



## PLANT PURCHASING SPECIFICATION BHOPAL

BP 25778

REV NO. 04

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SUPERSEDES  
BP 25778 Rev.03

### FLEXIBLE POLYURETHANE VARNISHED GLASS BRAIDED SLEEVING ( TEMP.INDEX 155 )

#### 1. GENERAL:

This specification governs the quality of flexible polyurethane varnished glass braided sleeving of circular section, braided from 'E' grade glass fibre yarn, impregnated several times with flexible polyurethane varnish. The material shall have a temp. index of at least 155.

#### 2. APPLICATION :

Used for winding embedded temperature detector leads on A.C.Machines etc.

#### 3. COMPLIANCE WITH NATIONAL STANDARDS :

There is no Indian Standard covering this type of material.

#### 4. DIMENSIONS AND TOLERANCES:

##### 4.1 Sizes :

Bore diameter and length of the sleeving shall be specified on the order.

##### 4.2 Standard Bore Diameter, Wall Thickness & Tolerances: Shall be as per table below:

Inner dia mm			Wall Thickness mm			
Above	Upto	Permissible Allowance	Upto 0.3	Above 0.3 & Upto 0.5	Above 0.5 & Upto 0.7	Above 0.7 & Upto 1.0
0.6	2.1	+ 0.3	+ 0.05	+ 0.1	-	-
2.1	6.1	+ 0.4	-	-	-	-
6.1	7.1	+ 0.5	-	-	+ 0.15	-
7.1	11.1	+ 0.5	-	-	+ 0.15	-
11.1	12.1	+ 0.5	-	-	+ 0.15	-
12.1	14.1	+ 0.8	-	-	-	-
14.1	22.1	+ 0.8	-	-	+ 0.2	-
22.1	30	+ 1.0	-	-	-	+ 0.3

#### 5. COLOUR:

Natural. However any other colour can also be ordered. Sleeveings shall be supplied with marking thread of red colour if stated on the order.

Revision : Reviewed &amp; Brought upto date

Based on SN 56727 Gr.GS-PUR  
of NMA Siemens.

Issued by :

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**6. FINISH:**

Sleeving shall be made from yarn, free from defects likely to cause irregularities and be uniform in appearance, reasonably smooth and free from internal and external irregularities. The coating material shall be uniform and continuous and shall adhere firmly to the braid. Sleeve should not form wrinkles while cutting.

**7. SAMPLE FOR TEST:**

10 metre length of sleeving shall be supplied for testing and approval.

**8. TEST METHODS:**

Unless otherwise specified, the test shall be conducted to IEC 60684 - 2.

**9. ELECTRICAL PROPERTIES :****9.1 Electric Strength (Proof) in Air At Room Temp. (As Recd.) :**

Wall Thickness (mm)	Proof Voltage (kV)
Less than 0.5	1.5
0.5 & above	4.0

**9.2 Electric Strength (Proof) After Buckling :**

Samples are subjected to single buckling around 180 deg, pressure at the buckling point being 20 N. Samples are then straightened and tested for electric strength (proof) at 3 kv for 1 Min.

**9.3 Electric Strength After Bending :**

300 mm long sample of sleeving is drawn on to Copper Wires of size 0.6 times the inner dia of sleeve, and wound over metal mandrel of diameter equal to 3.5 times of internal dia of sleeving for 1 to 3 turns.

Samples are then tested at  $160 \pm 3$  deg.C at 2 kV for one minutes. Samples are kept at  $160 \pm 3$  Deg.C for one hour prior to application of voltage.

**10. CHEMICAL PROPERTIES:****10.1 Identification of Coating :**

The coating shall be polyurethane varnish when identified by infra-red spectrophotometer or by any conventional method.



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**11. TEST CERTIFICATE:**

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

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

The test certificate shall bear the following information.

BP 25778 : Flexible Polyurethane Varnished Glass Braided Sleeving (Temp.Index 155).  
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BHEL Order No.

Batch/Lo No.

Test values obtained/certificate for compliance for clause 4 to 6, 9 and 10.

**12. PACKING AND MARKING:**

The sleeveings shall be suitably packed to prevent from contamination and damage in transit. Each package shall be marked with the following information:

BP 25778 : Flexible Polyurethane Varnished Glass Braided Sleeving (Temp.Index 155).

BHEL Order No.

Manufacturer's Name and Grade.

Batch/Lot No.

Bore Diameter and Length.

Date of Manufacture.