FP-301VW Tubing

Flexible Polyolefin

Data Sheet

Product Description

3M™ FP-301VW Tubing has the same outstanding balance of electrical, physical and chemical properties as FP-301 Tubing and is specially engineered for superior flame resistance.

FP-301VW Tubing meets MIL-DTL-23053/5, Class 3 requirements. It is UL Recognized and CSACertified at 600 volts @ 125°C (ULFile Nos. E-39100, VW-1 and E-69751; CSANo. 38227, OFT).

FP-301VW Tubing is rated for continuous operation from –55°C (–67°F) to 135°C (275°F) and withstands elevated temperatures to 300°C (572°F) for brief periods. Minimum shrink temperature for all FP-301VWTubing is 100°C (212°F).

Typical Applications

FP-301VW Tubing is ideal for fire-resistant coverings of components and flammable wire assemblies.

Shrink Ratio

FP-301VW Tubing has a 2:1 shrink ratio. When freely recovered, the tubing will shrink to 50% of its as-supplied internal diameter. The recovered wall thickness of the tubing is proportional to the degree of recovery. High expansion ratios are available subject to factory quotation.

Standard Colors

FP-301VW (flame retardant)–black, white, red, blue and yellow.

Standard Packaging

Four-foot lengths or large spools. Cut pieces available subject to factory quotation.

Ordering Information

Order FP-301VW by product name, size equivalent to expanded inside diameter, package type and color. Always order the largest size that will shrink snugly over the item to be covered.
Example: FP-301VW, 1/4", 4 ft., white.

Standard Sizes and Dimensions

Ordering Size	Expanded I.D. (Minimum)		Recovered I.D. (Maximum)		Recovered Wall Thickness (Nominal)	
	in.	(mm)	in.	(mm)	in.	(mm)
3/64	.046	(1,17)	.023	(0,58)	.016	(0,41)
1/16	.063	(1,60)	.031	(0,79)	.017	(0,43)
3/32	.093	(2,36)	.046	(1,17)	.020	(0,51)
1/8	.125	(3,18)	.062	(1,57)	.020	(0,51)
3/16	.187	(4,75)	.093	(2,36)	.020	(0,51)
1/4	.250	(6,35)	.125	(3,18)	.025	(0,64)
3/8	.375	(9,53)	.187	(4,75)	.025	(0,64)
1/2	.500	(12,70)	.250	(6,35)	.025	(0,64)
3/4	.750	(19,05)	.375	(9,53)	.030	(0,76)
1	1.000	(25,40)	.500	(12,70)	.035	(0,89)
1-1/2	1.500	(38,10)	.750	(19,05)	.040	(1,02)
2	2.000	(50,80)	1.000	(25,40)	.045	(1,14)
3	3.000	(76,20)	1.500	(38,10)	.050	(1,27)
4	4.000	(101,60)	2.000	(50,80)	.055	(1,40)

Typical Properties

Applicable Specification
MIL-DTL-23053/5, Class 3; ULFile E-39100, VW-1, E-69751; CSALR38227, OFT

Physical

Tensile Strength	2400 PSI
Ultimate Elongation	400%
Longitudinal Change	+1, -10%
Secant Modulus (2%)	13,000 PSI
Specific Gravity	1.5
Heat Aging (168 hrs. @ 175°C)	Elongation 175%
Heat Shock (4 hrs. @ 250°C)	No dripping, cracking, passes mandrel wrap test
Low Temperature Flexibility (4 hrs. @ –55°C)	No cracking
Flammability	Self-extinguish meets UL 224 VW-1 Test

Electrical

Dielectric Strength	900 V/mil
Volume Resistivity	10^{15} ohm-cm

Chemical

Corrosive Effect	Non-corrosive
Solvent Resistance	
Tensile Strength	1000 PSI
Dielectric Strength	400 V/mil
Water Absorption	0.2%
Fungus Resistance	Non-nutrient

Technical information provided consists of typical product data and should not be used for specification purposes. Unless otherwise noted, all tests are performed at room temperature.