

FCFW

INSULATE
SEAL
PROTECT

3:1
SHRINK RATIO



HEAVY WALL CROSS-LINKED POLYOLEFIN TUBING

HEAVY WALL HEAT SHRINK TUBING INSULATES AND PROTECTS ELECTRICAL SPLICES AND TERMINATIONS WHERE MAXIMUM FLAME RETARDANCY AND EXCEPTIONAL INSULATING AND SEALING CHARACTERISTICS ARE REQUIRED

FEATURES AND BENEFITS

- 3:1 shrink ratio
- Flame retardant
- High impact and abrasion resistance - capable of withstanding severe mechanical abuse of U.R.D., submersible and direct burial installations
- FCFW tubing will not split or rupture during installation, even when overheated
- Optional thermoplastic adhesive liner provides complete environmental protection and insulation
- Rated for 1 kV, 90°C continuous use
- Continuous operating temperature: -55°C to 110°C
- Shrink temperature: 120°C
- Standard colors: Black & Red

STANDARDS

- UL 486D
- CSA C22.2 No. 198.2
- ANSI C119- 1
- Western Underground Guides No. 2.4 and 2.5
- IEEE 383 Vertical Flame Test
- ANSI C37.20.2
- ICEA S-19-8 and NEMA insulation thickness requirements
- SAE-AMS-DTL-23053/15 Class 1
- DNV Type approval

TYPICAL APPLICATIONS

- Insulation of low voltage cables
- Battery cable protection
- Flame retardant systems



DIMENSIONS

ORDER NUMBER	EXPANDED		RECOVERED				APPLICATION RANGE FOR GENERAL USE		600/ 1000 V SINGLE CONDUCTOR SIZE	LENGTHS	
	INTERNAL DIAMETER (MIN) D		INTERNAL DIAMETER (MAX) d		WALL THICKNESS (NOM) W						
	MM	IN	MM	IN	MM	IN	MM	IN	AWG/MCM	M	IN
0350**	8.9	0.35	3.0	0.12	1.8	0.07	3.5 - 8	0.15 - 0.3	#14 - #10	1.2	48
0500**	13.0	0.51	4.1	0.16	2.4	0.08	4.5 - 11	0.2 - 0.45	#8 - #6	1.2	48
0750	19.1	0.75	6.1	0.24	2.5	0.09	6.5 - 16.5	0.25 - 0.65	#6 - #2	1.2	48
1100	27.9	1.10	8.9	0.35	3.0	0.12	10 - 24	0.4 - 0.95	#1 - 3/0	1.2	48
1500	38.1	1.50	11.9	0.47	4.1	0.16	13 - 35	0.5 - 1.4	2/0 - 350	1.2	48
2000	50.8	2.00	16.0	0.63	4.1	0.16	17.5 - 44	0.7 - 1.75	250 - 500	1.2	48
2700	68.1	2.70	22.1	0.87	4.1	0.16	24 - 59	0.95 - 2.3	600 - 1000	1.2	48
3500*	89.9	3.54	30.0	1.18	4.1	0.16	33 - 80	1.3 - 3.1	800 - 1250	1.2	48
4700*	119.9	4.72	39.9	1.57	4.2	0.17	44 - 104	1.75 - 4.1	1500 - 2500	1.2	48

*FCFW 3500 and FCFW 4700 are not UL or CSA listed

**Meets the material performance of MIL spec only

TECHNICAL DATA

PROPERTY	TEST METHOD	REQUIREMENT	TYPICAL PERFORMANCE	UNITS
PHYSICAL				
Tensile Strength	ASTM D412	1,200 (8.3) minimum	1,905 (13.13)	psi (MPa)
Elongation	ASTM D638	200 minimum	531	percent
Low Temperature Flexibility	4 hrs at -67 °F (-55 °C)	No cracking	No cracking	
Heat Shock	4 hrs at 437 °F (225 °C)	No cracks, flowing or dripping	No cracks, flowing or dripping	
Heat resistance:	168 hrs at 302 °F (150 °C)			
Tensile strength	ASTM D412	1,000 (6.9) minimum	1,800 (12.41)	psi (MPa)
Ultimate elongation	ASTM D412	100 minimum	359	percent
ELECTRICAL				
Dielectric Strength	ASTM D2671	200 (7.9) minimum	Pass	volts/mil (Kv/mm)
Volume Resistivity	ASTM D876	1 x 10 ¹³ minimum	3.78 x 10 ¹⁴	Ohm-cm
CHEMICAL				
Corrosion	16 hrs at 250 °F (121 °C)	No corrosion	No corrosion	
Water absorption, percent, maximum	24 hrs at 73 °F (23 °C)	0.5 maximum	0.14	percent
Flammability	ASTM D2671, Procedure C	Self extinguishing 1 minute; 25% maximum flag burnt	Pass	
Fluid resistance: (Hydraulic fluid (petroleum base), JP-8, Diesel lubricating oil, 5 percent NaCl, Deicing fluid)	24 hrs immersion at 75 °F (24 °C) in various fluids ***			
Tensile strength	ASTM D412	750 (5.2) minimum	1,199 (8.22)	psi (MPa)
Dielectric strength	ASTM D2671	200 (7.9) minimum	558 (22.0)	volt/mil (Kv/mm)
Fungus resistance	ASTM G21	No growth or Tensile higher than 1200 psi and Elongation higher than 200% after exposure	Pass	

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.
- Please specify the product name, order reference number and options you require. Order Example: FCFW, 1500, black, unprinted, unlined, 48 in lengths

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