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PLANT PURCHASING SPECIFICATION
BHOPAL

BP 21192

Rev. No. 06

PAGE 1 OF 4

SUPERSEDES
BP 21192 Rev.05

SOFT UNCALENDERED MOULDABLE PRESSBOARD – SOLID

1. GENERAL :

This specification governs the quality of a solid uncalendered mouldable pressboard of high purity & high oil absorption and capable of being formed. It is manufactured from 100% sulphate wood pulp in natural colour without the addition of any additive/adhesive in to the solid plastic state. The material shall be free from soluble electrolytes such as chlorides, sulphates and carbonates and also from conducting particles. The material in insulating oil has temperature index of at least 105.

2. APPLICATION :

Used for making moulded and shaped components of Transformers.

3. COMPLIANCE WITH NATIONAL STANDARDS :

The material shall comply in general, with the requirement of the following International standard and also meet the requirements of this specification.

IEC : 60641-3-1 : Specification for pressboard and press
Type B 5.1 paper electrical purpose Part 3
(Edition 2.0 : 2008 - 07)

4. DIMENSIONS AND TOLERANCES :

Thickness, width and length of the pressboard sheet shall be stated on the order.

The sheet shall be rectangular in shape with the two diagonals being equals. Sheet shall not form parallelogram. The diagonals of the sheet shall be within ± 5 mm.

4.1 PREFERRED THICKNESSES :

0.6, 1, 1.5, 2, 3, 4 & 5 MM

4.1.1 Tolerance on Thickness :

$\pm 10\%$

4.2 Preferred Length, Width & Tolerance :

4.3

1800 x 3300, 2000 x 3000 mm with a tolerance of $\pm 0.5\%$.

Revision : Reviewed & Reaffirmed

Issued by :

STANDARDS AND MATERIALS GROUP
TECHNICAL SERVICES DEPARTMENT



TSD 6206 A

PLANT PURCHASING SPECIFICATION BHOPAL

BP 21192

Rev. No. 06

PAGE 2 OF 4

4.3 Bow (Edge Camber) :

Lateral departure of the four edges of the sheet from a straight line forming a cord shall not be more than 2 mm.

5. FINISH :

Shall have a smooth finish.

6. TEST METHODS :

Unless otherwise specified, the tests shall be conducted in accordance with the relevant methods of IEC Pub : 60641 - 2 : Specification for pressboard and presspaper for electrical purposes-Methods of Test.

7. SAMPLE FOR TEST :

Two boards of ordered thickness in 500 x 500 mm Size shall be supplied for testing and approval.

8. PHYSICAL PROPERTIES :

8.1 Apparent Density :

0.75 to 0.90 g/cm³

8.2 Oil Absorption

35% Min.

8.3 Moisture Content :

8% Max.

8.4 Shrinkage in air :

Direction	:	Shrinkage (%) Max.
Machine (MD)	:	0.8
Cross (XD)	:	1.2
Thickness (TK)	:	6.0

8.5 Cohesion Between Plies (Visual Test) :

The splits shall rupture with ragged or hairy appearance.

9. Mechanical properties :

9.1 Tensile Strength :

Machine Direction (MD) : 50 MPa, Min.

Cross Machine Direction (XD) : 40 MPa, Min.



PLANT PURCHASING SPECIFICATION
BHOPAL

BP 21192

Rev. No. 06

PAGE 3 OF 4

9.2 Elongation :

Machine Direction : 7% Min.

Cross Machine Direction : 8% Min.

10. Electrical Properties :

10.1 Electric Strength in oil at 90 ± 2° C (Short time-rapid rise test)

Thickness mm, over	Upto & incl	kV/mm, Min.
-	1.6	30
1.6	3.0	25
3.0	6.0	20

11. CHEMICAL PROPERTIES :

11.1 Ash Content ;

0.5% Max.

11.2 pH of 5% Aqueous Extract :

6 – 9

11.3 Conductivity of 5% Aqueous Extract :

7 mS / m, Max

12. Test Certificate :

Three copies of test certificate shall be supplied with each consignment.

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

Test certificate shall bear the following information ;

BP21192 : Soft Un-Calendered Mouldable Presboard-Solid.
Rev.06

BHEL Order No.

Manufacturer / Supplier's Name, Trade mark, if any.

Batch / Lot No. (No. of boards & quantity

Size and quantity (kg) supplied.

No. of Boards

Test results of clause 4.5 and 8 to 11.



**PLANT PURCHASING SPECIFICATION
BHOPAL**

BP 21192

Rev. No. 02

PAGE 4 OF 4

13. PACKING AND MARKING :

Manufacture's name or identification slips shall be given on each board which shall be compatible with insulating oil to IS : 335 / IEC 60296. The boards shall be sealed in high density polyethylene sheets which shall then be covered all around with water proof bitumenised brown paper to prevent entry of rain water. These boards then shall be packed in a wooden case to avoid damage during transit.

Each packing case shall be marked legibly with the following information :

BP 21192 : Soft Un-Calendered Mouldable Pressboard-Solid

BHEL Order No. :

Manufacture's / Supplier's Name

Grades / Trade mark, if any.

Batch / lot No.

Thickness, Length & Width of Board.

No. of Board A Quantity Supplied.