



CORPORATE PURCHASING SPECIFICATION

AA21108

Rev No.05

PREFACE SHEET

PRECOMPRESSED PRESS BOARD SOLID

FOR INTERNAL USE ONLY

REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS

Equivalent / Comparable Standards:

1) International : IEC 60641-3-1: 2008, Type B 3.1A

Probable / Suggested Suppliers and Grades:

Refer plant vendors list

User Plants and Replaced Plant Specifications / References:

1) HEP, BHOPAL : BP21198
2) TP, JHANSI : BP21198

Revisions: Spec. completely revised in line with International Standard.

APPROVED:
INTERPLANT MATERIAL RATIONALISATION
COMMITTEE – MRC(E&IM)

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PRECOMPRESSED PRESS BOARD SOLID

1 GENERAL

This specification governs the quality requirements of a very hard and rigid solid pressboard characterised by high purity and mechanical strength and capable of being sheared without showing ragged edges. Its surface bears mash marks. It is manufactured by hot pressing 100% sulphate wood pulp without the addition of any additive / adhesive into the solid plastic state. The material shall be free from soluble electrolyte such as chlorides, sulphates and carbonates and from conducting particles. The material in insulating oil shall have temperature index of at least 105°C.

2 APPLICATION

The material is used as insulating blocks, spacer strips, cylinders & other insulating components, barriers etc. in transformers, reactors and capacitors etc.

3 COMPLIANCE / PROPERTIES

The material shall comply with the requirements of IEC 60641-3-1:2008 Type B3.1A.

4 DIMENSIONS AND TOLERANCES

Thickness, width and length of the pressboard shall be stated on the order. The sheet shall be rectangular in shape with the two diagonals being equal. Sheet shall not form parallelogram. Two diagonals of the sheet shall be within $\pm 3\text{mm}$.

5 PREFERRED THICKNESS

1, 1.5, 2, 3, 4, 5, 6 and 8mm

6 Preferred Size

1800 X 3100mm, 2100 X 3200mm (With a tolerance of $\pm 100\text{mm}$ on length & width). However, other sheet sizes may be purchased as per requirements.

7 FINISH

Shall have matt finish with no irregularities.

8 METHOD OF TESTS

IEC: 60641-2

9 SAMPLE FOR TEST

Four boards of ordered thickness in 500 X 500 mm size shall be supplied for testing and approval.

10 TEST CERTIFICATE

Test certificate should contain all properties as per IEC 60641-3-1:2008 Type B 3.1A, except Plybond resistance.

Revisions: Spec. completely revised in line with International Standard.

APPROVED:
INTERPLANT MATERIAL RATIONALISATION
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CORPORATE PURCHASING SPECIFICATION

Unless otherwise stated, 3 copies of test certificates shall be supplied along with each consignment. In addition, the supplier shall ensure to send one copy of test certificates along with their dispatch documents to facilitate quick clearance of the material.

11 PACKING & MARKING

Manufacturer's name/ brand or identification slips with carbon free ink shall be given on each board which shall be compatible with insulating oil to IEC 60296. The boards shall be sealed in high density polyethylene sheets/ suitable packing to prevent ingress of rain water. These boards then shall be packed in a wooden case to avoid damage during transit. Packing shall be marked legibly with the following information –

- 1) AA21108 (Rev 05): PRECOMPRESSED PRESS BOARD SOLID
- 2) BHEL Order No.
- 3) Manufacturer's name / Grade / Batch / Lot no.
- 4) Thickness, Length & Width of the board
- 5) Quantity of boards / Net weight / Gross weight (kg)
- 6) Date of manufacturer / No. of boards

12 REFERRED STANDARDS (Latest Publications Including Amendments)

- 1) IEC 60296
- 2) IEC 60641 - 2



CORPORATE PURCHASING SPECIFICATION

AA21109

Rev No.05

PREFACE SHEET

PRESSBOARD – LAMINATED FOR ELECTRICAL PURPOSES

FOR INTERNAL USE ONLY

REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS

Equivalent / Comparable Standards:

International : IEC 60763-3-1 : 2010, Type LB3.1A.1 or LB3.1A.2

Probable / Suggested Suppliers and Grades:

Refer plant vendors list

User Plants and Replaced Plant Specifications / References:

- | | | |
|----------------|---|---------|
| 1) HEP, BHOPAL | : | BP21198 |
| 2) TP, JHANSI | : | BP21198 |

Revisions: Spec. completely revised in line with International Standard

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CORPORATE PURCHASING SPECIFICATION

AA21109

Rev No. 05

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PRESSBOARD – LAMINATED FOR ELECTRICAL PURPOSES

1 GENERAL

This specification governs the quality requirements of a very hard and rigid laminated precompressed pressboard made by 100% sulphate wood pulp board characterised by high purity and mechanical strength and capable of being sheared without showing ragged edges. Its surface bears mash marks. The laminates are manufactured by building up laminate of solid precompressed pressboard by hot pressing with casein based adhesive or non-aqueous adhesive, free from extraneous matter in the solid plastic state. The material shall be free from soluble electrolyte such as chlorides, sulphates and carbonates and also from conducting particles. The material in insulating oil shall have temperature index of at least 105°C.

2 APPLICATION

The material is used as coil spacers, flat washers, edge blocks and clamping rings etc. in transformers, reactors etc.

3 COMPLIANCE / PROPERTIES

The material shall comply with the requirements of the latest edition of IEC 60763-3-1:2010 Type LB3.1A.1 or LB3.1A.2. Bidder to mentioned type offered.

4 DIMENSIONS AND TOLERANCES

Thickness, width and length of the pressboard shall be stated on the order. The sheet shall be rectangular in shape with the two diagonals being equal. Sheet shall not form parallelogram. Two diagonals of the sheet shall be within ± 5 mm.

5 PREFERRED THICKNESS

8, 12, 16, 20, 25, 30, 40, 50mm and above in multiple of 10mm

6 PREFERRED SIZE

1800 X 3000mm, 2100 X 3100mm (With a tolerance of ± 100 mm on length & width). However, other sheet sizes may be purchased as per requirements.

7 FINISH

Shall have matt finish with no irregularities.

8 METHOD OF TESTS

IEC 60763-2

9 SAMPLE FOR TEST

Three boards of ordered thickness in 500 X 500 mm size shall be supplied for testing and approval.

Revisions: Spec. completely revised in line with International Standard

APPROVED:
INTERPLANT MATERIAL RATIONALISATION
COMMITTEE – MRC(E&IM)

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CORPORATE PURCHASING SPECIFICATION**10 TEST CERTIFICATE**

Test certificate should contain all properties as per IEC 60763-3-1 Type LB3.1 A.1 or LB3.1 A.2., except Flatness.

Unless otherwise stated, 3 copies of test certificates shall be supplied along with each consignment. In addition, the supplier shall ensure to send one copy of test certificates along with their dispatch documents to facilitate quick clearance of the material.

11 PACKING & MARKING

Manufacturer's name or identification slips with carbon free ink shall be given on each board which shall be compatible with insulating oil to IEC 60296. The boards shall be sealed in high density polyethylene sheets/ suitable packing to prevent ingress of rain water. These boards then shall be packed in a wooden case to avoid damage during transit. Packing shall be marked legibly with the following information –

- 1) AA21109 (Rev. 05) : Pressboard – Laminated
- 2) BHEL Order No.
- 3) Manufacturer's name / Grade / Batch/ Lot no.
- 4) Thickness, Length & Width of the board
- 5) Quantity of boards / Net weight/ Gross weight (kg)
- 6) Date of manufacturer / No. of boards

12 REFERRED STANDARDS (Latest Publications Including Amendments)

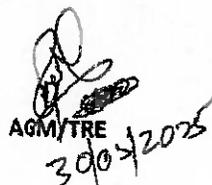
- 1) IEC 60763-2
- 2) IEC 60296

Pre Qualification Criteria (PQR) for Rate Contract (RC) of Indigenous press board for 1 year.		
Sl No.	Criteria	Documents required for evaluation
1	Only manufacturers are allowed. Manufacturers should have manufacturing facilities & In-house testing facilities in compliance with BHEL purchase specification, national / international standards & BHEL / BHEL's customer Quality plan.	Self-declaration of being original manufacturer. Documentary proof for Manufacturing facilities & In-house testing facilities. BHEL reserves the right for physical verification of above facilities.
2	Bidder should be manufacturing and supplying pressboard as per IEC 60641-3-1:2008 Type B3.1A and IEC 60763 -3-1:2010 Type LB3.1A.1 or LB3.1A.2. from their own works for at least 400 kV voltage class transformer / reactor to atleast 2 major Power Transformer Manufacturers.	As a proof, bidder to submit copies of 2 purchase orders and corresponding invoices for supply of pressboard for 400 kV voltage class transformer / reactor to any two major transformer manufacturers. PO and invoice date must be between 01.04.2020 to Technical Bid opening date. All copies of invoices and purchase orders should be self-attested by the authorized signatory of bidder. The documents should clearly bear Customer name & address, contact details, contact person information of customer.

MISCC Committee



AGM/PLG



AGM/TRE
30/04/2025



AGM(MR)
24/04/2025



AGM (QTR)



BHARAT HEAVY ELECTRICALS LIMITED
QUALITY PLAN FOR PRECOMPRESSED PRESS BOARD-SOLID AND LAMINATED

PART-I (FOR INDIGENOUS SUPPLY)

QA PLAN NO :QC/TCB/QAP/BO/30 REV.03		DATE:11/07/2017		PAGE: 1 OF 2			
SR. NO.	STAGE	CHARACTERISTICS	TYPE OF CHECK	REFERENCE DOCUMENT	QUANTUM OF CHECK	INSPECTION AGENCY	REMARKS
1	Final Inspection (visual and dimensional check)	1.1 Dimensions a)Thickness b)Length and width c)Bow d)Diagonals	M	AA21108 AA21109/ TRE184 TRE185	3 Samples per thickness per lot	TPIA	
		1.2 Finish	V	AA21108 AA21109/ TRE184 TRE185	20% by count	TPIA	-CHP for witness - Welt "marks" water" marks" waves" within thickness shall be acceptable. -Blots Blemishes / torn marks/Scratches/ lumps are not permissible -No damage/ Cut Marks shall be allowed even though the thickness requirements are met.
2	Final Testing (lab Tests)	a)All the tests to check Physical, Mechanical and Electrical properties	T	AA21108 AA21109/ TRE184 TRE185	1 sample per lot for each type of press board (Solid and laminated)	TPIA	CHP For Witness Surveillance test at BHEL works if not inspected at vendor works
LEGENDS: V-VISUAL,M-MEASUREMENT ,T TEST, TPIA-THIRD PARTY INSPECTION AGENCY., CQ-BHEL CORPORATE QUALITY,CHP-CUSTOMER HOLD POINT VENDOR CAN NOT PROCEED WITHOUT GETTING CLEAR ANCE FROM BHEL/CQ/TPIA							

NOTE: BHEL shall only involve in inspection at vendor works if so required as per customer approved QAP.

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BHARAT HEAVY ELECTRICALS LIMITED
QUALITY PLAN FOR PRECOMPRESSED PRESS BOARD-SOLID AND LAMINATED

PART-II (FOR IMPORTED SUPPLY)

QA PLAN NO :QC/TCB/QAP/BO/30 REV.03

DATE:11/07/2017

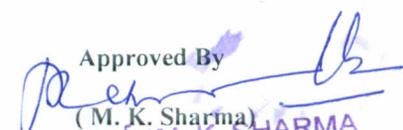
PAGE: 2 OF 2

SR. NO.	STAGE	CHARACTERERIS TICS	TYPE OF CHECK	REFERENCE DOCUMENT	QUANTUM OF CHECK	INSPECTION AGENCY	REMARKS
1	Final Inspection (visual and dimensional check)	1.1 Dimensions a)Thickness b)Length and width c)Bow d)Diagonals	M	AA21108 AA21109/ TRE184 TRE185	3 Samples per thickness per lot	TPIA	Record Review
		1.2 Finish	V	AA21108 AA21109/ TRE184 TRE185	20% by count	TPIA	Record Review
2	Final Testing (lab Tests)	a)All the tests to check Physical, Mechanical and Electrical properties	T	AA21108 AA21109/ TRE184 TRE185	1 sample per lot for each type of press board (Solid and laminated)	TPIA	Record Review Surveillance test once in a year at BHEL works

LEGENDS: V-VISUAL,M-MEASUREMENT ,T TEST, TPIA-THIRD PARTY INSPECTION AGENCY., CQ-BHEL CORPORATE QALITY,CHP-CUSTOMER HOLD POINT VENDOR CAN NOT PROCEED WITHOUT GETTING CLEAR ANCE FROM BHEL/CQ/TPIA

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