# **Heavy Wall, High Ratio Tubing**

### **CFHR-FR Series**

# Part number and sizing guide

High ratio, Flame Retardant, Heat-Shrinkable Tubing accommodates extreme differences between cables, connectors and backshells

## Features & Benefits

- 5.7:1 Shrink ratio
- Accommodates a wide range of connector shapes and configurations
- Optional Thermoplastic adhesive liner for complete environmental protection and insulation
- Meets MIL-DTL-23053/15, Class 1
- Meets UL-94 V-0 flame rating
- Flame retardant
- Continuous operating temperature: -55°C to 110°C
- Shrink temperature 120°C



Product Part	Internal Diameter		Wall	Available Lengths				
Number	Supplied	Recovered	Thickness		No	ominal (m	m)	
CFHR-FR-0318	31.8	5.6	1.5					
CFHR-FR-0444	44.4	8.0	2.4	70	107	150	054	005
CFHR-FR-0635	63.5	12.7	3.0	76	127	152	254	305
CFHR-FR-0762	76.2	19.1	3.6					

All dimension in millimetres



#### **Ordering Information**

Select a dimension which will shrink snugly over the component to be covered. If the recovery is restricted the resultant wall thickness will be less than specified. For each item, please specify the product name plus each of the following options

Product **CFHR-FR** Size CFHR-FR 0444 Length CFHR-FR 0444, 127

Please also advise on colour, printing and lining options.

For additional information on this product range or other high performance products please contact IS-Rayfast.

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## **Technical Data**

#### **Physical**

Property	Test Method	Typical Performance
Tensile Strength	ASTM D412, ISO 037	2100 psi (14.5 MPa)
Elongation	ASTM D142, ISO 037	600%
Elongation after Heat Aging (168hrs at 175°C)	ASTM D2671, ISO 037	400%
Heat Shock (4hrs at 225°C)	ASTM D2671	No cracking or flowing
Longitudinal Change	ASTM D2671	+1%, -10%
Low Temperature Flexibility (4hrs at -55°C)	ASTM D2671	No cracking
Specific Gravity	ASTM D792	1.25
Hardness (Shore D)	ASTM D2240	50D
Oxygen Index	ASTM D2863	27.00
Flammability	ASTM D2671 Procedure C	Flame Retardant

#### **Electrical**

Property	Test Method	Typical Performance
Dielectric Strength	ASTM D149	500 V/Mil (16 kV/mm)
Dielectric Voltage Withstand (2500V, 60Hz, 1min)	UL 486D	No breakdown
Volume Resistivity	ASTM D257	10 <sup>16</sup> ohm-cm

#### Chemical

Property	Test Method	Typical Performance
Fluid Resistance	MIL-DTL-23053	Good to Excellent
Fungus Resistance	ASTM G21	No Growth
Copper Corrosion	ASTM D2671	No Corrosion
Water Absorption	ASTM D570	0.2%

#### Adhesive

Property	Test Method	Typical Performance
Adhesive Lap Sheer (1in/min at 23°C)	ASTM D1002	125 psi (0.875 MPa)
Adhesive Softening Point	ASTM E28	92°C/-5°C
Adhesive Peel Strength (300mm/min at 23°C)	ASTM D1000	
Steel, aluminium, P.E.		35 pli
PVC		20 pli
Adhesive Blocking (30°C)	ASTM D1146	No Blocking
Water penetration	STM 706	No penetration after 236 hrs. of continuous immersion

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