



MEDIUM VOLTAGE BUS BAR INSULATION

A bus bar in electrical power distribution refers to thick strips of copper or aluminum bars that conduct electricity which are normally configured in metal enclosed and metal clad medium voltage switch gear. CBTM/CBTH is specifically designed to insulate straight or bent bus bar which permits clearance reduction in many applications. The tubing sleeve conforms tightly to bus bars and shrinks to the required insulation thickness to provide adequate electrical protection for the voltage rating of the equipment.

Coupled with CMVBT Series of medium voltage tape insulation products, CBTM/CBTH provides a comprehensive range of insulation solutions for electrical equipment and retrofit applications.

PRODUCT NAME

CBTM/CBTH

PRODUCT DESCRIPTION

Medium and heavy wall, anti-track heat shrink bus bar insulation tubing:

- CBTM rated for services to 25 kV
- CBTH rated for services to 36 kV

ADVANTAGE

- Faster shrink profile
- Improves time of application and shrinks tightly around corners reducing the risk of corona
- Allows drop-in or substitution of product in switch gear bus bar applications
- 3:1 shrink ratio and offered in several sizes to 6.7 in diameter
- Allows for emergency overload conditions when temperatures are elevated due to high current throughput
- Reduces bus bar clearance requirements by up to 70% in OEM assemblies
- Lowers manufacturing costs and improves operational control
- Prevents pollutants and other contaminants in the air from setting on the surface and causing arcing, thus making it virtually maintenance free

ADDITIONAL ATTRIBUTES

- Insulates 5 - 36 kV rated bus bars
- Protects against accidental bridging of bus bars
- Provides high resistance to arcing and tracking
- Offers excellent thermal endurance properties
- Qualified to ANSI/IEEE 37.20.2 for MV switch gear equipment
- Made of cross-linked, non-tracking, flame retardant, halogen free polyolefin material
- Supplied in 50 ft lengths



MARKET SEGMENT

Electrical, Industrial, OEM

CBTM/CBTH

MEDIUM VOLTAGE BUS BAR INSULATION

DIMENSIONS

ORDER NUMBER	EXPANDED				RECOVERED				APPLICATION RANGES							
	INTERNAL DIAMETER MIN. D		WALL THICKNESS NOM. W		INTERNAL DIAMETER MAX. d		WALL THICKNESS NOM. W		*RECTANGULAR BUS BAR				ROUND BUS BAR			
	MM	IN	MM	IN	MM	IN	MM	IN	MIN.		MAX.		MIN.		MAX.	
	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN

CBTM MEDIUM WALL BUS TUBING: FOR SERVICES TO 25 kV ON UNBOLTED BUS BAR

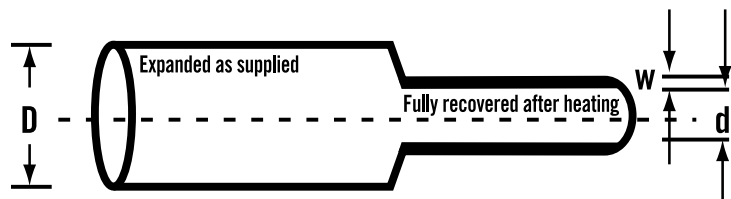
0750	19.0	0.75	1.14	0.045	5.5	0.22	2.70	0.109	6.4	1/4	6.4	1/4	6.8	0.27	15.2	0.60
1300	33.0	1.30	1.14	0.045	10.1	0.40	2.97	0.117	12.7	1/2	28.5	1 1/8	12.4	0.49	27.9	1.10
2050	52.0	2.05	1.14	0.045	19.0	0.75	2.79	0.110	31.5	1 1/4	50.8	2	22.3	0.88	43.1	1.70
2750	69.8	2.75	1.14	0.045	25.4	1.00	2.87	0.115	44.4	1 3/4	76.2	3	29.7	1.17	58.4	2.30
3500	88.9	3.50	1.14	0.045	29.9	1.18	3.09	0.122	57.1	2 1/4	101.6	4	35.8	1.41	73.6	2.90
4700	119.3	4.70	1.14	0.045	39.9	1.57	3.20	0.126	73.0	2 7/8	142.8	5 5/8	47.7	1.88	101.6	4.00
6700	170.1	6.70	1.14	0.045	58.4	2.30	3.17	0.125	114.3	4 1/2	203.2	8	69.5	2.74	144.7	5.70

CBTH HEAVY WALL BUS TUBING: FOR SERVICES TO 36 kV ON UNBOLTED BUS BAR

1100	27.9	1.10	1.67	0.066	8.9	0.35	3.88	0.153	9.5	3/8	12.7	1/2	10.6	0.42	17.7	0.70
2000	50.8	2.00	1.57	0.062	16.0	0.63	4.08	0.161	22.2	7/8	34.9	1 3/8	19.3	0.76	33.0	1.30
2700	68.0	2.68	1.52	0.060	22.1	0.87	4.08	0.161	34.9	1 3/8	50.8	2	26.1	1.05	43.1	1.70
3500	89.9	3.54	1.52	0.060	29.9	1.18	4.08	0.161	50.8	2	76.2	3	35.8	1.41	58.4	2.30
4700	119.9	4.72	1.57	0.062	39.9	1.57	4.19	0.165	69.8	2 3/4	111.1	4 3/8	47.7	1.88	81.2	3.20
6600	167.6	6.60	1.67	0.066	65.0	2.56	4.19	0.165	114.3	4 1/2	177.8	6 1/2	69.5	2.74	124.4	4.90

*Assume rectangular bus bars have 1/4 in thickness on min. application ranges and 5/8 in thickness on max. application ranges.

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



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	
		MM	IN	MM	IN	MM	IN	MM	IN
15 kV	95	86.0	3.4	106.0	4.2	55.0	2.2	66.0	2.6
25 kV	125	114.0	4.5	152.0	6.0	71.0	2.8	101.0	4.0
36 kV	150	165.0	6.5	203.0	8.0	142.0	5.6	190.0	7.5

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 table

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.
- Standard is red, printed, unlined, 50 ft lengths (maximum or 1 splice allowed with minimum length of 15 ft)
- Please specify the product name and order reference number
- Order Example: CBTM, 1300

Please contact your Customer Service Representative for material data sheet