

ENQ.NO: 1901700157 dt: 27.07.17

Material: Kiln Seasoned Chemically Treated Rubber Wooden Boxes--42 Items			
Sl.No	PRE QUALIFICATION CRITERIA ---Points	Vendor to confirm	Vendor's Reply (To be filled mandatorily)
1	All tendered items are reserved for exclusive procurement from MSE bidders as per the "Public Procurement Policy.Techno-commercially qualified MSE bidders will be considered for further processing. Bidders shall ensure that relevant document towards their MSE status be submitted along with offer(Part-I). Firm in process of obtaining MSE certificate / certification received after tender due date shall not be considered as MSE parties ".	Accepted / Not Accepted	
02	Capacity to manufacture & supply of boxes for BHEL, Trichy (Dispatching quantity of each type of box per month) shall be furnished in a separate sheet as per Annexure-III). Based on your declaration BHEL reserves the right to allocate the quantity. The monthly capacity of supply for each size should not be less than 10% of total BHEL's requirement.	Accepted / Not Accepted	
03	Bidders should quote for all sizes without fail. If bidder is not quoting any one of the items, their offers will not be considered for further processing and those bids will be summarily rejected.	Accepted / Not Accepted	
04	Delivery period--45 days from the date of PO. If the supply is not completed within the stipulated period, further order will not be issued until supply completion.	Accepted / Not Accepted	
05	MSE status will not be considered without submission of valid proof any one of the requested documents as per the clause 19 (iii) of Annexure-A	Accepted / Not Accepted	
06	Supply shall be as per the specification PR: CHEM: 20/03 Dated 15.11.2005 and as per the Drawing attached.	Accepted / Not Accepted	
07	Bidder should submit the list of machineries available in bidder's works including heat treatment chamber for reducing moisture content in wood and pressurised chemical treatment plant / facility , number of staff & stand by power back-up like DG set generator etc.	Accepted / Not Accepted	
08	ALL THE DOCUMENTS / DETAILS CALLED FOR IN THIS TENDER ARE TO BE FURNISHED ALONG WITH TECHNO-COMMERCIAL BID (PART-I). IF ANY OF THE FOLLOWING DOCUMENTS / DETAILS ARE NOT FURNISHED ALONG WITH TECHNO-COMMERCIAL BID, THOSE OFFERS WILL BE SUMMARILY REJECTED. Vendor should submit/upload the following attachments along with the technical bid, duly filled in, sealed and signed by the vendor (part-I). (please put tick mark in the box for the submitted documents)		
8.1	ANNEXURE-A (Instructions for tender terms & conditions)		
8.2	ANNEXURE-B (Acceptance for commercial terms & conditions)		
8.3	ANNEXURE-C (Signed copy of Integrity Pact)		
8.4	ANNEXURE-III (delivery capacity in 45 days)		
8.5	ANNEXURE-N (Company details)		
8.6	Any one of the following documents should be submitted for considering MSE category as per Annexure-A/point no.19		
8.6.1	Valid MSE/NSIC certificate		
8.6.2	EM II certificate		
8.6.3	EM II certificate along with attest copy of CA certificate (ANNEXURE-II)		
8.6.4	UDYOG AADHAR Number		

NOTE:

Offers meeting the above prequalification criteria points only (01 to 8.6.4) will be evaluated further. Otherwise the offers will summarily be rejected.

**I. PROCEDURE FOR ENTERPRISE PROCUREMENT SYSTEM (EPS)**

a. Interested bidders / Suppliers shall submit their offer through e-Procurement mode at <https://bheleps.buyjunction.in> Offers in any other mode will not be accepted. For Enterprise Procurement System (EPS) Bidders/Suppliers are requested to follow these steps.

REQUIREMENTS

1. A PC with Internet connectivity.
2. DSC (Digital Signature Certificate) (Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION)
3. The site is best viewed in Internet Explorer 9.0. If you are using Internet Explorer 10 or above then enable compatibility view available under Tools menu
4. Install Java 1.8 Update 67/72/79/77 (32 OR 64 Bit)

MANDATORY REQUIREMENT:

Suppliers interested for registration for BHEL Open Tenders should have a valid DSC (Digital Signature Certificate) before Proceeding forward for Registration. Herein a Valid DSC refers to an Active and unexpired Signing and Encryption Certificate, with specification Class III SHA 2 2048 bit.

UNREGISTERED SUPPLIER IN EPS:

Procedure for Online Registration in EPS for Open Tender Suppliers for BHEL

Unregistered Supplier: Supplier visits EPS at <https://bheleps.buyjunction.in>

Please follow the below steps for registration

1. Click Register Button (Top of the Screen)
2. Please input your organization PAN No (in case of Indian supplier) or click "Foreign" in case you are an overseas Supplier.
3. Click on INTERESTED Button against the respective BHEL Unit
4. Key in your desired login id (Login Code should be 8 - 24 characters in length and can only use numeric values) If you have registered by keying in PAN No. then your desired login id will be prefixed by "OTI", In case of overseas suppliers it will be prefixed with "OTF"
5. Fill in the other details.
6. Fill in the Captcha code and click next
7. Register your Signing certificate and click next
8. Select atleast one procurement category you may be dealing in.

Once the above steps are completed, your profile will be activated by mjunction within 2 business hours. After registering follow the steps provided in "For Registered Supplier" to view RFQ.

In case of any assistance, please call the following nos for support: **033-6601 1717 (From 9:30am to 5:30pm)**

NB:-

1 -- BHEL Administrator or user will have no role for approving Registration and Open Tenders and DSC for Any supplier who has registered himself from the front END which is in case of OT.

FOR REGISTERED SUPPLIER IN EPS:

- a. Supplier visits EPS home page
- b. Supplier signs in with their user id and password
- c. Selects the RFQ Code and views it.
- d. Attaches themselves to the RFQ by clicking the interested button
- e. Supplier fills the bid template and makes necessary attachments
- f. Supplier submits their bid by clicking CONFIRM.

In case of any assistance, please call the following Nos for support:
033-6601 1717 (From 9:30am to 5:30pm)

b. Bidders are requested to quote their offer price on F.O.R Destination (BHEL/Stores) basis only (The basic price of the material quoted in the bid should be inclusive of Packing, Forwarding, freight and transit insurance, etc.,). Ex-works offers will be summarily rejected without further clarification.

c. No charges shall be indicated as "Lumpsum" or "Approximate" in absolute value. All charges like taxes and duties should be clearly specified as "percentage" of the quoted rates.

d. If GST is payable as extra to the quoted price, should be specifically stated in quotations along with GST no., failing which the purchaser will not be liable for payment of tax. GST is rolled out on 01.07.17, bidder shall submit their GSTN details. Our GSTN is 33AAACB4146P2ZL

e. Manufacturer's name, trademark or patent no. if any should be specified. Illustrative leaflets giving technical particulars are required along with quotation wherever necessary.

f. Products with I.S.I. certification marks will be preferred.

g. The Purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept in Part or full without assigning any reason whatsoever.

- h. The bidder has to keep track of any changes by viewing the addendum / Corrigendum's issued by the Purchaser on time-to- time basis in the E-Procurement platform. The Company calling for tenders shall not be responsible for any claims/problems arising out of this.
- i. The user should complete all the processes and steps required for bid submission. The successful bid submission can be ascertained once acknowledgement is given by the system through bid submission number after completing all the processes and steps. BHEL and mjunction Services Ltd. will not be responsible for incomplete bid submission by users. Users may also note that the incomplete bids will not be saved by the system and are not available for the Purchaser for processing.
- j. Before uploading scanned documents if any, the bidders shall sign on all the statements, documents, certificates uploaded by him, owning responsibility for their correctness / authenticity.

II.TERMS AND CONDITIONS OF THE ENQUIRY

- Offers received from MSE vendors only will be considered for this Enquiry
- Offers should have a validity of minimum 90 days from the date of Technical bid opening. The quoted/**Finalized rates shall be Firm for one year from the date of finalization of Rate Contract** / till completion of the supplies including amendment / deviation / extension if any in quantity / date.
- On the due date of tender opening, only technical bids will be opened. The opened technical bids will be evaluated by us and clarifications required, if any, will be called for from the bidders on technical and commercial points. If no reply is received from the vendor for the clarification raised by BHEL with in the final cut-off date those vendors offer will be processed with the documents available / submitted against this tender. Offers not meeting the required specification, pre-qualification criteria and technical condition will be summarily rejected. The price bids of technically suitable bidders will be opened on a later date with prior intimation to techno-commercially suitable bidders.
- No revision of prices will be entertained at any circumstances after tenders are opened.**
- Bidders should quote for all sizes without fail. If bidder is not quoting any one of the items, their offers will not be considered for further processing and those bids will be summarily rejected.**
- The monthly capacity of supply for each size should not be less than 10% of total BHEL's requirement.**
- The order of split up ratio is given in the below table.**

No. of techno commercially accepted MSE vendors	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10 & ...
7 and above	40%	10% each--To maximum six counter offer accepted vendors in the order of ranking.								
6	40%	12% each--To maximum five counter offer accepted vendors in the order of ranking.								
5	40%	15% each--To maximum four counter offer accepted vendors in the order of ranking.								
4	40%	20% each--To maximum three counter offer accepted vendors in the order of ranking.								
3	50%	25% each--To maximum two counter offer accepted vendors in the order of ranking.								
2	70%	30% each will be offered to the remaining one counter offer accepted vendor.								
1	100%	No counter offer.								
Splitting of quantity is not applicable for enquiry quantity of 150 Nos or less than 150 Nos.	100%	No splitting								

- a. Ranking L-1, L-2 etc. shall be done for individual items for the techno-commercially acceptable offers on landed cost to BHEL, Trichy basis and BHEL reserves the right to place order for individual items with different vendors.
- b. In the case of counter offer vendors, if offer is not accepted by any one, it will be extended to other rankers (Upto H1) till reaches maximum six vendors with respect to the above splitting table & chart indicated on the SI no.(f).
- c. The quantities indicated in this tender are tentative annual requirement of BHEL. Order will be placed on actual requirement basis.
- d. BHEL reserves the right to place order as mentioned in the split up ratio on monthly basis and delivery period is 45 days from the date of order.
- e. In the event of more than one vendor becoming L1 for any of the item / items, the enquiry quantity for those item / items will be shared as per below chart

No. of L1 vendors	L1				L2	L3	L4	L5	L6
2	20%		20%		12%	12%	12%	12%	12%
3	20%	20%		20%	10%	10%	10%	10%	
4	20%	20%	20%	20%	10%	10%			
5 (or) more than 5	Quantity will be shared equally to all the L1 vendors								

8. BHEL reserves the right to short close or reduce the quantity mentioned in the Enquiry / Purchase Order.
9. In case of failure in supplying the items as per PO terms and conditions within the delivery period, BHEL reserves the right to cancel the PO and share the quantity among other vendors who qualified as per the split up ratio. Also such failed vendors will be removed from Rate Contract of this Enquiry and their share quantity will be distributed equally among other qualified vendors as per the split up ratio.
10. BHEL reserves the right to negotiate with L1 vendor or re-float the tender for items where, L1 price is not the lowest acceptable price. BHEL also reserves the right to reject abnormally low bids. BHEL reserves the right to increase or decrease the tender quantity.
11. The rates are to be quoted on F.O.R. destination basis only (Inclusive of Packing, Forwarding, and Freight and Transit Insurance charges to supplier account). Other delivery conditions like Ex-works / Ex-Godown/ Transportation of materials through transport carriers from your works up to the transport carrier's office at Tiruchy and taking delivery of goods by BHEL from such office of transport carriers is not acceptable to us and such offers will be summarily rejected.

12. ASSEMBLING OF BOXES

- a) The boxes are to be assembled within 7 working days from the date of the PLANT LAB REPORT
- b) The dimensions of the top, bottom and side girth batterns shall be as per the relevent drawing.
- c) The thickness of the POLY ETHELYENE SHEET shall be 150 microns and more.

If supplier is not meeting the above 3 points, their boxes will be rejected despite they pass chemical test.

13. Payment Terms (Indigenous):

Payment term is 100% direct payment after 45 days from the date of receipt and acceptance of materials & assembly of boxes. (Bills will be forwarded to finance only after assembling the boxes against written mail confirmation from ward-14 about completion of assembly of boxes). Any deviation in the above payment term will attract loading as mentioned below.

"Base rate of SBI (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders.

14. Liquidated Damages (LD) clause.

Single delivery schedule:

If the Supplier fails to deliver the P.O quantity within the period specified in the contract, then the Purchaser shall deduct liquidated damages, 0.5% of the total order value per week of delay or part thereof subject to a maximum of 10% of the total order value.

(Once the PO delivery due date is crossed, all the bills issued after the PO delivery date have to be clubbed till final dispatch and forwarded for processing of payment as a single bunch, ie. 100% Order should be completed for processing the bill. LD percentage will be calculated from PO delivery due date to final despatch date for total order value.)

Staggered delivery schedule

~~In case of staggered delivery schedule, if the Supplier fails to deliver the quantity of any line item of the P.O within the period specified in that line item, Purchaser shall deduct Liquidated Damages, 0.5% of the undelivered portion per week delay or part thereof subject to maximum of 10% of the total order value~~

Liquidated Damages (LD): (Any deviations shall attract loading to the extent of relaxation sought to which it is not agreed by the bidder at offered value).

15. RISK PURCHASE: Alternatively the purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid or if the same were not available, the best and the nearest available substitutes therefor. The supplier shall be liable for any loss, which the purchaser may sustain by reason of such risk purchases in addition to penalty at the rate mentioned in LD clause above.

16. BHEL will consider the ranking after the loading is applied as referred above wherever deviations are observed.

17. Instructions for GST & Invoice Submission

The following conditions will apply and supplier shall fully comply to the below points.

- a. *Response to Tenders for Indigenous supplier will be entertained only if the vendor has a valid GST registration no which should clearly mentioned in the offer. If any specific exemption is available, a declaration with due supporting documents need to be furnished for considering the offer..*
- b. *Supplier shall mention their GSTN registration number in all their invoices and invoices shall be in the format as specified/prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No which is linked/uploaded in GSTN network shall be clearly indicated), item description as per PO, Quantity, Rate, Value, applicable taxes with nomenclature (like IGST, SGST, CGST & UTGST) separately, HSN/ SAC Code, etc.*
- c. *All invoices shall bear the HSN Code for each item separately (Harmonized System of Nomenclature)/ SAC code (Services Accounting Code).*
- d. *A declaration to the effect that all invoice particulars are/were uploaded in the GSTN network/ portal & all tax liability as per GST rules and regulations have been and will be discharged, shall be mentioned in the invoice. If not mentioned in the invoice, a separate declaration shall be submitted as per the requirement of BHEL.*
- e. *All documents like Mill Test Certificate, LR copy, Guarantee/Warranty certificate, work completion certificate, any other document mentioned in PO, shall be sent along with the vehicle/consignment. For all consignments received within the calendar month, input credit will be availed within that month in line with monthly returns filing cycle. In case of any discrepancy in the document or non-submission of documents mentioned in the PO, then BHEL will not be able to accept or account the material, in such case availing of tax credit will be deferred to next month or so.*
- f. *In case of discrepancy in the data uploaded by supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note (details to be uploaded in GSTN portal) for the shortages or rejections in the suppliers, within the calendar month notified by BHEL.*
- g. *For any such delay in availing of tax credit for reasons attributable to supplier (as mentioned above), interest (calculated @ SBI Base Rate + 6%) along with penalty if any will be deducted for the delayed period i.e. from the month of receipt till the month tax credit is availed, from the running bills.*

- h. Under GST regime, BHEL has to discharge GST liability on LD recovered from suppliers/contractors. Hence applicable GST shall also be recoverable from suppliers/contractors on LD amount. For this Debit note will be issued by BHEL indicating the respective supply invoice number.

18. PACKING AND MARKING:

- a) The supplier shall arrange for securely protecting and packing the materials in bundles to avoid loss or damages during transit. Each bundle shall consist all six shooks for making one box.
- b) In case of any quality rejection of materials, the supplier has to collect the materials at his own cost within the 15 days of rejection of advice. Otherwise the materials will be scrapped by BHEL.
- c) Unloading at BHEL has to be done by the suppliers and BHEL will not be in a position to provide any handling / unloading facilities.
- d) BHEL Name, Supplier Name, DC No. & Date shall be stencilled on all sides of shooks supplied to BHEL.

19. SPECIAL PROVISIONS FOR MICRO AND SMALL ENTERPRISES (MSE) BIDDERS:

i. MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (five years from the date of issue in acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed as per **Annexure II** where deemed validity of EM II certificate of five years have expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bids at par with other bidders. No benefits shall be applicable for the enquiry if any deficiency in the above required documents is not submitted before the price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer. This provision for MSE will apply subject to the condition that the participating MSE meets the tender requirements.

ii. In case of any change in the MSE status of the bidder, it shall be the responsibility of the bidder to notify the change as a part of the bid document. If at a later date it comes to the knowledge of BHEL, that the change in the status has not been intimated by the bidder and the order is obtained under the premise of an MSE then BHEL would cancel the pending order against this tender and take necessary steps for suspension of the business dealing with the bidder as per the procurement policy of BHEL.

iii. All supplier (new/old) will be eligible for registration/renewal with BHEL as MSE supplier and provided at least any one of the following documents are submitted along with tender documents

- a. Valid NSIC Certificate (or)
- b. Entrepreneurs Memorandum part II (EM II) certificate (valid based on deemed validity of 5 years) (or)
- c. EM II certificate along with attest copy of CA certificate (as per prescribed format at **Annexure-II**) applicable for the relevant financial year (latest audited), where the deemed validity of EM II is over However credential of all MSE suppliers will be verified before considering the intended benefits for MSE suppliers as per clause (i) at the time of tender evaluation.
- d. **UDYOG AADHAR Number for MSE vendors (Details as per point no.20)**

20. Online registration of Udyog Aadhar and providing benefit of Public Procurement Policy for MSE vendors

For ease of registration of Micro, Small and Medium Enterprises (MSMEs), Ministry of MSME has started Udyog Aadhar Memorandum which is an online registration system (free of cost) w.e.f. 18th September, 2015 and all Micro & Small Enterprises (MSEs) who are having Udyog Aadhaar Memorandum should also be provided all the benefits available for MSEs under the Public Procurement Policy for Micro and Small Enterprises (MSEs), Order 2012.

As per the Gazette notification dated 21.09.2015 of notification no. S.O. 2576(E) dated 18.09.2015 issued by Ministry of MSME regarding filing of Udyog Aadhaar by Micro, Small and Medium Enterprises. As per the notification, it is compulsory to register any new MSME on the Udyog Aadhaar portal.

Udyog Aadhaar portal is now operationalized and is available at <http://udyogaadhaar.gov.in> / where MSME can file the Udyog Aadhaar. FAQ link of the same is available at <http://udyogaadhaar.gov.in/UA/FAQ.aspx>.

".....After the notification dated 18-09-2015, filing of EM-I/II by States/UTs should be discouraged and instead all efforts be made to popularize the filing of UAM on the portal created by Ministry of MSME i.e. <http://udyogaadhaar.gov.in...>"

"...It is clarified that once the UAM has been notified dated 18-09-15, there cannot be a different cut-off date announced for adopting UAM. However, in order to maintain continuity, the cases of EM-I/II filing under process till 18-09-2015 may be accepted...."

"....All other online/ offline systems of registration of MSMEs created and maintained by Central/State/UT Governments should cease to register new MSMEs forthwith. Such online platforms may be allowed to exist for the time being to enable access to useful legacy data for decision making. Henceforth, there should be only one system i.e. UAM for the registration of new MSME units....."

Hence, vide above gazette notification the registration of MSMEs is permitted based on the Udyog Aadhaar since filing of EM II may cease to exist for registering MSMEs in the near future.

21. Conditional offers are likely to be rejected.

22. Bidders not confirming to the enquiry specifications will be disqualified.

23. The correspondences between the bidder and BHEL through email are considered as valid document legally though not signed. It is treated as valid confirmations made on behalf of the respective company and comes under the legal ambit of the business transaction and hence binding on both the parties.

24. Disclaimer Clause: Neither the Organization (Bharat Heavy Electricals Ltd.) nor the service provider (mjunction Services Ltd.) is responsible for any failure of submission of bids due to failure of internet or other connectivity problems or reasons thereof.

25. Bidders participating in the tender should declare in their technical bid whether they have been black-listed / kept on hold / given Business holiday for a specified period by any Public Sector Undertaking or Government Departments. The reasons for such action with details and the current status of such hold shall be clearly furnished to BHEL. If no such details are mentioned in the offer, it will be construed that the bidder is not under any such hold. However, at a later date if it comes to the notice of BHEL about any such hold under enforcement, BHEL reserves the right to reject the offer at any point of time and also under any stage of the finalization of the tender. Such bidders will not be permitted to participate in the further tender proceedings and will be communicated suitably.

26. If Guarantee / Warranty period is applicable as per tender specification, No deviation permitted and deviated offers are liable for rejection.

27. The Tender Due date falling on public holiday due to any circumstances, the tender will be opened on next working day.

28. For verification of data submitted towards evaluation of bidder's capability, BHEL may decide to visit the bidder(s) works. Any fact found deviating from submitted data shall make the bidder liable to be disqualified.

29. Any other conditions which might have been quoted by the seller and are in contravention to the terms and prescribed in the enquiry and which have not been specifically accepted by purchaser will not be applicable to the contract.

30. Lowest price received against BHEL tenders need not be the technically acceptable one and in that case BHEL reserves the right not to consider the same. The purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept or reject any tender in part or full without assigning any reason whatsoever.

31. ARBITRATION: All disputes or differences whatsoever which may arise at any time during execution of the Contract shall be mutually settled by BHEL and Contractor as per provision of the Contract. However, in the event such disputes cannot be settled mutually, such disputes shall be settled as per the Arbitration and reconciliation Act, 1996 of the Govt. of India and its subsequent amendments. In case of disputes with the Central PSUs, the same shall be settled at Tiruchirapalli as per the Guidelines of the Govt. of India. However, during the period such disputes are settled either by mutual discussions between the parties or by legal means, Contractor shall continue to do the work as per terms & conditions of Contract.

**COMMERCIAL TERMS CONFIRMATION REQUIRED FROM THE SUPPLIERS
TO BE SUBMITTED ALONG WITH PART – I (TECHNO COMMERCIAL BID)**

SL. NO	DESCRIPTION	BHEL REQUIREMENTS	Supplier confirmation (strikeout whichever is not applicable)
1	Validity	90 days from the date of technical bid opening	Non Deviatable
2	Price Quoted	F.O.R Destination BHEL Stores / Trichy	Non Deviatable
3	GST	Supplier Option	Inclusive / extra ----- %
5	Delivery Schedule	PO will be placed in every month based on the monthly requirement and should be executed within 45 days from the date of PO	Non Deviatable
6	Payment Terms	After 45 days from the date of receipt and acceptance of materials at BHEL.(Details as per sl.no:13 of “Annexure – A”)	Accepted / Not Accepted
7	LD Clause	0.5% per week to maximum of 10% (for details please read s.no:14 of “Annexure – A”)	Accepted / Not Accepted
8	Risk Purchase Clause	(For Details Please Read S.No:15 Of “Annexure – A”)	Non Deviatable
9	Price Variation	No price revision shall be entertained till completion of ordered quantity including PO amendment if any.	NON DEVIATABLE
10	Contact Person Details	Name: Mobile no: Email :	To be filled Compulsorily
11	Kiln Seasoned Chemically Treated Rubber Wood Boxes as per Specification PR:CHEM:20, Rev.no.03 dt:15.11.2005		Non Deviatable
12	2 Copies of Test Certificate are to be enclosed along with DC.		Non Deviatable
13	Bidders have to confirm that, whether they have been black-listed / kept on hold / given Business holiday for a specified period by any Public Sector Undertaking or Government Departments/any other units of BHEL. (With reference to S.No.25 of Annexure – A).		Yes / No
14	In case of failure in supplying the items as per PO terms and conditions within the delivery period, BHEL reserves the right to cancel the PO and share the quantity among other vendors who qualified as per the split up ratio. Also such failed vendors will be removed from the Contract of this Enquiry & future tenders and their share quantity will be distributed equally among other qualified vendors as per the split up ratio.		Yes / No
15	Documents as called in Sl.No.19 of terms & conditions attached (MSE Status) a. Valid MSE/NSIC certificate ☐ (or) b. EM II certificate ☐ (or) c. EM II certificate along with attest copy of CA certificate (ANNEXURE-II) ☐ (or) d. UDYOG AADHAR Number ☐		Attached / Not Attached

IMPORTANT NOTE:

AUTHORIZED PERSON HAS TO SIGN & SEAL ALL THE PAGES OF THE TENDER DOCUMENT AND HOULD BE ATTACHED IN PART-1 OF THE EPS PORTAL.

SL NO.	MATERIAL	SHORT TEXT	DRAWING NUMBER	QUANTITY	UN	VENDOR 45DAYS CAPACITY IN Nos. *
10	200150330000	CTR WOOD BOX T-1	4-V-4000-07183 / 02	1180	NO	
20	200151080000	CTR WOOD BOX T-1A	4-V-4000-07183 / 02	1,340	NO	
30	200150320000	CTR WOOD BOX T-2	4-V-4000-07183 / 02	2320	NO	
40	200150300000	CTR WOOD BOX T-3	2-V-0000-05779/02	900	NO	
50	200150800000	CTR WOOD BOX T-4	2-V-0000-05779/02	720	NO	
60	200150820000	CTR WOOD BOX T-6	2-V-0000-05779 /02	880	NO	
70	200150830000	CTR WOOD BOX T-7	2-V-0000-05779/02	370	NO	
80	200150840000	CTR WOOD BOX T-10	2-V-0000-05779 /02	300	NO	
90	200150930000	CTR WOOD BOX T-11	2-V-0002-05780	160	NO	
100	200150940000	CTR WOOD BOX T-12	2-V-0003-05780	220	NO	
110	200150950000	CTR WOOD BOX T-14	2-V-0000-05779/02	190	NO	
120	200150970000	CTR WOOD BOX T-17	2-V-0005-05780/00	175	NO	
130	200151000000	CTR WOOD BOX T-52	2-V-4600-03636/08	1440	NO	
140	200151010000	CTR WOOD BOX T-53	2-V-4600-03636/08	890	NO	
150	200151060000	CTR WOOD BOX T-54	2-V-4600-03636/08	270	NO	
160	200151090000	CTR WOOD BOX T-56	2-V-4600-03636/08	280	NO	
170	200151110000	CTR WOOD BOX T-58	2-V-4600-03636/08	710	NO	
180	200151120000	CTR WOOD BOX T-61	1-V-0000-11136/04	200	NO	
190	200151130000	CTR WOOD BOX T-62	2-V-7503-10122	120	NO	
200	200054040000	K.S.CHEM.T.R.W BOXES 600X500X400MM	3-SH-B-004/C	390	NO	
210	200054050000	K.S.CHEM.T.R.W BOXES 900X600X600MM	2-SH-CRT-00002/B	2060	NO	
220	200054060000	K.S.CHEM.T.R.W BOXES1200X900X600MM	2-SH-CRT-00002/B	1,580	NO	
230	200054070000	K.S.CHEM.T.R.W BOXES1300X900X900MM	2-SH-CRT-00002/B	2000	NO	
240	200054080000	K.S.CHEM.T.R.W BOXES1500X700X700MM	2-SH-CRT-00002/B	1,820	NO	
250	200054100000	K.S.CHEM.T.R.W BOXES1600X900X1000MM	3-SH-B-005	1660	NO	
260	200054110000	K.S.CHEM.T.R.W BOXES800X200X200MM	40-SPM-SH-00001/01	200	NO	
270	200054120000	K.S.CHEM.T.R.W BOXES 1500X200X200MM	40-SPM-SH-00001/01	100	NO	
280	200054130000	K.S.CHEM.T.R.W BOXES 2000X200X200MM	40-SPM-SH-00001/01	60	NO	
290	200054220000	K.S.CHEM. T.R.W. BOXES 200X200X200 MM	40-SPM-SH-00001/01	1220	NO	
300	200054250000	K.S.CHEM.T.R.W BOXES 1100X500X500MM	3-SH-B-004/B/01	420	NO	
310	200054150000	K.S.CHEM.T.R.W BOXES 1100X400X400MM	40-SPM-SH-00002/01	540	NO	
320	200054450000	Type SPY - Size 450X200X200 Box	40-SPM-SH-00001/01	1,240	NO	
330	200054390000	Type SPR - Size 850X630X670 Box	20-SPM-SH-00003/01	120	NO	
340	200150740000	CTR WOOD BOX T-23	1-V-0000-11136/04	160	NO	
350	200150750000	CTR WOOD BOX T-24	1-V-0000-11136/04	170	NO	
360	200150780000	CTR WOOD BOX T-27	1-V-0000-11136/04	220	NO	
370	200150790000	CTR WOOD BOX T-28	1-V-0000-11136/04	110	NO	
380	200150880000	CTR WOOD BOX T-15	2-V-0000-05779/02	250	NO	
390	200054140000	K.S.CHEM.T.R.W BOXES 1100X200X200MM	3-SH-B-004/B Rev.No. 01	160	NO	
400	200054240000	K.S.CHEM.T.R.W BOXES 1100X300X300MM	3-SH-B-004/B, Rev.No. 01	120	NO	
410	200054170000	K.S.CHEM.T.R.W BOXES 2000X500X400MM	40-SPM-SH-00002, REV.No. 01	100	NO	
420	200054180000	K.S.CHEM.T.R.W BOXES 2500X400X400MM-SPL	40-SPM-SH-00002, REV.No. 02	40	NO	

***THE MONTHLY CPACITY OF SUPPLY FOR EACH SIZE SHOULD BE NOT LESS THAN 10% OF TOTAL BHEL'S REQUIREMENT. BIDDERS SHOULD FILL UP THE MONTHLY CAPACITY FOR ALL THE SIZES WITHOUT FAIL. IF BIDDER IS NOT QUOTING ANY ONE OF THE ITEMS, THEIR OFFERS WILL NOT BE CONSIDERED FOR FURTHER PROCESSING AND THOSE BIDS WILL BE SUMMARILY REJECTED.**

Certificate by Chartered Accountant on letter head

This is to Certify that M/S
 (hereinafter referred to as 'company') having its registered office at
 is registered under MSMED Act 2006, (Entrepreneur
 Memorandum No (Part-II) dtd:.....,
 Category: (Micro/Small)). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the latest audited financial year as per MSMED Act 2006 is as follows:

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No.S.O.1722(E) dated October 5, 2006 :
 Rs.....Lacs
2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:
 Rs.....Lacs

(Strike off whichever is not applicable)

The above investment of Rs.....Lacs is within permissible limit of Rs.....Lacs forMicro / Small (Strike off which is not applicable) Category under MSMED Act 2006.

Or

The company has been graduated from its original category (Micro/ Small) (Strike off which is not applicable) and the date of graduation of such enterprise from its original category is (dd/mm/yyyy) which is within the period of 3 years from the date of graduation of such enterprise from its original category as notified vide S.O. No. 3322(E) dated 01.11.2013 published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

Name -

Membership number -

Seal of Chartered Accountant

INTEGRITY PACT

ANNEXURE-C

Between

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at “BHEL House”, Siri Fort, New Delhi – 110049 (India) hereinafter referred to as “The Principal”, which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART

and

_____, (description of the party along with address), hereinafter referred to as “The Bidder/ Contractor” which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

Preamble

The Principal intends to award, under laid-down organizational procedures, contract/s for

_____. The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitor(s), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1 – Commitments of the Principal

ANNEXURE-C

- 1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-
 - 1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
 - 1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
 - 1.1.3 The Principal will exclude from the process all known prejudiced persons.
- 1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

Section 2 – Commitments of the Bidder(s)/ Contractor(s)

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
 - 2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he / she is not legally entitled to, in

order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

- 2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- 2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant IPC/ PC Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 2.1.4 The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- 2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 – Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidders(s)/ Contractor(s) from the tender process or take action as per the separate “Guidelines on Banning of Business dealings with Suppliers/ Contractors” framed by the Principal.

Section 4 – Compensation for Damages

ANNEXURE-C

- 4.1 If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.
- 4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/Performance Bank Guarantee, whichever is higher.

Section 5 – Previous Transgression

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- 5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6 – Equal treatment of all Bidders/ Contractors/ Sub-contractors

- 6.1 The Bidder(s)/ Contractor(s) undertake(s) to obtain from all sub-contractors a commitment consistent with this Integrity Pact and report Compliance to the Principal. This commitment shall be taken only from those sub-contractors whose contract value is more than 20% of Bidder's/ Contractor's contract value with the Principal. The Bidder(s)/ Contractor(s) shall continue to remain responsible for any default by his Sub-contractor(s).
- 6.2 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.
- 6.3 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

Section 7 – Criminal Charges against violating Bidders/ Contractors /Sub-contractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section 8 –Independent External Monitor(s)

- 8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
- 8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality.
- 8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
- 8.5 As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or

take corrective action, or heal the situation, or to take other relevant action. The Monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

- 8.6 The Monitor will submit a written report to the CMD, BHEL within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.
- 8.7 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.8 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant IPC / PC Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.9 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.
- 8.10 The word 'Monitor' would include both singular and plural.

Section 9 – Pact Duration

- 9.1 This Pact begins and shall be binding on and from the submission of bid(s) by bidder(s). It expires for the Contractor 12 months after the last payment under the respective contract and for all other Bidders 6 months after the contract has been awarded.
- 9.2 If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified as above, unless it is discharged/ determined by the CMD, BHEL.

Section 10 – Other Provisions

ANNEXURE-C

- 10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.
- 10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
- 10.3 If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.
- 10.4 Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 10.5 Only those bidders/ contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.

For & On behalf of the Principal
(Office Seal)

For & On behalf of the Bidder/ Contractor
(Office Seal)

Place-----

Date-----

Witness: _____

(Name & Address) _____

Witness: _____

(Name & Address) _____

ANNEXURE - N

THE FOLLOWING DATA SHOULD BE FURNISHED BY ALL THE VENDOR

1. NAME & ADDRESS OF THE VENDOR :
2. CONTACT / COMMUNICATION DETAILS : PERSON:
- LANDLINE No:
- MOBILE NO:
- FAX NO.:
- EMAIL ID:
3. BUSINESS TYPE : MANUFACTURER / TRADER / AGENT
4. BUSINESS STATUS : MSE / NON-MSE (IN CASE OF MSE, NECESSARY DOCUMENTS SHOULD BE FURNISHED)
5. MSE TYPE : MICRO / SMALL
6. MSE OWNER CATEGORY : SC / ST (COMMUNITY CERTIFICATE SHOULD BE FURNISHED)
7. TYPE OF MSE FIRM : PROPRIETARY / PARTNERSHIP (IN CASE OF PARTNERSHIP FIRM, PERCENTAGE OF SHARE HELD SHOULD BE FURNISHED)
8. GST NO (DOC. PROOF SHOULD BE FURNISHED) :
11. PAN NO. :

(SIGNATURE & SEAL)

ANNEXURE - N

THE FOLLOWING DATA SHOULD BE FURNISHED BY ALL THE VENDOR

BHARAT HEAVEY ELECTRICALS LIMITED TIRUCHIRAPPALLI - 620 014		
(ALL VENDORS SHOULD FURNISH THE BELOW DETAILS)		
SI No	Details	Document Submission
1	Nature of ownership & relevant documents	
	Proprietorship Professional Tax Regn	YES / NO
	Municipal Regn	YES / NO
	Partnership firm Partnership Deed	YES / NO
	Co-operative society Society rules & bye laws	YES / NO
	Private/Limited Company Memorandum & Articles of Association	YES / NO
	State Govt. / Govt. Of India Undertaking Memorandum & Articles of Association	YES / NO
2	Nature of Business (Manufacturing Unit) (Indian Subsidiary - attach authorization certificate of principal)	YES / NO
2	Manufacturing range & facilities: (If applicable) • List down the product range & specification details. • List of Manufacturing facilities/equipment's (including material handling facility)	YES / NO
3	Licence details of the factory	YES / NO
4	• Permanent Account No	YES / NO
	• GSTN number	YES / NO
	• Regn number of category as per MSMED Act (If applicable)	YES / NO
5	If registered with any other BHEL unit • Letter of registration with BHEL unit (If applicable)	YES / NO
6	Accreditation certificate for ISO:9001 / TOC of Quality System manual / ISO:14000 / OHSAS ISO 18000 (If applicable)	YES / NO
SIGN AND SEAL OF AUTHORIZED PERSON		

TEST CERTIFICATE FOR RUBBER WOOF (MODEL FORMAT)

Test report no.:XXX/dated DD-MM-YY

DC No.XXX/Dated DD-MM-YY

1	NAME OF THE FIRM	
2	PO NO. & DATE	
3	NAME OF THE CUSTOMER	BHEL,TRICHY
4	MATERIALS	CHEMICALLY TREATED RUBBER WOOD
5	QUANTITY & SIZE DETAILS	AS PER DC NO.XXX/DATED DD-MM-YY
6	SPECN TO WHICH MATERIALS SUPPLIED	PR:CHEM:20/03
7	DIMENSION REPORT	AS SPECIFIED IN PR:CHEM:20/03, CI.3.5
8	NAME OF THE SPECIES IDENTIFIED (TRADE NAME)	RUBBER WOOD
9	DATE OF SEASONING / TYPE OF SEASONING	DD-MM-YY / KILN SEASONING
10	PERCENTAGE OF MOISTURE CONTENT IN SEASONED WOOD BEFORE CHEMICAL TREATMENT (TEST AS PER IS:401,ANNEX-C)	XX%
11	DATE OF CHEMICAL TREATMENT	
12	TYPE OF CHEMICAL TREATMENT FOLLOWED	PRESSURE TYPE/ VACUUM IMPREGNATION (tick as applicable)
13	TYPE OF CHEMICAL PRESERVATIVES USED	Copper-Chromium-Born (C.C.B)
14	DEPTH OF PENETRATION OF PRESERVATIVE CHEMICALS, mm	___mm (as per PR:CHEM:20/03, CI 3.7
	Presence of copper (test as per IS:401, Anne D)	Present
	Presence of Chromium (Test as per IS:401, Annex D)	Present
	Presence of Boron (Test as per IS:401, Annex D)	Present
15	PERCENTAGE OF MOISTURE CONTENT AFTER CHEMICAL TREATMENT (Test as per IS:401, Annex C)	Xx% (when dispatched)
16	Certified that the above supply conforms to the specification. PR:CHEM: 20/03.	

Signature of quality inspector with seal



SPECIFICATION FOR PACKING WOOD – RUBBER WOOD

Doc. No. PR: CHEM: 20

Rev. No.: 03

Date: 15.11.2005

1.0 SCOPE:

This specification prescribes the requirements of rubber wood intended for packing purposes.

2.0 DEFINITION:

RUBBER WOOD – Seasoned and chemically treated rubber wood in converted form (scantlings, boxes / shooks) intended for packing cases to be stored outside and exposed.

3.0 REQUIREMENTS:

3.1 Supply of planks to shipping / FB shall be with one side planing, joint planed and two longitudinal edges prepared for lap joints of 12.5 mm on opposite sides.

3.2 The rubber wood to be supplied shall be seasoned as per IS 1141 – 1993, “SEASONING OF TIMBER – CODE OF PRACTICE”.

3.3 The process for chemical preservative treatment shall be as per IS 401 – 2001, “PRESERVATION OF TIMBER – CODE OF PRACTICE”.

3.4 For chemical treatment, the preservative chemicals used shall be Copper, Chrome, and Boron (CCB) composition.

3.5 DIMENSIONS AND ITS TOLERANCE:

3.5.1 Dimensions shall be as specified in Purchase Order.

3.5.2 The dimensional tolerance shall be as follows:

Length : ± 10 mm

Width : ± 4 mm

Thickness : ± 3 mm for thickness up to 30 mm
: ± 4 mm for thickness above 30 mm

Bow : ± 4 mm per 300 mm



**SPECIFICATION FOR
PACKING WOOD –
RUBBER WOOD**

Doc. No. PR: CHEM: 20

Rev. No.: 03

Date: 15.11.2005

3.6 FREEDOM FROM DEFECTS:

3.6.1 Planks, Scantlings, Battens shall be free from defects like cracks, bends and knots.

3.7 The material shall also comply with the requirements given in Table – 1.

Table – 1 REQUIREMENTS FOR RUBBER WOOD

S. No.	Characteristics	Requirement
1	Species	Rubber
2	Chemical depth penetration Test	6.0 mm, (min)

ANNEX C

(Clause 9.2)

METHOD FOR THE DETERMINATION OF MOISTURE CONTENT

C-1 TEST SAMPLE

C-1.1 Baulks and Scantlings

If the timber is in baulks and scantlings, that is, of cross-sections greater than 5×5 cm, a boring taken about 30 cm away from an end and roughly in the middle of any side shall constitute the test sample.

C-1.2 Planks

If the timber is in planks of thickness 2.5 cm or less, a section 2.5 cm long, taken at about 30 cm from an end, shall constitute the test sample.

C-1.3 Green Timber

In the case of a charge of evenly dried or green timber of the same species, about a dozen samples shall be taken for obtaining the average moisture content.

C-2 PROCEDURE

C-2.1 The test sample, immediately after it has been

bored or cut from the timber, is placed in a tared weighing bottle; the bottle with the sample in it is weighed and then placed with the stopper removed in an oven set at $103 \pm 2^\circ\text{C}$. After 24 hours of drying, the bottle is taken out, stoppered, and cooled to the atmospheric temperature in a desiccator and weighed.

C-3 CALCULATION

C-3.1 The moisture content, in percent, shall be calculated as follows:

$$\text{Moisture content} = \frac{B - C}{C - A} \times 100$$

where

B = mass of the weighing bottle (including stopper) with sample before drying,

C = mass of the weighing bottle (including stopper) with sample after oven drying, and

A = mass of the weighing bottle (including stopper).

ANNEX D

(Clause 9.5)

METHOD FOR THE DETERMINATION OF PENETRATION OF PRESERVATIVE

D-1 GENERAL

Methods for the determination of penetration of copper-chrome-arsenic composition, zinc chloride and acid-cupric-chromate composition are given below. 'Definite colour reactions are not given by other common preservatives.

D-2 COPPER-CHROME-ARSENIC COMPOSITION, ACID-CUPRIC-CHROMATE COMPOSITION, BORATED-COPPER-CHROME-ARSENIC COMPOSITION AND AMMONIACAL-COPPER-ARSENITE COMPOSITION

D-2.1 Detection for Copper

D-2.1.1 Dissolve 0.5 g chrome Azurol-S and 5.0 g of sodium acetate in 80 ml water and dilute to 100 ml.

D-2.1.2 Spray the solution over split section or boring with a fine spray on the cut surface of treated wood. A deep blue colour shows the presence of copper.

D-2.2 Detection for Chromium

D-2.2.1 Dissolve 0.5 g diphenyl carbazide in 50 ml isopropyl alcohol and 50 ml of distilled water.

D-2.2.2 Spray the solution on the boring or cross section of treated wood. Portions containing chromium will develop a purple colour while unpenetrated portion will remain as such.

D-2.3 Detection for Arsenic

D-2.3.1 Solution 1

3.5 g ammonium molybdate dissolved in 90 ml distilled water followed by 9 ml concentrated nitric acid.

D-2.3.2 Solution 2

0.7 g benzidine dihydrochloride dissolved in 10 ml concentrated acetic acid and diluted to 100 ml by adding 90 ml distilled water.