



# SFTW-203 Tubing

3:1 Very Flexible Polyolefin

## Data Sheet

### Product Description

3M™ SFTW-203 is a 3:1 shrink ratio tubing that offers an outstanding balance of electrical, physical and chemical properties for a wide variety of industrial and military applications. SFTW-203 is made of very flexible, heat-shrinkable polyolefin which is mechanically tough, chemically resistant, and can be easily surface printed.

SFTW-203 tubing has been engineered to offer a low shrink temperature of 100°C (212°F). This allows the tubing to shrink rapidly, and minimizes heat exposure and possible damage to temperature sensitive substrates.

SFTW-203 tubing meets the performance requirements of MIL-DTL-23053/5 Class 1, and is UL Recognized (File No. E48398) for flame retardance. It is rated for continuous operation from -55°C (-67°F) to 135°C (275°F), and withstands elevated temperatures of 300°C (572°F) for brief periods.

### Typical Applications

The extra flexibility and low shrink temperature of SFTW-203 tubing make it ideal for shrink-fit jacketing and insulation of flexible wire bundles and temperature sensitive components. The 3:1 shrink ratio makes SFTW-203 the insulation of choice for end terminations where the connector body is larger than the cable and for repair applications where the tubing must be slid over a connector. SFTW-203 can also be used to insulate an oversized component in line to the wiring.

### Shrink Ratio

SFTW-203 has a 3:1 shrink ratio. When freely recovered, the tubing will shrink to 33% of its as-supplied internal diameter. The recovered wall thickness of the tubing is proportional to the degree of recovery.

### Standard Colors

Black.

### Standard Packaging

Boxes of four-foot lengths, or large spools. Cut pieces subject to factory quotation.

### Ordering Information

Order SFTW-203 by product name, size equivalent to expanded inner diameter, color, and package type. Always order the largest size that will shrink-fit snugly over the item to be covered. Example: SFTW-203, 1/2", black, 4 ft lengths.

### Standard Sizes and Dimensions

| Ordering Size | Expanded I.D. (Minimum) |        | Recovered I.D. (Maximum) |        | Recovered Wall Thickness (Nominal) |        |
|---------------|-------------------------|--------|--------------------------|--------|------------------------------------|--------|
|               | in.                     | (mm)   | in.                      | (mm)   | in.                                | (mm)   |
| 1/16          | .059                    | (1,5)  | .020                     | (0,5)  | .018                               | (0,45) |
| 1/8           | .118                    | (3,0)  | .039                     | (1,0)  | .022                               | (0,55) |
| 1/4           | .236                    | (6,0)  | .079                     | (2,0)  | .026                               | (0,65) |
| 3/8           | .354                    | (9,0)  | .118                     | (3,0)  | .030                               | (0,75) |
| 1/2           | .472                    | (12,0) | .157                     | (4,0)  | .030                               | (0,75) |
| 3/4           | .709                    | (18,0) | .236                     | (6,0)  | .030                               | (0,75) |
| 1             | .945                    | (24,0) | .315                     | (8,0)  | .039                               | (1,00) |
| 1 1/2         | 1.535                   | (39,0) | .512                     | (13,0) | .045                               | (1,15) |

Note: Dimensions in inches are approximate.

### Typical Properties

#### Applicable Specifications

MIL-DTL-23053/5, Class 1; ULFile E48398;  
CSA LR 38227

#### Physical

Tensile Strength 2600 PSI  
Ultimate Elongation 400%  
Longitudinal Change ±5%  
Secant Modulus (2% elong.) 8700 PSI  
Specific Gravity 1.29  
Heat Shock No cracking, flowing or dripping (4 hrs. @ 250°C)  
Water Absorption 0.2%  
Heat Aging Elongation (168 hrs. @ 158°C) 350%  
Low Temperature Flexibility (4 hrs. @ -55°C) No cracking  
Flammability Self extinguishing

#### Electrical

Dielectric Strength 700 V/mil  
Volume Resistivity 10<sup>15</sup> ohm-cm

#### Chemical

Corrosive effect Non-corrosive  
Solvent Resistance  
Tensile Strength 1100 PSI  
Dielectric Strength 400 V/mil  
Fungus Resistance Inert

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.

**Limited Warranty** – 3M expressly warrants that for a period of ninety days from the date of purchase, 3M static control products will be free of defects in materials (parts) and workmanship (labor). Defects occurring during the warranty period will be repaired or products will be replaced at 3M's option and expense, if 3M receives notice during the warranty period. Defective products must be returned to 3M with proof of purchase date.

**Warranty Exclusions** – THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESS AND IMPLIED, INCLUDING FITNESS AND MERCHANTABILITY. The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean, or repair products.

**Limit of Liability** – In no event will 3M or Seller be responsible or liable for special, incidental, or consequential losses or damages, whether based in tort or contract. Fulfillment of 3M's warranty obligations will be Customer's exclusive remedy and 3M's and Seller's limit of liability for any breach of warranty or otherwise.

**For your nearest distributor or to order, call 1-800-328-1368**

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