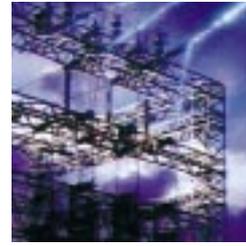




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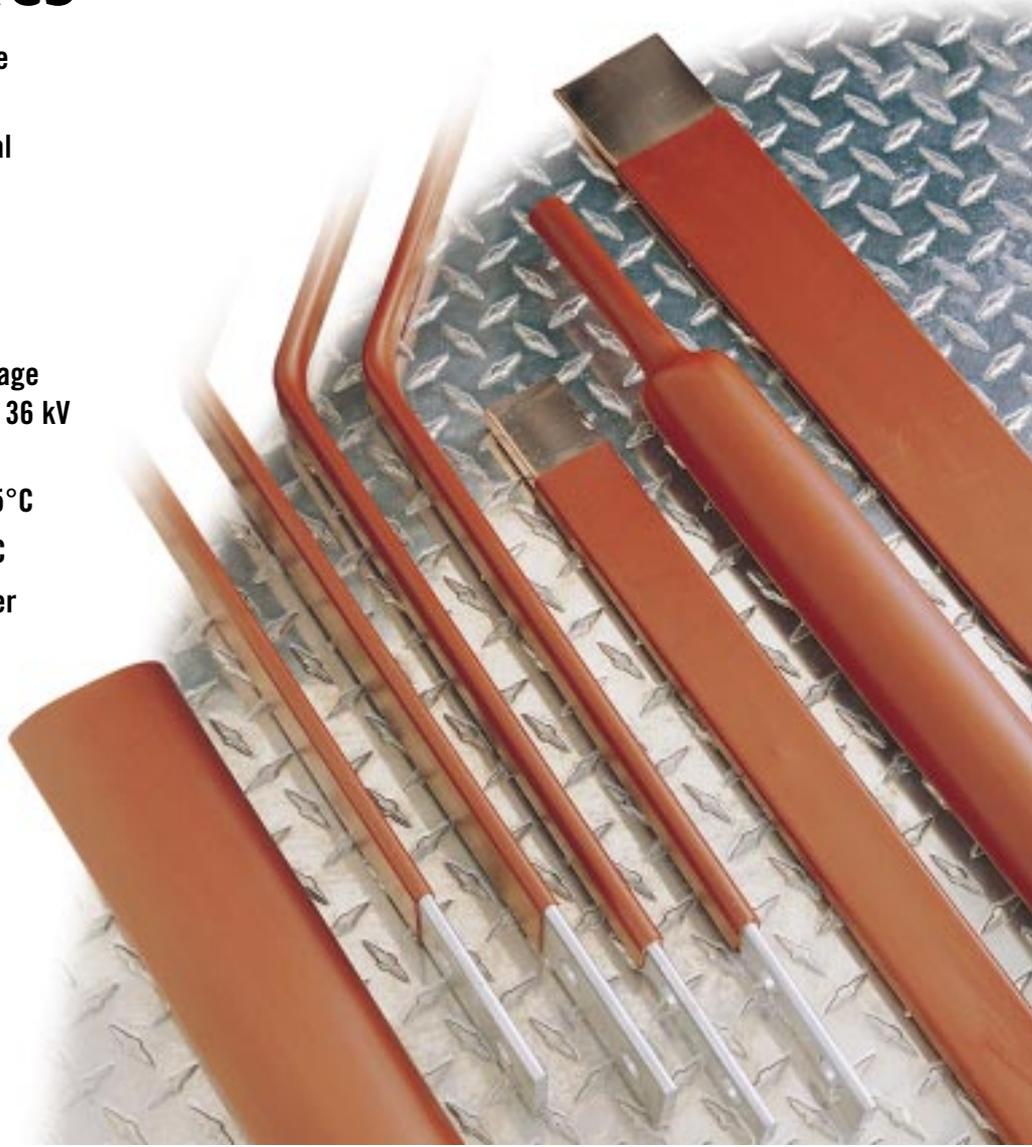


# CBTM/CBTH

Medium and Heavy Wall Anti-track Heat Shrinkable Tubing specifically designed for insulating medium voltage bus bar

## Main Features

- Reduces bus bar clearance requirements
- Protects against accidental flashover
- Anti-track
- Halogen free
- Tested to ANSI C37.20.2 standards for medium voltage switchgear applications to 36 kV
- Continuous operating temperature: -40°C to 125°C
- Shrink temperature: 120°C
- Slides into place easily over bends





## Technical Data

### Physical

Property	Test Method	Typical Performance
Tensile Strength	ASTM D412, ISO 37	1200 psi (8.3 MPa)
Elongation	ASTM D412, ISO 37	370%
Heat Aging (7 days 175°C)		
Tensile Strength	ASTM D2671	1500 psi (10 MPa)
Elongation	ASTM D2671	200%
Heat Shock (4 hrs at 225°C)	ASTM D2671	No cracking or flowing
Low Temperature Flexibility (4 hrs at -25°C)	ASTM D2671	No cracking
Flammability	ANSI C37.20, ASTM D2671	Pass

### Electrical

Dielectric Strength	ASTM D149	500 V/mil (20 kV/mm) at 2 mm
Surface Resistance	ASTM D257	510 x 10 <sup>9</sup> ohm
Volume Resistivity	ASTM D257	2.20 x 10 <sup>13</sup> ohm-cm
Dielectric Constant	ASTM D150	3.4
Tracking Resistance (2500 V, 300 min)	ANSI C37.20, ASTM D2303	Non-tracking
Weathering	ASTM G53	Non-tracking after 6000 hrs

### Chemical

Corrosion	ASTM D2671	No corrosion
Water Absorption	ASTM D570	0.25%
Fluid Resistance	MIL-DTL-23053/15	Good to excellent

### Adhesive

Adhesive Softening Point	ASTM E28	100°C
Low Temperature Flexibility	STM C12	-25°C
Lap Shear	STM C9	250 psi
Peel Strength: To Aluminum	STM C8	10 pli
Tracking Tests (2500 V, 300 min)	ANSI C37.20, ASTM D2303	Non-tracking

## Clearances with Insulation

System Voltage	BIL kV	CBTM Medium Wall Tubing		CBTH Heavy Wall Tubing	
		p to p	p to g	p to p	p to g
15 kV	95	86.0	106.0	55.0	66.0
25 kV	125	114.0	152.0	71.0	101.0
36 kV	150	165.0	203.0	142.0	190.0

p to p: Phase to Phase orientation  
 p to g: Phase to Ground orientation  
 Spacing based on metal to metal dimension prior to insulation  
 Spacing based on insulation wall thickness per application range of above tables

## CANUSA

### There's no end to what we cover

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## Dimensions

ART. NU.	EXPANDED		RECOVERED		APPLICATION RANGES			
	INTERNAL DIAMETER (MIN)	INTERNAL DIAMETER (MAX)	WALL THICKNESS (NOM)	RECTANGULAR BUS BAR MIN	RECTANGULAR BUS BAR MAX	ROUND BUS BAR MIN	ROUND BUS BAR MAX	
CBTM 0750 20/6	19.0	5.5	2.7	6.4	6.4	6.8	15.2	
CBTM 1300 33/10	33.0	10.1	3.0	12.7	28.5	12.4	27.9	
CBTM 2050 52/19	52.0	19.0	2.8	31.5	50.8	22.3	43.1	
CBTM 2750 70/25	69.8	25.4	2.9	44.4	76.2	29.7	58.4	
CBTM 3500 90/30	88.9	29.9	3.1	57.1	101.6	35.8	73.6	
CBTM 4700 120/40	119.3	39.9	3.2	73.0	142.8	47.7	101.6	
CBTM 6700 170/58	170.1	58.4	3.2	114.3	203.2	69.5	144.7	
CBTM 9000 228/77	228.6	76.9	3.3			91.9	190.5	

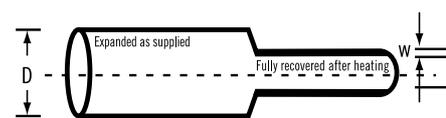
ART. NU.	EXPANDED		RECOVERED		APPLICATION RANGES			
	INTERNAL DIAMETER (MIN)	INTERNAL DIAMETER (MAX)	WALL THICKNESS (NOM)	RECTANGULAR BUS BAR MIN	RECTANGULAR BUS BAR MAX	ROUND BUS BAR MIN	ROUND BUS BAR MAX	
CBTH 1100 28/9	27.9	8.9	3.9			10.6	17.7	
CBTH 2000 50/16	50.8	16.0	4.1	25.4	34.9	19.3	33.0	
CBTH 2700 68/22	68.0	22.1	4.1	34.9	50.8	26.1	43.1	
CBTH 3500 90/30	89.9	29.9	4.1	50.8	76.2	35.8	58.4	
CBTH 4700 120/40	119.9	39.9	4.2	69.8	111.1	47.7	81.2	
CBTH 6600 168/58	167.6	58.4	3.86	107.9	177.8	69.5	124.4	

Rectangular Bus Bars have thickness of 1/4 to 5/8 inch

Application ranges noted above selected to obtain minimum insulation thickness required to meet ANSI C37.20.2 withstand requirements at bus bar spacing noted below. These spacings were determined from a limited number of test configurations. Due to the wide variety of bus bar configurations, these spacings should not be employed without actual testing by the user.

## Ordering

Select a dimension which will shrink snugly over the component to be covered. If recovery is restricted the resultant wall thickness will be less than specified.



Lengths: Supplied as 15 m reels. Max. 1 splice allowed with minimum length of 4.6m.

Standards: Tested to ANSI C37.20.2 to 36kV. Test Report Available.

Note: Non-standard sizes, lengths and adhesive linings available subject to factory quotation.

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