



PLANT PURCHASING SPECIFICATION BHOPAL

BP 25191

REV NO. 04

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SUPERSEDES
BP 25191 Rev.03

GLASS BACKED RESIN POOR EPOXY BONDED MICA PAPER TAPE / WRAPPER

1.0 GENERAL:

This specification governs the quality requirements of epoxy resin bonded glass backed mica paper tape/ wrapper suitable for resin poor (VPI) insulation system. The epoxy binder and accelerator in the tape/ wrapper should be compatible with Bisphenol-A and Diglycidylether based epoxy resin and acid anhydride hardener based VPI impregnation system. The mica paper shall be uncalcined muscovite grade. The glass fabric backing shall be linen weave Dexol treated. The coils / bars insulated with this tape / wrapper shall undergo VPI process with the above mentioned solvent free epoxy resin and hardener mix and shall have a temperature index of ≥ 155 .

2.0 APPLICATION:

Used for main insulation of coils / bars of electrical machines with VPI system.

3.0 COMPLIANCE WITH NATIONAL STANDARDS:

There is no Indian standard covering this material.

4.0 DIMENSIONS AND TOLERANCES:

4.1 Sizes :

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

4.2 Standard thickness : 0.14 mm $\pm$ 0.02 mm

4.3 Standard width : 25 mm $\pm$ 0.5 mm

4.4 Standard Length / Roll : 50 m (55 mm bobbin ID) / 80 m (25 mm bobbin ID)

However, for special applications, any other length may be ordered.

Revision: Reviewed & Brought upto date.
Cl.1,4.4,8.1,8.4 & 12 Modified

Issued by :

STANDARDS AND MATERIALS GROUP
TECHNICAL SERVICES DEPARTMENT

Rev. 04

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5.0 SHELF LIFE AND STORAGE:

$\leq 5^{\circ} \text{C}$: 24 months, minimum from the date of delivery.

> 5 to $\leq 25^{\circ} \text{C}$: 12 months, minimum from the date of delivery.

6.0 TEST METHODS:

Unless otherwise specified all the tests shall be conducted as per the relevant methods of IEC 60371-2.

7.0 SAMPLE FOR TESTS:

Two tape rolls / 5 sq. m. wrapper, shall be sent to TSD for testing from every consignment.

8.0 PROPERTIES:

8.1 Composition :

When tested as per conventional method composition shall be as given below:

Total substance	: 215 $\pm$ 19 gm/m ²
Mica Paper	: 160 $\pm$ 13 gm/m ²
Bond Content	: 21 $\pm$ 3 gm/m ²
Glass Content	: 34 $\pm$ 3 gm/m ²

8.2 Accelerator Content (For information only) : 13% on Nominal Bond.

8.3 Volatile : 1.0% Max.

8.4 Tensile Strength at 3.0% Elongation : 100 N/cm (Minimum)

8.5 Stiffness (IEC : 60626 - 2) : 60 N/m (Maximum)

During test mica shall be on top side.

8.6 Electric Strength (BDV) in air at Room Temp.IS 2584 : 1.5 kV (Minimum)

9.0 OVERLAP INDICATION: (For hand taping rolls only)

A centre line shall be marked throughout the length of tape to indicate half overlap.

10.0 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. Only one joint is permitted per roll, maximum.



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11.0 TEST CERTIFICATE:

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 dispatch documents to facilitate quick clearance of the material.

The test certificate shall bear the following information:

BP 25191-Rev 04 : Glass Backed Resin Poor Epoxy Bonded Mica Paper Tape / Wrapper.

BHEL Order No.

Manufacturer's Name.

Batch No. / Lot No.

Date of Manufacture.

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

12.0 PACKING AND MARKING:

i) Bobbin for hand taping

The tape shall be supplied wound tightly on rigid plastic bobbins with rounded inner edges with ID-55 mm as shown in "Sketch-A".

ii) Bobbin for machine taping

The tape is to be supplied on plastic bobbin (as shown in the "Sketch B"). The bobbin should have dimensions as follows:

Inner Diameter of Bobbin	:	25 + 0.2 / - 0.0mm
Outer Diameter of Bobbin	:	30 mm
Material of Bobbin	:	Plastic
Notches	:	4 numbers equally distributed 0.5 deep 10 wide

Mica paper shall be on top side. The rolls shall be kept in a Polythene bag, which in turn shall be packed in polystyrene container to avoid damage during transit / storage. Each container shall be marked with the following

BP 25191-Rev 04 : Glass Backed Resin Poor Epoxy Bonded Mica Paper Tape / Wrapper.

BHEL Order No.

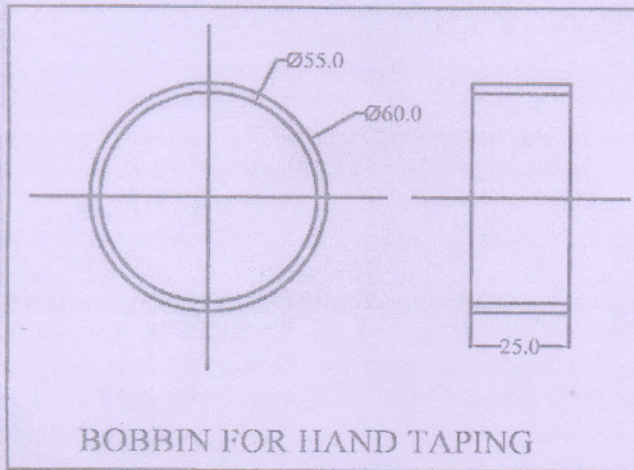
Manufacturer's Name.

Batch No. / Lot No.

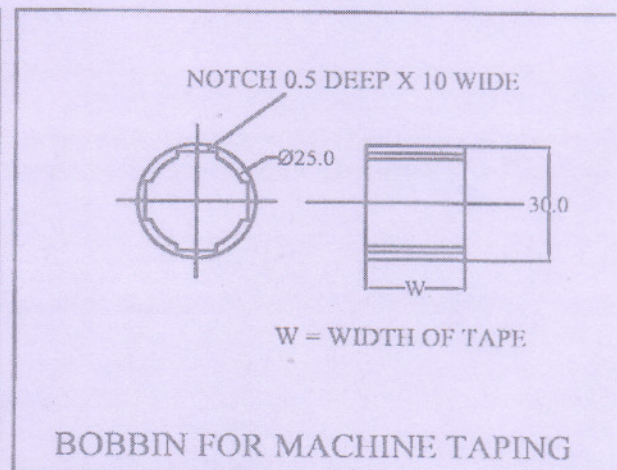
Date of Manufacture.

Note:

- Each roll shall be marked with "USE BEFORE....."(Date of Expiry)
- "Sketch-A" & "Sketch B" are appearing on next page.



SKETCH-A



SKETCH-B