



**PLANT PURCHASING SPECIFICATION
BHOPAL**

BP 25296

Rev No. 05

PAGE 1 OF 4

SUPERSEDES
BP 25296 Rev.04

**FLEXIBLE MULTILAYER INSULATION HAVING
CALENDARED POLYAMIDE PAPER ON
BOTH SIDES**

1. GENERAL :

This specification governs the requirements of flexible multilayer insulation having polyester film sandwiched between calendared polyamide (aramid) paper. The composite insulation has temperature index of at least 155.

2. APPLICATION :

Used as insulation in AC, DC & Traction Machines etc.

3. COMPLIANCE WITH NATIONAL STANDARDS :

There is no Indian Standard for this material. However assistance has been drawn from IEC 60626 - 3 " Specification For Combined Flexible Materials for Electrical Insulation Specification For Individual Materials".

4. DIMENSIONS AND TOLERANCES :

4.1 Sizes : Thickness, Width and length shall be as specified on the order.

4.2 Preferred Thickness and Tolerance : As per Annexure - I.

4.3 Preferred width & tolerance : 500, 600, 900 mm with a tolerance of ± 3 mm.

5. TEST METHODS : As stated against each clause.

6. TEST SAMPLE :

One roll of 5 m shall be supplied for purposes of evaluation and approval.

Revision :

Reviewed & Brought upto date

Issued by :

Sharda

STANDARDS AND MATERIALS GROUP
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PLANT PURCHASING SPECIFICATION BHOPAL

BP 25296

Rev No. 05

PAGE 2 OF 4

7. BASIC MATERIALS :

7.1 Polyester Film :

Polyester Film used shall meet the requirements of Plant Purchasing Specification BP 22887.

7.2 Calendared Polyamide (Aramid) Paper :

Calendared Polyamide (Aramid) Paper shall meet the requirements of plant purchasing specification AA 22901.

7.3 Composition :

The composite material shall be made using the materials in the order given below.

Cover Layer I : Calendared Polyamide Paper

Foil (Support) : Polyester Film

Cover Layer II : Calendared Polyamide Paper

Thickness of different materials shall be as per Annexure- I and shall be checked as per any conventional method.

8. PHYSICAL PROPERTIES :

8.1 Finish :

The material shall be free from foreign inclusions and gaps. The surface shall not have wrinkles or dry patches.

8.2 Density : 1.0 - 1.2 gm/cc.

8.3 Substance : As per Annexure - I.

9. MECHANICAL PROPERTIES :

9.1 Breaking Strength N/10 mm Width : As per Annexure - I.

Note : Breaking strength and Elongation test shall be carried out on samples of size 250 x 15 mm using tensile testing machine with a uniform rate of traverse of 200 mm per minute and gauge length of 100 mm.

10. ELECTRICAL PROPERTIES :

10.1 Breakdown Voltage at Room Temperature (IS:2584) : As per Annexure - I.



**PLANT PURCHASING SPECIFICATION
BHOPAL**

BP 25296

Rev No. 05

PAGE 3 OF 4

11. TEST CERTIFICATES:

Unless otherwise specified, three copies of test certificate shall be supplied with each consignment.

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

The test certificate shall bear the following information:

BP 25296 : Flexible Multilayer Insulation Having Calendared Polyamide Paper on
Rev.05 Both Sides

BHEL Order No.

Batch / Lot No.

Test results obtained for the Physical, Mechanical and Electrical properties and dimensional tolerances as per the specification.

12. PACKING AND MARKING:

Material shall be supplied in rolls. The rolls shall be suitably packed so as to prevent damage during transit. Each package shall be labeled with the following.

BP 25296 : Flexible Multilayer Insulation Having Calendared Polyamide Paper On
Both Sides.

Manufacturer's / Supplier's Name.

Batch / Lot No.

Size.

Date of Manufacture.

Recommended Storage conditions

Net Weight.



TSD 6206 A

PLANT PURCHASING SPECIFICATION BHOPAL

BP 25296

Rev No. 05

PAGE 4 OF 4

Annexure - 1

Thickness of Composite mm	Tolerance on Thickness (mm)	Construction Thickness in mm			Substance gm/m ² ± 12%	Breaking Load N/10 mm, Min.		Elongation % Min.		Elect. Strength (BDV) Kv, Min.
		Cover layer I	Foil Support	Cover layer II		Longitudinal Direction	Transverse Direction	Longitudinal Direction	Transverse Direction	
0.14	± 0.02	0.05	0.023	0.05	140	100	80	15	20	6
0.18	± 0.02	0.05	0.05	0.05	185	160	100	15	20	10
0.22	± 0.02	0.08	0.05	0.08	220	170	140	15	20	10
0.30	± 0.02	0.08	0.125	0.08	330	270	200	20	25	16
0.38	± 0.05	0.08	0.19	0.08	430	320	250	20	25	20
0.48	± 0.05	0.08	0.30	0.08	570	430	300	20	25	25
0.70	± 0.05	0.13	0.35	0.13	750	650	650	20	25	27