Energy Division

HVBT
High Voltage Busbar Insulation Tape (25 kV)

Tyco Electronics' HVBT is a heat-shrinkable, adhesive-coated tape which provides insulation enhancement and protection against accidentally induced discharge. HVBT tape is designed to combine the integrity of a heat-shrinkable tubing with the versatility of a wraparound product.

HVBT is quick and easy to install. Upon application of heat the tape shrinks down and the adhesive lining melts amalgamating the overlapping layers together, producing a complete lap to lap seal. A single layer of HVBT tape, two-thirds overlapped, will provide AC voltage withstand (flashover protection) to at least 17.5 kV increasing to 25 kV if a second layer is applied.

Although HVBT tape will stick to itself and other insulating materials it will not adhere to metal or porcelain allowing easy removal for maintenance.

Applications
HVBT tape offers a simple and effective solution to the problems of retrofit insulation of busbars particularly where existing equipment cannot be dismantled. It can be used for indoor and outdoor applications and is easily installed over a wide variety of shapes including complex connections.

Clearance Reduction
The table below indicates the clearance reductions which are possible using HVBT tape. 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.

Rated Voltage (kV)	Phase-Phase (mm)	Phase-Ground (mm)	IEC 71-2 Air Clearance (mm)
Round Busbars			
12	55	65	120
17.5	70	85	160
24	95	125	220
36	150	205	320
Rectangular Busbars			
12	65	75	120
17.5	85	104	160
24	115	150	220
36	200	285	320

Features and Benefits
- Compatible with all other products in the Raychem MV insulation enhancement system
- Easy to apply using readily available equipment
- Suitable for both indoor and outdoor use
- Excellent anti-tracking properties
- Continuous operating temperature up to 90˚C
- Extremely versatile and flexible at temperatures as low as -40˚C, the 30% shrink ratio enables coverage of almost any shape
- Good thermal emissivity and contact with busbars means no derating is required
- Manufactured from non-halogen based materials, reducing the toxic and corrosive effects in the event of fire
- Can be stored indefinitely at temperatures up to 50˚C without loss of performance

Tyco Electronics
Our commitment. Your advantage.

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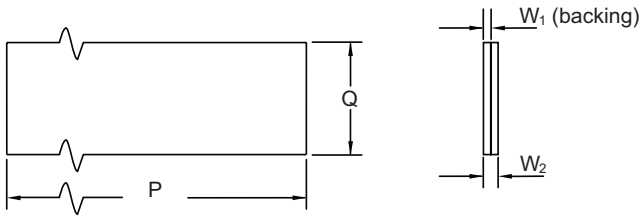
Key Product Specifications	Test Method	Requirement
Dielectric strength	ASTM D149, IEC 243	130 kV/cm min.
Accelerated aging	ISO 188, ASTM D2671	168 hrs@ 120˚C
–Tensile strength		10 MPa min.
–Ultimate elongation		300% min.
Low Temperature	ASTM D2671	No cracking
Flexibility	Procedure C	after 4 hrs @ -40˚C
Volume resistivity	ASTM D257, IEC 93	1 x 1013 Ohm cm min.
Smoke Index	NES 711	Less than 50
Acid gas generation	Raychem PPS 3010 4.23	Less than 3% by weight
Resistance to transformer oil	VDE 0370	168 hrs @ 23˚C
–Tensile strength		10 MPa min.
–Ultimate elongation		300% min.

Note: For further product specification information see Raychem PPS 3010/33. The above information refers to backing material only.

Product Selection Rectangular Busbars Width	IAC Application Recommended Product	IEEE Applications	HVBT Length Needed/meter of Busbar
25 mm	HVBT-12-A	HVBT-1-R	10.0
50 mm	HVBT-14-A	HVBT-2-R	7.6
75 mm	HVBT-14-A	HVBT-2-R	11.4
100 mm	HVBT-14-A	HVBT-2-R	15.6
150 mm	HVBT-14-A	HVBT-2-R	25.0
200 mm	HVBT-16-A	HVBT-4-R	15.6

IEC Round Busbars Diameter	Application Recommended Product	IEEE Applications	HVBT Length Needed/meter of Busbar
12 mm	HVBT-12-A	HVBT-1-R	5.0
25 mm	HVBT-14-A	HVBT-2-R	5.0
50 mm	HVBT-14-A	HVBT-2-R	10.0
75 mm	HVBT-14-A	HVBT-2-R	16.7
100 mm	HVBT-16-A	HVBT-4-R	10.0



Ordering Information

Ordering Description	Dimensions Q a min.	W_1 a min.	W_1 b min.	W_2 b min.	UOM : Roll of length, P (m)	(ft)
HVBT-12-A	25	0.38	0.56	0.86	10	25
HVBT-14-A	50	0.38	0.56	0.86	10	25
HVBT-15-A	75	0.38	0.56	0.86	10	25
HVBT-16-A	100	0.38	0.56	0.86	10	25

Technical Report
EDR-5466—Qualification report for HVBT

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Energy Division – a pioneer in the development of economical solutions for the electrical power industry. Our product range includes: Cable accessories, connectors & fittings, electrical equipment, instruments, lighting controls, insulators & insulation enhancement and surge arresters.