

Technical Information - Low-voltage tubing and wraparound sleeves

Material properties

	Test method	WCSM heavy wall	FCSM heavy wall, flame-retardant	MWTM medium wall	RNF-100 thin wall	CRSM wraparound
Physical						
Tensile strength	ASTM D 412	1750 psi min.	1750 psi min.	2000 psi min.	1500 psi min.	2450 psi min.
Ultimate elongation	ASTM D 412	350% min.	350% min.	350% min.	200% min.	350% min.
Accelerated aging (168 hrs at 150°±2°C)	ASTM D 2671					
Tensile strength	ASTM D 412	1750 psi min.	1600 psi min.	2000 psi min.		2000 psi min.
Ultimate elongation	ASTM D 412	350% min.	200% min.	300% min.		300% min.
Low-temperature flexibility (4 hrs. at temp. indicated)	ASTM D 2671	No cracking (-55°C)	No cracking (-40°C)	No cracking (-40°C)	No cracking (-55°C)	No cracking (-40°C)
Flammability	ASTM D 2671				Self-extinguishing (60 sec max.)	

Electrical

Dielectric strength	ASTM D 149	430 V/mil min. (at 0.04 inch)	330 V/mil min. (at 0.10 inch)	500 V/mil min. (at 0.04 inch)	500 V/mil min.	500 V/mil min. (at 0.04 inch)
Volume resistivity	ASTM D 257	1 x 10 ¹² ohm-cm min.	1 x 10 ¹³ ohm-cm min.	1 x 10 ¹² ohm-cm min.	1 x 10 ¹⁴ ohm-cm min.	1 x 10 ¹² ohm-cm min.

Chemical

Resistance to liquids						
Transformer oil to VDE 0370	ASTM D 543	X	X	X		X
Lubricating oil (30 wt.)	ASTM D 543	X				
Aviation fuel (JP-4)	ASTM D 543	X			X	
Diesel fuel #2	ASTM D 543	X				
Leaded gasoline (89 octane)	ASTM D 543	X				
Hydraulic fluid (MIL-H-5606)	ASTM D 543				X	
Tensile strength	ASTM D 412	1450 psi min.	1600 psi min.	2000 psi min.	1000 psi min.	2000 psi min.
Ultimate elongation	ASTM D 412	300% min.	300% min.	300% min.		300% min.
Corrosive effect (16 hours at 150°±2°C)	ASTM D 2671	No corrosion			No corrosion at 175°C	
Fungus resistance	ASTM G 21	Pass rating 1	Pass rating 1	Pass rating 1	Pass rating 1	Pass rating 1

Technical specifications

ANSI C119.1-1986		X	X			X
UL 486D-1986		X				
UL Standard 224					X	
CSA 22.2		X			X	
Western Underground Guide 2.5		X				
MIL-I-23053/15, Class 1 & 2					X	
Flame-retardant per IEEE 383, ICEA-S-19-81			X			

Note: Blank space indicates that property was not measured during product qualification.