

**Instruction to bidders and terms & conditions for supply of Cold Rolled Grain Oriented (CRGO) steel laminations on finished and stacked basis under enquiry (E1453028) for BHEL Bhopal Unit (India) – 138878 kgs.**

Offers through GeM's e-procurement portal <https://gem.gov.in> are invited in Two-Part Bid system for purchase of **27HP100 / 27HP100d / 23HP100 / 23HP100d** grade of CRGO laminations on finished and stacked basis as per terms and conditions below.

**General:** Enquiry will be governed by below mentioned technical and commercial terms for supply of Cold Rolled Grain Oriented (CRGO) Laminations in conformity with BHEL specification BP10987 rev.07 for requirement of BHEL Bhopal.

The supplies against this enquiry shall be subject to GeM's general Terms and conditions of enquiry and PO. In addition, the terms and conditions given under this annexure shall specifically apply to this enquiry.

- 1. Technical terms and condition** detailed herein along with BHEL specification BP10987 rev.07 (**27HP100 / 27HP100d / 23HP100 / 23HP100d** or equivalent or superior) mentioned under scope of contract will govern supply of CRGO Laminations.
- 2. Quantity & bid evaluation:** Tentative quantity for **27HP100 / 27HP100d / 23HP100 / 23HP100d** or equivalent or better grade of CRGO Laminations in terms of core losses is as under:

Item details of tender are as under:

(all quantities in kg)

It. No	Item description	Per set qty.	Total no. of sets	Total qty.	Total qty. with +1% tolerances.	Delivery at BHEL Bhopal
1	CRGO laminations in grade 27HP100 / 27HP100d / 23HP100 / 23HP100d, equivalent or superior in terms of losses as per core computer drg no. 34697000470 rev.04	41855	2	83710	84547.10	November 2025
2	CRGO laminations in grade 27HP100 / 27HP100d / 23HP100 / 23HP100d, equivalent or superior in terms of losses as per core computer drg no. 34697000419 rev.02	27584	2	55168	55719.68	December 2025
<b>Total</b>			<b>4</b>	<b>138878</b>	<b>140266.78</b>	

Over all quantities are subject to variation of +1/-0%. Bidders can also quote superior grade material (in terms of core losses). Acceptance / rejection of the same shall be in purview of BHEL.

Supply quantities are to be restricted between 83710 kg & 84547.1 kg for item 1 & between 55168 kgs & 55719.68 kgs for item 2.

Individual L1 for each item shall be established.

- 3. Customer approved laminations & raw material sources:** CRGO laminations are to be made from CRGO steel (mother coil) grade (**27HP100 / 27HP100d / 23HP100 / 23HP100d or equivalent or superior in terms of core losses**). For subject requirement, CRGO lamination processor and raw material – CRGO coils supplying mills, both, must be approved by M/s PGCIL for at least their 400 kV class jobs.
- 4. PQR (pre-qualifying requirement) conditions:**

- As per attached PQR points along with NIT- E1453028 (Annexure-II).

**Important note:**

- All circulars issued by Government of India affecting any of the above conditions directly / indirectly shall supersede the above-mentioned conditions.
- Vendors to fill the Annexure- III with duly signed and stamped along with Bid submission.
- All the Annexures – I, II, III & IV to be duly signed and stamped and submit along with part – I bid.

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- 5. Supply conditions:** Tentative shipment / delivery shall be within 45 days from Purchase order (PO) OR contractual delivery, whichever is later from date of award of formal PO. Expected shipment dates beyond contractual delivery may change subject to mutual consent. Tentative requirement of materials against this enquiry for BHEL- Bhopal is by November 2025 for item 1 & by December 2025 for item 2.

Laminations are to be cut on CNC cropping line only. CRGO laminations are to be made as per BHEL drawing provided for each purchase order. Number of sheets specified per stack per width should be ensured. Stack height is very important and to be maintained, weight may vary slightly. Clarification should be immediately taken from BHEL Bhopal, if stack height is not achieved. Tolerance of + 1% in total weight per PO will be permissible to achieve required stack height and completeness of laminations. If total weight of laminations required exceeds PO quantity with permissible tolerance, prior approval shall be obtained from Transformer Engineering. All the limbs, Centre leg, side leg, yoke and fishes shall be supplied duly stacked in ready to build to core condition. Clarification, if any, to be taken from TRM/ TRE, BHEL Bhopal.

### 6. Inspection and Test certificates: -

- I. Supplier shall submit Mill TC of raw material CRGO coils along with commercial documents if required by PGCIL (Bill of lading, Bill of entry, commercial invoice and packing list etc.) evidencing purchase of genuine CRGO coils for BHEL's lamination job for each purchase order. Mill TC shall be submitted before processing the job for approval / inspection from BHEL QC / PGCIL to avoid any quality complaints in future.
- II. BHEL Quality/ PGCIL /TPIA will review TC or inspect coil at vendor works and accord clearance for processing laminations within 10 days (considering inspection duration and testing of samples at competent accredited testing lab as per ISO 17025. Certificate shall contain accreditation & Accreditation Symbol) of submission of complete mill TC, clarifications and other documents if required any. Mill TC shall be as per BHEL specifications. No delivery extension request will be considered in case of delay by supplier in submission of complete documents and clarifications. BHEL will not be responsible for LD penalty due to delay in submission of mill TC or clarifications by vendor.
- III. Test certificates should cover result of tests for mechanical and electrical properties as per specification for each coil No/ Heat No.
- IV. Dimensions and tolerances shall be as per specifications and a clause confirming same shall be mentioned clearly in mill TC submitted.
- V. Inspection is to be done before (of prime CRGO coils) and after processing (of finished laminations) by PGCIL and BHEL, Quality or any one agency. Supplier shall give inspection call at least 10 days in advance for both.
- VI. Raw material and finished laminations testing are in supplier's scope wherever required as per Quality Plan. Inspection both RM and final shall be as per PGCIL's applicable QA plan.
- VII. Magnetic properties including Maximum specific total loss and magnetic permeability measurement will be done by Single Sheet method (for domain refined grade) and Epstein method (for other grades) as per IS 3024 & acceptance norm as elaborated in IS 3024. For RM stage and final stage inspection as mentioned in concerned Quality Plan, Samples of shall be selected by BHEL/Customer and testing (in the scope of supplier) shall be done in laboratory having valid accreditation from MRA signatories of ILAC/APLAC against ISO 17025. For final acceptance at BHEL, results obtained at BHEL lab will be final and binding for acceptance of material.
- VIII. TC shall clearly bear BIS mark with license number.

### 7. Tests and procedure: Test certificate shall clearly indicate following information:

- I. Supplier's name, Grade, Identification no., Size and weight, Packet/ Bundle no.
- II. Test results of dimensions and tolerances
- III. Details of insulation coating
- IV. Type test as required
- V. Properties of Specific total loss of each coil, Mechanical and Electrical properties for one random coil of each lot.
- VI. Results of chemical composition (for information only, if required). Supplier shall enclose one copy of test certificate as per above along with dispatch documents to facilitate clearance/ acceptance of finished laminations. After making core with supplied laminations the core losses shall be measured at BHEL Bhopal in presence of M/s PGCIL.
- VII. It will be reviewed with respect to the Test certificates of raw material / lamination provided by Supplier. Supplier shall be responsible for higher losses if any. In case of higher losses, BHEL reserves the right to reject full lot.

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8. **Bid opening**: - The 'Techno-commercial' part of the bid i.e. Bid Part – I of the offers shall be opened on the due date of tender opening **on GeM portal**. Clarifications if required on this part may be obtained from the bidders for their evaluation. The Price bid Part-II of such bidders alone shall be opened on a later date **on GeM portal** whose techno-commercial bids are found acceptable. The date of 'Price bid –Part II' opening shall be intimated to technically qualified bidders later.
9. Price finalization shall be done through price bid opening and through reverse auction as per GeM terms and conditions.
10. **Delivery period**: Delivery period shall be quoted in number of Days from PO date or as per agreed commercial conditions. BHEL prefers delivery to be 45 days from date of PO. Early deliveries will be acceptable with mutual consent. Item wise PO shall be placed separately. **Supply requirement against this enquiry for BHEL- BHOPAL shall be by November 2025 for item 1 & by December 2025 for item 2.**
11. **Terms of delivery**: F.O.R. destination on door delivery basis (BHEL Bhopal).
12. **Levy of Penalty for delayed performance**: As per latest GeM guidelines. On LD recovery, the applicable GST shall also be recoverable from indigenous vendors. Receipt of material at BHEL (CN date i.e., material entry date in BHEL) will be taken as proof of delivery for indigenous bidders.
13. **Replacement of rejected goods**: Final inspection for acceptance of material shall be at BHEL's works after testing in presence of BHEL as well as PGCIL representative during core building stage and results shall be binding on the suppliers. Rejected goods are to be lifted and replacements to be supplied immediately free of cost by the vendor. It will be dealt as per latest GeM guidelines.
14. **Payment Terms**: - As per latest GeM guidelines.

**MSME Suppliers** may opt for the below payment terms:

- I. **Micro & Small enterprises** - Within 45 days from receipt & acceptance of materials at BHEL-BHOPAL.
- II. **Medium enterprises** - Within 60 days from receipt & acceptance of materials at BHEL-BHOPAL.
- III. MSME vendors may opt for payment through TReDS (Trade Receivables Discounting System), TReDS benefit can be availed through following platforms: Invoicemart (M/s A. TReDS limited), M1xchange (M/s Mynd Solutions Pvt Ltd) and M/s RxIL. For details please visit respective websites.
- II. No overdue interest shall be payable by BHEL.

15. **Transit Insurance**: - All type of risks to be covered in Insurance policy and in supplier scope only.
16. **Validity of Offer**: Offer should be valid for a period of 90 days from the date of technical bid opening date for finalization of the contract. In case, validity lower than 90 days is provided, bids shall be liable for rejection.
17. **Taxes & Duties**: -

- The bidders are requested to furnish the rate and type of duty / taxes as extra applicable to the product under this enquiry in their bid (along with details like HSN, SAC codes, GSTIN no. of vendor etc).
- Indian Bidders-Bidders to ensure timely remittance of SGST, CGST, IGST as applicable in time as per law.
- Vendor to ensure compliance to timely filing of monthly GST return. GST portion of invoice shall be released only upon the invoice being reflected in GSTR 2A of BHEL and invoices being compliant to GST Invoice rules.

BHEL will avail tax credit as per GST rules. Vendors to note that GST portion of invoice amount shall be released only upon:

- Vendor declaring such invoice in his GSTR – 1 and
- Receipt of goods and tax invoice by the BHEL and
- Confirmation of payment of GST thereon by vendor on GSTN portal
- Above is subject to receipt of goods and tax invoice thereof along with vendor declaring invoice in his return and paying GST within timeline prescribed for availing TC by BHEL.

In case, GST credit is delayed / denied to BHEL due to non / delayed receipt of goods and / or tax invoice or expiry of timeline prescribed in GST law for availing such ITC (Input Tax Credit) or any other reasons not attributable to BHEL, GST amount shall be recoverable from vendor along with interest levied / leviable on BHEL.

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In case, vendor delays declaring such invoice in his return and GST credit availed by BHEL is denied or reversed, subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from vendor along with interest levied / leviable on BHEL. Further, any GST liability arising on BHEL under RCM (Reverse Charge) before actual receipt of goods and / or invoice thereof would be subject to recovery of interest leviable for the period between the date of such liability and actual date of eligibility of ITC based on receipt of goods, receipt of invoices and other conditions specified in GST law.

### 18. Integrity Pact:

- a) The integrity pact submitted along with the current rate contract will be considered valid for the duration of contract.
- b) IP is a tool to ensure that activities and transactions between the Company and its Bidders/Contractors are handled in a fair, transparent and corruption free manner. A panel of Independent External Monitors (IEM) has been appointed to oversee implementation of IP in BHEL.
- c) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory who signs in the offer) along with techno-commercial bid. Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be preliminary qualification. Details of IEMs for this tender is furnished below:

Sl.No	IEM	Email
1	Shri Bishwamitra Pandey, IRAS (Retd.)	<a href="mailto:iem2@bhel.in">iem2@bhel.in</a>
2	Shri. Mukesh Mittal, IRS (retd.),	<a href="mailto:iem3@bhel.in">iem3@bhel.in</a>

- d) Please refer section-8 of the IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to the IEM mentioned in the tender.
- e) No routine correspondence shall be addressed to IEM (phone/post/email) regarding the clarifications, time extensions or any such administrative queries, etc. on the tender issued. All such clarification/issues shall be addressed directly to the tender issuing (procurement) department.

**19. Short closure:** BHEL reserves right to short close the contract for quantities anytime during the tenure of the contract.

**20. Fraud prevention policy:** Fraud prevention Policy of GeM is to be complied.

**21. Compliance to MAKE IN INDIA** circular issued by Gol:

*“For this procurement, the local content to categorize a supplier as a Class I local supplier / Class II local supplier / Non-Local supplier and purchase preference to Class I local supplier, is as defined in Public Procurement (Preference to Make in India), Order 2017 dated 19.07.2024 issued by DPIIT. In case of subsequent orders issued by the nodal ministry, changing the definition of local content for the items of the NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT”*

*To avail purchase preference under Make in India guidelines, vendor should be categorized as Class 1 supplier. For a vendor to be classified as Class 1 supplier, bidder & their mill from which support letter has been furnished shall have to submit annexure – IV with seal and sign duly ratified / verified by statutory auditor or cost auditor of the company (in case of companies) or from a practicing-chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.*

**22. Prevention of conflict of Interest among bidders/agent:** Treatment of cases regarding conflict of interest:

The bidder notes that a conflict of interest would said to have occurred in the tender process and execution of the resultant contract, in case of any of the following situations:

- i. If its personnel have a close personal, financial, or business relationship with any personnel of BHEL who are directly or indirectly related to the procurement or execution process of the contract, which can affect the decision of BHEL directly or indirectly;
- ii. The bidder (or his allied firm) provided services for the need assessment/ procurement planning of the Tender process in which it is participating;

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- iii. Procurement of goods directly from the manufacturers/ suppliers shall be preferred. However, if the OEM/ Principal insists on engaging the services of an agent, such agent shall not be allowed to represent more than one manufacturer/ supplier in the same tender. Moreover, either the agent could bid on behalf of the manufacturer/ supplier or the manufacturer/ supplier could bid directly but not both. In case bids are received from both the manufacturer/ supplier and the agent, bid received from the agent shall be ignored. However, this shall not debar more than one Authorised distributor (with/ or without the OEM) from quoting equipment manufactured by an Original Equipment Manufacturer (OEM) in procurements under a Proprietary Article Certificate.
- iv. A bidder participates in more than one bid in this tender process. Participation in any capacity by a Bidder (including the participation of a Bidder as a partner/ JV member or sub-contractor in another bid or vice-versa) in more than one bid shall result in the disqualification of all bids in which he is a party. However, this does not limit the participation of an entity as a sub-contractor in more than one bid if he is not bidding independently in his own name or as a member of a JV.

The Bidder declares that they have read and understood the above aspects, and the bidder confirms that such conflict of interest does not exist and undertakes that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s), in this regard. 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. **In case, the Bidder is found having indulged in above activities, the same will be considered as a violation of the tender conditions, and suitable action shall be taken by BHEL as per extant policies/ guidelines.**

23. **Corrigendum / addendum:** Any corrigendum/addendum related to this tender shall be updated on GeM portal <https://gem.gov.in>. Bidders are requested to regularly visit the BHEL website to keep themselves abreast with updates.
24. Bidders are advised to read the latest Government circular/OM/Notices etc. issued by Government of India & BHEL (wherever applicable to BHEL, shall be follow).
  - i. BHEL's PO conditions for indigenous bidders (attached).
  - ii. Latest Order (Public procurement no-4 dtd. 23.02.2023) subject: Restrictions under rule 144 (Xi) of general financial rules GFRs, 2017 shall be applicable along with subsequent order issued by Government of India (Ministry of Finance).
  - iii. General terms and conditions as per GeM shall be applicable.
25. BHEL shall not be releasing any additional document other than formal PO in case contract is finalized with a bidder. For any queries, please contact the undersigned:

<b>Name:</b>	Dharmendra Singh	Madhurendra Manderwal	Vineet Suman
<b>Designation:</b>	AGM	DGM	Sr. Manager
<b>Department:</b>	CMM – Steel, Copper & FE	CMM – FE & Steel	CMM - Steel
<b>Contact details:</b>	+91 755 – 250 3360	+91 755 – 250 5210	+91 755 – 250 5805
<b>Email:</b>	<a href="mailto:dharmendra2000@bhel.in">dharmendra2000@bhel.in</a>	<a href="mailto:madhurendra@bhel.in">madhurendra@bhel.in</a>	<a href="mailto:vineetsuman@bhel.in">vineetsuman@bhel.in</a>

**PQR (Pre-Qualifying requirement) conditions of tender no - E1453028.**

Sr. No	Parameters	Vendors compliance (Yes/No)
1.	Suppliers of <b>CRGO rolls and lamination</b> (slitting & cutting) must be approved by M/s Power Grid (Component Manufacturers of Power Transformer/Reactor up to 400 kV Class) on tender bid part-1 opening date.  Any change in M/s PGCIL status shall be immediately informed to BHEL. Vendors must be approved by M/s PGCIL and if validity extension is pending with PGCIL, same shall be considered for further processing.	
2.	<b>Certificate of conformity:</b> Lamination processor to submit valid certificate of conformity of BIS as on bid part – 1 opening date as per latest quality control order issued by Government of India.	

(Seal & sign of the bidder)

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**Annexure - III (E1453028)**

**Other salient parameters for compliance in tender E1453028:**

<b>Sr. No</b>	<b>Conditions</b>	<b>Vendors compliance/acceptance (Yes/No)</b>
1	Confirmation about UOM (Unit of Measurement) & currency in which you have quoted i.e. INR / kg OR INR / MT.	(Yes / No)
2	Confirm whether you have quoted your rate inclusive of GST. (*please quote rate inclusive of GST only.)	(Yes / No)
3	Acceptance to supplies as per BHEL's specification BP 10987 rev.07.	(Yes / No)
4	Confirmation that tendered quantity for each item of enquiry has been offered.	(Yes / No)
5	Quoted delivery period. Material requirement shall by November 2025 for 125 R laminations (item 1) & December 2025 for 80 R laminations (item 2).	(Delivery period to be quoted in no. of days)
6	Acceptance of penalty clause as per standard GeM terms	(Yes / No)
7	Acceptance to clause 3 of annexure wherein bidder and their mill – both are approved by PGCIL for their 400 kV class jobs.	(Yes / No)
8	Acceptance to bid evaluation criteria as per clause 2 of annexure - I	(Yes / No)
9	Acceptance to general terms and conditions as per GeM.	(Yes / No)
10	Acceptance to fraud prevention Policy of GeM.	(Yes / No)
11	Acceptance of inspection clause: Inspection to be carried out as per applicable QA plan of PGCIL.	(Yes / No)
12	Acceptance of standard payment term of GeM.	(Yes / No)
13	Acceptance to Integrity Pact clauses. Integrity Pact duly signed & filled to be submitted with the offer.	(Yes / No)
14	Confirmation that only one grade & type of CRGO steel to be used for manufacturing of one set	(Yes / No)
15	Acceptance that BIS grade CRGO coils shall be sourced from mills holding valid BIS license and from only those approved by PGCIL for their 400 kV class jobs.	(Yes / No)

(Seal & sign of the bidder)

**MAKE IN INDIA format (to be filled by OeMs of the participating bidders)**

**BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL**

**MATERIAL MANAGEMENT – STEEL DIVISION**

*For this Procurement, Government of India Public Procurement (Preference to Make in India), Order 2017 with its amendments and subsequent Orders issued by the respective nodal ministries shall be applicable even if issued after issue of this NIT but before finalization of contract/PO/WO against this NIT.*

*As per the Provisions of this order, please submit **a self-certification complying with the conditions below on company letterhead duly signed by competent authority.***

I \_\_\_\_\_, hereby declare on behalf of M/s. \_\_\_\_\_ that we are participating in the Enquiry No. \_\_\_\_\_ floated by BHEL, Bhopal (MP), India and shall comply with following:

1. Public Procurement (Preference to Make in India), Order 2017 *with its amendments* and subsequent Orders issued by the respective nodal ministries shall be applicable even if issued after issue of this NIT but before finalization of contract/PO/WO against this NIT.

(a) A supplier will be treated as “**Class-I Local Suppliers**”, if the items quoted by bidder have local content equal to or more than 50%.

(b) ‘**Local Content**’ means the amount of value added in India, which shall be total value of item quoted (excluding net domestic indirect taxes) minus the value of imported content in the item (including all custom duties) as a proportion of the total value, **in percent**.

2. I hereby declare that our firm qualifies as “**Class-I Local Suppliers**”.

**a. The Local Content in the items quoted under this Enquiry is \_\_\_\_\_ Percent**

**b. Details of location(s) in India where this value addition shall be done, is/are as follows:**

- (a) \_\_\_\_\_  
(b) \_\_\_\_\_  
(c) \_\_\_\_\_

( \_\_\_\_\_ )

For M/s. \_\_\_\_\_

(Seal & Sign)





TSD 6206 A

# PLANT PURCHASING SPECIFICATION BHOPAL

BP 10987

REV NO. 07

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SUPERSEDES

BP 10987 Rev 06

## COLD ROLLED GRAIN ORIENTED SHEET STEEL

### 27 HP 100

#### 1. GENERAL:

This specification governs the quality requirements of double side insulated, cold rolled, grain oriented magnetic steel sheets of thickness 0.27mm

#### 2. APPLICATION:

Used in transformer cores.

#### 3. CONDITION OF DELIVERY:

Cold rolled and annealed.

The sheet shall be supplied in side trimmed continuous coils, with insulation coating on both sides, as specified in clause 6.

#### 4. COMPLIANCE WITH NATIONAL STANDARDS:

This standard is based on IS:3024

#### 5. DIMENSIONS AND TOLERANCES:

##### 5.1 Sizes:

The steel sheet shall be supplied to the dimensions specified on the order.

##### 5.1.1 Thickness:

The thickness of the sheet shall be 0.27 mm.

##### 5.1.2 Width:

The nominal standard width of the coil shall be 790, 840, 915 or 1000 mm.

The order shall clearly specify the width of the coil required.

#### Revision:

Reviewed and brought upto date.

#### Issued by:

STANDARDS AND MATERIALS GROUP  
TECHNICAL SERVICES DEPTMENT

Rev. 07

Date : 08.02.2023

Date of first Issue: July 1991



## 5.1.3 Weight:

The nominal weight of the coil shall be between 1800 - 2500 kg.

## 5.2 Tolerances:

### 5.2.1 Thickness:

Tolerance on thickness when measured with a contact micrometer at any location, not less than 9.5 mm from an edge shall not deviate more than  $\pm 0.025$  mm from the average thickness of the test lot or coil. The outer limits of acceptable thickness shall be within the range of 0.241 to 0.305 mm.

### 5.2.2 Width:

The tolerance of width for side trimmed coil shall be - 0 and + 3 mm.

### 5.2.3 Edge Camber:

The deviation of a side edge from a straight line over 2440 mm length or fraction thereof shall not exceed 3.2mm.

## 5.3 Waviness:

Sharp, short waves and buckles are extremely detrimental to the effective use of grain oriented electrical steel in flat laminations and shall be avoided in the delivered materials.

For material of width greater than 150 mm, the deviation from flatness (Wave Factor) expressed as a percentage, shall not exceed 1.5 %

## 6. MANUFACTURE:

The sheet shall be of low carbon, silicon steel having silicon content around 3.15%. High permeability and low core-loss in the direction of rolling is to be achieved by appropriate metallurgical processes.

The thermally flattened material shall be coated with an inorganic surface coating type C2 and an inorganic surface coating, type C5, applied over the inherent C2 coating to provide extra surface insulation resistance on both sides

The steel sheets shall be uniformly coated on both sides with an insulation as stated above, as part of its manufacturing process, which will withstand stress relief annealing without deterioration of its adhesion or electrical insulation value at a temperature of 790 to 840 deg.C. There shall be no change in colour of the insulation after annealing.



The insulation, coating shall be uniform throughout the length of the coil. There shall be no line marks, rough spots, dots and patches etc.

Note: Not to be confused with some discoloration / shade difference of the insulation inherent to the manufacturing process.

7. FREEDOM FROM DEFECTS:

The material shall be clean, bright, smooth and free from dents, surface defects such as holes, scabs, pits, blisters, slivers, mill marks etc. and also free from oil, grease, dust, scale and rust.

The sheet surface shall not exhibit any of these defects even after stress relief annealing at 790 deg.C to 840 deg.C.

8. TEST SAMPLES:

Test samples shall be selected from the consignment as follows:

8.1 Maximum Specific Total Loss:

One from each coil.

8.2 Electrical & Mechanical Tests:

One sample per consignment/lot for Mechanical Tests and Electrical Tests (Surface Insulation Resistivity and Magnetic Permeability Tests).

8.3 The test samples shall be sufficient in size to provide the necessary test pieces.

9. TEST METHODS:

Unless otherwise specified, the test shall be conducted in accordance with the relevant method specified in IS 3024

10. MECHANICAL TESTS:

10.1 Ductility:

Material shall possess good shearing and punching properties and shall be sufficiently ductile to permit normal working.

The bend test shall be carried on transversely cut test specimen of not less than 152 mm long and 30 mm wide.

The test specimen shall be initially bent through 90 degrees, this bend not being counted. The specimen shall then be bent backward and forward through 160 degrees. The specimen shall complete one bend without fracture.

10.2 Stacking Factor:

The surface quality of the material when measured in terms of stacking factor (viz, a minimum of 16 samples under a pressure of 0.35 MPa) shall be 95% minimum.



11. ELECTRICAL TESTS:

11.1 Surface Insulation Resistivity.:

When tested as per IS 649 section -2 the surface insulation resistivity per lamination (two surfaces) of single strip specimens (5 on each side), shall show the following readings.

Average Value            10 ohms cm<sup>2</sup>, Minimum.

Individual Value.        5 ohms cm<sup>2</sup>, Minimum

11.2 Maximum Specific Total Loss:

11.2.1 Cutting of Test Specimen:

Epstein test specimens measuring 30 mm wide and not less than 300 mm long, shall be cut from the sample with sharp shears. All the strips shall be cut parallel to the direction of rolling.

11.2.2 Stress - Relief Annealing:

The Epstein test specimens cut as described above, shall be annealed at a temperature of 790 deg.C to 840 deg.C for approximately 1 hour in an atmosphere comprised of a combination of pure Nitrogen and pure Hydrogen (2 to 15%). Provision shall be made for obtaining essentially perfect flatness in the magnetic test specimen in the stress relief anneal.

11.2.3 Testing

When tested in accordance with IS 649, the specimens prepared as described in clause 11.2.1 and 11.2.2 shall be tested at a peak magnetic flux density of 1.7 T and a frequency of 50 Hz. The specific total loss shall not be greater than 1.00 watt/kg

11.3 Magnetic Permeability Test

The induction value at 800 A/m magnetising force shall not be less than 1.85 Tesla.

12. TYPE TEST: - Ageing\*

When tested at a peak Magnetic Flux Density of 1.7T and at a frequency of 50 Hz, the specific total loss of the specimen which has been heated at a temperature of 225deg.C for 24 hours shall not deteriorate by more than 4% of the measured specific total loss (clause 11.2) of the coil concerned.

\*Note: Type tests shall be carried out when "Type Approval" to a supplier is given and repeated once in two years for the approved sources.



## 13 TEST CERTIFICATES:

Unless otherwise stated, three copies of certificates shall be supplied alongwith each consignment.

In addition, the supplier shall ensure to enclose one copy of the test certificate along with their dispatch documents/shipping list to facilitate quick clearance of the material. The test certificate shall bear the following information.

BP 10987 (Rev. 07): Cold rolled Grain Oriented Sheet Steel Gr: 27HP100

Order No,

Supplier's Name/Grade/Identification No,

Size & Weight,

Packet/Bundle No,

Test Results of Dimensions & Tolerances,

Freedom from Defects,

Details of Insulation Coating,

Type Test, Properties of (a) Specific Total Loss of each coil

(b) Mechanical & Electrical properties for one random coil of each lot/consignment,

(c) Results of chemical composition for information only.

## 14 PACKING AND MARKING:

The material shall be supplied preferably in coils of continuous length. However, if it becomes unavoidable, the coils of the order can be supplied with maximum of three butt weld joints, The supplier shall ensure that the welds are made in such a manner without causing damage to the areas of coil adjacent to the weld. The welds shall be clearly marked by suitable tags projecting outside the coil.

Sheets shall be packed vertically/horizontal according to the instructions given in the Annexure.

A Metal label / tag shall be securely attached with each coil or drum or bundle outside its wrapping and shall be legibly marked with the following information.

BP 10987: Cold rolled Grain Oriented Sheet Steel Gr: 27HP100

BHEL Order No.

Manufacturer's/Supplier's name.

Identification/Coil No.

Size and Quantity supplied.

-----  
GENERAL INFORMATION FOR CALCULATION

Density - 7.65 Kg/dm<sup>3</sup>.



ANNEXURE

DETAILED INSTRUCTIONS FOR PACKING

The nominal weight of each coil shall be 1800 - 2500 kg.

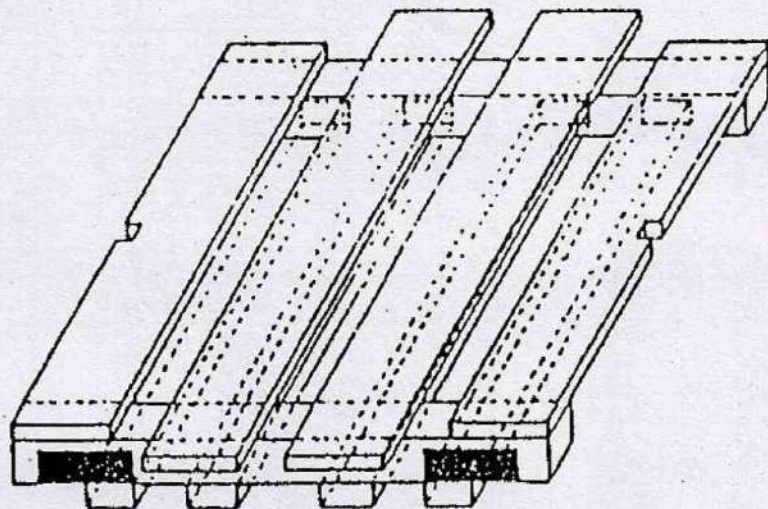
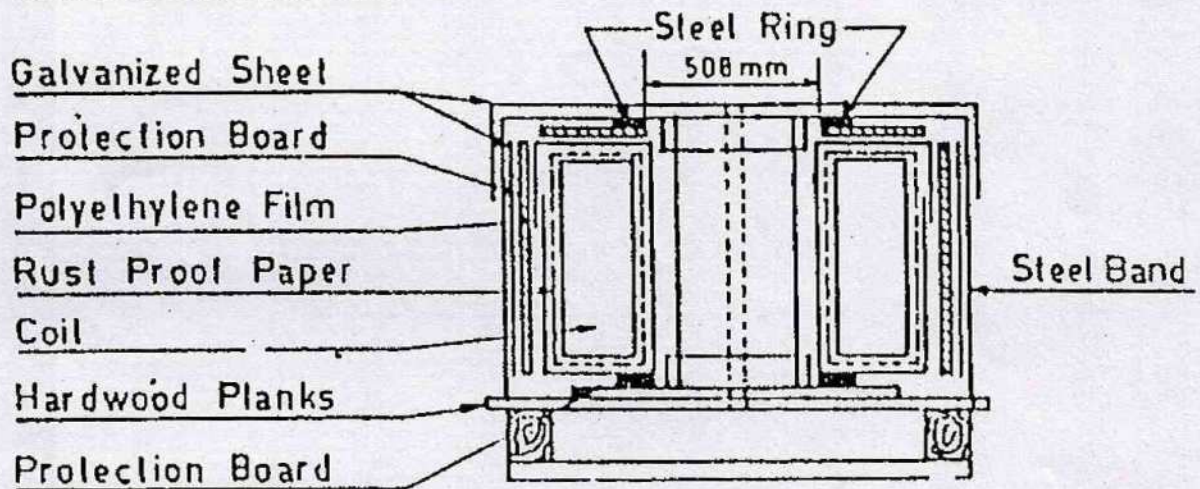
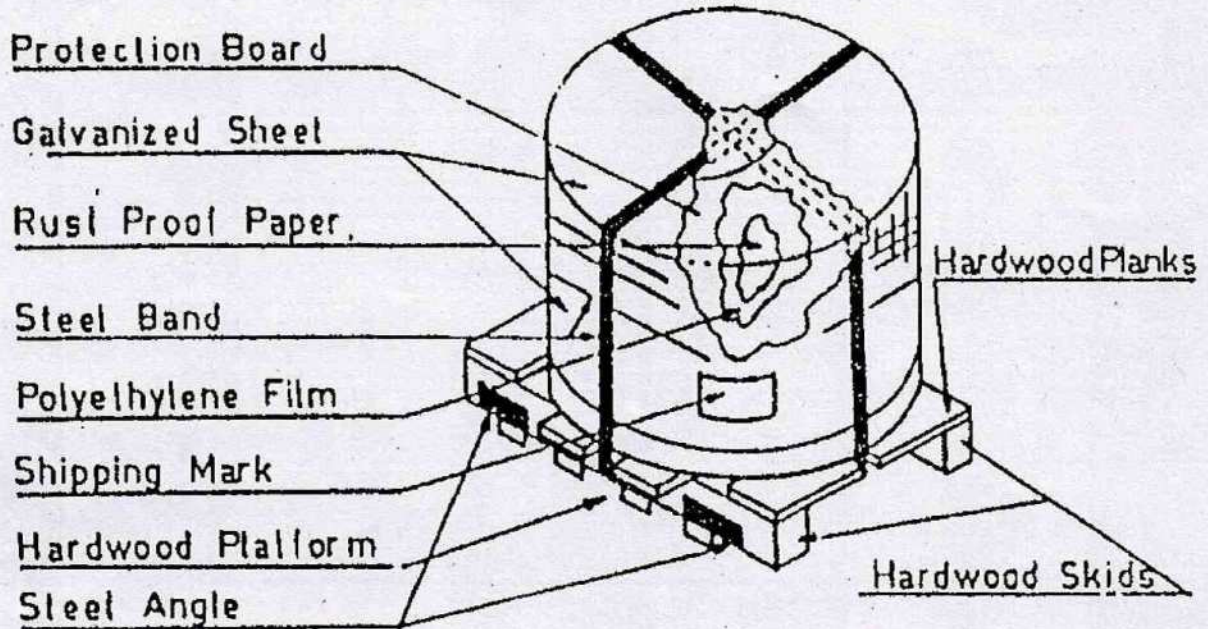
The nominal internal diameter of coil shall be 508 mm.

Packing shall be sea-worthy and shall protect the coils from damage and rusting during transit.

Coils shall be vertically/horizontally packed according to the instructions given below.

1. An annular protection board shall be placed at either end of the coil. Protection board sleeve shall be provide at ID of the coil.
2. The coil should then be wrapped with waterproof anti-rust crepe Kraft paper by lapping axially all around the circumference.
3. The coil shall then be covered by polyethelene sheet or anti-rust waterproof paper and the ends sealed properly.
4. A galvanised sheet should be wrapped on the outside of the coil and the top and bottom the coil. Care should be taken to ensure that the ends of top and bottom the coil extend sufficiently over the inside diameter of the coil.
5. A galvanised sheet should be wrapped on the inside of the coil care should be taken that it overlaps sufficiently over the ends of the sheet mentioned in (4) above.
6. Steel rings made from thick angle sheets should be placed on the rims of the inner and outer diameters at both ends of the coil. The rings should be held at either ends at four points by steel bands.
7. The coil should then be mounted on wooden skids held together by steel bands. Wooden skids must have cut outs to house the steel bands for tight fit and to avoid slippage.
8. The packing should ensure that there is no slippage of moisture and the coils reach BHEL in completely rust free condition. It should be strong enough to withstand handling at the docks; at sea and on the road.
9. Coils should be sufficiently tight wound to prevent collapse to an extent that would preclude their being mounted on a mandrel appropriate to the ordered internal diameter.
10. Each package shall indicate the, sling position, for lifting without damage. It is preferable to fox a suitable size of 'sheet steel Angle' at the position where the Sling Rope is to be fitted to avoid slippage/damage/breakage of the wooden skid at four places.





Annexure-1

INTEGRITY PACT**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 CRGO laminations for 2X15R+2X80R / 450kV class conductors for PGCIL Manupur EMS8028.  
 \_\_\_\_\_ (hereinafter referred to as "Contract"). 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 panel of Independent External Monitor(s) (IEMs), 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**

- 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. The Bidder(s)/ Contractor(s) commits himself to observe the following principles during 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 Indian Penal Code (IPC) and Prevention of Corruption 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 Foreign Bidder(s)/ Contractor(s) shall disclose the name and address of agents and representatives in India and Indian Bidder(s)/ Contractor(s) to disclose their foreign principals or associates. 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.

2.3 The Bidder(s)/ Contractor(s) shall not approach the Courts while representing the matters to IEMs and shall await their decision in the matter.

### 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 Bidder(s)/ Contractor(s) from the tender process; terminate the contract, if already awarded, exclude from future business dealings and/ 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

4.1 If the Principal has disqualified the Bidder (s) from the tender process before award / order acceptance 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 is entitled to terminate the Contract according to Section 3, or terminates the Contract in application of Section 3 above, the Bidder(s)/ Contractor (s) transgression through a violation of Section 2 above shall be construed breach of contract and the Principal shall be entitled to demand and recover from the Contractor an amount equal to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher, as damages, in addition to and without prejudice to its right to demand and recover compensation for any other loss or damages specified elsewhere in the contract.

**Section 5 - Previous Transgression**

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 (three) 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 or action can be taken as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.


**Section 6 - Equal treatment of all Bidder (s)/ Contractor (s) / Sub-contractor (s)**


- 6.1 The Principal will enter into Integrity Pacts with identical conditions as this Integrity Pact with all Bidders and Contractors.
- 6.2 In case of Sub-contracting, the Principal Contractor shall take the responsibility of the adoption of Integrity Pact by the Sub-contractor(s) and ensure that all Sub-contractors also sign the Integrity Pact.
- 6.3 The Principal will disqualify from the tender process all Bidders who do not sign this Integrity Pact or violate its provisions.

**Section 7 - Criminal Charges against violating Bidders/ Contractors /Subcontractors**

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 panel of Independent External Monitor (s) (IEMs) for this Integrity Pact. The task of the IEMs is to review independently and objectively, whether and to what extent the parties comply with the obligations under this Integrity Pact.
  - 8.2 The IEMs are 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 IEMs shall be provided access to all documents/ records pertaining to the Contract, for which a complaint or issue is raised before them as and when warranted. However, the documents/records/information having National Security implications and those documents which have been classified as Secret/Top Secret are not to be disclosed.
  - 8.4 The Principal will provide to the IEMs 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 IEMs the option to participate in such meetings.

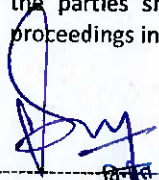
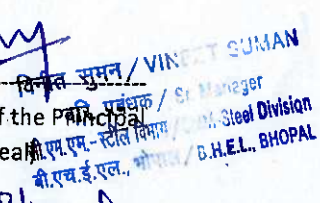
- 
- 8.5 The advisory role of IEMs is envisaged as that of a friend, philosopher and guide. The advice of IEMs would not be legally binding and it is restricted to resolving issues raised by a Bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some Bidders. At the same time, it must be understood that IEMs are not consultants to the Management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.
- 8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process or during execution of Contract, the matter should be examined by the full panel of IEMs jointly, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.
- 8.7 The IEMs would examine all complaints received by them and give their recommendations/ views to the CMD, BHEL at the earliest. They may also send their report directly to the CVO, in case of suspicion of serious irregularities requiring legal/ administrative action. Only in case of very serious issue having a specific, verifiable Vigilance angle, the matter should be reported directly to the Commission. IEMs will tender their advice on the complaints within 30 days.
- 8.8 The CMD, BHEL shall decide the compensation to be paid to the IEMs and its terms and conditions.
- 8.9 IEMs should examine the process integrity, they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the Principal should be looked into by the CVO of the Principal.
- 8.10 If the IEMs have reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Indian Penal Code / Prevention of Corruption 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 IEMs may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.11 After award of work, the IEMs shall look into any issue relating to execution of Contract, if specifically raised before them. As an illustrative example, if a Contractor who has been awarded the Contract, during the execution of Contract, raises issue of delayed payment etc. before the IEMs, the same shall be examined by the panel of IEMs. Issues like warranty/ guarantee etc. shall be outside the purview of IEMs.
- 8.12 However, the IEMs may suggest systemic improvements to the management of the Principal, if considered necessary, to bring about transparency, equity and fairness in the system of procurement.
- 8.13 The word 'Monitor' would include both singular and plural.

#### Section 9 - Pact Duration

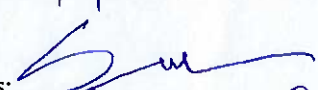
- 9.1 This Integrity Pact shall be operative from the date this Integrity Pact is signed by both the parties till the final completion of contract for successful Bidder, and for all other Bidders 6 months after the Contract has been awarded. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings.
- 9.2 If any claim is made/ lodged during currency of this Integrity Pact, the same shall be binding and continue to be valid despite the lapse of this Pact as specified above, unless it is discharged/ determined by the CMD, BHEL.

**Section 10 - Other Provisions**

- 10.1 This Integrity Pact is subject to Indian Laws and exclusive jurisdiction shall be of the competent Courts as indicated in the Tender or Contract, as the case may be.
- 10.2 Changes and supplements as well as termination notices need to be made in writing.
- 10.3 If the Bidder(s)/ Contractor(s) is a partnership or a consortium or a joint venture, this Integrity Pact shall be signed by all partners of the partnership or joint venture or all consortium members.
- 10.4 Should one or several provisions of this Integrity Pact turn out to be invalid, the remainder of this Integrity Pact 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 Integrity Pact with the Principal would be competent to participate in the bidding. In other words, entering into this Integrity Pact would be a preliminary qualification.
- 10.6 In the event of any dispute between the Principal and Bidder(s)/ Contractor(s) relating to the Contract, in case, both the parties are agreeable, they may try to settle dispute through Mediation before the panel of IEMs in a time bound manner. In case, the dispute remains unresolved even after mediation by the panel of IEMs, either party may take further action as the terms & conditions of the Contract. The fees/expenses on dispute resolution through mediation shall be shared by both the parties. Further, the mediation proceedings shall be confidential in nature and the parties shall keep confidential all matters relating to the mediation proceedings including any settlement agreement arrived at between the parties as outcome of mediation. Any views expressed, suggestions, admissions or proposals etc. made by either party in the course of mediation shall not be relied upon or introduced as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the dispute that is the subject of mediation proceedings. Neither of the parties shall present IEMs as witness in any Alternative Dispute Resolution or judicial proceedings in respect of the dispute that was subject of mediation.

For & On behalf of the Principal  
(Office Seal)  

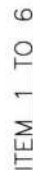
Place BHEL Bhopal.  
Date 17/07/25

Witness:   
(Name & Address) Shambhu Prakash  
BHEL Bhopal

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

Witness: \_\_\_\_\_  
(Name & Address) \_\_\_\_\_

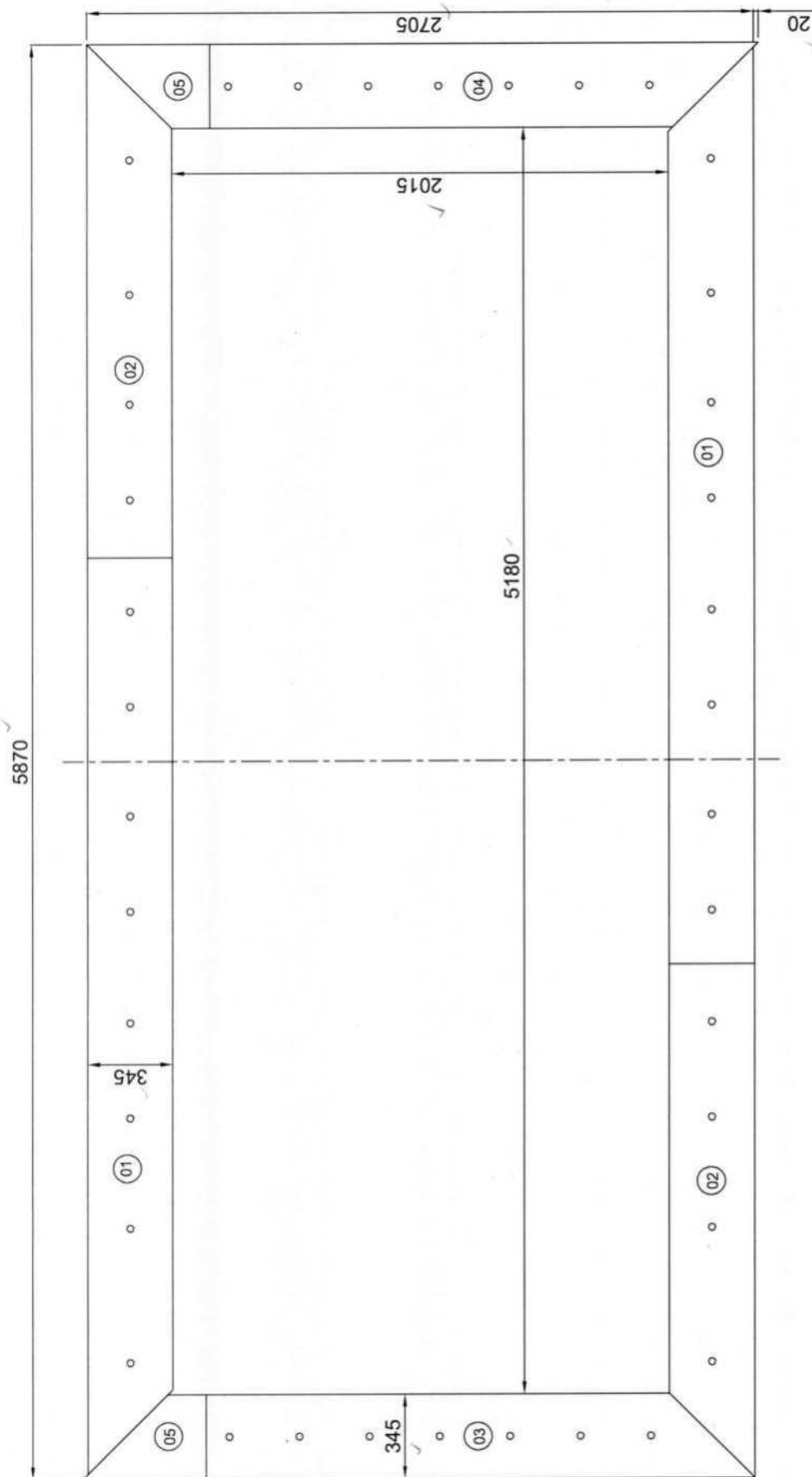




1. EACH PACKET WELL BE BUILT UP WITH 4/4 BLADING AS PER P-Q ARRANGEMENT.
2. ALL MITRES TO BE CUT AT 45°
3. FOR TOLERANCES REFER DRG. 34997000055.
4. LAMINATIONS TO BE CUT WITH DIMENSIONS ALONG THE GRAINS OF STEEL.
5. LAMINATIONS TO BE FREE FROM BURRRS, DENTS, WAVINESS AND RUST.
6. FOR DE LINKED BOM REFER COMPUTER BOM NO. 34697000419.
7. FOR DIMENSION, WEIGHT AND OTHER DETAILS, REFER TABLE 1.
8. DRAWN WEIGHT IS INCLUSIVE OF 2.5% WASTAGE.
9. SPACE FACTOR = 0.97 CONSIDERED.
10. FOR CORE GRADE SEE WORK-ORDER .
11. LAMINATION QUANTITY INDICATED IN BOM IS APPLICABLE FOR LAMINATION THICKNESS 0.27 MM. FOR LAMINATION THICKNESS OF 0.23 MM, QUANTITY TO BE INCREASED ON PRO-RATA BASIS.

Item	B1	C1	C2	VAR 00 (50 MVAR)	VAR 01 (63 MVAR)	VAR 02 (80 MVAR)
	mm	mm	mm	Kg	Kg	Kg
1	276	3070	2794	9400	9809	
2	276	3420	3144			11680
3	276	639	363	1957	2042	
4	276	637	361			2175
5	276	2010	1734	12309	12844	
6	276	2010	1734			13729
				<b>23666</b>	<b>24695</b>	<b>27584</b>

File No. HEP-TCBGMQ(Misc)/613/2025-HEP-TRM20606 (Computer No. 203590)  
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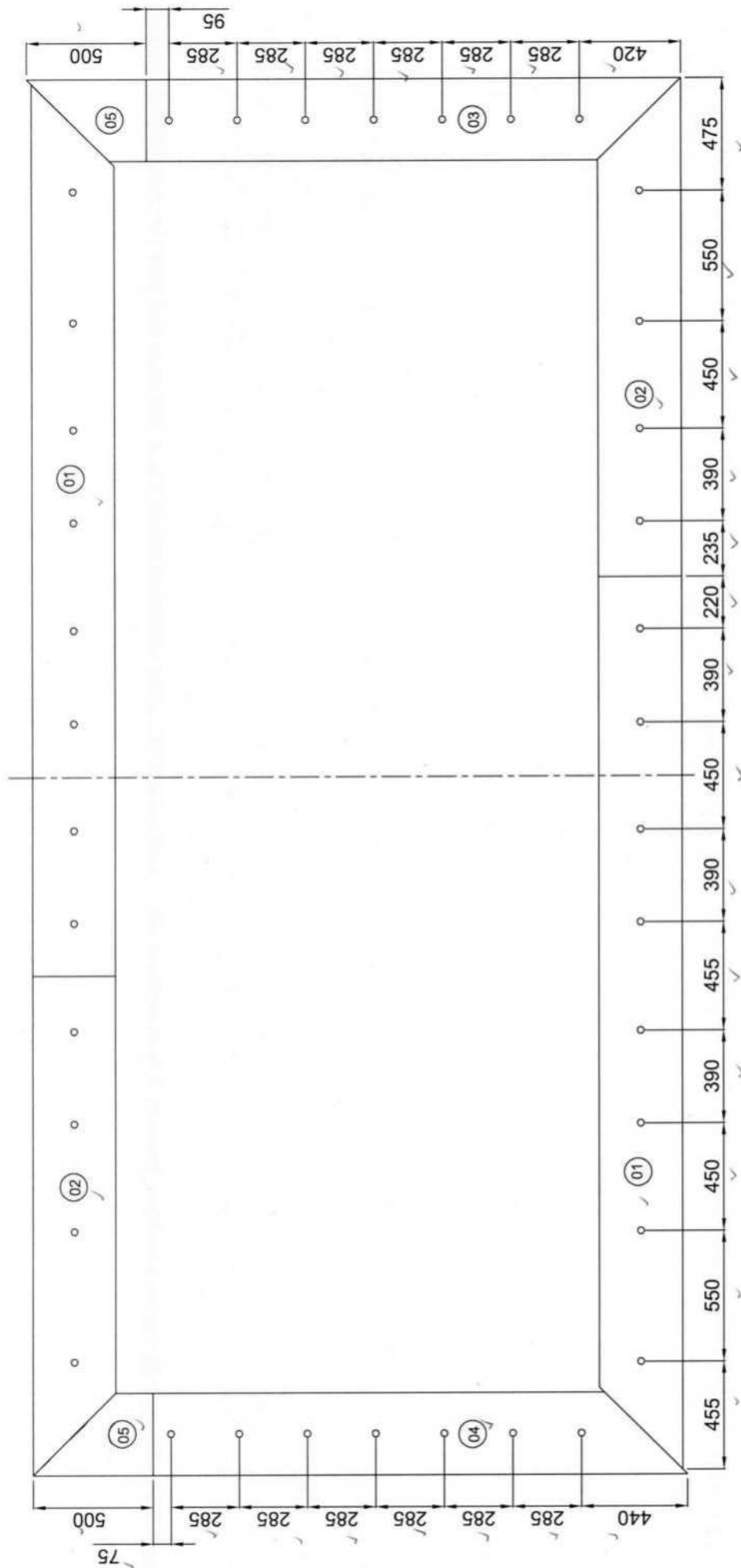


## P-ARRANGEMENT

R04 / 02.02.24 / A.DAVE - SHEET 3 REVISED.


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SIZE A3

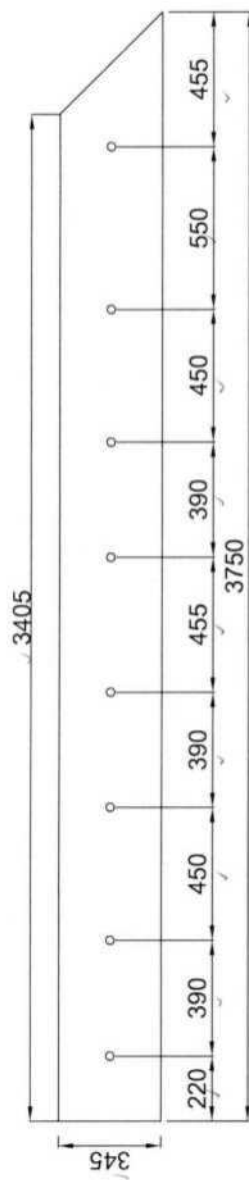


## Q-ARRANGEMENT

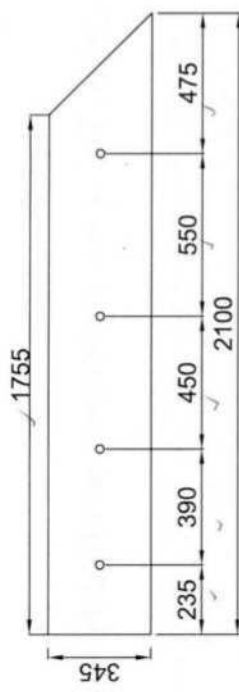
R04 / 02.02.24 / A.DAVE - SHEET 3 REVISED.

03		03.9.22		ALTERED CHECKED APPROVED		02		19.3.22		ALTERED CHECKED APPROVED		REV 01		DATE 18.2.22		ALTERED CHECKED APPROVED		-SD- -SD- -SD-				ASSY DRG 24697000269		DRN S. DUTTA		NAME S. DUTTA		SIGN -SD-		DATE 22.10.21	
ZONE		LENGTH OF OTHER SIDE ADDED FOR ITEM 1,2,3,4,&5		ZONE		ZONE		HOLE DETAILS FOR ITEM 3 AND 4 REVISED.		ZONE		ZONE		DRAWING COMPLETELY REVISED.		ZONE		ZONE		TITLE CORE LAMINATION (125 MWAR 420 KV REACTOR FOR POWERGRID)		DRG. NO. 34697000470		REV 04		S'NO 02		NO OF SHTS 03			

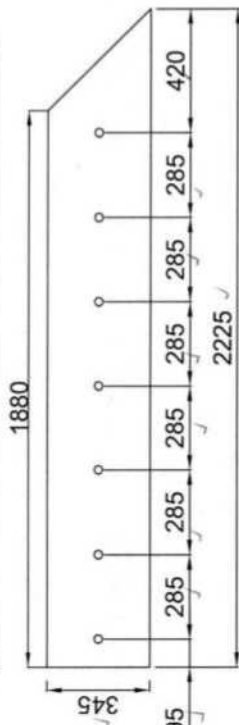
SIZE A3



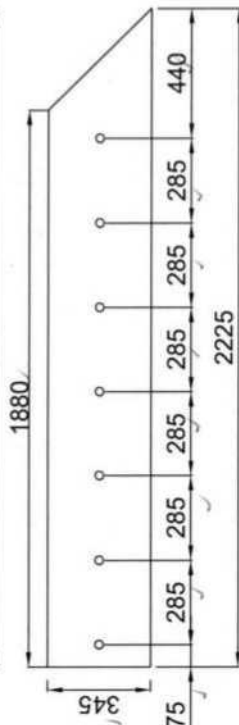
IT. 01  
18990 Kg



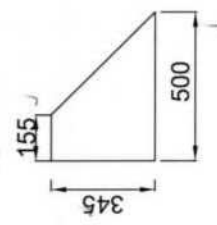
IT. 02  
10231.5 Kg



IT. 03  
5447.5 Kg



IT. 04  
5447.5 Kg



IT. 05  
1738.5 Kg

**NOTE - HOLES SHALL BE PUNCHED AT CENTER OF LAMINATION WIDTH.**

GRADE OF CORE STEEL

## CORE BLADING

HOLE DIA

NET WEIGHT OF CORE STEEL

MATERIAL TO BE DRAWN FROM STORE : 42901 KG (INCL. 2.5% WASTAGE)

CORE TO BE TESTED : 2 kV AC FOR 1 MINUTE

TOTAL CORE THICKNESS

: 27HP100 (FOR OTHER GRADE, CONSULT TRE)

: 4/4

: 29mm

 $\therefore 41855 \text{ KG (WITH SF} = 0.970)$ 

: 42901 KG (INCL. 2.5% WASTAGE)

: 2 kV AC FOR 1 MINUTE

: 1030 MM (LAMINATION TO LAMINATION)

**NOTE -**

1. EACH PACKET WILL BE BUILT UP WITH FOUR LAMINATION PER LAYER ALTERNATELY AS PER ARRANGEMENT P-Q.
2. ALL MITRES TO BE CUT AT 45°.
3. FOR TOLERANCES REFER DRG. 34997000055.
4. LAMINATIONS TO BE CUT WITH DIMENSIONS ALONG THE GRAINS OF STEEL.
5. LAMINATIONS TO BE FREE FROM BURRS, DENTS, WAVINESS AND RUST.
6. FOR DE LINKED BOM REFER COMPUTER BOM NO. 346970000470.

R04 / 02.02.24 / A.DAVE - COMMENT FOR GRADE OF STEEL REVISED.

[illegible]

SIZE A3



REF DRG NO.

SIGN AND DATE \_\_\_\_\_

INVENTORY NO.



03	03.9.22	<div>ALTERED</div> <div>CHECKED</div> <div>APPROVED</div>	<div>ALTERED</div> <div>CHECKED</div> <div>APPROVED</div>	02	19.3.22	<div>ALTERED</div> <div>CHECKED</div> <div>APPROVED</div>	<div>-sd-</div> <div>-sd-</div> <div>-sd-</div>	REV.	01	DATE	18.2.22	<div>ALTERED</div> <div>CHECKED</div> <div>APPROVED</div>	<div>-sd-</div> <div>-sd-</div> <div>-sd-</div>		BHARAT HEAVY ELECTRICALS LTD. BHOPAL	ASSY DRG. 24697000269 W/O. 61203-A-517-01	DRN CKD APPD	NAME S. DUTTA AKSHAY DAVE ARUN KHARE	SIGN -sd- -sd- -sd-	DATE 22.10.21 25.10.21 30.10.21							
	03	03.9.22	<div>ALTERED</div> <div>CHECKED</div> <div>APPROVED</div>	<div>ALTERED</div> <div>CHECKED</div> <div>APPROVED</div>	02	19.3.22	<div>ALTERED</div> <div>CHECKED</div> <div>APPROVED</div>	<div>-sd-</div> <div>-sd-</div> <div>-sd-</div>	REV.	01	DATE	18.2.22	<div>ALTERED</div> <div>CHECKED</div> <div>APPROVED</div>								<div>-sd-</div> <div>-sd-</div> <div>-sd-</div>						
	03	03.9.22	<div>ALTERED</div> <div>CHECKED</div> <div>APPROVED</div>	<div>ALTERED</div> <div>CHECKED</div> <div>APPROVED</div>	02	19.3.22	<div>ALTERED</div> <div>CHECKED</div> <div>APPROVED</div>	<div>-sd-</div> <div>-sd-</div> <div>-sd-</div>	REV.	01	DATE	18.2.22	<div>ALTERED</div> <div>CHECKED</div> <div>APPROVED</div>								<div>-sd-</div> <div>-sd-</div> <div>-sd-</div>						
ZONE		LENGTH OF OTHER SIDE ADDED FOR ITEM 1,2,3,4,&5			ZONE		HOLE DETAILS FOR ITEM 3 AND 4 REVISED.			ZONE		DRAWING COMPLETELY REVISED.			TITLE		CORE LAMINATION (125 MVAR 420 kV REACTOR FOR POWERGRID)		DRG. NO.		34697000470		REV		04		


SIZE A3

REF DRG NO.

SIGN AND DATE \_\_\_\_\_

INVENTORY NO.



03	ALTERED		02	19.3.22	REV.	DATE	ALTERED	-sd-		BHARAT HEAVY ELECTRICALS LTD. BHOPAL W/O 61203-A-517-01	ASSY DRG. 24697000269	NAME S. DUTTA AKSHAY DAVE ARUN KHARE	SIGN -sd- -sd- -sd-	DATE 22.10.21 25.10.21 30.10.21	
	CHECKED				01	18.2.22	CHECKED	-sd-							
	APPROVED						APPROVED	-sd-							
ZONE	LENGTH OF OTHER SIDE ADDED FOR ITEM 1,2,3,4,&5			ZONE	HOLE DETAILS FOR ITEM 3 AND 4 REVISED.			DRAWING COMPLETELY REVISED.			TITLE CORE LAMINATION (125 MVAR 420 KV REACTOR FOR POWERGRID)			DRG. NO. 34697000470	REV 04

SIZE A3



