BUSBAR INSULATION TUBING (BBIT)

VOLTAGE CLASS 36 kV, APPLICATION Ø 11-125 MM

KEY FEATURES

- Exceptional insulation and long term reliability even at high continuous operating temperatures
- Suitable for indoor and outdoor use
- Excellent anti-tracking properties
- Flame retardant and halogen-free
- Good thermal emissivity
- Long shelf life and can be stored at temperatures up to 50°C without loss of performance
- REACH and RoHS compliant
- UL approved

TE Connectivity's (TE) Raychem BBIT thick-wall, heat shrink tubing provides insulation enhancement and protection against flashover and accidentally induced discharge. Particularly useful in confined spaces, TE's Raychem BBIT tubing can be used on both circular and rectangular copper or aluminium busbars.

On application of heat, the tubing shrinks snugly over the busbar profile ensuring that the required minimum wall thickness is obtained. The BBIT tubing can be installed easily during large scale production using an oven or in the field using a gas torch or hot air. The BBIT tubing is manufactured from a halogen-free based polymer which has excellent performance in high voltage environments and reduces the noxious and corrosive effects in fire situations.

The use of the BBIT tubing allows equipment designers the freedom to reduce air spacing between busbars such as in the manufacture of switchgear cabinets where space is at a premium. The BBIT tubing provides flashover protection up to 36 kV.

Customers can count on consistent, high quality products, driven by TE's proven innovation and backed by our extraordinary customer support.

Busbar Insulation Tubing (BBIT)

TE's wildlife and asset protection products and systems of tubes, tapes, sheets, pre-formed covers and barriers provide a proven, cost-effective and easy-to-install solution to bird, animal and weather related outages.

CLEARANCE REDUCTION

The tables indicate the clearance reductions which are possible using TE's Raychem BBIT tubing. These are derived from BIL, AC withstand, DC withstand and discharge extinction tests. These clearances should not be adopted without testing by the user. Sharp electrodes and unusual geometries may require wider clearances.

ROUND BUSBARS

Rated voltage (kV)	Phase–phase mm (in)	Phase–ground mm (in)	IEC 71-2 air clearance mm (in)
12	30 (1.18)	40 (1.57)	120 (4.72)
17.5	45 (1.77)	60 (2.36)	160 (6.30)
24	60 (2.36)	90 (3.54)	220 (8.66)
36	100 (3.93)	160 (6.30)	320 (12.60)

RECTANGULAR BUSBARS

Rated voltage (kV)	Phase–phase mm (in)	Phase–ground mm (in)	IEC 71-2 air clearance mm (in)
12	35 (1.38)	45 (1.77)	120 (4.72)
17.5	55 (2.17)	65 (2.56)	160 (6.30)
24	70 (2.76)	100 (3.93)	220 (8.66)
36	140 (5.51)	190 (7.48)	320 (12.60)

TECHNICAL REPORT

EDR 5535	BBIT Tubing Qualification Report
PPR 3320	Thermal Endurance Temperature Index of BBIT
UVR 8122	Resistance of BBIT in Hydrofluoric Acid
20180627-E498737	BBIT UL Certificate Reference

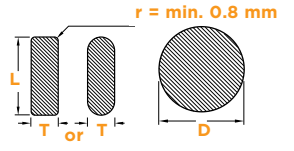
KEY PRODUCT SPECIFICATIONS	TEST METHOD	REQUIREMENT
Thermal endurance	IEC 216	125°C min. (257°F min.)
Accelerated ageing	ISO 188, ASTM D2671	168 hrs @ 150°C (302°F)
- Tensile strength		10 MPa min.
- Ultimate elongation		300% min.
Inclined tracking test	IEC 60587 ASTM D2303	No tracking or erosion
		1hr @ 2.5 kV
		1hr @ 2.75 kV
Dielectric strength	ASTM D149, IEC 243	350 kV/cm min. @ 1.00 mm (889 v/mil min. @ 0.04 in)
		180 kV/cm min. @ 2.00 mm (450 v/mil min. @ 0.08 in)
		150 kV/cm min. @ 2.50 mm (381 v/mil min. @ 0.10 in)
		120 kV/cm min. @ 3.00 mm (304.80 v/mil @ 0.12 in)
Volume resistivity	IEC 60093 ASTM D257	1E+10^{14} Ωcm
Low temperature flexibility	ASTM D2671 Procedure C	No cracking after 4 hrs @ -40°C (-40°F)
Smoke index	NES 711	Less than 120
Acid gas generation	TE's Raychem PPS 3010 4.23	Less than 1% by weight
Flammability	ANSI C37.20/IEEE-27	No flame conveyance, 60 sec. max.

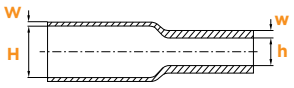
INSTALLATION INSTRUCTIONS

EPP-3264-12/18	Installation Instructions for BBIT

PRODUCT SELECTION

TE's Raychem tubing BBIT tubing should normally be used on the following busbar sizes:





	PRODUCT SELECTION				ORDERING INFORMATION				
Ordering description	Rectangular bars L + T mm (in)		Round bars D m (in)		Inside diameter mm (in)		Wall thickness mm (in)		UOM: roll of length m (ft)
	min.	max.	min.	max.	H min.	h max.	W nom.	w min.	
BBIT-25/10-A/U-4	17 (0.67)	28 (1.10)	11 (0.43)	20 (0.79)	25 (0.98)	10 (0.39)	1.6 (0.06)	3.6 (0.14)	25 (82.02)
BBIT-40/16-A/U-4	28 (1.10)	45 (1.77)	18 (0.71)	32 (1.26)	40 (1.57)	16 (0.63)	1.6 (0.06)	3.6 (0.14)	20 (65.62)
BBIT-65/25-A/U-4	44 (1.73)	69 (2.72)	28 (1.10)	47 (1.85)	65 (2.56)	25 (0.98)	1.6 (0.06)	3.6 (0.14)	15 (49.21)
BBIT-100/40-A/U-4	69 (2.72)	102 (402)	44 (1.73)	72 (2.83)	100 (3.94)	40 (1.57)	1.6 (0.06)	3.6 (0.14)	15 (49.21)
BBIT-150/60-A/U-4	102 (4.02)	148 (5.83)	65 (2.56)	105 (4.13)	150 (5.91)	60 (2.36)	1.6 (0.06)	3.6 (0.14)	15 (49.21)
BBIT-175/80-A/U-4	133 (5.24)	196 (7.72)	85 (3.35)	125 (4.92)	175 (6.89)	80 (3.15)	1.6 (0.06)	3.6 (0.14)	10 (32.81)

Note: W, H = as supplied w, h = after free recovery.
Maximum longitudinal change after free recovery: ±5%. Maximum eccentricity: 35% (as supplied), 15% (after free recovery). Fit the larger size of BBIT if two sizes fit the required application.
Installation instructions EPP-3264-12/18 and Material Safety Data Sheet available on request.

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