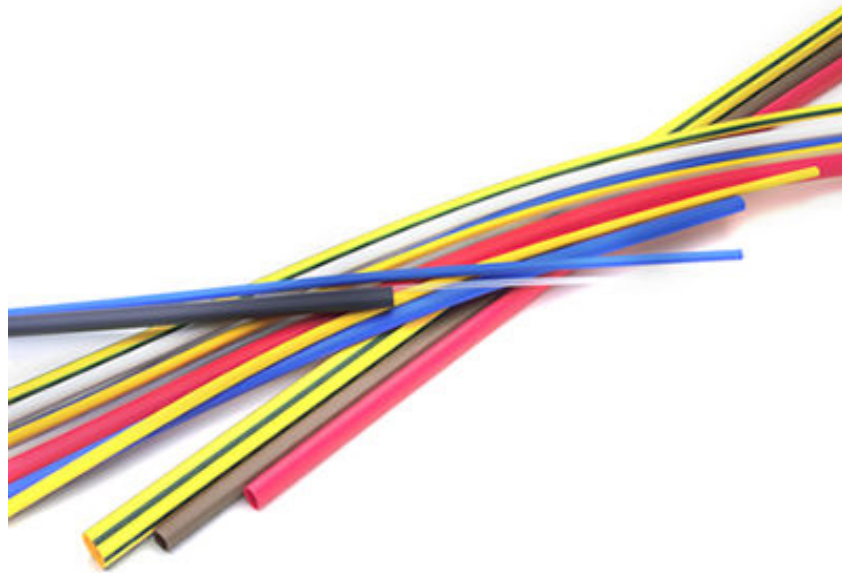




# Heat Shrink Tubes

SFTW-202A - Polyolefin



## 1. Product Description

SFTW-202A is a flexible ROHS heat shrink tubing range. The tubes have a polyolefin flame-retarded wall. They are designed to provide reliable performance for electrical splices, connections, and terminations up to 600V. SFTW- 202A tubes are available in different colors and have a 2:1 shrink ratio.

## 2. Typical Properties

Physical	Value	Unit	Requirement	Test Method
Shrink ratio	2:1			
Tensile strength	14 - 24	N/mm <sup>2</sup>	Min. 10	IEC 60684-2-19
Elongation at break	250 - 550	%	Min 250	IEC 60684-2-19
Longitudinal change	-5 to 0	%	-10 to 0	IEC 60684-2-9
Concentricity supplied (total wall)	80	%	Min. 65	IEC 60684-2-3
Concentricity fully recovered (outer wall)	90	%	Min. 85	IEC 60684-2-3
Secant Modulus	70 to 125	N/mm <sup>2</sup>	50 to 175	IEC 60684-2-19
Relative Density	1.25 - 1.40	g/cm <sup>3</sup>	1.2 to 1.4	IEC 60684-2-4

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Thermal	Value	Unit	Requirement	Test Method
Continuous Operating Temperature	-55 to 135	°C		
Shrink Temperature	135 to 280	°C		
Heat Shock			4 hrs at 200°C	IEC 60684-2-6
Tensile strength	13 - 23	N/mm <sup>2</sup>	>10	IEC 60684-2-19
Elongation at break	250 to 550	%	>200	IEC 60684-2-19
Low Temperature Flexibility	Pass		4 hrs at -55°C No cracking after bending	IEC60684-2-14
Copper Corrosion	Pass		No corrosion	IEC 60684-2-33
Flammability	Pass		Method C (30s, 75mm)	IEC 60684-2-26
<b>Electrical</b>				
Breakdown Voltage	290	kV/cm	Expanded ID (mm): 1.2 to 26 → Min. 210 kV/cm Expanded ID (mm): 26 to 103 → Min. 100 kV	IEC 60684-2-21
Volume resistivity	10 <sup>14</sup>	Ohm/cm	Min.10 <sup>14</sup> at room temperature	IEC 60684-2-23
<b>Chemical</b>				
Selected fluids according to table 5 of IEC 60684-3-212 at 23 °C, 24 hrs	Pass	N/mm <sup>2</sup> / %	Tensile/Elongation Min. 7 / Min. 200	IEC 60684-2-36

### 3. User Information

#### 3.1 Product Guide

Part Number	Expanded ID (minimal) mm	Recovered ID (maximal) mm	Total Recovered Wall Thickness (nominal) mm
1.2	1.2	0.6	0.4
1.6	1.6	0.8	0.4
2.4	2.4	1.2	0.5
3.2	3.2	1.6	0.5
4.8	4.8	2.4	0.5
6.4	6.4	3.2	0.6
9.5	9.5	4.8	0.6
12.7	12.7	6.4	0.6
19.0	19.0	9.5	0.8
25.4	25.4	12.7	0.9
38.0	38.0	19.0	1.0
51.0	51.0	25.4	1.1
76.0	76.0	38.0	1.3
102.0	102.0	51.0	1.4

### 3.2 Agency Approvals & Self Certifications

- RoHS compliant. For RoHS information, please visit [www.3M.com/RoHS](http://www.3M.com/RoHS)
- UL-224 125°C 600 V, File E48398
- BWB certificate K16/99085
- VDE certificate 94972
- IEC 60684-3-212 type A
- CSA Certificate 1333384

### 3.3 Shelf Life & Storage

This product has a 5-year shelf life from date of manufacture when stored in a humidity controlled storage (-5°C to +25°C and <75% relative humidity).

## 4. Additional Information

To request additional product information, see address below.

### ***Important Notice***

All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluates the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method or application.

Values presented have been determined by standard test methods and are average values not meant to be used for specification purposes.

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