

Suflex® Astra 703/105

VW-1 Rated Mechanical Tubing

Temp Class: Class A (105° C)

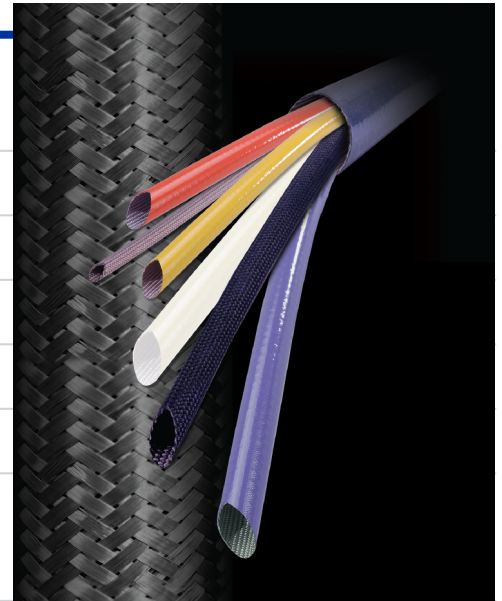
Grades Available: C

Material: Polyvinylchloride Tubing

Sizes Available: AWG #24 through 2-1/2" I.D.

Colors Available: Clear, Black

Applicable Standards: UL Recognized Component and VW-1 Flame Rating under file no. E31622, MIL-I-631/QPL



Features

- ▶ VW-1 Flame Rating.
- ▶ Fungus resistant and non-corrosive.
- ▶ Extremely flexible. Does not crack with 180° bends.
- ▶ -35°C brittle point.

Product Description

Suflex Astra 703/105 is a general purpose, high heat-resistant, extruded polyvinylchloride plastic tubing designed for continuous use in 105°C applications. This material carries the Underwriters Laboratories recognition and is rated VW-1 by the Laboratories. Suflex Astra 703/105 is supplied in continuous lengths on spools.

Suggested Applications

Suflex Astra 703/105 tubing is widely used on transformer, motor and coil lead wires. It also finds applications in electronic apparatus and in consumer goods such as toys, blenders, food machines, outboard motors, lawn care equipment, stereos, lighting equipment, motorcycles, etc. Suflex Astra 703/105 tubing may also be used for vacuum or pressure hoses and transfer of compatible liquids.



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Sizes Available

Size	Inside Diameter, in. (mm)		Nominal I.D.
	Maximum	Minimum	
24 AWG	0.027 (0.69)	0.020 (0.51)	0.022
22 AWG	0.032 (0.81)	0.025 (0.64)	0.027
20 AWG	0.039 (0.99)	0.032 (0.81)	0.034
19 AWG	0.044 (1.11)	0.036 (0.91)	0.040
18 AWG	0.049 (1.25)	0.040 (1.02)	0.042
17 AWG	0.054 (1.37)	0.045 (1.14)	0.047
16 AWG	0.061 (1.55)	0.051 (1.30)	0.053
15 AWG	0.067 (1.70)	0.057 (1.45)	0.059
14 AWG	0.074 (1.88)	0.064 (1.63)	0.066
13 AWG	0.082 (2.08)	0.072 (1.83)	0.076
12 AWG	0.091 (2.31)	0.081 (2.06)	0.085
11 AWG	0.101 (2.60)	0.091 (2.31)	0.095
10 AWG	0.112 (2.80)	0.102 (2.60)	0.106
9 AWG	0.124 (3.20)	0.114 (2.90)	0.118
8 AWG	0.141 (3.60)	0.129 (3.30)	0.133
7 AWG	0.158 (4.00)	0.144 (3.70)	0.148
6 AWG	0.178 (4.50)	0.162 (4.10)	0.166
5 AWG	0.198 (5.00)	0.182 (4.60)	0.186
4 AWG	0.224 (5.70)	0.204 (5.20)	0.208
3 AWG	0.249 (6.30)	0.229 (5.80)	0.234
2 AWG	0.278 (7.10)	0.258 (6.60)	0.263
1 AWG	0.311 (7.90)	0.289 (7.30)	0.294
0 AWG	0.347 (8.80)	0.325 (8.30)	0.330
5/16"	0.334 (8.4836)	0.312 (7.9248)	0.312
3/8"	0.399 (10.10)	0.375 (9.50)	0.375
7/16"	0.462 (11.70)	0.438 (11.10)	0.438
1/2"	0.524 (13.30)	0.500 (12.70)	0.500
5/8"	0.655 (16.70)	0.625 (15.90)	0.625
3/4"	0.786 (20.00)	0.750 (19.10)	0.750
7/8"	0.911 (23.20)	0.875 (22.20)	0.875
1"	1.036 (26.30)	1.000 (25.40)	1.000
1-1/8"	1.161 (29.60)	1.125 (28.70)	1.125
1-1/4"	1.286 (32.80)	1.250 (31.90)	1.250
1-1/2"	1.536 (39.20)	1.500 (38.30)	1.500
1-3/4"	1.786 (45.50)	1.750 (44.60)	1.750
2"	2.036 (51.90)	2.000 (51.00)	2.000
2-1/4"	2.330 (59.40)	2.250 (57.40)	2.250
2-1/2"	2.536 (64.70)	2.500 (63.80)	2.500

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Product Specifications

Property		Underwriters Laboratories, Inc.		MIL-I-631 Grade C Requirements		Typical Astra 703/105 Performance
		Conditioning	Requirements	Conditioning	Requirements	
Dielectric Strength	Dry			C-96/23/50	Min. 800 V/mil	1180 V/mil
	Wet			C-96/23/96	Min. 85% of dry	94% of dry
Shelf Aged		60 days at 23°C	Min. 2500V for 1 min and then increase to breakdown			Exceeds Requirements Avg. Dielectric Breakdown 15,000 to 30,000V Avg. 88%
Oven Aged		50 days at 133°C	Min. 50% Shelf Age			
Dielectric Constant	Dry			C-96/23/50	Maximum 7.0	2.96
	Wet			C-96/23/96	Maximum 8.0	3.71
Dissipation Factor	Dry			C-96/23/50	Maximum .14	.050
	Wet			C-96/23/96	Maximum .16	.059
Insulation Resistance		Tap Water @ 60°F	Mins. from 2.11 to 0.059 mega ohms/M ft. from #24 to 2-1/2"			Exceeds Requirements
Volume Resistivity				None	Min. 1×10 omh-cm	308×10
Tensile Strength	Unaged			C-96/23/50	Min. 1800 psi	3480 psi
	Shelf Aged	60 days at 23°C	Min. 1500 psi			Over 3000 psi
	Oven Aged	60 days @ 113°C	Min. 70% Shelf Age			90-95%
Tensile Elongation	Unaged			C-96/23/50	Min. 200% Max 350%	
	Shelf Aged	60 days at 23°C	100% Minimum			250-350%
	Oven Aged	60 days at 113°C	Min. 70% Shelf Age	400 h 130°C	Max. 35% Change	80-90% of Original
Heat Shock		1 h @ 136°C	No Cracking			No Cracking
Lengthwise Shrinkage				2 h 130°C	10% Max.	5%
Softening Temperature				None	Min. 70°C	100°C
Deformation		2 h @ 121°C	Max. decrease wall thickness 50%			22% Decrease
Flexibility		60 days @ 113°C	No Cracks Returns to round cross sections after bend	200 h @ 100°C	No cracks 180°C bend around 1/8" rod	No Cracking, proper return to round cross section
Cold Performance		-10°C	No Cracks 6 Turns around model	50% Brittle Temp. Impact Method	Max. -10°C	No Cracks at -25°C -35°C Brittle Point



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Property	Underwriters Laboratories, Inc.		MIL-I-631 Grade C Requirements		Typical Astra 703/105 Performance
	Conditioning	Requirements	Conditioning	Requirements	
Flame Resistance	Five 15 sec. Flame Applications	Does not burn longer than 1 min after application	None	Max. 15 seconds	Self-extinguishing in 10 seconds or less
Corrosion	7 days at 186°C	No deleterious effect on copper or tubing	720 h 70°C High Humidity	No corrosion Max. 2% resistance increase of conductor	Conforms at 0.8% Resistance Increase
Oil Resistance			High Swelling oil h 50°C	No Cracks, no oil penetration. Max. 10° increase in dia.	Conforms 0.5% Increase
Fungus Resistance			12 mos. 23°C 50% RH in Culture	No Fungus Growth	Conforms
Bursting Strength	Increased Pressure		C-96/23/50	+Min. 29 psi to 96 psi	Exceeds all requirements by 90%
	Decreased Pressure		C-96/23/96	+Min. 15 psi to 48 psi	

*All Atkins & Pearce coated insulation solutions are REACH and RoHS compliant.



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Ordering Information

Product	Grade	Size*	Color	Packing Code
80 = Astra 703 Std Wall	0 = No Electrical Grade	0024 = AWG #24	01 = Black	1 = Spool
82 = Astra 703 1/32"		0022 = AWG #22	12 = Clear	Y = Cut Piece
84 = 703 600V		0020 = AWG #20		
		0019 = AWG #19		
		0018 = AWG #18		
*703 Std Wall Size: 24 - 2-1/2"		0017 = AWG #17		
*703 1/32" Size: 20 - 1/2"		0016 = AWG #16		
703 600V Size: 20 - 3/8"		0015 = AWG #15		
		0014 = AWG #14		
		0013 = AWG #13		
		0012 = AWG #12		
		0011 = AWG #11		
		0010 = AWG #10		
		0009 = AWG #9		
		0008 = AWG #8		
		0007 = AWG #7		
		0006 = AWG #6		
		0005 = AWG #5		
		0004 = AWG #4		
		0003 = AWG #3		
		0002 = AWG #2		
		0001 = AWG #1		
		0000 = AWG #0		
		0313 = 5/16"		
		0375 = 3/8"		
		0438 = 7/16"		
		0500 = 1/2"		
		0625 = 5/8"		
		0750 = 3/4"		
		0875 = 7/8"		
		1000 = 1"		
		1250 = 1 - 1/4"		
		1500 = 1 - 1/2"		
		1750 = 1 - 3/4"		
		2000 = 2"		
		2500 = 2 - 1/2"		

Example: 8000004011 (Astra 703/105 Std Wall, 4, Black, Spool)

