisite skill, proficiency, qualification, experience etc.
- d) Contractor to maintain appropriate records of his employees deployed to carry out the job(s).
- e) Contractor should issue appropriate appointment letters to his employees.
- f) Contractor to provide employment card/identity card with photograph duly verified and attested by the Contractor to his employees. Contractor to indicate the name of the proprietary/partnership firm/company, place of work, contract number and duration of validity of card.
- g) Contractor will be responsible for the good conduct of his employees. In case of any misconduct/misbehavior by any employee, the contractor will replace such employee(s) immediately.
- h) Contractor will ensure that the job is executed through his employees on his rolls and under no circumstances the contractor will deploy any casual employee to carry out the job nor shall sub-contract the job without prior written permission.
- i) Contractor will keep watch on his employees and he will be liable for any pilferage / loss to BHEL due to acts of omission and commission by his employees. Similarly, liability for any compensation to outsiders on account of any act of omission and commission
- j) Contractor to provide safety appliances and safety shoes to his employees. The contractor shall be responsible for enforcing all safety regulations as applicable.
- k) The contractor has to provide a distinct uniform different from BHEL employees. The Uniform should have logo of the Contractors firm / company. The uniform shall be kept in neat, tidy and wearable condition. Wherever necessary, the Cap shall be integral part of the uniform.
- l) Contractor to ensure that all precautions are taken for safety of his employees and equipments.
- m) In the event of termination of contract for any reason whatsoever, the contractor shall withdraw all his employees from the establishment of BHEL. In case contractor decides to terminate services of his employees, he should settle all terminal dues including retrenchment compensation.
- n) Contractor shall provide to his employees all necessary tools, tackles and equipment like motor operated saws, nailers (nail guns), Lamination machine, PC, Printer etc. and maintain

the same to carry out the job expeditiously under the contract at his cost and if necessary contractor may take insurance policy of his men, material, equipments and tools and tackles.

- p) Contractor shall provide material at his cost as mentioned in the contract to his employees for carrying out the job.
- q) In the event of contractor withdrawing from the works during the period of contract, a minimum of 30 days-notice shall be given to BHEL. However, in such an event, the contractor shall forfeit the security deposit and is subjected to any acts that may be undertaken by BHEL in line with suspension of Business dealing with suppliers and contractors.

II) TOWARDS STATUTORY LIABILITY

- a) All statutory requirements under Minimum Wages Act, 1948, Payment of Wages Act, 1936, Employee Compensation Act. 1923, EPF & MP Act, 1952, Payment of Gratuity Act, 1972, ESI Act, 1948, The Contract Labour (R&A) Act, 1970, Payment of Bonus Act, 1965, Income Tax Act, Service Tax Act and all other applicable Acts shall be complied with by the contractor.
- b) Contractor shall comply with all statutory requirements, rules, regulations, notifications in relation to employment of his employees issued from time by the concerned authorities.
- c) Contractor shall ensure payment of statutory prescribed minimum wages as applicable from time to time in the presence of authorized representative of BHEL and maintain proper records of their timely disbursement. These records need to be preserved for a period of at least 3 years and should be made available even after the contract is over for any verification by the statutory authorities / BHEL authorities.
- d) Contractor to provide PF pass book to his employees and ensure payment of PF, EDLI, pension dues under EPF & MP Act, 1952 to the PRFC.
- e) Contractor shall ensure payment of ESI contribution under ESI Act, 1948 and provide ESI membership No. / card of each employee.
- f) Contractor shall produce proof of deductions as well as remittances of PF, EDLI, Pension, ESI contribution, administrative charges etc. wherever applicable and shall maintain proper records. Contractor to issue wage slips to his employees.
- g) Contractor shall furnish proper returns to the concerned statutory authorities and provide a copy of the same to BHEL.
- h) Contractor shall be solely responsible for non-payment / delayed payment of wages / DA, contributions under EPF & MP Act, ESI Act etc.
- i) In case the contractor fails to make payment of wages to his employees or remittance of contribution to the concerned authorities, the security deposit / other dues / running bills under the contract can be utilized by BHEL to discharge the liability of the contractor.
- j) Contractor shall indemnify BHEL against all claims and losses under various Labour Laws, statutes or any civil or criminal law in connection with employees deployed by him.
- k) The liability for any compensation on account of injury sustained by an employee of the contractor will be exclusively that of the contractor.
- l) Contractor to obtain insurance cover for his employees / equipment / tools and tackles etc. and take third party risk insurance coverage at his own cost. BHEL shall not be responsible for any loss, damage, and pilferage of property and / or his employees.
- m) Contractor should have independent code numbers / exemptions under EPF & MP Act, 1952 and ESI Act, 1948 and shall cover his employees under the said codes.
- n) Payment of bonus under the payment of Bonus Act, Payment of gratuity under the Gratuity Act, and retrenchment compensation under Act will be the sole responsibility of the contractor.

- o) Over and above the daily wage rate, payment shall be made for leave with wages.
- p) Contractor shall observe Provisions of the Factories Act in respect of working hours, holidays, rest intervals, leave and overtime to his employee. No work shall be done on second/third shift, overtime, Sundays or on other declared holidays without written permission.
- q) In case a contractor employs women as employee he will discharge his obligation under law in respect of such women workers such prohibition of engaging them during night-hours, prohibition of employing them for more than 9 hours per day, provision of crèche facility, grant of maternity leave as per rules etc.
- r) Contractor shall be responsible for making payment of wages before expiry of 7days from the last day of wage period and to ensure disbursement of wages in the presence of the authorities' representative of contract operating division who shall record under his signature at the end of entries in the Register of wages.
- s) Contractor to obtain license under CL(R&A) Act, 1970.

OTHER OBLIGATIONS OF THE CONTRACTOR:-

- 1) The contractor shall fully comply with the following enactments:
 - (a) Contract Labour (R & A) Act, 1970 and rules formed there under in A.P.
 - (b) Wage Rates as per BHEL Fair wadges as deleared/ from time to time.
 - (c) Payment of Wages Act.
 - (d) ESI Act, 1948
 - (e) EPF Act, 1952
 - (f) Employee Compensation Act, 1923.
 - (g) BHEL instructions as issued from time to time in regard to working hours, holidays, or any other statutory provision.
- 2) The contractor shall obtain License from the Assistant Labour Commissioner (Central), or appropriate government if he engages twenty or more workmen only.
- 3) The Contractor shall produce the following Registers and forms before commencement of work, for verification by the Executing Officer.
 - (a) Form XII - Register of contractors
 - (b) Form XIII - Register of workmen employed by contractor (Rule 75)
 - (c) Form XIV - Employment card issued by contractor (Rule 76)
 - (d) Form XVI - Muster Roll (Rule 78(1) (a) (i))
 - (e) Form XVII - Register of wages (Rule 78(1) (a) (ii))
 - (f) Form XVIII - Register of wages-cum Muster Roll (in case of weekly payment)
 - (g) Form XIX - Wage Slip (Rule 78(b))
 - (h) Form XX - Register of deduction for damages or loss (Rule 78(1) (a) (ii))
 - (i) Form XXI - Register of files (Rule 78(1) (a) (ii))
 - (j) Form XXII - Register of advances (Rule 78(1) (a) (ii))
 - (k) Form XXIII - Register of overtime (Rule 78(1) (a)(iii))
 - (l) Form XXIV - Return to be sent by the contractor to licensing officer (Rule 82(1))

The contractor shall maintain the above neatly, completely and legibly for inspection by various authorities even at short notice. The Executing officer of BHEL shall periodically inspect these registers and forms, and shall send his inspection note to Industrial Relations (IR) section of HR department.

- 4) The contractor shall observe
 - (a) Weekly rest day
 - (b) BHEL List of Holidays
- 5) Contractor shall obtain complete bio-data, of the labour, employment certificate and Antecedent verification in the prescribed form for each labour and supervisor engaged by him,

and shall submit the same to the HR department/IR section through the contract executing officers before commencement of the work.

- 6) The entry permits are to be issued to the contract labour by Assistant Commandant/Plant (CISF), based on the requisition submitted by Contract Executing Officer and forwarded by HR-IR Personnel.
- 7) Every contractor shall submit a notice regarding commencement and completion of work in Form-VI A&B [Rule 25(viii) & 81(3)] to HR department, IR Section through his contract executing officer, for forwarding the same to State Labour Department.
- 8) The contractor shall make himself or his representative available at the work spot everyday during execution of work, for effective supervision.
- 9) The contractor shall attend to all inspections notified/conducted by the HR department, Labour department, P.F. authorities, Factory Inspectors, ESI inspectors, or any other such authorities.
- 10) Non-compliance of any provisions under the act/rule/instructions/guidelines shall make the contractor liable for penal action including termination of contract.
- 11) Contractor shall furnish in a separate letter his place of residence and postal address. The delivery at the above named place or posting in a Post Box regularly maintained by the Post and Telegraph Department or sending letters registered for acknowledgement of any notice, letter or other communication to the contractor shall be deemed sufficient service thereof upon the contractor. Change in address shall come into force at any time by an instrument executed by the contractor and delivered to the BHEL official who has signed the contract.
- 12) The contractor must satisfy himself by personal study understand thoroughly the scope of proposed work in detail and all conditions affecting the work before entering into the contract. There shall not be at any time, dispute/complaint of any nature regarding scope of work or any misunderstanding with regard to nature or omission of the work to be done nor shall any application for compensation in terms of time and money shall be accepted by BHEL regarding the above.
- 13) Contractor shall in his absence keep competent agent constantly on the works and any directions or explanations given by the "Contract executing Officer" or his representative to such agent shall be held to have been given to the contractor himself.
- 14) Contractor on the advice of BHEL official shall immediately remove any person employed by him, who may in the opinion of the BHEL official, is incompetent or involves himself in misconduct. Such persons shall not be again employed on the works without written permission of the BHEL official.
- 15) The contractor shall give all notices required by the acts, regulation, by laws, legal acts and pay all fees in connection therewith unless and otherwise arranged and decided in writing with BHEL. He shall also ensure that no attachments are made against materials or work forming part of or for the use of the contractor. In all such cases, contractor shall protect and indemnify BHEL against any claim or liability arising from or based on the violation of any such laws, ordinances, regulations, orders, decrees or attachment either by himself or by his employees.
- 16) It shall be contractor's sole responsibility to protect the public and his employees against accident from any cause and provide required safety equipments and shall indemnify BHEL against any claims for damages for injury to the person or property resulting from any such accidents and shall, where the provisions of the workmen's compensation Act apply, take steps to properly insure against any claims thereunder.
- 17) In the event of any accident in respect of which compensation may become payable under the Employee compensation Act VIII of 1923 whether by the contractor or by BHEL as principal, it

shall be lawful for BHEL to retain out of monies due and payable to the contractor such sum or sums of money as may, in the opinion of BHEL shall be final in regard to all matter arising in this clause.

- 18) No work shall be done on Sundays or on other declared Holidays of BHEL without the written permission of BHEL officer in charge of the work. The contractor shall comply with the provisions of the factory act if the same are applicable.
- 19) On the occurrence of an accident, which results in the death of any of the workmen employed by the contractor or which is so serious as to be likely to result in the death of any such workmen, the contractor shall within 24 hours of the happening of such an accident intimate in writing to the BHEL official in-charge of the work.
- 20) The contractor shall indemnify BHEL against all losses or damages sustained by BHEL resulting directly or indirectly from his failure to give intimation in the manner aforesaid including the penalties or dues if any and become payable by BHEL, as a consequence of failure, BHEL to give notice under the employee compensation Act or otherwise conform to the provisions of the said Act in regard to such accident.
- 21) The contractor shall ensure adherence to all statutory requirements applicable to BHEL.
- 22) The contractor shall ensure abidance by all the labour laws especially including contract labour (R&A) Act, payment of wages Act, workmen's compensation Act, minimum wages Act, ESI Act and provident fund act as amended from time to time.
- 23) Notwithstanding the above clause, in case of any financial loss incurred by company on account of contravention of the Provident Fund regulations or any regulations of rule touching the same by the contractor, the contractor shall submit an undertaking to indemnify the company to the extent of the loss incurred by the company.
- 24) The contractor shall not resort to subcontracting under any circumstances. If found subcontracting at a later date, BHEL reserves the right to take whatever action it deems fit, including cancellation of the Contract.
- 25) The contractor shall provide the required safety equipment to the labours engaged by him.
- 26) Contractor shall issue "Employment Card" as per statute to all labour and supervisors covered under the job work contract.
- 27) The contractor shall be responsible to settle any grievances of the labour deployed by him.
- 28) Above mentioned work shall be executed in accordance with the general agreement conditions applicable to job works as per OMI-195. A copy of the same can be had in soft or hard copy from the undersigned.
- 29) All bidders are to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA. Only those bidders who have given their acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit online sealed bid in the Reverse Auction. Non-submission of online sealed bid by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.

Estimates of items

ANNEXURE-D

Outsourcing of packaging of consignments of Pumps, Switchgear, DS items, Spares, Pulverisers, Oil rigs and a small portion of TCGT & TG areas along with packaging material supply and addressing

| SI No | Description | 2Years Qty | Measuring Unit | Scope | Est Rate Split in ₹ |
|-------|--|------------|----------------|-------------------------------|---------------------|
| 1 | Nailed cases small (vol<0.2 cub.m.) DWG No: 3-CPDC-0049 | 800 | Cub. M | Material cost | 5209.25 |
| | | | | Loading, packing & addressing | 672.29 |
| 2 | Nailed cases medium (0.2 cub.m. <vol <1 cub.m.) DWG No: 2-CPDC-0040 | 2600 | Cub. M | Material cost | 5012.67 |
| | | | | Loading, packing & addressing | 672.29 |
| 3 | Nailed runner cases (vol >1 cub.m.) DWG No: 2-CPDC-0041 | 2800 | Cub. M | Material cost | 4030.78 |
| | | | | Loading, packing & addressing | 672.29 |
| 4 | Export nailed cases small (vol<0.2 cub.m.) DWG No: 3-CPDC-0052 | 20 | Cub. M | Material cost | 5209.25 |
| | | | | Loading, packing & addressing | 672.30 |
| 5 | Export nailed cases medium (0.2 cub.m. <vol <1 cub.m.) DWG No: 3-CPDC-0051 | 100 | Cub. M | Material cost | 4816.11 |
| | | | | Loading, packing & addressing | 672.30 |
| 6 | Export nailed runner cases (vol >1 cub.m.) DWG No: 3-CPDC-0050 | 100 | Cub. M | Material cost | 3833.22 |
| | | | | Loading, packing & addressing | 672.30 |
| 7 | Bolted runner cases (wt > 800 kg) DWG No: 2-CPDC-0019 | 3500 | Cub. M | Material cost | 4224.41 |
| | | | | Loading, packing & addressing | 454.09 |
| 8 | Export bolted runner cases (wt > 800 kg) DWG No: 2-CPDC-0018 | 1200 | Cub. M | Material cost | 4226.37 |
| | | | | Loading, packing & addressing | 454.09 |
| 9 | Switchgear Crates (Base unit, insulator, interrupter) As per DWGs | 320 | Cub. M | Material cost | 3538.35 |
| | | | | Loading, packing & addressing | 672.29 |
| 10 | Bowl & bowl hub frames DWG No: 4-94-0527 | 150 | Nos. | Material cost | 3636.64 |
| | | | | Loading, packing & addressing | 670.32 |
| 11 | Cardboard boxes (Personal collection) As per Spec AA51414 | 25 | Cub. M | Material cost | 2319.59 |
| | | | | Loading, packing & addressing | 74.71 |
| 12 | Primary packing (Critical components) As per Spec: HY0490569-05 | 16000 | Sq M. | Material cost | 500 |
| | | | | Packing | 221.00 |
| 13 | Plywood enclosure (Critical components) | 8000 | Sq M. | Material cost | 826.60 |
| | | | | Loading, packing & addressing | 112.05 |
| 14 | Open Items | 6000 | Nos. | Material cost | 374.48 |
| | | | | Packing & addressing | 76.63 |
| 15 | Fumigation as per ISPM Spec | 160 | Cub. M | Fumigation cost | 2824.00 |

| | | | | | |
|----|--|------|--------|-------------------------------|----------|
| 16 | Export Plywood cum GI sheet enclosure (Critical components) | 400 | Sq. M. | Material cost | 1009.80 |
| | | | | Loading, packing & addressing | 200.00 |
| 17 | Miniature Plywood packing cases DWG No: 2-CPDC-0055 | 100 | Cub. M | Material cost | 6826.67 |
| | | | | Loading, packing & addressing | 672.29 |
| 18 | Medium sized Plywood packing cases DWG No: 2-CPDC-0056 | 80 | Cub. M | Material cost | 6226.56 |
| | | | | Loading, packing & addressing | 672.29 |
| 19 | Pegion hole packing cases DWG No: 2-94-0991 | 80 | Cub. M | Material cost | 12100.00 |
| | | | | Loading, packing & addressing | 672.30 |
| 20 | Frame for journal opening cover, separator top and separator body DWG No: 2-CPDC-0059 / 0057 | 80 | Nos. | Material cost | 1206.00 |
| | | | | Loading, packing & addressing | 670.32 |
| 21 | Frame for Gear Box assembly DWG No: 2-CPDC-0060 | 80 | Nos. | Material cost | 2252.00 |
| | | | | Loading, packing & addressing | 670.32 |
| 22 | Draw works assembly opening covers DWG No: 2-CPDC-0063 | 80 | Nos. | Material cost | 7399.00 |
| | | | | Loading, packing & addressing | 670.32 |
| 23 | Frame for Mill shell assembly DWG No: 2-CPDC-0064 | 80 | Nos. | Material cost | 5920.00 |
| | | | | Loading, packing & addressing | 670.32 |
| 24 | Vacuum packing (critical components) As per Spec issued by BHEL | 800 | Sq. M | Material cost | 1152.00 |
| | | | | Loading, packing & addressing | 221.00 |
| 25 | Foam packing (Instruments As per Spec issued by BHEL) | 80 | Sq. M. | Material cost | 483.00 |
| 26 | Metallic enclosure (Material scope with product group) | 8000 | Sq. M. | Loading, packing & addressing | 112.05 |

Total

₹ 86279703/-

The above estimated rates do not include VAT on material and service tax on labour portion.

Ref No.: HY/LOGISTICS/OS/16-12/01

Date: 06.12.2016

ANNEXURE-E

Outsourcing of packaging of consignments of Pumps, Switchgear, DS items, Spares, Pulverisers, Oil rigs and a small portion of TCGT & TG areas along with packaging material supply and addressing

SCOPE OF CONTRACT AND SPECIAL INSTRUCTIONS

| SI | Description | 2Years Qty | Measuring Unit | Scope |
|----|--|------------|----------------|-------------------------------|
| 1 | Nailed cases small (vol<0.2 M ³) DWG No: 3-CPDC-0049 | 800 | M ³ | Material cost |
| | | | | Loading, packing & addressing |
| 2 | Nailed cases medium (0.2 M ³ <vol <1 M ³) DWG No: 3-CPDC-0040 | 2600 | M ³ | Material cost |
| | | | | Loading, packing & addressing |
| 3 | Nailed runner cases (vol > M ³) DWG No: 3-CPDC-0041 | 2800 | M ³ | Material cost |
| | | | | Loading, packing & addressing |
| 4 | Export nailed cases small (vol<0.2 M ³) DWG No: 3-CPDC-0052 | 20 | M ³ | Material cost |
| | | | | Loading, packing & addressing |
| 5 | Export nailed cases medium (0.2 M ³ <vol <1 M ³) DWG No: 3-CPDC-0051 | 100 | M ³ | Material cost |
| | | | | Loading, packing & addressing |
| 6 | Export nailed runner cases (vol >1 M ³) DWG No: 3-CPDC-0050 | 100 | M ³ | Material cost |
| | | | | Loading, packing & addressing |
| 7 | Bolted runner cases (wt > 600 kg) DWG No: 3-CPDC-0019 | 2500 | M ³ | Material cost |
| | | | | Loading, packing & addressing |
| 8 | Export bolted runner cases (wt > 600 kg) DWG No: 2-CPDC-0018 | 1200 | M ³ | Material cost |
| | | | | Loading, packing & addressing |
| 9 | Switchgear Crates (Base unit, insulator, interruptor) As per crate DWGs | 320 | M ³ | Material cost |
| | | | | Loading, packing & addressing |
| 10 | Bowl & bowl hub frames As per DWG No: 4-94-0527 | 150 | Nos. | Material cost |
| | | | | Loading, packing & addressing |
| 11 | Cardboard boxes (Personal collection) As per Spec AA51414 | 25 | M ³ | Material cost |
| | | | | Loading, packing & addressing |
| 12 | Primary packing (Critical components) As per Spec: HY0490569-05 | 16000 | M ² | Material cost |
| | | | | Packing |

| | | | | |
|----|---|------|----------------|-------------------------------|
| 13 | Plywood enclosure (Critical components) | 8000 | M ² | Material cost |
| | | | | Loading, packing & addressing |
| 14 | Open items | 6000 | Nos. | Material cost |
| | | | | Addressing |
| 15 | Fumigation as per ISPM Spec | 160 | M ³ | Fumigation cost |
| 16 | Export Plywood cum GI sheet enclosure (Critical components) | 400 | M ² | Material cost |
| | | | | Loading, packing & addressing |
| 17 | Miniature plywood packing cases DWG No: 2-CPDC-0055 | 80 | M ³ | Material cost |
| | | | | Loading, packing & addressing |
| 18 | Medium sized Plywood packing cases for air freight transport DWG No: 2-CPDC-0056 | 80 | M ³ | Material cost |
| | | | | Loading, packing & addressing |
| 19 | Pigeon hole packing cases DWG No: 2-94-0991 | 80 | M ³ | Material cost |
| | | | | Loading, packing & addressing |
| 20 | Frame for journal opening cover, separator top and separator body, DWG No: 2-CPDC-0059 / 0057 | 80 | Nos. | Material cost |
| | | | | Loading, packing & addressing |
| 21 | Frame for Gear box assembly DWG No: 2-CPDC-0060 | 80 | Nos. | Material cost |
| | | | | Loading, packing & addressing |
| 22 | Draw works assembly opening covers DWG No: 2-CPDC-0063 | 80 | Nos. | Material cost |
| | | | | Loading, packing & addressing |
| 23 | Frame for Mill shell assembly DWG No: 2-CPDC-0064 | 80 | Nos. | Material cost |
| | | | | Loading, packing & addressing |
| 24 | Vacuum packing (Critical components) As per Spec issued by BHEL | 800 | M ² | Material cost |
| | | | | Packing |
| 25 | Foam packing (Instruments) As per Spec issued by BHEL | 80 | M ² | Material cost |
| 26 | Metallic enclosure (Material scope with Product group) | 8000 | M ² | Loading, packing & addressing |

The quantities indicated are based on OUTER DIMENSIONS of the packing consignments and not based on the solid wood or primary pkg content (Except for Sl. Nos. 10, 14, 20-23 which are based on nos. of consignments packed). The quantities mentioned in the agreement schedule are worked out from the relevant drawings in the company and may not be the actuals required for execution. BHEL does not expressly or by implication agree that the actual amount of the work to be done shall correspond there with, but reserves the right to increase or decrease the quantity of any class or portion of the work as he deems necessary.

Techno-commercial terms and conditions

A. Supply of wooden packing cases , side frames & primary packaging material:

Internal cushioning –

Each wooden packing case shall be accompanied with the following cushioning materials to be used appropriately as per the application.

Corrugated boxes – Corrugated boxes shall be used wherever applicable to give material inside the box the cushioning effect and protect them from accidental damage in transit. BHEL Specification AA51414 shall be adhered to.

Air bubble sheets – The bubble sheets shall be wrapped in several layers for protection of small items (viz. Electronic/instruments/ sophisticated/ any critical items as per BHEL job Engineer/supervisor instruction) and for surface protection of heavy items. BHEL Specification AA51426 shall be adhered to.

Expanded polystyrene inserts – EPS inserts designed with ribs that will compress on impact and return to its original shape shall be used wherever applicable for less fragile and heavy weight shipments. BHEL Specification AA 51416 shall be adhered to. For flat, narrow and dense products, EPS loose fill peanuts shall be used.

Polyethylene foam sheets – For high value precision items Polyethylene foam sheets shall be used. Specification IS7933-1975 shall be adhered to.

Moisture control –

All the Packing cases are to be lined with hessian bitumen kraft paper LDPE 100 GSM , at sides, bottom inside and top.

LDPE – Multilayered LDPE shall be used, for medium to large sized non-fragile items, those which require moisture absorption. BHEL Specification AA51408 shall be adhered to.

Silica gel – Silica gel or any clay based moisture absorber, dehumidifier sachets, shall be supplied, to contain moisture inside the packing cases. For silica gel, BHEL Specification AA55619 shall be adhered to.

All these consumables, shall be in the scope of the contractor. Accordingly, Contractor shall keep sufficient stock of all the internal cushioning and moisture control material and the value of the packing case shall be deemed to have included cost of such provisions, so mentioned.

1. **Schedule 1:** For Indigenous consignment volume less than 0.2 cubic meter, nailed wooden box (small) shall be supplied which will be constructed of pieces of surfaces smooth finished wooden planks with reinforcing runners attached by nails. The packing box will consist of base, four side panels and top cover. Standard packing box in this category shall be of sizes in mm : 300x300x300; 400x400x400; 500x500x500; 600x600x400 & 700x700x400 etc., However, lengths in this category may go as high as 6000 mm; volume remaining within 0.2 cubic meter. Variants of Drawing No. 3-CPDC-0049 shall be applicable for manufacture of packing cases in this category. The variant drawings are based on increasing lengths. The box should be capable of withstanding a load of 950 Kgs maximum. Packing case to be lined with hessian bitumen Kraft paper LDPE 100 GSM at sides, bottom inside and top. Outside top is to be turned 80mm on sides and fixed. The packing case shall conform to the size specified by the Ordering Authority with an average tolerance of plus or minus 10 mm on all dimensions. Gaps between planks shall not exceed 2 mm.
2. **Schedule 2:** For Indigenous consignment outer volume from 0.2 cubic meter to 1 cubic meter, nailed wooden box (medium) shall be supplied which will be constructed of pieces of

surfaces smooth finished wooden planks with reinforcing runners attached by nails. Construction shall include wooden plank / timber per BHEL instructions. The packing box will consist of base, four side panels and top cover. Standard Sizes in this category shall be (mm) : 600x600x620; 700x700x720; 800x800x820; 800x800x420; 1000x1000x400; 1100x700x700; 1300x640x600; 1600x600x600; 1900x500x520; 2500x600x300; 3500x400x450; 4200x400x450; 5200x400x450 etc., Lengths in this category may go as high as 6500mm; volume remaining between 0.2 cubic meter and 1 cubic meter. Variants of Drawing No. 2-CPDC-0040 shall be applicable for manufacture of Packing cases in this category. The variant drawings are based on increasing lengths. The box should be capable of withstanding a load of 3200 kgs maximum. Packing case to be lined with hessian bitumen kraft paper LDPE 100 GSM at sides, bottom inside and top. Outside top is to be turned 80mm on sides and fixed. The packing case shall conform to the size specified by the Ordering Authority with an average tolerance of plus or minus 10 mm on all dimensions. Gaps between planks shall not exceed 2 mm.

3. **Schedule 3:** For Indigenous consignment outer volume greater than 1 cubic meter, nailed wooden runner boxes shall be supplied which will be constructed of pieces of surfaces smooth finished wooden planks with reinforcing runners attached by nails. Construction shall include wooden plank / timber per BHEL instructions. The packing box will consist of base with runners, four side panels and top cover. These cases will be mandatorily required for Local gauge boards, Victaulic couplings, Gate Valves, Globe valves, Elbows, level gauges, Girth gear housing seals air fans, Duplex filters, Signal cables, Local instrumentation racks or any other items for which nailed runner cases are envisaged. Nailed cases of lower grades (Sl nos 1 & 2) will not be accepted in this category. Standard packing box in this category shall be of sizes (mm) : 900x600x1900; 1000x1000x1000; 1200x1200x1200; 1660x1600x550; 1700x1220x1000; 1900x1140x640; 3000x1500x1300; 2150x800x800; 4300x800x600; 8400x800x700; etc., lengths in this category may go as high as 8700mm. Variants of Drawing No. 2-CPDC-0041 shall be applicable for manufacture of Packing cases in this category. The variant drawings are based on increasing lengths. The box should be capable to withstand a load of 9000 kgs maximum. Packing case to be lined with hessian bitumen kraft paper LDPE 100 GSM at sides, bottom inside and top. Outside top is to be turned 80mm on sides and fixed. The packing case shall conform to the size specified by the Ordering Authority with an average tolerance of plus or minus 10 mm on all dimensions. Gaps between planks shall not exceed 2 mm.
4. **Schedule 4:** For Export consignment outer volume less than 0.2 cubic meter, the construction of these cases will be similar to Sl. No. 1 above except that the box shall be enclosed with plywood and G.I. Sheet is to be provided & covered with the wooden packing boxes outside area. The specification of G.I. sheet shall be as per AA10166-R06. These cases will be required for similar components as indicated at SL NO. 1. Variants of Drawing No. 3-CPDC-0052 shall be applicable for manufacture of Packing cases in this category. The variant drawings are based on increasing lengths. The box should be capable to withstand a load of 600 kgs maximum. The cases in this category shall be sea-worthy as per BHEL Spec: HY0490569-05. Wood used in this category shall be ISPM 15 compliant and contractor shall submit certificate of conformity of a reputed certified laboratory to that extent without any extra price implication. The packing case shall conform to the size specified by the Ordering Authority with an average tolerance of plus or minus 10 mm on all dimensions. Gaps between planks shall not exceed 2 mm.
5. **Schedule 5:** For Export consignment outer volume from 0.2 cubic meter to 1 cubic meter, the construction of these cases will be similar to Sl. No. 2 above except that the box shall be enclosed with plywood and G.I. Sheet is to be provided & covered with the wooden packing boxes outside area. The specification of G.I. sheet shall be as per AA10166-R06. These cases will be required for similar components as indicated at SL NO. 2. Variants of Drawing No. 3-CPDC-0051 shall be applicable for manufacture of Packing cases in this category. The variant drawings are based on increasing lengths. The box should be capable to withstand a load of

2500 kgs maximum. The cases in this category shall be sea-worthy as per BHEL Spec: HY0490569-05. Wood used in this category shall be ISPM 15 compliant and contractor shall submit certificate of conformity of a reputed certified laboratory to that extent without any extra price implication. The packing case shall conform to the size specified by the Ordering Authority with an average tolerance of plus or minus 10 mm on all dimensions. Gaps between planks shall not exceed 2 mm.

6. **Schedule 6:** For Export consignment outer volume greater than 1 cubic meter, the construction of these cases will be similar to Sl. No. 3 above except that the box shall be enclosed with plywood and G.I. Sheet is to be provided & covered with the wooden packing boxes outside area. The specification of G.I. sheet shall be as per AA10166-R06. These cases will be required for similar components as indicated at SL NO. 3. Variants of Drawing No. 3-CPDC-0050 shall be applicable for manufacture of Packing cases in this category. The variant drawings are based on increasing lengths. The box should be capable to withstand a load of 2000 kgs maximum. The cases in this category shall be sea-worthy as per BHEL Spec: HY0490569-05. Wood used in this category shall be ISPM 15 compliant and contractor shall submit certificate of conformity of a reputed certified laboratory to that extent without any extra price implication. The packing case shall conform to the size specified by the Ordering Authority with an average tolerance of plus or minus 10 mm on all dimensions. Gaps between planks shall not exceed 2 mm.
7. **Schedule 7:** For Indigenous consignment weight exceeding 800 kg, bolted wooden runner case shall be supplied where wooden planks of surfaces smooth finished shall be fastened with bolts of suitable sizes and reinforced with suitable runners. The packing box will consist of base, four side panels and top cover. Base, sides & top cover of the packing boxes are to be secured/ fastened with steel strips. Standard packing box in this category shall be of sizes (mm) 1000 x 1000 x 1300; 1200x1200x1200; 1400x1400x800; 1800x1800x800; 3300x1700x800; 5200x5200x4000 & 6700x3700x2500 etc. Normally, These cases will be mandatorily required for Bevel gear wheels, Spout segment inner cones, Scraper & guard assembly, Speed monitor systems, Liner journal heads, Bowl extension ring segments, Air cooler elements, Gland steam condenser assembly, Ceramic lined MPOs, Pump shaft assembly, Cartridge assembly, Fabricated Mills items or any other items for which bolted runner cases are envisaged. Variants of Drawing No. 2-CPDC-0019 shall be applicable for manufacture of Packing cases in this category. The variant drawings are based on increasing lengths. The box should be capable to withstand a load of 9500 kgs maximum. However this is only indicative and weights of consignments can be on higher side. Packing case to be lined with hessian bitumen kraft paper LDPE 100 GSM at sides, bottom inside and top. Outside top is to be turned 80mm on sides and fixed. The packing case shall conform to the size specified by the Ordering Authority with an average tolerance of plus or minus 10 mm on all dimensions. Gaps between planks shall not exceed 2 mm.
8. **Schedule 8:** For Export consignment weight exceeding 800 kg, the construction of these bolted runner cases will be similar to Sl. No. 7 above except that the box shall be enclosed with plywood and G.I. Sheet is to be provided & covered with the wooden packing boxes outside area. These cases will be required for similar components as indicated at SL NO. 8. The specification of G.I. sheet shall be as per AA10166-R06. Variants of Drawing No. 2-CPDC-0018 shall be applicable for manufacture of Packing cases in this category. The variant drawings are based on increasing lengths. The box should be capable to withstand a load of 10500 kgs maximum. However this is only indicative and weights of consignments can be on higher side. The cases in this category shall be sea-worthy as per BHEL Spec: HY0490569-05. Wood used in this category shall be ISPM 15 compliant and contractor shall submit certificate of conformity of a reputed certified laboratory to that extent without any extra price implication. The packing case shall conform to the size specified by the Ordering Authority with an average tolerance of plus or minus 10 mm on all dimensions. Gaps between planks shall not exceed 2 mm.

9. **Schedule 9:** For Switchgear crates, the construction shall be a framed structure without completely being enclosed with plywood or lumber. Planks will be used for sheathing which is gapped by at various distances. The gap between planks shall not be greater than the width of the sheathing planks. These Crates shall be manufactured based on DWG Nos.: 25180501982_R04 (Base unit 145 kV); 25180506985_R08 (Base unit 420 kV); 25180506986_R09 (Double interrupter); 25180506991_R03 (Double interrupter W/O PIR); 35180501981-S00-R03 (Interrupter) & 35180506987_R04 (Support insulators). The packing crate shall conform to the size specified by the Ordering Authority with an average tolerance of plus or minus 10 mm on all dimensions.
10. **Schedule 10:** For Bowl & Bowl Hub frames; the fixture will be constructed of pieces of wooden beams, block with reinforcing runners attached by nails. Construction shall include wooden plank / timber per BHEL instructions. Applicable Drawing No. 4-94-0527.
11. **Schedule 11:** For Card Board Boxes; corrugated boxes shall be required for personal collection. BHEL Spec: AA51414 shall be followed.
12. **Schedule 12:** For Primary Packing; Critical components shall be packed with **VCI** (volatile corrosion inhibitor) primary material viz. rust preventive oil, dehumidifier, VCI powder, VCI HDPE, VCI bubble sheets etc. for protection against weather and other adverse conditions. The above improvised packing is being adopted in Pumps, Pulverisers & Oilrigs. Also the same is being adopted in few cases of packing Turbines, Compressors, IV & ESV Valves , Bearing pedestal , Stator Bars and MDVs & few fragile components in 03 CDC viz. Control panels. The following procedure is to be followed:
 - A. VCI base sheet to be put initially.
 - B. VCI – Rust Preventive Oil shall be applied for all machined and bolted areas.
 - C. VCI Rustogel shall be applied for all the machined components where possibility of dripping (of oil) exists.
 - D. VCI Rust preventive Powder shall be put all over the components for protection against metal corrosion.
 - E. DHF Dehumidifier or Moisture absorbent shall be applied for controlling the moisture present / entrapped inside.
 - F. VCI Bubble Sheet shall wrap around for extra protection of metal from Mechanical damage and rust prevention.
 - G. Stretch film shall wrap around the bubble sheets to keep the sheet intact.
 - H. VCI outside UV protected barrier shall be from protection of metal from outside atmospheric and to keep away WVTR (Water Vapour Transmission Rate)
 - I. Special adhesive tape shall be used for sealing.
 - J. HDPE Tarpaulin 200GSM shall be used as per BHEL specification HY78133.

The primary packaging shall be sea-worthy as per BHEL Spec: HY0490569-05.

It may be noted that the apart from primary packaging (S. No 12), any of the other schedules (any of the Sl. Nos. 1-9 & 13) meant for secondary wooden packaging capable of firmly and securely holding the primary receptacle shall be utilized for completion of packing work for critical components . Hence, the packing list generated for the critical component will be common documentary evidence for both the primary and secondary packaging and billing will be done accordingly.

13. **Schedule 13:** For Indigenous / Export consignment weights exceeding 5,000 kg, Plywood side frames reinforced with wooden runners are to be built on steel transport fixtures secured to cleats. Thereafter Top cover shall be constructed for closing the consignment. The steel

transport frame is within the scope of BHEL. This packing shall be adopted for assemblies' viz. Boiler Feed Pumps, Booster Pumps, Planetary Gear Box, Load Gear Box, Journal Shafts, Compressors and Turbines etc. Steel transport fixtures shall be in the scope of BHEL and will be provided by BHEL. Dimensions of the packing shall be made available to the contractor for building the frames during execution of contract. Weight of the consignments may vary from 5000 kg to 100000 kg approx. To withstand the sling crushing loads, the spacing between vertical runners should not exceed 750 mm and horizontal runners should not exceed 500 mm on side frames. The runners in the top cover shall be inclusive of sling supports, to withstand sling crushing loads, while loading the consignments. Suggestive sketches for side frames / top cover & corresponding steel transport fixture (BHEL scope) are provided at Annexures. IS: 303 specification is to be followed for Plywood.

14. **Schedule 14:** Certain items like fabricated canisters, fabricated deaerator assemblies, separator tops, separator body, bundles pipes, channels, hydraulic drums & other loose items are shipped bare or open without any wooden packing boxes or enclosures. However, wooden saddles / stands / supports/ straps shall be supplied for suitable packing arrangements to enable mounting of these equipment on trailers. Also necessary packaging material shall be supplied for protection of projection of the equipment and prevention of damage of the material by sling wires at sling points. Maximum dimension of consignments of this nature will be 14000 x 4000 x 4500 mm approx. Maximum weight of the consignments will be 30000 kg approx.
15. **Schedule 15:** For Indigenous / Export consignments wherever required, ISPM treatment (fumigation) to be complied with wooden packaging material along with marking and certification. Contractor has to ensure fumigation of boxes from a certified laboratory, for all wooden packing materials, as per ISPM updated revisions.
16. **Schedule 16:** For Indigenous / Export consignment weights exceeding 5,000 kg, Plywood side frames and G.I. Sheet is to be provided outside of the plywood packing which will be reinforced with wooden runners are to be built on steel transport fixtures secured to cleats. Thereafter Top cover shall be constructed for closing the consignment. The steel transport frame is within the scope of BHEL. This packing shall be adopted for assemblies' viz. Boiler feed pumps, Booster pumps, planetary gear box, Load gear box, Journal shafts, Compressors, Turbines etc. Steel transport fixtures shall be in the scope of BHEL and will be provided by BHEL. Dimensions of the packing shall be made available to the contractor for building the frames during execution of contract. Weight of the consignments may vary from 5000 kg to 10000 kg approx. To withstand the sling crushing loads, the spacing between vertical runners should not exceed 750 mm and horizontal runners should not exceed 500 mm on side frames. The runners in the top cover shall be inclusive of sling supports, to withstand sling crushing loads, while loading the consignments. Suggestive sketches for side frames / top cover & corresponding steel transport fixture (BHEL scope) are provided at Annexures. IS: 303 specification is to be followed for Plywood. All woods used for this type of packing should be ISPM 15 compliant and Contractor shall submit certificate to that extent without any extra price implication. The packing case shall conform to the size specified by the Ordering Authority with an average tolerance of plus 10 mm on all dimensions.
17. **Schedule 17** Miniature packing cases: Requirement of this size exists for packing of very small items like pins, "O" rings, washers, screws etc. especially at Spares CDC. Height and width of these packing cases being less than 300 MM, length may go as far as 1.5 M. Applicable Drawing No. 2-CPDC-0055.
18. **Schedule 18:** These medium sized packing cases with plywood outer sheath are to be used suitable for Air freight transport. All dimensions (length, width & height) of this type of boxes are within 1000 MM. Applicable Drawing No. 2-CPDC-0056.
19. **Schedule 19 – Pigeon hole cases;** Steel Pigeon hole cases / Partitioned boxes are to be used compulsorily wherever it is necessary to segregate high value metallic components inside a packing case. Movement of each of the items shall be completely arrested inside the packing

case. Dimensions of packing cases shall be such that all the items shall snugly fit into the cases. All such packing cases shall be tailor-made to suit the exact dimensions. Painting of 2 coats of red oxide paint with necessary anti rust treatment shall be done as per AA56101. Normally, Standard Sizes in this category shall be (mm): 800x500x200 with 150 pigeon holes; 900x500x400 with 40 pigeon holes; 1100x900x300 with 200 pigeon holes; 1300x1200x700 with 200 pigeon holes; 1500x1000x500 with 100 pigeon holes; 1600x1600x800 with 200 pigeon holes etc. These cases will be required for packing of LP moving blades, Lock blades, GT Buckets or any other items / sizes for which the cases are envisaged. Maximum weight capacity of the boxes shall be around 600 kg.

20. **Schedule 20:** Frame for Journal opening cover, separator top and separator body; the fixture will be constructed of pieces of wooden blocks which to be bolted with the items. Applicable Drawing No. 2-CPDC-0057.
21. **Schedule 21:** Frame for Gear Box assembly; the fixture will be constructed of pieces of wooden beams, blocks which are to be bolted with equipment. Applicable Drawing No. 4-94-0060.
22. **Schedule 22:** Draw works assembly opening covers; the fixture will be constructed of pieces of wooden beams, blocks with reinforcing runners attached by nails. Construction shall include wooden saddles / stands / supports/ straps plank / timber as per BHEL instructions. Applicable Drawing No. 4-94-0063.
23. **Schedule 23:** Frame for Mill shell assembly; the fixture will be constructed of pieces of wooden blocks which are to be bolted with the items. Applicable Drawing No. 2-CPDC-0064.
24. **Schedule 24 – VCI Vacuum packing;** Critical components shall be packed with VCI Vacuum packing, for protection from moisture, corrosion, objectionable gases, ultraviolet rays & mechanical damages. This packing will be done in specific cases wherever the products are required to be protected for longer period up to 2 years. VCI Vacuum packing will be required for packing of Turbo generator Rotors, Gas Turbine rotors, bearings or any other items for which the packing is envisaged. The following procedure is to be followed:
 - a) Parts shall be thoroughly cleaned just before VCI vacuum packing. Finger prints on cleaned items are to be avoided as the same are very corrosive. VCI Rust preventive oil (Ferrous grade oil base) shall be applied to all the components to withstand any corrosion. VCI Rust gel shall be applied for all the machined components where possibility of dripping (of oil) exists.
 - b) VCI Rust preventive Powder shall be put all over the components for protection against metal corrosion.
 - c) DHF Dehumidifier or Moisture absorbent shall be applied for controlling the moisture present / entrapped inside.
 - d) VCI Bubble Sheet shall wrap around for extra protection of metal from Mechanical damage and rust prevention.
 - e) Stretch film shall wrap around the bubble sheets to keep the sheet intact.
 - f) VCI outside UV protected barrier shall be from protection of metal from outside atmospheric and to keep away WVTR (Water Vapour Transmission Rate)
 - g) Special adhesive tape shall be used for sealing.
 - h) HDPE Tarpaulin 200GSM shall be used as per BHEL specification HY78133.
 - i) Pre-Heated sheets of VCI laminated Aluminium foils shall be draped over the component placed on a base support, and then by means of suction applied to the underside of the frame, the softened foil shall be pulled downwards to drape over the contours of the component and in contact with the base support.

- j) After completion of the vacuum, heat sealing of the foil ends shall be done with a heat sealer, thus forming an airtight contact between the sheet and the base support.

Mostly, the above procedure for VCI Vacuum packaging is sufficient for effectively corrosion proofing. However the Contractor must be able to ensure compliance with the exports vacuum packing guidelines laid down by any of the customer as the case may be.

This schedule should be applied to special generator rotor packing also as the case may be.

It may be noted that apart from the above mentioned VCI Vacuum packaging (Schedule no 24), any other schedules (any of the Sl. Nos. 1-10, 13, 16-20) meant for secondary wooden packing capable of firmly and securely holding the primary receptacle shall be operated for completion of packing work for critical components. Hence, the packing list generated for the critical component will be common documentary evidence for both the VCI Vacuum packaging and secondary wooden packing and billing may be done accordingly.

25. **Schedule 25 – Foam packing;** Instapak Quick Room Temperature bags or Instapak QRT shall be used to pack and protect High value Gas Turbine precision spares items so that they arrive damage free in a neat professional package. Products of any size, shape or weight are to be protected, and it should be quick and easy to use. The self-contained chemicals in the bag shall be activated by patting back and forth on the bags and instantaneously the custom fitted foam packaging shall securely fit and protect the item inside the box ready for transport.

The foam packing will be required for packing of High precision Gas Turbine components like Nozzles, Diaphragms or any other fragile items for which the packing is envisaged.

It may be noted that apart from the above mentioned Foam packaging (Schedule no 25), any of the other schedules (any of the Sl. Nos. 1-10, 13, 16-18) meant for secondary packing capable of firmly and securely holding the primary receptacle shall be operated for completion of packing work for critical components. Hence, the packing list generated for the critical component will be common documentary evidence for both the Foam packaging and secondary packing and billing may be done accordingly.

26. **Schedule 26:** For Indigenous / Export consignment weights exceeding 5,000 kg, metallic enclosures to be provided by BHEL. This packing shall be adopted for assemblies' viz. Boiler feed pumps, Booster pumps, planetary gear box, Load gear box, Journal shafts, Compressors, Turbines etc. Weight of the consignments may vary from 5000 kg to 100000 kg approx. Contractor has to carry out loading, packing by using internal packing materials and addressing.
27. Besides the wooden cases & crates as per Sl. Nos. 1-9, 17-24, custom-made packing cases / crates will be required by BHEL as and when applicable during execution of contract. Contractors are required to supply custom design cases based on the consignment profile and dimensions with or without the presence of BHEL drawings.

28. The length of the nails shall be chosen according to the following Table:

| | | | | | | |
|------------------------------------|----|----|----|-----|-----|-----|
| Thickness of the plank / beam (mm) | 25 | 35 | 40 | 50 | 80 | 100 |
| Length of nail (mm) | 60 | 80 | 80 | 100 | 150 | 200 |

29. Contractor will maintain buffer stocks of standard packing cases in their warehouse and at the job site to ensure that they have control over their material supply and are not caught short handed.
30. Contractor in his own interest will arrange in advance sufficient quantity of good quality raw materials such as packing wood, nails, corner angles strips, Thermo Cole (thickness 25mm), LDPE in 0.175 mm thick and size: 3 x 50 Meters, Polythene covers, Bail strips (size width: 19mm, thickness: 0.46mm), insulation tape, silica gel sachets to IS: 3401 and ensure best quality boxes are made and best quality packing is done. LDP pouch (width within 1 meter) are to be sealed by using LDP Pouch sealing machine after placement of materials. Bail strips are to be clamped with BHEL monogram. Contractor will maintain buffer stocks of consumables in their warehouse.
31. Recommended timbers for manufacture of bases and reinforcing runners and for side planks BHEL specification HY51463-R01 shall be applicable. Neem, Maddi & Assam Pine may also be used for hard wood applications. For softwood applications, BHEL specification AA51401 can be used for small packing cases and for side planks but not for the reinforcing runners and for the base.
32. Plywood shall be as per specification IS: 303.
33. The packing boxes & wooden side frames of different sizes will be supplied based on the packing requirement of the respective packing cells. The contractor will maintain close liaison to assess the requirement of the packing boxes. All semi-finished boxes/crates/frames supplied by contractor, should be marked with vendor code of the contractor (issued by BHEL), serial No. (Minimum 4 digit), Month & Year of manufacture and weight in Kg of the box/crate/frame for identification as per following format:

Vendor code: XXXXX, Sl. No: YYYY, Month & Year: 01/17, Box Wt.: ZZ.ZZ
34. Preliminary inspection of the boxes and side frames will be carried out by BHEL QC or Job Engineer / supervisor on receipt of the boxes / frames at BHEL as per specification / drawings. Preliminary inspection cleared boxes will be used for packing. Contractor has to take back boxes which are rejected during preliminary inspection. Final inspection will be done by BHEL QC after the packing has been completed. The packing boxes / side frames shall be guaranteed for safe packing, handling & transportation up to the destination. The Contractor shall ensure that all wood and timber used for packaging shall be as per BHEL specification and drawings. The contractor shall submit test certificates for the packing cases certifying that the cases are free of any defects pertaining to material, construction and workmanship as per BHEL specification and drawings.
35. Contractor has to produce relevant test certificates for all packing materials (viz. semi-finished boxes, internal packing materials, plywood, GI sheet etc.) as per requirement of BHEL job executing supervisor/engineer.
36. Metallic pouches are to be supplied and nailed to the packing cases to protect the packing list copies which will be kept outside the packing cases.
37. **A part all schedules -** For item nos. 1-9, 11, 15, 17-19 of the scope of work, billing of packing case material will be done on the basis of the outer volume of the consignment as determined from dimensions indicated in the packing list generated (Rs per cubic m). Material billing for item no. 10, 14, 20-23 will be done on the basis of nos. of items packed (Rs Per no). For item no 12, 24, 25 of the scope of work, billing of primary packaging material will be done on the basis of the total surface area of the consignment (Rs per square m). For item no 13, 16 of the scope of work, billing of side frames material will be done on the basis of the total surface area minus bottom (all sides & top but except bottom since supported on steel transport fixture provided by BHEL) of the consignment as determined from dimensions indicated in the packing list generated (Rs per square m). Charges for all

miscellaneous consumables like Polythene, silica gel, thermo Cole, nails, studs, bolts, ink, paint for marking etc. shall be included in the rates quoted for packing cases and frames by the bidders. Material billing for packing material for bare or open items i.e. for item no. 14 will be done on the basis of the nos. of packing lists generated for open items (Rs per no.). Accordingly for item no. 14, flat rate for material shall be quoted by the bidders per item irrespective of the size, weight of the consignment. For all the billing mentioned, packing lists issued by the respective packing sections shall be the basis of reference.

38. Although the principal requirement of contractor shall be to cater to packing requirement of TCGT (01CDC) & EM (02CDC), HE & F (06CDC), Pumps (70CDC), Switchgear (03CDC), DS (09CDC), Spares (WHCDC), Pulverisers (51CDC), Oil rigs (54CDC), the contractor shall execute packing of any consignments as and when applicable.

39. Contract prices shall be firm till execution of contract.

40. Rates quoted shall include all taxes and duties **except VAT on material and service tax on labour portion**. The price quoted should be on firm basis and including all other charges.

41. **All the terms & conditions of the contract with respect to Taxes & Duties are subject to the new taxation laws introduced from time to time (e.g., GST). The terms & conditions will be modified in accordance with the provisions of new laws (e.g., GST).**

42. Payment terms

The payment of monthly running bills will be released against submission of bills. Invoices will be cleared subject to submission of necessary documents including packing lists and also the statutory ones such as PF challans, wage sheets etc. Successful bidder shall make his own arrangement for making payment of impending labour wages and other dues in the meanwhile. If required contractor supplied boxes details (including inside BHEL premises make boxes) to be verified during bill verification.

43. Penalty clause

The delivery of the packing material shall be made within the time prescribed in the requisition letter issued by Logistics department every month. The requisition letter will be reviewed every week for delivery. Failure to supply the packing material in time as per delivery specified would make the contractor liable to an unconditional penalty at the rate of ½% of undelivered portion of charges of requisition lot per week or part thereof subject to a maximum of 10% of undelivered portion of the charges of the lot. Penalties shall be adjusted against the monthly payments to the contractor subject to an overall cap of 10% of total contract value for the contract period. Any loading on penalty clause shall be 10% or to the extent to which it is not agreed to by the bidder.

44. Invoices shall be issued by the Contractor in the name of the BHEL. The invoices shall contain the information regarding Gross amount payable and net amount payable, VAT on material and Service tax on labour portion, Tax Registration Nos. etc. The documents shall be presented by the Contractor to the BHEL for drawing payment are Signed commercial invoice in quadruplicate, Packing lists, contractor supplied packing box serial Nos. etc.

45. Presently, no repository store is available to hold the stock of the contractor material. Hence, the contractor shall store the material building temporary sheds near the location identified by BHEL. The Contractor shall see that delivered materials are immediate usable.

B. Packing & addressing of wooden packing cases , side frames :

1. All packing shall be done as per attached specification as per code of packing practice detailed in the attached specification HY0490572-R01.

2. Packing shall be properly and solidly made to afford the goods protection from any mechanical and/or water damage that may be reasonably expected during ocean, land, or air transport (as appropriate). Equipment sensitive to water damage shall be protected to

preserve it in a dry state for up to 1 year during transport, storage and installation when subject to typical high humidity, high rainfall conditions. The packing shall be such that damage will not occur to the packed goods by tilting, displacing, swinging, vibrating, lifting, escaping, compression or any other shipping hazards.

3. Sufficient supply of cushioning material should be stock at any given time for extensive use inside the packing cases. Accordingly, Contractor shall arrange all the cushioning material and the value of the packing case shall be deemed to have included cost of such provisions, so mentioned. However, wherever necessary, schedule 25 may be applied and Foam packing may be used as per the discretion of the BHEL official.
4. The crushing stresses of slings shall be completely resisted by members in the top and side diagonals or side runners in the cases and by the plywood in plywood sheathed cases. Correct nailing of the packing boxes as they are fabricated and using enough bolted fastenings in assembling panels into a case should insure adequate strength to resist vibration and other stresses.
5. After placing the components in the packing cases, the components shall be properly fixed to arrest any movement during handling and transport. This shall be done by using sufficient cushioning material at proper places to arrest the movement and to distribute the load evenly in the packing case. Dimensions of packing cases should be such that all the items shall snugly fit into the cases. Otherwise, the items will keep bouncing around inside the box, get collided with each other and also collide with the wall of the box. The packing cases shall be tailor-made to suit the exact dimensions.
6. Base, sides & top cover of the packing boxes are to be secured/ fastened with steel strips. Nails of suitable diameters shall be used for nailing down the various parts of packing cases, keeping in view rigidity of the whole frame and safety of the contents. The nails are in supplier's scope. The nails shall be staggered at equal pitches and shall be well clinched along the grain of the timber. After placing the components in the packing cases, the components shall be properly fixed to arrest any movement during handling and transport. This shall be done by fixing wooden sections at proper places to arrest the movement and to distribute the load evenly in the packing case.
7. Prior to packing, all goods, equipment and materials shall be checked internally and externally to ensure that they are free from all weld spatter, scale, rust, filings, dirt, etc., as well as foreign materials.
8. Loose items shall be packed by wrapping with VCI paper, polythene sheet / polythene covers, binding wire where ever required. Same procedure shall be extended for sub assemblies also. Extra wooden supports of 50 X 80 mm and 80 X 100 mm in required lengths are to be provided after keeping the product in the packing cases and openings of the product are to be closed with 12 mm ply wood sheet where ever necessary.
9. All openings shall be covered or plugged with substantial (12mm thick minimum) plywood or metal enclosures that are securely fastened.
10. The contractor will carry out the packing of consignments – stacking, wrapping the polythene sheet, bubble sheet & VCI paper, stud fixing, fixing the side panels, top cover, securing with steel strip, marking etc. using only the hand tools. **However, electric power, handling facility, crane, fork lift etc. will be provided by BHEL as per the requirement.**
11. The contractor will carry out the packing work in the BHEL premises at location identified by BHEL.
12. The contractor will have to maintain liaison & organize the resources in a manner that the packing of the items is completed within the stipulated time, after the consignments are made available for packing at Logistics.

13. **B part all schedules** - For item nos. 1-9, 11, 17-19 of the scope of work, billing of packing work will be done on the basis of the outer volume of the consignment as determined from dimensions indicated in the packing list generated (Rs per cubic m). Packing billing for item no. 10 & 20-23 will be done on the basis of nos. of item packed (Rs Per no). For item no. 12, 24, 26 of the scope of work, billing of packing will be done on the basis of the total surface area of the consignment (Rs per square m). For item nos. 13, 16 of the scope of work, billing of packing will be done on the basis of the total surface area minus bottom (all sides & top but except bottom since supported on steel transport fixture provided by BHEL) of the consignment as determined from dimensions indicated in the packing list generated (Rs per square m). Packing billing for packing material for bare or open items i.e. for item no. 14 will be done on the basis of the nos. of packing lists generated for open items (Rs per no). Accordingly for item no. 14, flat rate for packing shall be quoted by the bidders per item irrespective of the size, weight of the consignment.
14. Rates quoted shall include all taxes and duties except VAT on material and service tax on labour portion. **The price quoted should be on firm basis and including all other charges.**
15. After all the components are properly packed and the box closed, the following data shall be marked on at least two opposite sides of the case in laminated A4 sheet which are to be nailed on boxes. For open items and Metallic Enclosures, markings are to be done either on ply wood sheets (8 x 800 x 600 mm) or GI sheets (0.4 x 300 x 300 mm) as required with a water proof black paint. The height of the characters shall be approximately 50/80 mm or as required. All the markings required to indicate proper handling of the cases during transit shall be provided. The Data to be marked:
- (a) "B H E L" AND ADDRESS.
 - (b) COMPANY'S MONOGRAM.
 - (c) CONSIGNEE'S FULL AND CORRECT ADDRESS.
 - (d) IDENTIFICATION NUMBER OF THE CASE.
 - (e) ROUGH DIMENSIONS OF THE CASE IN CM S.
 - (f) NET WEIGHT AND GROSS WEIGHT OF THE CASE.
 - (g) POSITION OF SLINGS FOR HANDLING.
 - (h) INDICATION OF THE TOP OF THE CASE (BY ARROW, UMBRELLA ETC)
 - (i) NAME OF THE CONSIGNMENT (e.g." INSTRUMENT PANEL, " MISCELLANEOUS". ETC)
 - (j) COLOUR STRIPS CODIFICATION, WHEREEVER APPLICABLE.
 - (k) STORAGE INSTRUCTION CODE (DENOTED BY LETTER P, Q, R,S ETC)
 - (l) MADE IN INDIA.
16. Payment shall be made on receipt of invoice by BHEL subject to its completeness and correctness and against packing list.

MEASUREMENT OF WORK AND PAYMENT THEREOF

- 1) A Measurement Book will be maintained in the BHEL by LOGISTICS Department located at 07 Bldg. The Contractor, wherein he or his authorized representative, will submit bill based on quantities completed entries in the measurement book.
- 2) The Contract officer will inspect the work executed by the contractor and authenticate the entries made in the measurement book.
- 3) Short comings, if any, in the work executed will be pointed out by the designated employee to the Contractor or his authorized representative and the same will be rectified by him within two days to the satisfaction of the designated employee.
- 4) Payment towards work satisfactorily executed will be made to the Contractor at the following rates :-

Measurement of work will be as per Annexure-F (Price schedule for Outsourcing of packaging of consignments of TCGT & TG, EM, HE & F, Pumps, Switchgear, DSItems, Spares, Pulverisers, Oil rigs and areas along with packaging material supply and addressing). Packing material shall be billed against Schedule A of the rates quoted and packing labour shall be billed against Schedule B for any consignment for the generated packing list. The packing lists shall be certified by the respective section Packing-in-charges.

- i) Payments will be made to the contractor once in a month after satisfactory completion of work on the basis of work carried out by him.
- ii) All payments will be subject to deduction of income tax at source as per Income Tax Rules.
- 5) Any future wage raise on account of DA Increase/ Wage revision by Central Government shall be met by the contractor himself. BHEL will not reimburse the differential in rate of DA or Wages.

SPECIAL INSTRUCTIONS:

- 1) If the tender is made by an individual, it shall be signed with his full name and his address shall be furnished. If it is made by firm, it shall be signed with the co-partnership name by a member of the firm, who shall also sign his own name, also furnish the name and address of each member of the firm. If the tender is made by a corporation, it shall be signed by a duly authorized Officer who shall produce with the tender, satisfactory evidence of his authorization. Such tendering corporation/firm is required to furnish evidence of its existence along with bid. Bidders are required to furnish a copy of Power of Attorney in favour of the signatory if the tender is submitted on behalf of a firm/ Company.
- 2) The EMD will be refunded to the unsuccessful Bidders on application after rejection of the tender is intimated. The earnest money will be retained in the case of the successful bidders and either of the cases will not carry any interest. It will be dealt with as provided in the conditions attached to the tender.
- 3) Whenever a tender is to be accepted, the bidder, whose tender is under consideration, shall attend the Office of "Officer Inviting the Tender" on the date fixed by written intimation to him. He shall forthwith, upon intimation being given to him by the "Officer Inviting the Tender" (Ex. Sr Manager (Logistics)) for acceptance of his tender, complete the execution of the agreement by signing all documents connected therewith. Failure to do so and not to commence the work within one month from the date of intimation shall entail forfeiture of the earnest money.
- 4) Bidders shall peruse carefully the instructions and directions to the parties given in the tender document and the conditions there of and all other relevant documents before quoting the rates for the work. The approximate quantity of work to be executed under each class is given in the schedule. The quantities are given with a view to enable bidder to quote his overall rate for each class of work in the tender form and for a uniform comparison of tenders. It shall be definitely understood that the schedule is liable to alterations at the discretion of accepting authority. The quantities mentioned in the tender notice and given in the tender schedule (price bid) are worked out based on our tentative production programmes. The quantities mentioned against the line items in the tender are for two years are indicative only. The quantities may increase or decrease depending on actual execution.
- 5) Bidders shall keep the offer valid for a period of 90 days from the date of opening of tender (Techno-commercial bid) or 60 days after date of reverse auction whichever is later. After submitting the tender, he will not recall his offer or modify the terms and conditions thereof. Should the bidder fail to observe or comply with the foregoing stipulations, the EMD shall be forfeited.
- 6) Bidders have to quote their rates in the tender schedule legibly written in figures and words and those not submitted in proper form are liable for rejection.

- 7) The submission of tender shall be strictly in accordance with the terms and conditions stipulated in this tender notice. No counter conditions will be acceptable or valid in which case tenders are liable for rejection.
- 8) The bidders must satisfy themselves by personal study understand thoroughly the scope of proposed work in detail and all conditions affecting the work before quoting. There shall not be at any time after submission of the tender, dispute/ complaint of any nature regarding the scope of work and interpretation of specifications or any misunderstanding with regard to nature or omission of the work to be done nor shall any application for compensation in terms of time and money shall be accepted by BHEL in regard to the above
- 9) Contractor shall be deemed to have included in his tender price of all the plant, machinery and appliances required for the purpose of all operations connected with the work embraced under the contract to secure a satisfactory quality of work and rate of progress which in the opinion of the " Contract Signing Officer" will ensure the completion of the work within the time specified.
- 10) The contractor has to produce the bank guarantee, in the prescribed proforma valid for the contract period for a value calculated at the rates mentioned, towards security deposit. The claim period under the guarantee shall be valid for six months after expiry of the contract.
- 11) The rates quoted by the contractor should be firm for the contract period. There shall be no revision in contract rates during the period of the contract.

**GUIDELINES AND STATUTORY PAYMENTS FOR SUBMITTING TENDERS FOR
WORKS AS PER EXISTING INSTRUCTIONS.**

- i) Contractor should pay BHEL Fair wedges to the workmen employed for carry out job.
- ii) Contractor shall provide two (2) pairs of uniform, helmet, shoes, goggles, and gloves, washing soap, summer cap etc., other personal protective Equipments wherever applicable to their labour.
- iii) Any increase in rate of DA/ Wages hike shall be met by the contractor and BHEL will not reimburse the same to the contractor; contractor shall anticipate such hike and quote in the tenders.

(SPECIAL CONDITIONS – SAFETY)

- 1) The following are a few safety measures suggested while carrying the work. However all the items of work should be carried out in safe working manner taking all precautions.
- 2) Proper and necessary precautions shall have to be taken wherever the work involves breaking of reinforced cement concrete slab and dismantling of brick work. These items of work will have to be carried in the presence of the Engineer-in-charge.
- 3) Proper and necessary scaffolding is to be erected wherever dismantling of brick work is carried out at height more than 1.80 M
- 4) The contractor shall keep supply all safety equipment like safety boots, goggles, helmets and safety belts, Hand gloves (as required for carry out work) to all the workers and ensure uses.
- 5) The contractor shall keep a supervisor always at work site.
- 6) Power shut down shall be taken before commencement of the work wherever power cables are running.
- 7) Proper and necessary scaffolding and ladders are to be used for carrying out all types of works.
- 8) Any causality or damage caused to the property or person by any untowards incidents while executing this contract will be at the contractor risk & cost.
- 9) Violation of applicable safety, health & environment related norms a penalty of ₹5000.00 (Rupees five thousand) per occasion shall be imposed.

- 10) Violation as above resulting any physical injury a penalty of 0.5% of contract value shall be imposed (maximum of ₹20,000.00) per injury in addition to ₹5000.00 as mention above.
- 11) In case fatal accident, a penalty of 1% of the contract value (maximum of ₹10,00,000.00 (Rupees ten lakh)) as mentioned above

RETURN OF SECURITY DEPOSIT:

If the contractor fully performs and completes the work in all respects to the entire satisfaction of BHEL and presents an absolute "No Demand Certificate" in the prescribed form and returns properties to BHEL taken, borrowed or hired by him for carrying out the said works, security Deposit will be released to the contractor after deducting all costs, expenses and other amounts that are to be paid to BHEL under this or other contracts entered into with the contractor. It may be noted that in no case the Security Deposit shall be refunded/ released prior to passing of final bill and completion of guarantee period.

The interest shall not be payable by BHEL on Earnest Money Deposit, Security Deposit or on any moneys use to the contractor.

Provident Fund

The Contractor should allot PF account number and get the nomination form, duly filled in, from each labour deployed by him at the time of joining.

In case the labour already has PF/pension account number, allotted to him, previously, then the contractor shall get the transfer form filled up at the time of joining and send to the office of concerned Regional Provident Fund Commissioner.

After termination of contract the contractor shall provide due assistance to the labour for withdrawal of PF/pension amount, when due.

The Contractor shall liaison with the PF officials to get the annual PF slips and distribute amongst his own labours.

P.F. CONTRIBUTION:

| Employee's Contribution | Employer's Contribution |
|---------------------------|-------------------------|
| 12% of Normal waged paid | PF Contribution 3.67% |
| Insp/ Admn Charages 0.85% | |
| Admn/Insp Charges 0.01% | |
| Pension Fund 8.33% | |
| EDLI Charges 0.5% | |

The Contractor shall submit annual returns in Form-6A and Form 3A, prescribed under statutory EPF scheme, 1952, in respect of each labour deployed by him with a copy to HR and finance department.

Employees State Insurance

The Contractor should allot ESI account number and get the nomination form, duly filled in, from each labour deployed by him at the time of joining.

At the time of joining the contractor shall get the self/family registration form filled by the labour and submit to the local ESI office.

The contractor shall collect the identity card issued after submission of registration form, from ESI office and handover the card to the concerned labour.

ESI CONTRIBUTION:-

| Employee's Contribution | Employer Contribution |
|-------------------------|-----------------------|
| 1.75% of gross wages | 4.75% of gross wages |

The Contractor shall submit annual returns in Form-6 prescribed under ESI Act, deployed by him with a copy to HR and finance department

BHARAT HEAVY ELECTRICALS LIMITED
(A Govt of India Undertaking)
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(Logistics)

Ref No.: HY/ LOGISTICS/ OS/ 16 -12/ 01

Date: 06.12.2016

TENDER NOTICE

ANNEXURE-F

Outsourcing the packaging contract at TCGT, EM, Switchgear, HE & F, Open Items, DS, Pulverisers, Oil Rigs, Pumps and Spares areas along with packaging material supply and addressing

NO DEVIATION CERTIFICATE

THIS IS TO DECLARE THAT WE DO NOT HAVE ANY DEVIATION IN THE STIPULATIONS OF YOUR TENDER AND ACCORDINGLY ACCEPT ALL THE SITUATIONS WITHOUT ANY RESERVATIONS WHATSOEVER.

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(Logistics)

Ref No.: HY/LOGISTICS/OS/16-12/01

Date: 06.12.2016

ANNEXURE-G

PRICE BID SCHEDULE

BHEL ESTIMATE:

| Sl No | Description | 2Years Qty | Measuring Unit | Scope | Est Rate Split in ₹ |
|-------|--|------------|----------------|-------------------------------|---------------------|
| 1 | Nailed cases small (vol<0.2 cub.m.) DWG No: 3-CPDC-0049 | 800 | Cub. M | Material cost | 5209.25 |
| | | | | Loading, packing & addressing | 672.29 |
| 2 | Nailed cases medium (0.2 cub.m. <vol <1 cub.m.) DWG No: 2-CPDC-0040 | 2600 | Cub. M | Material cost | 5012.67 |
| | | | | Loading, packing & addressing | 672.29 |
| 3 | Nailed runner cases (vol >1 cub.m.) DWG No: 2-CPDC-0041 | 2800 | Cub. M | Material cost | 4030.78 |
| | | | | Loading, packing & addressing | 672.29 |
| 4 | Export nailed cases small (vol<0.2 cub.m.) DWG No: 3-CPDC-0052 | 20 | Cub. M | Material cost | 5209.25 |
| | | | | Loading, packing & addressing | 672.30 |
| 5 | Export nailed cases medium (0.2 cub.m. <vol <1 cub.m.) DWG No: 3-CPDC-0051 | 100 | Cub. M | Material cost | 4816.11 |
| | | | | Loading, packing & addressing | 672.30 |
| 6 | Export nailed runner cases (vol >1 cub.m.) DWG No: 3-CPDC-0050 | 100 | Cub. M | Material cost | 3833.22 |
| | | | | Loading, packing & addressing | 672.30 |
| 7 | Bolted runner cases (wt > 800 kg) DWG No: 2-CPDC-0019 | 3500 | Cub. M | Material cost | 4224.41 |
| | | | | Loading, packing & addressing | 454.09 |
| 8 | Export bolted runner cases (wt > 800 kg) DWG No: 2-CPDC-0018 | 1200 | Cub. M | Material cost | 4226.37 |
| | | | | Loading, packing & addressing | 454.09 |
| 9 | Switchgear Crates (Base unit, insulator, interrupter) As per DWGs | 320 | Cub. M | Material cost | 3538.35 |
| | | | | Loading, packing & addressing | 672.29 |
| 10 | Bowl & bowl hub frames DWG No: 4-94-0527 | 150 | Nos. | Material cost | 3636.64 |
| | | | | Loading, packing & addressing | 670.32 |
| 11 | Cardboard boxes (Personal collection) As per Spec AA51414 | 25 | Cub. M | Material cost | 2319.59 |
| | | | | Loading, packing & addressing | 74.71 |
| 12 | Primary packing (Critical components) As per Spec: HY0490569-05 | 16000 | Sq M. | Material cost | 500 |
| | | | | Packing | 221.00 |
| 13 | Plywood enclosure (Critical components) | 8000 | Sq M. | Material cost | 826.60 |
| | | | | Loading, packing & addressing | 112.05 |

| | | | | | |
|----|--|------|--------|-------------------------------|----------|
| 14 | Open Items | 6000 | Nos. | Material cost | 374.48 |
| | | | | Packing & addressing | 76.63 |
| 15 | Fumigation as per ISPM Spec | 160 | Cub. M | Fumigation cost | 2824.00 |
| 16 | Export Plywood cum GI sheet enclosure (Critical components) | 400 | Sq. M. | Material cost | 1009.80 |
| | | | | Loading, packing & addressing | 200.00 |
| 17 | Miniature Plywood packing cases DWG No: 2-CPDC-0055 | 100 | Cub. M | Material cost | 6826.67 |
| | | | | Loading, packing & addressing | 672.29 |
| 18 | Medium sized Plywood packing cases DWG No: 2-CPDC-0056 | 80 | Cub. M | Material cost | 6226.56 |
| | | | | Loading, packing & addressing | 672.29 |
| 19 | Pegion hole packing cases DWG No: 2-94-0991 | 80 | Cub. M | Material cost | 12100.00 |
| | | | | Loading, packing & addressing | 672.30 |
| 20 | Frame for journal opening cover, separator top and separator body DWG No: 2-CPDC-0059 / 0057 | 80 | Nos. | Material cost | 1206.00 |
| | | | | Loading, packing & addressing | 670.32 |
| 21 | Frame for Gear Box assembly DWG No: 2-CPDC-0060 | 80 | Nos. | Material cost | 2252.00 |
| | | | | Loading, packing & addressing | 670.32 |
| 22 | Draw works assembly opening covers DWG No: 2-CPDC-0063 | 80 | Nos. | Material cost | 7399.00 |
| | | | | Loading, packing & addressing | 670.32 |
| 23 | Frame for Mill shell assembly DWG No: 2-CPDC-0064 | 80 | Nos. | Material cost | 5920.00 |
| | | | | Loading, packing & addressing | 670.32 |
| 24 | Vacuum packing (critical components) As per Spec issued by BHEL | 800 | Sq. M | Material cost | 1152.00 |
| | | | | Loading, packing & addressing | 221.00 |
| 25 | Foam packing (Instruments As per Spec issued by BHEL | 80 | Sq. M. | Material cost | 483.00 |
| 26 | Metallic enclosure (Material scope with product group) | 8000 | Sq. M. | Loading, packing & addressing | 112.05 |

Total

₹ 86279703/-

The bidders are required to quote the tender value on percentage (%) basis at excess or less or on par with estimate value in figures and words. **Quoting price for individual line item by bidder will lead to rejection of bid.**

| Percentage (%) | In Figures | In Words |
|----------------|------------|----------|
| Excess | | |
| Less | | |
| On Par | | |

A) VAT on material : _____

B) Service tax on labour portion: _____

NOTES

1. Bidder shall quote basic price, VAT on material and Service tax on labour portion separately. Bidder shall also mention VAT & the service tax percentage. The price quoted should be on firm basis and including all other charges. The basic price includes all taxes and duties except VAT on material and service tax on labour portion.
2. Bidders have to give details of taxes and duties taken for arriving of the all inclusive prices for our reference only. However, this no way dilutes the clause mentioned above that the price quoted shall be all inclusive of taxes.
3. **Individual line item estimated rates as well as overall estimate are disclosed to the bidders by BHEL in the estimates of items. Subsequent L1 overall quoted price compared to overall estimate in % (+/-) will be applied to estimated individual line item rates for payment purpose. Bidders are to quote total cost to BHEL only. The calculation sheet e.g. EXCEL sheet (which will help to arrive at "Total Cost to BHEL") will be finalized by the RA Committee and will be communicated to all the bidders of RA.**
4. BHEL reserves the right to negotiate even with L1 bidder, in case the overall L1 value quoted is not reasonable and/ or to obtain Lowest reasonable rates individually for all the items.
5. L1 rate will be evaluated on total cost to BHEL. The work is to be distributed between 2 (two) successful bidders with the lowest bidder L1 getting about 60% share and L2 will be getting about 40%. This shall be done provided the L1 rate is accepted by the L2 bidder. The L1 rate will be offered to L2 bidder. In case L2 does not agree with L1 rates, L1 rates will be offered to L3 and if L3 also refuses, the same will offered to L4, L5 up to L(N-1) bidder (N is no. of technically qualified bidder). If all refuses then the whole work will be awarded to L1.
6. Bidders shall quote the rates of items strictly as per unit of measurements mentioned in the price bid schedule.
7. Prices quoted shall be valid for 90 days from the date of opening of techno-commercial bid or 60 days of date of reverse auction whichever is later.
8. Rates quoted in figures and words shall be identical. Where there is a discrepancy between the price quoted in figures and in words, the price in words will prevail. Where there is a discrepancy between the unit and the line item total resulting from multiplying the unit rate by the quantity, the higher of the two figures (unit or the line item total) will be considered for evaluation. However in case of placement of order, the lower of the two figures (unit or the line item total) will be considered.
9. The rate quoted should be kept firm and valid for a period of two years and no extra payment will be reimbursed to the contractor by BHEL. Any increase of DA/ wages to the contract labour shall be absorbed by the contractor himself during the period of contract.
10. The rate shall include all necessary personal protective equipment, like helmet uniform, shoes goggles, hand gloves etc for the workmen engaged by him.
11. All the Statutory requirements under Minimum Wages Act, 1948, Payment of Wages Act, 1936, Workmen Compensation Act, 1923, EPF & MP Act, 1952, Payment of Gratuity Act, 1972. ESI Act, 1948. The Contract Labour (R&A) Act, 1970, Payment of Bonus Act, 1965, Income Tax, Service Tax Act and all other applicable Acts shall be complied with by the contractor.

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(Logistics)

Ref No.: HY/ LOGISTICS/ OS/ 16 -12/ 01

Date: 06.12.2016

CERTIFICATE

THIS IS TO CERTIFY THAT I/WE HAVE READ THE TERMS AND CONDITIONS OF THE TENDER AND AGREE FOR ALL THE CONDITIONS IN TO WITH OUT EXCEPTION INCLUDING PENALTY CLAUSE, PAYMENT OF SECURITY DEPOSIT, ETC. THE RATES QUOTED ARE ALL INCLUSIVE OF TAXES (EXCEPT VAT ON MATERIAL AND SERVICE TAX ON LABOUR PORTION), DUTIES AND ALL OTHER ALLOWANCES, STATUTORY BONUS AND DA (VARIABLE AT AN INTERVAL OF 6 MONTHS AS PER CENTRAL GOVT. NOTIFICATION) PAYABLE FOR ALL THE EMPLOYEES DEPLOYED AS PER LABOUR LAWS AND ARE FIRM DURING THE PERIOD OF CONTRACT.



CORPORATE PURCHASING SPECIFICATION

AA 101 66

Rev. No. 06

PAGE 1 OF 3

GALVANIZED STEEL SHEET, GRADE 120 GPD/GC

1.0 GENERAL:

This specification governs the quality requirements of plain and corrugated galvanized steel sheets, grade 120 GPD/GC produced by hot-dip process.

2.0 APPLICATION:

Used for general purpose, such as paneling and roofing.

3.0 CONDITION OF DELIVERY:

Annealed or normalized and galvanized.

The sheets shall be supplied plain or corrugated as specified in BHEL order.

4.0 COMPLIANCE WITH NATIONAL STANDARDS:

Material shall comply with the requirements of the following National standards and also meet the requirements of this specification:

IS:277-2003, Gr.:120 GPD/GC: Galvanized steel sheet (Plain and corrugated)

5.0 DIMENSIONS AND TOLERANCES:

Sizes:

The material shall be supplied to the dimensions specified in BHEL order. Standard sizes shall be selected from IS:277.

Plain sheets shall be ordered on the basis of length, width and thickness.

Corrugated sheets shall be ordered on the basis of length, thickness, depth, pitch and number of corrugations.

5.2 Tolerances:

The tolerances on sheets and coils shall comply with IS : 513 as detailed below:

5.2.1 Length:

- 0 mm
+ 15 mm or 0.5 percent of length whichever is greater.

5.2.2 Diagonal:

The diagonal distances between the opposite corners of any sheet shall not differ by more than 20mm.

5.2.3 Width:

- 0 mm and + 10 mm.

Revisions :

Cl. 27.6.12 OF MOM OF MRC-S&GPS

APPROVED :

INTERPLANT MATERIAL RATIONALISATION
COMMITTEE-MRC (S&GPS)

Rev. No. 06

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Prepared

Issued

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Dt :

Year :

BHOPAL

Corp. R&D

AUGUST, 1976

**5.2.4 Mass:**

The tolerance on mass of individual sheets shall be $\pm 10\%$ and tolerance on mass of each bundle of sheets shall be $\pm 5\%$.

5.2.5 Corrugations (When specified):

| | | |
|--------------------------------------|----------------|----------------------------|
| On depth | : ± 2.5 mm | Average of 4 measurements. |
| On pitch | : ± 5.0 mm | |
| On over all width after corrugations | : ± 25 mm | |

6.0 MANUFACTURE :

The steels or coils used for galvanizing shall conform to the requirements of Gr.: O for corrugated and DD for plain of IS:513 or IS: 1079 and shall be either annealed or normalized. However, for corrugated sheets the maximum phosphorus content may be 0.09 percent.

Galvanizing shall be carried out by first pickling the black sheets or by cleaning the cold rolled coils in line and then dipping them in a bath of molten zinc at a temperature suitable to produce a complete and uniformly adhesive coating of zinc. The zinc ingots used for galvanizing shall conform at least to grade Zn 98 of IS:209.

7.0 FREEDOM FROM DEFECTS :

Galvanized plain sheets, corrugated sheets and coils shall be reasonably flat and free bare spots, holes, tears and other harmful defects.

Coils, however, may contain some abnormal imperfections which render a portion of the coil unusable since the imperfections in the coil can not be removed as in the case of cut lengths.

8.0 TEST SAMPLES:**8.1 Bend Test (For plain sheets):**

Test pieces, 230 mm long and 75 to 100 mm wide, shall be cut both along and across the direction of rolling. Bend test pieces shall be selected at the rate of one set of 2 for every 1000 sheets or part thereof. Bend test shall not be conducted for corrugated sheets.

8.2 Coating Test:

One set of three samples, each 50 x 50 mm or 50 mm diameter shall be selected at random from one sheet for every 1000 galvanized sheets or part thereof. In the case of galvanized sheets produced from black sheets, one set of three samples shall be taken, two from an extremities of a diagonal and one from the middle of the sheet whereas in the case of galvanized sheets produced from cold rolled coils, one set of three samples shall be cut, one being from the middle of the width of sheet and one each from each side of sheet and in no case closer than 75 mm from the edge of the sheet.

9.0 BEND TEST (FOR PLAIN SHEETS):

Test samples prepared in accordance with clause 8.1 above shall withstand bending through 180° round a mandrel having a diameter equal to the number of times the thickness of the sheet specified in the table below without peeling or flaking of zinc.

Thickness of sheet, mm

*** Mandrel diameter**

Over 0.16 and upto & incld. 0.30

4

Over 0.30 and upto & incld. 1.60

3

Over 1.60 and upto & incld. 5.00

2

* Expressed as the number of times the thickness of sheet.



10.0 ZINC COATING TEST:

Single Test:

One test sample bearing the lightest mass of coating out of the three test samples selected under clause 8.2 above, shall be used and the mass of the zinc coating when determined by the method given in IS:6745 shall not be less than 100 g/m².

The mass of coating shall represent the total mass of zinc, both sides inclusive.

11.0 TEST CERTIFICATES:

Unless otherwise specified, three copies of test certificates shall be supplied.

In addition, the supplier shall ensure to enclose one copy of the test certificate along with their dispatch documents to facilitate quick clearance of the material.

The test certificate shall bear the following information:

AA 101 66, Rev 06: Galvanized steel sheet, Grade 120 GPD/GC

BHEL Order No,

Supplier's name,

Identification No

Dimensional inspection

Results of bend and zinc coating tests.

Note: Material procured, supplied and certified as AA 101 66, Rev 05/IS:277, Gr.:120 GPD/GC and comply with the requirements of this specification is acceptable.

12.0 PACKING AND MARKING:

Sheets shall be securely packed in waterproof paper or hessian cloth and securely tied round with hoop iron and with wooden battens underneath to prevent the sheets from corrosion and damage during transit.

A metal label shall be securely attached to each bundle and shall bear the following information :

AA 101 66: Galvanized steel sheets, grade 120 GPD/GC

BHEL Order No,

Supplier's Name

Consignment and Identification No,

Size and Weight.

13.0 REFERRED STANDARDS (Latest Publications Including Amendments) :

1. IS : 209

2. IS : 277

3. IS : 513

4. IS : 1079

5. IS:6745



PLYWOOD FOR GENERAL PURPOSES

1. GENERAL:

This specification governs the quality of Plywood For General Purposes.

2. APPLICATION:

Used in protective packaging, partitions, etc.

3. COMPLIANCE WITH NATIONAL STANDARDS:

There is no Indian Standard Covering this type of material.

4. DIMENSIONS AND TOLERANCES:

4.1 Sizes:

Length, Width, thickness and number of Plies shall be stated on our order.

4.2 Tolerances:

The following tolerances on the nominal sizes of finished boards shall be permissible.

| Dimension | Nominal Size | Tolerances |
|--------------|--------------------------|------------------|
| a) Length | Upto & Includ. 120 cm | + 3 mm - 0 mm |
| | Above 120 cm | + 6 mm - 0 mm |
| b) Width | Upto & Includ. 90 cm | + 3 mm - 0 mm |
| | Above 90 cm | + 6 mm - 0 mm |
| c) Thickness | Upto & Includ 5 mm | ± 10 Percent |
| | 6 to 9 mm | ± 7 Percent |
| | Above 9 mm | ± 5 Percent |

Revisions: Reference of IS: 303 deleted.
Refer Cl 4.5 of MOM. WG(T&PM).

Approved: INTERPLANT MATERIAL WG (T&PM)
RATIONALISATION COMMITTEE

Rev. No.
02

Rev. Date
Feb. '93

Revised:
BHOPAL

Prepared
CORP. R&D

Issued
CORP. R&D

Date
July, '80

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5. FINISH:

The faces of plywood boards shall be reasonably smooth and face veneers shall be of reasonably uniform thickness. Slight sanding may be given to rough boards in order to make them reasonably smooth. The edge of the boards shall be trimmed square within 3 mm.

6. TEST SAMPLES:

Two boards of 300 x 300 mm size in ordered thickness shall be supplied for testing.

7. PROPERTIES:

When tested in accordance with IS: 1734, the test pieces shall show the following properties:

7.1 Moisture Content (IS: 1734, Part I):

5 to 15 percent.

7.2 Glue Shear Strength In Dry State (IS: 1734, Part IV):

Average Value : 685 N (70 kgf) minimum.

Individual Value : 490 N (50 kgf) minimum.

8. TEST CERTIFICATES:

Unless otherwise stated, three copies of test certificates shall be supplied giving the following information:

AA 511 01 : Plywood For General Purposes.
Rev. 02

BHEL Order No.

Supplier's Name & Trade Mark, if any:

Batch No.

Test Results of Clauses 7.1 & 7.2.

9. PACKING AND MARKING :

Each Plywood board shall be legibly and indelibly marked or stamped on the face near one corner with the following:

AA 511 01 : Plywood For General Purposes.

BHEL Order No.

Manufacturer's/Supplier's Name:

Trade Mark, if any:

Batch No.

Year of Manufacture:

Grade & Type:

Size & Quantity:

The Plywood boards shall be suitably packed to prevent damage during transit.

**CORPORATE PURCHASING SPECIFICATION**

AA 514 01

Rev. No. 03

PAGE 1 OF 6

CONIFEROUS TIMBER FOR GENERAL PACKING PURPOSES

This specification governs the quality requirements of coniferous timber supplied in the form of planks, battens, beams and sleepers. The coniferous timber differs from non-coniferous (broad leave) timber in its gross appearance, anatomical structure and properties. In general, it works more easily under the tools and can be easily nailed.

2.0 APPLICATION:

Used for general packing purposes.

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

There is no National standard covering this material. However, assistance has been derived from the following National standards:

| | |
|---------------------------------|---|
| IS:190-1991 Grade I | Coniferous Sawn Timber (Baulks & Scantling) |
| IS:6662-1993 Groups III & IV | Timber Species Suitable For Wooden Packaging |

4.0 TERMINOLOGY:

For the purpose of this specification, the definitions given in IS:707 (Glossary of terms applicable to timber and timber products) shall apply except for the beam which is defined as follows:

Beam is defined as converted timber whose cross-sectional dimensions exceed 50mm in both directions.

5.0 SPECIES:

Shall be as stated on the order. Some standard species are:

| <u>Trade Name</u> | <u>Botanical Name</u> | <u>Abbreviation</u> |
|-------------------|-----------------------|---------------------|
| Fir | Abies pindrow | FIR |
| Deodar | Cedrus deodara | DEO |
| Chir | Pinus roxburghii | CHR |
| Kali | Pinus wallichiana | KAL |
| Khasi Pine | Pinus khasya | KPI |
| Spruce | Picea smithiana boiss | SPR |

Revisions:

Cl. 8.1.2 MOM of WG(T&PM)

APPROVED:INTERPLANT MATERIAL
RATIONALISATION COMMITTEE- WG(T&PM)

| | | | | | |
|----------------|---------|-------------|--------------------|---------------------|-----------------------------|
| Rev. No. 03 | Amd.No. | Reaffirmed | Prepared BHOPAL | Issued Corp. R&D | Dt. of 1st Issue MAR.'80 |
| Date: 01.10.95 | Dt : | Year.Oct.07 | | | |

| | | |
|-------------|------------------------------------|---|
| AA 514 01 | CORPORATE PURCHASING SPECIFICATION |  |
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| PAGE 2 OF 6 | | |

6.0 DIMENSIONS AND TOLERANCES:

6.1 Sizes

Width, thickness and length of timber shall be clearly stated on the order.

6.2 Tolerances:

6.2.1 Width : 50 to 250 mm Tolerance : ± 3 mm

6.2.2 Thickness : 20 to 250 mm Tolerance : $+3$ mm
 -1 mm

6.2.3 Length:

Standard length : 1 to 12 metres in multiples of 0.5 metre Tolerance : $\pm 2\%$ or ± 25 mm whichever is less.

Note:

1.0 Measurements:

1.1.1 When nominal sizes are ordered, length, width and thickness shall be measured on the basis of accepted sizes. Plus tolerances shall not be added while computing the volume.

1.2 The measurements of length, width, thickness and computation of volume shall be as follows:

- The length shall be measured in metres in midline of a piece. The fractions of a metre shall be rounded Off to the nearest lower 10 mm.
- The width shall be measured at the narrowest place in millimetres and shall be rounded off to the nearest lower one millimetre.
- The thickness shall be measured at the narrowest place in millimetres and shall be rounded off to the nearest lower one millimetre.
- The volume shall be computed in cubic metres correct to three places of decimal on the basis of accepted sizes.

2.0 Single sampling plan based on IS:2500 shall be followed.

7.0 MOISTURE CONTENT:

The timber shall have a moisture content as stated below within a depth of 15mm from the surface excluding a length of 300mm from each end at the time of inspection. The moisture content will be determined in accordance with Appendix-A of IS: 287.

October to June : 30%

July to September (Rainy season) : 40%

**8.0 FREE FROM DEFECTS:**

Timber shall be free from the following defects:

Brashness, splits across the grain, shakes, spring, twist, insect attack, any kind of decay (rot), any sign of infection, open centre heart, centre heart on planks and any other defect. Defects to the extent specified below are permissible. These defects shall be measured in accordance with IS:3364.

8.1 Bow:

Shall be permissible upto a maximum of 2mm for 300mm length.

8.2 Cup:

Shall be permissible upto a maximum of 6mm for 300mm width.

8.3 Centre heart:

Shall be permissible only on sleepers when it is not further than 35mm from the nearest edge. This does not apply to beams of cross sections above 200 X 200 mm.

8.4 Wane:**a) For sections upto and including 150 X 150 mm:**

Shall be permissible upto 1/5 of the width on the broad face subject to a maximum of 70mm and upto 1/3 of the width on the narrow face subject a maximum of 50mm, provided that one broad face is completely free from this defect. The wane shall be measured at its deepest part.

b) For sections above 150 X 150 mm:

The cumulative lengths of waness on all the sides should not be more than one length of the piece.

8.5 End splits:

The longest end split at each end shall be measured and the lengths added together. The total length of these shall not exceed 80mm per metre run of the piece.

8.6 Live knots:**8.6.1 Knots on the surface:****a) Upto & including 25mm diameter:**

A maximum of 5 knots/metre length are permissible. However, the knots shall not be so grouped or located as to affect the strength of the piece.

b) Over 25mm and upto and including 70mm diameter:

A maximum of 2 knots/metre length are permissible.

**8.6.2 Knots on the edges:**

- a) Upto and including 10mm diameter and for full thickness:
A maximum of 2 knots/metre length are permissible.
- b) Over 10mm and upto & including 50mm diameter and for less than half thickness:
A maximum of 2 knots/metre length are permissible.

8.7 Dead knots:

- a) Below 10mm diameter:
A maximum of 3 knots/metre length are allowed provided that the knots are not so grouped or located as to affect the strength.
- b) From 10mm to upto and including 25mm diameter:
A maximum of 2 knots allowed to the extent of 1 knot/metre length.
- c) Above 25mm diameter: Not allowed.

Note: (For clauses 8.6 & 8.7): Major axis of the knot should be taken as the diameter of the knot.

8.8 Surface cracks:

Surface cracks with a maximum depth of 10% of the thickness are permissible. A continuous crack of any depth, all along the length is not permissible.

8.9 Sap wood:

Permissible upto a maximum of 12 percent of the cross sectional area.

9.0 END COATING:

Timber shall be coated with any of the following effective compositions upto a distance of 80mm from each end.

- 9.1 Thick coal tar or bituminous paint.
- 9.2 Resin and lamp black (10:1) melted, mixed and applied hot.
- 9.3 Hardened gloss oil.
- 9.4 Paraffin wax.
- 9.5 Molasses and lime (3:1).
- 9.6 Geru/Yellow clay.



10.0 INSPECTION AT SUPPLIER'S WORKS:

Whenever specified, tests and inspection are to be conducted in the presence of BHEL's representative. BHEL representative shall have free access at all times while work on the contract is being performed to all parts of the manufacturer works. The manufacture shall offer BHEL's representative all reasonable facilities, without charge, to satisfy the latter that the material is being furnished in accordance with this specification.

The manufacturer shall prepare and provide necessary test specimens for testing to be carried out at his premises. If facilities are not available at his works the manufacturer, shall make necessary arrangements for carrying out the prescribed tests elsewhere. The manufacturer shall notify BHEL in advance about the readiness of the material for inspection and testing. BHEL reserves the right to test the material at BHEL's Works and the final acceptance of the material shall be based on these test results.

11.0 TEST CERTIFICATES

Three copies of test certificate shall be supplied unless otherwise stated on the order. In addition, supplier shall ensure to enclose one copy of test certificate along with their dispatch documents to facilitate quick clearance of the material.


The test certificate shall have the following information:

| | | |
|-----------------------------------|---|--|
| AA 514 01 (Rev.No.03) | : | Coniferous timber for general packing purposes |
| BHEL order No. | : | |
| Supplier's References | : | |
| Type & Specie | : | |
| Treatment, if any | : | |
| Results of Dimensional Inspection | : | |
| Moisture content | : | |
| Defects as per clause 8 | : | |
| Size | : | |
| Quantity supplied | : | |

12.0 MARKING :

The timber shall be marked/painted with the following:

- AA 514 01
- BHEL order No. :
- Supplier's Name :
- Size & Quantity :

| | | |
|--|------------------------------------|---|
| AA 514 01 | CORPORATE PURCHASING SPECIFICATION |  |
| Rev. No. 03 | | |
| PAGE 6 OF 6 | | |
| <p>13.0 REJECTION AND REPLACEMENT: If the material does not conform to the requirements of this specification or found defective during further processing, such material shall be rejected not withstanding any previous certification of satisfactory testing and/or inspection. The supplier shall under take to replace the rejected consignment at his own cost and the rejected material shall be taken back by the supplier after fulfilling the commercial terms and conditions.</p> <p>14.0 REFERRED STANDARDS: The following is the list of the latest standards, as published by the respective issuing bodies, referred to in this specification.</p> <p>1) IS:190 2) IS:287 3) IS:707 4) IS:2500 5) IS:3364 6) IS:6662</p> | | |

**EXPANDED POLYESTRENE (THERMOCOLE) - TYPE 2****1. GENERAL :**

This specification governs the quality of Expanded Polystyrene (Thermocole), Type 2 Sheets.

2. APPLICATION :

Used for general packing purpose.

3. COMPLIANCE WITH NATIONAL STANDARDS :

The material shall comply with the requirements of the following national standard and also meet the requirements of this specification.

IS : 4671-1984

(Reaffirmed 1990)

Type 2.

EXPANDED POLYSTYRENE FOR THERMAL
INSULATION PURPOSES.

4. DIMENSIONS AND TOLERANCES :

Thickness x Width x Length shall be specified on the order.

4.1 Sizes

Length x width : 1000 x 500 mm

However any other size can also be ordered.

4.2 Thickness

Thickness of the sheet shall be 15, 20, 25, 40, 50, 60, 75 & 100mm.

4.3 Tolerance:

Tolerance in length, width & thickness; \pm 2mm.

5. TEST SAMPLES :

One sheet of 200 x 200 mm shall be taken for testing from each consignment.

6.0 Properties :**6.1 BULK DENSITY**

When tested in accordance with the method prescribed in IS : 5688, Bulk Density shall be 15kg/.. m³.

A tolerance of + 5 % shall be allowed on bulk density.

6.2 FLAMMABILITY:

The material shall be of self extinguising type when tested by the method prescribed in Appendix F of IS : 4671.

7. TEST CERTIFICATES :

Unless otherwise stated, three copies of test certificates shall be supplied giving the following information.

Revision:

Refer cl. 4.2.1.10
of MOM WG (T & PM)

Approved:

INTERPLANT MATERIAL RATIONALISATION
COMMITTEE - WG (T & PM)

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CORP.R&D

NOV, '86

AA 51416

Rev. No. 01

PAGE 2 OF 2

CORPORATE PURCHASING SPECIFICATION



AA : 51416 (Rev. No. 01) : EXPANDED POLYSTYRENE (THERMOCOLE) - Type 2.

BHEL Order No.

Manufacturer's/Suppliers Name & Trade Mark, if any :

Batch No.

Test results of clauses 4 & 6.

8. PACKING & MARKING :

The sheets shall be securely and suitably packed in order to avoid damage during transit. Each package shall be legibly marked with the following information :

AA 51416 : EXPANDED POLYSTYRENE (THERMOCOLE) - Type 2

BHEL Order No.

Manufacturer's/Supplier's Name

Trade mark, if any :

Batch No.

Size & quantity :

No. of sheets :

**VOLATILE CORROSION INHIBITOR (VCI) TREATED PAPER****1.0 GENERAL:**

This specification governs the quality of Volatile Corrosion Inhibitor (VCI) Treated Paper Which is coated or impregnated with corrosion inhibitor which emits its vapour to the metal surface when kept in enclosed space.

2.0 APPLICATION:

Used as packaging papers which when wrapped around ferrous metal components provide temporary protection to them against corrosion for short period.

3.0 COMPLIANCE WITH NATIONAL STANDARD:

The material shall comply with requirements of following National standard and also meet requirements of this specification

IS 6263-1972 Re affirmed 2004: Volatile Corrosion Inhibitor (VCI) treated Paper Heavy duty, Class I

4.0 FREEDOM FROM DEFECTS:

4.1 Sheets shall not stick together to such an extent that causes tearing or injury to the sheets when unrolled or separated.

4.2 Paper shall not show any appreciable loss of coating or impregnate in normal handling operations.

4.3 The paper shall not produce obnoxious vapors in such concentration so as to cause annoyance or health hazard to the persons handling them.

5.0 DIMENSIONS AND TOLERANCES

5.1 **WIDTH:** 1000mm unless otherwise specified. Tolerance ± 3 mm

5.2 **Length/Roll:** 100meter

6.0 TEST SAMPLES:

One square meter of treated paper shall be supplied for testing/approval purposes.

7.0 PROPERTIES:

When tested with test method shown against each the test sample show following Properties

7.1 **Burst Factor (IS:1060 Part 1):** 30 Minimum

7.2 **Tear Factor (IS:1060 Part 1):** 120 Minimum

Revisions :

Cl: 8.5 of 8th MOM of WG-T&PM

APPROVED :

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Nov., 1986

| | | |
|-------------|---|---|
| AA 51406 | CORPORATE PURCHASING SPECIFICATION |  |
| Rev. No. 02 | | |
| PAGE 2 OF 2 | | |

7.3 pH of Water Extract(IS1060 Part 1): 7±1

7.4 Vapour Inhibiting Ability (IS 6263)

To be passed the test if no corrosion observed on surface

7.5 Contact Corrosivity (IS 6263)

To be passed the test if contact area within scribe marks on the test panel is not corroded.

8.0 INSPECTION AT SUPPLIER'S WORKS:

Whenever specified, tests and inspection are to be conducted in the presence of BHEL's representative.

The supplier shall offer BHEL's representative all reasonable facilities, without charge to satisfy the latter that the material is being furnished in accordance with this specification. The supplier shall prepare and provide necessary test specimens for testing to be carried out at his premises. If facilities are not available at his works, the supplier shall make Necessary arrangements for carrying out the prescribed tests elsewhere. The supplier shall notify BHEL in advance about the readiness of the material for inspection and testing. BHEL reserves the right to test the material at BHEL's work and the final acceptance of the material shall be based on these test results.

9.0 TEST CERTIFICATES:

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

In addition the supplier shall ensure to enclose one copy of test certificate along with their despatch documents to facilitate quick clearance of the material.

AA 51604 (Rev. No. 02) : Volatile Corrosion Inhibitor(VCI) Treated Paper

BHEL order no.

Manufacturer's / supplier's name.

Trade mark, if any.

Batch / lot no and consignment / identification No.

Test results of clauses 4,5 & 7

10.0 PACKING AND MARKING:

Each roll and package shall be packed suitably to avoid ingress of moisture during transit

and storage. Each package shall be marked with following.

AA 51604 : Volatile Corrosion Inhibitor (VCI) Treated Paper

BHEL Order No.

Manufacturer's / supplier's name.

Batch / lot No.

Trade mark, if any.

Sizes and quantity supplied

Caution: Use adequate ventilation. Wash hands with soap and water after use. Store paper in cool and dry place.

11.0 REFERRED STANDARDS (Latest Publications Including Amendments):

1. IS: 6263

2. IS: 1060



CORPORATE PURCHASING SPECIFICATION

AA 51408

Rev. No. 02

PAGE 1 OF 4

POLYETHELENE FILM - LOW DENSITY

1.0 GENERAL:

This specification governs the quality requirement of flexible (non-rigid), low density polyethylene film suitable for use at temperatures -45°C to 90°C

2.0 APPLICATION:

Used for packing and allied purposes

Note: When the film is intended for use in fumigation purpose, film thickness above 175 microns shall be used

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

The material shall comply with the requirements of following National standard and also meet the requirements of this specification

IS: 2508 - 1984 (Re affirmed 2003) Low density polyethylene film Gr.001

4.0 DIMENSIONS AND TOLERANCES:

4.1 Sizes: Thickness, width and length shall be stated on our order.

4.2 Preferred Thickness and tolerances:

100, 125, 150, 175, & 200 micron with a tolerance of $\pm 20\%$

4.3 Preferred width:

900, 1000, 1500, 2000, 2500 & 3000 mm

| Width, mm | | Tolerances \pm mm |
|-----------|---------------|---------------------|
| Above | Upto and incl | |
| 900 | 1250 | 8 |
| 1250 | 2500 | 20 |
| 2500 | 3000 | 40 |

Revisions :

CL 8.5 OF 8th WG-T&PM

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Dt :

Year :

HARDWAR

Corp. R&D

DEC.1985



5.0 MANUFACTURE:

The low density polyethylene shall be manufactured from compound having polyethylene resin with additives to impart the additional qualities to the film such as slip, antioxidant, low water permeability, dust protection, transparency etc.

“BHEL” emblem of size A40 shall be embossed at an interval of 500mm along the length of film and 250 mm along its width. The colour of emblem shall be Air Craft Blue (Shade No.108) as per IS:5.

6.0 APPEARANCE AND FINISH:

The film shall be uniform in colour, texture and finish. And also shall be free from pinholes, undispersed raw material, streaks, foreign particles holes, and tears or blisters. The edge shall be free of nicks and cuts when seen with unaided eye.

7.0 COLOUR:

Unless otherwise specified, the film shall be supplied in natural colour (essentially colourless). Black colour or any other colour can also be ordered.

7.0 ODOUR:

The film shall be free from any objectionable odour.

8.0 TEST METHOD:

Unless otherwise specified, the tests shall be conducted in accordance with the relevant methods of IS:2508.

9.0 TEST SAMPLES:

One square metre (1sq.m) of ordered thickness shall be supplied for testing purpose.

10.0 PHYSICAL PROPERTIES

Density at 27°C

Natural and colour other than Black : 0.912 to 0.923 g/cc

?

Black colour : 0.922 to 0.937g/cc

?

**11.0 MECHANICAL PROPERTIES:****11.1 Tensile Strength at Break:**

| Direction | N/mm ² Min. | |
|-------------------------------|------------------------|---|
| Length wise/Machine (MD) | 11.77 | ? |
| Cross wise/Cross Machine (XD) | 8.33 | ? |

11.2 Elongation at Break (Min.)

| | |
|-------------------------|------|
| Machine direction | 200% |
| Cross-Machine Direction | 400% |

12.0 INSPECTION AT SUPPLIERS WORKS:

Whenever specified, tests and inspection are to be conducted in presence of BHEL's Representative.

BHEL representative shall have free access at all times while the work on contract is being Performed to all parts of manufacturer's works. The manufacturer shall offer BHEL's representative all reasonable facilities without charge to satisfy latter that the material is being furnished in accordance with this specification. The manufacturer shall prepare and provide necessary test specimen for testing to be carried out at his premises. If facility do not exist at his premises works, the manufacturer shall make necessary arrangements for carrying out the prescribed tests elsewhere. The manufacturer shall notify BHEL representative in advance about Readiness of the material for inspection and testing.

BHEL reserves the right to test the material at BHEL's works and the final acceptance of material shall be based on these tests results.

13.0 TEST CERTIFICATES:

Unless otherwise specified, three copies of test certificates shall be supplied with each consignment, indicating the following information:

- AA 51408 (Rev 02): Polyethylene film low density
- BHEL Order No.
- Batch / Lot No.
- Results of dimensional inspection
- Test results of clause 10 and 11



In addition supplier shall ensure to enclose one copy of test certificate along with their despatch documents to facilitate quick clearance of the material.

14.0 PACKING & MARKING :

To be supplied in rolls suitably packed to prevent damage during transit and storage. Each roll shall be tightly wound on centre bobbin and wrapped with thick packing paper properly tied with cotton lace.

Each roll shall be marked legibly with following information

Each drum shall bear the following information :

- * AA51408
- * BHEL order No.
- * Manufacturer's name and grade
- Batch / Lot No.
- Thickness
- Net Weight on Roll

15.0 REJECTION AND REPLACEMENT :

In the event of any film proving defective during the course of preparation, testing, subsequent use etc. such material shall be rejected notwithstanding any previous certification of satisfactory testing and/or inspection. The supplier shall undertake to replace the rejected film at his own cost and the rejected material shall be taken by supplier after fulfilling the commercial terms and conditions

16.0 REFERRED STANDARDS: (Latest Publications Including Amendments) :

- 1) IS: 5



CORPORATE PURCHASING SPECIFICATION

AA 514 14

REV. No. 02

PAGE 1 OF 4

CORRUGATED FIBRE BOARDS AND BOXES

1. GENERAL:

This specification governs the quality requirement of corrugated fibre boards, (sheets) and boxes.

2. APPLICATION:

Used as a cushioning material for general packaging purposes.

3. COMPLIANCE WITH NATIONAL STANDARDS:

The material shall comply with the requirements of the following National standard and also meet the requirements of this specification.

IS: 2771(Part-1)-1990) Corrugated fibre board boxes

4. DIMENSIONS & TOLERANCES:

As stated on order

5. CORRUGATIONS:

Double walled corrugated & B-flute (Narrow). If any other corrugation type is required, this shall be specified on our order.

6. MANUFACTURE:

6.1 BOARDS:

Boards shall consist of one or more sheets of fluted paper (fluting) stuck or interposed between two or more flat sheets of paper or board (liners), usually kraft. The liner or liners may be laminated with suitable adhesive capable of firmly adhering the various plies together. Sodium silicate or any other highly alkaline adhesive shall not be used.

6.2 BOXES:

As stated on order.

7. TEST SAMPLES:

One sheet/box shall be taken for testing and approval.

8. PROPERTIES:

The test samples shall show the following properties when tested in accordance with the relevant clauses shown against each.

Revision:

As per 5th meeting of WG(T&PM)

Approved:

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COMMITTEE - WG(T&PM)

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Dt.

Year:

BHOPAL

CORP. R&D

Nov. '86

8.1 BURSTING STRENGTH (IS:2771:Part-1):

| Type of Corrugated Board. | Mass Content Kg., Max. | Combined Internal Dimensions(L+W+D) mm, Max. | Bursting Strength (Kgf/cm ²),Min. |
|---------------------------|------------------------|--|---|
| Single wall or 3 ply | 5 | 635 | 6 |
| | 8 | 750 | 8 |
| | 10 | 1025 | 9 |
| Double wall or 5 ply | 15 | 1275 | 10 |
| | 20 | 1525 | 12 |
| | 25 | 1575 | 13 |
| Triple wall or 7 ply | 30 | 1650 | 14 |
| | 40 | 1775 | 17 |
| | 55 | 1900 | 24 |
| | 75 | 2150 | 29 |

Note:

- Boxes should be made with no single dimension exceeding 50 percent of the combined internal dimensions.
- For calculating the maximum combined dimensions for any intermediate mass content, for each 10 percent reduction in mass of contents below the maximum permitted for a box, the calculated combined dimensions from the table may be increased by 5 percent.

8.2 WATER ABSORPTION (IS:4006:Part-1,Method 6):

The increase in the mass of the board after the test shall not be more than 155 g/sq.m.

8.3 FLAP BEND:

The flaps shall not crack at the crease when bent through 90° inside and 90° out side. This test shall not be applicable to triple-wall or 7-ply boxes.

8.4 JOINT STRENGTH FOR BOXES:

The strength of the joint shall be observed by grasping a body or a cover in the hands, one on each side of the joint, and pulling it apart until the joint ruptures. The failure shall occur in the board and not in the fasteners. This test shall not be applicable for triple wall or 7-ply boxes.

9. RETESTS:

If only one box from the test sample fails to meet one or more of the test requirements of this specification further boxes shall be selected at random from the same consignment of boxes for testing for the defective property or properties. The number of additional boxes to be tested shall be twice the number from which the box from the original test sample fail.



10. INSPECTION AT SUPPLIER'S WORKS:

Whenever specified, tests and inspection are to be conducted in the presence of BHEL's representative. BHEL representative shall have free access at all times while work on the contract is being performed to all parts of the manufacturer works. The manufacture shall offer BHEL's representative all reasonable facilities, without charge, to satisfy the latter that the material is being furnished in accordance with this specification.

The manufacturer shall prepare and provide necessary test specimens for testing to be carried out at his premises. If facilities are not available at his works the manufacturer shall make necessary arrangements for carrying out the prescribed tests elsewhere. The manufacturer shall notify BHEL in advance about the readiness of the material for inspection and testing.

BHEL reserves the right to test the material at BHEL's Works and the final acceptance of the material shall be based on these test results.

11. TEST CERTIFICATES:

Three copies of test certificate shall be supplied unless otherwise stated on the order.

In addition, supplier shall ensure to enclose one copy of test certificate along with their dispatch documents to facilitate for quick clearance of the material.

The test certificate shall have the following information:

AA 514 14 (Rev.No.02) : Corrugated Fibre boards/boxes
 BHEL order No. :
 Supplier's References :
 Type of corrugation :
 Results of Dimensional Inspection :
 Test results as per clause 8 :

12. PACKING AND MARKING :

The board material shall be packed in bundles of 50 sheets, whereas the boxes shall be packed and supplied as agreed between BHEL and manufacturer. Each bundle/box shall be legibly marked with the following:

Spec. No. AA 514 14
 BHEL order No. :
 Supplier's Name :
 Quantity supplied :

**13. REJECTION AND REPLACEMENT :**

In the event of any board material/box proving defective during the course of preparation, testing or erection such material/box shall be rejected notwithstanding any previous certification of satisfactory testing and/or inspection. The supplier shall under take to replace the rejected consignment at his own cost and the rejected material shall be taken back by the supplier after fulfilling the commercial terms and conditions.

14. REFERRED STANDARDS:

The following is the list of the latest standards, as published by the respective issuing bodies, referred to in this specification.

- 1) IS: 4006 Part-1

POLYETHYLENE AIR BUBBLE FILM1. GENERAL:

This specification governs the quality of Polyethylene Air Bubble Film made of two layers of polyethylene sheathing with air bubbles entrapped with a uniform pattern to provide cushioning effect to the contents packed or wrapped in it. The film shall be chemically neutral and non-reactive with chemicals and alkalies at room temperature. The film shall be free from objectionable odour.

2. APPLICATION:

Used for packaging and allied purposes.

3. COMPLIANCE WITH NATIONAL STANDARDS:

The material shall comply with the requirements of the following national standard and also meet the requirements of this specification.

IS: 12787-1989 : Polyethylene Air Bubble Film.

4. DIMENSIONS AND TOLERANCES:4.1 Sizes:

Thickness, Width and Length shall be as stated on our order.

4.2 Thickness of Composite Film:

150 Microns Min.

4.3 Width And Tolerance:4.3.1 Preferred Width:

1500 mm.

4.3.2 Tolerance On Width:

± 20 mm

4.4 Bubble Diameter:

10 ± 1 mm

4.4.1 No Of Bubbles:

7000 Nos./m² minimum.

Revisions:

Approved:

**INTERPLANT MATERIAL WG(T&PM)
RATIONALISATION COMMITTEE**

Rev. No.

Rev. Date

Revised:

Prepared

BHOPAL

Issued

CORP. R&D

Date

Feb. '93

**5. APPEARANCE AND FINISH:**

The film shall be uniform in colour, and shall be free from pinholes, undispersed raw material, streaks, foreign particles, tears and blisters. The edges shall be free from nicks and cuts visible to the unaided eye.

6. COLOUR:

Unless otherwise specified, the film shall be of natural colour (essentially colourless). Any other colour may also be ordered as and when required.

7. ODOUR:

The film shall be free from any objectionable odour.

8. TEST SAMPLES:

1 Square metre of ordered thickness shall be supplied for testing and approval purposes.

9. PROPERTIES:

When tested in accordance with the relevant methods of IS: 1060 (Part 1) and IS: 2508, the material shall show the following properties.

9.1 Physical Properties:**9.1.1 Yield at 27°C:**

100 - 185 gm/m²

9.2 Mechanical Properties:**9.2.1 Bursting Strength:**

2500 kg/m²

9.2.2 Elongation at Break:

120% Min.

12. TEST CERTIFICATES:

Unless otherwise specified, three copies of test certificates shall be supplied with each consignment, giving the following information:

AA 514 26 : Polyethylene Air Bubble Film

BHEL Order No.

Batch/Lot No.

Test results of clauses 4, 10 and 11.

13. PACKING AND MARKING:

To be supplied in rolls suitably packed to prevent damage during transit and storage. Each roll shall be tightly wound on centre bobbin and wrapped with thick packing paper, properly tied with cotton laces.

Each roll shall be marked legibly with the following information:

AA 514 26 : Polyethylene Air Bubble Film

BHEL Order No.

Manufacturer's name and grade

Batch No./Lot No.

Thickness, Width and Length

Net weight of the roll.



CORPORATE PURCHASE SPECIFICATION

AA 556 19

Rev. No. 03

PAGE 1 OF 2

SILICA GEL – INDICATING TYPE

1.0 GENERAL :

This specification governs the quality requirements of Silica Gel – Indicating type, impregnated with cobalt chloride, Coating of cobalt chloride shall not come out easily by rubbing. The material shall be solid with grainy porous structure free from extraneous impurities.

2.0 APPLICATION:

Used as industrial desiccant in packages and transformer breathers.

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

The material shall comply, with the requirements of the following national standard and also meet the requirements of this specification.

IS: 3401-1992, Type: Indicating: Silica Gel

4.0 PARTICLE SIZE:

The standard size of the particle is 3 to 6 mesh (5.6 to 2.8mm).
When checked with 3mm sieve, residue shall be 99.5%, minimum.

5.0 TEST SAMPLES: As per IS:3401.

6.0 PROPERTIES:

When tested in accordance with the relevant clauses of IS:3401, the test sample shall show the following properties.

6.1 Colour: Blue.

6.2 Absorption Capacity of Moisture: 27% by weight, minimum.

6.3 Bulk Density: (For information only): 650±50 g/litre

7.0 TYPE TESTS:

7.1 Loss on drying at 150 + 5°C for 4 hours: 5% by weight, maximum.

Revisions :

Cl: 34.11.35 of MOM of MRC-CPO

APPROVED :

INTERPLANT MATERIAL
RATIONALISATION COMMITTEE-MRC (CPO)

Rev. No. 03

Amd.No.

Reaffirmed

Prepared
BHOPAL

Issued
Corp. R&D

Dt. of 1st Issue
June, 1987

Dt: 15.11.2005

Dt :

Year :2005

**8.0 KEEPING PROPERTY**

When stored in covered dry place in the original sealed containers under normal temperature conditions, the material shall retain the properties prescribed in this specification for a period of 12 months after the date of manufacture which shall be subsequent to the date of placement of BHEL order.

9.0 TEST CERTIFICATES:

Unless otherwise specified, three copies of test certificates shall be supplied alongwith each consignment giving the following information.

In addition, the supplier shall ensure to enclose one copy of test certificate along with their dispatch documents to facilitate quick clearance of the material.

AA 556 19, Rev No. 03 : Silica Gel – Indicating type

BHEL Order No.

Manufacture's/Supplier's Name.

Trade mark, if any

Batch/lot No.

Date of manufacture and expiry, if any

Test results of clause 4.0, 6.0 & 7.0.

10.0 PACKING AND MARKING:

The material shall be suitably packed in clean dry polythene bags of at least 100 micron thickness and sealed. These polythene bags shall be further packed in air tight synthetic material containers. The capacity of the containers shall be 5 or 10kg as specified in the BHEL order.

Each consignment shall be legibly marked or labeled with the with the following information:

AA 556 19: Silica Gel – Indicating type

BHEL Order No.

Manufacture's/Supplier's Name.

Trade mark, if any

Batch/lot No.

Date of manufacture and expiry, if any

Sizes and quantity supplied

11.0 REFERRED STANDARDS (Latest Publications Including Amendments):

1. IS:3401



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NON-CONIFEROUS TIMBER FOR GENERAL PACKING PURPOSES

1. GENERAL:

This specification governs the quality of non-coniferous timber supplied in the form of planks, battens, beams and sleepers.

2. APPLICATION:

Used for the manufacture of packing cases/crates.

3. COMPLIANCE WITH NATIONAL STANDARDS:

Assistance has been derived from the following Indian Standards in preparing this specification.

IS: 399 – 1963 : Classification of commercial timbers and their zonal distribution.

IS: 1326 – 1992 : Specification for non-coniferous sawn timber (Baulks and Scantlings)

IS: 5966 – 1993 : Specification for non-coniferous timber in converted form for general purposes.

IS: 6662 – 1993 : Timber species suitable for wooden packaging - Specification.

4. TERMINOLOGY:

For the purpose of this specification, the definitions given in IS: 707 (Glossary of terms applicable to timber and timber products) shall apply except for the beam which is defined as below.

Beam is defined as converted timber whose cross-sectional dimensions exceed 50 mm in both directions.

5. SPECIES:

The species of non-coniferous timber shall be as per annexure I.

Revisions:

**Cl. No. 11 added. Cl. No. 3, 7.1 & 12 revised.
Cl. No. 7.4 Deleted.**

Issued :

**STANDARDS ENGINEERING & IPR
COORDN. DEPARTMENT**

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Prepared:

Approved:

Dt of 1st issue

Dt. NOV. 09

Dt.

Year

VNR

DGM(E&CC)

MAY. 90

6. DIMENSIONS AND TOLERANCES:

6.1 Sizes: Width, thickness and length of timber shall be clearly stated on the order/drawing.

6.2 Tolerance:

6.2.1 Width:

| Width, mm | Tolerance, mm |
|-------------------------|---------------|
| 50, 75, 100 | + 3 |
| 125, 150, 200, 225, 250 | { + 6 - 3 |

6.2.2 Thickness:

| <u>Thickness, mm</u> | <u>Tolerance, mm</u> |
|----------------------------------|----------------------|
| 20, 25, 35, 40, 50 | + 3 |
| 75, 100, 125, 150, 175, 200, 250 | { + 6 - 3 |

6.2.3 Length:

Standard length:

1 to 12 metres in multiples of 0.5 metre.

Tolerance:

± 2% or ± 50 mm whichever is less.

Note: The minus tolerances for width, thickness and length shall not be permitted in more than 10% of the timber supplied.

7. SEASONING AND MOISTURE CONTENT:

7.1 Timber for packing purpose other than export orders:

The timber shall have a moisture content of 30% maximum for planks and battens and 35% maximum for beams within a depth of 15 mm from the surface excluding a length of 30 cm from each end, at the time of inspection any time in the year. The moisture content will be determined in accordance with IS:287, IS:11215. This does not apply to timber procured in sleeper form for further conversion.

7.2 Timber for packing purpose for export orders:

The moisture content shall not exceed the maximum of 18%.



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7.3 The moisture content % shall be specified in the order.

8. FREEDOM FROM DEFECTS:

Timber shall be free from the following defects:

Brashness, splits across the grain, shakes, cup, spring, twist insect attack, any kind of decay (rot) visible infection, open centre heart, centre heart on planks and any other defect.

The extent to which defects are permitted are given in Annexure II.

9. END COATING:

Timber shall be coated with any of the following effective compositions, upto a distance of 80 mm from each end or 20 mm more than the longest split, whichever is higher.

9.1 Thick coal tar or bituminous paint.

9.2 Resin and lamp black (10:1), melted, mixed and applied hot.

9.3 Hardened gloss oil.

9.4 Paraffin wax.

9.5 Molasses and lime (3:1).

10. END STRAPPING:

Timber above 200 mm x 200 mm cross section shall be strapped with steel clamps to prevent end splitting.

11. TREATMENT OF WOOD:

Supplier shall ensure the following:

All wood packaging material used in packaging of export consignments are required to be rendered free from all pests either by heat treatment or by fumigation with Methylene Bromide as per ISPM-15 (International Standards for Phytosanitary Measures) by the accredited fumigation agencies recognised by the Government. Supplier should submit certificate to that extent.

The treated wood packaging material shall carry prescribed treatment mark as per ISPM-15 in addition to standard markings of ISPM-15 on his material.

| | | |
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12. CERTIFICATES:

The supplier shall furnish a certificate with each lot/consignment in support of the type of species, treatment (Fumigation/Chemical) and moisture content.

13. MARKING:

The timber shall be marked/painted in order to identify the source of supply in accordance with our instructions.



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ANNEXURE - I

**SPECIES OF NON-CONFEROUS TIMBER RECOMMENDED FOR HEAVY PACKING
CASES/CRATES**

| Sl. No. | Botanical Name | Standard Trade Name | Local Names | Abbreviated Symbol |
|---------|----------------------------------|---------------------|---|--------------------|
| 1. | <u>Fagara burdrunga</u> | MULLILAM | MUTTILAM (Tamil), RHETSA (Telugu); BEPULI (Uudu) | MUY |
| 2. | Careya arborea | KUMBI | KUMBHI (Assam & Bengali), KAMBI (Hindi) | KUM |
| 3. | Syzygium Cumini | JAMAN | JAMUN (Hindi & MP); JAMUK (Assam); JAM (Bengali); KUDA (Koli); JAMU (Oriya); JAMBU (Gujarati); NERLU, NERULA (Kannada); JAMBUL (Marathi); NAVAL (Malayalam & Tamil); NEREDU (Telugu) | JAM |
| 4. | Apha – namixis Polystachya | PITRAJ | BOGA, AMARI (Assam); LOCHUNI, LOSHUNE (Bengali); RAKTATOHIDA (Marathi), MULLUMUTTAGA (Kannada); KARAGIL (Malayalam), VEKKALI, VELLAKONGU (TAMIL) | PIT |
| 5. | Albizzia procera | SAFID- SIRIS | SAFED- SIRIS (Hindi); SIT (Andamans); KOROI (Assam & Bengali); TENTHRA (Koli); DHALASIRISH (Oriya); KINHAI, KILAI (Marathi); GURER (MP); KARANGRO (Gujarati); BELLATI, SALVAGAI (Kannada); VELLAVAKA (Malayalam); VELVAGAI (Tamil); TELLACHINDUGA (Telugu) | SSI |
| 6. | Terminalia bellirica | BAHERA | BAHERA (Hindi & Marathi); BHAIRA (Punjabi); BHOMARA (Assam); LUMPUNG (Koli); BAHADA (Oriya); BAHETA (Gujarati); THARE, TARE, TARI (Kannada); BAHELA (Marathi); THANNI (Malayalam); TANI (Tamil & Telugu) | BAH |
| 7. | Logerstroemia parviflora | LENDI | ASIDH, DHAURI'SIDA (Hindi); MECHI (Assam); SIDHA (Bengali & Oriya); GARASEKRE (Koli); BURI – DHAMERO (Nepali); LENDIA – SENHA (Marathi); KALIASAJA, LENDI (MP) BONDARO (Gujarati); NANAGU (Malayalam); PEIKADUKKAI (Tamil); CHENNANGI (Kannada & Telugu) | LEN |

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| Sl. No. | Botanical Name | Standard Trade Name | Local Names | Abbreviated Symbol |
|---------|---------------------------|---------------------|---|--------------------|
| 8. | Acrocarpus Fraxini folius | MUNDANI | MANDANE (Nepali); BELANJI (Kannada); KURANYAN, MALAVEPPU (Malayalam); MALAMKOMAI (Tamil) | MUN |
| 9. | Dysoxylum Mala baricum | WHITE CEDAR | BILIDEVADARI (Kannada); VELLA – GIL (Malayalam & Tamil) | WCE |
| 10. | Mangi fera India | MANGO | AM (Hindi & Assam); AMB (Punjabi); ULI (Koli); AMBA (Oriya & Marathi); MAVU (Kannada) MAMARAM (Tamil); MAMIDI (Telugu) | MAN |
| 11. | Lagerstroemia Speciosa | JARUL | AJHAR (Assam); GARASEKRE (Koli); PUNIPATULI (Oriya); NIRMARUTHU (Malayalam); POOMARUTHU, PUMARUDU (Tamil) | JAR |
| 12. | Adina Corodifolia | HALDU | HALDU, KARAM (Hindi); TARAK COPA (Assam); RANGKAT (Bengali) KUMBHA (Koli); KURUMA (Oriya); HALDU, HEDU (Marathi); KARAM (MP); HALWDWAR, HALDWAN (Gujarathi); HEDDI, YETAGAL, YETTAGA (Kannada); BIMBU (Malayalam); KADAMBERI, MANJAKADAMBAI (Tamil); HALDAWA (Urdu); BANDARU (Telugu) | HAL |
| 13. | Dipterocarpus Indicus | GURUJAN | GARJAN (Assam); YENNEMARA (Coorg); KALPAYINI, KALPINE (Malayalam); ENNEY, VELLAYINI (Tamil); KALPINE (Kannada); GURGAL (Urdu). | GUR |
| 14. | Lagerstroemia Lonceolata | BENTEAK | Nana (Gujarati & Marathi); NANDI, BENDEKU (Kannada); VENTEAK (Malayalam); BETHEKKU, VENTHEKHU (Tamil); BILLINANDI, BOLULTAR (Telugu) | BEN |
| 15. | Dipterocarpus macrocarpus | HOLLONG | HOLLONG (Assam) | HON |
| 16. | Mitragyna Parvifolia | KAIM | GURI, KALAM, PHALDU (Hindi); HAMSABETI (Koli); MITUKUNIA (Oriya) | KAM |



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| Sl. No. | Botanical Name | Standard Trade Name | Local Names | Abbreviated Symbol |
|---------|--------------------------------------|---------------------|--|--------------------|
| 17. | Terminalia procera | WHITE BOMBWEE | DADAM (Andaman) | WBO |
| 18. | Artocarpus hirsuta | AINI | HEBBALASU, HEBHULSINA (Kannada); PATHPHANAS (Marathi); AINIPILAVU (Malayalam); AINIPILA ANJILI (Tamil) | ANI |
| 19. | Terminalia Myriocarpa | HOLLOCK | PANISAG (Nepali) | HOL |
| 20. | Protium Serratum; Bursera Serreta | MURTENGA | ERRA KARRA (Telugu) | MUR |
| 21. | Grewia- Ti Lifolia | DHAMAN | TADA (Telugu); DADSAL, THADSAL (Kannada); CHADACHI (Malayalam) THADACHI (Tamil); PEDDA JANA (Telugu) | DHA |
| 22. | Albizialebeck | KOKKO | SIRIS (Hindi & Oriya); SARIN, SHRIN (Punjabi); HIRIH (Assam); SIRISH (Bengali); CHICHOLA (Marathi); BAGE (Kannada); VAKA (Malayalam); VAGAI (Tamil); DIRISINAM (Telugu) | KOK |
| 23. | Holoptelea- Intergrifolia | KANJU | KANJU, PAPRI (Hindi); KUMKAR, RAJAIN (Punjabi); ANJAN (Bengali); CHIBIL, DHAURANJO (Oriya); PAPARA (Marathi); CHILWAL, CHIROL, KARANJI (MP) THAPSI (Kannada); AVAL (Malayalam) AYILI (Tamil) | KAJ |
| 24. | Schimawallich Choisy | CHILAUNI | GOGRA, MAKRISAL (Assam) | CHL |
| 25. | Xyliaxylocarpa | IRUL | KONGRA, TANGAN (Oriya); SURIA (Marathi); SAURIYA (MP) JAMBE (Kannada); IRUL (Tamil), KONDATANGEDU (Telugu) | IRU |
| 26. | Hopea | HOPEA | BOGIMAR (Kannada); IRUMBOGAM (Malayalam); VELLAI – GONGU (Tamil) | HOP |
| 27. | Teriminalia- tomentosa | LAUREL | ASNA, SAIN (Hindi); AISAN (Punjabi); HATANA (Koli); PUCCASAJ (Nepali); SAHAJA (Oriya); AIN, SADAR, SAJ (MP) KARUMARUDU (Malayalam); KARIMARUDU, MATTI (Tamil); NALLAMADDI (Telugu) | LAU |

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| Sl. No. | Botanical Name | Standard Trade Name | Local Names | Abbreviated Symbol |
|---------|----------------------|---------------------|---|--------------------|
| 28. | Shorearobusta | SAL | SAKHU, SAL, SAKHUA (Hindi); SARJAM (Koli); RAIGAL –A SARGI (Oriya) | SAL |
| 29. | Mesuaferrea | MESUA | GANGANE (Andaman); NAHOR(Assam); NAGESWAR, NAGKESAR (Bengali); NAGESWAR (Oriya); NAGASAMPIGI (Kannada); CHURULI (Malayalam); NANGAL, NANGU (Tamil); NAGAKESARI (Telugu) | MES |
| 30. | Terminaliapaniculata | KINDAL | HONAL, HONAGALU (Kannada); KINDAL (Marathi); PILLAMARUDU (Malayalam & Tamil); NALLAPULAGA (Telugu) | KIN |
| 31. | Grevillea robusta | A CUNN | SILVER OAK | SOA |

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ANNEXURE -II

PERMISSIBLE DEFECTS

| Sl. No. | Defects | Extent Permissible |
|---------|---|--|
| 1. | BOW | Shall be permissible upto a maximum of 2 mm for 300 mm length of the piece. |
| 2. | CUP | Shall not be permissible. |
| 3. | END SPLITS | The longest end split at each end shall be measured and the lengths added together. The total length of the longest end split shall not exceed 60 mm per metre of the length of the piece. |
| 4. | KNOTS | Live knots measuring from 20 to 35 mm in diameter and dead knots measuring upto 15 mm in diameter shall be permissible provided they are not so numerous or so grouped or located as to affect unduly the strength of the pieces. |
| 5. | BORER HOLE (DAED INFE- STATION) | Borer holes (dead infestation) shall be permissible, on one face only provided such holes are not deeper than 10 mm and are well scattered |
| 6. | SAP WOOD WANE | Shall be permissible. |
| 7. | WANE | Wane shall be permissible upto 1/5 of the width on a broad face, subject to a maximum of 60 mm and upto 1/3 of the width on the narrow face provided that one broad face and one narrow face is completely free from this defect. Wane shall not be present in more than 30% of the total number of pieces accepted at any one time. |
| 8. | CROSS GRAIN | Shall be permissible upto a maximum deviation of 1 in 10. |
| 9. | SURFACE CRACK | Depth of the deepest crack on any one face (excluding the ends) shall be permissible upto a maximum of 2 mm in case of planks and beams upto 50 mm thick, 3 mm for beams above 50mm and upto 100mm thick and 6mm for beams above 100mm thick. A continuous crack of any depth, all along the length, is not permissible. |



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HY55399

REV. No. 01

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**ECO-FRIENDLY VOLATILE CORROSION INHIBITOR (VCI)
RUSTOPAPER, POWDER AND DESICCANT**

1.0 GENERAL:

This standard lays down the conditions and quality requirements for eco-friendly VCI (Volatile Corrosion Inhibitor) type packing materials and method. The VCI supplier should supply bags coated with VCI chemical.

1.1 Volatile corrosion inhibitors are organic chemicals, which when present as vapour, inhibit the rusting of ferrous metals. The vapours form an extremely thin film over metal surface, especially those of iron and steel, thereby rendering them passive. Metal components are kept in closed box which contain vapours of the material. They also use paper or synthetic film wraps which have the VCI powder impregnated on them.

2.0 APPLICATION:

For rust preventive protection during and upto end of transportation cycle.

3.0 QUALITY REQUIREMENTS FOR RUSTOPAPER:

I - Physical Data:

- i) In general the VCI paper should conform to IS 6263 (1972).
- ii) Molecular weight/grammage: The paper should be multilayered as
 - a) Outer most layer paper: 100 gauge low density polyethylene film.
 - b) Penultimate outer layer: High density polyethylene tape woven fabric 10 x 10 mesh.
 - c) 2nd layer from inside: 100 gauge low density polyethelene.
 - d) Inner most layer: 60 gsm craft paper.
- iii) Melting point: 180°C to 190°C for the chemical impregnated.
- iv) Vapour density (Air = 1)

= 1.006 for the chemical impregnated.

Revisions:

Clause 1.0 amended.

Issued :

**STANDARDS ENGINEERING
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Prepared:

Approved:

Dt.of 1st Issue

Dt. FEB. 08

Dt.


Year:

DGM (CDC)

DGM (TS)

DEC. 2005

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- v) Colour : Optional.
 - vi) Bursting strength:
 - a) Maximum = 10.5 kg/sqcm
 - b) Minimum = 9.00 kg/sqcm
 - c) Average = 9.70 kg/sqcm
 - vii) Tear strength
(Average) = Direction 1 = 1280 gf
Direction 2 = 800 gf
 - viii) Vapour pressure/pH value = 1×10^{-4} at 20°C. pH between 7 to 7.5.
 - ix) Solubility (water) = < 5% by weight at 20°C for chemicals.
 - x) Odour = Slightly amine like.
 - xi) % volatile by volume = 99% by volume for chemicals.
 - xii) Flash point = > 100°C for chemicals.
 - xiii) Extinguishing media = H₂O, CO₂, dry chemical fighting agent.
- Toxicity Data
(For the chemical)
- xiv) LD-50-oral ingestion = 280 mg/kg (rats)
 - xv) Skin irritation = Moderate skin sensitisation in some people
 - xvi) Testing: As per Indian standard 5730 (1978)

PACKING AND MARKING:

The volatile corrosion inhibitor (VCI) treated paper shall be packed as agreed to between the purchaser and supplier.

- a) Class and size.
- b) Name of the manufacturer and trade mark, if any.
- c) Date of manufacture.

The package shall also be marked with following:

CAUTION: Use adequate ventilation. Wash hands, clean with soap and water after use. Store paper in a cool and dry place.



**PLANT PURCHASING
SPECIFICATION
HYDERABAD**

HY55399


Rev. No.01

PAGE 3 OF 5

4.0 QUALITY REQUIREMENTS FOR VCI RUSTO POWDER/VCI RUSTO TABLETS:

I Physical data:

| | | | |
|--------|-------------------------------------|---|---|
| i) | Appearance | : | Powder/Tablets |
| ii) | Chemical family | : | Amine salts |
| iii) | Current TLV (Threshold limit value) | : | 10 ppm or 40 kg/m ³ |
| iv) | Melting point | : | 180°C to 190°C |
| v) | Vapour density (Air = 1) | : | 1.006 |
| vi) | Colour | : | Optional |
| vii) | Vapour pressure/pH | : | 1 x 10 ⁻⁴ mm of Hg at 20°C/pH-7 |
| viii) | Solubility (water) | : | < 5% by weight at 20°C |
| ix) | Odour | : | Slightly amine like |
| x) | % volatile by volume | : | 99 |
| xi) | Flash point | : | > 100°C |
| xii) | Flammable limit | : | Not applicable |
| xiii) | Extinguishing media | : | H ₂ O, CO ₂ or dry chemical fire fighting agent. |
| xiv) | LD-50-oral ingestion | : | 280 mg/kg (rats) |
| xv) | TLV units (Threshold Limit Value) | : | 10 ppm or 40 mg/m ³ |
| xvi) | Skin irritation | : | Slight skin sensitisation in some people |
| xvii) | Stability | : | Stable |
| xviii) | Conditions to avoid | : | Avoid contact with strong acids or alkalis. |
| xix) | Hazardous decomposition | : | Oxides of nitrogen, CO & CO ₂ |

| | | |
|----------------|---|---|
| HY55399 | PLANT PURCHASING SPECIFICATION HYDERABAD |  |
| Rev. No.01 | | |
| PAGE 4 OF 5 | | |

- xx) Spill or leak precaution : Sweep up
- xxi) Waste disposal method : Can be disposed off with normal solid waste. Advised to dispose off in accordance with central/state/local pollution and environmental control regulations.
- xxii) Respirator type : Acid/organic vapour masks to avoid vapour, if required.
- xxiii) Eye protection : Safety glasses or goggles.
- xxiv) Gloves : Chemical resistant rubber etc.
- xxv) Storage temperature : Minimum = None
Maximum = 60°C
- xxvi) Average shelf life required : Minimum 12 months from the date of manufacture.
- xxvii) Precautions to be taken during handling/storing : Keep the container/packing tightly closed when not in use. Store below 60°C. Avoid contact with eatables.
- xxviii) Sampling, test conditions, compatibility with barrier materials preparation of test panel, test for compatibility with non-ferrous metals, test for thermal stability, test for vapour-inhibiting ability, test for contact corrosivity, sampling and no. of tests as per IS 5730 (1970).

5.0 MOISTURE REMOVER (DESICCANT):

5.1 Quality requirements:

- 5.1.1 Desiccant should not have adverse effect on plastic, paints or oil etc.
- 5.1.2 Should not be toxic and should be moisture free and environmental friendly. Should be safe to use.
- 5.1.3 pH value should be near neutral.
- 5.1.4 Weather changes particularly humidity can affect the product, if not properly stored. It should be stored in dry and ambient condition.
- 5.1.5 Small quantity of activated material compound should absorb large quantity of moisture.



**PLANT PURCHASING
SPECIFICATION
HYDERABAD**

HY55399

Rev. No.01

PAGE 5 OF 5

- 5.1.6 Should be supplied in ready to use sachets, for suspending at recommended dosage.
- 5.1.7 Melting point should be greater than or equal to 600°C.
- 5.1.8 Colour preferred is white or colourless.
- 5.1.9 Solubility: It should be insoluble.
- 5.2 pH (1% suspension in water) = 7
- 5.2.1 `Odour preferred is odourless.
- 5.2.2 Should not be volatile.
- 5.2.3 There should be no irritation to skin.
- 5.2.4 Should be stable in dry condition.
- 5.2.5 Waste disposal should be as per central/state/local pollution and environmental control regulations advised.
- 5.2.6 Eyes to be protected by safety goggles when using desiccant.
- 5.2.7 Gloves used during handling of desiccant should be chemical resistant rubber.
- 5.2.8 Average shelf life of the product should be 6 months from the date of manufacture.
- 5.2.9 Should not be sensitive to heat & light.
- 5.2.10 Keep containers/packing in a dry place.

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**PLANT PURCHASING
SPECIFICATION
HYDERABAD**

HY 78134

REV. NO. 00

PAGE 1 OF 2

HDPE SHEETS, COVERS/TARPAULINS

1.0 SCOPE:

This specification covers the requirements of quality and preferred sizes of HDPE (High Density Polyethylene) sheets, tarpaulins/covers used in packing and despatch of items/assemblies at BHEL, Ramachandrapuram, Hyderabad.

2.0 QUALITY REQUIREMENTS:

2.1 The HDPE sheets, tarpaulins/covers should comply in general with **IS 7903-2005**.

2.2 The HDPE sheets, tarpaulins/covers should be resistance to penetration by water.

2.3 The HDPE sheets, tarpaulins/covers should not tear when bent or folded.

2.4 The preferred sizes are as follows:

- a) 40 feet x 60 feet.
- b) 30 feet x 60 feet.
- c) 30 feet x 40 feet.
- d) 1.2 metres x 100 metres (roll).

Actual sizes to be procured will be mentioned in the purchase order.

2.5 The preferred colours are black or blue. The colour may be taken as mentioned in BHEL's purchase order.

2.6 The tarpaulin shall be as per variety no. of IS 7903, Table – 1 as mentioned in BHEL's purchase order.

2.7 Eyelets and rope lashings shall be fixed if mentioned in purchase order.

Revisions:

Issued :

**STANDARDS ENGINEERING & IPR
COORDINATION DEPARTMENT**

Rev.No.

Amd.No.

Reaffirmed:

**Prepared:
MANAGER
(CDC)**

Approved:

Date:

Dt.

Dt.

Year:

Sr. DGM (TS)

JUNE, 2012

HY 78134

REV. NO. 00

PAGE 2 OF 2

**PLANT PURCHASING
SPECIFICATION
HYDERABAD**



3.0 PACKING AND MARKING:

3.1 Each HDPE sheet/tarpaulin/cover shall be legibly marked at one corner on one side with the following:

- a) Supplier's name
- b) Batch number, year of manufacture
- c) Type and size

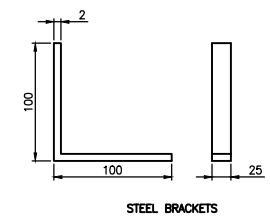
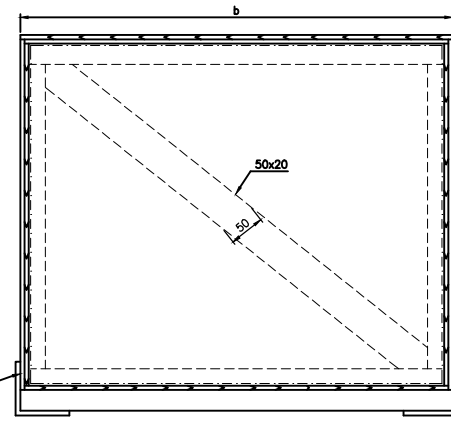
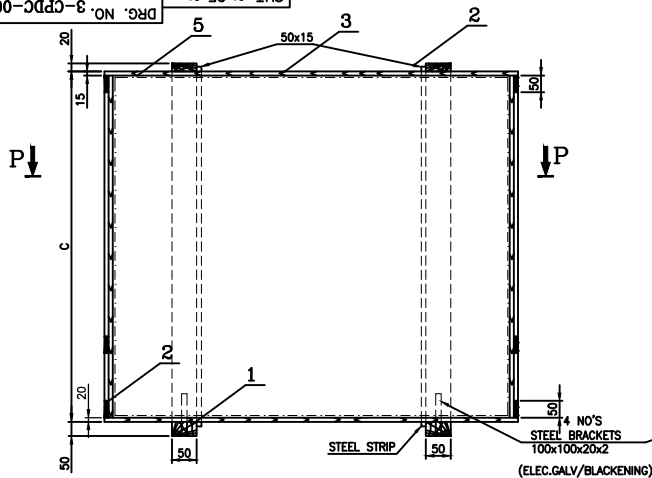
4.0 REFERRED STANDARD:

IS 7903-2005

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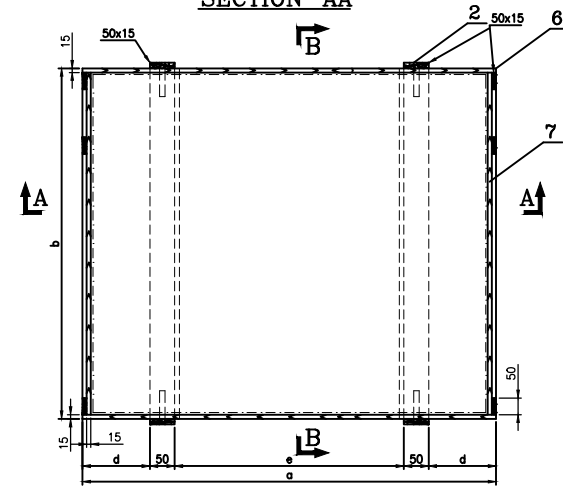
(ALL DIMENSIONS ARE IN mm)

DRG. NO. 3-CPDC-0049
SHT. 01 OF 02



SECTION-AA

SECTION-BB



PLAN AT P-P

NOTES:-

1. OUT SIDE DIMENSIONS a x b x c ARE TO BE MAINTAINED CORRECTLY.
2. WOOD TO HY:51463.
3. CASE TO BE LINED WITH HESSAIN BITUMEN POLYTHYLENE COATED KRAFT PAPER AT SIDES & BOTTOM – INSIDE & TOP (OUTSIDE) TO BE TURNED 80mm ON SIDES AND FIXED.
4. PLANKS 15mm THICK AT TOP & SIDES AND 20mm THICK AT BOTTOM.
5. PACKING INSTRUCTIONS AS PER HY:0490301.
6. COMPONENT PRESERVATION AS PER HY:0490563
7. WOODEN RUNNERS, BEAMS & PLANKS SHALL BE CHEMICALLY TREATED.

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

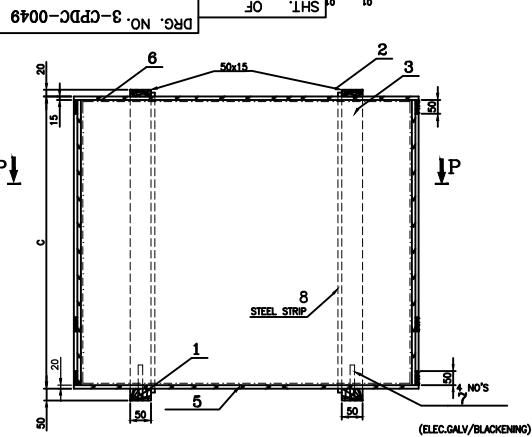
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| REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED |
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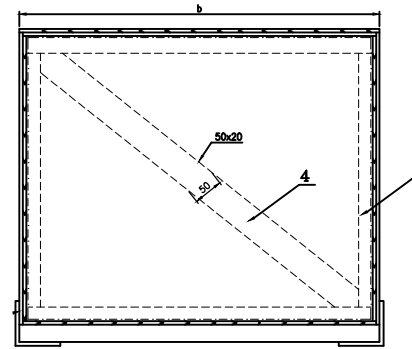
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| BHARAT HEAVY ELECTRICALS LTD. HYDERABAD | | NAME SIGN. DATE NO. OF VAR. | |
| DRN. MG 02.07.09 -NA- | | CHD. RR 02.07.09 -NA- | |
| APPD. KB 02.07.09 | | | |
| DEPT. CPDC 480C | UNTO. DIMS. OR. 9/4/11 | SCALE NTS | WEIGHT (KG) -NA- |
| TITLE PACKING CASE FOR MISCELLANEOUS ITEMS TYPE; VAR: 01 | | CARD CODE -NA- | REF. TO ASSY. DRG. -NA- |
| DRAWING NO. 3-CPDC-0049 | | REV. 00 | NO. OF ITEMS -NA- |
| SHT. No 01 | | NO. OF SHT. 02 | |

FIRST ANGLE PROJECTION

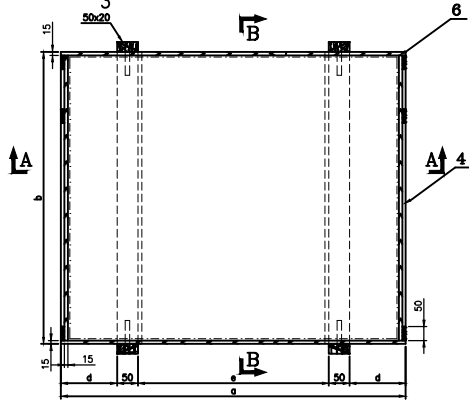
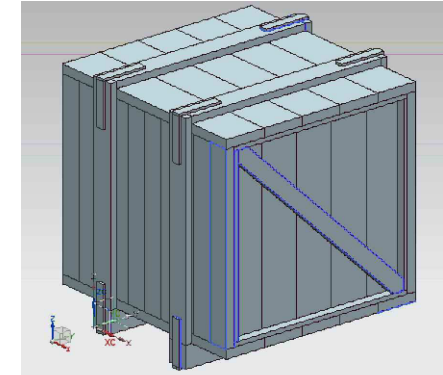
(ALL DIMENSIONS ARE IN mm)



SECTION-AA



SECTION-BB



PLAN AT P-P

NOTE FOR INDIGENOUS PAKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. BOTTOM PLANKS/RUNNERS AS PER SPEC HY51463 (NEEM, MADDI & ASSAM PINE ALSO CAN BE USED). SPEC AA51401 CAN BE USED FOR SIDE & TOP PLANKES ONLY AND NOT FOR BOTTOM PLANKS/RUNNERS
3. PAKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
4. PLANKS 25mm THICK AT BOTTOM AND 20mm AT SIDES AND TOP PLANKS.
5. POSITION NUMBER '8' M.S LIFTING ANGELS TO BE FIXED AT SUITABLE PLACES.
6. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PAKING CASE.
7. TOLERANCE IS +3 MM ON THIKCNSS OF PLANKS & RUNNERS,
8. GAPS BETWEEN PLANKS SHOULD NOT EXCEED 2MM

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

| | | | |
|---|--------------------------------------|-------------------|----|
| 8 | STEEL STRIP: 20 X 1.0 MM | Length as per Box | 2 |
| 7 | STEEL BRACKETS | 100x100x20x2 | 4 |
| 6 | SIDES & TOP PLANKS(min 100mm width) | 20mm THICK | 5 |
| 5 | BOTTOM PLANKS (min 100mm width) | 25mm THICK | 1 |
| 4 | BRACING AT EACH SIDES OF BOX | 50x20 | 10 |
| 3 | STRUT | 50x20 | 4 |
| 2 | HORIZONTAL TOP BATTENS | 50x15 | 2 |
| 1 | SKID | 50x50 | 2 |

| S.NO | ITEM DESCRIPTION | DIMENSIONS | QTY |
|------|------------------|------------|-----|
|------|------------------|------------|-----|

TYPE OF PRODUCT OR VOLUME UPTO 0.20 CMT

NAME OF CUSTOMER/PROJECT

| | | | | |
|--|----------|-------|----------|-------|
| BHARAT HEAVY ELECTRICALS LTD. HYDERABAD | NAME | SIGN. | DATE | NO.OF |
| | DRN. MG | | 02.07.09 | VAR. |
| | CHD. RR | | 02.07.09 | -NA- |
| | APPD. KB | | 02.07.09 | |

| | | | | | | |
|------------|-------------------------|-----------|------------------|-------------------------|---------------|------------------|
| DEPT. CPDC | UNTO. DIMS. OR. 8/11/11 | SCALE NTS | WEIGHT (KG) -NA- | REF. TO ASSY. DRG. -NA- | ITEM NO. -NA- | NO.OF ITEMS -NA- |
|------------|-------------------------|-----------|------------------|-------------------------|---------------|------------------|

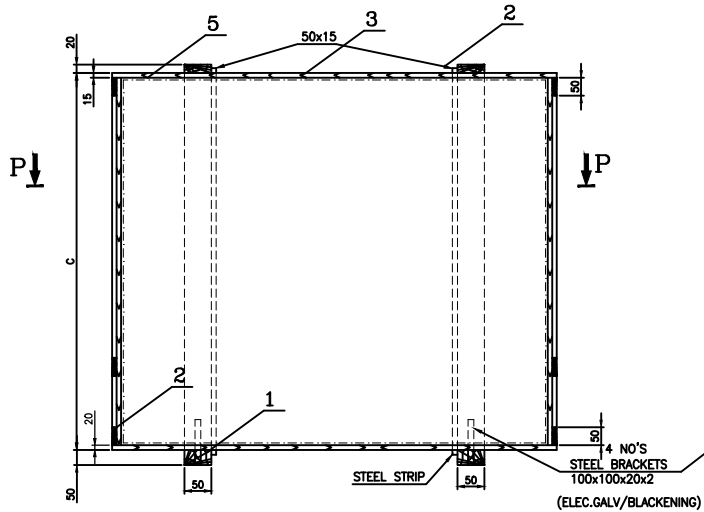
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|---|--|--|------------|----------------|------|
| TITLE | | | CARD CODE | DRAWING NO. | REV. |
| PACKING CASE FOR MISCELLANEOUS ITEMS TYPE; VAR-02 | | | -NA- | 3-CPDC-0049 | 00 |
| | | | SHT. No 02 | NO. OF SHT. 02 | |

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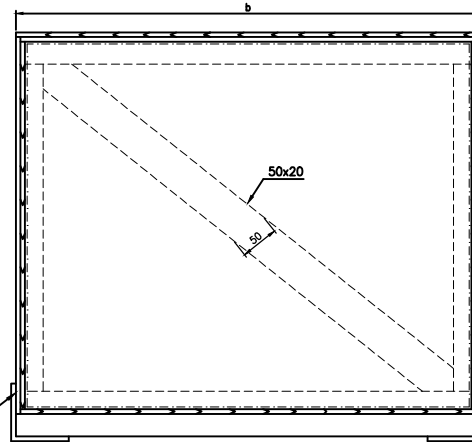
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

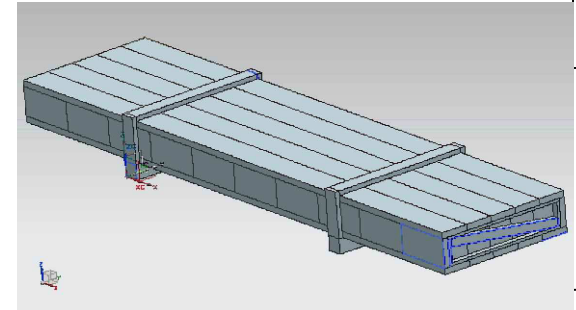
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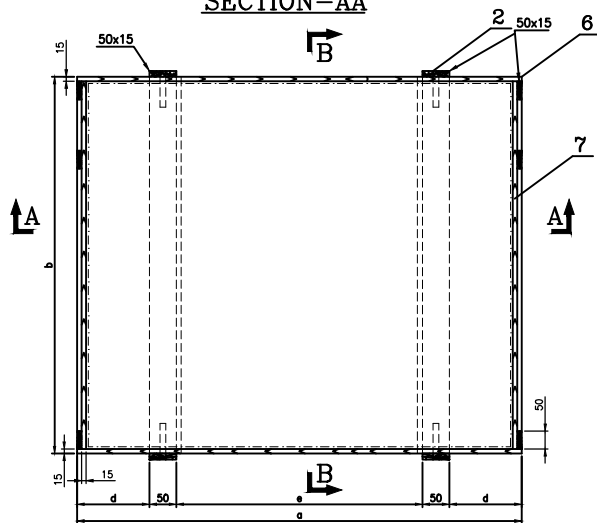
SECTION-AA



SECTION-BB



GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261



PLAN AT P-P

NOTES:-

1. OUT SIDE DIMENSIONS $a \times b \times c$ ARE TO BE MAINTAINED CORRECTLY.
2. WOOD TO HY:51463.
3. CASE TO BE LINED WITH HESSAIN BITUMEN POLYTHYLENE COATED KRAFT PAPER AT SIDES & BOTTOM - INSIDE & TOP (OUTSIDE) TO BE TURNED 80mm ON SIDES AND FIXED.
4. PLANKS 15mm THICK AT TOP & SIDES AND 20mm THICK AT BOTTOM.
5. PACKING INSTRUCTIONS AS PER HY:0490301.
6. COMPONENT PRESERVATION AS PER HY:0490563
7. WOODEN RUNNERS, BEAMS & PLANKS SHALL BE CHEMICALLY TREATED.

tolerance of plus or minus 10 mm on all dimensions. Gaps between planks shall not exceed 2 mm

| | | | | | | | | | |
|--|--|---------------------|--|-------------|--|------------------|--|-------------------------|--|
| TYPE OF PRODUCT OR RANGE: BETWEEN 0.01 CMT TO 0.20 CMT | | NAME | | SIGN. | | DATE | | NO. OF VAR. | |
| NAME OF CUSTOMER/PROJECT | | DRN. MG | | CHD. RR | | APPD. KB | | 02.07.09 | |
| Bharat Heavy Electricals Ltd. Hyderabad | | 02.07.09 | | 02.07.09 | | 02.07.09 | | -NA- | |
| DEPT. CPDC | | UNTO. DIMS. GR. 1/1 | | SCALE NTS | | WEIGHT (KG) -NA- | | REF. TO ASSY. DRG. -NA- | |
| CODE 480C | | 1/1 | | NTS | | -NA- | | -NA- | |
| TITLE | | CARD CODE | | DRAWING NO. | | REV. | | NO. OF ITEMS | |
| PACKING CASE FOR MISCELLANEOUS ITEMS TYPE VAR:03 | | -NA- | | 3-CPDC-0049 | | 00 | | -NA- | |
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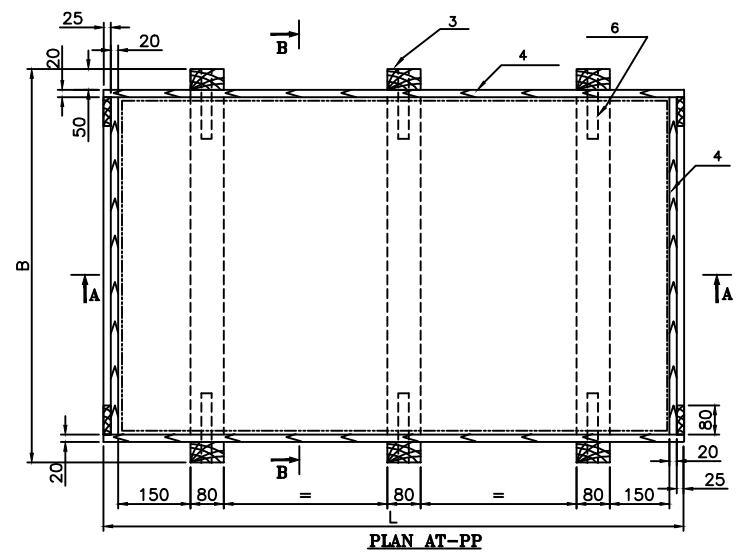
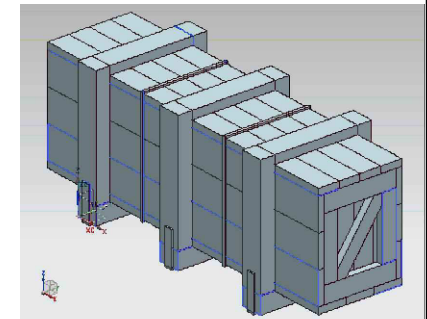
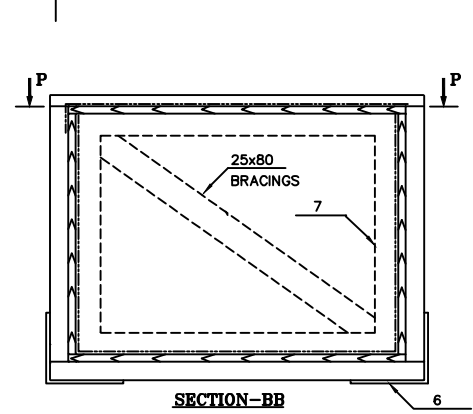
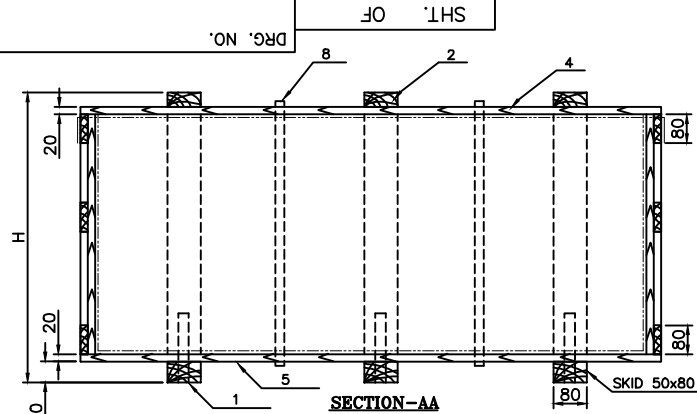
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| | | CHD/APPD | | | CHD/APPD | | | CHD/APPD | | | CHD/APPD | | | CHD/APPD |
| 1 | | | 2 | | | 3 | | | 4 | | | 5 | | |

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

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- NOTE FOR INDIGENOUS PACKING CASES:**
1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
 2. BOTTOM PLANKS/RUNNERS AS PER SPEC HY 51463 (NEEM, MADDI & ASSAM PINE ALSO CAN BE USED). SPEC AA51401 CAN BE USED FOR SIDE & TOP PLANKES ONLY AND NOT FOR BOTTOM PLANKS/RUNNERS
 3. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
 4. PLANKS 25mm THICK AT BOTTOM AND 20mm AT SIDES AND TOP PLANKS.
 5. M.S LIFTING ANGLES TO BE FIXED AT SUITABLE PLACES.
 6. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
 7. TOLERANCE IS +3 MM ON THICKNESS OF PLANKS & RUNNERS,
 8. GAPS BETWEEN PLANKS SHOULD NOT EXCEED 2MM.

| ITEM NO. | DESCRIPTION | DIMENSION | |
|----------|--------------------------------------|-----------------|-----------------|
| 8 | STEEL STRIP | 0.8mm Thk | As per Box Size |
| 7 | BRACING AT EACH ENDS | 25 X 80 | 10 |
| 6 | GALVANIZING/BLACKENING | 200X200X30X3.15 | 6 |
| 5 | BOTTOM PLANKS (min 100mm width) | 25mm THICK | As per Box Size |
| 4 | SIDES & TOP PLANKS(min 100mm width) | 20mm THICK | As per Box Size |
| 3 | STRUT VERTICAL | 50 X 80 | 6 |
| 2 | SKIDS TOP | 25 X 80 | 3 |
| 1 | SKIDS BOTTOM | 50 X 80 | 3 |

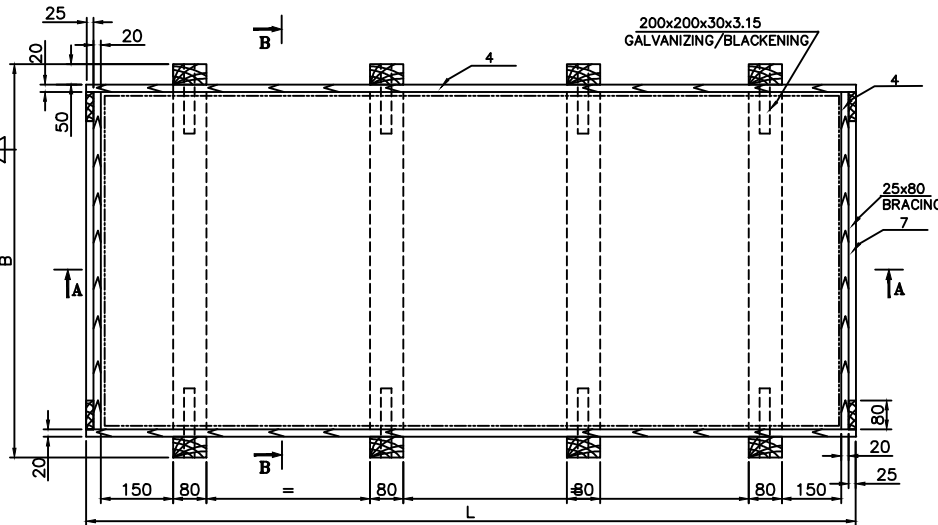
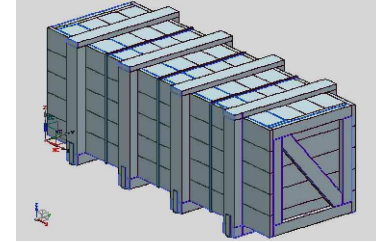
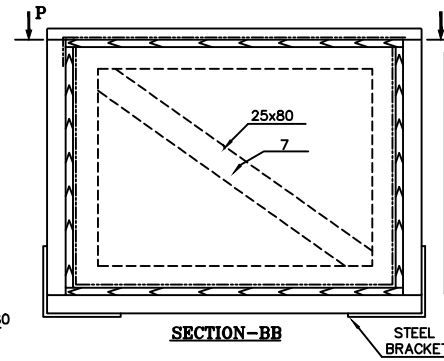
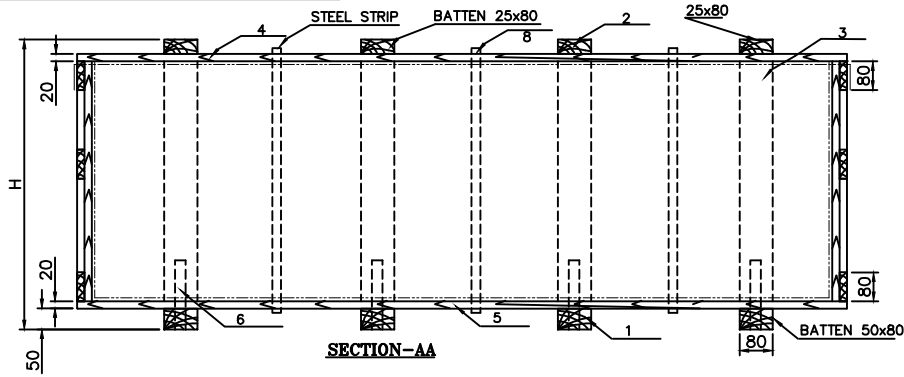
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT (VOLUME: 0.2 Cu.Mtrs TO 1.0 Cu.Mtrs)

| | | | | | | |
|--|-----------------------|-----------|------------------|--------------------|--------------------------------|----------------|
| BHARAT HEAVY ELECTRICALS LTD. HYDERABAD | NAME | SIGN. | DATE | NO.OF VAR. | | |
| | DRN. | MADHU | 01.05.13 | | | |
| | CHD. | RAGHAV | 01.05.13 | | | |
| | APPD. | KOUSHIK | 01.05.13 | | | |
| DEPT. CPDC 840 | UNTO. DIMS. GR. 2/M/7 | SCALE NTS | WEIGHT (KG) -NA- | REF. TO ASSY. DRG. | ITEM NO. | NO.OF ITEMS |
| TITLE INDIGENOUS NAILED CASES MEDIUM VAR:01 | | | | CARD CODE | DRAWING NO. 2-CPDC-0040 | REV. 00 |
| | | | | SHT. No. 01 | NO. OF SHT. 05 | |

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

DRG. NO. 2 - CPDC-040



PLAN AT-PP

NOTE FOR INDIGENOUS PAKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. BOTTOM PLANKS/RUNNERS AS PER SPEC HY 51463 (NEEM, MADDI & ASSAM PINE ALSO CAN BE USED). SPEC AA51401 CAN BE USED FOR SIDE & TOP PLANKES ONLY AND NOT FOR BOTTOM PLANKS/RUNNERS
3. PAKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
4. PLANKS 25mm THICK AT BOTTOM AND 20mm AT SIDES AND TOP PLANKS.
5. M.S LIFTING ANGLES TO BE FIXED AT SUITABLE PLACES.
6. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PAKING CASE.
7. TOLERANCE IS +3 MM ON THICKNESS OF PLANKS & RUNNERS,
8. GAPS BETWEEN PLANKS SHOULD NOT EXCEED 2MM.

| | | | |
|---|--------------------------------------|-----------------|-----------------|
| 8 | STEEL STRIP | 0.8mm Thk | As per Box Size |
| 7 | BRACING AT EACH ENDS | 25 X 80 | 10 |
| 6 | GALVANIZING/BLACKENING | 200X200X30X3.15 | 8 |
| 5 | BOTTOM PLANKS (min 100mm width) | 25mm THICK | As per Box Size |
| 4 | SIDES & TOP PLANKS(min 100mm width) | 20mm THICK | As per Box Size |
| 3 | STRUT VERTICAL | 50 X 80 | 8 |
| 2 | SKIDS TOP | 25 X 80 | 4 |
| 1 | SKIDS BOTTOM | 50 X 80 | 4 |

TYPE OF PRODUCT (ABOVE 0.2 Cu.Mtrs TO 1.0 Cu.Mtrs ONLY)
OR
NAME OF CUSTOMER/PROJECT

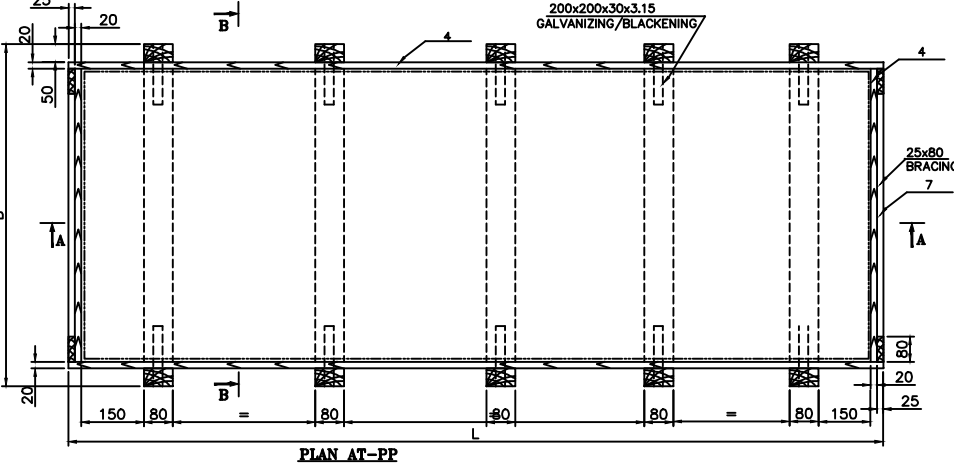
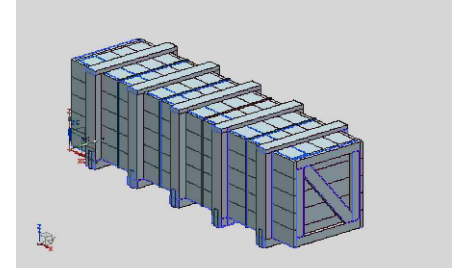
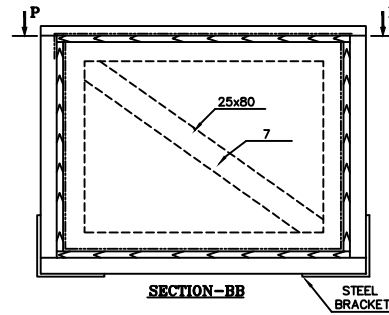
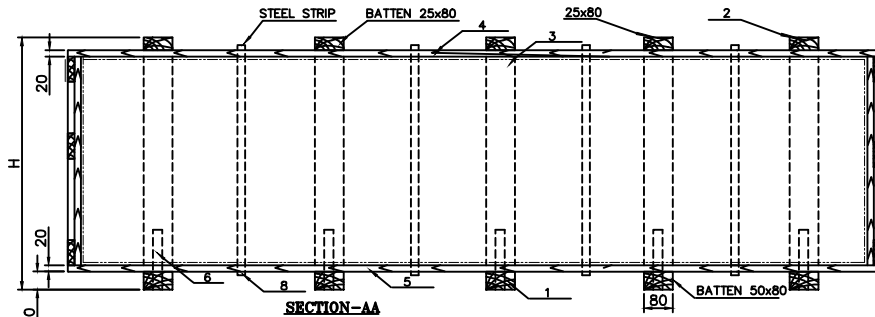
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|---|-------------------------------|--|--------------|---------------------|-----------------------------------|-------------------|-------------|
| | BHARAT HEAVY ELECTRICALS LTD. | | NAME | SIGN. | DATE | NO.OF VAR. | |
| | HYDERABAD | | DRN | MADHU | 01.05.13 | | |
| | | | CHD | RAGHAV RAM | 01.05.13 | | |
| | | | APPD | KOUSHIK | 01.05.13 | | |
| DEPT. CPDC CODE 840 | UNTO. DIMS. GR. ø/M/Y | | SCALE NTS | WEIGHT (KG) -NA- | REF. TO ASSY. DRG. | ITEM NO. | NO.OF ITEMS |
| TITLE NAILED CASE MEDIUM VAR:02 | | | | CARD CODE | DRAWING NO. 2-CPDC-0040 | REV. 00 | |
| | | | | | SHT. No. 02 | NO. OF SHT. 05 | |

INVENTORY NO. SIGN. AND DATE REF. DRG. NO. COMPUTER FILE NAME THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

FIRST ANGLE PROJECTION


(ALL DIMENSIONS ARE IN mm)

DRG. NO. 2 - CPDC-040 SHT. OF



| | | | |
|---|--------------------------------------|-----------------|-----------------|
| 8 | STEEL STRIP | 0.8mm Thk | As per Box Size |
| 7 | BRACING AT EACH ENDS | 25 X 80 | 10 |
| 6 | GALVANIZING/BLACKENING | 200X200X30X3.15 | 10 |
| 5 | BOTTOM PLANKS (min 100mm width) | 25mm THICK | As per Box Size |
| 4 | SIDES & TOP PLANKS(min 100mm width) | 20mm THICK | As per Box Size |
| 3 | STRUT VERTICAL | 50 X 80 | 10 |
| 2 | SKIDS TOP | 25 X 80 | 5 |
| 1 | SKIDS BOTTOM | 50 X 80 | 5 |

TYPE OF PRODUCT (ABOVE 0.2 Cu.Mtrs TO 1.0 Cu.Mtrs ONLY)
OR
NAME OF CUSTOMER/PROJECT

| | | | | | | |
|---|-------------------------------|-----------|------------------|--------------------|-----------------------------|-------------|
|  | BHARAT HEAVY ELECTRICALS LTD. | | NAME | SIGN. | DATE | NO.OF VAR. |
| | HYDERABAD | | MADHU | | 01.05.13 | |
| | | | RAGHAV RAM | | 01.05.13 | |
| DEPT. CPDC | UNTOL. DIMS. GR. Q/M/F | SCALE NTS | WEIGHT (KG) -NA- | REF. TO ASSY. DRG. | ITEM NO. | NO.OF ITEMS |
| 840 | | | | | | |
| TITLE NAILED CASES MEDIUM VAR:3 | | | | CARD CODE | DRAWING NO. 2 - CPDC-040 | REV. 00 |
| | | | | SHT. No. 03 | NO. OF SHT. 05 | |

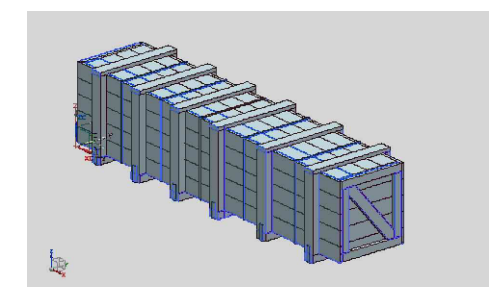
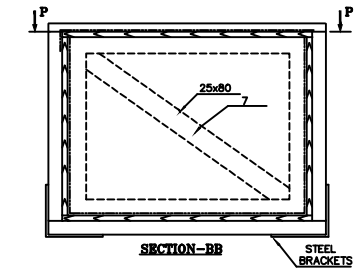
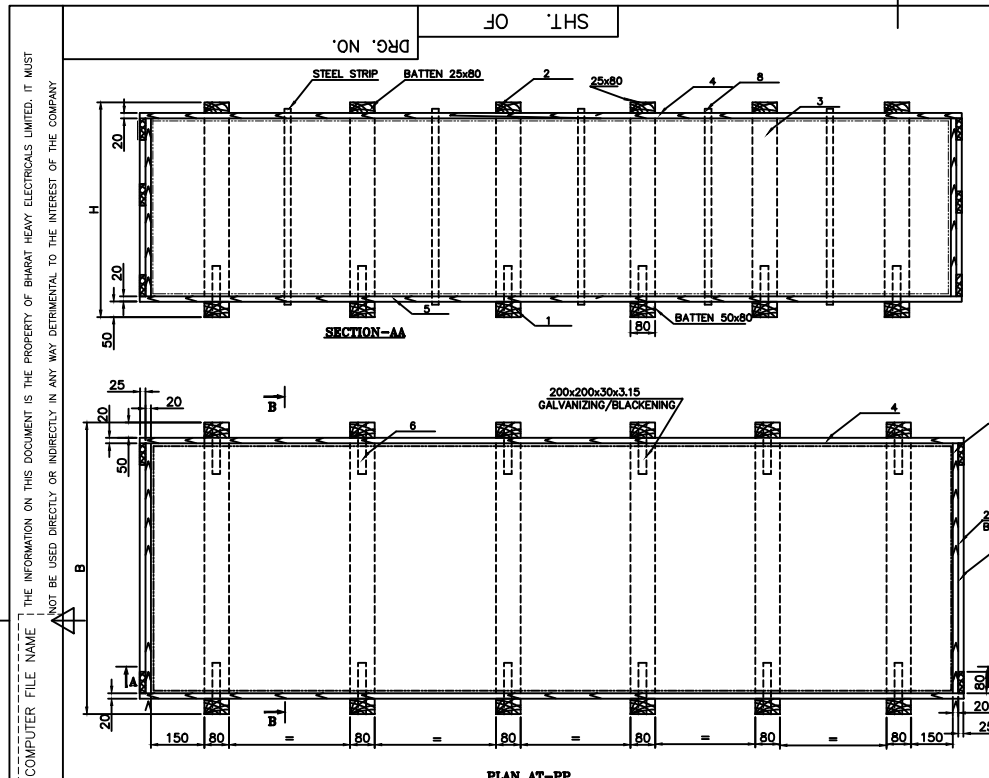
NOTE FOR INDIGENOUS PAKCING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. BOTTOM PLANKS/RUNNERS SHALL BE AS PER SPEC HY 51463 (NEEM, MADDI & ASSAM PINE ALSO CAN BE USED). SPEC AA51401 CAN BE USED FOR SIDE & TOP PLANKES ONLY AND NOT FOR BOTTOM PLANKS/RUNNERS
3. PAKCING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
4. PLANKS 25mm THICK AT BOTTOM AND 20mm AT SIDES AND TOP PLANKS.
5. M.S LIFTING ANGLES TO BE FIXED AT SUITABLE PLACES.
6. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PAKCING CASE.
7. TOLERANCE IS +/- 3 MM ON THICKNESS OF PLANKS & RUNNERS,
8. GAPS BETWEEN PLANKS SHOULD NOT EXCEED 2MM.

SIGN. AND DATE REF. DRG. NO. SN 30040
 COMPUTER FILE NAME THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY
 INVENTORY NO

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)



COMPUTER FILE NAME: THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.
 SIGN. AND DATE: REF. DRG. NO.
 INVENTORY NO.

- NOTE FOR INDIGENOUS PACKING CASES:**
1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
 2. BOTTOM PLANKS/RUNNERS AS PER SPEC HY 51463 (NEEM, MADDI & ASSAM PINE ALSO CAN BE USED). SPEC AA51401 CAN BE USED FOR SIDE & TOP PLANKS ONLY AND NOT FOR BOTTOM PLANKS/RUNNERS
 3. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
 4. PLANKS 25mm THICK AT BOTTOM AND 20mm AT SIDES AND TOP PLANKS.
 5. M.S LIFITING ANGLES TO BE FIXED AT SUITABLE PLACES.
 6. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
 7. TOLERANCE IS +3 MM ON THIKCNESS OF PLANKS & RUNNERS,
 8. GAPS BETWEEN PLANKS SHOULD NOT EXCEED 2MM.

| | | | |
|---|--------------------------------------|-----------------|-----------------|
| 8 | STEEL STRIP | 0.8mm Thk | As per Box Size |
| 7 | BRACING AT EACH ENDS | 25 X 80 | 10 |
| 6 | GALVANIZING/BLACKENING | 200X200X30X3.15 | 12 |
| 5 | BOTTOM PLANKS (min 100mm width) | 25mm THICK | As per Box Size |
| 4 | SIDES & TOP PLANKS(min 100mm width) | 20mm THICK | As per Box Size |
| 3 | STRUT VERTICAL | 50 X 80 | 12 |
| 2 | SKIDS TOP | 25 X 80 | 6 |
| 1 | SKIDS BOTTOM | 50 X 80 | 6 |

TYPE OF PRODUCT (ABOVE 0.2 Cu.Mtrs TO 1.0 Cu.Mtrs ONLY)
 OR
 NAME OF CUSTOMER/PROJECT

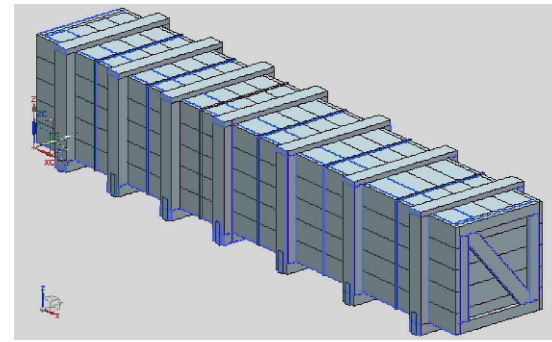
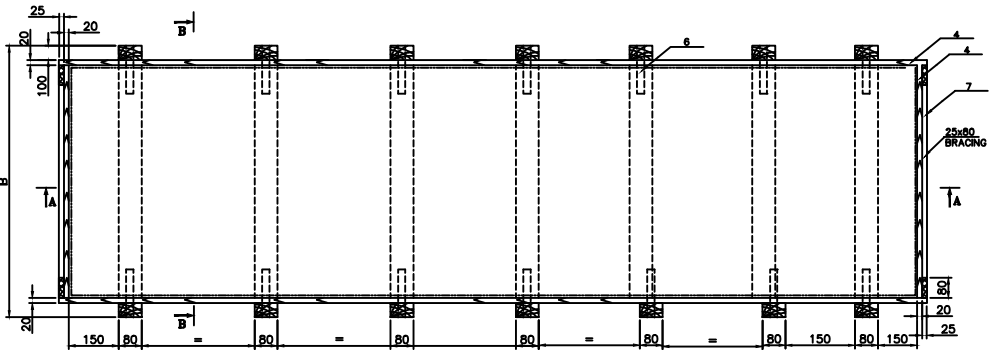
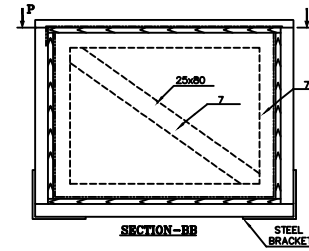
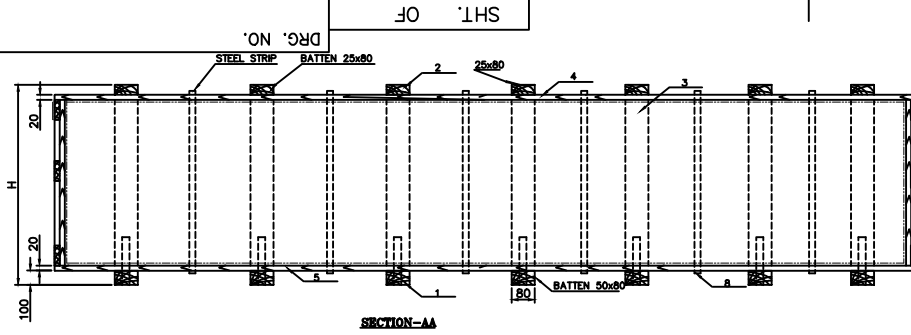
| | | | | | | |
|--|-----------------------|-----------|------------------|--------------------|----------|-------------|
| BHARAT HEAVY ELECTRICALS LTD. HYDERABAD | NAME | SIGN. | DATE | NO.OF VAR. | | |
| | DRN. MADHU | | 01.05.13 | | | |
| | CHD. RAGHAV | | 01.05.13 | | | |
| | APPD. KUSHIK | | 01.05.13 | | | |
| DEPT. CPDC | UNTO. DIMS. GR. 2/M/7 | SCALE NTS | WEIGHT (KG) -NA- | REF. TO ASSY. DRG. | ITEM NO. | NO.OF ITEMS |

| | | |
|--------------------------------------|-------------------|----------------|
| TITLE | DRAWING NO. | REV. |
| NAILED CASES MEDIUM VAR:4 | 2-CPDC-040 | 00 |
| CARD CODE | SHT. No. 04 | NO. OF SHT. 05 |

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

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 SIGN. AND DATE REF. DRG. NO. INVENTORY NO.



PLAN AT-PP

- NOTE FOR INDIGENOUS PAKING CASES:**
1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
 2. BOTTOM PLANKS/RUNNERS AS PER SPEC HY51463 (NEEM, MADDI & ASSAM PINE ALSO CAN BE USED). SPEC AA51401 CAN USED FOR SIDE & TOP PLANKES ONLY AND NOT FOR BOTTOM PLANKS/RUNNERS
 3. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
 4. PLANKS 25mm THICK AT BOTTOM AND 20mm AT SIDES AND TOP PLANKS.
 5. M.S LIFTING ANGLES TO BE FIXED AT SUITABLE PLACES.
 6. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
 7. TOLERANCE IS +3 MM ON THICKNESS OF PLANKS & RUNNERS,
 8. GAPS BETWEEN PLANKS SHOULD NOT EXCEED 2MM.

| | | | |
|---|--------------------------------------|-----------------|-----------------|
| 8 | STEEL STRIP | 0.8mm Thk | As per Box Size |
| 7 | BRACING AT EACH ENDS | 25 X 80 | 10 |
| 6 | STEEL BRACKET GALVANIZING/BLACKENING | 200X200X30X3.15 | 8 |
| 5 | BOTTOM PLANKS (min 100mm width) | 25mm THICK | As per Box Size |
| 4 | SIDES & TOP PLANKS (min 100mm width) | 20mm THICK | As per Box Size |
| 3 | STRUT VERTICAL | 80 X 100 | 8 |
| 2 | SKIDS TOP | 25 X 80 | 4 |
| 1 | SKIDS BOTTOM | 80 X 100 | 4 |

TYPE OF PRODUCT (ABOVE 0.2 Cu.Mtrs TO 1.0 Cu.Mtrs ONLY)
OR
NAME OF CUSTOMER/PROJECT

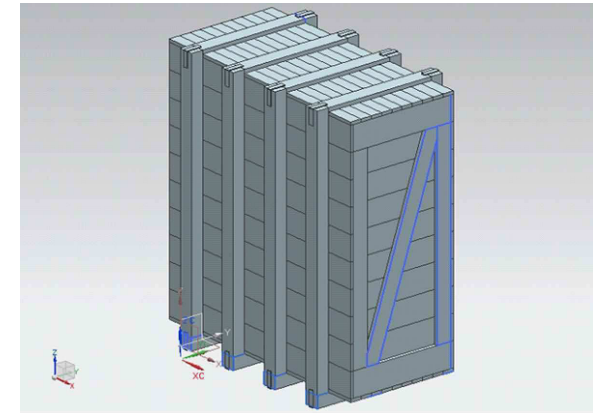
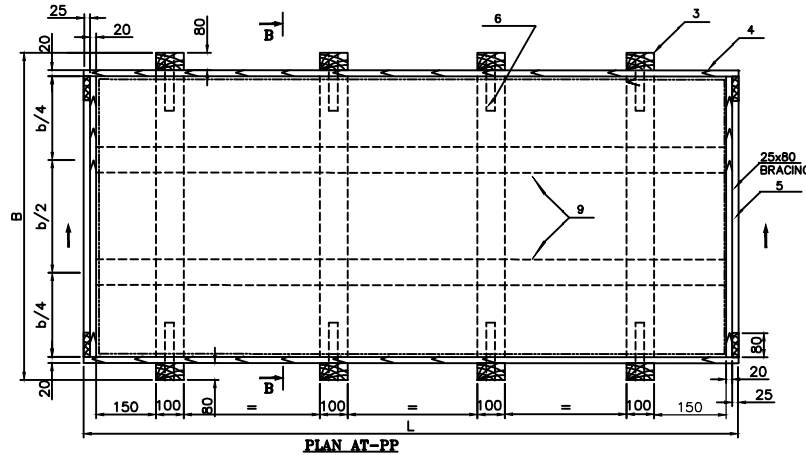
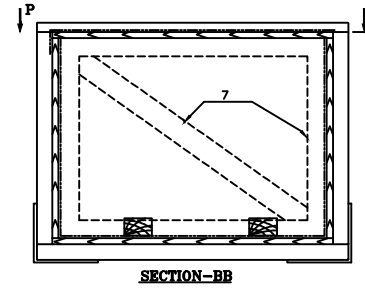
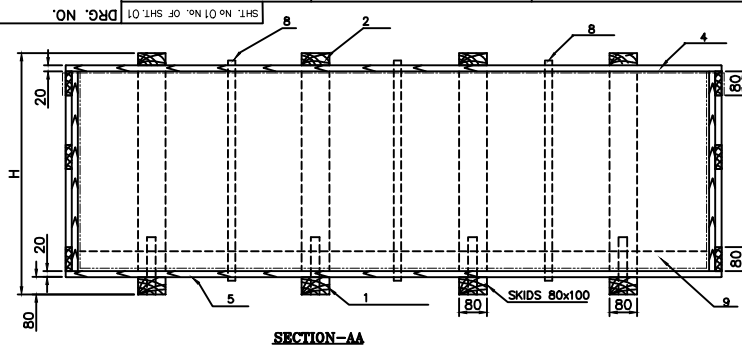
| | | | | |
|--|-------------|----------|----------|------------|
| BHARAT HEAVY ELECTRICALS LTD. HYDERABAD | NAME | SIGN. | DATE | NO.OF VAR. |
| | DRN. MADHU | | 01.05.13 | |
| | CHD. RAGHAV | | 01.05.13 | |
| APPD. KUSHIK | | 01.05.13 | | |

| | | | | | | |
|------------|-----------------------|-----------|------------------|--------------------|----------|-------------|
| DEPT. CPDC | UNTO. DIMS. GR. 2/M/7 | SCALE NTS | WEIGHT (KG) -NA- | REF. TO ASSY. DRG. | ITEM NO. | NO.OF ITEMS |
|------------|-----------------------|-----------|------------------|--------------------|----------|-------------|

| | | |
|----------------------------|-------------------|----------------|
| TITLE | CARD CODE | REV. |
| NAILED CASES MEDIUM | 2-CPDC-040 | 00 |
| VAR:05 | SHT. No. 05 | NO. OF SHT. 05 |

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)



GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

NOTE FOR INDIGENOUS PAKCING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. BOTTOM PLANKS/RUNNERS AS PER SPEC HY 51463 (NEEM, MADDI & ASSAM PINE ALSO CAN BE USED). SPEC AA51401 CAN BE USED FOR SIDE & TOP PLANKES ONLY AND NOT FOR BOTTOM PLANKS/RUNNERS
3. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
4. PLANKS 25mm THICK AT BOTTOM AND 20mm AT SIDES AND TOP PLANKS.
5. M.S LIFTING ANGLES TO BE FIXED AT SUITABLE PLACES.
6. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
7. TOLERANCE IS +3 MM ON THICKNESS OF PLANKS & RUNNERS,
8. GAPS BETWEEN PLANKS SHOULD NOT EXCEED 2MM.

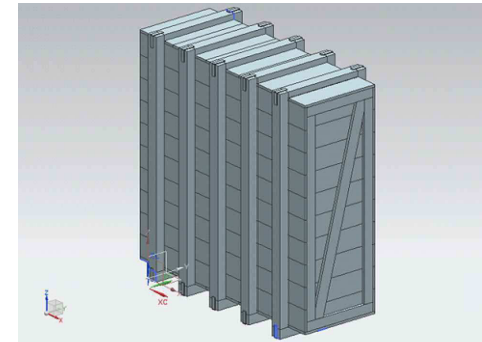
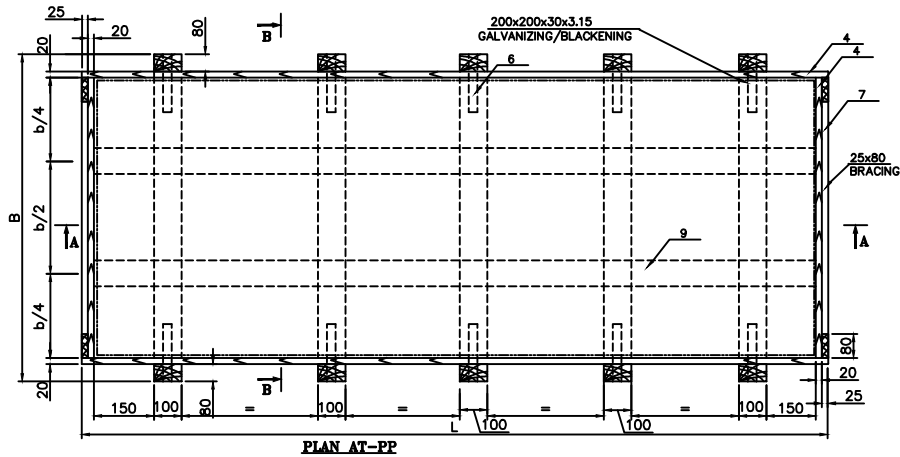
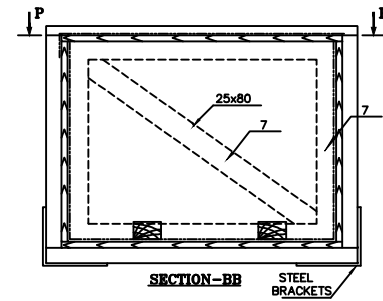
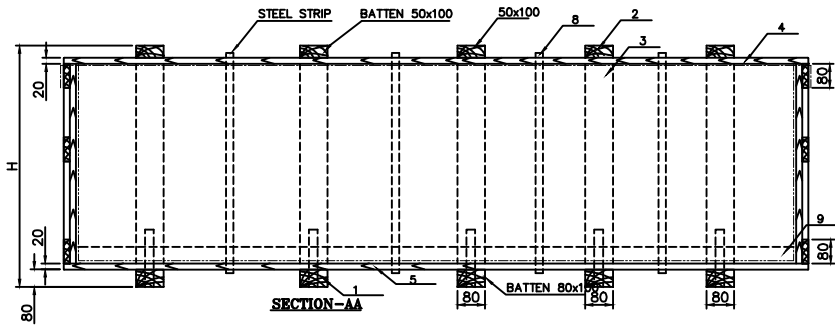
| | | | |
|---|--------------------------------------|-----------------|-----------------|
| 9 | SKIDS INSIDE | 80 X 100 | As per Box Size |
| 8 | STEEL STRIP | 0.8mm Thk | As per Box Size |
| 7 | BRACING AT EACH ENDS | 25 X 80 | 8 |
| 6 | GALVANIZING/BLACKENING | 200X200X30X3.15 | 8 |
| 5 | BOTTOM PLANKS (min 100mm width) | 25mm THICK | As per Box Size |
| 4 | SIDES & TOP PLANKS(min 100mm width) | 20mm THICK | As per Box Size |
| 3 | STRUT VERTICAL | 80 X 100 | 8 |
| 2 | SKIDS TOP | 25 X 80 | 4 |
| 1 | SKIDS BOTTOM | 80 X 100 | 4 |

| ITEM NO. | DESCRIPTION | DIMENSION | QTY | | | | | | | | | | | | | | | | | | |
|--|-----------------------|----------------|--------------------------------------|-----------------------|-------------|-------|------|-------------|------------|--|----------|--|-------------|--|----------|--|---------------|--|----------|--|--|
| TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT (ABOVE 1 Cu.Mtr to 4 CuMtr.) | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td rowspan="3"> </td> <td>NAME</td> <td>SIGN.</td> <td>DATE</td> <td>NO. OF VAR.</td> </tr> <tr> <td>DRN. MADHU</td> <td></td> <td>01.05.13</td> <td></td> </tr> <tr> <td>CHD. RAGHAV</td> <td></td> <td>01.05.13</td> <td></td> </tr> <tr> <td>APPD. KOUSHIK</td> <td></td> <td>01.05.13</td> <td></td> <td></td> </tr> </table> | | | | | NAME | SIGN. | DATE | NO. OF VAR. | DRN. MADHU | | 01.05.13 | | CHD. RAGHAV | | 01.05.13 | | APPD. KOUSHIK | | 01.05.13 | | |
| | NAME | SIGN. | DATE | | NO. OF VAR. | | | | | | | | | | | | | | | | |
| | DRN. MADHU | | 01.05.13 | | | | | | | | | | | | | | | | | | |
| | CHD. RAGHAV | | 01.05.13 | | | | | | | | | | | | | | | | | | |
| APPD. KOUSHIK | | 01.05.13 | | | | | | | | | | | | | | | | | | | |
| DEPT. CPDC | UNTO. DIMS. OR. 4/M/1 | SCALE NTS | WEIGHT (KG) REF. TO ASSY. DRG. | ITEM NO. NO. OF ITEMS | | | | | | | | | | | | | | | | | |
| TITLE NAILED RUNNER CASES VAR: 01 | | CARD CODE | DRAWING NO. 2-CPDC-0041 00 | | | | | | | | | | | | | | | | | | |
| SHT. No 01 | | NO. OF SHT. 04 | | | | | | | | | | | | | | | | | | | |

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

DRG. NO. 2 SHT. NO. 01 NO. OF SHTS. 10



NOTE FOR INDIGENOUS PAKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. BOTTOM PLANKS/RUNNERS SHALL BE AS PER SPEC HY 51463 (NEEM, MADDI & ASSAM PINE ALSO CAN BE USED). SPEC AA51401 CAN BE USED FOR SIDE & TOP PLANKS ONLY AND NOT FOR BOTTOM PLANKS/RUNNERS
3. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
4. PLANKS 25mm THICK AT BOTTOM AND 20mm AT SIDES AND TOP PLANKS.
5. M.S LIFTING ANGLES TO BE FIXED AT SUITABLE PLACES.
6. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
7. TOLERANCE IS +3 MM ON THIKCNSS OF PLANKS & RUNNERS,
8. GAPS BETWEEN PLANKS SHOULD NOT EXCEED 2MM.

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

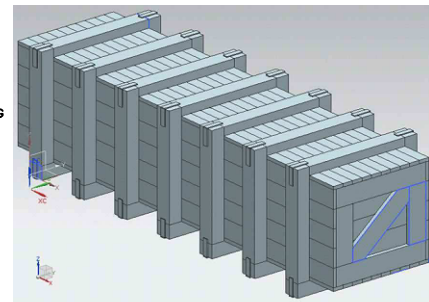
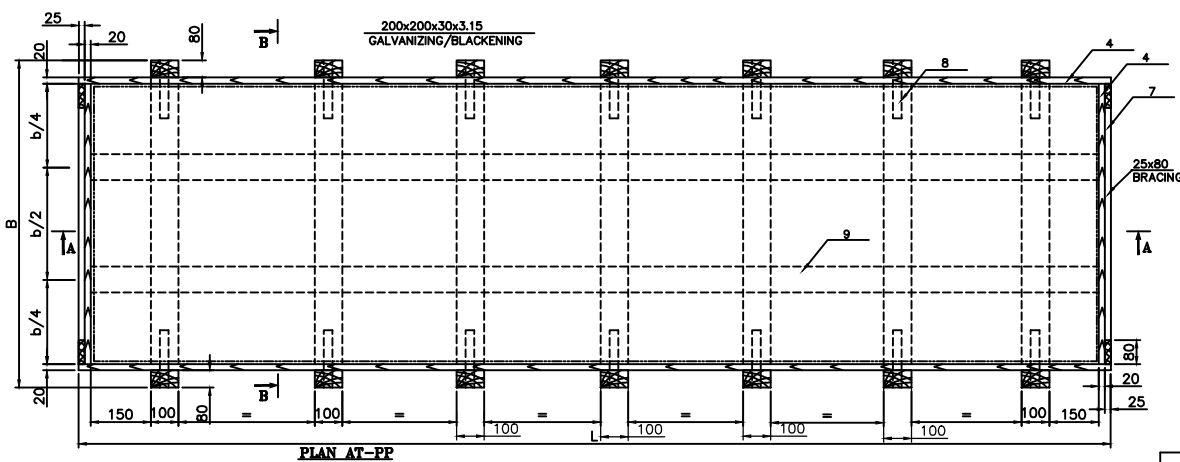
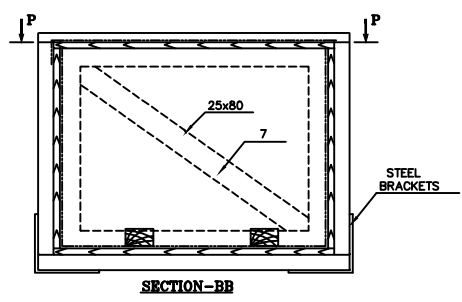
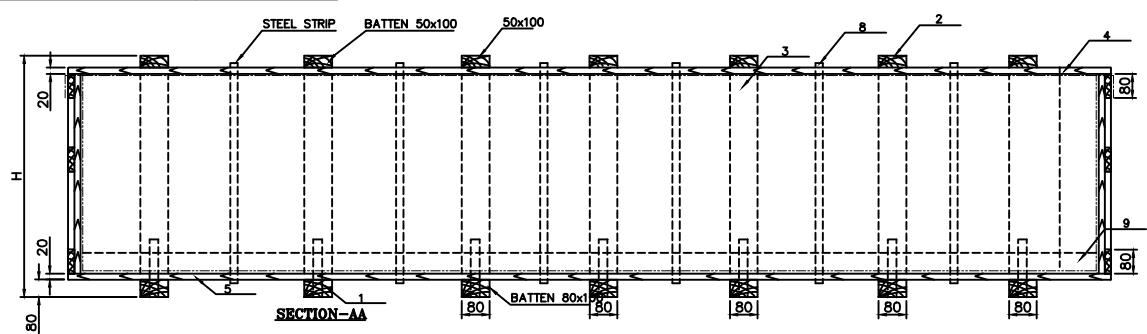
INVENTORY NO. SIGN. AND DATE REF. DRG. NO. COMPUTER FILE NAME THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY

| | | | |
|---|--------------------------------------|-----------------|-----------------|
| 9 | SKIDS INSIDE | 80 X 100 | As per Box Size |
| 8 | STEEL STRIP | 0.8mm Thk | As per Box Size |
| 7 | BRACING AT EACH ENDS | 25 X 80 | 10 |
| 6 | GALVANIZING/BLACKENING | 200X200X30X3.15 | 10 |
| 5 | BOTTOM PLANKS (min 100mm width) | 25mm THICK | As per Box Size |
| 4 | SIDES & TOP PLANKS(min 100mm width) | 20mm THICK | As per Box Size |
| 3 | STRUT VERTICAL | 80 X 100 | 10 |
| 2 | SKIDS TOP | 25 X 80 | 5 |
| 1 | SKIDS BOTTOM | 80 X 100 | 5 |

| ITEM NO. | DESCRIPTION | DIMENSION | | |
|---------------------|---|------------------------------|---------------------------|--------------------|
| | TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT | (ABOVE 1 Cu.Mtr to 4 CuMtr.) | | |
| | BHARAT HEAVY ELECTRICALS LTD. HYDERABAD | DRN. | MADHU | 01.05.13 |
| | | CHD. | RAGHAV | 01.05.13 |
| | | APPD. | KOUSHIK | 01.05.13 |
| DEPT. CPDC | UNTO. DIMS. OR. W/M/I | SCALE | WEIGHT (KG) | REF. TO ASSY. DRG. |
| CODE. B40C | | NTS | | ITEM NO. |
| | | | | NO. OF ITEMS |
| TITLE | | CARD CODE | DRAWING NO. | |
| NAILED RUNNER CASES | | | 2-CPDC-041 | |
| VAR: 02 | | | REV. 00 | |
| | | | SHT. No 02 NO. OF SHT. 04 | |

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)



NOTE FOR INDIGENOUS PACKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. BOTTOM PLANKS/RUNNERS SHALL BE AS PER SPEC HY 51463 (NEEM, MADDI & ASSAM PINE ALSO CAN BE USED FOR SIDE & TOP PLANKS ONLY AND NOT FOR BOTTOM PLANKS/RUNNERS SPEC AA51401 CAN BE USED FOR SIDE & TOP PLANKS ONLY AND NOT FOR BOTTOM PLANKS/RUNNERS)
3. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
4. PLANKS 25mm THICK AT BOTTOM AND 20mm AT SIDES AND TOP PLANKS.
5. M.S LIFITING ANGLES TO BE FIXED AT SUITABLE PLACES.
6. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
7. TOLERANCE IS +3 MM ON THICKNESS OF PLANKS & RUNNERS,
8. GAPS BETWEEN PLANKS SHOULD NOT EXCEED 2MM.

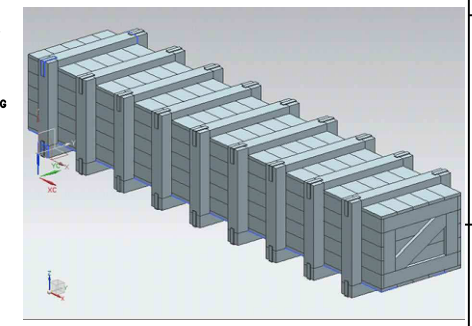
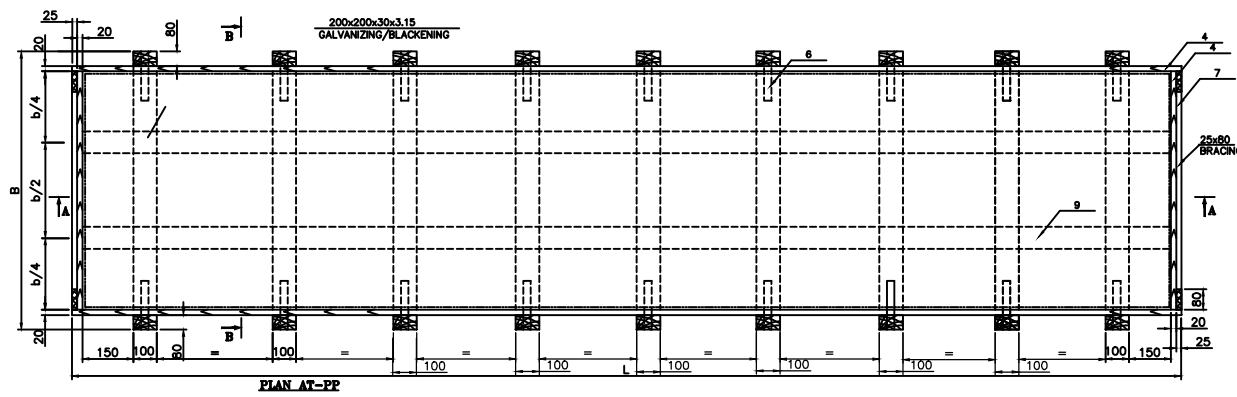
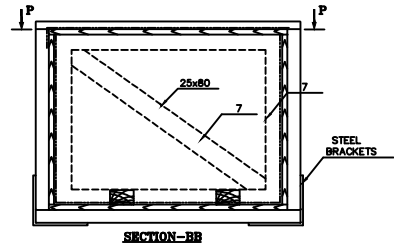
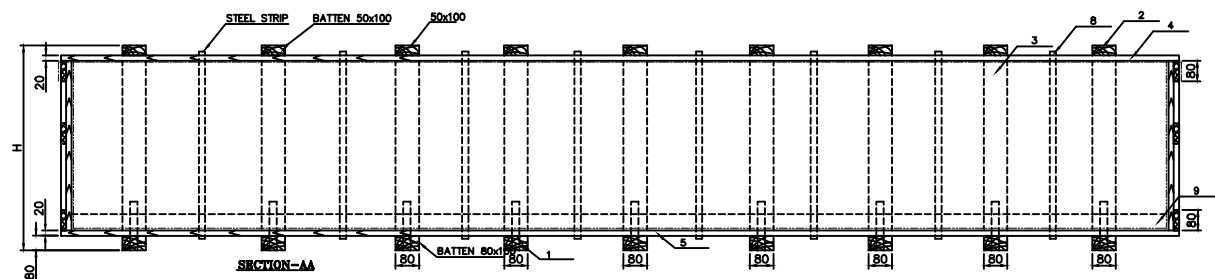
| | | | |
|---|--------------------------------------|-----------------|-----------------|
| 9 | SKIDS INSIDE | 80 X 100 | As per Box Size |
| 8 | STEEL STRIP | 0.8mm Thk | As per Box Size |
| 7 | BRACING AT EACH ENDS | 25 X 80 | 10 |
| 6 | GALVANIZING/BLACKENING | 200X200X30X3.15 | 14 |
| 5 | BOTTOM PLANKS (min 100mm width) | 25mm THICK | As per Box Size |
| 4 | SIDES & TOP PLANKS (min 100mm width) | 20mm THICK | As per Box Size |
| 3 | STRUT VERTICAL | 80 X 100 | 14 |
| 2 | SKIDS (TOP) | 25 X 80 | 7 |
| 1 | SKIDS BOTTOM | 80 X 100 | 7 |

| ITEM NO. | DESCRIPTION | DIMENSION | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|------------|----------------|--------------------|------------------------|--------------|-------------|---------------------|----------|--------------|----|----------|--|------------|----------------|--|----------|--|--|---------|--|----------|--|
| TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT (ABOVE 1 Cu.Mtr to 4 CuMtr.) | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>DEPT. CPDC</td> <td>UNTO., DIMS. OR. 4/M/1</td> <td>SCALE NTS</td> <td>WEIGHT (KG)</td> <td>REF. TO ASSY. DRG.</td> <td>ITEM NO.</td> <td>NO. OF ITEMS</td> </tr> </table> | | | | DEPT. CPDC | UNTO., DIMS. OR. 4/M/1 | SCALE NTS | WEIGHT (KG) | REF. TO ASSY. DRG. | ITEM NO. | NO. OF ITEMS | | | | | | | | | | | | | |
| DEPT. CPDC | UNTO., DIMS. OR. 4/M/1 | SCALE NTS | WEIGHT (KG) | REF. TO ASSY. DRG. | ITEM NO. | NO. OF ITEMS | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>DRN.</td> <td>NAME</td> <td>SIGN.</td> <td>DATE</td> <td>NO. OF VAR.</td> </tr> <tr> <td>CHD.</td> <td>MADHU</td> <td></td> <td>01.05.13</td> <td></td> </tr> <tr> <td>APPD.</td> <td>RAGHAV</td> <td></td> <td>01.05.13</td> <td></td> </tr> <tr> <td></td> <td>KOUSHIK</td> <td></td> <td>01.05.13</td> <td></td> </tr> </table> | | | | DRN. | NAME | SIGN. | DATE | NO. OF VAR. | CHD. | MADHU | | 01.05.13 | | APPD. | RAGHAV | | 01.05.13 | | | KOUSHIK | | 01.05.13 | |
| DRN. | NAME | SIGN. | DATE | NO. OF VAR. | | | | | | | | | | | | | | | | | | | |
| CHD. | MADHU | | 01.05.13 | | | | | | | | | | | | | | | | | | | | |
| APPD. | RAGHAV | | 01.05.13 | | | | | | | | | | | | | | | | | | | | |
| | KOUSHIK | | 01.05.13 | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td colspan="2">TITLE</td> <td>CARD CODE</td> <td>REV.</td> </tr> <tr> <td colspan="2">NAILED RUNNER CASES</td> <td>2-CPDC-041</td> <td>00</td> </tr> <tr> <td colspan="2">VAR: 03</td> <td>SHT. No 03</td> <td>NO. OF SHT. 04</td> </tr> </table> | | | | TITLE | | CARD CODE | REV. | NAILED RUNNER CASES | | 2-CPDC-041 | 00 | VAR: 03 | | SHT. No 03 | NO. OF SHT. 04 | | | | | | | | |
| TITLE | | CARD CODE | REV. | | | | | | | | | | | | | | | | | | | | |
| NAILED RUNNER CASES | | 2-CPDC-041 | 00 | | | | | | | | | | | | | | | | | | | | |
| VAR: 03 | | SHT. No 03 | NO. OF SHT. 04 | | | | | | | | | | | | | | | | | | | | |

INVENTORY NO. SIGN. AND DATE REF. DRG. NO. COMPUTER FILE NAME SN 30041 GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261 THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)



NOTE FOR INDIGENOUS PAKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. BOTTOM PLANKS/RUNNERS AS PER SPEC HY 51463 (NEEM, MADDI & ASSAM PINE ALSO CAN BE USED) SPEC AA51401 IS USED FOR SIDE & TOP PLANKES ONLY AND NOT FOR BOTTOM PLANKS/RUNNERS
3. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
4. PLANKS 25mm THICK AT BOTTOM AND 20mm AT SIDES AND TOP PLANKS.
5. M.S LIFITNG ANGLES TO BE FIXED AT SUITABLE PLACES.
6. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
7. TOLERANCE IS +3 MM ON THICKNESS OF PLANKS & RUNNERS,
8. GAPS BETWEEN PLANKS SHOULD NOT EXCEED 2MM.

INVENTORY NO. _____ SIGN. AND DATE _____ REF. DRG. NO. _____ COMPUTER FILE NAME _____
 THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY
 GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

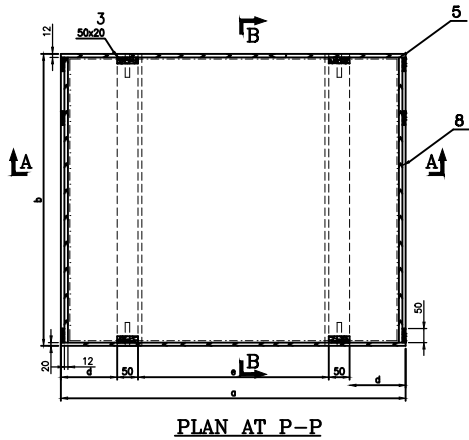
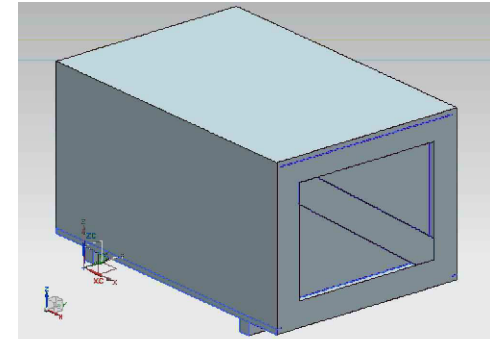
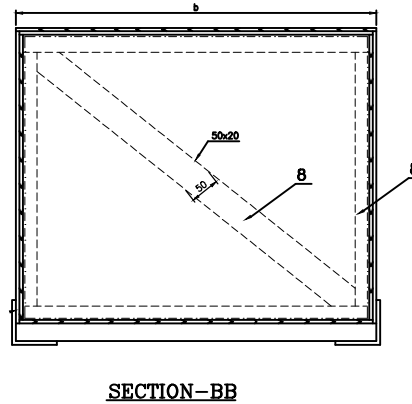
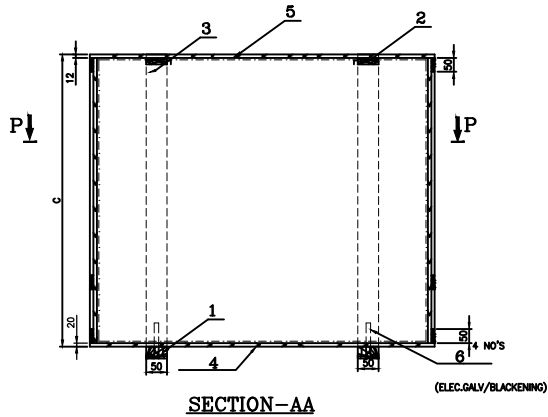
| | | | |
|---|--------------------------------------|-----------------|-----------------|
| 9 | SKIDS INSIDE | 80 X 100 | As per Box Size |
| 8 | STEEL STRIP | 0.8mm Thk | As per Box Size |
| 7 | BRACING AT EACH ENDS | 25 X 80 | 10 |
| 6 | GALVANIZING/BLACKENING | 200X200X30X3.15 | 18 |
| 5 | BOTTOM PLANKS (min 100mm width) | 25mm THICK | As per Box Size |
| 4 | SIDES & TOP PLANKS (min 100mm width) | 20mm THICK | As per Box Size |
| 3 | STRUT VERTICAL | 80 X 100 | 18 |
| 2 | SKIDS TOP | 25 X 80 | 9 |
| 1 | SKIDS BOTTOM | 80 X 100 | 9 |

| ITEM NO. | DESCRIPTION | DIMENSION | | |
|---|---|-------------------------------|--------------------------------------|--------------|
| | TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT | (ABOVE 1 Cu.Mtr to 4 Cu.Mtr.) | | |
| | | NAME | SIGN. | DATE |
| | | DRN. | MADHU | 01.05.13 |
| | | CHD. | RAGHAV | 01.05.13 |
| | | APPD. | KOUSHIK | 01.05.13 |
| | | DEPT. CPDC | UNTO. DIMS. OR: 4/4/1 | SCALE NTS |
| | | WEIGHT (KG) | REF. TO ASSY. DRG. | ITEM NO. |
| | | | | NO. OF ITEMS |
| TITLE NAILED RUNNER CASES VAR: 04 | | CARD CODE | DRAWING NO. 2-CPDC-041 REV. 00 | |
| | | SHT. No 04 | NO. OF SHT. 04 | |

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

DRG. NO. 3-CPDC-0052
SHT. OF 10



NOTE FOR EXPORT PAKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. PAKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
3. PLANKS 20mm THICK AT BOTTOM AND PLY WOOD 12mm AT SIDES AND TOP.
4. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PAKING CASE.
5. PLY WOOD THICK 12MM; AS PER SPEC: AA51101 FOR SIDES ONLY.
6. TOLERANCE IS +/- 5% ON THICKNESS OF PLY WOOD AS PER SPEC:AA51101,
7. G.I. SHEET 0.3mm THICK (IS:277) SIDES, TOP (OUT SIDE) & BOTTOM (INSIDE)
8. WHERE EVER REQUIRED ISPM COMPLAINCE WOOD (BOTTOM PLANKS & RUNNERS) SHALL BE USED . AS PER SPEC, HY 51463 ISPM-15 CERTIFICATE SHALL BE SUBMITTED BY THE VENDOR WITHOUT ANY EXTRA PRICE IMPLICATIONS.

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

| S.NO | ITEM DESCRIPTION | DIMENSIONS | QTY |
|------|---------------------------------|--------------------|-----|
| 8 | BRACING | 50 X 20 | 10 |
| 7 | G.I SHEET 0.3MM THICK (IS:277) | AS PER PAKING CASE | |
| 6 | STEEL BRACKETS | 100X100X20X2 | 4 |
| 5 | SIDES & TOP (PLY WOOD) | 12mm THICK | 5 |
| 4 | BOTTOM PLANKS (MIN 100MM WIDTH) | 20mm THICK | 1 |
| 3 | STRUT | 50 X 20 | 4 |
| 2 | HORIZONTAL TOP BATTENS | 50 X 15 | 2 |
| 1 | SKID | 50 X 50 | 2 |

| S.NO | | ITEM DESCRIPTION | | DIMENSIONS | | QTY | |
|--------------------------|--|-------------------------------|--|-----------------------|----|-------------|----------|
| TYPE OF PRODUCT | | | | | | | |
| OR | | | | VOLUME: UPTO 0.20 CMT | | | |
| NAME OF CUSTOMER/PROJECT | | | | | | | |
| | | BHARAT HEAVY ELECTRICALS LTD. | | NAME | | SIGN. | DATE |
| | | HYDERABAD | | DRN. | MG | | 02.07.09 |
| | | | | CHD. | RR | | 02.07.09 |
| | | | | APPD. | KB | | 02.07.09 |
| DEPT. CPDC | | UNTO. DIMS. OR. 8/11/11 | | SCALE | | WEIGHT (KG) | |
| CODE 480C | | | | NTS | | -NA- | |
| | | | | REF. TO ASSY. DRG. | | ITEM NO. | |
| | | | | -NA- | | -NA- | |
| TITLE | | DRAWING NO. | | CARD | | REV. | |
| EXPORT NAILED CASE | | 3-CPDC-0052 | | -NA- | | 00 | |
| | | SHT. No 01 | | NO. OF SHT. | | 01 | |

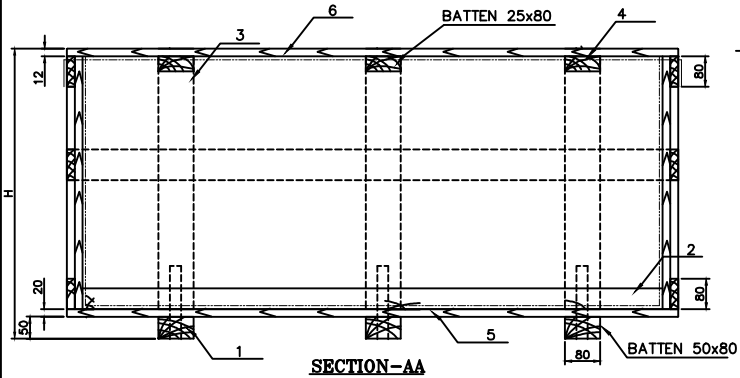
INVENTORY NO. SIGN. AND DATE REF. DRG. NO. COMPUTER FILE NAME THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY

| REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED |
|------|------|----------|------|------|----------|------|------|----------|------|------|----------|
| ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD |
| 1 | | | 2 | | | 3 | | | 4 | | |

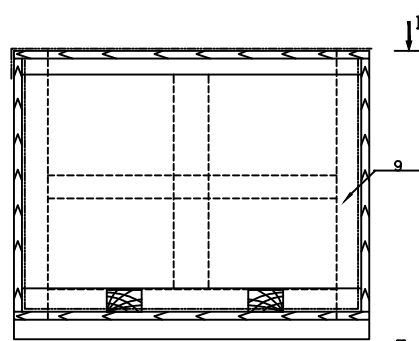
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

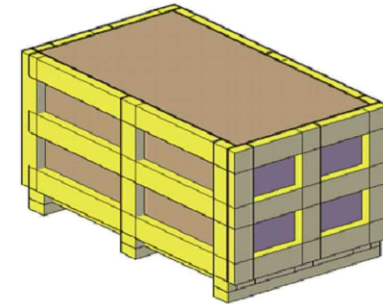
DRG. NO. OF SHT. 3 - CPDC-0051



SECTION-AA



SECTION-BB



For Indigenous Consignments: G.I. Sheet is NOT required

For Export Consignments: G.I. Sheet is REQUIRED

NOTE FOR EXPORT PAKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
3. PLANKS 20mm THICK AT BOTTOM AND PLY WOOD 12mm AT SIDES AND TOP.
4. POSITION NUMBER '8' M.S LIFTING ANGELS TO BE FIXED AT SUITABLE PLACES.
5. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
6. PLY WOOD THICK 12MM; AS PER SPEC: AA51101 FOR SIDES ONLY.
7. TOLERANCE IS +/- 5% ON THICKNESS OF PLY WOOD AS PER SPEC: AA51101,
8. G.I. SHEET 0.3mm THICK (IS:277) SIDES, TOP (OUT SIDE) & BOTTOM (INSIDE)
9. WHERE EVER REQUIRED ISPM COMPLIANCE WOOD (PLANKS/RUNNERS) SHALL BE USED AS PER SPEC. HY 51463 ISPM-15 CERTIFICATE SHALL BE SUBMITTED BY THE VENDOR WITHOUT ANY EXTRA PRICE IMPLICATIONS.

| S.NO | ITEM DESCRIPTION | DIMENSIONS | QTY |
|------|---------------------------------|---------------------|-----|
| 9 | BRACING AT EACH SIDES OF BOX | 25 X 80 | 10 |
| 8 | G.I. SHEET 0.3mm THICK (IS:277) | AS PER PACKING CASE | |
| 7 | STEEL BRACKETS: | 200x200x30x3.15 | 6 |
| 6 | PLY WOOD FOR SIDES & TOP | 12mm THICK | 5 |
| 5 | BOTTOM PLANKS (Min 100mm width) | 20mm THICK | 1 |
| 4 | HORIZONTAL RUNNERS TOP | 25 X 80 | 3 |
| 3 | STRUT | 25 X 80 | 6 |
| 2 | SUPPORTING BEAMS | 50 X 80 | 2 |
| 1 | SKID | 50 x 80 | 3 |

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT **VOLUME: 0.2 Cu.Mtrs TO 1.0 Cu.Mtrs**

| | | | | | | |
|--|-------------------------------|-----------|------------------|----------------------------------|-------------|----------------|
| | BHARAT HEAVY ELECTRICALS LTD. | | NAME | SIGN. | DATE | NO.OF VAR. |
| | HYDERABAD | | DRN. | MG | 03.04.12 | |
| | | | CHD. | KB | 03.04.12 | |
| | | | APPD. | KB | 03.04.12 | |
| DEPT. CPDC | UNTOL. DIMS. GR. 8/0/7 | SCALE NTS | WEIGHT (KG) -NA- | REF. TO ASSY. DRG. | ITEM NO. | NO.OF ITEMS |
| CODE 840 | | | | | | |
| TITLE EXPORT NAILED RUNNER CASE | | | CARD CODE | DRAWING NO. 3 - CPDC-0051 | | REV. 00 |
| | | | | SHT. No | NO. OF SHT. | |

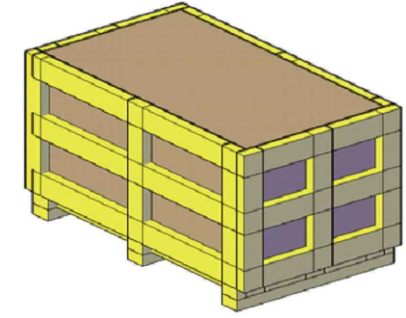
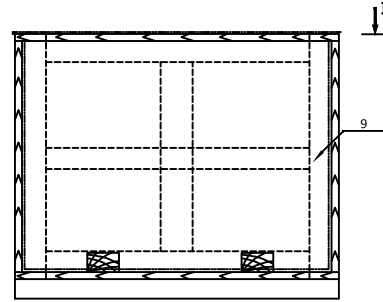
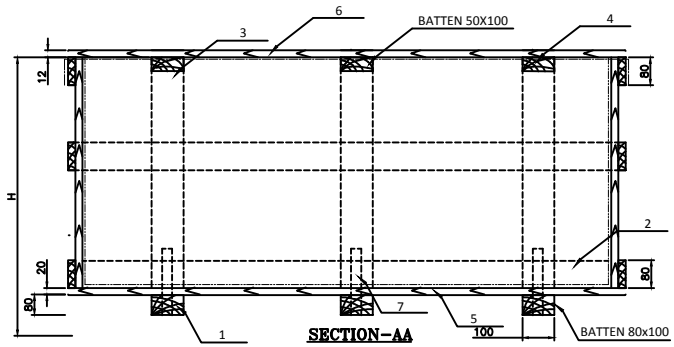
INVENTORY NO. SIGN. AND DATE REF. DRG. NO. SN 30040 COMPUTER FILE NAME THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

PLAN AT-PP

FIRST ANGLE PROJECTION

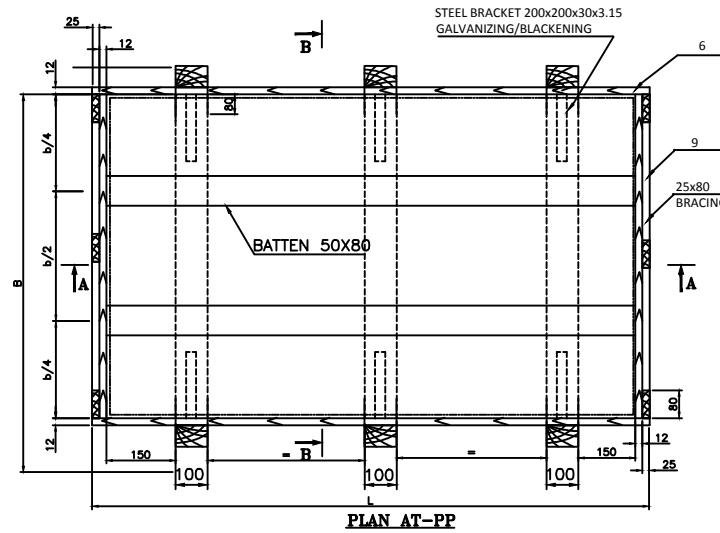
(ALL DIMENSIONS ARE IN mm)

SHT. OF
DRG. NO. 3 - CPDC-0050



ABOVE PICTURE IS INDICATIVE ONLY

For Indigenous Consignments: G.I. Sheet is NOT required
For Export Consignments: G.I. Sheet is REQUIRED



NOTE FOR EXPORT PAKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
3. PLANKS 20mm THICK AT BOTTOM AND PLY WOOD 12mm AT SIDES AND TOP.
4. TOLERANCE IS OF +/- 10 mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
5. PLY WOOD THICK 12MM; AS PER SPEC: AA51101 FOR SIDES ONLY.
6. TOLERANCE IS +/- 5% ON THICKNESS OF PLY WOOD AS PER SPEC: AA51101,
7. G.I. SHEET 0.3mm THICK (IS:277) SIDES, TOP (OUT SIDE) & BOTTOM (INSIDE)
8. WHERE EVER REQUIRED ISPM COMPLAINE WOOD (BOTTOM PLANKS & RUNNERS) SHALL BE USED . AS PER SPEC. HY 51463 ISPM-15 CERTIFICATE SHALL BE SUBMITTED BY THE VENDOR WITHOUT ANY EXTRA PRICE IMPLICATIONS.

| | | | |
|---|---------------------------------|---------------------|----|
| 9 | BRACING AT SIDES OF BOX | 25 X 80 | 10 |
| 8 | G.I. SHEET 0.3mm THICK (IS:277) | AS PER PACKING CASE | |
| 7 | STEEL BRACKETS: | 200x200x30x3.15 | 6 |
| 6 | PLY WOOD FOR SIDES & TOP | 12mm THICK | 5 |
| 5 | BOTTOM PLANKS (Min 100mm width) | 20mm THICK | 1 |
| 4 | HORIZONTAL RUNNERS TOP | 50 X 100 | 3 |
| 3 | STRUT | 25 X 80 | 6 |
| 2 | SUPPORTING BEAM | 50 X 80 | 2 |
| 1 | SKID | 100 X 80 | 3 |

| S. NO | ITEM DESCRIPTION | DIMENSIONS | QTY |
|-------|------------------|------------|-----|
|-------|------------------|------------|-----|

TYPE OF PRODUCT (ABOVE 1 Cu.Mtr. TO 4 Cu.Mtr.)
OR
NAME OF CUSTOMER/PROJECT

| | | | | |
|--|---------------------|-------|----------|------------|
| BHARAT HEAVY ELECTRICALS LTD. HYDERABAD | NAME | SIGN. | DATE | NO.OF VAR. |
| | DRN. SYED NAZEER | | 21.11.02 | |
| | CHD. T.MURALI | | 21.11.02 | |
| | APPD. C.V.SUBBA RAO | | 21.11.02 | |

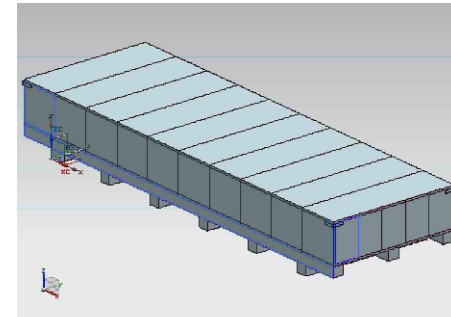
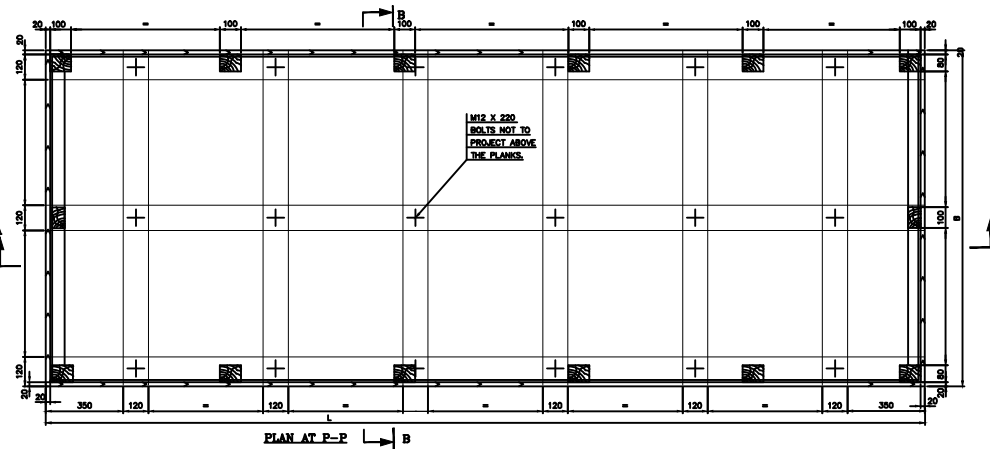
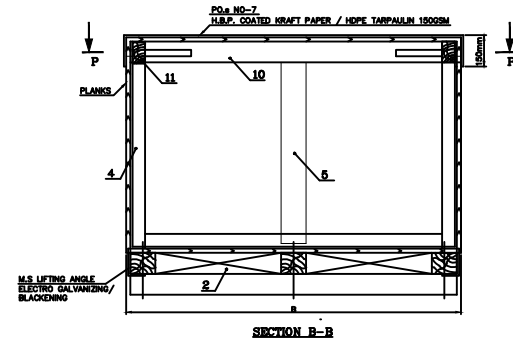
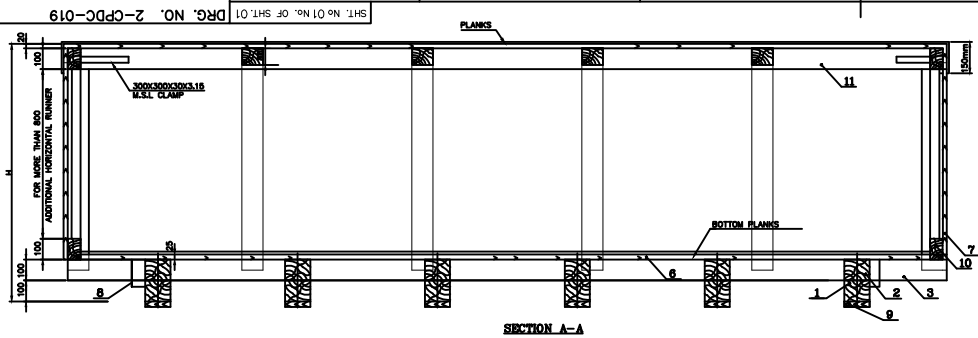
| | | | | | | |
|------------|-----------------------|-----------|------------------|--------------------|----------|-------------|
| DEPT. CPDC | UNTO. DIMS. GR. ϕ/M/F | SCALE NTS | WEIGHT (KG) -NA- | REF. TO ASSY. DRG. | ITEM NO. | NO.OF ITEMS |
| 840 | | | | | | |

| | | | |
|---|-----------|-------------------------------------|-------------------|
| TITLE EXPORT NAILED RUNNER CASE | CARD CODE | DRAWING NO. 3 - CPDC-0050 | REV. 00 |
| SHT. No | | NO. OF SHT. | |

INVENTORY NO. SIGN. AND DATE REF. DRG. NO. COMPUTER FILE NAME THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY. SM/30041

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)



NOTE FOR INDIGENOUS PACKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. BOTTOM PLANKS/RUNNERS SHALL BE AS PER SPEC HY 51463 (NEEM, MADDI & ASSAM PINE ALSO CAN BE USED). SPEC AA51401 CAN BE USED FOR SIDE & TOP PLANKES ONLY AND NOT FOR BOTTOM PLANKS/RUNNERS
3. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
4. PLANKS 25mm THICK AT BOTTOM AND 20mm AT SIDES AND TOP PLANKS.
5. M.S LIFTING ANGLES TO BE FIXED AT SUITABLE PLACES.
6. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
7. TOLERANCE IS +/- 3 MM ON THICKNESS OF PLANKS & RUNNERS,
8. GAPS BETWEEN PLANKS SHOULD NOT EXCEED 2MM.

| | | | |
|----|--------------------------------------|-------------------|----|
| 11 | HORIZONTAL RUNNERS | BOX100 | 2 |
| 10 | HORIZONTAL RUNNERS | BOX100 | 8 |
| 9 | SUPPORTING PLANK | 20 mm THICK | 6 |
| 8 | LIFTING ANGLE | 100x100x200-4mmTh | 4 |
| 7 | SIDES & TOP PLANKS(min 100mm width) | 20mm THICK | 5 |
| 6 | BOTTOM PLANKS (min 100mm width) | 25mm THICK | 1 |
| 5 | STURT | 80 x 100 | 2 |
| 4 | STRUT | 80 x 100 | 12 |
| 3 | SUPPORTING BEAM | 100 x 120 | 3 |
| 2 | INTERMEDIATE BEAM | 100 x 120 | 12 |
| 1 | SKID | 100 x 120 | 6 |

| ITEM NO. | DIMENSION |
|----------|-----------|
|----------|-----------|

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

| | | | | |
|---|---------------|-------|----------|-------|
| BHARAT HEAVY ELECTRICALS LTD. HYDERABAD | NAME | SIGN. | DATE | NO.OF |
| | DRN. MADHU | | 01.05.13 | VAR. |
| | CHD. RAGHAV | | 01.05.13 | |
| | APPD. KOUSHIK | | 01.05.13 | |

| | | | | | | |
|------------|-----------------------|-------|-------------|--------------------|----------|-------------|
| DEPT. CPDC | UNTO. DIMS. OR. 4/M/1 | SCALE | WEIGHT (KG) | REF. TO ASSY. DRG. | ITEM NO. | NO.OF ITEMS |
| B40C | | | | | | |

| | | | |
|----------------------------|-----------|-------------------|----------------|
| TITLE | CARD CODE | DRAWING NO. | REV. |
| BOLTED RUNNER CASES | | 2-CPDC-019 | 00 |
| VAR: 03 | | SHT. No 04 | NO. OF SHT. 04 |

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 COMPUTER FILE NAME
 REF. DRG. NO.
 SIGN. AND DATE
 INVENTORY NO

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

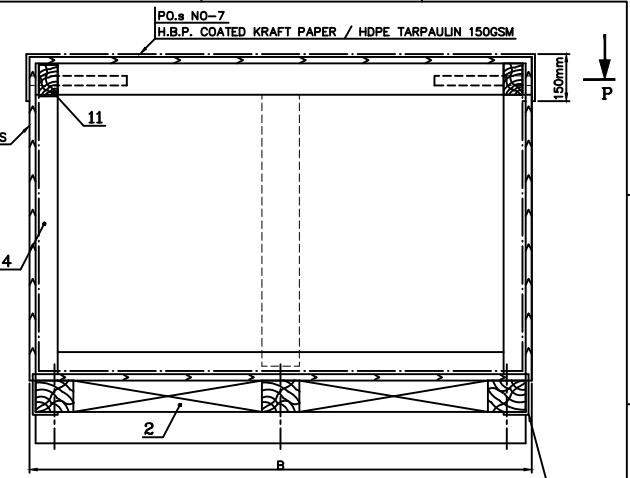
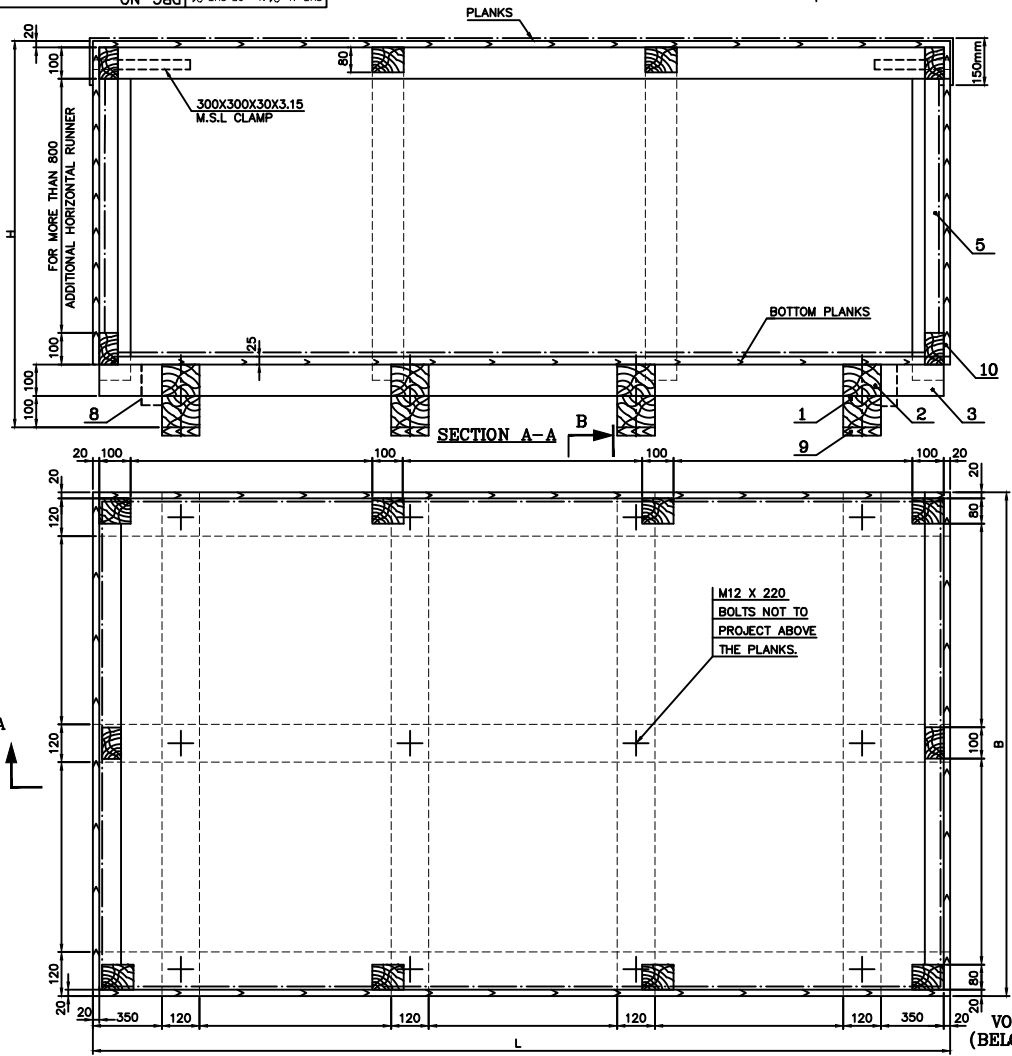
DRG. NO. 2-CPDC-019
SHT. NO 01 NO. OF SHT. 01

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

DRG. NO. 2-CPDC-0019/s

INVENTORY NO. SIGN. AND DATE REF. DRG. NO. COMPUTER FILE NAME 2CPDC0019.DWG GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261 THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY



- NOTE -**
- PACKING INSTRUCTIONS AS PER CS: HY 0490572.
 - PACKING WOOD AS PER HY: 51463.
 - COMPONENT PRESERVATION AS PER HY 0490563.
 - THE CASE IS TO BE COVERED INSIDE ON ALL SIDES WITH H.B.P COATED KRAFT PAPER HDPE TARPULIN 150GSM SUCH THAT THE PAPER COMES IN BETWEEN THE PLANING AND THE BRACES AT THE CORNERS, IT SHOULD BE PATCHED WITH EXTRA BITUMINOUS PAPER TO PREVENT LEAKAGE OF WATER ALSO THE CASE IS TO BE COVERED WITH BITUMINOUS PAPER ON THE TOP TO PREVENT LEAKAGE OF WATER IN TO THE CASE.
 - THE H.B.P. COATED KRAFT PAPER / HDPE TARPULIN 150GSM ON THE TOP TO BE TURNED ATLEAST 150MM ON ALL SIDES AS SHOWN.
 - POSITION NUMBER '8' M.S LIFTING ANGLES TO BE FIXED AT SUITABLE PLACES.
 - THE H.B.P. COATED KRAFT PAPER / HDPE TARPULIN 150GSM TO BE PROVIDED AT THE BOTTOM OF THE CASE.

| ITEM NO. | DESCRIPTION | DIMENSION |
|----------|--------------------------------------|-------------------------|
| 11 | HORIZONTAL RUNNERS | 80x100 |
| 10 | HORIZONTAL RUNNERS | 80x100 |
| 9 | SUPPORTING PLANK | 20 mm THICK |
| 8 | LIFTING ANGLE | 100x100x200-4mmTh, 4NOS |
| 7 | SIDES & TOP PLANKS(min 100mm width) | 20mm THICK |
| 6 | BOTTOM PLANKS (min 100mm width) | 25mm THICK |
| 5 | STURT | 80 x 100 |
| 4 | STURT | 80 x 100 |
| 3 | SUPPORTING BEAM | 100 x 120 |
| 2 | INTERMEDIATE BEAM | 100 x 120 |
| 1 | SKID | 100 x 120 |

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

| | | | | |
|---|--------------------|--------------------|----------|-------------|
| BHARAT HEAVY ELECTRICALS LTD HYDERABAD | NAME | SIGN. | DATE | NO. OF VAR. |
| | DRN. SYED NAZEER | <i>[Signature]</i> | 13.11.99 | |
| | CHD. T.MURALI | | 3.11.99 | |
| | APPD. CV SUBBA RAO | | 13.11.99 | |

| | | | | | | |
|------------|--------------------|-------|-------------|--------------------|----------|--------------|
| BEP. CPDC | UNTO. DIMS. OR W/M | SCALE | WEIGHT (KG) | REF. TO ASSY. DRG. | ITEM NO. | NO. OF ITEMS |
| CODE: B40C | | | | | | |

| | | |
|--------------------------------|----------------------------|----------------|
| TITLE | CARD CODE | REV. |
| BOLTED RUNNER CASES VAR: 01 | DRAWING NO. 2-CPDC-0019 | 04 |
| | SHT. No 01 | NO. OF SHT. 04 |

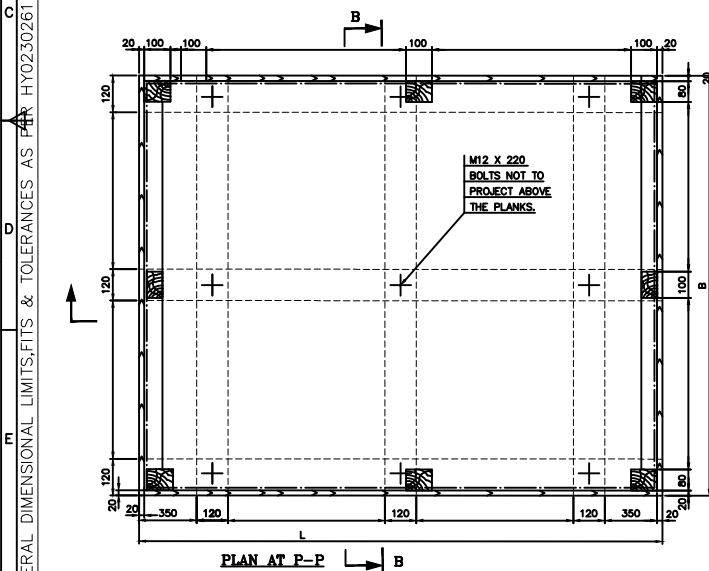
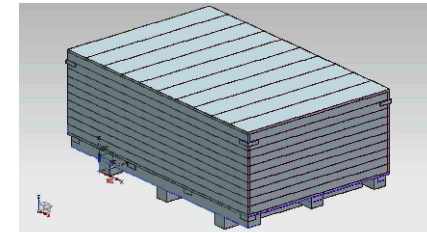
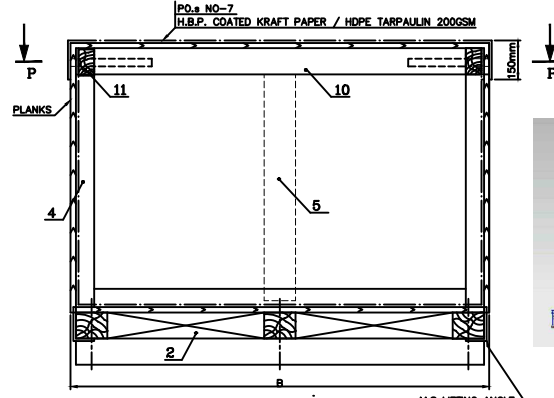
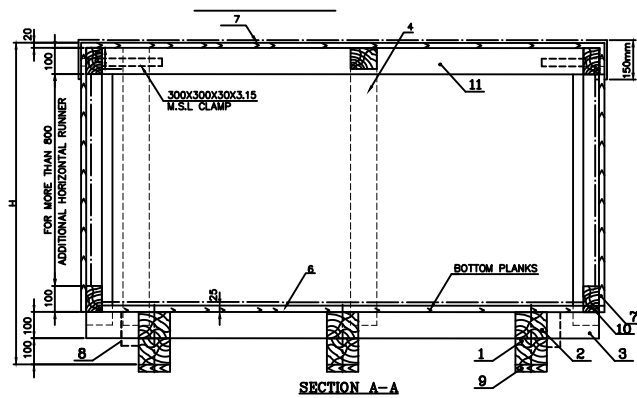
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|------|------|--|------|------|------------------------|------|------|--|------|------|-----------------|
| ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD |
| | 04 | 3.12.09 | | 03 | 24.7.02 | | 02 | 18.5.01 | | 01 | 10.12.99 |
| | | POS.NO 10 & 11 ADDED IN PARTLIST & DRAWING | | | DRG. REVISED GENERALLY | | | DIMENSION 350mm WAS 300mm AND 800mm WAS 1000mm | | | DIM 300 WAS 200 |

VOL: L x B x H (BELOW 15 Cu.Mtrs)
SUPPORTING BEAMS SPACING NOT TO EXCEED 600mm.
STRUT SPACING NOT TO EXCEED 800mm.
SKID SPACING NOT TO EXCEED 600mm.

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

DRG. NO. 2-CPDC-019



NOTE FOR INDIGENOUS PAKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. BOTTOM PLANKS/RUNNERS SHALL BE AS PER SPEC HY 51463 (NEEM, MADDI & ASSAM PINE ALSO CAN BE USED). SPEC AA51401 CAN BE USED FOR SIDE & TOP PLANKES ONLY AND NOT FOR BOTTOM PLANKS/RUNNERS
3. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
4. PLANKS 25mm THICK AT BOTTOM AND 20mm AT SIDES AND TOP PLANKS.
5. M.S LIFTING ANGLES TO BE FIXED AT SUITABLE PLACES.
6. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
7. TOLERANCE IS +/- 3 MM ON THICKNESS OF PLANKS & RUNNERS,
8. GAPS BETWEEN PLANKS SHOULD NOT EXCEED 2MM.

| ITEM NO. | DESCRIPTION | DIMENSION | QTY |
|----------|--------------------------------------|--------------------|-----|
| 11 | HORIZONTAL RUNNERS TOP | 80x100 | 2 |
| 10 | HORIZONTAL RUNNERS BOTTOM & TOP | 80x100 | 5 |
| 9 | SUPPORTING PLANK | 20 mm THICK | 3 |
| 8 | LIFTING ANGLE | 100x100x200-4mmTh. | 4 |
| 7 | SIDES & TOP PLANKS(min 100mm width) | 20mm THICK | 5 |
| 6 | BOTTOM PLANKS (min 100mm width) | 25mm THICK | 1 |
| 5 | STURT | 80 x 100 | 2 |
| 4 | STURT | 80 x 100 | 6 |
| 3 | SUPPORTING BEAM | 100 x 120 | 3 |
| 2 | INTERMEDIATE BEAM | 100 x 120 | 6 |
| 1 | SKID | 100 x 120 | 3 |

| ITEM NO. | DESCRIPTION | DIMENSION | QTY |
|----------|-------------|-----------|-----|
|----------|-------------|-----------|-----|

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

| NAME | SIGN. | DATE | NO.OF VAR. |
|---------------|-------|----------|------------|
| DRN. MADHU | | 01.05.13 | |
| CHD. RAGHAV | | 01.05.13 | |
| APPD. KOUSHIK | | 01.05.13 | |

| DEPT. CPDC | UNTO. DIMS. OR W/M | SCALE | WEIGHT (KG) | REF. TO ASSY. DRG. | ITEM NO. | NO.OF ITEMS |
|------------|--------------------|-------|-------------|--------------------|----------|-------------|
| B40C | W/M | | | | | |

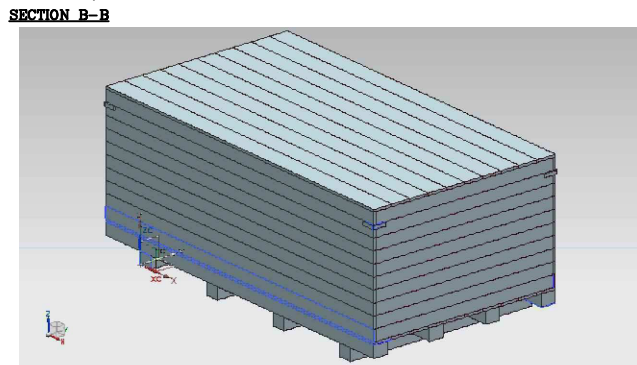
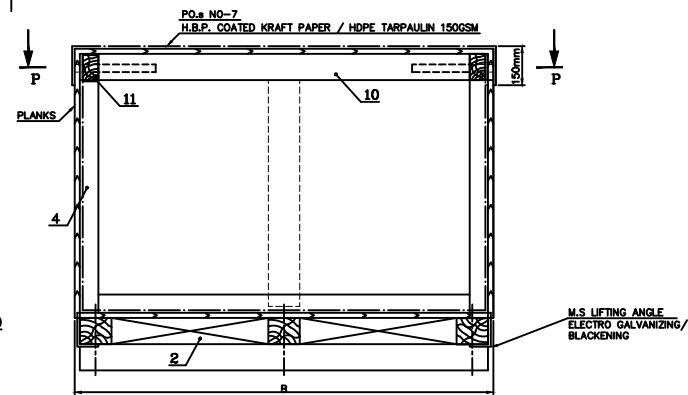
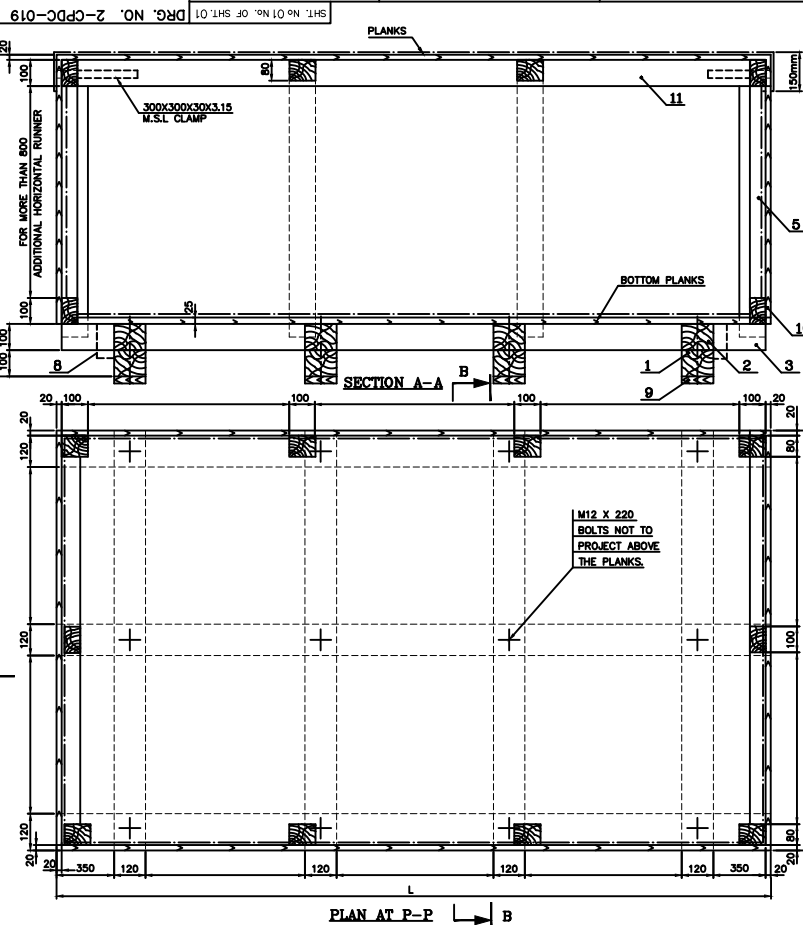
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|--|-----------|-------------|------|
| INDIGENOUS BOLTED RUNNER CASES VAR: 01 | | 2-CPDC-019 | 00 |

| SHT. No | NO. OF SHT. |
|---------|-------------|
| 02 | 04 |

INVENTORY NO. SIGN. AND DATE COMPUTER FILE NAME THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY
 GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)



NOTE FOR INDIGENOUS PAKCING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. BOTTOM PLANKS/RUNNERS SHALL BE AS PER SPEC HY 51463 (NEEM, MADDI & ASSAM PINE ALSO CAN BE USED). SPEC AA51401 CAN BE USED FOR SIDE & TOP PLANKES ONLY AND NOT FOR BOTTOM PLANKS/RUNNERS
3. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
4. PLANKS 25mm THICK AT BOTTOM AND 20mm AT SIDES AND TOP PLANKS.
5. M.S LIFTING ANGLES TO BE FIXED AT SUITABLE PLACES.
6. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
7. TOLERANCE IS +/- 3 MM ON THICKNESS OF PLANKS & RUNNERS,
8. GAPS BETWEEN PLANKS SHOULD NOT EXCEED 2MM.

| ITEM NO. | DESCRIPTION | DIMENSION | QTY |
|----------|--------------------------------------|-------------------|-----|
| 11 | HORIZONTAL RUNNERS TOP | 80X100 | 2 |
| 10 | HORIZONTAL RUNNERS BOTTOM & TOP | 80X100 | 6 |
| 9 | SUPPORTING PLANK | 20 mm THICK | 4 |
| 8 | LIFTING ANGLE | 100x100x200-4mmTh | 4 |
| 7 | SIDES & TOP PLANKS(min 100mm width) | 20mm THICK | 5 |
| 6 | BOTTOM PLANKS (min 100mm width) | 25mm THICK | 1 |
| 5 | STURT | 80 x 100 | 2 |
| 4 | STRUT | 80 x 100 | 8 |
| 3 | SUPPORTING BEAM | 100 x 120 | 3 |
| 2 | INTERMEDIATE BEAM | 100 x 120 | 8 |
| 1 | SKID | 100 x 120 | 4 |

| ITEM NO. | DESCRIPTION | DIMENSION | QTY |
|----------|-------------|-----------|-----|
|----------|-------------|-----------|-----|

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

| DEPT. CPDC | UNTO. DIMS. OR. W/M/I | SCALE | WEIGHT (KG) | REF. TO ASSY. DRG. | ITEM NO. | NO. OF ITEMS |
|------------|-----------------------|-------|-------------|--------------------|----------|--------------|
| B40C | | | | | | |

| DRN. | NAME | SIGN. | DATE | NO. OF VAR. |
|------|---------|-------|----------|-------------|
| | MADHU | | 01.05.13 | |
| | RAGHAV | | 01.05.13 | |
| | KOUSHIK | | 01.05.13 | |

| TITLE | CARD CODE | DRAWING NO. | REV. |
|--------------------------------|-----------|-------------|------|
| BOLTED RUNNER CASES VAR: 02 | | 2-CPDC-019 | 00 |

| SHT. No | NO. OF SHT. |
|---------|-------------|
| 03 | 04 |

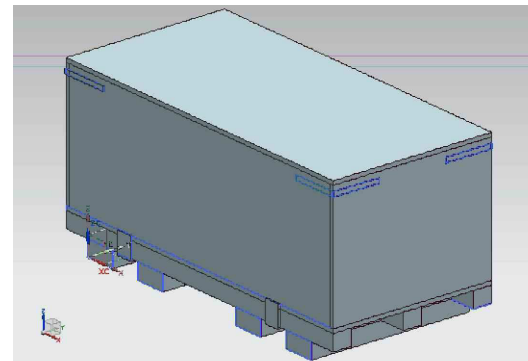
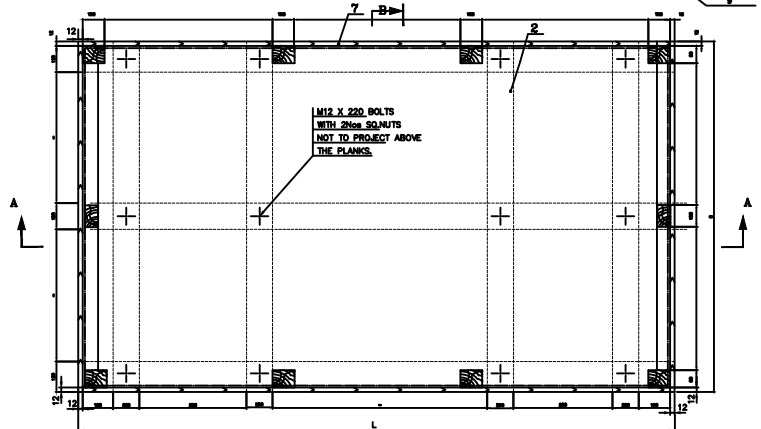
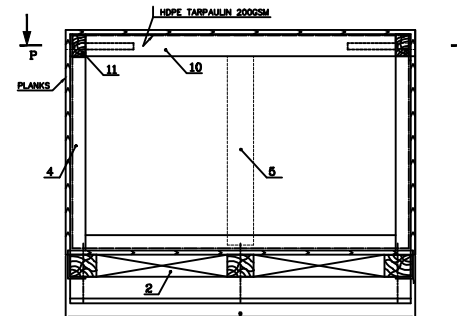
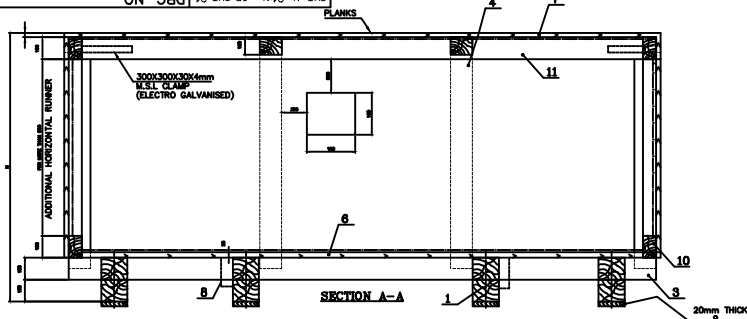
INVENTORY NO. _____ SIGN. AND DATE _____ REF. DRG. NO. _____ COMPUTER FILE NAME _____ GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261 THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

2-CPDC-0018
DRG. NO.

SHT. NO 01 NO. OF SHTS



NOTE FOR EXPORT PAKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. PAKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
3. PLANKS 20mm THICK AT BOTTOM AND PLY WOOD 12mm AT SIDES AND TOP.
4. POSITION NUMBER '8' M.S LIFTING ANGELS TO BE FIXED AT SUITABLE PLACES.
5. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PAKING CASE.
6. PLY WOOD THICK 12MM; AS PER SPEC: AA51101 FOR SIDES ONLY.
7. TOLERANCE IS +/- 5% ON THICKNESS OF PLY WOOD AS PER SPEC: AA51101,
8. G.I. SHEET 0.3mm THICK (IS:277) SIDES, TOP (OUT SIDE) & BOTTOM (INSIDE)
9. WHERE EVER REQUIRED ISPM COMPLIANCE WOOD (PLANKS/RUNNERS) SHALL BE USED . AS PER SPEC. HY 51463 ISPM-15 CERTIFICATE SHALL BE SUBMITTED BY THE VENDOR WITHOUT ANY EXTRA PRICE IMPLICATIONS.

| ITEM NO. | DESCRIPTION | DIMENSION | QTY |
|----------|-----------------------------------|-------------------------|-----|
| 12 | G.I SHHET 0.3MM THK | AS PER PAKING CASE | |
| 11 | HORIZONTAL RUNNERS TOP | 80 x 100 | 2 |
| 10 | HORIZONTAL RUNNERS BOTTOM & TOP | 80 x 100 | 6 |
| 9 | SUPPORTING PLANKS | 20 MM THICK | 4 |
| 8 | LIFTING ANGLE(ELECTRO GALVANISED) | 100x100x200-4mmTh, 4NOS | 4 |
| 7 | PLYWOOD (SIDES & TOP) | 12 mm Thickness | 5 |
| 6 | PLANK(BOTTOM) | 25 mm Thickness | 1 |
| 5 | STURT | 80 x 100 | 2 |
| 4 | STRUT | 80 x 100 | 8 |
| 3 | SUPPORTING BEAM | 100 x 200 | 3 |
| 2 | INTERMEDIATE BEAM | 100 x 200 | 8 |
| 1 | SKID | 100 x 200 | 4 |

| ITEM NO. | DESCRIPTION | DIMENSION | QTY |
|----------|-------------|-----------|-----|
|----------|-------------|-----------|-----|

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

| NAME | SIGN. | DATE | NO.OF VAR. |
|----------|-------|----------|------------|
| DRN. MG | | 29.05.13 | |
| CHD. RR | | 29.05.13 | |
| APPD. KB | | 29.05.13 | |

| DEPT. CPDC CODE: B40C | UNTO. DIMS. OR: W/M/H | SCALE | WEIGHT (KG) | REF. TO ASSY. DRG. | ITEM NO. | NO.OF ITEMS |
|-----------------------|-----------------------|-------|-------------|--------------------|----------|-------------|
| | | | | | | |

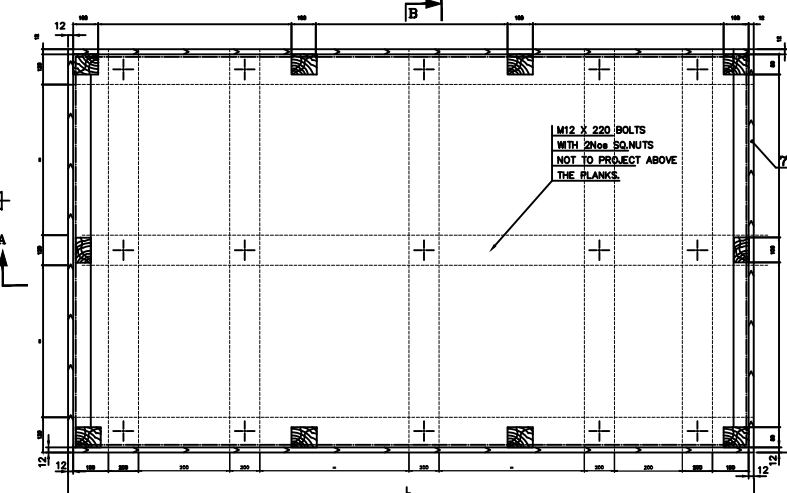
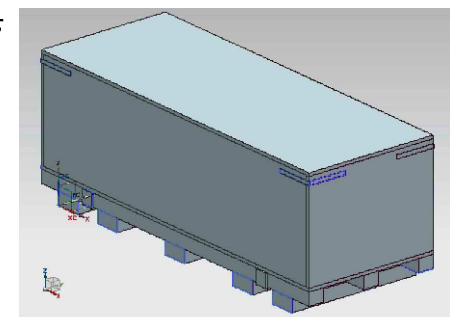
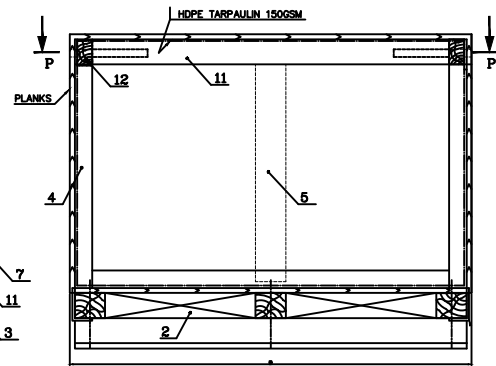
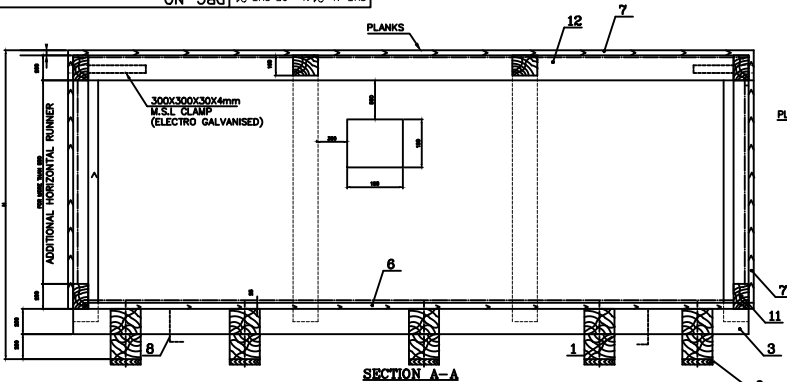
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|----------------------------|-----------|-------------|---------------|
| EXPORT BOLTED RUNNER CASES | | 2-CPDC-0018 | 00 |
| VAR: 01 | | SHT. No 01 | NO. OF SHT.04 |

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 COMPUTER FILE NAME: 2C0C0018.DWG
 SIGN. AND DATE: REF. DRG. NO.
 INVENTORY NO

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

DRG. NO. 2-CPDC-0018



PLAN AT P-P

SECTION B-B

NOTE FOR EXPORT PAKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. PAKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE &TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
3. PLANKS 20mm THICK AT BOTTOM AND PLY WOOD 12mm AT SIDES AND TOP.
4. POSITION NUMBER '8' M.S LIFTING ANGELS TO BE FIXED AT SUITABLE PLACES.
5. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PAKING CASE.
6. PLY WOOD THICK 12MM; AS PER SPEC: AA51101 FOR SIDES ONLY.
7. TOLERANCE IS +/- 5% ON THICKNESS OF PLY WOOD AS PER SPEC: AA51101,
8. G.I. SHEET 0.3mm THICK (IS:277) SIDES, TOP (OUT SIDE) & BOTTOM (INSIDE)
9. WHERE EVER REQUIRED ISPM COMPLAINE WOOD (PLANKS/RUNNERS) SHALL BE USED AS PER SPEC. HY 51463. ISPM-15 CERTIFICATE SHALL BE SUBMITTED BY THE VENDOR WITHOUT ANY EXTRA PRICE IMPLICATION.

| ITEM NO. | DESCRIPTION | DIMENSION | QTY |
|----------|-----------------------------------|-------------------------|-----|
| 12 | HORIZONTAL RUNNERS TOP | 80 x 100 | 2 |
| 11 | HORIZONTAL RUNNERS BOTTOM & TOP | 80 x 100 | 6 |
| 10 | G.I SHEET 0.3MM THICK | AS PER PAKING CASE | |
| 9 | SUPPORTING PLANKS | 20 MM THICK | 5 |
| 8 | LIFTING ANGLE(ELECTRO GALVANISED) | 100x100x200-4mmTh, 4NOS | 4 |
| 7 | PLYWOOD (SIDES & TOP) | 12 mm Thickness | 5 |
| 6 | PLANK(BOTTOM) | 25 mm Thickness | 1 |
| 5 | STURT | 80 x 100 | 2 |
| 4 | STRUT | 80 x 100 | 8 |
| 3 | SUPPORTING BEAM | 100 x 200 | 3 |
| 2 | INTERMEDIATE BEAM | 100 x 200 | 10 |
| 1 | SKID | 100 x 200 | 5 |

| ITEM NO. | DESCRIPTION | DIMENSION | QTY |
|----------|-------------|-----------|-----|
|----------|-------------|-----------|-----|

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

| BHARAT HEAVY ELECTRICALS LTD. HYDERABAD | | NAME | SIGN. | DATE | NO.OF VAR. |
|---|----|------|-------|----------|------------|
| DRN. | MG | | | 29.05.13 | |
| CHD. | RR | | | 29.05.13 | |
| APPD. | KB | | | 29.05.13 | |

| DEPT. CPDC | UNTO. DIMS. OR. R40C | SCALE | WEIGHT (KG) | REF. TO ASSY. DRG. | ITEM NO. | NO.OF ITEMS |
|------------|----------------------|-------|-------------|--------------------|----------|-------------|
| | | | | | | |

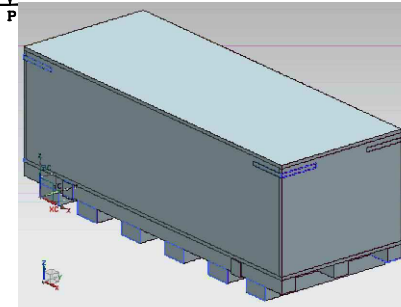
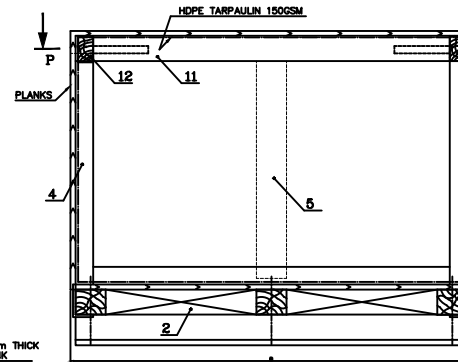
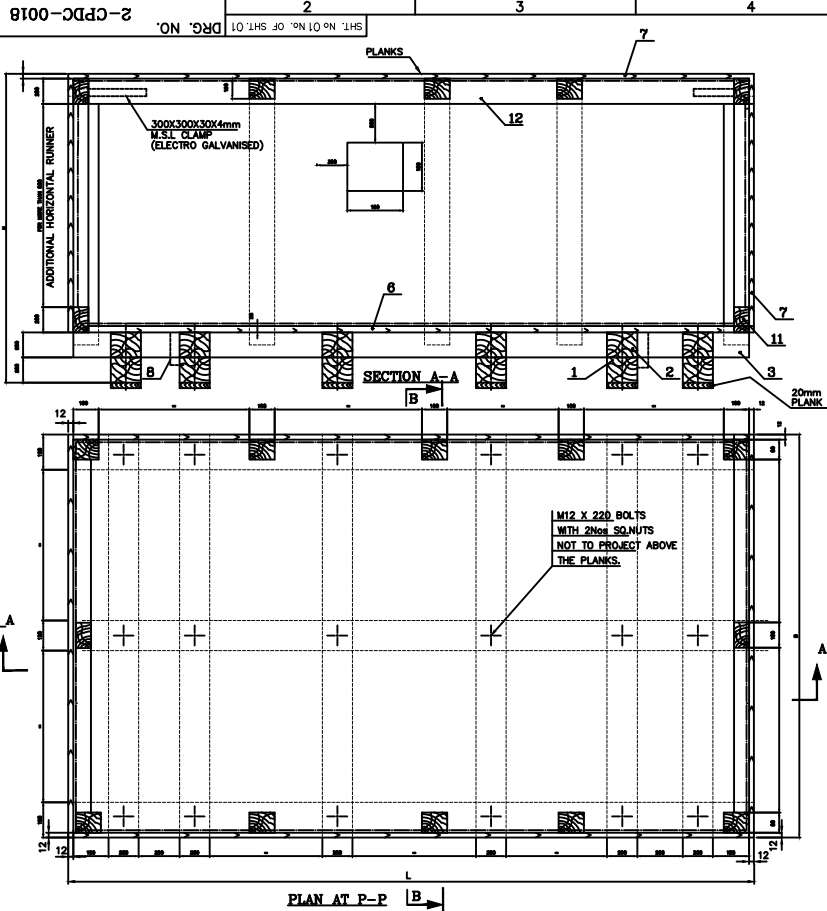
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|-----------------------------------|-----------|-------------|---------------|
| EXPORT BOLTED RUNNER CASES VAR:02 | | 2-CPDC-0018 | 00 |
| | | SHT. No 02 | NO. OF SHT.04 |

THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY
 COMPUTER FILE NAME 2CD0018.DWG
 SIGN. AND DATE REF. DRG. NO.
 INVENTORY NO

| REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED |
|------|------|----------|------|------|----------|------|------|----------|------|------|----------|
| ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD |
| 1 | | | 2 | | | 3 | | | 4 | | |
| 5 | | | 6 | | | 7 | | | 8 | | |

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)



NOTE FOR EXPORT PAKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES,BOTTOM INSIDE & TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES & FIXED
3. PLANKS 20mm THICK AT BOTTOM AND PLY WOOD 12mm AT SIDES AND TOP.
4. POSITION NUMBER '8' M.S LIFTING ANGELS TO BE FIXED AT SUITABLE PLACES.
5. TOLERANCE IS OF $+/- 10$ mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
6. PLY WOOD THICK 12MM; AS PER SPEC: AA51101 FOR SIDES ONLY.
7. TOLERANCE IS $+/- 5\%$ ON THICKNESS OF PLY WOOD AS PER SPEC: AA51101,
8. G.I. SHEET 0.3mm THICK (IS:277) SIDES, TOP (OUT SIDE) & BOTTOM (INSIDE)
9. WHERE EVER REQUIRED ISPM COMPLAINE WOOD (PLANKS/RUNNERS)SHALL BE USED AS PER SPEC. HY 51463. ISPM-15 CERTIFICATE SHALL BE SUBMITTED BY THE VENDOR WITHOUT ANY EXTRA PRICE IMPLICATIONS.

| | | | |
|----|-----------------------------------|-------------------------|----|
| 12 | HORIZONTAL RUNNERS TOP | 80 x 100 | 2 |
| 11 | HORIZONTAL RUNNERS TOP & BOTTOM | 80 x 100 | 7 |
| 10 | G.I SHEET 0.3MM THICK | AS PER PACKING CASE | |
| 9 | SUPPORTING PLANKS | 20 MM THICK | 6 |
| 8 | LIFTING ANGLE(ELECTRO GALVANISED) | 100x100x200-4mmTh, 4NOS | 4 |
| 7 | PLYWOOD (SIDES & TOP) | 12 mm Thickness | 5 |
| 6 | PLANK(BOTTOM) | 25 mm Thickness | 1 |
| 5 | STRUT | 80 x 100 | 2 |
| 4 | STRUT | 80 x 100 | 10 |
| 3 | SUPPORTING BEAM | 100 x 200 | 3 |
| 2 | INTERMEDIATE BEAM | 100 x 200 | 12 |
| 1 | SKID | 100 x 200 | 6 |

| ITEM NO. | DESCRIPTION | DIMENSION | QTY |
|----------|-------------|-----------|-----|
|----------|-------------|-----------|-----|

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

| BHRAT HEAVY ELECTRICALS LTD HYDERABAD | NAME | SIGN. | DATE | NO. OF |
|--|----------|-------|----------|--------|
| | DRN. MG | | 29.05.13 | VAR. |
| | CHD. RR | | 29.05.13 | |
| | APPD. KB | | 29.05.13 | |

| DEPT. CPDC | UNTO. DIMS. OR. CODE. B40C | SCALE | WEIGHT (KG) | REF. TO ASSY. DRG. | ITEM NO. | NO. OF ITEMS |
|------------|----------------------------|-------|-------------|--------------------|----------|--------------|
| | | | | | | |

| TITLE | CARD CODE | DRAWING NO. | REV. |
|----------------------------|-----------|-------------|------|
| EXPORT BOLTED RUNNER CASES | | 2-CPDC-0018 | 00 |
| VAR: 03 | | | |

| SHT. No | NO. OF SHT. |
|---------|-------------|
| 03 | 04 |

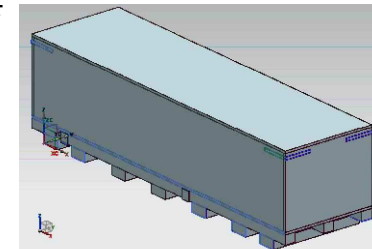
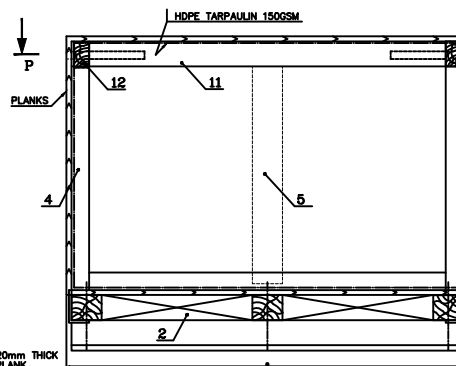
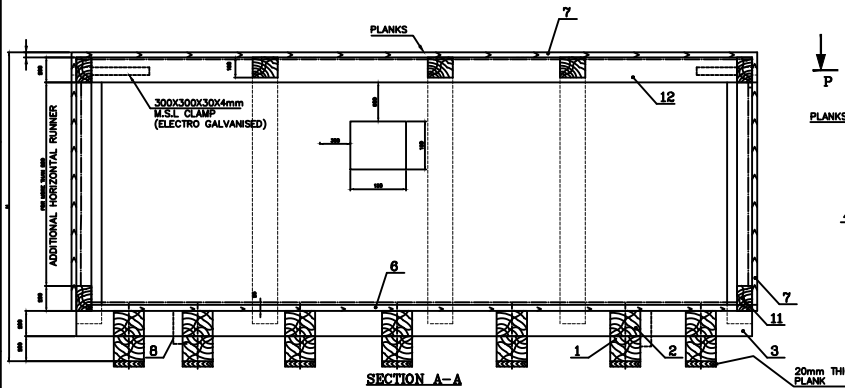
INVENTORY NO. SIGN. AND DATE REF. DRG. NO. COMPUTER FILE NAME 2CD0018.DWG THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY

| REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED |
|------|------|----------|------|------|----------|------|------|----------|------|------|----------|
| ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD |
| 1 | | | 2 | | | 3 | | | 4 | | |
| 5 | | | 6 | | | 7 | | | 8 | | |

FIRST ANGLE PROJECTION

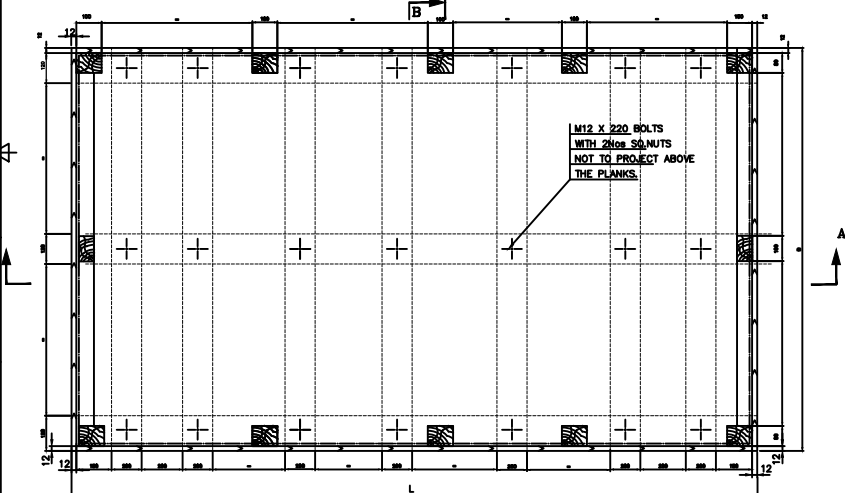
(ALL DIMENSIONS ARE IN mm)

DRG. NO. 2-CPDC-0018
SHT. NO. 01 NO. OF SHTS 01



SECTION A-A

SECTION B-B



PLAN AT P-P

NOTE FOR EXPORT PAKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
3. PLANKS 20mm THICK AT BOTTOM AND PLY WOOD 12mm AT SIDES AND TOP.
4. POSITION NUMBER '8' M.S LIFTING ANGELS TO BE FIXED AT SUITABLE PLACES.
5. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
6. PLY WOOD THICK 12MM; AS PER SPEC: AA51101 FOR SIDES ONLY.
7. TOLERANCE IS +/- 5% ON THICKNESS OF PLY WOOD AS PER SPEC: AA51101.
8. G.I. SHEET 0.3mm THICK (IS:277) SIDES, TOP (OUT SIDE) & BOTTOM (INSIDE)
9. WHERE EVER REQUIRED ISPM COMPLAINE WOOD (PLANKS/RUNNERS) SHALL BE USED AS PER SPEC. HY 51463. ISPM-15 CERTIFICATE SHALL BE SUBMITTED BY THE VENDOR WITHOUT ANY EXTRA PRICE IMPLICATION.

| ITEM NO. | DESCRIPTION | DIMENSION | QTY |
|----------|-----------------------------------|-------------------------|-----|
| 12 | HORIZONTAL RUNNERS TOP | 80 x 100 | 2 |
| 11 | HORIZONTAL RUNNERS TOP & BOTTOM | 80 x 100 | 7 |
| 10 | G.I SHEET 0.3MM THIK | AS PER PACKING CASE | |
| 9 | SUPPORTING PLANK | 20 MM THICK | 7 |
| 8 | LIFTING ANGLE(ELECTRO GALVANISED) | 100x100x200-4mmTh, 4NOS | 4 |
| 7 | PLYWOOD (SIDES & TOP) | 12 mm Thickness | 5 |
| 6 | PLANK(BOTTOM) | 25 mm Thickness | 1 |
| 5 | STURT | 80 x 100 | 2 |
| 4 | STRUT | 80 x 100 | 10 |
| 3 | SUPPORTING BEAM | 100 x 200 | 3 |
| 2 | INTERMEDIATE BEAM | 100 x 200 | 14 |
| 1 | SKID | 100 x 200 | 7 |

| ITEM NO. | DESCRIPTION | DIMENSION |
|----------|-------------|-----------|
|----------|-------------|-----------|

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

| DEPT. CPDC CODE: B40C | UNTO. DIMS. OR: W/M// | SCALE NTS | WEIGHT (KG) | REF. TO ASSY. DRG. | ITEM NO. | NO. OF ITEMS | APPROVALS | | |
|-----------------------|-----------------------|-----------|-------------|--------------------|----------|--------------|-----------|-------|----------|
| | | | | | | | NAME | SIGN. | DATE |
| | | | | | | | DRN. MG | | 29.05.13 |
| | | | | | | | CHD. RR | | 29.05.13 |
| APPD. KB | | 29.05.13 | | | | | | | |

| | | | | | | |
|-----------------------|-----------------------|-----------|-------------|--------------------|----------|--------------|
| DEPT. CPDC CODE: B40C | UNTO. DIMS. OR: W/M// | SCALE NTS | WEIGHT (KG) | REF. TO ASSY. DRG. | ITEM NO. | NO. OF ITEMS |
|-----------------------|-----------------------|-----------|-------------|--------------------|----------|--------------|

| | | | |
|--|-----------|---------------------------------------|------------|
| TITLE EXPORT BOLTED RUNNER CASES VAR: 04 | CARD CODE | DRAWING NO. 2-CPDC-0018 VAR: 04 | REV. 00 |
|--|-----------|---------------------------------------|------------|

INVENTORY NO. SIGN. AND DATE REF. DRG. NO. COMPUTER FILE NAME 2CDC0018.DWG THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY

| REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED |
|------|------|----------|------|------|----------|------|------|----------|------|------|----------|------|------|----------|
| ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD |
| 1 | | | 2 | | | 3 | | | 4 | | | 5 | | |

| | |
|-----------|---------------|
| SH. No 04 | NO. OF SH. 04 |
|-----------|---------------|

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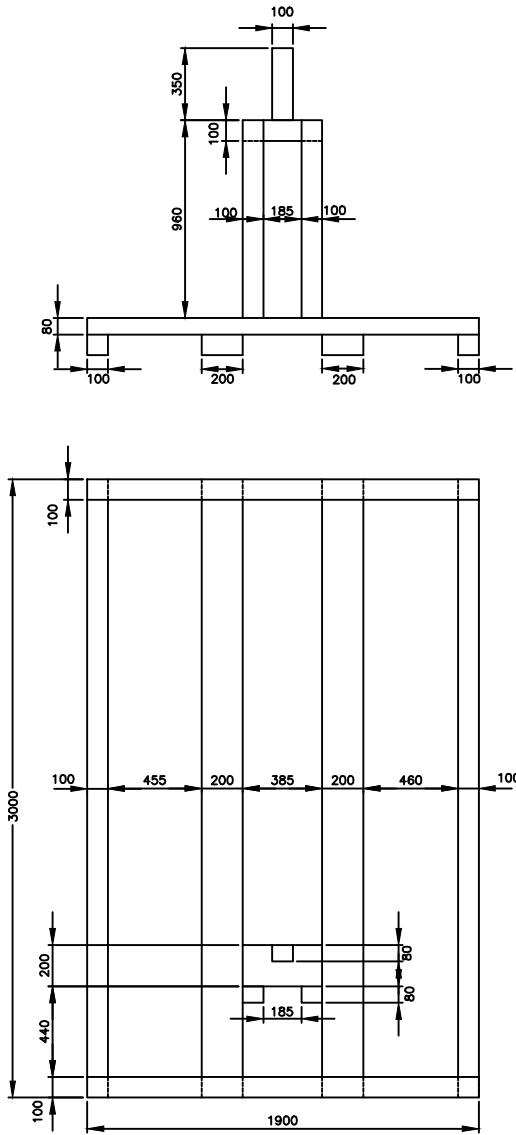
SIGN. AND DATE REF. DRG. NO. INVENTORY NO

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

| | | | | | |
|------|------|---------|------|------|---------|
| REV. | DATE | ALTERED | REV. | DATE | ALTERED |
| | | CHECKED | | | |

GEN. DIM. LIMITS, FITS, & TOLERANCES AS PER P.S. :- HY0230261



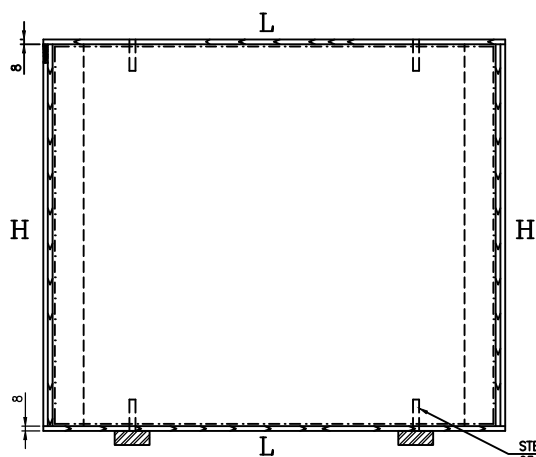
| Sl. No | DESCRIPTION | SIZE | No.PCS |
|--------|-------------------|------------------|--------|
| 6 | WOODEN BLOCK | 100 x 200 x 385 | 1 |
| 5 | VERICAL BEAM | 100x 80 x 350 | 1 |
| 4 | VERICAL BEAM | 80 x 100 x 960 | 2 |
| 3 | HORIZONTAL RUNNER | 100 x 100 x 3000 | 2 |
| 2 | HORIZONTAL RUNNER | 200 x 100 x 3000 | 2 |
| 1 | HORIZONTAL RUNNER | 80 x 100 x 1900 | 2 |

| | | | | | | | | |
|--|----------------------|---------|-------------|-------------|--------------------------|----------|-------------|------------|
| REMARKS | | ITEM NO | DESCRIPTION | STD | MATL. CODE | A/C | UNIT | UNIT Wt. |
| | | | | | MATL. SPEN. | | | QTY. |
| | | | | DRN. | MG | | DATE | NO.OF VAR. |
| | | | | CHD. | RR | | 27.11.12 | |
| | | | | APPD. | KB | | 27.11.12 | |
| DEPT. CODE | UNTO. DIM. GR. R/M/F | | SCALE | WEIGHT (KG) | REF. TO ASSY DRG. | ITEM NO. | NO.OF ITEMS | |
| TITLE WOODEN SUPPORT FOR BOWL & BOWL HUB ASSLY | | | | CARD CODE | DRAWING NO. 4-94-67-0527 | REV. 00 | | |
| | | | | SHT No. | NO OF SHT. | | | |

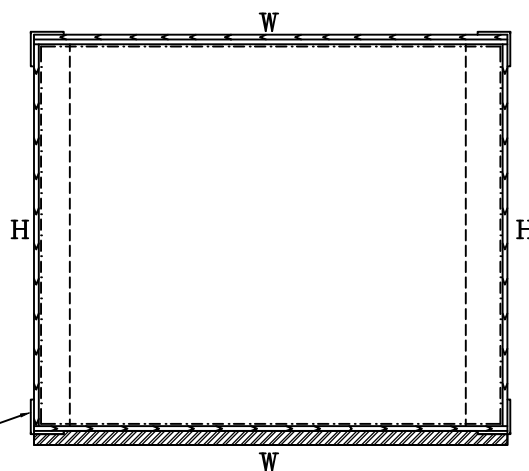
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

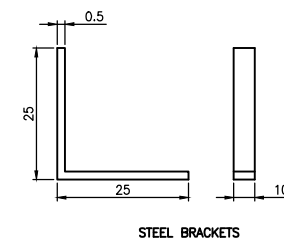
DRG. NO. 2-CPDC-0055



FRONT VIEW

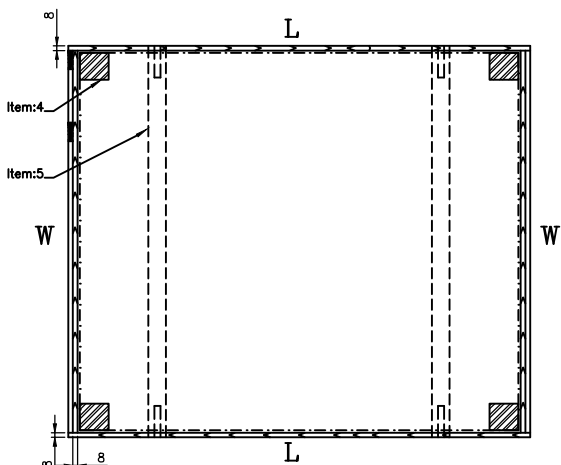


SIDE VIEW



STEEL BRACKETS

Item:2
STEEL BRACKETS
25x25x10x2
(ELEC.GALV/BLACKENING)



PLAN

NOTES:-

1. OUTER SIDE DIMENSIONS L x W x H ARE TO BE MAINTAINED CORRECTLY.
2. WOOD TO HY:51463.
3. IN SIDE OF CASE TO BE LINED WITH HDPE TARPULINE SHEET
4. PLANKS 8mm THICK AT TOP, ALL SIDES & BOTTOM.
5. PACKING INSTRUCTIONS AS PER HY:0490301.
6. COMPONENT PRESERVATION AS PER HY:0490563

Width(W) : 150mm to 300mm
Height(H): 150mm to 300mm



| S.NO | ITEM DESCRIPTION | DIMENSIONS | QTY |
|------|---|-----------------------|-----|
| 6 | PLANKS BOTTOM | 25x50x100 | 2 |
| 4 | RUNNERS INSIDE | 25x25x100 | 4 |
| 3 | HDPE TARPULINE SHEET FOR ALL INSIDE WALLS | 150 GSM As per Box | - |
| 2 | STEEL BRACKETS: | 25X25X10X0.5 | 8 |
| 1 | PLY WOOD FOR ALL SIDES, BOTTM & TOP | 8mm Thk LxWxH | 6 |

S.NO ITEM DESCRIPTION DIMENSIONS QTY

TYPE OF PRODUCT OR RANGE:
NAME OF CUSTOMER/PROJECT

| NAME | SIGN. | DATE | NO.OF VAR. |
|---|-------|----------|------------|
| BHARAT HEAVY ELECTRICALS LTD. HYDERABAD | | 21.09.15 | -NA- |
| | | 21.09.15 | -NA- |
| | | 21.09.15 | -NA- |

| DEPT. CPDC CODE 480C | UNTO. DMS. GR. 8/M/F | SCALE NTS | WEIGHT (KG) -NA- | REF. TO ASSY. DRG. -NA- | ITEM NO. -NA- | NO.OF ITEMS -NA- |
|---|----------------------|-----------|------------------|-------------------------|----------------------------|------------------|
| TITLE MINIATURE CASES FOR MISCELLANEOUS ITEMS TYPE | | | | CARD CODE -NA- | DRAWING NO. 2-CPDC-0055 | REV. 00 |
| | | | | SHT. No 01 | NO. OF SHT. 01 | |

INVENTORY NO. SIGN. AND DATE REF. DRG. NO. COMPUTER FILE NAME THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

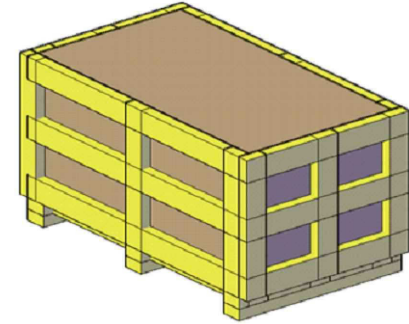
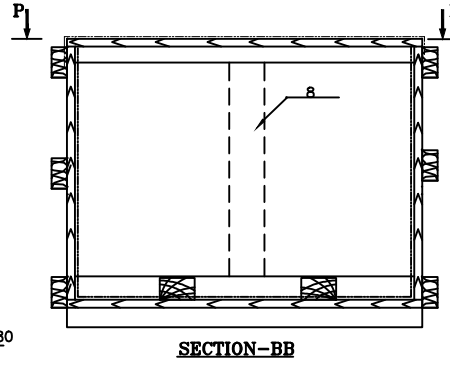
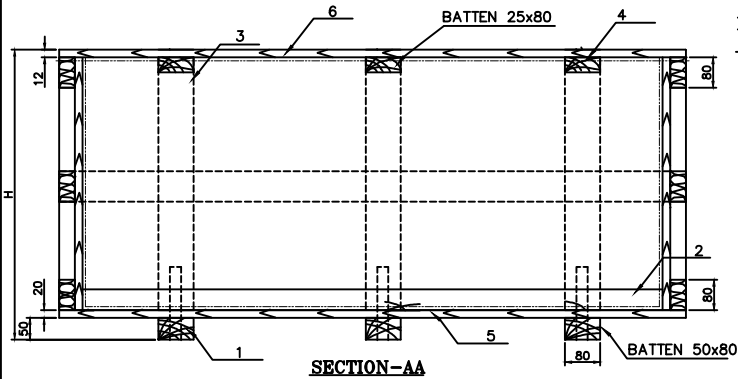
GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

| REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED |
|------|------|----------|------|------|----------|------|------|----------|------|------|----------|
| ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD |
| 1 | | | 2 | | | 3 | | | 4 | | |
| 5 | | | 6 | | | 7 | | | 8 | | |

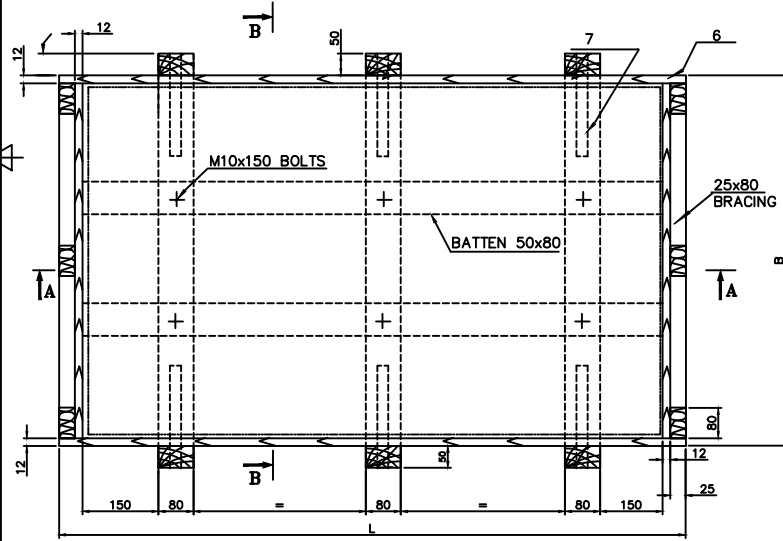
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

DRG. NO. OF SHT. 2 - CPDC-0056



ABOVE PICTURE IS INDICATIVE ONLY



PLAN AT-PP

Range of Sizes (in mm): LxWxH
300x300x300mm to 800x800x800mm

NOTE FOR EXPORT PAKING CASES:

1. OUT SIDE DIMENSIONS LxBxH ARE TOBE MAINTAINED CORRECTLY.
2. PACKING CASE TO BE LINED WITH HESSIAN BITUMEN KRAFT PAPER LDPE 100 GSM AT SIDES, BOTTOM INSIDE AND TOP. OUTSIDE TOP IS TO BE TURNED 80MM ON SIDES AND FIXED
3. PLANKS 20mm THICK AT BOTTOM, SIDES AND PLY WOOD 12mm AT SIDES AND TOP.
4. POSITION NUMBER 'B' M.S LIFTING ANGELS TO BE FIXED AT SUITABLE PLACES.
5. TOLERANCE IS OF + / - 10 mm ON LENGTH, WIDTH & HEIGHT OF PACKING CASE.
6. PLY WOOD THICK 12MM; AS PER SPEC: AA51101 FOR SIDES ONLY.
7. TOLERANCE IS +/- 5% ON THIKNESS OF PLY WOOD AS PER SPEC: AA51101,
8. WHERE EVER REQUIRED ISPM COMPLAINCE WOOD (PLANKS/RUNNERS) SHALL BE USED . AS PER SPEC. HY 51463 ISPM-15 CERTIFICATE SHALL BE SUBMITTED BY THE VENDOR WITHOUT ANY EXTRA PRICE IMPLICATIONS.

| S.NO | ITEM DESCRIPTION | DIMENSIONS | QTY |
|------|------------------------------|-----------------|-----|
| 9 | | | |
| 8 | RUNNERS AT EACH SIDES OF BOX | 80 X 100 | 10 |
| 7 | STEEL BRACKETS: | 200x200x30x3.15 | 6 |
| 6 | PLY WOOD FOR SIDES & TOP | 12mm THICK | 5 |
| 5 | PLANKS FOR BOTTOM & SIDES | 20mm THICK | 5 |
| 4 | HORIZONTAL RUNNERS TOP | 25 X 80 | 3 |
| 3 | STRUT | 25 X 80 | 6 |
| 2 | SUPPORTING BEAMS | 50 X 80 | 2 |
| 1 | SKID | 50 x 80 | 3 |

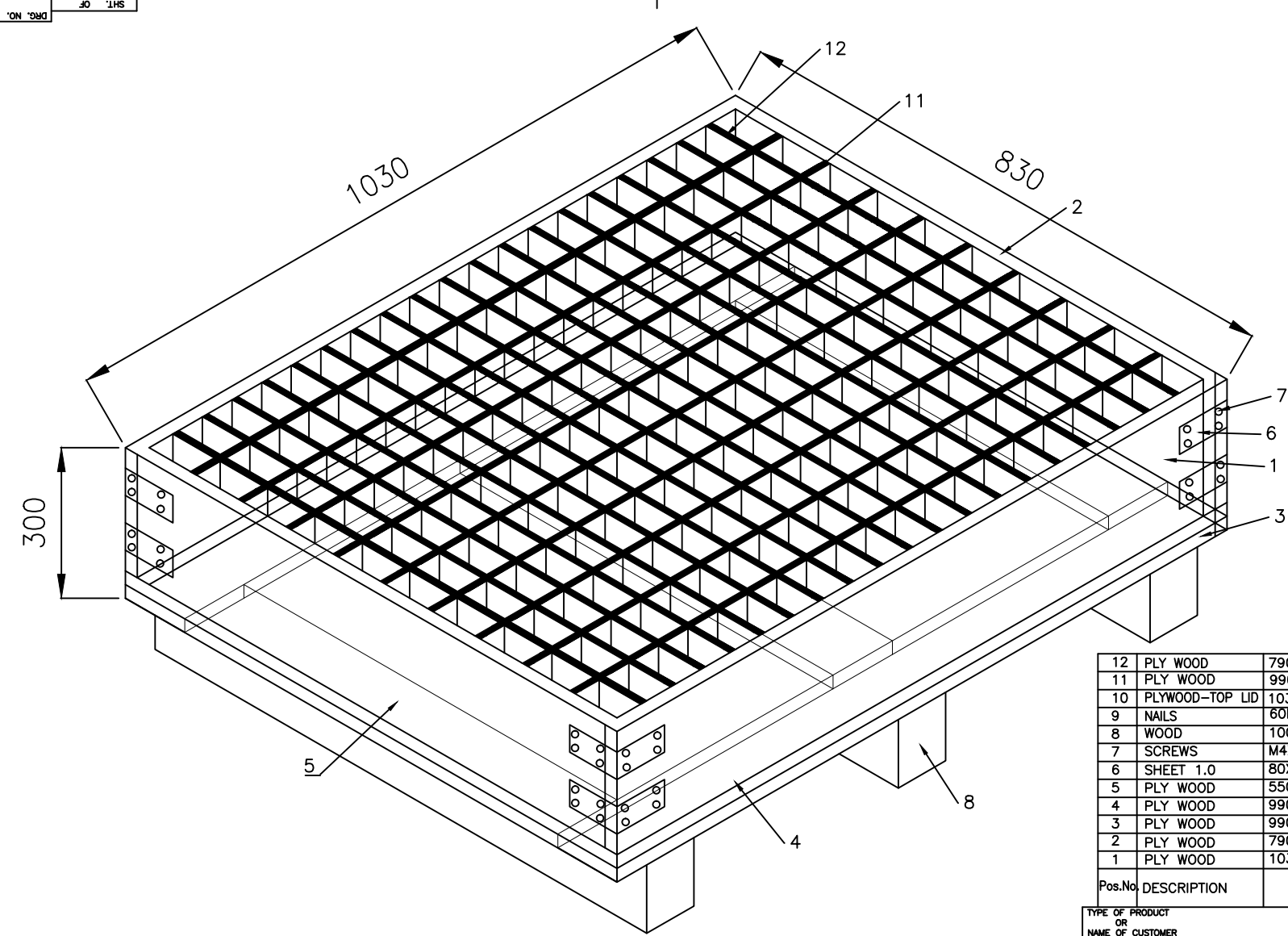
TYPE OF PRODUCT **Ply wood Packing cases**
OR
NAME OF CUSTOMER/PROJECT **(Runners on Plywood sheets)**

| | | | | | | |
|--|-------------------------------|-----------|------------------|----------------------------------|----------------|-------------|
| | BHARAT HEAVY ELECTRICALS LTD. | | NAME | SIGN. | DATE | NO.OF VAR. |
| | HYDERABAD | | DRN. | MG | 30.10.15 | |
| | | | CHD. | MLN | 30.10.15 | |
| | | | APPD. | KB | 30.10.15 | |
| DEPT. CPDC 840 | UNTO. DIMS. GR. ϕ/M/Y | SCALE NTS | WEIGHT (KG) -NA- | REF. TO ASSY. DRG. | ITEM NO. | NO.OF ITEMS |
| TITLE PLYWOOD PACKING CASES (Runners on plywood sheets) | | | CARD CODE | DRAWING NO. 2 - CPDC-0056 | REV. 00 | |
| | | | SHT. No | | NO. OF SHT. | |

INVENTORY NO. SIGN. AND DATE REF. DRG. NO. SN 30040 COMPUTER FILE NAME THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)



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GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

| REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | | | | | | | | | | | | | | | |
|------|------|----------|------|------|----------|------|------|----------|------|------|----------|------|------|----------|------|------|----------|------|------|----------|---|--|--|---|--|--|----|--|--|----|--|--|----|--|--|
| ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD | ZONE | | CHD/APPD | | | | | | | | | | | | | | | |
| 1 | | | 2 | | | 3 | | | 4 | | | 5 | | | 6 | | | 7 | | | 8 | | | 9 | | | 10 | | | 11 | | | 12 | | |

| Pos.No | DESCRIPTION | SIZE | Qty |
|--------|-----------------|-------------|-----|
| 12 | PLY WOOD | 790X220X10 | 19 |
| 11 | PLY WOOD | 990X220X10 | 9 |
| 10 | PLYWOOD-TOP LID | 1030X830X20 | 1 |
| 9 | NAILS | 60MM LONG | 12 |
| 8 | WOOD | 100X80X830 | 3 |
| 7 | SCREWS | M4X12 | 64 |
| 6 | SHEET 1.0 | 80X40X1 | 8 |
| 5 | PLY WOOD | 550X120X20 | 3 |
| 4 | PLY WOOD | 990X120X20 | 2 |
| 3 | PLY WOOD | 990X790X20 | 1 |
| 2 | PLY WOOD | 790x300x20 | 2 |
| 1 | PLY WOOD | 1030x300x20 | 2 |

TYPE OF PRODUCT OR NAME OF CUSTOMER

BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD

| | | | |
|----------|------|----------|--------|
| NAME | SGN. | DATE | NO. OF |
| DRN. MC | | 18.08.13 | VAR. |
| CHD. RR | | 18.08.13 | |
| APPD. KB | | | |

DEPT. UNTO. DIMS. SCALE WEIGHT (KG) REF. TO ASSY. DRG. ITEM NO. NO. OF ITEMS

CODE OR V/M/F

TITLE: **PACKING CASE FOR GUIDE BLADES**

DRAWING NO. **2-94-11-991**

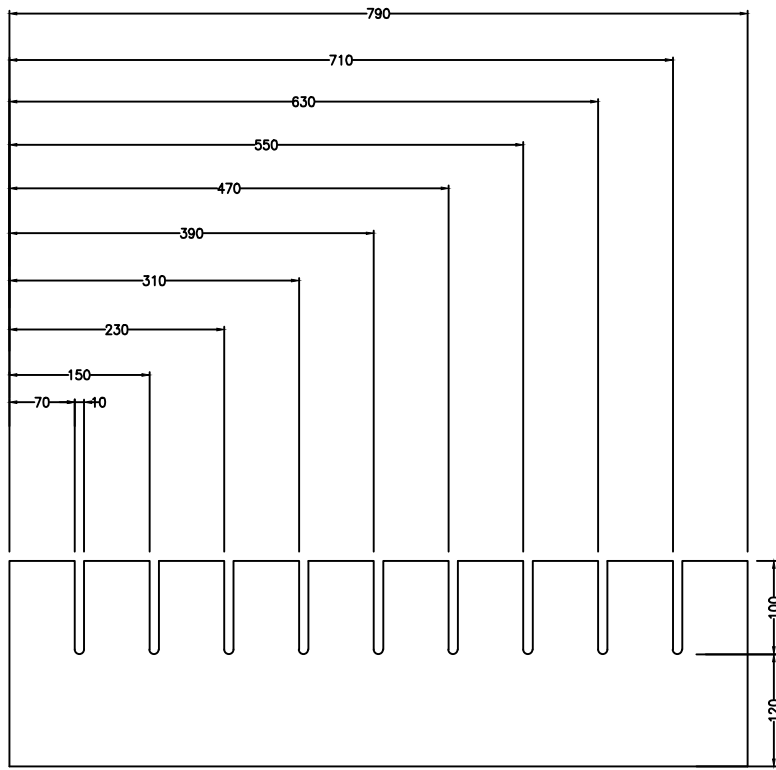
REV. **00**

SHT. No. 1 NO. OF SHT. 2

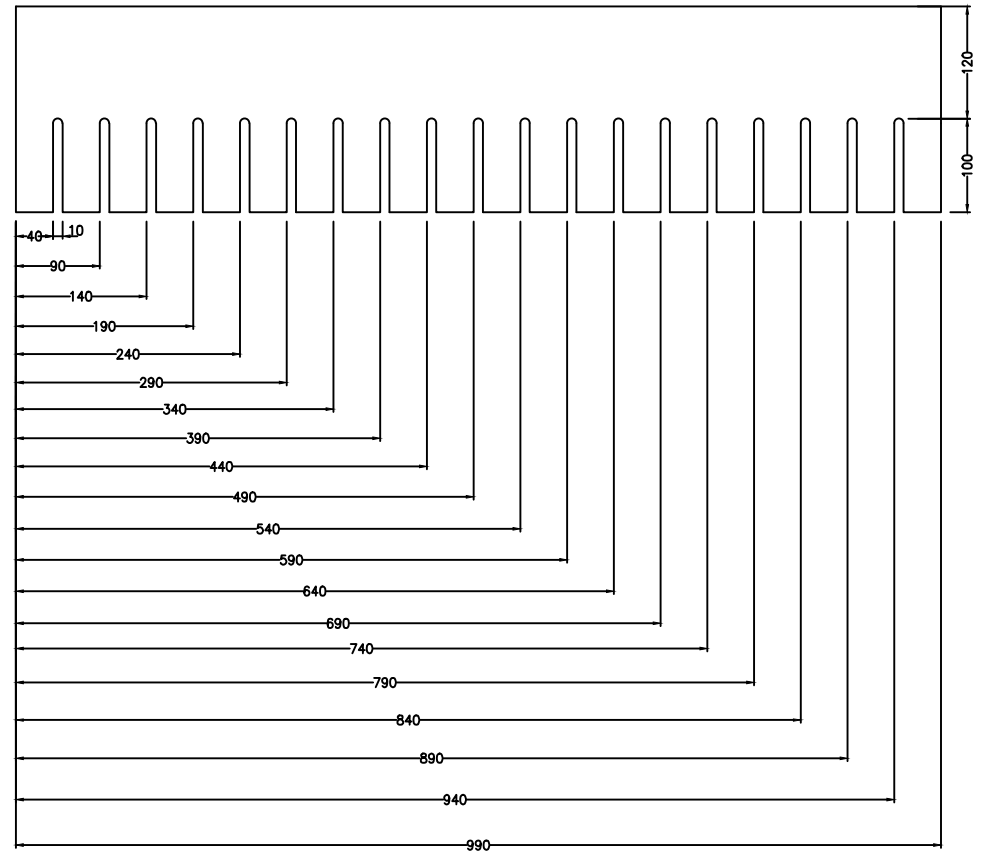
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

DRG. NO. SHIT. OF



Item No:12



Item No:11

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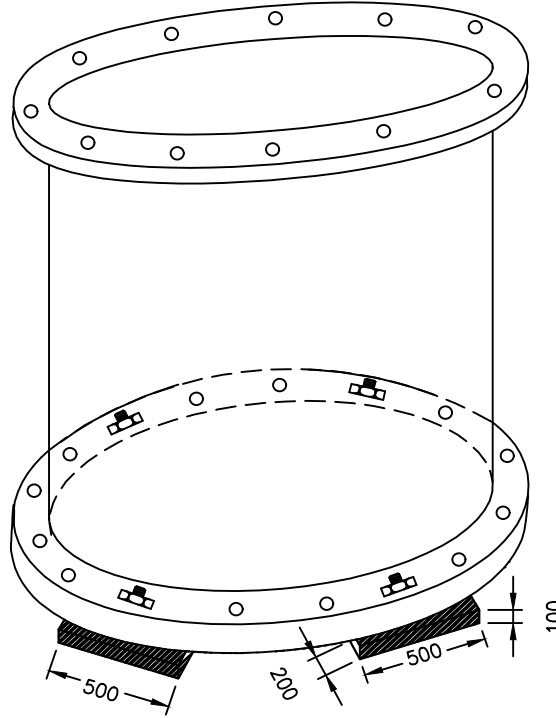
GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261

| REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | REV. | DATE | ALTERED | |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|
| CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | CHD/APPD | |
| | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | |
|---|--------------|-----------|-------------|--------------------|--------------|
| TYPE OF PRODUCT OR NAME OF CUSTOMER | | NAME | SGN. | DATE | NO. OF VGR. |
| BHARAT HEAVY ELECTRICALS LTD. HYDERABAD | | DRN. M/G | RR | 10.08.13 | 10.08.13 |
| DEPT. CODE | UNTO. OR V/W | SCALE | WEIGHT (KG) | REF. TO ASSY. DRG. | ITEM NO. |
| | | | | | |
| TITLE | | CARE CODE | DRAWING NO. | REV. | NO. OF ITEMS |
| PACKING CASE FOR GUIDE BLADE | | | 2-94-11-991 | 00 | |
| | | | SHT. No 02 | NO. OF SHIT. 2 | |

| | | | | | |
|------|------|---------|------|------|---------|
| REV. | DATE | ALTERED | REV. | DATE | ALTERED |
| | | CHECKED | | | |

GEN. DIM. LIMITS , FITS , & TOLERANCES AS PER P.S :- HY0230261



NOTE:-

1. PACKING INSTRUCTIONS AS PER HY : 0490572

| | | | | | | | |
|----------------|---|------------------------|-----------------|----------------|-------------------------|----------|----------------|
| REF. DRG. NO. | 2 | Bolts M12 | Length: 200MM | 4 | | | |
| | 1 | WOODEN RUNNERS | 100 X 200 X 500 | 4 | | | |
| SIGN. AND DATE | REMARKS | ITEM NO | DESCRIPTION | SIZE | QTY. | | |
| | | | DRN. | MG | SIGN. | DATE | NO.OF VAR. |
| INVENTORY NO | DEPT. CPDC | UNTO. DIM. GR. /C/M/F/ | SCALE NTS | WEIGHT (KG) NA | REF. TO ASSY DRG. | ITEM NO. | NO.OF ITEMS NA |
| | CODE 480C | | | | | | |
| | TITLE WOODEN SUPPORTS FOR JOURNAL OPENING COVER; SEPERATOR TOP & SEPERATOR BODY | | | CARD CODE | DRAWING NO. 2-CPDC-0059 | | REV. 00 |
| | | | | SHT No. | NO OF SHT. | | |

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REF. DRG. NO.

SIGN. AND DATE

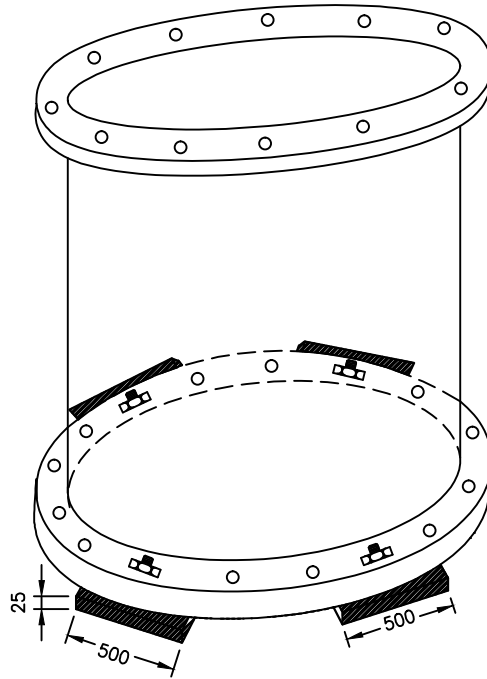
INVENTORY NO

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

| | | | | | |
|------|------|---------|------|------|---------|
| REV. | DATE | ALTERED | REV. | DATE | ALTERED |
| | | CHECKED | | | CHECKED |

GEN. DIM. LIMITS , FITS , & TOLERANCES AS PER P.S :- HY0230261



NOTE:-

1. PACKING INSTRUCTIONS AS PER HY : 0490572
2. PACKING WOOD AS PER HY : 51463.

| | | | | | | | |
|------------------------------------|-------------------------------|---------------|----------------|----------------|-------------------|------------|----------------|
| | 2 | Bolts M20 | M20X150MM | 4 | | | |
| | 1 | WOODEN PLANKS | 20 X 200 X 500 | 4 | | | |
| REMARKS | ITEM NO | DESCRIPTION | SIZE | QTY. | | | |
| | BHARAT HEAVY ELECTRICALS LTD. | | NAME | SIGN. | DATE | NO.OF VAR. | |
| | HYDERABAD | | DRN. | MG | 15.10.15 | | |
| | | | CHD. | MLN | 15.10.15 | | |
| | | | APPD. | KB | 15.10.15 | | |
| DEPT. CPDC | UNTOL. DIM. GR. C/M/F/ | | SCALE NTS | WEIGHT (KG) NA | REF. TO ASSY DRG. | ITEM NO. | NO.OF ITEMS NA |
| CODE 480C | | | | | | | |
| TITLE | | | | DRAWING NO. | | REV. | |
| WOODEN SUPPORTS FOR SEPERATOR BODY | | | | 2-CPDC-0057 | | 00 | |
| | | | | SHT No. | | NO OF SHT. | |

BHARAT HEAVY ELECTRICALS LIMITED.

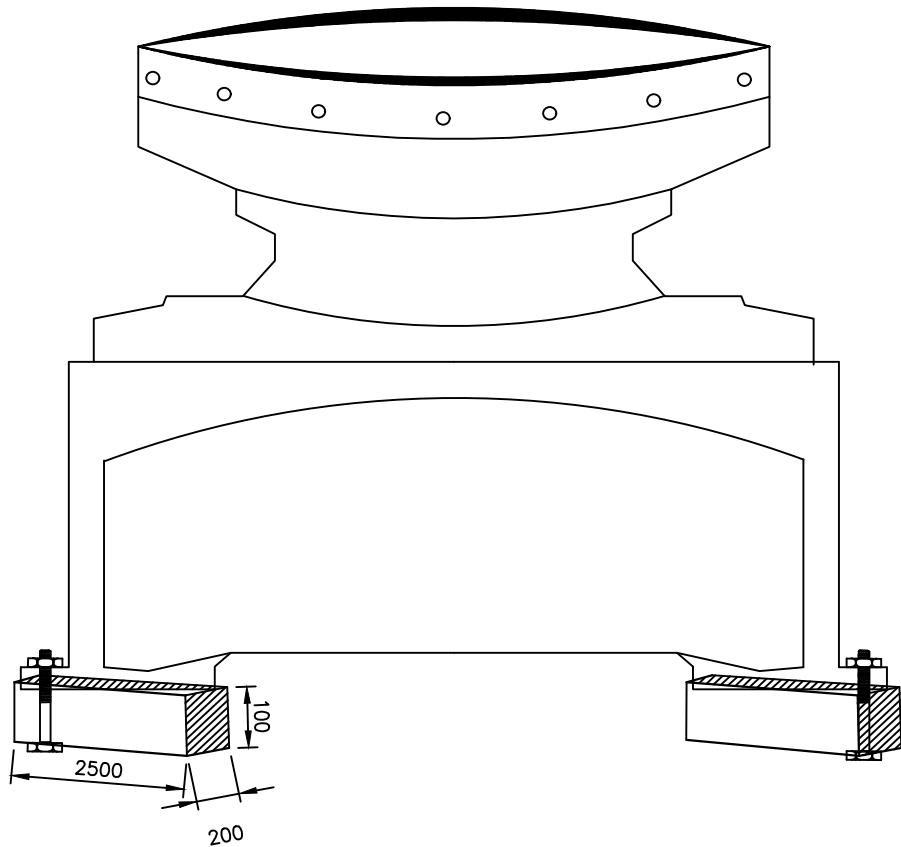
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FIRST ANGLE PROJECTION

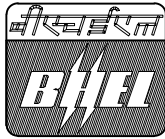
(ALL DIMENSIONS ARE IN mm)

| | | | | | |
|------|------|---------|------|------|---------|
| REV. | DATE | ALTERED | REV. | DATE | ALTERED |
| | | CHECKED | | | CHECKED |

GEN. DIM. LIMITS , FITS , & TOLERANCES AS PER P.S :- HY0230261



NOTE:-
1. PACKING INSTRUCTIONS AS PER HY : 0490572

| | | | | | | | |
|----------------|--|-------------------------|------------------|----------------|-------------------|-------------------------|----------------|
| REF. DRG. NO. | 2 | Bolts M12 | Length: 200MM | 4 | | | |
| | 1 | WOODEN RUNNERS | 100 X 200 X 2500 | 2 | | | |
| SIGN. AND DATE | REMARKS | ITEM NO | DESCRIPTION | SIZE | QTY. | | |
| |  BHARAT HEAVY ELECTRICALS LTD. HYDERABAD | DRN. | MG | SIGN. | DATE | NO.OF VAR. | |
| | | CHD. | MLN | | 15.10.15 | | |
| APPD. | | KB | | 15.10.15 | | | |
| INVENTORY NO | DEPT. CPDC | UNTOL. DIM. GR. /C/M/F/ | SCALE NTS | WEIGHT (KG) NA | REF. TO ASSY DRG. | ITEM NO. | NO.OF ITEMS NA |
| | CODE 480C | | | | | | |
| | TITLE WOODEN SUPPORTS FOR GEAR BOX | | | | CARD CODE | DRAWING NO. 2-CPDC-0060 | |
| | | | | SHT No. | NO OF SHT. | | |

BHARAT HEAVY ELECTRICALS LIMITED.

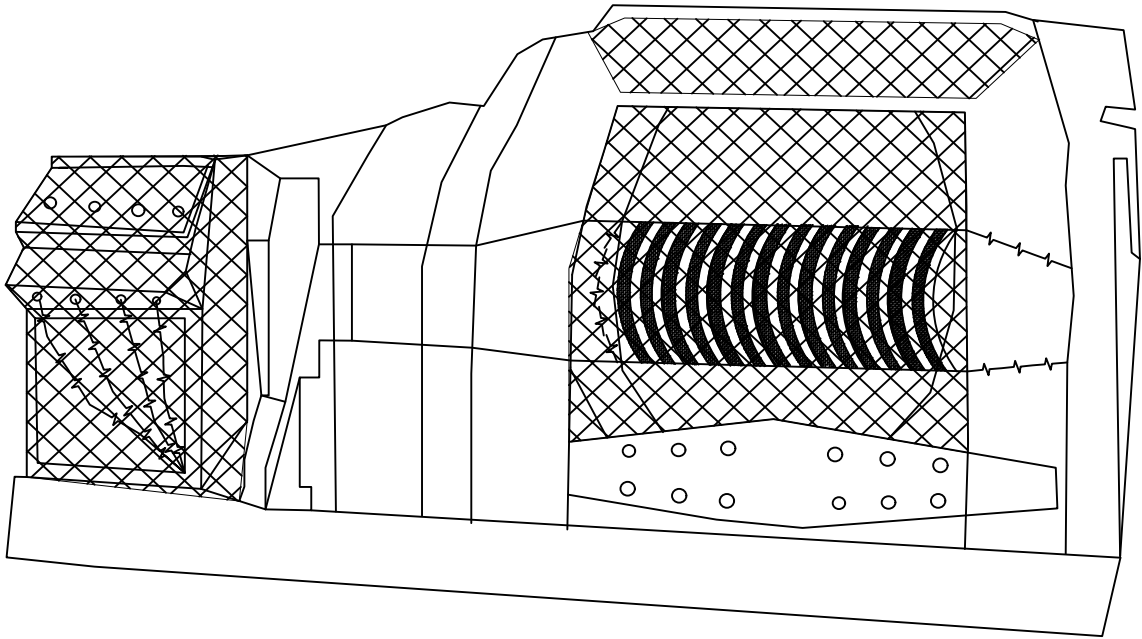
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FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

| | | | | | |
|------|------|---------|------|------|---------|
| REV. | DATE | ALTERED | REV. | DATE | ALTERED |
| | | CHECKED | | | |

GEN. DIM. LIMITS , FITS , & TOLERANCES AS PER P.S :- HY0230261



NOTE:-

1. PACKING INSTRUCTIONS AS PER HY : 0490572

| | | | | |
|--|---|----------------|--------------|-------|
| | 2 | PLY WOOD SHEET | 20X1220X2440 | 2 Nos |
| | 1 | PLY WOOD SHEET | 20X1220X2440 | 2 Nos |

| REMARKS | ITEM NO | DESCRIPTION | SIZE | QTY. |
|---------|---------|-------------|------|------|
|---------|---------|-------------|------|------|



BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD

| | NAME | SIGN. | DATE | NO.OF VAR. |
|-------|------|-------|----------|------------|
| DRN. | MG | | 15.10.15 | |
| CHD. | MLN | | 15.10.15 | |
| APPD. | KB | | 15.10.15 | |

| | | | | | | | |
|---------------|-----------------------------|--|--------------|-------------------|-------------------|----------|-------------------|
| DEPT. CPDC | UNTO. DIM. GR. C/M/F/ | | SCALE NTS | WEIGHT (KG) NA | REF. TO ASSY DRG. | ITEM NO. | NO.OF ITEMS NA |
|---------------|-----------------------------|--|--------------|-------------------|-------------------|----------|-------------------|

| | | | | |
|---------|-------------------------------|-----------|----------------------------|------------|
| TITLE | WOODEN SUPPORTS DRAW WORKS | CARD CODE | DRAWING NO. 2-CPDC-0063 | REV. 00 |
| SHT No. | | | NO OF SHT. | |

BHARAT HEAVY ELECTRICALS LIMITED.

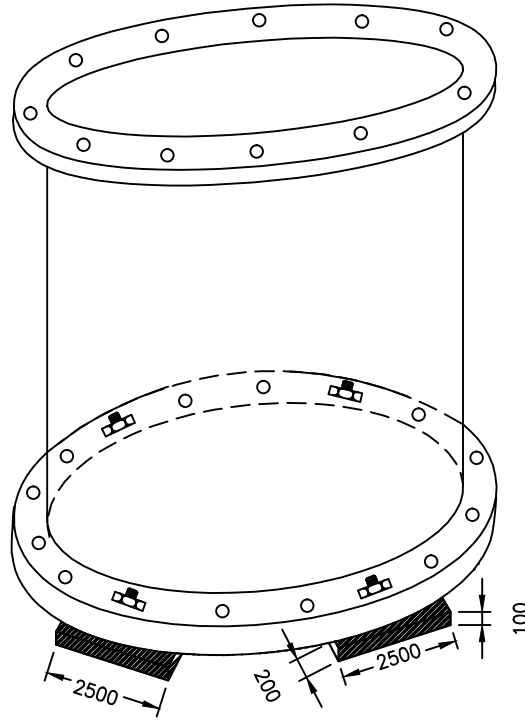
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FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

| REV. | DATE | ALTERED | REV. | DATE | ALTERED |
|------|------|---------|------|------|---------|
| | | CHECKED | | | CHECKED |
| | | | | | |

GEN. DIM. LIMITS, FITS, & TOLERANCES AS PER P.S :- HY0230261



NOTE:-

1. PACKING INSTRUCTIONS AS PER HY : 0490572

| | | | | |
|--|---|----------------|------------------|---|
| | 2 | Bolts M20 | Length: 500MM | 4 |
| | 1 | WOODEN RUNNERS | 100 X 200 X 2500 | 6 |

| REMARKS | ITEM NO | DESCRIPTION | SIZE | QTY. |
|---------|---------|-------------|------|------|
| | | | | |



BHARAT HEAVY ELECTRICALS LTD.
HYDERABAD

| NAME | SIGN. | DATE | NO.OF VAR. |
|----------|-------|----------|------------|
| DRN. MG | | 15.10.15 | |
| CHD. MLN | | 15.10.15 | |
| APPD. KB | | 15.10.15 | |

| | | | | | | | |
|------------|-----------------------|--|-----------|----------------|-------------------|----------|----------------|
| DEPT. CPDC | UNTOL. DIM. GR. C/M/F | | SCALE NTS | WEIGHT (KG) NA | REF. TO ASSY DRG. | ITEM NO. | NO.OF ITEMS NA |
|------------|-----------------------|--|-----------|----------------|-------------------|----------|----------------|

| | | | | |
|-------|--------------------------------|-----------|-------------------------|---------|
| TITLE | WOODEN SUPPORTS FOR MILL SHELL | CARD CODE | DRAWING NO. 2-CPDC-0064 | REV. 00 |
| | | SHT No. | NO OF SHT. | |