



PLANT PURCHASING SPECIFICATION  
BHOPAL

BP 25183

REV NO. 04

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SUPERSEDES  
BP 25183 Rev.03

**BIS-A-EPOXY BONDED POLYESTER FILM BACKED  
MICA PAPER SHEET AND TAPE**

1. GENERAL:

This specification governs the quality requirements of Bis-A Epoxy resin bonded polyester film backed mica paper foilium and tapes. Material shall be made from Calcined Muscovite mica paper bonded with Bis-A-Epoxy and Hardener system with polyester film backing. Polyester film shall have shrinkage of 3% (max.) as per DIN 40634 Gr F1510. The material shall be supplied in B-stage. The homogeneous insulation produced after pressing and curing shall have temperature index of at least 155.

2. APPLICATION:

Used for insulation of slot portion, overhang portion of rotor windings etc. of A.C. Machines.

3. COMPLIANCE WITH NATIONAL STANDARDS:

There is no Indian Standard covering this type of material.

4. DIMENSIONS AND TOLERANCES:

4.1 Sizes:

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

4.2 Thickness:

4.2.1 Standard thickness : 0.08 mm.

4.2.2 Tolerance :  $\pm 0.01$  mm.

4.3 Width :

4.3.1 Tape : 12, 16, 25 mm.

4.3.1.1 Tolerance :  $\pm 0.3$  mm.

4.3.2 Folium : 1000 mm.

Revision : Reviewed & Reaffirmed  
Based on Gr.MIR 1 FM 075.1 of SN 56242  
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4.3.2.1 Tolerance :  $\pm 5$  mm.

4.4 Length Per Roll : 100 , 200 metres

However for special applications any other size may be ordered.

### 5. SHELF LIFE AND STORAGE:

$\leq 5$  deg.C : 24 Months, Minimum from the date of delivery.

$> 5$  to  $\leq 25$  deg.C : 12 Months, Minimum from the date of delivery.

Note : During storage no resin flow at the edges or sticking together of layers is accepted. The mechanical & electrical properties must stay within the tolerance limits to the end of shelf life.

### 6. TEST SAMPLES:

Two rolls of 100 metre length and 25 mm width wide Tape or one roll of 5 metre length and 1000 mm width wrapper shall be submitted for testing and approval.

### 7. TEST METHOD:

As stated against each clause.

### 8. COMPOSITION :

Thickness (mm)	Mica Paper (gm/m <sup>2</sup> )	Bond Content (gm/m <sup>2</sup> )	Polyester Film (gm/m <sup>2</sup> )
0.08	75 $\pm$ 5	21 $\pm$ 3	32 $\pm$ 2

### 9. PROPERTIES:

9.1 Substance : 128  $\pm$  10 gm/m<sup>2</sup>

Tested on a sample of size 100 cm<sup>2</sup>

9.2 Volatile Matter : 0.7%, Max.

9.3 Electric Strength (BDV) in Air at Room Temp.IS: 2584 ; 5 KV, Min.

9.4 Stiffness (IEC : 60626 - 2) ; 40 N/m, Max.

During Test mica shall be on top side.

### 10. PROPERTIES OF CURED LAMINATE:

Laminate (0.5 mm thick) prepared by curing 6 layers of folium/tape at 140  $\pm$  5 deg.C under a pressure of 2 N/mm<sup>2</sup> for 10  $\pm$  0.25 hours shall show the following properties:



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10.1 Electrical Strength (BDV) (IS:2584) : 80 Kv/mm, Min.

11. **JOINTS:**

The material shall be supplied in continuous lengths as stated on the order. Rolls having joint shall be packed separately and appropriately marked. 90% of the consignment shall be without joints. Material used for jointing shall not adversely affect the properties of the cured insulation. If the material used for jointing is not compatible with the insulation, the supplier, shall notify accordingly. Per roll, maximum only one joint is permitted.

12. **TEST CERTIFICATE:**

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

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.

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BHEL Order No.  
Manufacturer's/Supplier's, Name.  
Batch No./Lot No.  
Date of Manufacture.

Test results obtained for the properties and dimensional tolerances as per the specification.

13. **PACKING AND MARKING:**

The material shall be supplied wound tightly on rigid plastic bobbins of suitable size, with mica paper facing outwards, free from folds and wrinkles using interleaving films.

The rolls shall be kept in a polythene bag, which in turn is packed in suitable container to avoid damage during transit & storage.

Each container shall be labelled with the following:

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Manufacturer's/Supplier's Name.

BHEL Order No.

Batch No./Lot No.

Date of Manufacture.