



PLANT PURCHASING SPECIFICATION BHOPAL

BP 25185

REV NO. 11

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POLYESTER FILM BACKED EPOXY RESIN BONDED MICA PAPER TAPE/ SHEET

SUPERSEDES

BP 25185 Rev 10

1. GENERAL:

This specification governs the requirements of polyester film backed calcined muscovite mica paper tape/sheet bonded with Bisphenol — A epoxy resin. The polyester film shall have shrinkage of 3% (max.) as per DIN EN 60674.

The tape/sheet shall remain flexible after curing (heat treatment) in order to permit coils/bars to be formed and shaped without damage to the conductor/main insulation even after initial / final pressing/forming of the coils.

The material after pressing and curing shall be suitable for Class F (155° C) temperature level.

2. APPLICATION :

Used for the conductor insulation of stator coils/rotor bar insulation of high and low voltage AC machines.

3. COMPLIANCE WITH NATIONAL STANDARDS:

There is no Indian Standard covering this type of material.

4. DIMENSIONS & TOLERANCES:

4.1 Sizes :

Thickness, width and length shall be as stated on the order

4.2 Thickness :

4.2.1 Standard Thickness & Tolerance

0.09 mm \pm 0.01mm

4.3 Width

4.3.1 Standard Width & Tolerance

- a) 12 mm \pm 0.2 mm (Tape)
- b) 1000 mm \pm 5 m (Sheet)

4.4 Length / Roll :

- a) 500 m (Tape)
- b) 100, 200 m (Sheet)

However, for special applications, any other size may be ordered

Revision : Spec. revised to include material in sheet form also.

Issued by :

**STANDARDS AND MATERIALS GROUP
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5. Shelf Life and Storage

$\leq 5^{\circ}\text{C}$ - 48 months minimum from the date of delivery.

>5 to $\leq 25^{\circ}\text{C}$ - 24 months minimum from the date of delivery.

Note :

During storage, no resin flow at the edges or sticking together of the layers is acceptable. The mechanical and electrical properties must stay within the tolerance limits till the end of shelf life.

6. Test Methods

Unless otherwise specified, all the tests shall be conducted as per the relevant method of IEC60371-2.

7. Test Sample

Two rolls of tape/ two square meters of sheet shall be sent to TSD by BHEL QC for testing as per QC plan.

8. Composition :

Thickness (mm)	Mica Paper (gsm)	Polyester Film (gsm)	Bond Content (gsm)	Total Substance (gsm)
0.09 ± 0.01	75 ± 8	42 ± 4	12 ± 4	129 ± 15

9. Properties

9.1 Tensile Strength at 3% Elongation

20 N/ cm width minimum

9.2 Electric Strength (BDV) in Air at Room Temperature (IS 2584)

5 kV AC minimum

9.3 Stiffness at Room Temperature

40 N/m maximum

Specimen size shall be as given below.

Length : 100 mm

Width : 12 mm

10. Joints

As far as possible the material shall be supplied in continuous lengths as stated on the order. Rolls having joint/ joints shall be appropriately marked. 80 % of the consignment may have one joint and 20 % may have 3 joints.



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11. Rejection :

BHEL reserves the right to reject the entire lot of the material if found not conforming to the stipulations of this specification. Parts of the lot not subjected to testing but found not to meet the specifications/ found to be defective/ having hidden defects or having application problems can be rejected later on also.

12. Test Certificate :

Test certificate shall include all test/measurement results as per clauses 4, 8 & 9.

Unless otherwise specified, three copies of test certificates shall be supplied.

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

The test certificate shall bear the following information.

BP 25185 : Polyester Film Backed Epoxy
(Rev. 11) Resin Bonded Mica Paper Tape/Sheet

BHEL Order Number

Manufacturer's / Supplier's Name :

Batch Number / Lot Number :

Test results obtained for all the properties, composition, dimensions and tolerances as per the specification.

13. Packing and Marking

The tape shall be supplied wound tightly on rigid plastic bobbins with rounded edges, with ID 75 mm. Mica paper shall be on top side. The outer diameter of the roll shall be less than 250 mm. The rolls shall be kept in a polythene bag, which in turn should be packed in polystyrene containers.

Each container shall be labeled with the following :

BP 25185: Polyester Film Backed Epoxy Resin Bonded Mica Paper Tape/Sheet.

Manufacturer's /

Supplier's Name & tape grade :

BHEL Order Number :

Batch Number / Lot Number :

Date of Manufacture :