# SCL

## Semirigid, Encapsulant-Lined, Polyolefin Tubing

### Product Facts

- 3:1 shrink ratio
- Splash-resistant, moisture-resistant covering; not intended for use where immersion in fluids is required
- Rugged protection against abrasion, vibration, and flexing
- Excellent strain relief and insulation of weak points
- RoHS compliant

### Applications

Encapsulates components, splices, and terminations where moisture resistance and mechanical protection are required. Encapsulant melts and flows to fill surface irregularities of the substrate. While still hot, the tubing can be blocked to form a wire breakout.

### Installation

Minimum shrink temperature: 125°C [257°F]

Minimum full recovery temperature: 135°C [275°F]

### Operating Temperature Range

-55°C to 110°C [-67°F to 230°F]

### Specifications/Approvals

| Series | UL | Military | Raychem |
|---|---|---|---|
| SCL | E85381<br>600 V, 125°C | AMS-DTL-23053/4*, Class 1 | RT-1301 |

*Formerly MIL-I-23053/4 and MIL-DTL-23053/4.

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## SCL (Continued)

### Product Dimensions

| Size | Additional Standard Color | Inside Diameter | | Recovered Wall Thickness** | |
|---|---|---|---|---|---|
| | | Minimum Expanded as Supplied | Maximum Recovered After Heating | Total Wall After Heating | Meltable Wall After Heating (Nominal) |
| 1/8 | Brown | 3.2 [0.125] | 0.6 [0.023] | 0.96 ± 0.15 [0.038 ± 0.006] | 0.51 [0.020] |
| 3/16 | Gray | 4.8 [0.187] | 1.5 [0.060] | 1.09 ± 0.15 [0.043 ± 0.006] | 0.64 [0.025] |
| 1/4 | White | 6.4 [0.250] | 2.0 [0.080] | 1.19 ± 0.15 [0.047 ± 0.006] | 0.69 [0.027] |
| 3/8 | Red | 9.5 [0.375] | 3.4 [0.135] | 1.27 ± 0.18 [0.050 ± 0.007] | 0.76 [0.030] |
| 1/2 | Blue | 12.7 [0.500] | 5.0 [0.195] | 1.39 ± 0.18 [0.055 ± 0.007] | 0.89 [0.035] |
| 3/4 | Yellow | 19.1 [0.750] | 8.0 [0.313] | 1.65 ± 0.18 [0.065 ± 0.007] | 1.02 [0.040] |
| 1 | N/A | 25.4 [1.000] | 10.2 [0.400] | 1.90 ± 0.18 [0.075 ± 0.007] | 1.02 [0.040] |

**Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | | |
|---|---|---|
| Color | Standard | Black (-0) for all sizes, plus one additional color per size per Product Dimensions table. |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. Special order sizes are available upon request. | |
| Standard packaging | In 1.2-meter [4-foot] lengths. | |
| Ordering description*** | Specify product name, size and color (for example, SCL 1/4-0). | |

***Europe only. For supply to MIL spec., Def Stan and BS add -MS, -DS or -BS to ordering description.



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

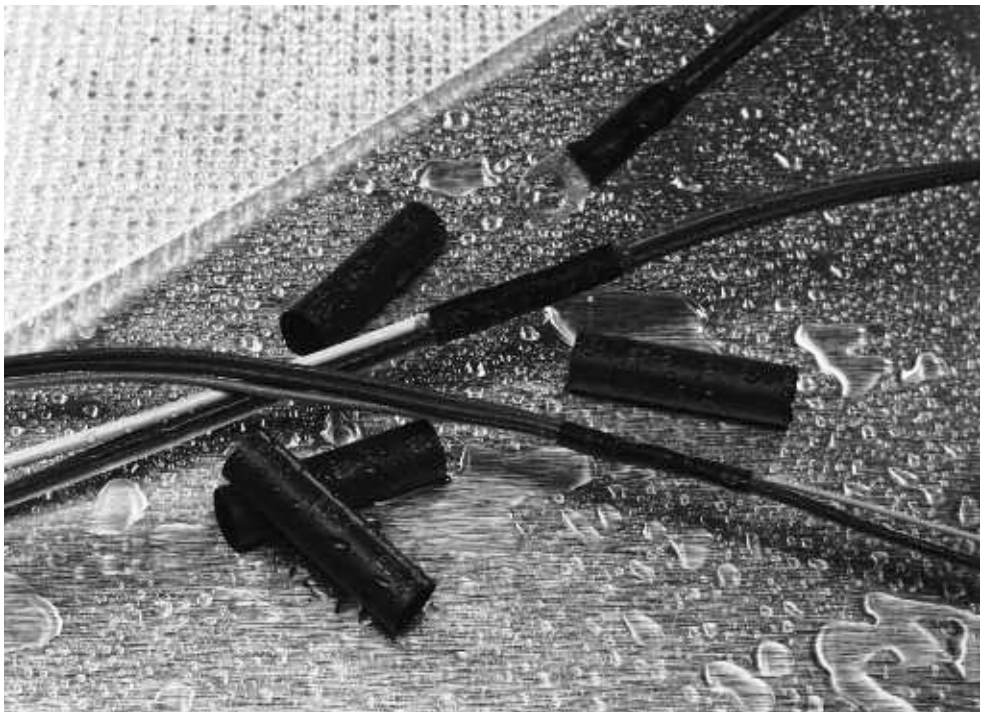
Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# SCT

## Flame-Retardant, Adhesive-Lined, Semirigid Polyolefin Tubing (Extended Temperature Range)

### Product Facts

- **4:1 shrink ratio allows a few sizes to cover a wide range of splice and component diameters**
- **Flame-retardant and mechanically tough, the tubing provides strain relief and abrasion protection of wire splices, terminals, and other components**
- **Thick adhesive liner forms an effective barrier against fluids and moisture and performs well at an extended temperature range**
- **RoHS compliant**



### Applications

Specially designed to insulate and seal automotive wire splices and components in an under-the-hood automotive environment. Specially formulated to function at an extended temperature range.

### Installation

Minimum shrink temperature: 110°C [230°F]

Minimum full recovery temperature: 135°C [266°F]

### Operating Temperature Range

-40°C to 150°C [-40°F to 302°F]

### Specifications/Approvals

| Series | Raychem |
|---|---|
| SCT | SCT SCD |

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## SCT (Continued)

### Product Dimensions

| Part Number | Inside Diameter | | Recovered Wall Thickness* | |
|---|---|---|---|---|
| | Minimum Expanded as Supplied | Maximum Recovered After Heating | Total Wall After Heating | Meltable Wall After Heating (Nominal) |
| SCT No. 1 | 7.6 [0.300] | 1.7 [0.065] | 1.52 ± 0.30 [0.060 ± 0 .012] | 0.76 [0.030] |
| SCT No. 2 | 9.0 [0.355] | 2.3 [0.090] | 1.52 ± 0.30 [0.060 ± 0 .012] | 0.76 [0.030] |
| SCT No. 3 | 11.6 [0.455] | 2.5 [0.100] | 2.29 ± 0.30 [0.090 ± 0.012] | 1.40 [0.055] |
| SCT No. 4 | 17.8 [0.700] | 4.4 [0.175] | 2.54 ± 0.30 [0.100 ± 0.012] | 1.52 [0.060] |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | |
|---|---|
| Color | Black |
| Size selection | Always order the largest size that will shrink snugly over the component being covered. Special order sizes are available upon request. |
| Standard packaging | Cut pieces. |
| Marking | Tubing will be printed with its numbered size (such as SCT-1, SCT-2, SCT-3, SCT-4). |
| Ordering description | Specify product name, numbered size, color and cut length (for example, SCT-NO.3-E3-0-75MM). |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# SFR

**Very Flexible, Flame-Retardant, Silicone Elastomer Tubing**

## Product Facts

- **Outstanding low-temperature flexibility**
- **Resistance to hydraulic fluids, fuel, and lubricating oil**
- **Very good ablative characteristics: when exposed to flame, surface turns to insulative char or "ablates"**
- **RoHS compliant**

### Applications

Provides cable jacketing, harness protection, and strain relief for electronic components, semi-conductor leads, and wire splices. Suitable for applications that require flexibility over a wide range of operating temperatures.

### Installation

Minimum shrink temperature: 135°C [285°F]

Minimum full recovery temperature: 175°C [347°F]

### Operating Temperature Range

-75°C to 180°C [-103°F to 356°F]

### Specifications/Approvals

| Series | Military | Raychem |
|---|---|---|
| SFR | AMS-DTL-23053/10*<br>MIL-PRF-46846, Type II, Class 1 | RT-1140 |

*Formerly MIL-I-23053/10 and MIL-DTL-23053/10.

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## SFR (Continued)

### Product Dimensions

| Size | Inside Diameter | | Recovered Wall Thickness** |
|---|---|---|---|
| | Minimum Expanded as Supplied | Maximum Recovered After Heating | After Heating |
| 1/4 | 6.4 [0.250] | 3.6 [0.143] | 0.88 ± 0.25 [0.035 ± 0.010] |
| 3/8 | 9.5 [0.375] | 5.4 [0.214] | 1.02 ± 0.25 [0.040 ± 0.010] |
| 1/2 | 12.7 [0.500] | 7.3 [0.286] | 1.21 ± 0.38 [0.048 ± 0.015] |
| 5/8 | 15.9 [0.625] | 9.1 [0.357] | 1.32 ± 0.38 [0.052 ± 0.015] |
| 3/4 | 19.1 [0.750] | 10.9 [0.428] | 1.44 ± 0.38 [0.057 ± 0.015] |
| 7/8 | 22.2 [0.875] | 12.7 [0.500] | 1.65 ± 0.38 [0.065 ± 0.015] |
| 1 | 25.4 [1.000] | 14.5 [0.570] | 1.77 ± 0.51 [0.070 ± 0.020] |
| 1 1/4 | 31.8 [1.250] | 18.1 [0.714] | 2.21 ± 0.51 [0.087 ± 0.020] |
| 1 1/2 | 38.1 [1.500] | 21.8 [0.857] | 2.41 ± 0.51 [0.095 ± 0.020] |
| 1 3/4 | 44.5 [1.750] | 25.4 [1.000] | 2.71 ± 0.51 [0.107 ± 0.020] |
| 2 | 50.8 [2.000] | 29.0 [1.140] | 2.79 ± 0.51 [0.110 ± 0.020] |

**Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | |
|---|---|
| Color | Standard Black (-0) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. Special order sizes are available upon request. |
| Standard packaging | On spools. |
| Ordering description*** | Specify product name, size and color (for example, SFR 1/4-0). |

***Europe only. For supply to MIL spec., Def Stan and BS add -MS, -DS or -BS to ordering description.



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

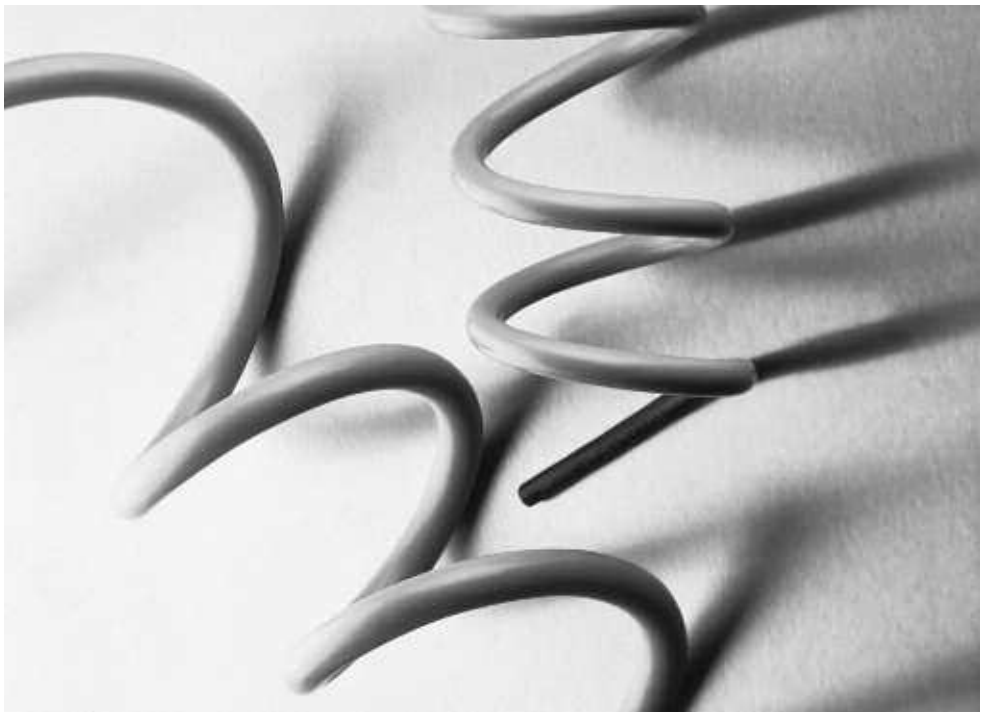
Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# SRFR

## Highly Flexible, Silicone Rubber Tubing

### Product Facts

- Highly flame-retardant
- Extremely flexible at high and low temperatures
- Shrink ratio 1.5:1 minimum except sizes 4/2.9 and 29/20
- RoHS compliant



### Applications

Highly flexible and resistant to high and low temperatures. Unlike other silicone materials, SRFR displays outstanding physical strength. It resists extreme heat shocks, and exhibits good thermal insulation. SRFR is non-burning and has outstanding ablative properties as well as excellent physical and electrical properties. SRFR is used in medical equipment where its key properties are outstanding flexibility and ability to withstand exposure to sterilization conditions. Other applications include thyristor power cable insulation, heating element and bus bar insulation, fiber optic bundle sheathing, and rocketry support cable protection.

### Installation

Minimum shrink temperature: 135°C [275°F]

Minimum full recovery temperature: 175°C [347°F]

### Operating Temperature Range

-75°C to 200°C
[-103°F to 392°F]

### Specifications/Approvals

| Series | UL | Raychem |
|---|---|---|
| SRFR | E85381 VW-1<br>600V, 200°C | RT-1142<br>RW-2057 |

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## SRFR (Continued)

### Product Dimensions

| Size | Inside Diameter | | Recovered Wall Thickness* |
|---|---|---|---|
| | Minimum Expanded as Supplied | Maximum Recovered After Heating | After Heating |
| 2.9/1.7 | 2.9 [0.114] | 1.7 [0.067] | 1.0 ± 0.50 [0.039 ± 0.020] |
| 4/2.9 | 4.0 [0.158] | 2.9 [0.114] | 1.0 ± 0.50 [0.039 ± 0.020] |
| 7.8/4.6 | 7.8 [0.307] | 4.6 [0.181] | 1.0 ± 0.50 [0.039 ± 0.020] |
| 10/6.5 | 10.0 [0.394] | 6.5 [0.256] | 1.5 ± 0.50 [0.059 ± 0.020] |
| 15/9.6 | 15.0 [0.591] | 9.6 [0.378] | 1.5 ± 0.50 [0.059 ± 0.020] |
| 21/13 | 21.0 [0.827] | 13.0 [0.512] | 2.0 ± 0.75 [0.079 ± 0.030] |
| 29/20 | 29.0 [1.142] | 20.0 [0.787] | 2.0 ± 0.75 [0.079 ± 0.030] |
| 41/27 | 41.0 [1.614] | 27.0 [1.063] | 3.0 ± 1.00 [0.118 ± 0.039] |
| 51/33 | 51.0 [2.008] | 33.0 [1.299] | 3.0 ± 1.00 [0.118 ± 0.039] |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | | |
|---|---|---|
| Color | Standard | Gray (-8) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. | |
| Standard packaging | On spools. | |
| Ordering description | Specify product name, size and color (for example, SRFR 2.9/1.7-8). | |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# SST/SST-FR

## Self-Sealing, Heat-Shrinkable Tubing

### Product Facts

- Thick adhesive liner forms an effective barrier against fluids and moisture
- Thick-wall insulation, strain relief and abrasion protection
- No need for greases, tape, or epoxy
- Expansion ratios as high as 3:1
- Available in flame-retardant material
- SST has the following agency approvals:
  - ABS (American Bureau of Shipping)
  - Lloyd's (Lloyd's Register of Shipping)
- RoHS compliant

### Applications

SST provides a simple, positive splice-sealing method that offers protection under adverse environmental conditions. Tubing supplied with standard sealant provides water sealing and environmental protection in wet or underground applications. The thermoplastic adhesive not only seals, but also provides mechanical strain relief. The polymer tubing has excellent insulating, abrasion-resistance, and strain-relief properties.

### Installation

Minimum shrink temperature: 90°C [195°F]

Minimum full recovery temperature: 121°C [250°F]

### Operating Temperature Range

-55°C to 110°C
[-67°F to 230°F]

### Specifications/Approvals

| Series | Military | Industry | Agency | Raychem |
|---|---|---|---|---|
| SST | — | — | | RW-2011 |
| SST-FR | AMS-DTL-23053/15*, Classes 1 and 2 | ASTM D 685, nonburning | ABS, Lloyd's | RW-2011 |

*Formerly MIL-I-23053/I5 and MIL-DTL-23053/15.

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## SST/SST-FR (Continued)

### Product Dimensions

| Size† | Standard Nominal Length | Inside Diameter | | Wall Thickness | | Recommended Cable Range for 600-Volt Cable |
|---|---|---|---|---|---|---|
| | | Minimum Expanded as Supplied | Maximum Recovered After Heating | Expanded | Nominal Wall After Heating†† | |
| SST*-03 | 30**, 48 | 0.300 | 0.100 | 0.025 | 0.070 | 18 through 14 AWG |
| SST*-04 | 30**, 48 | 0.400 | 0.150 | 0.025 | 0.070 | 14 through 10 AWG |
| SST*-07 | 48 | 0.750 | 0.220 | 0.030 | 0.095 | 8 through 1 AWG |
| SST*-11 | 48 | 1.100 | 0.375 | 0.040 | 0.120 | 2 through 4/0 AWG |
| SST*-13 | 48 | 1.300 | 0.375 | 0.035 | 0.120 | 2 through 4/0 AWG |
| SST*-15 | 48 | 1.500 | 0.500 | 0.050 | 0.140 | 2/0 AWG through 500 MCM |
| SST*-17 | 48 | 1.700 | 0.500 | 0.045 | 0.140 | 2/0 AWG through 500 MCM |
| SST*-20 | 48 | 2.000 | 0.750 | 0.050 | 0.160 | 350 MCM through 1000 MCM |
| SST*-27 | 48 | 2.700 | 0.900 | 0.050 | 0.160 | 500 MCM through 1250 MCM |
| SST*-30 | 48 | 3.000 | 1.250 | 0.050 | 0.160 | 900 MCM through 1500 MCM |
| SST*-40 | 48 | 4.000 | 1.750 | 0.050 | 0.160 | 1500 MCM through 2500 MCM |
| SST*-45 | 48 | 4.500 | 1.750 | 0.050 | 0.160 | 1500 MCM through 2500 MCM |

†In place of asterisk* substitute length of tubing to be ordered. For example, SST*-11, as the second column indicates, comes in 48-inch lengths, so a 48-inch cut piece of SST tubing would be SST 48-11.
††Wall thickness will be less if tubing recovery is restricted during shrinkage.
**30-inch length standard for /226 coating only.

### Ordering Information

| | | |
|---|---|---|
| Color | Standard | Black |
| | Nonstandard | White, Red, Yellow and Clear (Clear is non-flame-retardant) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. Special order sizes are available upon request. | |
| Standard packaging | See Product Dimensions table. | |
| Ordering description | Specify product name, cut length, size and color (for example, SST 48-07/FR/97). | |

### Part Numbering System

**SST - _ - _ / _ / _ / _ / _**

**"NM"** - no marking

**Color**
Black/leave blank (standard)
White/WHT
Red/RED
Yellow/YLW
Clear/CL (non-flame retardant)

**Adhesive/sealant**
/97 standard with FR
/226 standard with Non FR

**"FR"** - flame-retardant

**Size**

**Length** in inches (48 inch max)

**Family**

**Example: SST-48-07/FR/97/NM**



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# TAT-125

## Adhesive-Lined, Flexible, Polyolefin Tubing

### Product Facts

- 2:1 shrink ratio
- Thin adhesive lining that bonds to outer tubing and surface below, forming a positive environmental seal
- Flexibility of both tubing and adhesive
- Moisture seal that is resistant to bending of the substrate
- Good mechanical strength and cut-through resistance
- Adhesive that bonds to a wide variety of plastics, rubbers, and metals, including polyethylene, neoprene, lead, and steel
- RoHS compliant

### Applications

Seals and protects simple in-line splices, bimetallic joints, and components from fluids, moisture, and corrosion. Repairs damaged wire insulation, especially where flexibility is required. Provides one-step electrical insulation and moisture sealing.

### Installation

Minimum shrink temperature: 95°C [203°F]

Minimum full recovery temperature: 121°C [250°F]

### Operating Temperature Range

-55°C to 110°C
[-67°F to 230°F]

### Specifications/Approvals

| Series | UL* | Military | Raychem |
|---|---|---|---|
| TAT-125 Type 1 (colors) | E85381<br>600 V, 125°C | AMS-DTL-23053/4*, Class 2 | RW-3032 |
| TAT-125 Type 2 (clear) | — | — | RW-3032 |

*Formerly MIL-I-23053/4 and MIL-DTL-23053/4. Sizes 1/4" through 1 1/2" only.

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## TAT-125 (Continued)

### Product Dimensions

| Size | Inside Diameter | | Recovered Wall Thickness** | |
|---|---|---|---|---|
| | Minimum Expanded as Supplied | Maximum Recovered After Heating | Total Wall After Heating (Nominal) | Adhesive Wall After Heating (Nominal) |
| 1/8 | 3.2 [0.125] | 1.6 [0.062] | 0.69 [0.027] | 0.23 [0.009] |
| 3/16 | 4.8 [0.187] | 2.4 [0.093] | 0.71 [0.028] | 0.25 [0.010] |
| 1/4 | 6.4 [0.250] | 3.2 [0.125] | 0.74 [0.029] | 0.13 [0.005] |
| 3/8 | 9.5 [0.375] | 4.8 [0.187] | 0.74 [0.029] | 0.13 [0.005] |
| 1/2 | 12.7 [0.500] | 6.4 [0.250] | 0.76 [0.030] | 0.15 [0.006] |
| 3/4 | 19.1 [0.750] | 9.5 [0.375] | 0.89 [0.035] | 0.15 [0.006] |
| 1 | 25.4 [1.000] | 12.7 [0.500] | 1.07 [0.042] | 0.20 [0.008] |
| 1 1/2 | 38.1 [1.500] | 19.1 [0.750] | 1.19 [0.047] | 0.28 [0.011] |

**Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | | |
|---|---|---|
| Color | Standard | Black (-0) |
| | Nonstandard | White (-9), red (-2), blue (-6), yellow (-4), green (-5), brown (-1), orange (-3), violet (-7), gray (-8), clear (-X , not flame-retardant) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. Special order sizes are available upon request. | |
| Standard packaging | In 1.2-meter [4-foot] lengths. | |
| Ordering description | Specify product name, size and color (for example, TAT-125 1/4-0). | |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# TC Caps

## Semirigid, Flame-Retardant Polyolefin Caps

### Product Facts

- 2.5:1 shrink ratio
- Flame-retardant
- Permanent or temporary method to terminate wires
- Rapid, simple installation
- Rugged protection against abrasion, vibration, and flexing
- RoHS compliant

### Applications

Widely used for wire terminations because of their light weight, small size and durability. Vibration-proof caps are used to insulate and terminate dead-end electrical cables, fixtures, connectors, and other electrical equipment. Also used to protect the ends of wire during storage.

### Installation

Minimum shrink temperature: 110°C [230°F]

Minimum full recovery temperature: 135°C [275°F]

### Operating Temperature Range

-55°C to 135°C
[-67°F to 275°F]

### Specifications/Approvals

| Series | UL | Raychem |
|---|---|---|
| TC Caps | E85381<br>600 V, 125°C | TC Caps SCD |

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## TC Caps (Continued)

### Product Dimensions

| Size | Color | Length | | Inside Diameter | | Recovered Wall Thickness** |
|---|---|---|---|---|---|---|
| | | Nominal Overall as Supplied | Minimum Open Barrel after Recovery* | Minimum Expanded as Supplied | Maximum Recovered After Heating | After Heating |
| TC 4001 | White (-9) | 19.1 (0.750) | 10.2 (0.400) | 1.6 (0.063) | 0.8 (0.030) | 0.51 ± 0.12 (0.020 ± 0.005) |
| TC 4003 | Red (-2) | 25.4 (1.000) | 14.0 (0.550) | 3.2 (0.125) | 1.3 (0.050) | 0.64 ± 0.12 (0.025 ± 0.005) |
| TC 4005 | Gray (-8) | 28.6 (1.125) | 14.0 (0.550) | 6.4 (0.250) | 2.5 (0.100) | 0.69 ± 0.12 (0.027 ± 0.005) |

*See glossary for definition of “barrel”.
**Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | | |
|---|---|---|
| Color | Standard | One color per size per the Product Dimensions table. |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. | |
| Standard packaging | In pieces. | |
| Ordering description | Specify product name, size and color (for example, TC-CAPS-4003-2). | |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# TFE and TFER

## High-Temperature, Chemically Inert, Modified Tubing made of PTFE

### Product Facts

- **Shrink ratio: 1.8:1 (TFE)**
  **3.2:1 (TFER)**
- **High flame-resistance**
- **Excellent chemical resistance**
- **RoHS compliant**

### Applications

Designed to provide insulation and mechanical protection in severe chemical and thermal environments. Used to cover hydraulic hose and couplings to prevent contamination and corrosion. The high mechanical strength and extremely low coefficient of friction make it good for reducing damage to bearing shafts and similar applications.

### Installation

Minimum shrink temperature: 330°C [625°F]

Minimum full recovery temperature: 340°C [644°F]

### Operating Temperature Range

-67°C to 250°C
[-88.6°F to 482°F]

### Specifications/Approvals

| Series | Military | Raychem |
|---|---|---|
| TFE, TFER | AMS-DTL-23053/12*, Classes 3 and 5<br>Def. Stan. 59-97 Type 5A (TFE)<br>Def. Stan. 59-97 Type 5B (TFER) | RW-2055 (TFE)<br>RW-2054 (TFER) |

*Formerly MIL-I-23053/12 and MIL-DTL-23053/12.

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## TFE and TFER (Continued)

### Product Dimensions

#### TFE

| Size | Inside Diameter | | Wall Thickness** |
|---|---|---|---|
| | Minimum Expanded as Supplied | Maximum Recovered After Heating | Nominal Recovered After Heating |
| 30 | 0.8 [0.032] | 0.38 [0.015] | 0.23 [0.009] |
| 28 | 0.9 [0.035] | 0.46 [0.018] | 0.23 [0.009] |
| 26 | 1.1 [0.043] | 0.56 [0.022] | 0.25 [0.010] |
| 24 | 1.2 [0.047] | 0.68 [0.027] | 0.25 [0.010] |
| 22 | 1.4 [0.055] | 0.81 [0.032] | 0.30 [0.012] |
| 20 | 1.5 [0.059] | 0.99 [0.039] | 0.30 [0.012] |
| 18 | 1.9 [0.075] | 1.24 [0.049] | 0.30 [0.012] |
| 16 | 2.3 [0.091] | 1.55 [0.061] | 0.30 [0.012] |
| 14 | 3.0 [0.118] | 1.83 [0.072] | 0.30 [0.012] |
| 12 | 3.8 [0.150] | 2.26 [0.089] | 0.30 [0.012] |
| 10 | 4.8 [0.189] | 2.84 [0.112] | 0.30 [0.012] |
| 8 | 6.1 [0.240] | 3.58 [0.141] | 0.38 [0.015] |
| 6 | 7.6 [0.299] | 4.52 [0.178] | 0.38 [0.015] |
| 4 | 9.4 [0.370] | 5.69 [0.224] | 0.38 [0.015] |
| 2 | 10.9 [0.429] | 7.06 [0.278] | 0.38 [0.015] |
| 0 | 11.9 [0.469] | 8.81 [0.347] | 0.38 [0.015] |

**Wall thickness will be less if tubing recovery is restricted during shrinkage.

#### TFER

| Size | Inside Diameter | | Wall Thickness** |
|---|---|---|---|
| | Minimum Expanded as Supplied | Maximum Recovered After Heating | Nominal Recovered After Heating |
| 5/64 | 2.0 [0.079] | 0.6 [0.024] | 0.23 [0.009] |
| 1/8 | 3.2 [0.126] | 1.0 [0.039] | 0.25 [0.010] |
| 1/4 | 6.4 [0.252] | 1.6 [0.063] | 0.30 [0.012] |
| 3/8 | 9.5 [0.374] | 2.4 [0.095] | 0.30 [0.012] |
| 1/2 | 12.7 [0.500] | 3.7 [0.146] | 0.38 [0.015] |
| 5/8 | 15.9 [0.626] | 4.5 [0.177] | 0.38 [0.015] |
| 3/4 | 19.0 [0.748] | 5.7 [0.224] | 0.38 [0.015] |
| 1 | 25.4 [1.000] | 7.1 [0.230] | 0.38 [0.015] |
| 1-1/4 | 32.0 [1.260] | 8.8 [0.347] | 0.38 [0.015] |

**Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | |
|---|---|
| Color | Standard Clear (-X) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. Special order sizes are available upon request. |
| Standard packaging | In 1.2-meter [4-foot] lengths. |
| Ordering description*** | Specify product name, size and color (for example,TFE 22-X). |

***Europe only. For supply to MIL spec., Def Stan and BS add -MS, -DS or -BS to ordering description.



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# Tubing Kits and Mini-Spools

## Smaller Packaging Options for Single Wall and Adhesive-Lined Tubing Products

### Product Facts

- **VERSAFIT and RNF-100 tubing: 2:1 shrink ratio**
- **DWP-125: 3:1 shrink ratio**
- **ES1000: 4:1 shrink ratio**
- **VERSAFIT tubing's low full recovery temperature reduces installation time and the risk of damage to temperature-sensitive components**
- **RNF-100 offers excellent physical, chemical, and electrical properties that meet or exceed commercial, industrial and military standards for highly reliable, general purpose tubing**
- **DWP-125 and ES1000 have high-shrink-ratios to allow for insulation and sealing of irregular shapes; few sizes cover a wide range of diameters**
- **RoHS compliant**

### Applications

Single wall VERSAFIT and RNF-100 tubing provide electrical insulation and strain relief of in-line components, electrical connections, wire terminations, and splices. They can be used to bundle wires for flexible light duty harnesses. Also to identify or color code wires, cables, terminals and electronic components.

Adhesive-lined DWP-125 and ES1000 environmentally seal and protect a wide variety of electrical applications, including wire splices, terminations, breakouts and connector-to-cable transitions.

### Installation

Minimum full recovery temperature:

VERSAFIT: 90°C [194°F]

RNF-100: 121°C [250°F]

DWP-125: 125°C [257°F]

ES1000: 135°C [275°F]

### Operating Temperature Range

VERSAFIT and RNF-100:
-55°C to 135°C
[-67°F to 275°F]

DWP-125:
-40°C to 110°C
[-40°F to 230°F]

ES1000:
-40°C to 130°C
[-40°F to 266°F]

### Specifications/Approvals

| Series | UL | CSA | Raychem |
|---|---|---|---|
| VERSAFIT | E35586 VW-1<br>600 V, 125°C | LR31929 VW-1<br>600 V, 125°C | RW-3009 |
| RNF-100 | E35586<br>600 V, 125°C | LR31929<br>600 V, 125°C | RT-350 |
| DWP-125 | E35586<br>600 V, 125°C | — | DWP-125 SCD |
| ES1000 | E85381<br>600 V, 125°C | — | RT-1113 |

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## Tubing Kits and Mini-Spools (Continued)

### Single Wall Tubing

**KIT 1 – 2 to 1 Shrink Ratio • Black • 600V, 125°C, UL/CSA VW-1**

**(KIT 1 PN: A55251-000)**

| Expanded I.D. | Quantity (6 Inch Pieces) | Fits Wire Gauge Size | Refill Part Number |
|---|---|---|---|
| VERSAFIT-3/16" | 30 | 18 – 14 AWG | D76139-000 |
| VERSAFIT-1/4" | 28 | 12 – 10 AWG | F37063-000 |
| VERSAFIT-3/8" | 24 | 8 AWG | D27573-000 |
| VERSAFIT-1/2" | 20 | 6 –3 AWG | C02462-000 |
| VERSAFIT-3/4" | 14 | 2 – 1/0 AWG | A92664-000 |
| VERSAFIT-1" | 10 | 2/0 – 4/0 AWG | C21270-000 |

**KIT 2 – 2 to 1 Shrink Ratio • 7 Colors** • 600V, 125°C, UL/CSA VW-1 (except clear)**

**(KIT 2 PN: D54859-000)**

| Expanded I.D. | Quantity (6 Inch Pieces) | Fits Wire Gauge Size | Refill Part Number |
|---|---|---|---|
| VERSAFIT-3/32" | 35 | 18 AWG | E31091-000 |
| VERSAFIT-1/8" | 28 | 16 AWG | 349256-000 |
| VERSAFIT-3/16" | 21 | 14 AWG | C53800-000 |
| VERSAFIT-1/4" | 21 | 12 – 10 AWG | C87605-000 |
| VERSAFIT-3/8" | 14 | 8 AWG | A82691-000 |
| VERSAFIT-1/2" | 14 | 6 – 3 AWG | E10896-000 |

**Clear tubing in Kit 2 and Kit 2 Refills is RNF-100.

### Adhesive-Lined Tubing

**KIT 3 – Black/White/Red/Clear • 600V, 125°C, UL**

**(KIT 3 PN: E42160-000)**

| Expanded I.D. | Quantity (6 Inch Pieces) | Fits Wire Gauge Size | | Refill Part Number |
|---|---|---|---|---|
| DWP-125-1/8" | 25 | 20 – 16 AWG | (3 to 1 Shrink Ratio) | D14889-000 |
| DWP-125-3/16" | 25 | 14 –10 AWG | (3 to 1 Shrink Ratio) | E87367-000 |
| DWP-125-1/4" | 24 | 12 –10 AWG | (3 to 1 Shrink Ratio) | F91864-000 |
| DWP-125-1/2" | 10 | 6 –3 AWG | (3 to 1 Shrink Ratio) | F41454-000 |
| DWP-125-3/4" | 5 | 2 – 1/0 AWG | (3 to 1 Shrink Ratio) | C67617-000 |
| DWP-125-1" | 3 | 2/0 – 4/0 AWG | (3 to 1 Shrink Ratio) | F66623-000 |
| ES1000-NO.1 | 6 | 16 – 12 AWG | (4 to 1 Shrink Ratio) | |
| ES1000-NO.2 | 5 | 12 – 10 AWG | (4 to 1 Shrink Ratio) | |
| ES1000-NO.3 | 5 | 10 – 8 AWG | (4 to 1 Shrink Ratio) | |
| ES1000-NO.4 | 3 | 6 –3 AWG | (4 to 1 Shrink Ratio) | |

KITS 1, 2 and 3 are comprised of a durable six section plastic box with hinged lid. Inside the lid are product selection guidelines. Ask your Sales Representative about KIT 4 and KIT 6, our Economy Tubing Kits in a reclosable plastic bag, also used on "point of sale" racks. Here are Part Numbers for those Kits and their content:
KIT 4: E32151-000 (Three pieces each of 3/16", 1/4", 3/8", 1/2", 3/4" and 1" Black tubing in 6 inch pieces)
KIT 6: C72402-000 (Three pieces each of 3/64", 1/16", 3/32" and 1/8" Black tubing in 6 inch pieces)

### VERSAFIT MINI-SPOOLS

**2 to 1 Shrink Ratio • Black • 600V, 125°C, UL/CSA VW-1**

| Expanded I.D. | Quantity (Feet) | Part Number |
|---|---|---|
| VERSAFIT-3/64" | 100 | C16404-000 |
| VERSAFIT-1/16" | 75 | E40870-000 |
| VERSAFIT-3/32 | 65 | D70981-000 |
| VERSAFIT-1/8" | 60 | C17600-000 |
| VERSAFIT-3/16" | 50 | F27135-000 |
| VERSAFIT-1/4" | 40 | F64479-000 |
| VERSAFIT-3/8" | 35 | D57591-000 |
| VERSAFIT-1/2" | 30 | E37316-000 |
| VERSAFIT-3/4" | 25 | 449582-000 |
| VERSAFIT-1" | 15 | F27156-000 |

VERSAFIT is a very flexible, highly flame-retardant polyolefin tubing, 90°C full recovery temperature, good fluid resistance with a UL 224/CSA VW-1 flammability rating.

### RNF-100 MINI-SPOOLS

**2 to 1 Shrink Ratio • Black • 600V, 125°C, UL/CSA**

| Expanded I.D. | Quantity (Feet) | Part Number |
|---|---|---|
| RNF-100-3/64" | 100 | D00409-000 |
| RNF-100-1/16" | 75 | A66551-000 |
| RNF-100-3/32 | 65 | D42391-000 |
| RNF-100-1/8" | 60 | F56629-000 |
| RNF-100-3/16" | 50 | E77288-000 |
| RNF-100-1/4" | 40 | F75818-000 |
| RNF-100-3/8" | 35 | D12330-000 |
| RNF-100-1/2" | 30 | A81736-000 |
| RNF-100-3/4" | 25 | E40866-000 |
| RNF-100-1" | 15 | E62131-000 |

RNF-100 is a flexible, flame-retardant polyolefin tubing, 121°C full recovery temperature, excellent fluid resistance with a UL 224/CSA All Tubing flammability rating.



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# TUGA-GP

## Shiny, Non-Flame-Retardant, Polyolefin Tubing

### Product Facts

- 2:1 shrink ratio
- Can be easily hot-stamped
- Bright, shiny surface
- Semiflexible, non-flame-retardant, halogen-free
- Conforms to substrates more uniformly and with less longitudinal change than most PVC-based materials
- RoHS compliant

### Applications

TUGA-GP is a commercial grade tubing for general applications where a flame-retardant product is not needed but where electrical insulation and mechanical performance are important. TUGA-GP makes an attractive covering for many automotive, appliance, and consumer-goods applications.

### Installation

Minimum shrink temperature: 85°C [85°F]

Minimum full recovery temperature: 110°C [230°F]

### Operating Temperature Range

-55°C to 125°C
[-67°F to 257°F]

### Specifications/Approvals

| Series | Raychem |
|---|---|
| TUGA-GP | RW-2201 |

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | | ■ | |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## TUGA-GP (Continued)

### Product Dimensions

| Size | Inside Diameter | | Wall Thickness* |
|---|---|---|---|
| | Minimum Expanded as Supplied | Maximum Recovered After Heating | Nominal After Heating |
| 1.2/0.6 | 1.2 [0.046] | 0.6 [0.023] | 0.4 [0.016] |
| 1.6/0.8 | 1.6 [0.062] | 0.8 [0.031] | 0.4 [0.016] |
| 2.4/1.2 | 2.4 [0.093] | 1.2 [0.046] | 0.5 [0.019] |
| 3/1.5 | 3.0 [0.118] | 1.5 [0.059] | 0.5 [0.019] |
| 5/2.5 | 5.0 [0.197] | 2.5 [0.098] | 0.5 [0.019] |
| 6.4/32 | 6.4 [0.250] | 3.2 [0.125] | 0.6 [0.024] |
| 8/4 | 8.0 [0.315] | 4.0 [0.157] | 0.6 [0.024] |
| 9.5/4.8 | 9.5 [0.375] | 4.8 [0.187] | 0.6 [0.024] |
| 11/5.5 | 11.0 [0.433] | 5.5 [0.217] | 0.6 [0.024] |
| 12.7/6.4 | 12.7 [0.500] | 6.4 [0.250] | 0.6 [0.024] |
| 15/7.5 | 15.0 [0.591] | 7.5 [0.295] | 0.8 [0.031] |
| 20/10 | 20.0 [0.787] | 10.0 [0.394] | 0.8 [0.031] |
| 25.4/12.7 | 25.4 [1.000] | 12.7 [0.500] | 0.9 [0.035] |
| 38/19 | 38.0 [1.496] | 19.0 [0.748] | 1.0 [0.039] |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | |
|---|---|
| Color | Standard Black (-0) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. Special order sizes available upon request. |
| Standard packaging | On spools. |
| Ordering description | Specify product name, size and color (for example, TUGA 3/1.5-0). |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

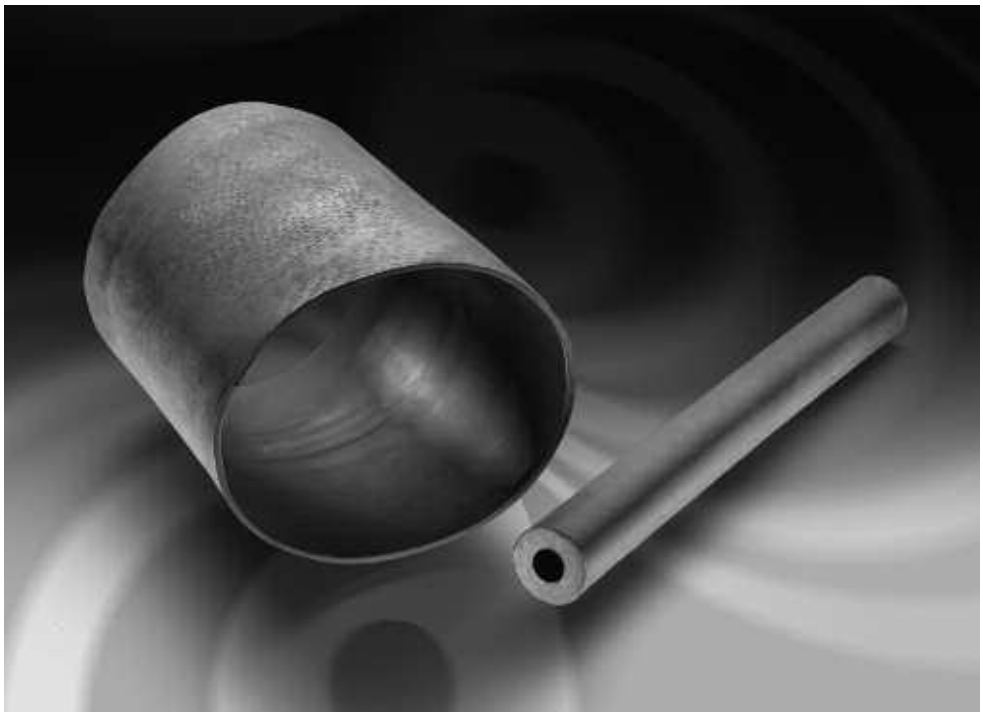
Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# URHT

## Ultra-High-Ratio, Flame-Retardant, Polyolefin Heat-Shrinkable Tubing

### Product Facts

- Shrink ratios as high as 8:1
- Specially formulated for thick wall insulation, strain relief and abrasion protection
- Flame-retardant passing ASTM D 635
- Excellent performance in both hot and cold environments
- Optional factory applied adhesive provides watertight environmental sealing in wet and corrosive locations
- RoHS compliant



### Applications

Ultra-high-shrink-ratio, heat-shrinkable tubing, with expansion ratios as high as 8-to-1, is designed to conform to odd shapes and shrink over large transitions, allowing for the repair and sealing of cable connectors and equipment. Cable harnesses can be repaired and released without disassembly. This product can be used to seal the back end of a connector or simply repair a damaged outer insulation of a cable or wire.

URHT tubing is available with or without a hot melt adhesive lining.

### Installation

Minimum shrink temperature: 135°C [275°F]

Minimum full recovery temperature: 150°C [302°F]

### Operating Temperature Range

-55°C to 135°C
[-67°F to 275°F]

### Specifications/Approvals

| Series | Military | Raychem |
|---|---|---|
| URHT | SAE-AS81765/1, Type II* | URHT SCD |

*heat-shrinkable, crosslinked, flexible polyolefin

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## URHT (Continued)

### Product Dimensions

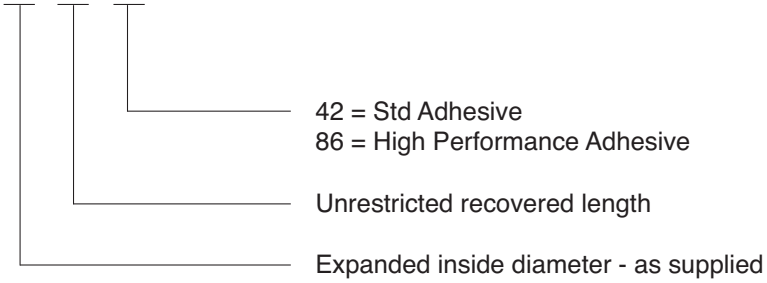
| Size | Inside Diameter | | Wall Thickness | |
|---|---|---|---|---|
| | Minimum Expanded as Supplied | Maximum Recovered After Heating | Nominal Recovered After Heating | Unrestricted Full Recovered Length ± 6.35 (.250) |
| URHT-200 | 50.80 (2.000) | 5.84 (0.230) | 3.56 (0.140) | 7.62, 101.60, 152.40, 254.00 (3, 4, 6, 10) |
| URHT-300 | 76.20 (3.000) | 8.64 (0.340) | 3.56 (0.140) | 7.62, 101.60, 152.40, 254.00 (3, 4, 6, 10) |

### Ordering Information

| | | |
|---|---|---|
| Color | Standard | Black (-0) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. | |
| Standard packaging | In pieces. | |
| Ordering description | Specify product name, size, cut length and color (for example, URHT-200-10-0). | |

### Part Numbering System

**URHT - _ / _ / _**






9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# Versafit

## Highly Flame-Retardant, Very Flexible, Low-Shrink-Temperature, Polyolefin Tubing

### Product Facts

- 2:1 shrink ratio
- Low shrink temperature reduces installation time and the risk of damage to temperature-sensitive components
- Very flexible; doesn't easily wrinkle when bent
- Highly flame-retardant
- Hot stamps extremely well
- Higher temperature rating, better thermal stability, and higher resistance to physical abuse than noncrosslinked materials
- Free of polybrominated biphenyls (PBBs) and polybrominated biphenyl oxides and ethers (PBBOs and PBBEs), which are classified as environmentally hazardous substances
- RoHS compliant

### Applications

Cost-effective choice for many commercial and military applications; electrically insulates and protects in-line components, disconnect terminals, and splices. Bundles wires for very flexible light-duty harnesses. Strain-relieves electrical wire connections for commercial applications. Identifies or color-codes wires, cables, terminals, and components.

### Installation

Minimum shrink temperature: 70°C [158°F]

Minimum full recovery temperature: 90°C [194°F]

### Operating Temperature Range

-55°C to 135°C
[-67°F to 275°F]

### Specifications/Approvals

| Series | UL | CSA | Military | Raychem |
|---|---|---|---|---|
| Versafit | E35586 VW-1<br>600 V, 125°C | LR31929 VW-1<br>600 V, 125°C | AMS-DTL-23053/5*<br>Classes 1 & 3 | RW-3009 |

*Formerly MIL-I-23053/5 and MIL-DTL-23053/5.

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## Versafit (Continued)

### Product Dimensions

| Size | Inside Diameter | | Recovered Wall Thickness** |
|---|---|---|---|
| | Expanded as Supplied | Maximum Recovered After Heating | After Heating |
| 3/64 | 1.63 ± 0.2 [0.064 ± 0.008] | 0.6 [0.023] | 0.40 ± 0.08 [0.016 ± 0.003] |
| 1/16 | 1.85 ± 0.2 [0.073 ± 0.008] | 0.8 [0.031] | 0.43 ± 0.08 [0.017 ± 0.003] |
| 3/32 | 2.79 ± 0.2 [0.110 ± 0.008] | 1.2 [0.046] | 0.51 ± 0.08 [0.020 ± 0.003] |
| 1/8 | 3.43 ± 0.2 [0.135 ± 0.008] | 1.6 [0.062] | 0.51 ± 0.08 [0.020 ± 0.003] |
| 3/16 | 5.21 ± 0.3 [0.205 ± 0.010] | 2.4 [0.093] | 0.51 ± 0.08 [0.020 ± 0.003] |
| 1/4 | 7.11 ± 0.3 [0.280 ± 0.010] | 3.2 [0.125] | 0.64 ± 0.08 [0.025 ± 0.003] |
| 3/8 | 10.16 ± 0.4 [0.400 ± 0.015] | 4.8 [0.187] | 0.64 ± 0.08 [0.025 ± 0.003] |
| 1/2 | 13.72 ± 0.4 [0.540 ± 0.015] | 6.4 [0.250] | 0.64 ± 0.08 [0.025 ± 0.003] |
| 5/8*** | 16.90 ± 0.4 [0.665 ± 0.015] | 8.0 [0.315] | 0.76 ± 0.08 [0.030 ± 0.003] |
| 3/4 | 20.45 ± 0.4 [0.805 ± 0.015] | 9.5 [0.375] | 0.76 ± 0.08 [0.030 ± 0.003] |
| 1 | 26.80 ± 0.4 [1.055 ± 0.015] | 12.7 [0.500] | 0.89 ± 0.12 [0.035 ± 0.005] |
| 1 1/4*** | 33.40 ± 0.7 [1.315 ± 0.025] | 15.9 [0.625] | 1.02 ± 0.15 [0.040 ± 0.006] |
| 1 1/2 | 39.88 ± 0.8 [1.570 ± 0.030] | 19.1 [0.750] | 1.02 ± 0.15 [0.040 ± 0.006] |
| 2 | 52.83 ± 1.0 [2.080 ± 0.040] | 25.4 [1.000] | 1.14 ± 0.16 [0.045 ± 0.007] |
| 3 | 78.49 ± 1.0 [3.090 ± 0.040] | 38.1 [1.500] | 1.27 ± 0.20 [0.050 ± 0.008] |
| 4 | 104.14 ± 1.3 [4.100 ± 0.050] | 50.8 [2.000] | 1.40 ± 0.23 [0.055 ± 0.009] |

**Wall thickness will be less if tubing recovery is restricted during shrinkage.
***Nonstandard size; available by special order only.

### Ordering Information

| | | |
|---|---|---|
| Color | Standard | Black (-0), white (-9), red (-2), blue (-6), yellow (-4) |
| | Nonstandard | Brown (-1), orange (-3), green (-5), violet (-7), gray (-8) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. Special order sizes are available upon request. | |
| Standard packaging**** | On spools. | |
| Ordering description***** | Specify product name, size and color (for example, Versafit 1/4-0). | |

****Available in the convenient Mini-Spool packaging/dispensing system, for sizes 3/64” up to 1” (black only).
*****Europe only. For supply to MIL, Def Stan and BS add -MS, -DS or -BS to ordering description.



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

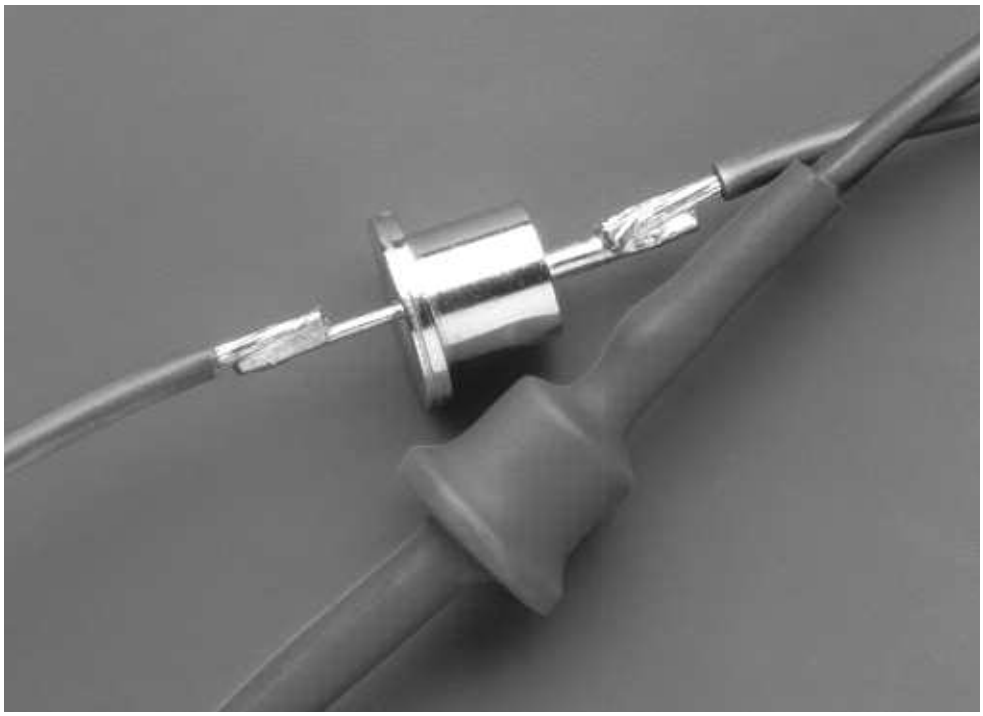
Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# Versafit-3X

**Very Flexible, High-Shrink-Ratio, Highly Flame-Retardant, Low-Shrink-Temperature, Polyolefin Tubing**

## Product Facts

- **Highly flame-retardant**
- **3:1 shrink ratio easily accommodates irregular shapes; few sizes cover a wide range of diameters**
- **Low shrink temperature reduces installation time and the risk of damage to temperature-sensitive components**
- **Free of polybrominated biphenyls (PBBs) and polybrominated biphenyl oxides and ethers (PBBOs and PBBEs) which are classified as environmentally hazardous substances**
- **RoHS compliant**



### Applications

Provides electrical insulation and strain relief of in-line components, electrical connections, wire terminations, and splices. Bundles wires for flexible light duty harnesses. Identifies or color codes wires, cables, terminals and electrical and electronic components.

### Installation

Minimum shrink temperature: 70°C [158°F]

Minimum full recovery temperature: 90°C [194°F]

### Operating Temperature Range

-55°C to 135°C
[-67°F to 275°F]

### Specifications/Approvals

| Series | UL | CSA | Raychem |
|---|---|---|---|
| Versafit-3X | E35586 VW-1<br>600 V, 125°C | LR31929 VW-1<br>600 V, 125°C | RW-3009 |

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## Versafit-3X (Continued)

### Product Dimensions

| Size | Inside Diameter | | Recovered Wall Thickness* |
|---|---|---|---|
| | Minimum Expanded as Supplied | Maximum Recovered After Heating | After Heating |
| 1/8 | 3.2 (0.125) | 1.1 (0.042) | 0.58 ± 0.08 (0.023 ± 0.003) |
| 1/4 | 6.4 (0.250) | 2.2 (0.083) | 0.58 ± 0.08 (0.023 ± 0.003) |
| 3/8 | 9.5 (0.375) | 3.2 (0.125) | 0.61 ± 0.08 (0.024 ± 0.003) |
| 1/2 | 12.7 (0.500) | 4.3 (0.166) | 0.61 ± 0.08 (0.024 ± 0.003) |
| 3/4 | 19.1 (0.750) | 6.4 (0.250) | 0.61 ± 0.08 (0.024 ± 0.003) |
| 1 | 25.4 (1.000) | 8.5 (0.333) | 0.64 ± 0.08 (0.025 ± 0.003) |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | | |
|---|---|---|
| Color | Standard | Black (-0) |
| | Nonstandard | White (-9), red (-2), blue (-6), yellow (-4), green (-5), brown (-1), orange (-3), violet (-7), gray (-8) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. | |
| Standard packaging | On spools. | |
| Ordering description | Specify product name, size and color (for example, Versafit-3X-1/4-0). | |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

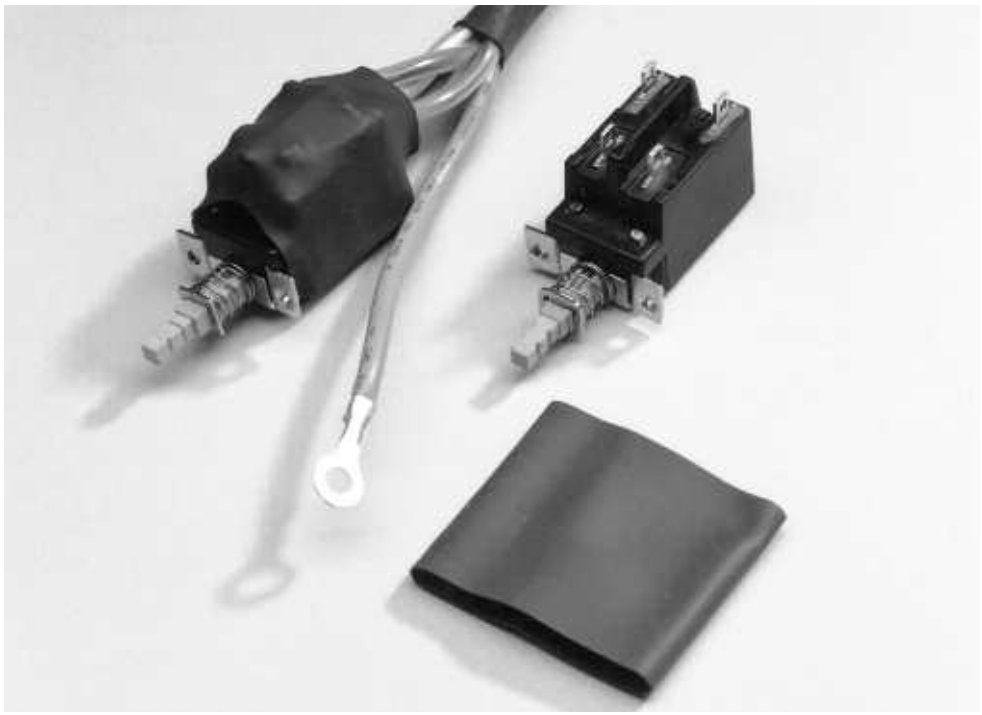
Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# Versafit V2

**Highly Flame-Retardant, Very Flexible, Low-Shrink-Temperature, Polyolefin Tubing**

## Product Facts

- **2:1 shrink ratio**
- **Low shrink temperature reduces installation time and the risk of damage to temperature-sensitive components**
- **Very flexible; doesn't easily wrinkle when bent**
- **Highly flame-retardant**
- **Hot stamps extremely well**
- **Higher temperature rating, better thermal stability, and higher resistance to physical abuse than noncrosslinked materials**
- **Free of polybrominated biphenyls (PBBs) and polybrominated biphenyl oxides and ethers (PBBOs and PBBEs), which are classified as environmentally hazardous substances**
- **RoHS compliant**



### Applications

Cost-effective choice for many commercial applications; electrically insulates and protects in-line components, disconnect terminals, and splices. Bundles wires for very flexible light-duty harnesses. Strain-relieves electrical wire connections. Identifies or color-codes wires, cables, terminals, and components.

### Installation

Minimum shrink temperature: 70°C [158°F]

Minimum full recovery temperature: 90°C [194°F]

### Operating Temperature Range

-30°C to 125°C [-22°F to 257°F]

### Specifications/Approvals

| Series | UL | CSA | Raychem |
|---|---|---|---|
| Versafit V2 | E35586 VW-1<br>600 V, 125°C | LR31929 VW-1<br>600 V, 125°C | RW-3023 |

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## Versafit V2 (Continued)

### Product Dimensions

| Size | Inside Diameter | | Wall Thickness | |
|---|---|---|---|---|
| | Expanded as Supplied | Maximum Recovered After Heating | Expanded as Supplied (Nominal) | Recovered* After Heating (Minimum) |
| 1.0 | 1.5 ± 0.2 [0.059 ± 0.008] | 0.50 [0.020] | 0.20 [0.008] | 0.33 [0.013] |
| 1.5 | 2.1 ± 0.2 [0.075 ± 0.008] | 0.75 [0.030] | 0.20 [0.008] | 0.35 [0.014] |
| 2.0 | 2.6 ± 0.2 [0.102 ± 0.008] | 1.00 [0.039] | 0.25 [0.010] | 0.43 [0.017] |
| 2.5 | 3.1 ± 0.2 [0.122 ± 0.008] | 1.25 [0.049] | 0.25 [0.010] | 0.43 [0.017] |
| 3.0 | 3.6 ± 0.2 [0.142 ± 0.008] | 1.50 [0.059] | 0.25 [0.010] | 0.43 [0.017] |
| 3.5 | 4.1 ± 0.3 [0.161 ± 0.012] | 1.75 [0.069] | 0.25 [0.010] | 0.43 [0.017] |
| 4.0 | 4.6 ± 0.3 [0.181 ± 0.012] | 2.00 [0.079] | 0.25 [0.010] | 0.43 [0.017] |
| 5.0 | 5.6 ± 0.3 [0.221 ± 0.012] | 2.50 [0.098] | 0.30 [0.012] | 0.56 [0.022] |
| 6.0 | 6.6 ± 0.3 [0.260 ± 0.012] | 3.00 [0.118] | 0.30 [0.012] | 0.56 [0.022] |
| 7.0 | 7.6 ± 0.3 [0.299 ± 0.012] | 3.50 [0.138] | 0.30 [0.012] | 0.56 [0.022] |
| 8.0 | 8.6 ± 0.3 [0.339 ± 0.012] | 4.00 [0.158] | 0.30 [0.012] | 0.56 [0.022] |
| 9.0 | 9.6 ± 0.3 [0.378 ± 0.012] | 4.50 [0.177] | 0.30 [0.012] | 0.56 [0.022] |
| 10.0 | 10.4 ± 0.3 [0.409 ± 0.012] | 5.00 [0.197] | 0.30 [0.012] | 0.56 [0.022] |
| 11.0 | 11.4 ± 0.3 [0.449 ± 0.012] | 5.50 [0.217] | 0.30 [0.012] | 0.56 [0.022] |
| 12.0 | 12.7 ± 0.3 [0.500 ± 0.012] | 6.00 [0.236] | 0.30 [0.012] | 0.56 [0.022] |
| 13.0 | 13.5 ± 0.3 [0.532 ± 0.012] | 6.50 [0.256] | 0.35 [0.014] | 0.66 [0.026] |
| 14.0 | 14.4 ± 0.4 [0.567 ± 0.016] | 7.00 [0.276] | 0.35 [0.014] | 0.68 [0.027] |
| 15.0 | 15.7 ± 0.4 [0.618 ± 0.016] | 7.50 [0.295] | 0.35 [0.014] | 0.68 [0.027] |
| 16.0 | 16.9 ± 0.4 [0.665 ± 0.016] | 8.00 [0.315] | 0.35 [0.014] | 0.68 [0.027] |
| 18.0 | 19.0 ± 0.4 [0.748 ± 0.016] | 9.00 [0.354] | 0.40 [0.016] | 0.76 [0.030] |
| 20.0 | 21.4 ± 0.4 [0.843 ± 0.016] | 10.00 [0.394] | 0.40 [0.016] | 0.76 [0.030] |
| 22.0 | 23.2 ± 0.4 [0.913 ± 0.016] | 11.00 [0.433] | 0.45 [0.018] | 0.89 [0.035] |
| 25.0 | 26.8 ± 0.4 [1.055 ± 0.016] | 12.50 [0.492] | 0.45 [0.018] | 0.89 [0.035] |
| 27.0 | 28.2 ± 0.5 [1.110 ± 0.020] | 12.50 [0.492] | 0.45 [0.018] | 0.89 [0.035] |
| 28.0 | 30.0 ± 0.5 [1.181 ± 0.020] | 14.00 [0.551] | 0.45 [0.018] | 0.89 [0.035] |
| 30.0 | 32.1 ± 0.5 [1.264 ± 0.020] | 15.00 [0.591] | 0.45 [0.018] | 0.89 [0.035] |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | | |
|---|---|---|
| Color | Standard | Black (-0) |
| | Nonstandard | White (-9), red (-2), blue (-6), yellow (-4), green (-5), orange (-3), violet (-7), brown (-1), gray (-8) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. Special order sizes are available upon request. | |
| Standard packaging | On spools. | |
| Ordering description | Specify product name, size and color (for example, V2-3.0-0). | |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

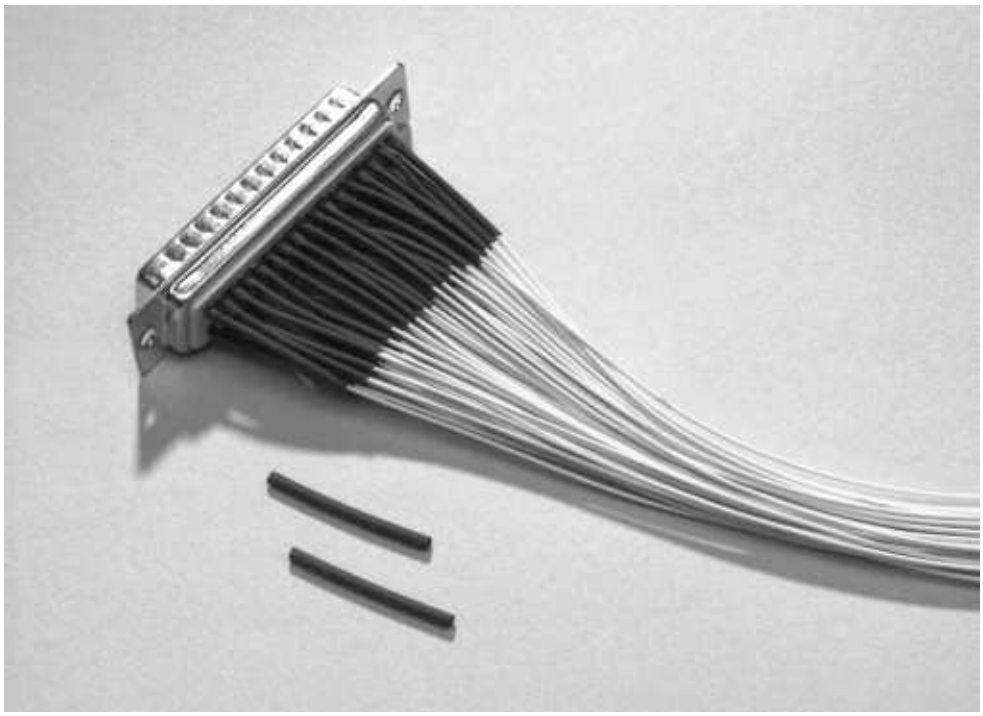
Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# Versafit V4

**Very-Thin-Wall, Very Flexible, Highly Flame-Retardant, Polyolefin Tubing**

## Product Facts

- **2:1 shrink ratio**
- **Very thin wall provides space savings and rapid shrinking**
- **Low shrink temperature further reduces installation time and risk of damage to temperature-sensitive components**
- **Very flexible; doesn't easily wrinkle when bent**
- **Free of polybrominated biphenyls (PBBs) and polybrominated biphenyl oxides and ethers (PBBOs and PBBEs), which are classified as environmentally hazardous substances**
- **RoHS compliant**



### Applications

Typically used where space saving is important. Offers the ability to pack components more closely than is possible with standard tubings. Cost-effective choice for many commercial applications; electrically insulates and protects in-line components, disconnect terminals, and splices. Used for strain relief on high-density connectors.

### Installation

Minimum shrink temperature: 70°C [158°F]

Minimum full recovery temperature: 90°C [194°F]

### Operating Temperature Range

-30°C to 125°C
[-22°F to 257°F]

### Specifications/Approvals

| Series | UL | CSA | Raychem |
|---|---|---|---|
| Versafit V4 | E85381 VW-1<br>300 V, 125°C | LR31929 VW-1<br>150 V, 125°C | RW-3023 |

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## Versafit V4 (Continued)

### Product Dimensions

| Size | Inside Diameter | | Wall Thickness | |
|---|---|---|---|---|
| | Expanded as Supplied | Maximum Recovered After Heating | Expanded as Supplied (Nominal) | Recovered* After Heating (Minimum) |
| 0.6 | 0.95 ± 0.25 [0.037 ± 0.010] | 0.30 [0.012] | 0.10 [0.004] | 0.25 [0.010] |
| 0.8 | 1.20 ± 0.25 [0.047 ± 0.010] | 0.40 [0.016] | 0.10 [0.004] | 0.25 [0.010] |
| 1.0 | 1.40 ± 0.25 [0.055 ± 0.010] | 0.50 [0.020] | 0.10 [0.004] | 0.25 [0.010] |
| 1.5 | 1.90 ± 0.25 [0.075 ± 0.010] | 0.75 [0.030] | 0.10 [0.004] | 0.25 [0.010] |
| 2.0 | 2.30 ± 0.25 [0.091 ± 0.010] | 1.00 [0.039] | 0.10 [0.004] | 0.25 [0.010] |
| 2.5 | 2.80 ± 0.25 [0.110 ± 0.010] | 1.25 [0.049] | 0.15 [0.006] | 0.25 [0.010] |
| 3.0 | 3.30 ± 0.25 [0.130 ± 0.010] | 1.50 [0.059] | 0.15 [0.006] | 0.25 [0.010] |
| 3.5 | 3.80 ± 0.25 [0.150 ± 0.010] | 1.75 [0.069] | 0.15 [0.006] | 0.25 [0.010] |
| 4.0 | 4.40 ± 0.25 [0.173 ± 0.010] | 2.00 [0.079] | 0.15 [0.006] | 0.25 [0.010] |
| 5.0 | 5.50 ± 0.25 [0.217 ± 0.010] | 2.50 [0.098] | 0.15 [0.006] | 0.25 [0.010] |
| 6.0 | 6.50 ± 0.40 [0.256 ± 0.016] | 3.00 [0.118] | 0.15 [0.006] | 0.28 [0.011] |
| 7.0 | 7.50 ± 0.40 [0.295 ± 0.016] | 3.50 [0.138] | 0.15 [0.006] | 0.28 [0.011] |
| 8.0 | 8.50 ± 0.40 [0.335 ± 0.016] | 4.00 [0.158] | 0.15 [0.006] | 0.28 [0.011] |
| 9.0 | 9.50 ± 0.40 [0.374 ± 0.016] | 4.50 [0.177] | 0.15 [0.006] | 0.28 [0.011] |
| 10.0 | 10.50 ± 0.50 [0.413 ± 0.020] | 5.00 [0.197] | 0.15 [0.006] | 0.28 [0.011] |

| Inch Size | Inside Diameter | | Recovered Wall Thickness* |
|---|---|---|---|
| | Minimum Expanded as Supplied | Maximum Recovered After Heating | After Heating |
| 3/64 | 1.2 [0.046] | 0.6 [0.023] | 0.30 ± 0.05 [0.012 ± 0.002] |
| 1/16 | 1.6 [0.062] | 0.8 [0.031] | 0.30 ± 0.05 [0.012 ± 0.002] |
| 3/32 | 2.4 [0.093] | 1.2 [0.046] | 0.30 ± 0.05 [0.012 ± 0.002] |
| 1/8 | 3.2 [0.125] | 1.6 [0.062] | 0.33 ± 0.05 [0.013 ± 0.002] |
| 3/16 | 4.8 [0.187] | 2.4 [0.093] | 0.33 ± 0.05 [0.013 ± 0.002] |
| 1/4 | 6.4 [0.250] | 3.2 [0.125] | 0.36 ± 0.08 [0.014 ± 0.003] |
| 3/8 | 9.5 [0.375] | 4.8 [0.187] | 0.36 ± 0.08 [0.014 ± 0.003] |
| 1/2 | 12.7 [0.500] | 6.4 [0.250] | 0.36 ± 0.08 [0.014 ± 0.003] |
| 3/4 | 19.1 [0.750] | 9.5 [0.375] | 0.43 ± 0.08 [0.017 ± 0.003] |
| 1 | 25.4 [1.000] | 12.7 [0.500] | 0.51 ± 0.08 [0.020 ± 0.003] |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | | |
|---|---|---|
| Color | Standard | Black (-0) |
| | Nonstandard | Other colors available upon request. |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. Special order sizes are available upon request. | |
| Standard packaging | On spools. | |
| Marking | Marked with UL/CSA/-F- legends (metric sizes) or unmarked (inch sizes). | |
| Ordering description | Specify product name, size (mm or in.) and color (for example, V4-1.0-0). | |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

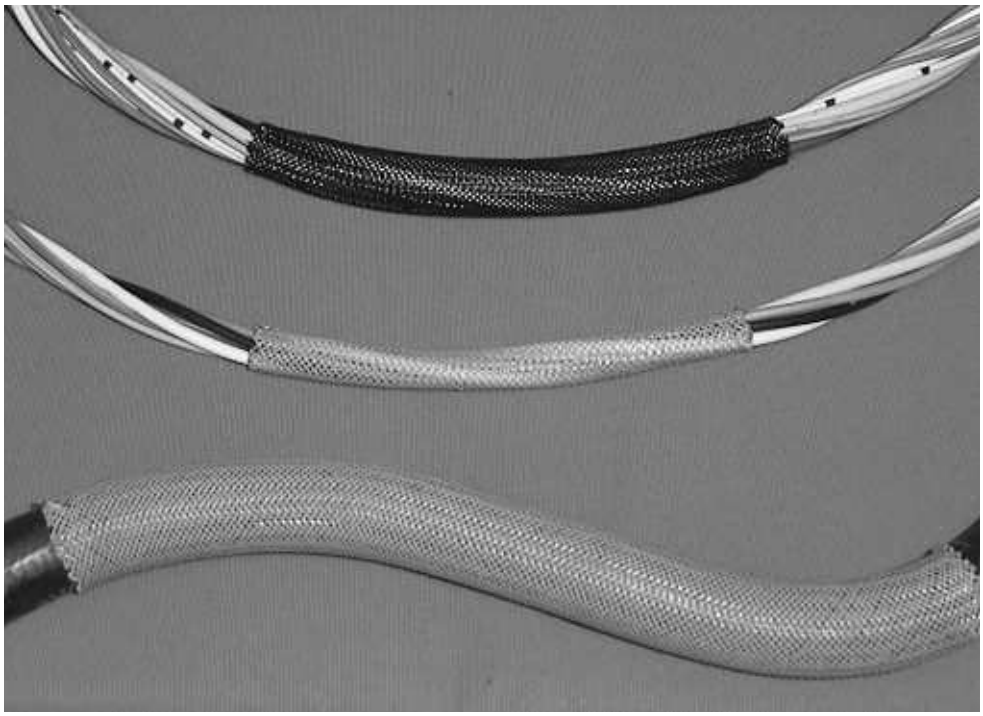
Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# Versaflex

## Expandable, Braided, Polyester Sleeving

### Product Facts

- Excellent abrasion and cut-through resistance
- Lightweight
- Flexible (even at low temperatures)
- Fungus proof
- Not affected by most chemical and solvents, non-hygroscopic
- Versaflex-FR sleeving meets UL VW-1 and is self-extinguishing
- Wide range of sizes available
- RoHS compliant



### Applications

Versaflex sleeving is suited for the mechanical protection of wire harnesses, hoses, and all other applications where exceptional flexibility combined with superior abrasion/cut resistance is required. It also serves as an economical means for wire bundling that will not trap heat or moisture; expanding easily to fit over irregular shapes, then contracting to conform and grip. To prevent fraying, these products should be cut to length using a hot knife.

### Installation

This product is cold applied.

### Operating Temperature Range

-50°C to 150°C
[-58°F to 302°F]

(220°C [-58°F to 302°F] for short periods)

### Specifications/Approvals

| Series | UL | Raychem |
|---|---|---|
| Versaflex-FR | E306976 VW-1, 125°C | |
| Versaflex | — | RK-6772 |

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## Versaflex (Continued)

### Product Dimensions

| Versaflex (metric) | | |
|---|---|---|
| Nominal Size | Size Range | |
| | Minimum | Maximum |
| 3 (0.118) | 1 (0.039) | 5 (0.197) |
| 4 (0.158) | 2 (0.079) | 7 (0.276) |
| 5 (0.197) | 3 (0.118) | 9 (0.354) |
| 6 (0.236) | 4 (0.158) | 12 (0.472) |
| 8 (0.315) | 5 (0.197) | 12 (0.472) |
| 10 (0.394) | 7 (0.276) | 15 (0.591) |
| 12 (0.472) | 8 (0.315) | 17 (0.669) |
| 15 (0.591) | 10 (0.394) | 20 (0.787) |
| 20 (0.787) | 14 (0.551) | 26 (1.024) |
| 25 (0.984) | 18 (0.709) | 34 (1.339) |
| 30 (1.181) | 20 (0.787) | 40 (1.575) |
| 40 (1.575) | 30 (1.181) | 50 (1.969) |
| 50 (1.969) | 40 (1.575) | 60 (2.362) |

| Versaflex (Imperial) | | |
|---|---|---|
| Size | Nominal Size | Size Range |
| 1/8 | 3 (0.118) | 2.4 – 6.4 (0.094 – 0.252) |
| 1/4 | 6 (0.236) | 3.2 – 9.5 (0.125 – 0.375) |
| 3/8 | 10 (0.394) | 4.7 – 16 (0.185 – 0.630) |
| 1/2 | 13 (0.512) | 6.4 – 19 (0.252 – 0.748) |
| 3/4 | 19 (0.748) | 13 – 32 (0.512 – 1.260) |
| 1-1/4 | 32 (1.256) | 19 – 45 (0.748 – 1.772) |
| 1-3/4 | 45 (1.772) | 32 – 70 (1.260 – 2.756) |
| 2 | 51 (2.008) | 38 – 76 (1.496 – 2.992) |

| Versaflex-FR flame retardant, expandable polyester braid | | |
|---|---|---|
| Size | Nominal Size | Size Range |
| 1/8 | 3 (0.118) | 2.4 – 6.4 (0.094 – 0.252) |
| 1/4 | 6 (0.236) | 3.2 – 9.5 (0.125 – 0.375) |
| 3/8 | 10 (0.394) | 4.7 – 16 (0.185 – 0.630) |
| 1/2 | 13 (0.512) | 6.4 – 19 (0.252 – 0.748) |
| 3/4 | 19 (0.748) | 13 – 32 (0.512 – 1.260) |
| 1-1/4 | 32 (1.256) | 19 – 45 (0.748 – 1.772) |
| 1-3/4 | 45 (1.772) | 32 – 70 (1.260 – 2.756) |
| 2 | 51 (2.008) | 38 – 76 (1.496 – 2.992) |

### Ordering Information

| | | |
|---|---|---|
| Color | Standard | Versaflex (metric) : Black (-0) Grey (-8)<br>Versaflex (imperial) : Black (-0)<br>Versaflex-FR : Black with a white X tracer (-09) |
| Standard packaging | On spools. | |
| Ordering description | Specify product name, size and color (for example, VERSAFLEX-FR-1/4-09-SP) | |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# XFFR

## Halogen-Free, Flame-Retardant, Heat-Shrinkable Tubing

### Product Facts

- Emits minimal amounts of toxic or acid gasses during combustion
- Meets performance requirements of MIL-C-24640 and MIL-C-24643 cable jackets
- Resists moisture, fungus, and weathering
- Available in expansion ratios as high as 3:1
- XFFR has the following approvals:
  - ABS (American Bureau of Shipping)
  - Lloyd's (Lloyd's Register of Shipping)
- RoHS compliant

### Applications

XFFR halogen-free tubing can be used for rejacketing and repairing halogen-free cables in any enclosed area where a flame-retardant, halogen-free environment is required. These environments include tunnels, buildings, mass transit vehicles, and ships. When installed with S-1305 tape, the tubing can also be used in applications requiring water sealing and protection from abrasion and corrosion.

### Installation

Minimum shrink temperature: 70°C [158°F]

Minimum full recovery temperature: 121°C [250°F]

### Operating Temperature Range

-55°C to 110°C [-67°F to 230°F]

### Specifications/Approvals

| Series | Military | Industry | Raychem |
|---|---|---|---|
| XFFR | MIL-C-24640<br>MIL-C-24643 | NES 713<br>NES 711 | RW-2016 |

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## XFFR (Continued)

### Product Dimensions

| Size | Inside Diameter | | Recovered Wall Thickness* |
|---|---|---|---|
| | Minimum Expanded as Supplied | Maximum Recovered After Heating | After Heating (Nominal) |
| XFFR-03 | 7.62 [0.300] | 2.54 [0.100] | 2.03 [0.080] |
| XFFR-04 | 10.16 [0.400] | 3.81 [0.150] | 2.03 [0.080] |
| XFFR-07 | 19.05 [0.750] | 5.59 [0.220] | 2.03 [0.080] |
| XFFR-11 | 27.94 [1.100] | 9.52 [0.375] | 2.67 [0.105] |
| XFFR-15 | 38.10 [1.500] | 12.70 [0.500] | 3.05 [0.120] |
| XFFR-20 | 50.80 [2.000] | 19.05 [0.750] | 3.05 [0.120] |
| XFFR-30 | 76.20 [3.000] | 31.75 [1.250] | 4.06 [0.160] |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | | |
|---|---|---|
| Color | Standard | Black (-0) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. | |
| Standard packaging | 1.2-meter [4-foot] or 7.5-meter [25-foot] lengths. | |

### Part Numbering System

**XFFR - 03 X 4 / NM**

- **"NM"** - no mark
- **Length** in feet (4 feet standard)
- **Size**
- **Family**



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# ZH2

**Flexible, Highly Flame-Retardant, Low Recovery Temperature, ZEROHAL Polyolefin Tubing**

## Product Facts

- **2:1 shrink ratio**
- **Highly flame-retardant; UL/CSA VW-1 flammability rating**
- **Environmentally friendly tubing essentially free of halogens**
- **Emits minimal amounts of toxic or acid gasses when burned**
- **RoHS compliant**

### Applications

Electrical insulation and strain relief of connections and terminations in computers, appliances, and other commercial electronic products. Jacketing and bundling of light duty harnesses in rail and mass transit vehicles, buildings, and other enclosed areas where emission of toxic gasses from burning materials containing halogens is very undesirable.

### Installation

Minimum shrink temperature: 70°C [158°F]

Minimum full recovery temperature: 90°C [194°F]

### Operating Temperature Range

-30°C to 125°C
[-22°F to 257°F]

### Specifications/Approvals

| Series | UL | CSA | Raychem |
|---|---|---|---|
| ZH2 | E35586 VW-1<br>600 V, 125°C | LR31929 VW-1<br>600 V, 125°C | RW-3036 |

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## ZH2 (Continued)

### Product Dimensions

| Size | Inside Diameter | | Wall Thickness | |
|---|---|---|---|---|
| | Expanded as Supplied | Maximum Recovered After Heating | Expanded as Supplied (Nominal) | Recovered* After Heating (Minimum) |
| 0.8 | 1.2 ± 0.2 [0.047 ± 0.008] | 0.40 [0.016] | 0.20 [0.008] | 0.33 [0.013] |
| 1.0 | 1.5 ± 0.2 [0.059 ± 0.008] | 0.50 [0.020] | 0.20 [0.008] | 0.33 [0.013] |
| 1.5 | 2.1 ± 0.2 [0.075 ± 0.008] | 0.75 [0.030] | 0.20 [0.008] | 0.34 [0.013] |
| 2.0 | 2.6 ± 0.2 [0.102 ± 0.008] | 1.00 [0.039] | 0.25 [0.010] | 0.43 [0.017] |
| 2.5 | 3.1 ± 0.2 [0.122 ± 0.008] | 1.25 [0.049] | 0.25 [0.010] | 0.43 [0.017] |
| 3.0 | 3.6 ± 0.2 [0.142 ± 0.008] | 1.50 [0.059] | 0.25 [0.010] | 0.43 [0.017] |
| 3.5 | 4.1 ± 0.3 [0.161 ± 0.012] | 1.75 [0.069] | 0.25 [0.010] | 0.43 [0.017] |
| 4.0 | 4.6 ± 0.3 [0.181 ± 0.012] | 2.00 [0.079] | 0.25 [0.010] | 0.43 [0.017] |
| 5.0 | 5.6 ± 0.3 [0.221 ± 0.012] | 2.50 [0.098] | 0.30 [0.012] | 0.56 [0.022] |
| 6.0 | 6.6 ± 0.3 [0.260 ± 0.012] | 3.00 [0.118] | 0.30 [0.012] | 0.56 [0.022] |
| 7.0 | 7.6 ± 0.3 [0.299 ± 0.012] | 3.50 [0.138] | 0.30 [0.012] | 0.56 [0.022] |
| 8.0 | 8.6 ± 0.3 [0.339 ± 0.012] | 4.00 [0.158] | 0.30 [0.012] | 0.56 [0.022] |
| 9.0 | 9.6 ± 0.3 [0.378 ± 0.012] | 4.50 [0.177] | 0.30 [0.012] | 0.56 [0.022] |
| 10.0 | 10.4 ± 0.3 [0.409 ± 0.012] | 5.00 [0.197] | 0.30 [0.012] | 0.56 [0.022] |
| 11.0 | 11.4 ± 0.3 [0.449 ± 0.012] | 5.50 [0.217] | 0.30 [0.012] | 0.56 [0.022] |
| 12.0 | 12.7 ± 0.3 [0.500 ± 0.012] | 6.00 [0.236] | 0.30 [0.012] | 0.56 [0.022] |
| 13.0 | 13.5 ± 0.3 [0.532 ± 0.012] | 6.50 [0.256] | 0.35 [0.014] | 0.66 [0.026] |
| 14.0 | 14.4 ± 0.4 [0.567 ± 0.016] | 7.00 [0.276] | 0.35 [0.014] | 0.68 [0.027] |
| 15.0 | 15.7 ± 0.4 [0.618 ± 0.016] | 7.50 [0.295] | 0.35 [0.014] | 0.68 [0.027] |
| 16.0 | 16.9 ± 0.4 [0.665 ± 0.016] | 8.00 [0.315] | 0.35 [0.014] | 0.68 [0.027] |
| 18.0 | 19.0 ± 0.4 [0.748 ± 0.016] | 9.00 [0.354] | 0.40 [0.016] | 0.76 [0.030] |
| 20.0 | 21.4 ± 0.4 [0.843 ± 0.016] | 10.00 [0.394] | 0.40 [0.016] | 0.76 [0.030] |
| 22.0 | 23.2 ± 0.4 [0.913 ± 0.016] | 11.00 [0.433] | 0.45 [0.018] | 0.89 [0.035] |
| 25.0 | 26.8 ± 0.4 [1.055 ± 0.016] | 12.50 [0.452] | 0.45 [0.018] | 0.89 [0.035] |
| 27.0 | 28.2 ± 0.5 [1.110 ± 0.020] | 12.50 [0.452] | 0.45 [0.018] | 0.89 [0.035] |
| 28.0 | 30.0 ± 0.5 [1.181 ± 0.020] | 14.00 [0.551] | 0.45 [0.018] | 0.89 [0.035] |
| 30.0 | 32.1 ± 0.5 [1.264 ± 0.020] | 15.00 [0.591] | 0.45 [0.018] | 0.89 [0.035] |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | |
|---|---|
| Color | Standard Black (-0) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. |
| Standard packaging | On spools. |
| Ordering description | Specify product name, size and color (for example, ZH2-6.0-0). |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# ZH4

**Very-Thin-Wall, Very Flexible, Highly Flame-Retardant, Low Recovery Temperature, ZEROHAL Polyolefin Tubing**

## Product Facts

- **2:1 shrink ratio**
- **Highly flame-retardant; UL/CSA VW-1 flammability rating**
- **Very thin wall provides space savings and rapid shrinking**
- **Low shrink temperature further reduces installation time and risk of damage to temperature-sensitive components**
- **Environmentally friendly tubing essentially free of halogens**
- **Emits minimal amounts of toxic or acid gasses when burned**
- **RoHS compliant**

### Applications

Electrical insulation and protection of in-line components, disconnect terminals, and splices in computers, appliances, and other commercial electronic products. Typically used where space saving is important. Offers the ability to pack components more closely than is possible with standard tubings. Used for strain relief on high-density connectors. Suitable for use in rail and mass transit vehicles, buildings, and other enclosed areas where emission of toxic gasses from burning materials containing halogens is very undesirable.

### Installation

Minimum shrink temperature: 70°C [158°F]

Minimum full recovery temperature: 90°C [194°F]

### Operating Temperature Range

-30°C to 125°C
[-22°F to 257°F]

### Specifications/Approvals

| Series | UL | CSA | Raychem |
|---|---|---|---|
| ZH4 | E85381 VW-1<br>300 V, 125ºC | LR31929 VW-1<br>150 V, 125ºC | RW-3036 |

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## ZH4 (Continued)

### Product Dimensions

| Size | Inside Diameter | | Wall Thickness | |
|---|---|---|---|---|
| | Expanded as Supplied | Maximum Recovered After Heating | Expanded as Supplied (Nominal) | Recovered* After Heating (Minimum) |
| 0.6 | 0.95 ± 0.25 [0.037 ± 0.010] | 0.30 [0.012] | 0.10 [0.004] | 0.25 [0.010] |
| 0.8 | 1.20 ± 0.25 [0.047 ± 0.010] | 0.40 [0.016] | 0.10 [0.004] | 0.25 [0.010] |
| 1.0 | 1.40 ± 0.25 [0.055 ± 0.010] | 0.50 [0.020] | 0.10 [0.004] | 0.25 [0.010] |
| 1.5 | 1.90 ± 0.25 [0.075 ± 0.010] | 0.75 [0.030] | 0.10 [0.004] | 0.25 [0.010] |
| 2.0 | 2.30 ± 0.25 [0.091 ± 0.010] | 1.00 [0.039] | 0.10 [0.004] | 0.25 [0.010] |
| 2.5 | 2.80 ± 0.25 [0.110 ± 0.010] | 1.25 [0.049] | 0.15 [0.006] | 0.25 [0.010] |
| 3.0 | 3.30 ± 0.25 [0.130 ± 0.010] | 1.50 [0.059] | 0.15 [0.006] | 0.25 [0.010] |
| 3.5 | 3.80 ± 0.25 [0.150 ± 0.010] | 1.75 [0.069] | 0.15 [0.006] | 0.25 [0.010] |
| 4.0 | 4.40 ± 0.25 [0.173 ± 0.010] | 2.00 [0.079] | 0.15 [0.006] | 0.25 [0.010] |
| 5.0 | 5.50 ± 0.25 [0.217 ± 0.010] | 2.50 [0.098] | 0.15 [0.006] | 0.25 [0.010] |
| 6.0 | 6.50 ± 0.40 [0.256 ± 0.016] | 3.00 [0.118] | 0.15 [0.006] | 0.28 [0.011] |
| 7.0 | 7.50 ± 0.40 [0.295 ± 0.016] | 3.50 [0.138] | 0.15 [0.006] | 0.28 [0.011] |
| 8.0 | 8.50 ± 0.40 [0.335 ± 0.016] | 4.00 [0.158] | 0.15 [0.006] | 0.28 [0.011] |
| 9.0 | 9.50 ± 0.40 [0.374 ± 0.016] | 4.50 [0.177] | 0.15 [0.006] | 0.28 [0.011] |
| 10.0 | 10.50 ± 0.50 [0.413 ± 0.020] | 5.00 [0.197] | 0.15 [0.006] | 0.28 [0.011] |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | |
|---|---|
| Color | Standard Black (-0) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. |
| Standard packaging | On spools. |
| Ordering description | Specify product name, size and color (for example, ZH4-2.0-0). |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

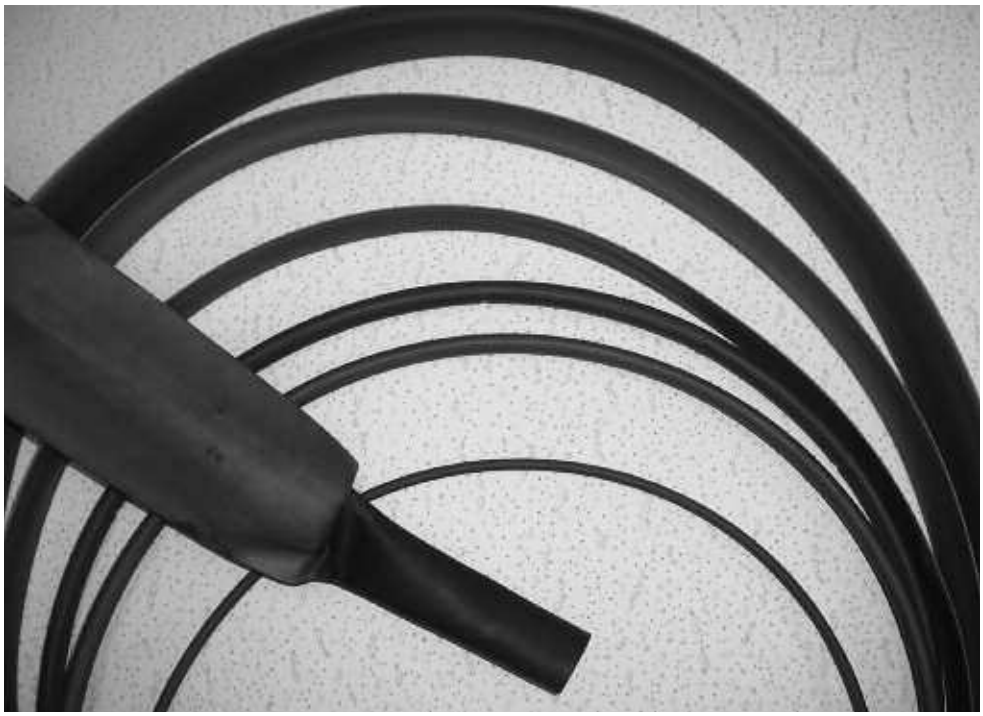
Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# ZH-100

## Flexible, Thin-Wall, Low-Fire-Hazard Tubing

### Product Facts

- 2:1 shrink ratio
- Low smoke emissions
- Flexible, flame-retardant
- No added halogens
- Low evolution of acid gases
- RoHS compliant



### Applications

ZH-100 is a flexible, thin-wall, heat-shrinkable tubing designed for low-fire-hazard applications. ZH-100 contains no added halogens, and exhibits excellent fire safety characteristics combined with low evolution of acid gases, while retaining good mechanical and fluid resistance properties.

### Installation

Minimum shrink temperature: 80°C [176°F]

Minimum full recovery temperature: 120°C [248°F]

### Operating Temperature Range

-30°C to 105°C
[-22°F to 221°F]

### Specifications/Approvals

| Series | Industry | Raychem |
|---|---|---|
| ZH-100 | BR 1326A | RW-2031 |

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## ZH-100 (Continued)

### Product Dimensions

| Size | Inside Diameter | | Recovered Wall Thickness* |
|---|---|---|---|
| | Minimum Expanded as Supplied | Maximum Recovered After Heating | After Heating |
| 1/8 | 3.2 [0.125] | 1.6 [0.062] | 0.50 ± 0.10 [0.019 ± 0.004] |
| 3/16 | 4.8 [0.187] | 2.4 [0.093] | 0.50 ± .0.10 [0.019 ± 0.004] |
| 1/4 | 6.4 [0.250] | 3.2 [0.125] | 0.65 ± 0.15 [0.026 ± 0.006] |
| 3/8 | 9.5 [0.375] | 4.8 [0.187] | 0.65 ± 0.15 [0.026 ± 0.006] |
| 1/2 | 12.7 [0.500] | 6.4 [0.250] | 0.65 ± 0.15 [0.026 ± 0.006] |
| 3/4 | 19.0 [0.750] | 9.5 [0.375] | 0.75 ± 0.15 [0.030 ± 0.006] |
| 1 | 25.4 [1.000] | 12.7 [0.500] | 0.90 ± 0.15 [0.035 ± 0.006] |
| 1 1/2 | 38.0 [1.500] | 19.0 [0.750] | 1.00 ± 0.20 [0.039 ± 0.008] |
| 2 | 51.0 [2.000] | 25.4 [1.000] | 1.15 ± 0.25 [0.045 ± 0.010] |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | |
|---|---|
| Color | Standard Black (-0) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. Special order sizes are available upon request. |
| Standard packaging | On spools. |
| Ordering description | Specify product name, size and color (for example, ZH-100 1/8-0). |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

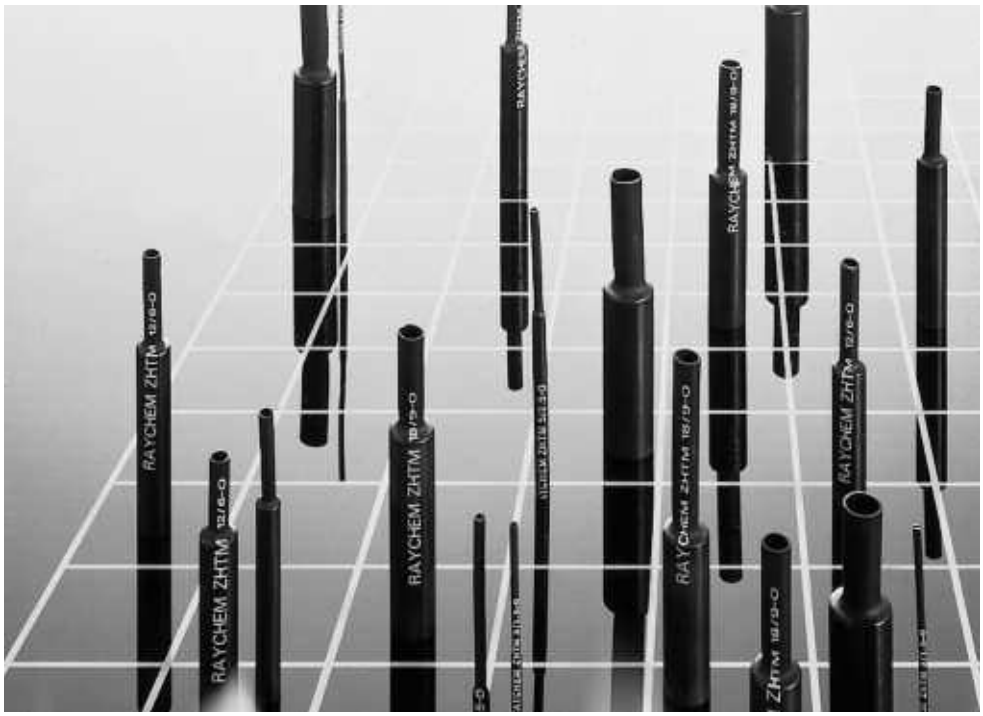
Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

# ZHTM

**Heat-Shrinkable, Flexible Tubing with Low Toxicity for Fire Safety Applications**

## Product Facts

- 2:1 shrink ratio
- Low smoke emission
- System 100 tubing
- RoHS compliant




### Applications

A flexible, thick-wall, heat-shrinkable tubing to be used in conjunction with -100 molded parts and Zerohal cable to form Raychem System 100. This material exhibits excellent fire safety characteristics combined with low smoke emission and low evolution of acid gases while retaining good mechanical and fluid-resistance properties. Used for insulation and protection of cables, harnesses, and electrical and electronic components in enclosed spaces, such as in marine applications, mass transit systems, and offshore installations, to reduce toxicity risks, or where equipment would be irreparably damaged by corrosive products of combustion.

### Installation

Minimum shrink temperature: 80°C [176°F]

Minimum full recovery temperature: 121°C [250°F]

### Operating Temperature Range

-30°C to 105°C
[-22°F to 221°F]

## Specifications/Approvals

| Series | Military | Agency | Industry | Raychem |
|---|---|---|---|---|
| ZHTM | Def. Stan. 59-97 Issue 3 Type 8 | BS 4G-198 Part 3 Type 15<br>VG 95343 Part 5 Type L<br>VDE 0341/Pt 9005 | BR 1326A | RW-2058 |

| Available in: | Americas | Europe | Asia Pacific |
|---|---|---|---|
| | ■ | ■ | ■ |



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

## ZHTM (Continued)

### Product Dimensions

| Size | Inside Diameter | | Recovered Wall Thickness* |
|---|---|---|---|
| | Minimum Expanded as Supplied | Maximum Recovered After Heating | After Heating |
| 3/1.5 | 3.0 [0.118] | 1.5 [0.059] | 0.70 ± 0.10 [0.028 ± 0.004] |
| 5/2.5 | 5.0 [0.197] | 2.5 [0.098] | 0.75 ± 0.12 [0.030 ± 0.005] |
| 8/4 | 8.0 [0.315] | 4.0 [0.157] | 0.80 ± 0.15 [0.031 ± 0.006] |
| 12/6 | 12.0 [0.472] | 6.0 [0.236] | 0.90 ± 0.15 [0.035 ± 0.006] |
| 18/9 | 18.0 [0.709] | 9.0 [0.354] | 1.00 ± 0.18 [0.039 ± 0.007] |
| 24/12 | 24.0 [0.945] | 12.0 [0.472] | 1.10 ± 0.20 [0.043 ± 0.008] |
| 40/20 | 40.0 [1.575] | 20.0 [0.789] | 1.30 ± 0.23 [0.051 ± 0.009] |
| 50/30 | 50.0 [1.969] | 30.0 [1.181] | 1.50 ± 0.28 [0.059 ± 0.011] |

*Wall thickness will be less if tubing recovery is restricted during shrinkage.

### Ordering Information

| | |
|---|---|
| Color | Standard Black (-0) |
| Size selection | Always order the largest size that will shrink snugly over the component to be covered. Special order sizes are available upon request. |
| Standard packaging | On spools. |
| Ordering description** | Specify product name, size and color (for example, ZHTM 8/4-0). |

**Europe only. For supply to Def Stan and BS add -DS or -BS to ordering description.



9-1773447-9
CIS WR 08/2011

te.com

Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

USA: 1-800-522-6752
Canada: 1-905-475-6222
Mexico: 52-55-1106-0800
L. & S. America: 54-11-4733-2200

Germany: 49-6251-133-1999
China: 86-400-820-6015
Japan: 81-44-844-8013
UK: 44-800-267-666

LifeElectronics
Живое партнерство

**ООО «ЛайфЭлектроникс»** **“LifeElectronics” LLC**

*ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703*

*Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.*

*С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров*

*Мы предлагаем:*

- *Конкурентоспособные цены и скидки постоянным клиентам.*
- *Специальные условия для постоянных клиентов.*
- *Подбор аналогов.*
- *Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.*

- *Приемлемые сроки поставки, возможна ускоренная поставка.*
- *Доставку товара в любую точку России и стран СНГ.*
- *Комплексную поставку.*
- *Работу по проектам и поставку образцов.*
- *Формирование склада под заказчика.*

- *Сертификаты соответствия на поставляемую продукцию (по желанию клиента).*
- *Тестирование поставляемой продукции.*
- *Поставку компонентов, требующих военную и космическую приемку.*
- *Входной контроль качества.*
- *Наличие сертификата ISO.*

*В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.*

*Конструкторский отдел помогает осуществить:*

- *Регистрацию проекта у производителя компонентов.*
- *Техническую поддержку проекта.*
- *Защиту от снятия компонента с производства.*
- *Оценку стоимости проекта по компонентам.*
- *Изготовление тестовой платы монтаж и пусконаладочные работы.*

*Тел: +7 (812) 336 43 04 (многоканальный)*
*Email: org@lifeelectronics.ru*

***www.lifeelectronics.ru***