



GSC Series Tubes



GMB / GHB Series Tubes

# HEAT SHRINK BUS BAR TUBE

Bus Tube is heat shrinkable tube designed to insulate busbar systems up to 36KV & to protect against accidental flashover. The tubes are manufactured from high quality non tracking crosslinked polyolefin material. Meets ANSI C37.20.2 standards for MV switchgear application up to 36 KV.

## TECHNICAL SPECIFICATION

### Physical

| TEST DESCRIPTION       | RECORDED VALUE                    | TEST METHOD |
|------------------------|-----------------------------------|-------------|
| 1. Tensile Strength    | 12 N/mm <sup>2</sup> (MPa) (min.) | ASTM D638   |
| 2. Ultimate Elongation | 300% (min.)                       | ASTM D638   |
| 3. Water Absorption    | 0.5% (max.)                       | ASTM D570   |
| 4. Density             | 1.20 ± 0.2 gm/cm <sup>3</sup>     | ASTM D792   |
| 5. Hardness            | 45 ± 10 shore D                   | ASTM D2240  |

### Thermal

|                                            |                                   |            |
|--------------------------------------------|-----------------------------------|------------|
| 1. Accelerated ageing                      | 120°C for 500 hrs                 | ASTM D2671 |
| a. Tensile Strength                        | 10 N/mm <sup>2</sup> (Mpa) (min.) | ASTM D638  |
| b. Ultimate Elongation                     | 250 % (min.)                      | ASTM D638  |
| 2. Low Temp. Flexibility (-40°C for 4 hrs) | No Cracking                       | ASTM D2671 |
| 3. Heat Shock (250°C for 30 min.)          | No cracking or flowing            | ESI 09-11  |
| 4. Shrink Temperature                      | 125°C                             | IEC 216    |
| 5. Continuous Temp. Limit                  | -40° to +115°C                    | IEC 216    |

### Electrical

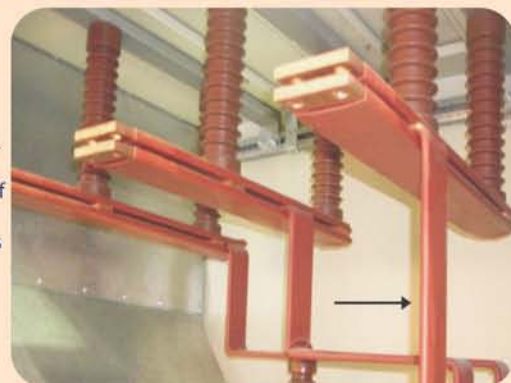
|                                 |                                                                 |            |
|---------------------------------|-----------------------------------------------------------------|------------|
| 1. Dielectric Strength          | 22 KV/mm. (min.)                                                | ASTM D149  |
| 2. Volume Resistivity           | 1 x 10 <sup>14</sup> Ohm.cm min                                 | ASTM D257  |
| 3. Dielectric constant          | 5 (max.)                                                        | ASTM D150  |
| 4. Resistant to track & erosion | No Tracking, erosion or flame failure up to 3.25 KV for 20 min. | ASTM D2303 |

### FEATURES & BENEFITS :-

- ❖ Reduce Busbar clearance.
- ❖ Prevent Busbar from chemical corrosion effected by strong acid, alkali, salt etc.
- ❖ Solve the problem of insulation among Busbar in Bus Duct.
- ❖ Halogen free, flame retardant.
- ❖ High dielectric strength.
- ❖ Highly Flexible for use on straight or angled bars without creasing.

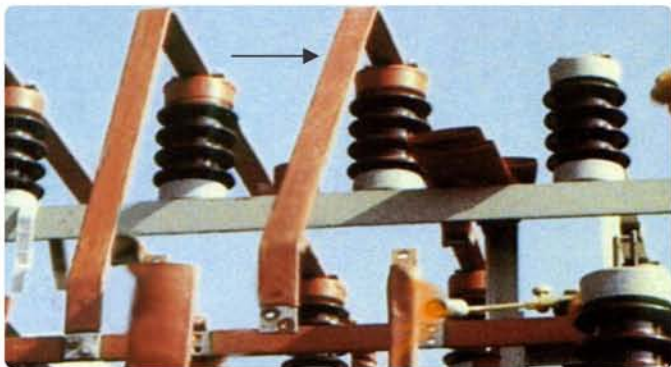
### Technical Qualification Report : QR 1016

Application of Heat Shrink Bus Bar Tubes



### CLEARANCE WITH INSULATION

| VOLTAGE | MEDIUM WALL TUBE (GMB) |                | HEAVY WALL TUBE (GHB) |                | UN-INSULATED BUS BARS (mm) |
|---------|------------------------|----------------|-----------------------|----------------|----------------------------|
|         | PH. TO PH (mm)         | PH TO GR. (mm) | PH TO PH. (mm)        | PH TO GR. (mm) |                            |
| 12 KV   | 65                     | 75             | 35                    | 45             | 120                        |
| 17.5 KV | 85                     | 105            | 55                    | 65             | 160                        |
| 24 KV   | 115                    | 150            | 70                    | 100            | 220                        |
| 36 KV   | 200                    | 285            | 140                   | 190            | 320                        |



## BUS BAR SELECTION CHART

### Thin Wall Tube [Up to 3.3KV]

| Gala Size  | D         | d         | T (±10%) | Reel length | Rectangular Bars (W+B) |      | Round Bar Ø |      |
|------------|-----------|-----------|----------|-------------|------------------------|------|-------------|------|
|            | mm (min.) | mm (max.) | mm       |             | min.                   | max. | min.        | max. |
| GSC 16/8   | 16        | 8         | 0.69     | 50          | 12                     | 18   | 8           | 12   |
| GSC 20/10  | 20        | 10        | 0.78     | 100         | 16                     | 25   | 12          | 16   |
| GSC 30/15  | 30        | 15        | 0.86     | 50          | 23                     | 38   | 18          | 24   |
| GSC 40/20  | 40        | 20        | 0.96     | 50          | 34                     | 52   | 23          | 33   |
| GSC 50/25  | 50        | 25        | 0.96     | 25          | 51                     | 65   | 28          | 41   |
| GSC 60/30  | 60        | 30        | 0.96     | 25          | 53                     | 75   | 34          | 48   |
| GSC 70/35  | 70        | 35        | 1.10     | 25          | 71                     | 90   | 38          | 57   |
| GSC 80/40  | 80        | 40        | 1.27     | 25          | 78                     | 100  | 46          | 64   |
| GSC 100/50 | 100       | 50        | 1.40     | 25          | 102                    | 125  | 55          | 80   |
| GSC 150/75 | 150       | 75        | 1.40     | 25          | 119                    | 190  | 80          | 121  |
| GSC 180/90 | 180       | 90        | 1.50     | 25          | 140                    | 236  | 95          | 150  |

### Medium Wall Tube [Upto 24KV]

|             |     |     |     |    |     |     |      |     |
|-------------|-----|-----|-----|----|-----|-----|------|-----|
| GMB 16/6    | 16  | 6   | 2.0 | 25 | 12  | 18  | 6.5  | 12  |
| GMB 25/8    | 25  | 8   | 2.5 | 25 | 16  | 30  | 9    | 20  |
| GMB 30/12   | 30  | 12  | 2.5 | 25 | 22  | 38  | 13.5 | 25  |
| GMB 40/16   | 40  | 16  | 2.5 | 25 | 29  | 50  | 18   | 32  |
| GMB 50/20   | 50  | 20  | 2.5 | 25 | 36  | 63  | 22   | 40  |
| GMB 65/25   | 65  | 25  | 2.7 | 25 | 46  | 82  | 28   | 52  |
| GMB 75/28   | 75  | 28  | 3.0 | 25 | 55  | 94  | 33   | 60  |
| GMB 85/32   | 85  | 32  | 3.0 | 25 | 58  | 107 | 37   | 68  |
| GMB 100/38  | 100 | 38  | 3.0 | 25 | 70  | 126 | 44   | 80  |
| GMB 120/45  | 120 | 45  | 3.0 | 15 | 90  | 150 | 55   | 96  |
| GMB 150/60  | 150 | 60  | 3.0 | 15 | 110 | 200 | 70   | 127 |
| GMB 180/70  | 180 | 70  | 3.0 | 15 | 125 | 226 | 80   | 144 |
| GMB 205/85  | 205 | 85  | 3.0 | 15 | 200 | 257 | 127  | 164 |
| GMB 250/120 | 250 | 120 | 3.0 | 15 | 220 | 314 | 140  | 200 |

### Heavy Wall Tube [Upto 36KV]

|             |     |     |     |    |     |     |     |     |
|-------------|-----|-----|-----|----|-----|-----|-----|-----|
| GHB 25/8    | 25  | 8   | 3.7 | 25 | 17  | 28  | 11  | 20  |
| GHB 30/12   | 30  | 12  | 4.0 | 25 | 21  | 33  | 15  | 25  |
| GHB 40/16   | 40  | 16  | 4.0 | 25 | 28  | 45  | 18  | 32  |
| GHB 50/20   | 50  | 20  | 4.0 | 25 | 34  | 54  | 24  | 40  |
| GHB 65/25   | 65  | 25  | 4.0 | 25 | 41  | 62  | 27  | 43  |
| GHB 75/28   | 75  | 28  | 4.0 | 20 | 47  | 69  | 28  | 47  |
| GHB 85/32   | 85  | 32  | 4.0 | 20 | 58  | 100 | 37  | 68  |
| GHB 100/38  | 100 | 38  | 4.2 | 20 | 69  | 102 | 44  | 72  |
| GHB 120/45  | 120 | 45  | 4.2 | 15 | 83  | 125 | 50  | 85  |
| GHB 150/60  | 150 | 60  | 4.5 | 15 | 102 | 168 | 65  | 105 |
| GHB 180/70  | 180 | 70  | 4.5 | 15 | 133 | 196 | 85  | 125 |
| GHB 205/85  | 205 | 85  | 4.5 | 15 | 200 | 250 | 127 | 164 |
| GHB 250/120 | 250 | 120 | 4.5 | 15 | 220 | 314 | 140 | 200 |

**BUSTUBE™**  
The Ultimate Insulation

Technical Drawings

