

# Medium Wall Busbar Insulating Tubes

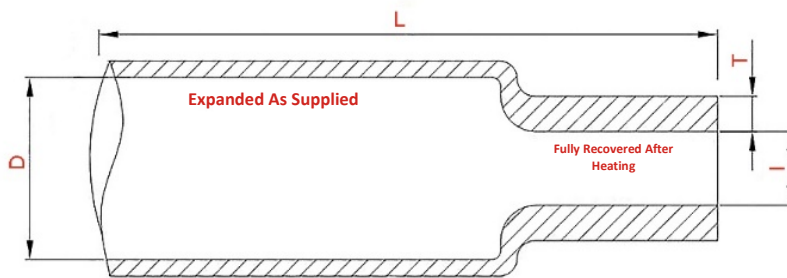


## RIBT

REPL Heat Shrinkable Busbar Medium Wall Insulating Tubes (RIBT) are used to insulate copper and aluminium busbars, preventing flashovers and accidentally induced discharge.

The tubes are made from thermally stabilized, cross linked, non-tracking and weather resistant polymeric material and have a nominal shrink ratio of 3:1 and an unlimited shelf life when stored at normal warehouse temperatures.

- Halogen Free
- Tracking Resistant
- UV & Weather Resistant
- Shrink Ratio: 3:1
- Minimal Shrink Temperature: 120°C



\*Drawing depicts typical dimensions (Dimensions are all in mm)

| MATERIAL SPECIFICATIONS  |  |                        |
|--|--|------------------------|
| CHARACTERISTIC   | VALUE  | TEST METHOD            |
| <b>Physical Properties</b>   |  |                        |
| Specific Gravity   | 1.19 ± 0.2   | ASTMD - 1505           |
| Water Absorption   | 1% (max)   | ASTM D - 570/ISO 62    |
| Tensile Strength   | ≥ 14 MPa   | ASTM D - 2671          |
| Ultimate Elongation  | ≥ 300% (min)   | ASTM D - 2671          |
| Hardness   | 45 ± 3 Shore D   | ASTM D - 2240          |
| Longitudinal Change  | ± 10 %   | ESI 09 - 13            |
| Shrink Temperature   | 120°C (min)  | IEC - 216              |
| <b>Thermal Ageing Tests (120°C ± 3°C for 168 hours)</b>  |  |                        |
| Ultimate Elongation  | ≥ 200% (min)   | ASTM D - 2671          |
| Tensile Strength   | ≥ 10 MPa   | ASTM D - 2671          |
| <b>Thermal Tests</b>   |  |                        |
| Heat Shock (30min, 200°C)  | No Cracking / No Flow  | ESI 09-13              |
| Low Temp. Flexibility (-40%)   | No Cracking  | ASTM D - 2671          |
| Flammability   | Self-Extinguishing   | ASTM D - 2671 - B      |
| <b>Electrical Properties</b>   |  |                        |
| Dielectric Strength  | ≥ 19 kV/mm (min)   | ASTM D - 149 / IEC 243 |
| Dielectric Constant  | ≤ 3.5  | ASTM D - 150 / IEC 250 |
| Volume Resistivity   | 1x10 <sup>14</sup> Ohm-cm (min)                                | ASTM D - 257 / IEC 93  |
| Resistant to Tracking & Erosion  | No Tracking, erosion or flame failure up to 3.25kV for 20 mins | ASTM D - 2303          |
| <b>Chemical Properties</b>   |  |                        |
| Fungus Resistance  | 1 (max)  | ASTM G - 21            |
| Chemical resistance immersion in following liquids NaOH (40%), H <sub>2</sub> SO <sub>4</sub> (3%), Toluene acetone for 24 hrs at room temperature | Good (no visual defects)                                       | ISO 175                |

| PRODUCT DIMENSIONS – RIBT Series |        |    |        |
|----------------------------------|--------|----|--------|
| CODE                             | D (mm) |    | T (mm) |
|                                  | E      | S  | S      |
| RIBT 15/6 *                      | 15     | 6  | ± 0.2  |
| RIBT 20/8 *                      | 20     | 8  | ± 0.2  |
| RIBT 25/10 *                     | 25     | 10 | ± 0.2  |
| RIBT 30/12 *                     | 30     | 12 | ± 0.2  |
| RIBT 40/16 *                     | 40     | 16 | ± 0.2  |
| RIBT 50/20 +                     | 50     | 20 | ± 0.2  |
| RIBT 60/24 +                     | 60     | 24 | ± 0.2  |
| RIBT 70/28 +                     | 70     | 28 | ± 0.2  |
| RIBT 80/32 +                     | 80     | 32 | ± 0.2  |
| RIBT 100/40 +                    | 100    | 40 | ± 0.2  |
| RIBT 120/48 +                    | 120    | 48 | ± 0.2  |

E – As Supplied | S – After Recovery

\* Available in 30 meter spools

+ Available in 15 meter spools

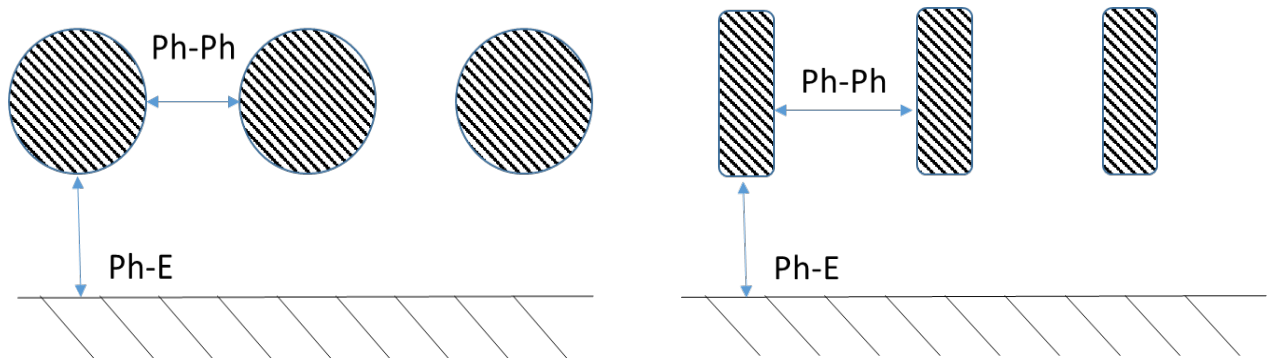
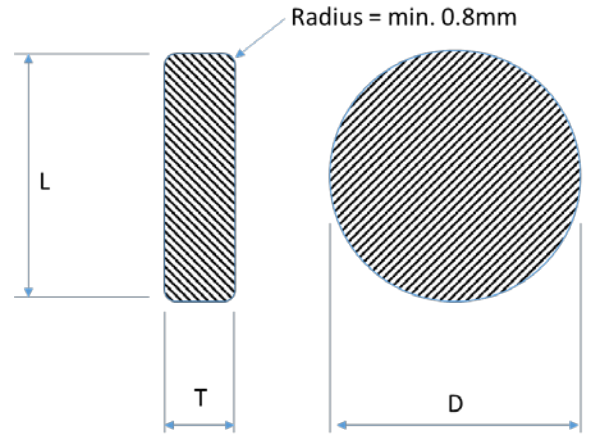
- Custom sizes are available on request with minimum volume requirements

See overleaf for recommendations on application range and clearance reduction ...



## RIBT

| APPLICATION RANGE |                                  |     |                                   |     |
|-------------------|----------------------------------|-----|-----------------------------------|-----|
| CODE              | Rectangular Busbar Section L + T |     | Round Busbar Section d = Diameter |     |
|                   | Min                              | Max | Min                               | Max |
| RIBT 15/6         | 12                               | 18  | 6.5                               | 12  |
| RIBT 20/8         | 15                               | 24  | 9                                 | 16  |
| RIBT 25/10        | 19                               | 31  | 11                                | 20  |
| RIBT 30/12        | 22                               | 38  | 13.5                              | 25  |
| RIBT 40/16        | 29                               | 50  | 18                                | 34  |
| RIBT 50/20        | 36                               | 63  | 22                                | 42  |
| RIBT 60/24        | 43                               | 76  | 26                                | 51  |
| RIBT 70/28        | 50                               | 89  | 31                                | 60  |
| RIBT 80/32        | 57                               | 102 | 35                                | 69  |
| RIBT 100/40       | 70                               | 130 | 44                                | 86  |
| RIBT 120/48       | 70                               | 156 | 44                                | 100 |



| CLEARANCE REDUCTION GUIDANCE |               |             |                        |                     |             |                        |
|------------------------------|---------------|-------------|------------------------|---------------------|-------------|------------------------|
| Voltage Level (kV)           | Round Busbars |             |                        | Rectangular Busbars |             |                        |
|                              | With RIBT     |             | Without                | With RIBT           |             | Without                |
|                              | Phase-Phase   | Phase-Earth | IEC 71-2 Air Clearance | Phase-Phase         | Phase-Earth | IEC 71-2 Air Clearance |
|                              | mm            | mm          | mm                     | mm                  | mm          | mm                     |
| 12kV                         | 55            | 65          | 120                    | 65                  | 75          | 120                    |
| 17.5kV                       | 70            | 85          | 160                    | 85                  | 105         | 160                    |
| 24kV                         | 95            | 125         | 220                    | 115                 | 150         | 220                    |
| 36kV                         | 150           | 205         | 320                    | 200                 | 285         | 320                    |

The table above is for guidance only on the potential clearances when using RIBT busbar tubing based on typical applications. Any unusual geometries will affect dimensions possible.

The user should test on actual applications to ensure adequate performance level

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