

ASTRATITE® TYPE AF TUBING

Class 125°C • Flexible Polyolefin Tubing

UL Recognized Component: File No. E31622

Canadian Standards Association: File No. 37065

ASTM D3149, Type I and Type II

MIL-I-23053/5, Class 1 and 2



DESCRIPTION

ASTRATITE Type AF is a flexible cross-linked polyolefin heat shrinkable tubing that will recover to half its original diameter when heated to 120°C or higher. During the shrinking operation, the tubing will encapsulate any device inside of it at the time, and will assume the contour of that device. It is useful for skin-tight covering of splices, resistors, diodes, mechanical parts, terminations, etc. Type I tubing is self-extinguishing when tested according to Federal Standard No. 228. Type II tubing is the corresponding clear tubing and is flammable. Both types are formulated for long-term heat and corrosion resistance. Type I tubing is also formulated for superior low temperature flexibility and chemical resistance. Continuous operating range is -55°C to +135°C. Type I tubing conforms to MIL-I-23053/5 and SAE Aerospace Material Specification AMS 3636. Type II tubing conforms to MIL-I-23053/5 and SAE Aerospace Material Specification AMS 3637.

DIMENSIONS

| Size | Minimum Expanded I.D. | | Maximum Recovered I.D. | | Nominal Recovered Wall | |
|-------|-----------------------|----------|------------------------|---------|------------------------|--------|
| | Inch | (mm) | Inch | (mm) | Inch | (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 | (1.60) | .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 | (9.52) | .187 | (4.75) | .025 | (0.64) |
| 1/2 | .500 | (12.70) | .250 | (6.35) | .025 | (0.64) |
| 3/4 | .750 | (19.05) | .375 | (9.52) | .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) |

PACKAGING

4 Foot Cut Lengths.

Spools of continuous lengths.

Cut to customer specifications.

STANDARD COLORS

Type I — 3/64" - 1/16" Black
 3/32" - 1" Black, white, red, yellow, green and blue
 1 1/8" - 4" Black

Type II — Clear

Other colors available on special order subject to factory acceptance.



PERFORMANCE CHARACTERISTICS

| Property | Specification | Typical Value |
|-----------------------------|--|-----------------------------|
| Tensile Strength | ASTM D638 | 1775 psi |
| % Elongation | ASTM D638 | 395% |
| Dielectric Withstand | 2500V / 1 Min. | Pass |
| Dielectric Strength | 500V / mil | 825 V/mil |
| Heat Aging | 175°C / 168 hrs. | 283% elongation |
| Heat Shock | 250°C / 4 hrs. | No cracking |
| Heat Resistance | 168 hr. / 175°C | 480% elongation |
| Low Temperature Flexibility | -55°C / 4 hrs. | No cracking |
| Corrosive Effect (mirror) | 150°C / 16 hrs. | No corrosion |
| Copper Stability | 160°C / 168 hrs. | 275% elongation |
| Color Stability | MIL-STD-104, 175°C / 4 hrs. | No change |
| Flammability — Type I only | Fed. Std. No. 228 | Self-extinguishing |
| Volume Resistivity — Type I | ASTM D257 | 8 x 10 ¹⁴ ohm-cm |
| — Type II | | 1 x 10 ¹⁷ ohm-cm |
| Longitudinal Change | 200°C / 3 min. | -3% Typ. 5% Max. |
| Secant Modulus | UL 224 | 1.9 x 10 ⁴ psi |
| Water Absorption | ASTM D570 | 0.3% |
| Solvent Resistance | 25°C / 24 hrs. JP 4 Water Av Gas Hyd. Fluid Skydrol 500 | 1600 psi 800 V/mil |
| Specific Gravity — Type I | ASTM D882 | 1.25 |
| — Type II | ASTM D882 | 0.93 |