



BUSBAR INSULATION TUBING (BPTM)

VOLTAGE CLASS 25 kV, APPLICATION Ø 6.5-220 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 BPTM medium-wall, heat shrink tubing provides insulation enhancement and protection against flashover and accidentally induced discharge.

Particularly useful in confined spaces, the BPTM 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. TE's Raychem BPTM tubing can be installed easily during large scale production using an oven or in the field using a gas torch or hot air.

The BPTM tubing is manufactured from a halogen-free based polymer which has excellent performance in high voltage environments and greatly reduces the noxious and corrosive effects in fire situations.

Use of the BPTM 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 BPTM tubing provides flashover protection up to 25 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 (BPTM)

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 BPTM 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	55 (2.17)	65 (2.56)	120 (4.72)
17.5	70 (2.76)	85 (3.35)	160 (6.30)
24	95 (3.74)	125 (4.92)	220 (8.66)
36	150 (5.91)	205 (8.07)	320 (12.60)

RECTANGULAR BUSBARS			
Rated voltage kV	Phase-phase mm (in)	Phase-ground mm (in)	IEC 71-2 air clearance mm (in)
12	65 (2.56)	75 (2.95)	120 (4.72)
17.5	85 (3.35)	105 (4.13)	160 (6.30)
24	115 (4.53)	150 (5.91)	220 (8.66)
36	200 (7.87)	285 (11.22)	320 (12.60)

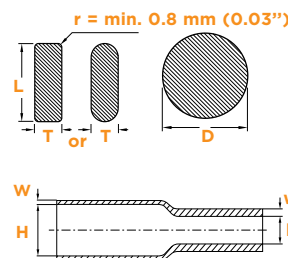
TECHNICAL REPORT	
EDR 5535	BPTM Tubing Qualification Report
PPR 3320	BPTM Material Thermal endurance Test Report
UVR 8122	Resistance of BBIT/BPTM to Hydrofluoric acid
20180627 E498737	BPTM UL Certificate

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 mm (457.2 v/mil min. @ 0.08 in)
		150 kV/cm min. @ 2.5 mm (492.12 v/mil min. @ 0.10 in)
		120 kV/cm min. @ 3 mm (393.70 v/mil min. @ 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 BPTM

PRODUCT SELECTION

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



Ordering description	PRODUCT SELECTION				ORDERING INFORMATION				
	Rectangular bars L + T mm (in)		Round bars D mm (in)		Inside diameter mm (in)		Wall thickness mm (in)		UOM: roll of length m (ft)
	min.	max.	min.	max.	H min.	h max.	W min.	W max.	
BPTM-15/6-A/U-4	12 (0.47)	18 (0.71)	6.5 (0.25)	12 (0.47)	15 (0.59)	6 (0.24)	1.1 (0.04)	1.90 (0.07)	30 (98.43)
BPTM-30/12-A/U-4	22 (0.87)	38 (1.50)	13.5 (0.53)	25 (0.98)	30 (1.18)	12 (0.47)	1.1 (0.04)	2.20 (0.09)	30 (98.43)
BPTM-50/20-A/U-4	36 (1.42)	65 (2.56)	22 (0.87)	43 (1.69)	50 (1.97)	20 (0.79)	1.1 (0.04)	2.35 (0.09)	30 (98.43)
BPTM-75/30-A/U-4	55 (2.17)	95 (3.74)	33 (1.30)	63 (2.48)	75 (2.95)	30 (1.18)	1.1 (0.04)	2.35 (0.09)	20 (65.62)
BPTM-100/40-A/U-4	70 (2.76)	130 (5.12)	44 (1.73)	86 (3.39)	100 (3.94)	40 (1.57)	1.1 (0.04)	2.35 (0.09)	25 (82.02)
BPTM-120/50-A/U-4	90 (3.44)	165 (6.50)	55 (2.17)	105 (4.13)	120 (4.72)	50 (1.97)	1.3 (0.05)	2.80 (0.11)	25 (82.02)
BPTM-175/70-A/U-4	125 (4.92)	235 (9.25)	80 (3.15)	150 (5.91)	170 (6.69)	70 (2.76)	1.3 (0.05)	2.80 (0.11)	15 (49.21)
BPTM-205/110-A/U-4	200 (7.87)	276 (10.87)	127 (5.00)	190 (7.48)	205 (8.07)	110 (4.33)	1.3 (0.05)	2.80 (0.11)	10 (32.81)
BPTM-235/130-A/U-4	235 (9.25)	315 (12.40)	150 (5.91)	220 (8.66)	235 (9.25)	130 (5.12)	1.5 (0.06)	3.10 (0.12)	20 (65.62)

Note: W, H = as supplied w, h = after free recovery.

Maximum longitudinal change after free recovery: +5% -10%. Maximum eccentricity (as supplied): 40%, (after free recovery) -75/30 10% -100/40 15%. Fit the larger size of BPTM if two sizes fit the required application.

Installation instructions EPP-3264-12/18 and Material Safety Data Sheet available on request.

FOR MORE INFORMATION:

TE Technical Support Centers

USA:	+ 1 800 327 6996
Canada:	+ 1 (905) 475-6222
Mexico:	+ 52 (0) 55-1106-0800
Latin/S. America:	+ 54 (0) 11-4733-2200
France:	+ 33 380 583 200
UK:	+ 44 0870 870 7500
Germany:	+ 49 896 089 903
Spain:	+ 34 916 630 400
Italy:	+ 39 333 250 0915
Benelux:	+ 32 16 508 695
Russia:	+ 7 495-790 790 2-200
China:	+ 86 (0) 400-820-6015

te.com/energy

©2018 TE Connectivity. All Rights Reserved. EPP-0608-01/19-EN

Raychem, TE Connectivity and the TE connectivity (logo) are trademarks of the TE Connectivity Ltd. family of companies. Other logos, product and Company names mentioned herein may be trademarks of their respective owners. While TE has made every reasonable effort to ensure the accuracy of the information in this brochure, TE does not guarantee that it is error-free, nor does TE make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. TE reserves the right to make any adjustments to the information contained herein at any time without notice. TE expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The dimensions in this brochure are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult TE for the latest dimensions and design specifications.