# Comprehensive range of HEAT-SHRINKABLE and COLD APPLIED TUBING

# Performance tubing for extreme environments and commercial applications

Heat-shrinkable tubing is available in an extensive range of sizes, colours and materials, including Polyolefins, Fluoropolymers, Elastomers and Silicone, many of which are radiation cross-linked to enhance their performance properties. Shrink ratios from 2:1 to 4:1 enable ease of installation, allowing the tubing to be utilised in all environments, from component protection through to rugged high performance electrical systems and field cable repairs. Temperature capabilities range from -75°C to +260°C.

Performance characteristics include chemical and fluid resistance, environmental and vibration protection, abrasion resistance and excellent electrical performance. Heat-shrinkable tubing is also a simple and effective way of improving a products aesthetic appearance.

A range of non shrinkable tubing is also available for applications where heat is not available or recommended.



#### **Typical Features & Benefits**

- · Mechanical protection
- Chemical/fluid resistance
- · Electrical insulation
- Moisture protection
- Strain relief, Flexibility
- · Flame-retardant, Low smoke
- · High shrink ratio
- · Low shrink temperature
- · Aesthetic enhancement
- Fast and efficient installation
- Pre-installed adhesives bond to a wide variety of plastics, rubbers and metals.

#### **Cut Piece Service**

Many of our tubing products can be supplied pre-cut to length. Please contact our sales office for details.



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#### **Tubing Selection Guide**

PRODUCT	Material	Single Wall	Dual Wall	Highly Flexible	Flexible	Semi-Rigid	Operating Temperature	Size Range	1.2m Lengths	Spools	Flat Spools
ATUM	Polyolefin		•		•		-55°C to +110°C	3mm to 40mm	•	•	
ATUM	Polyolefin		•		•		-55°C to +110°C	4mm to 52mm	•	•	
CGAT	Polyolefin		•		•		-40°C to +80°C	3mm to 39mm	•	•	
CGPT	Polyolefin	•			•		-40°C to +135°C	1.2mm to 102mm		•	
CGPT	Polyolefin	•			•		-40°C to +135°C	1.5mm to 39mm		•	
CRN	Polyolefin	•				•	-55°C to +135°C	1.2mm to 19mm	•		
DCPT	Polyolefin	•			•		-55°C to +135°C	1.6mm to 38mm		•	
DR-25	Elastomer	•			•		-75°C to +150°C	3.2mm to 76mm		•	
DR-25-TW	Elastomer	•		•			-75°C to +150°C	2.4mm to 38mm		•	
HCTE	ETFE	•			•		-55°C to +200°C	4.6mm to 49.2mm		•	
HTAT	Polyolefin		•		•		-55°C to +125°C	4mm to 48mm	•	•	
LSTT	Polyolefin	•			•		-40°C to +125°C	1.6mm to 38mm		•	
RNF-100	Polyolefin	•			•		-55°C to +135°C	1.2mm to 102mm	•	•	•
RNF-3000	Polyolefin	•			•		-55°C to +135°C	1.5mm to 39mm	•	•	
RP-4800	Polyolefin	•			•		-55°C to +135°C	25.4mm to 102mm	•	•	
RT-375	Fluoropolymer	•			•		-55°C to +150°C	1.2mm to 25.4mm		•	
RT-555	Fluoropolymer	•				•	-65°C to +200°C	3.2mm to 50.8mm		•	
RW-175-E	Polyvinylidene	•				•	-55°C to +175°C	1.2mm to 25.4mm	•	•	
RW-200-E	Fluoropolymer	•			•		-55°C to +200°C	3.2mm to 51mm		•	
SCL	Polyolefin		•			•	-55°C to +110°C	3.2mm to 25.4mm	•		
SCT*	Polyolefin		•			•	-40°C to +150°C	1.7mm to 17.8mm	•		
SR	58Silicone	•		•			-60°C to +180°C	0.5mm to 10mm		•	
SRFR	Silicone	•		•			-75°C to +200°C	2.9mm to 51mm		•	
STW	PTFE	•		•			-70°C to +260°C	0.5mm to 8.53mm		•	
TFE	Teflon	•				•	-67°C to +250°C	0.8mm to 11.9mm	•		
TFER	Teflon	•				•	-67°C to +250°C	2mm to 32mm	•		
TW	PTFE	•			•		-70°C to +260°C	0.41mm to 8.53mm		•	
<b>VERSAFIT®</b>	Polyolefin	•		•			-55°C to +135°C	1.63mm to 104.14mm		•	•
ZH2 & ZH4	Polyolefin	•		•			-30°C to +125°C	0.8mm to 30mm		•	
ZH-100	Polyolefin	•			•		-30°C to +105°C	3.2mm to 51mm		•	
ZHTM	Polyolefin	•			•		-30°C to +105°C	3mm to 50mm		•	

Note 1: SCL shrink ratio varies between 2.5:1 to 4:1.

Note 2: HCTE, STW, TW and SR are not heat-shrinkable.

Note 3: Standard pack sizes for all tubing products have been included for your information, guide only.

For more information on SCT tubing please contact us

#### **Tubing Selection Guide**

Shrink Ratio	Min. Shrink Temperature	Black - 0	Clear/Natural	Grey - 8	Red - 2	Yellow - 4	Green - 5	Blue - 6	White - 9	Grn/Ylw - 45	Non Std	Description
3:1	+80°C	•	•									Semi flexible, adhesive lined tubing
4:1	+80°C	•										Semi flexible, high shrink ratio, adhesive lined tubing
3:1	+80°C	•	•									Commercial grade adhesive lined tubing
2:1	+80°C	•	•		•	•	•	•	•			Commercial grade, flexible tubing
3:1	+80°C	•	•		•	•	•	•	•	•		Commercial grade, high shrink ratio, flexible tubing
2:1	+110°C	•	•									Semi-rigid, flame retardant tubing
2:1	+95°C									•		Green and Yellow striped tubing
2:1	+150°C	•										Flexible, chemical & abrasion resistant tubing
2:1	+150°C	•										Flexible, chemical & abrasion resistant thin wall
N/A	N/A	•										Helical convoluted conduit, flame retardant tubing
4:1	+80°C	•										High temp. high shrink ratio, adhesive lined tubing
2:1	+65°C	•	•		•	•	•	•	•			Low shrink temperature tubing
2:1	+95°C	•	•		•	•	•	•	•		•	General purpose, flexible, flame retardant tubing
3:1	+80°C	•	•		•	•	•	•	•		•	High shrink ratio, flexible, flame retardant tubing
4:1	+95°C	•			•	•	•	•	•		•	High shrink ratio, flame retardant tubing
2:1	+125°C		•									High clarity flame retardant semi-flexible tubing
2:1	+150°C	•										High temp. solvent resistant, low out-gassing
2:1	+155°C	•	•									High temp. chemical resistant, semi-rigid tubing
2:1	+100°C	•										High temp. chemical resistant flexible tubing
2.5:1	+125°C	•		<b>\$</b>	<b>\$</b>	<b>\$</b>		<b>\$</b>	<b>\$</b>		<b>\$</b>	Semi-rigid encapsulated lined tubing
4:1	+125°C	•										Semi-rigid adhesive lined tubing
N/A	N/A	•			•	•	•	•	•			Silicone tubing
1.7:1	+135°C			•								Highly flexible silicone rubber tubing
N/A	N/A	•	•			•	•	•	•			PTFE thin wall tubing
1.8:1	+260°C		•									High temp. chemically inert tubing, low ratio
3.2:1	+240°C		•									High temp. chemically inert tubing, higher ratio
N/A	N/A	•	•			•	•		•			PTFE standard wall tubing
2:1	+70°C	•			•	•	•	•	•			Highly flame retardant, low shrink temp. tubing
2:1	+70°C	•										Zerohal, flame retardant tubing
2:1	+80°C	•										59Low fire hazard, low toxicity, thin wall tubing
2:1	+80°C	•										Low fire hazard, low toxicity, flexible tubing

Spec change and non flame retardant colour option.

Non preferred colours refer to 1=Brown, 3=Orange, 7=Violet, 8=Grey.

Colours against specific sizes

## **ATUM**Polyolefin

#### Semi-flexible, adhesive lined

ATUM has an internal adhesive coating that, when heated, melts and flows to form a positive environmental barrier to prevent moisture penetration. Used to seal back-end connectors, wire splices, break-outs, cable jackets and electrical components.

#### Features & Benefits

- Environmentally seals and protects
- Excellent mechanical protection
- Bonds to plastics, rubbers and metals, including steel, copper, polyethylene, rubber & aluminium.

#### **Operating Temperature**

From -55°C to +110°C

#### Installation

- Minimum shrink temperature +80°C
- Minimum full recovery +110°C



#### **Specifications & Approvals**

- RK-6024 (black and clear)
- RW-2063 (black)
- · AMS-DTL-23053/4 Class 3
- UL E85381 600v, 110°C (Black only)

Inside D	Diameter	Nom Wall	Thickness	Pack	Size	Part Number
Minimum Supplied	Maximum Recovered	Total Wall	Adhesive Wall	1.2m Sticks (STK)	Spools (SP)	
3.0	1.0	1.00	0.50	30m	150m	ATUM-3/1-0-xx
6.0	2.0	1.00	0.50	30m	250m	ATUM-6/2-0-xx
9.0	3.0	1.40	0.60	30m	200m	ATUM-9/3-0-xx
12.0	4.0	1.78	0.75	30m	200m	ATUM-12/4-0-xx
19.0	6.0	2.25	0.80	30m	150m	ATUM-19/6-0-xx
24.0	8.0	2.54	1.00	30m	80m	ATUM-24/8-0-xx
40.0	13.0	2.54	1.00	12m	60m	ATUM-40/13-0-xx

#### Notes:

- · Dimension in millimeters unless otherwise stated.
- · Wall thickness will be less if tubing recovery is restricted during shrinkage.
- · Where xx is either STK (sticks) or SP (spools).

Part Number Example; ATUM-12/4-0-STK 12mm inside diameter, black tubing, supplied in 1.2 lengths

Ordering Information

Standard colour: 0=Black, (X = Also available in clear to order, non flame retardant)
Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: 1.2m lengths (STK) & Spools (SP)



- · RK-6024 (black and clear)
- RW-2063 (black)
- AMS-DTL-23053/4 Class 3
- UL E85381 600v, 110°C (Black only)

#### ATUM Polyolefin

Semi-flexible, adhesive lined

ATUM has an internal adhesive coating, that when heated, melts and flows to form a positive environmental barrier to prevent moisture penetration. Used to seal back-end connectors, wire splices, break-outs, cable jackets and electrical components.

#### Features & Benefits

- · Environmentally seals and protects
- · Excellent mechanical protection
- Bonds to plastics, rubbers and metals, including steel, copper, polyethylene, rubber & aluminium.

#### **Operating Temperature**

• From -55°C to +110°C

#### Installation

- Minimum shrink temperature +80°C
- Minimum full recovery +110°C

Inside Diameter		Nom Wall	Thickness	Pack	Size	Part Number
Minimum Supplied	Maximum Recovered	Total Wall	Adhesive Wall	1.2m Sticks (STK)	Spools (SP)	
4.0	1.0	1.00	0.50	30m	150m	ATUM-4/1-0-xx
8.0	2.0	1.00	0.50	30m	200m	ATUM-8/2-0-xx
120	3.0	1.40	0.60	30m	200m	ATUM-12/3-0-xx
16.0	4.0	1.78	0.75	30m	200m	ATUM-16/4-0-xx
24.0	6.0	2.25	0.80	30m	80m	ATUM-24/6-0-xx
32.0	8.0	2.54	1.00	12m	60m	ATUM-32/8-0-xx
52.0	13.0	2.54	1.00	6m	30m	ATUM-52/13-0-xx

#### Notes:

- · Dimensions in millimeters unless otherwise stated.
- · Wall thickness will be less if tubing recovery is restricted during shrinkage
- · Where xx is either STK (sticks) or SP (spools)

Part Number Example; ATUM-12/3-0-SP

12mm inside diameter, black tubing, supplied on spools

**Ordering Information** 

Standard colour: 0=Black

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: 1.2m lengths (STK) & Spools (SP)

#### CGAT

#### Polyolefin

Commercial grade, flexible, adhesive lined

Used to seal back-end connector, wire splices, break outs, cable jackets and electrical components. Includes an internal adhesive coating, that when heated, melts and flows to form a positive environmental barrier to prevent moisture

#### **Features & Benefits**

- · Environmentally seals and protects
- · Excellent mechanical protection
- · High strength bonding

#### **Operating Temperature**

From -30°C to +80°C

#### Installation

- Minimum shrink temperature +80°C
- Minimum full recovery +115°C



#### **Specifications & Approvals**

- RW-2050
- UL E85381, 600v, 80°C

Inside D	iameter	Nom Wall	Thickness	Pack	Size	Part Number
Minimum Supplied	Maximum Recovered	Total Wall	Adhesive Wall	1.2m Sticks (STK)	Spool (SP)	
3.0	1.0	1.00	0.50	30m	150m	CGAT-3/1-0-xx
6.0	2.0	1.00	0.50	30m	250m	CGAT-6/2-0-xx
9.0	3.0	1.35	0.60	30m	200m	CGAT-9/3-0-xx
12.0	4.0	1.50	0.70	30m	200m	CGAT-12/4-0-xx
18.0	6.0	1.70	0.80	30m	150m	CGAT-18/6-0-xx
24.0	8.0	1.90	1.00	30m	80m	CGAT-24/8-0-xx
39.0	13.0	2.10	1.00	12m	60m	CGAT-39/13-0-xx

#### Notes:

- · Dimension in millimetres unless otherwise stated.
- Wall thickness will be less if tubing recovery is restricted during shrinkage (note applies to both CGAT and CGPT on the opposite page)
- · Where xx is either STK (sticks) or SP (spools)

Part Number Example; CGAT-12/4-0-SP 12mm inside diameter, black tubing supplied on a spool

**Ordering Information** 

Standard colour: 0=Black (X = Also available in clear to order, non flame retardant)
Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: 1.2m lengths (STK) & Spools (SP)



- · RW-2059
- UL E35586, 600v, 125°C
- CSA LR 31929, 600v, 125°C

Clear is not flame retardant

## **CGPT**Polyolefin

#### Commercial grade, flexible tubing

A tough and flexible general purpose polyolefin tubing, providing a good blend of chemical, electrical and physical performance properties. Suitable for electrical insulation, strain relief, cable bundling, colour coding, identification of wires, cables and electronic components.

#### **Features & Benefits**

- · Very good chemical & solvent resistance
- · Excellent physical & electrical properties
- · Wide range of sizes and colours available

#### **Operating Temperature**

From -40°C to +135°C

#### Installation

- Minimum shrink temperature +80°C
- Minimum full recovery +120°C

Inside D	iameter	Wall Thickness	Pack Size	Part Number
Minimum Supplied (mm)	Maximum Recovered (mm)	Nominal Recovered (mm)	Spools Only (SP)	
1.2	0.6	0.45	600m	CGPT-1.2/0.6-Colour-SP
1.6	0.8	0.45	600m	CGPT-1.6/0.8-Colour-SP
2.4	1.2	0.50	300m	CGPT-2.4/1.2-Colour-SP
3.2	1.6	0.50	300m	CGPT-3.2/1.6-Colour-SP
4.8	2.4	0.50	300m	CGPT-4.8/2.4-Colour-SP
6.4	3.2	0.65	150m	CGPT-6.4/3.2-Colour-SP
9.5	4.8	0.65	150m	CGPT-9.5/4.8-Colour-SP
12.7	6.4	0.65	150m	CGPT-12.7/6.4-Colour-SP
19.0	9.5	0.75	150m	CGPT-19/9.5-Colour-SP
25.4	12.7	0.90	60m	CGPT-25.4/12.7-Colour-SP
38.0	19.0	1.00	60m	CGPT-38/19-Colour-SP
51.0	25.4	1.15	30m	CGPT-51/25.4-Colour-SP
76.0	38.0	1.25	15m	CGPT-76/38-Colour-SP
102.0	51.0	1.40	15m	CGPT-102/51-Colour-SP

Part Number Example; CGPT-25.4/12.7-2-SP 25.4mm inside diameter, red tubing.

**Ordering Information** 

Standard colour: 0=Black, 2=Red, 4=Yellow, 5=Green, 6=Blue, 9=White, X=Clear.

45=Yellow/Green stripes available for sizes 3.2/1.6 to 38/19 only.

Size selection: The largest size that will recover snugly over the component(s).

## **CGPT**Polyolefin

#### Commercial, flexible tubing

A tough and flexible general purpose polyolefin tubing, providing a good blend of chemical, electrical and physical performance properties. Suitable for electrical insulation, strain relief, cable bundling, colour coding, identification of wires, cables and electronic components.

#### **Features & Benefits**

- · Very good chemical & solvent resistance
- · Excellent physical & electrical properties
- · Wide range of sizes and colours available

#### **Operating Temperature**

• From -40°C to +135°C

#### Installation

- Minimum shrink temperature +80°C
- Minimum full recovery +120°C



#### **Specifications & Approvals**

- RW-2059
- UL E35586, 600v, 125°C
- CSA LR 31929, 600v, 125°C

Inside D	Diameter	Wall Thickness	Pack Size	Part Number
Minimum Supplied (mm)	Maximum Recovered (mm)	Nominal Recovered (mm)	Spools Only (SP)	
1.5	0.5	0.45	600m	CGPT-1.5/0.5-Colour-SP
3.0	1.0	0.55	300m	CGPT-3/1-Colour-SP
6.0	2.0	0.65	150m	CGPT-6/2-Colour-SP
9.0	3.0	0.75	150m	CGPT-9/3-Colour-SP
12.0	4.0	0.75	150m	CGPT-12/4-Colour-SP
18.0	6.0	0.85	150m	CGPT-18/6-Colour-SP
24.0	8.0	1.00	60m	CGPT-24/8-Colour-SP
39.0	13.0	1.15	60m	CGPT-39/13-Colour-SP

#### Note:

- · Wall thickness will be less if tubing recovery is restricted during shrinkage.
- · Clear is not flame retardant

Part Number Example; CGPT-12/4-9-SP 12.0mm inside diameter, white tubing.

Ordering Information

Standard colour: 0=Black, 2=Red, 4=Yellow, 5=Green, 6=Blue, 9=White, X=Clear. Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: Spools only



#### Polyolefin

#### Semi-rigid, flame retardant tubing

CRN tubing is ideally suited for strain relief and insulation of potential weak points such as wire splices, crimps and terminations. The flame-retardant material exhibits excellent mechanical and chemical properties. It meets major military and industrial specifications for an all purpose, semi-rigid tubing.

#### **Features & Benefits**

- · Tough, semi-rigid wire protection
- · Flame retardant

#### **Operating Temperature**

From -55°C to +135°C

#### Installation

- Minimum shrink temperature +110°C
- Minimum full recovery +135°C

#### **Specifications & Approvals**

- AMS-DTL-23053/6 class 1 (Clear class 2)
- RT-360 Type 1 (Clear type 2)
- UL E35586, 600v, 125°C
- CSA LR31929, 600v, 125°C (black only)

Inside D	iameter	Wall Thickness	Pack Size	Part Number
Minimum Supplied (mm)	Maximum Recovered (mm)	Nominal Recovered (mm)	1.2m Lengths only (STK)	
1.2	0.6	0.51	60	CRN-3/64-0-STK
1.6	0.8	0.51	60	CRN-1/16-0-STK
2.4	1.2	0.51	60	CRN-3/32-0-STK
3.2	1.6	0.51	60	CRN-1/8-0-STK
4.8	2.4	0.64	60	CRN-3/16-0-STK
6.4	3.2	0.64	30	CRN-1/4-0-STK
9.5	4.8	0.76	30	CRN-3/8-0-STK
12.7	6.4	0.76	30	CRN1/2-0-STK
19.0	9.5	0.89	30	CRN3/4-0-STK

#### Note:

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

Part Number Example; CRN-3/8-0-STK 9.5mm inside diameter, black, supplied in 1.2m lengths.

**Ordering Information** 

Standard colour: 0=Black (X = Also available in clear to order, non flame retardant)
Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: Sticks only

## **DCPT**Polyolefin

#### Flexible, flame retardant, dual colour

A tough and flexible general purpose polyolefin tubing, providing a good blend of chemical, electrical and physical performance properties. Suitable for electrical insulation, strain relief, cable bundling, colour coding, identification of wires, cables and other electronic components.

#### **Features & Benefits**

- · Very good chemical & solvent resistance
- Excellent physical & electrical properties
- Wide range of sizes available

#### **Operating Temperature**

From -55°C to +135°C

#### Installation

- · Minimum shrink temperature +95°C
- Minimum full recovery +120°C



#### **Specifications & Approvals**

- RW-2056
- UL E35586, 600v, 125°C
- CSA LR31929, 600v, 125°C
- VG 95343 Part 5 Type A

	Inside D	Inside Diameter		Pack Size	Part Number
	Minimum Supplied (mm)	Maximum Recovered (mm)	Nominal Recovered (mm)	Spools Only (SP)	
	3.0	1.5	0.51	300m	DCPT 3/1.5-45-SP
0	6.0	3.0	0.58	150m	DCPT 6/3-45-SP
Ratio	8.0	4.0	0.64	150m	DCPT 8/4-45-SP
¥	10.0	5.0	0.64	150m	DCPT 10/5-45-SP
Shrink	12.0	6.0	0.64	150m	DCPT 12/6-45-SP
2:1	19.0	9.0	0.76	150m	DCPT 19/9-45-SP
	26.0	13.0	0.89	60m	DCPT 26/13-45-SP
	38.0	19.0	1.00	60m	DCPT 38/19-45-SP
	3.0	1.0	0.55	300m	DCPT 3/1-45-SP
Ratio	6.0	2.0	0.65	150m	DCPT 6/2-45-SP
	9.0	3.0	0.75	150m	DCPT 9/3-45-SP
Shrink	12.0	4.0	0.75	150m	DCPT 12/4-45-SP
	18.0	6.0	0.85	150m	DCPT 18/6-45-SP
3:1	24.0	8.0	1.00	60m	DCPT 24/8-45-SP
	39.0	13.0	1.15	60m	DCPT 39/13-45-SP

Part Number Example; DCPT 38/19-45-SP 38mm inside diameter, yellow/green tubing, supplied on spools.

**Ordering Information** 

Standard colour: 45=Yellow/Green

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: Spools only - SP



DR-25
Elastomer

#### Flexible, abrasion & diesel resistant

DR-25 is made from radiation cross-linked elastomeric material, for long term heat resistance. Ideally suited for high performance wiring harnesses. Used in a wide range of military, aerospace and other harsh environment applications.

#### Features & Benefits

- · Excellent chemical & solvent resistance
- Excellent abrasion & mechanical protection
- · Compatible with 'System 25' components

#### **Operating Temperature**

From -75°C to +150°C

#### Installation

- Minimum shrink temperature +150°C
- Minimum full recovery +175°C

#### **Specifications & Approvals**

- AMS-DTL-23053/16
- BS 4G-198 Part 3 10A
- VG 95343 Part 5 Type DVDE-0341 Part 9005

Inside D	Diameter	Wall Thickness	Pack Size	Part Number
Minimum Supplied (mm)	Maximum Recovered (mm)	Nominal Recovered (mm)	Spools Only (SP)	
3.2	1.6	0.76	100m	DR-25-1/8-0-SP
4.8	2.4	0.84	100m	DR-25-3/16-0-SP
6.4	3.2	0.89	100m	DR-25-1/4-0-SP
9.5	4.8	1.02	100m	DR-25-3/8-0-SP
12.7	6.4	1.22	60m	DR-25-1/2-0-SP
19.0	9.5	1.45	60m	DR-25-3/4-0-SP
25.4	12.7	1.78	30m	DR-25-1-0-SP
38.0	19.0	2.41	15m	DR-25-1-1/2-0-SP
51.0	25.4	2.79	15m	DR-25-2-0-SP
76.0	38.0	3.18	15m	DR-25-3-0-SP

#### Notes:

- Wall thickness will be less if tubing recovery is restricted during shrinkage (this note applies to both DR25 and DCPT on the previous page).
- DR25 is also available as a repair tape, e.g. T-DR-25-NR1-0. For more information please contact us.
- For supply to BS 4G-198 add -BS to ordering description.

Part Number Example; DR-25-1/8-0-SP 3.2mm inside diameter, black, supplied on spools.

#### **Ordering Information**

Standard colour: 0=Black

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: Spools only - SP

#### **Elastomer**

#### Flexible, abrasion & diesel resistant

DR-25-TW is a 'Thin-Wall' version of DR-25 offering similar properties and is ideal for use where space and weight saving are important.

#### **Features & Benefits**

- · Excellent chemical & solvent resistance
- · Excellent abrasion & mechanical protection
- · Compatible with 'System 25' components
- · Lightweight, thin wall

#### **Operating Temperature**

From -75°C to +150°C

#### Installation

- · Minimum shrink temperature +150°C
- Minimum full recovery +175°C



#### **Specifications & Approvals**

- VG-95343 Part 5 Type D
- VDE-0341 Part 9005
- RK 6008/2

Inside D	Diameter	Wall Thickness	Pack Size	Part Number
Minimum Supplied (mm)	Maximum Recovered (mm)	Nominal Recovered (mm)	Spools Only (SP)	
2.4	1.2	0.51	150m	DR-25-TW-3/32-0-SP
3.2	1.6	0.51	150m	DR-25-TW-1/8-0-SP
4.8	2.4	0.51	150m	DR-25-TW-3/16-0-SP
6.4	3.2	0.64	75m	DR-25-TW-1/4-0-SP
9.5	4.8	0.64	75m	DR-25-TW-3/8-0-SP
12.7	6.4	0.64	75m	DR-25-TW-1/2-0-SP
19.0	9.5	0.76	75m	DR-25-TW-3/4-0-SP
25.4	12.7	0.89	30m	DR-25-TW-1-0-SP
31.5	15.0	1.10	30m	DR-25-TW-1-1/4-0-SP
38.0	19.0	1.02	30m	DR-25-TW-1-1/2-0-SP

#### Notes:

- · Wall thickness will be less if tubing recovery is restricted during shrinkage.
- · All dimensions in millimetres, unless other stated for this and following page.

Part Number Example; DR-25-TW-3/4-0-SP 19mm inside diameter, black tubing, supplied on spools.

**Ordering Information** 

Standard colour: 0=Black

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: Spools only - SP



- VG 96936 Part 6
- TE: RT-1162

## HCTE ETFE (Helical Conduit)

#### Flexible, Flame Retardant, Fluid Resistant

HCTE conduit can be used as an electrical harness component alone or used in conjunction with adaptors and heat shrinkable moulded parts, for a totally integrated harness system. Suitable for military and aerospace applications.

#### Features & Benefits

- · Excellent crush resistance
- Highly flame retardant
- · Superior flexibility and fluid resistance

#### **Operating Temperature**

 From -55°C to +200°C and up to 300°C for limited periods

#### Installation

Recommended that no more than 70% of the internal area be occupied by wires in any application.

Inside Diameter	Outside Diameter	Weight	Pack Size	Part Number
Minimum (mm)	Maximum (mm)	g/m	Spools	
4.60	8.10	18	60m	HCTE-0187-0-SP
6.90	10.50	22	60m	HCTE-0281-0-SP
7.70	11.80	26	60m	HCTE-0312-0-SP
9.20	12.90	30	60m	HCTE-0375-0-SP
10.80	14.50	37	60m	HCTE-0437-0-SP
12.30	16.50	52	30m	HCTE-0500-0-SP
15.40	19.50	64	30m	HCTE-0625-0-SP
17.90	23.60	74	30m	HCTE-0750-0-SP
21.80	27.20	96	30m	HCTE-0875-0-SP
24.70	31.10	112	30m	HCTE-1000-0-SP
30.70	35.30	130	30m	HCTE-1250-0-SP
36.50	46.50	169	30m	HCTE-1500-0-SP
39.60	50.17	177	15m	HCTE-1625-0-SP
42.67	52.88	191	15m	HCTE-1750-0-SP
49.20	59.23	220	15m	HCTE-2000-0-SP

Part Number Example; HCTE-0375-0 9.2mm inside diameter, black, supplied on spools.

Ordering Information

Standard colour: 0=Black

Size selection: Always order a conduit size that will ensure a "fill factor" of 70% is not exceeded

Standard packaging: Spools only

## **HTAT**Polyolefin

#### Adhesive lined, high temperature

HTAT has an internal adhesive coating that when heated melts and flows to form a positive environmental barrier to prevent moisture penetration. Used to seal back-end connectors, wire splices, break-outs, cable jackets and electrical components.

#### **Features & Benefits**

- · Environmentally seals and protects
- Excellent abrasion & mechanical protection
- Bonds to metals, rubbers and plastics including PVC and polyethylene

#### **Operating Temperature**

From -55°C to +125°C

#### Installation

- Minimum shrink temperature +80°C
- Minimum full recovery +110°C



**Specifications & Approvals** 

RW-2052

Inside D	Inside Diameter		Nom Wall Thickness		Size	Part Number
Minimum Supplied	Maximum Recovered	Recovered (mm)	Adhesive (mm)	1.2m Sticks (STK)	Spools (SP)	
4.0	1.0	1.00	0.40	30m	150m	HTAT-4/1-0-xx
8.0	2.0	1.00	0.50	30m	75m	HTAT-8/2-0-xx
12.0	3.0	1.40	0.60	30m	75m	HTAT-12/3-0-xx
16.0	4.0	1.75	0.75	30m	50m	HTAT-16/4-0-xx
24.0	6.0	2.25	0.80	30m	50m	HTAT-24/6-0-xx
32.0	8.0	2.50	1.00	12m	30m	HTAT-32/8-0-xx
48.0	13.0	2.55	1.00	6m	30m	HTAT-48/13-0-xx

#### Notes:

- · Wall thickness will be less if tubing recovery is restricted during shrinkage.
- · Where xx is either STK (sticks) or SP (spools).
- · All dimensions in millimetres, unless other stated.

Part Number Example; HTAT-16/4-0-SP 16mm inside diameter, black tubing, supplied on spools.

**Ordering Information** 

Standard colour: 0=Black

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: 1.2m Lengths: STK, or Spools: SP

**Polyolefin** 



**Specifications & Approvals** 

RW-2051

MVSS 302

Low shrink temperature, flexible

LSTT is a highly flexible, easy to handle and install low shrink temperature heat-shrinkable tubing. Ideal for covering heat sensitive devices and termination insulation. Meets automotive flame propagation standard MVSS302.

#### Features & Benefits

- · Rapid recovery at low temperatures
- · Good physical & electrical performance
- · Not flame retardant

#### **Operating Temperature**

From -40°C to +125°C

#### Installation

- Minimum shrink temperature +65°C
- Minimum full recovery +110°C

Inside D	Inside Diameter		Pack Size	Part Number
Minimum Supplied (mm)			Spools	
1.6	0.8	0.50	600m	LSTT-1.6-Colour-SP
2.4	1.2	0.55	300m	LSTT-2.4-Colour-SP
3.2	1.6	0.55	300m	LSTT-3.2-Colour-SP
4.8	2.4	0.55	300m	LSTT-4.8-Colour-SP
6.4	3.2	0.65	150m	LSTT-6.4-Colour-SP
9.5	4.8	0.65	150m	LSTT-9.5-Colour-SP
12.7	6.4	0.65	150m	LSTT-12.7-Colour-SP
19.0	9.5	0.80	150m	LSTT-19.0-Colour-SP
25.4	12.7	0.95	60m	LSTT-25.4-Colour-SP
38.0	19.0	1.05	60m	LSTT-38 0-Colour-SP

#### Notes:

- · Wall thickness will be less if tubing recovery is restricted during shrinkage.
- Where xx is either STK (sticks) or SP (spools).
- · All dimensions in millimetres, unless otherwise stated.

Part Number Example; LSTT-4.8-0-SP 4.8mm inside diameter, BLACK tubing, supplied in spools.

#### **Ordering Information**

Standard colour: 0=Black

NON-Standard colour 2=Red, 4=Yellow, 5=Green, 6=Blue, 9=White, X=Clear

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: Spools only

#### Protective **Tubing**

## RNF-100 Polyolefin

#### Flexible, flame retardant

Designed to provide superior mechanical (abrasion, cut-through, strain relief), thermal and fluid resistance performance. Used extensively in military applications for lightweight harness jackets, insulation, identification, colour coding and protection.

#### **Features & Benefits**

- · Excellent physical, chemical properties
- · Superior abrasion and solvent resistance
- · Flexible; conforms to irregular shapes

#### **Operating Temperature**

From -55°C to +135°C

#### Installation

- Minimum shrink temperature +95°C
- Minimum full recovery +121°C



#### **Specifications & Approvals**

- AMS-DTL23053/5 class 1 (colours)
- VDE 0341 Part 9005, Type A and B (colours)
- BS 4G 198-3 Type 11B
- UL E35586, 600v, 125°C

Inside D	Inside Diameter		Pack	Size	Part Number
Minimum Supplied	Maximum Recovered	Nominal Recovered (mm)	1.2m Sticks (STK)	Spools (SP)	
1.2	0.6	0.40	60m	600m	RNF-100-3/64-Colour-xx
1.6	0.8	0.43	60m	600m	RNF-100-1/16-Colour-xx
2.4	1.2	0.51	60m	300m	RNF-100-3/32-Colour-xx
3.2	1.6	0.51	60m	300m	RNF-100-1/8-Colour-xx
4.8	2.4	0.51	60m	300m	RNF-100-3/16-Colour-xx
6.4	3.2	0.64	30m	30m	RNF-100-1/4-Colour-xx
9.5	4.8	0.64	30m	30m	RNF-100-3/8-Colour-xx
12.7	6.4	0.64	30m	30m	RNF-100-1/2-Colour-xx
19.0	9.5	0.76	30m	30m	RNF-100-3/4-Colour-xx
25.4	12.7	0.89	30m	30m	RNF-100-1-Colour-xx
38.0	19.0	1.02	12m	12m	RNF-100-1-1/2-Colour-xx
51.0	25.4	1.14	12m	12m	RNF-100-2-Colour-xx
76.0	38.0	1.27	12m	12m	RNF-100-3-Colour-xx
102.0	51.0	1.4	12m	12m	RNF-100-4-Colour-xx

#### Note:

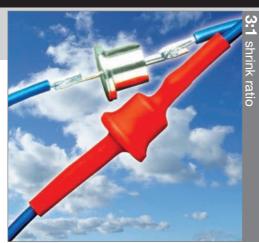
For supply to BS 4G-198 add -BS to ordering description.

Part Number Example; RNF-100-1-1/2-6-STK 38mm inside diameter, blue tubing, supplied in 1.2m sticks.

#### **Ordering Information**

Preferred colours: 0=Black, 2=Red, 4=Yellow, 5=Green, 6=Blue, 9=White, X=Clear (not FR).

Non preferred colours: 1=Brown, 3=Orange, 7=Violet, 8=Grey Standard packaging: 1.2m Lengths: STK, or Spools: SP



RNF-3000
Polyolefin
Flexible, flame retardant

High shrink ratio tubing with superior mechanical (abrasion, cut through, strain relief), thermal and fluid resistance performance. Used extensively in military applications for lightweight harness jackets, insulation, identification, colour coding and protection.

#### Features & Benefits

- · Excellent physical, chemical properties
  - Superior abrasion and solvent resistance
- · Flexible; conforms to irregular shapes

#### **Operating Temperature**

From -55°C to +135°C

## Installation

- Minimum shrink temperature +80°C
- Minimum full recovery +120°C

#### **Specifications & Approvals**

- VG 95343 Part 5 Type A (colours)
- VDE 0341 Part 9005
- BS 4G 198-3 Type 11B
- UL-E35586, 600V, +125°C (colours)

Inside D	iameter	Wall Thickness	Pack	Size	Part Number
Minimum Supplied	Maximum Recovered	Nominal Recovered (mm)	1.2m Sticks (STK)	Spools (SP)	
1.5	0.5	0.45	60m	600m	RNF-3000-1.5/0.5-Colour-xx
3.0	1.0	0.55	60m	300m	RNF-3000-3/1-Colour-xx
6.0	2.0	0.65	60m	150m	RNF-3000-6/2-Colour-xx
9.0	3.0	0.75	30m	150m	RNF-3000-9/3-Colour-xx
12.0	4.0	0.75	30m	150m	RNF-3000-12/4-Colour-xx
18.0	6.0	0.85	30m	150m	RNF-3000-18/6-Colour-xx
24.0	8.0	1.00	30m	60m	RNF-3000-24/8-Colour-xx
39.0	13.0	1.15	12m	60m	RNF-3000-39/13-Colour-xx

#### Notes

- Wall thickness will be less if tubing recovery is restricted during shrinkage (note applies to both RNF-3000 and RNF-100 on the opposite page).
- · Where xx is either STK (sticks) or SP (spools).
- · All dimensions in millimetres, unless other stated for this and previous page.
- For supply to BS 4G-198 add -BS to ordering description.

Part Number Example; RNF-3000-18/6-2-SP 18mm inside diameter, red tubing, supplied on a spool.

**Ordering Information** 

Preferred colours: 0=Black, 2=Red, 4=Yellow, 5=Green, 6=Blue, 9=White, X=Clear.

Non preferred colours: 1=Brown, 3=Orange, 7=Violet, 8=Grey Standard packaging: 1.2m Lengths: STK, or Spools: SP

#### RP-4800 Polyolefin

#### High shrink ratio, flame retardant

High shrink ratio (4:1) tubing. ideal for repairing cable harnesses and eliminating the need to remove any connectors or transitions. RP4800 provides excellent abrasion and fluid resistance, meeting industrial and military standards.

#### **Features & Benefits**

- · Excellent mechanical & electrical characteristics
- Excellent chemical & solvent properties
- · Large shrink range with 4:1 ratio

#### **Operating Temperature**

From -55°C to +135°C

#### Installation

- Minimum shrink temperature +95°C
- Minimum full recovery +121°C



#### **Specifications & Approvals**

- AMS-DTL23053/5 Class 1
- VG 95343 Part 5 Type A
- VDE 0341 Part 9005 Type A
- UL E35586 600V, 125°C

Inside D	iameter	Wall Thickness	Pack	Size	Part Number
Minimum Supplied	Maximum Recovered	Nominal Recovered (mm)	1.2m Sticks (STK)	Spools (SP)	
25.4	7.0	1.14	30m	60m	RP-4800-No.1-0-xx
50.8	14.0	1.14	6m	60m	RP-4800-No.2-0-xx
76.2	20.6	1.14	6m	30m	RP-4800-No.3-0-xx
101.6	26.7	1.14	6m	30m	RP-4800-No.4-0-xx
25.4	11.7	1.14	30m	60m	RP-4800-No.5-0-xx
60.3	17.3	1.14	6m	60m	RP-4800-No.6-0-xx
76.2	21.3	1.14	6m	30m	RP-4800-No.7-0-xx
95.3	23.6	1.14	6m	30m	RP-4800-No.8-0-xx
114.3	36.8	1.14	6m	30m	RP-4800-No.9-0-xx
38.1	9.5	1.14	6m	60m	RP-4800-No.10-0-xx
19.1	4.6	1.14	30m	60m	RP-4800-No.11-0-xx

#### Notes:

- · Wall thickness will be less if tubing recovery is restricted during shrinkage.
- · Where xx is either STK (sticks) or SP (spools).
- · All dimensions in millimetres, unless other stated.

Part Number Example; RP-4800-No.2-0-STK 50.8mm inside diameter, black tubing, supplied in 1.2m sticks.

**Ordering Information** 

Standard colours: 0=Black

Non standard colours: 1=Brown, 2=Red, 3=Orange, 4=Yellow, 5=Green, 6=Blue 7=Violet, 8=Grey,

and 9=White

Standard packaging: 1.2m Lengths: STK, or Spools: SP



RT-375
Fluoropolymer

High clarity, flame retardant & flexible

RT-375 provides protection for wire and cable markers from extreme mechanical and chemical abuse, as well as providing UL VW-1 flame retardance and UV protection. The sleeve provides excellent clarity, allowing full visibility of the marker being protected.

#### Features & Benefits

- · Exceptional clarity
- · Excellent chemical and fluid resistance
- · High degree of flame retardance

#### **Operating Temperature**

From -55°C to +150°C

#### Installation

- Minimum shrink temperature +125°C
- Minimum full recovery +150°C

#### **Specifications & Approvals**

- AMS-DTL 23053/18 Class 2
- BS 4G-198 Part 4 Type 20A
   UL-E85351 VW-1 600V. 150°C
- CSA LR31929 VW-1 600v. 150°C

Inside D	Inside Diameter		Pack Size	Part Number
Minimum Supplied (mm)	Maximum Recovered (mm)	Nominal Recovered (mm)	Spools (SP)	
1.2	0.6	0.25	304m	RT-375-3/64-X-SP
1.6	0.8	0.25	304m	RT-375-1/16-X-SP
2.4	1.2	0.25	152m	RT-375-3/32-X-SP
3.2	1.6	0.25	152m	RT-375-1/8-X-SP
4.8	2.4	0.25	152m	RT-375-3/16-X-SP
6.4	3.2	0.30	152m	RT-375-1/4-X-SP
9.5	4.8	0.30	120m	RT-375-3/8-X-SP
12.7	6.4	0.30	120m	RT-375-1/2-X-SP
19.0	9.5	0.43	90m	RT-375-3/4-X-SP
25.4	12.7	0.48	76m	RT-375-1-X-SP
38.1	19.0	0.51	76m	RT-375-1-1/2-X-SP
50.8	25.4	0.51	30m	RT-375-2-X-SP

#### Note:

- · Wall thickness will be less if tubing recovery is restricted during shrinkage.
- For supply to BS 4G-198 add -BS to ordering description.

Part Number Example; RT-375-1/4-X-SP 6.4mm inside diameter, clear tubing, supplied on a spool.

**Ordering Information** 

Standard colour: X=Clear.
Standard packaging: Spools: SP

#### **RT555**

#### **Fluoropolymer**

#### Fluid resistant, extended temperature range

Suitable for applications requiring resistance to high temperatures, solvents, corrosive chemicals and radiation. Low outgassing (successfully tested for NASA outgassing requirements). Use for insulation and strain relief on equipment and for protection of electronic instruments.

#### **Features & Benefits**

- · Extreme resistance to hydrocarbons
- Low outgassing
- · Highly flame retardant

#### **Operating Temperature**

From -65°C to +200°C

#### Installation

- Minimum shrink temperature +150°C
- Minimum full recovery +220°C



#### **Specifications & Approvals**

 UL-E85381, 185°C for 100,000 hours continuous use, also listed for 200°C for 40,000-hr intermittent exposure.

Inside Diameter		Pack Size	Part Number
Maximum Recovered (mm)	Nominal Recovered (mm)	Spools (SP)	
1.57	0.30	100m	RT555-1/8-0-SP
2.36	0.36	100m	RT555-3/16-0-SP
3.18	0.41	100m	RT555-1/4-0-SP
4.75	0.48	100m	RT555-3/8-0-SP
6.35	0.48	60m	RT555-1/2-0-SP
7.95	0.56	60m	RT555-5/8-0-SP
9.53	0.69	60m	RT555-3/4-0-SP
12.70	0.79	30m	RT555-1-0-SP
15.88	0.84	30m	RT555-1-1/4-0-SP
19.05	0.94	15m	RT555-1-1/2-0-SP
25.40	1.02	15m	RT555-2-0-SP
	Maximum Recovered (mm)  1.57 2.36 3.18 4.75 6.35 7.95 9.53 12.70 15.88 19.05	Maximum Recovered (mm)         Nominal Recovered (mm)           1.57         0.30           2.36         0.36           3.18         0.41           4.75         0.48           6.35         0.48           7.95         0.56           9.53         0.69           12.70         0.79           15.88         0.84           19.05         0.94	Maximum Recovered (mm)         Nominal Recovered (mm)         Spools (SP)           1.57         0.30         100m           2.36         0.36         100m           3.18         0.41         100m           4.75         0.48         100m           6.35         0.48         60m           7.95         0.56         60m           9.53         0.69         60m           12.70         0.79         30m           15.88         0.84         30m           19.05         0.94         15m

#### Note:

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

Part Number Example; RT555-3/16-0-SP 4.8mm inside diameter, black tubing, supplied on spools.

**Ordering Information** 

Standard colours: 0=Black

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: Spools only - SP



- AMS-DTL 23053/8
- VG 95343 Part 5 Type F
- UL-E35586 VW-1 600V. 150°C

## RW-175-E Polyvinylidene Fluoride High temperature, chemical resistant

RW-175-E is an extremely tough, high temperature tubing offering outstanding abrasion and cut-through resistance. Ideal for strain relief and insulating densely packed electrical connections, while allowing visual inspection of covered components.

#### **Features & Benefits**

- Transparent
- Tough semi-rigid, thin wall tubing
- High temperature performance
- · Protection from most industrial solvents & fuels

#### **Operating Temperature**

From -55°C to +175°C

#### Installation

- Minimum shrink temperature +155°C
- Minimum full recovery +175°C

Inside D	iameter	Wall Thickness	Pack	Size	Part Number
Minimum Supplied	Maximum Recovered	Nominal Recovered (mm)	1.2m Stick (STK)	Spools (SP)	
1.2	0.6	0.25	60m	304m	RW-175-E-3/64-colour-xx
1.6	0.8	0.5	60m	304m	RW-175-E-1/16-colour-xx
2.4	1.2	0.25	60m	152m	RW-175-E-3/32-colour-xx
3.2	1.6	0.25	60m	152m	RW-175-E-1/8-colour-xx
4.8	2.4	0.25	60m	152m	RW-175-E-3/16-colour-xx
6.4	3.2	0.30	30m	76m	RW-175-E-1/4-colour-xx
9.5	4.8	0.30	30m	60m	RW-175-E-3/8-colour-xx
12.7	6.4	0.30	30m	45m	RW-175-E-1/2-colour-xx
19.0	9.5	0.43	30m	76m	RW-175-E-3/4-colour-xx
25.4	12.7	0.48	30m	76m	RW-175-E-1-colour-xx
38.1	19.1	0.51	12m	30m	RW-175-E-1-1/2-colour-xx

#### Notes:

- · Wall thickness will be less if tubing recovery is restricted during shrinkage.
- · Where xx is either STK (sticks) or SP (spools).
- · All dimensions in millimetres, unless other stated.

Part Number Example; RW-175-E-1/8-X-STK 3.2mm inside diameter, clear tubing, supplied as 1.2m sticks.

#### Ordering Information

Standard colour: X=Clear.

Non Standard colours 0=Black

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: 1.2m Lengths: STK, or Spools: SP

#### RW-200-E

#### Fluoroelastomer

#### High temperature, chemically resistant

High specification heat shrinkable tubing based upon a crosslinked Fluoroelastomer material, resistant to a wide range of fuels, lubricants, acids and solvents at elevated temperatures. RW-200-E is highly flame retardant and meets strict military specifications

#### **Features & Benefits**

- · Excellent fluid and temperature resistance
- · Flexibility at low temperatures
- · Highly flame retardant

#### **Operating Temperature**

From -55°C to +200°C

#### Installation

- Minimum shrink temperature +100°C
- Minimum full recovery +175°C



#### **Specifications & Approvals**

- VG 95343 Part 5 Type E
- VDE 0341 Pt 9005
- BS 4G-198 Part 3 Type 12A

Inside D	Inside Diameter		Pack Size	Part Number
Minimum Supplied (mm)	Maximum Recovered (mm)	Nominal Recovered (mm)	Spools (SP)	
3.2	1.60	0.76	50m	RW-200-E-1/8-0-SP
4.8	2.40	0.84	50m	RW-200-E-3/16-0-SP
6.4	3.20	0.89	50m	RW-200-E-1/4-0-SP
9.5	4.80	1.02	50m	RW-200-E-3/8-0-SP
12.7	6.40	1.22	30m	RW-200-E-1/2-0-SP
19.0	9.50	1.45	30m	RW-200-E-3/4-0-SP
25.4	12.70	1.78	30m	RW-200-E-1-0-SP
38.1	19.10	2.41	15m	RW-200-E-1-1/2-0-SP
51.0	25.40	2.79	15m	RW-200-E-2-0-SP

#### Note:

- · Wall thickness will be less if tubing recovery is restricted during shrinkage.
- · For supply to BS 4G-198 add -BS to ordering description.

Part Number Example; RW-200-E-1-1/2-0-SP 38.1mm inside diameter, black tubing, supplied on spools.

**Ordering Information** 

Standard colours: 0 = Black

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: Spools only - SP



- AMS-DTL 23053/4, Class 1
- UL-E35581 600V. 125°C
- RT-1301

## SCL Polyolefin Semi-rigid, encapsulant lined

Designed to encapsulate 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.

#### **Features & Benefits**

- · Semi-rigid encapsulant lined tubing
- · Excellent moisture resistance
- · Good chemical & solvent resistance

#### **Operating Temperature**

From -55°C to +110°C

#### Installation

- Minimum shrink temperature +125°C
- Minimum full recovery +135°C

Inside Diameter		Nominal Wa	Nominal Wall Thickness		Part Number
Minimum Supplied	Maximum Recovered	Recovered (mm)	Encapsulant (mm)	1.2m Stick (STK)	
3.2	0.6	0.96	0.51	30m	SCL-1/8-0*-STK
4.8	1.5	1.09	0.64	30m	SCL-3/16-0*-STK
6.4	2.0	1.19	0.69	30m	SCL-1/4-0*-STK
9.5	3.4	1.27	0.76	30m	SCL-3/8-0*-STK
12.7	5.0	1.39	0.89	30m	SCL-1/2-0*-STK
19.0	8.0	1.65	1.02	30m	SCL-3/4-0*-STK
25.4	10.2	1.90	1.02	30m	SCL-1-0*-STK

#### Notes:

- · Wall thickness will be less if tubing recovery is restricted during shrinkage.
- Colour as standard is Black (0)\*, with optional colour per size, see table below.

Part Number Example; SCL-1-0-STK 25.4mm inside diameter, black tubing, supplied as 1.2m sticks.

#### **Ordering Information**

Standard colour: 0=Black

Size	3.2 mm	4.8 mm	6.4 mm	9.5 mm	12.7 mm	19.0 mm	25.4 mm
Colour	Brown (1)	Grey (8)	White (9)	Red (2)	Blue (6)	Yellow (4)	n/a

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: 1.2m Lengths: STK only

#### SR Silicone Rubber

#### High elasticity & temperature withstand

Silicone rubber has a good resistance to low and high temperatures and has good compatibility with numerous chemicals and excellent ageing characteristics. Extremely useful for cable harnessing because of its high elasticity and flexibility.

#### **Features & Benefits**

- · Excellent fluid and temperature resistance
- · Flexibility at low temperatures
- · Wide range of sizes available

#### **Operating Temperature**

- From -60°C to +180°C
- Intermittent temperature 250°C

#### Installation

· Push on application, no heat required



**Specifications & Approvals** 

BS2848 Type 5 Class 180TB

Wall Thickness	Pack Size	Part Number
Nominal Standard (mm)	Spools (SP)	
0.5	50m	SR-0.5/0.5-Colour
0.5	50m	SR-0.75/0.5-Colour
0.5	50m	SR-1.0/0.5-Colour
0.5	50m	SR-1.5/0.5-Colour
0.5	50m	SR-2.0/0.5-Colour
0.5	50m	SR-2.5/0.5-Colour
0.5	50m	SR-3.0/0.5-Colour
0.5	25m	SR-4.0/0.5-Colour
0.5	25m	SR-5.0/0.5-Colour
0.5	25m	SR-6.0/0.5-Colour
0.5	25m	SR-7.0/0.5-Colour
0.5	25m	SR-10.0/0.5-Colour
	Nominal Standard (mm)  0.5  0.5  0.5  0.5  0.5  0.5  0.5  0.	Nominal Standard (mm)         Spools (SP)           0.5         50m           0.5         25m           0.5         25m           0.5         25m           0.5         25m           0.5         25m           0.5         25m

#### Note:

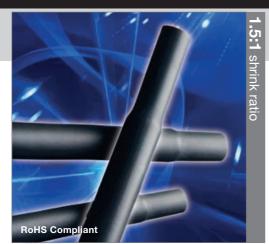
· Other colours and wall thicknesses are available, subject to minimum order quantities.

Part Number Example; SR-3.0/0.5-RED 3.0mm inside diameter, red tubing, supplied on spools.

Ordering Information

Standard colours: Black, Red, Yellow, Green, Blue, White Size selection: The smallest size that provides the best fit.

Standard packaging: Spools only



- UL E85381 VW-1 600v, 200°C
- RW-2057

#### SRFR Silicone Rubber

#### High elasticity & temperature withstand

Silicone heat shrinkable tubing is highly flexible at extreme temperatures, with an excellent balance of physical and electrical properties. SRFR displays outstanding physical strength, resists extreme heat shocks and exhibits good thermal insulation.

#### **Features & Benefits**

- Heat shrinkable at 1.5:1 minimum shrink ratio
  - Highly flame retardant
- · Flexible at both high and low temperatures
- · Good chemical & solvent resistance

#### **Operating Temperature**

From -75°C to +200°C

#### Installation

- Minimum shrink temperature +135°C
- Minimum full recovery +175°C

Inside Diameter		Wall Thickness	Pack Size	Part Number
Minimum Supplied (mm)	Maximum Recovered (mm)	Nominal Recovered (mm)	Spools (SP)	
2.9	1.7	1.0	50m	SRFR-2.9/1.7-8-SP
4.0	2.9	1.0	50m	SRFR-4.0/2.9-8-SP
7.8	4.6	1.0	50m	SRFR-7.8/4.6-8-SP
10.0	6.5	1.5	30m	SRFR-10/6.5-8-SP
15.0	9.6	1.5	30m	SRFR-15/9.6-8-SP
21.0	13.0	2.0	30m	SRFR-21/13-8-SP
29.0	20.0	2.0	15m	SRFR-29/20-8-SP
41.0	27.0	3.0	15m	SRFR-41/27-8-SP
51.0	33.0	3.0	15m	SRFR-51/33-8-SP

#### Note:

- · Spools are made up of 5m lengths.
- · Wall thickness will be less if tubing recovery is restricted during shrinkage.

Part Number Example; SRFR-51/33-8 51.0mm inside diameter, grey tubing, supplied on spools.

**Ordering Information** 

Standard colour: 8=Grey only

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: Spools only SP

#### STW PTFE

#### Thin wall protective sleeving

For use in a wide variety of applications and environments, providing superior temperature and chemical resistance along with excellent mechanical and electrical properties. The thin wall allows protection of wire, splices, electrical connectors and components used in confined spaces and in close proximity to other components.

#### **Features & Benefits**

- Wide temperature performance
- Excellent chemical resistance
- · Wide range of colours and sizes available

#### **Operating Temperature**

From -70°C to +260°C

#### Installation

Push on application, no heat required



#### **Specifications & Approvals**

- BS2848 Type 6 Class 250T
- Colours conform to BS 6746C

Inside Diameter	Wall Thickness	Order Qty	Pack Size	Part Number
Nominal Supplied (mm)	Nominal Standard (mm)	Minimum	Spools	
1.27	0.20	500m	500m	STW-17-Colour
1.42	0.20	500m	500m	STW-16-Colour
1.57	0.20	500m	500m	STW-15-Colour
1.73	0.20	500m	500m	STW-14-Colour
1.93	0.20	500m	250m	STW-13-Colour
2.16	0.20	500m	250m	STW-12-Colour
2.44	0.20	500m	250m	STW-11-Colour
2.72	0.20	500m	250m	STW-10-Colour
3.02	0.20	300m	150m	STW-9-Colour
3.43	0.20	200m	100m	STW-8-Colour

A wide range of additional sizes from 0.51mm inside diameter (STW-26), to 8.53mm inside diameter (STW-0) are available on request.

Part Number Example; STW-11-Natural 2.44mm inside diameter, natural tubing, supplied on spools.

**Ordering Information** 

Standard colours: Natural.

Other colours include Black, Blue, Green, White and Yellow. Size selection: The smallest size that provides the best fit.

Standard packaging: Spools only SP



- BS2848 Type 6 Class 250T
- Colours conform to BS 6746C

### PTFE Standard Wall Protective sleeving

Thicker wall version PTFE tube allows enhanced protection of wire, cable, electrical and electronic components, for commercial and high performance Military and Aerospace systems. As well as having superior temperature and chemical resistance, TW tubing also provides excellent mechanical and electrical properties.

#### **Features & Benefits**

- · Superior temperature performance
- · Excellent chemical resistance
- · Wide range of colours and sizes available

#### **Operating Temperature**

From -70°C to +260°C

#### Installation

· Push on application, no heat required

Inside Diameter	Wall Thickness	Order Qty	Pack Size	Part Number
Nominal Supplied (mm)	Nominal Standard (mm)	Minimum	Spools	
1.27	0.30	500m	500m	TW-17-Colour
1.42	0.30	500m	500m	TW-16-Colour
1.57	0.30	500m	500m	TW-15-Colour
1.73	0.30	500m	500m	TW-14-Colour
1.93	0.30	250m	250m	TW-13-Colour
2.16	0.30	250m	250m	TW-12-Colour
2.44	0.30	250m	250m	TW-11-Colour
2.72	0.30	200m	200m	TW-10-Colour
3.02	0.38	150m	150m	TW-9-Colour
3.45	0.38	100m	100m	TW-8-Colour

A wide range of additional sizes from 0.41mm inside diameter (TW-28), to 8.53mm inside diameter (TW-0) are available on request.

Part Number Example; STW-11-Natural 2.44mm inside diameter, natural tubing, supplied on spools.

**Ordering Information** 

Standard colours: Natural.

Other colours include Black, Blue, Green, White and Yellow. Size selection: The smallest size that provides the best fit.

Standard packaging: Spools only - SP

#### **Features & Benefits**

- · Highly flame retardant
- · Excellent chemical & solvent resistance

#### **Operating Temperature**

From -67°C to +250°C

#### Installation

- Minimum shrink temperature +330°C
- Minimum full recovery temperature +340°C



#### **Specifications & Approvals**

- AMS-DTL-23053/12 Class 3
- · RW-2055

Inside D	Inside Diameter		Pack Size	Part Number
Minimum Supplied (mm)	Maximum Recovered (mm)	Nominal Recovered (mm)	1.2m Lengths (STK)	
0.8	0.38	0.23	60m	TFE-30-X-STK
0.9	0.46	0.23	60m	TFE-28-X-STK
1.1	0.56	0.25	60m	TFE-26-X-STK
1.2	0.68	0.25	60m	TFE-24-X-STK
1.4	0.81	0.30	60m	TFE-22-X-STK
1.5	0.99	0.30	60m	TFE-20-X-STK
1.9	1.24	0.30	60m	TFE-18-X-STK
2.3	1.55	0.30	60m	TFE-16-X-STK
3.0	1.83	0.30	60m	TFE-14-X-STK
3.8	2.26	0.30	60m	TFE-12-X-STK
4.8	2.84	0.30	60m	TFE-10-X-STK
6.1	3.58	0.38	30m	TFE-8-X-STK
7.6	4.52	0.38	30m	TFE-6-X-STK
9.4	5.69	0.38	30m	TFE-4-X-STK
10.9	7.06	0.38	30m	TFE-2-X-STK
11.9	8.81	0.38	30m	TFE-0-X-STK

Part Number Example; TFE-20-X 1.5mm inside diameter, Clear tubing, supplied in sticks.

**Ordering Information** 

Standard colours: X=Clear

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: 1.2m Lengths: STK only



- AMS-DTL-23053/12 Class 5
- RW-2054

## TFER PTFE modified

#### High temperature, chemically inert

Provides insulation and mechanical protection in extreme thermal and chemical environments. Ideally suited for electrical insulation of electronic components, hydraulic hoses and couplings, against contamination and corrosion. High mechanical strength and low friction coefficient makes TFER ideal proection for bearing shafts and similar applications.

#### **Features & Benefits**

- · Highly flame retardant
- · Excellent chemical & solvent resistance

#### **Operating Temperature**

From -67°C to +250°C

#### Installation

- Minimum shrink temperature +330°C
- Minimum full recovery +340°C

Inside Diameter		Wall Thickness	Pack Size	Part Number
Minimum Supplied (mm)	Maximum Recovered (mm)	Nominal Recovered (mm)	1.2m Lengths (STK)	
2.0	0.6	0.23	60m	TFER-5/64-X-STK
3.2	1.0	0.25	60m	TFER-1/8-X-STK
6.4	1.6	0.30	30m	TFER-1/4-X-STK
9.5	2.4	0.30	30m	TFER-3/8-X-STK
12.7	3.7	0.38	30m	TFER-1/2-X-STK
15.9	4.5	0.38	30m	TFER-5/8-X-STK
19.0	5.7	0.38	30m	TFER-3/4-X-STK
25.4	7.1	0.38	30m	TFER-1-X-STK
32.0	8.8	0.38	12m	TFER-1-1/4-X-STK

#### Notes:

 Wall thickness will be less if tubing recovery is restricted during shrinkage operation, applicable to both TFE and TFER tubing.

Part Number Example; TFER-1-1/4-X 32.0mm inside diameter, clear tubing, supplied in sticks.

**Ordering Information** 

Standard colours: X=Clear

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: 1.2m Lengths: STK only

#### **VERSAFIT®**

#### **Polyolefin**

#### Highly flame retardant, very flexible

Recommended for electrical insulation and protection of in-line components, terminals and splices, requiring the highest levels of flame retardance. Versafit offers high flexibility for light duty wiring harnesses, as well as mechanical and strain relief protection.

#### **Features & Benefits**

- Low shrink temperature
- · Highly flame retardant
- 2:1 shrink ratio
- Very flexible

#### **Operating Temperature**

From -55°C to +135°C

#### Installation

- Minimum shrink temperature +70°C
- Minimum full recovery +90°C



#### **Specifications & Approvals**

- AMS-DTL-23053/5 Classes 1 & 3
- UL E35586 VW-1 600V 125°C
- BS 4G-198 Part 3 Type 11A
- RW-3009

Inside D	Inside Diameter		Pack Size	Part Number
Minimum Supplied (mm)	Maximum Recovered (mm)	Nominal Recovered (mm)	Spools (SP)	
1.63	0.6	0.40	300m	VERSAFIT-3/64-0-SP
1.85	0.8	0.43	300m	VERSAFIT-1/16-0-SP
2.79	1.2	0.51	150m	VERSAFIT-3/32-0-SP
3.43	1.6	0.51	150m	VERSAFIT-1/8-0-SP
5.21	2.4	0.51	150m	VERSAFIT-3/16-0-SP
7.11	3.2	0.64	75m	VERSAFIT-1/4-0-SP
10.16	4.8	0.64	75m	VERSAFIT-3/8-0-SP
13.72	6.4	0.64	75m	VERSAFIT-1/2-0-SP
20.45	9.5	0.76	75m	VERSAFIT-3/4-0-SP
25.53	12.7	0.89	30m	VERSAFIT-1-0-SP
39.88	19.1	1.02	38m	VERSAFIT-1-1/2-0-SP
52.83	25.4	1.14	38M	VERSAFIT-2-0-SP

#### Note:

- Wall thickness will be less if tubing recovery is restricted during shrinkage.
- For supply to BS 4G-198 add -BS to ordering description.

Part Number Example; VERSAFIT-3/16-0-SP 5.21mm inside diameter, Black tubing, supplied on spools.

**Ordering Information** 

Standard colours: 0=Black

Non Standard Colours 2=Red, 4=Yellow, 5=Green, 6=Blue and 9=White: Sizes 3/64" through to 1" only

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: Supplied on spools only - SP



ZH2 and ZH4
Polyolefin

Zerohalogen, flame retardant

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 undesirable.

ZH4 offers thinner wall

#### **Features & Benefits**

- · Highly flame retardant
- · Essentially free from halogens
- · Emits minimal amounts of gasses

#### **Operating Temperature**

• From -30°C to +125°C

#### Installation

- Minimum shrink temperature +70°C
- Minimum full recovery +90°C

#### **Specifications & Approvals**

- UL E35586 VW-1 600V, 125°C for ZH2
- UL E85381 VW-1 300V, 125°C for ZH4.
- CSA LR31929 VW-1 600V for ZH2
- CSA LR31929 VW-1 150V for ZH4

	Inside Diameter		Wall Thickness	Pack Size	Part Number
	Minimum Supplied (mm)	Maximum Recovered (mm)	Nominal Recovered (mm)	Spools (SP)	
	1.50	0.50	0.33	300m	ZH2-1.0-0-SP
	2.60	1.00	0.43	150m	ZH2-2.0-0-SP
	4.60	2.00	0.43	150m	ZH2-4.0-0-SP
ZH2	6.60	3.00	0.56	150m	ZH2-6.0-0-SP
Z	9.60	4.50	0.56	75m	ZH2-9.0-0-SP
	12.70	6.00	0.56	75m	ZH2-12.0-0-SP
	26.80	12.50	0.89	30m	ZH2-25.0-0-SP
	32.10	15.00	0.89	30m	ZH2-30.0-0-SP
	1.40	0.50	0.25	300m	ZH4-1.0-0-SP
ZH4	3.30	1.50	0.25	150m	ZH4-3.0-0-SP
Z	7.50	3.50	0.28	150m	ZH4-7.0-0-SP
	10.50	5.00	0.28	75m	ZH4-10.0-0-SP

#### Notes:

- · Wall thickness will be less if tubing recovery is restricted during shrinkage.
- · The selection shown above is only a small selection of what is available, please contact us for more details.

Part Number Example; ZH4-7.0-0-SP 7.50mm inside diameter, black tubing, supplied in spools.

**Ordering Information** 

Standard colour: 0=Black

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: Supplied on spools only - SP

#### ZH-100 Polyolefin

Low fire hazard, thin wall

A thin wall, flexible tubing, with excellent fire safety characteristics combined with low smoke emission, good mechanical and fluid resistance properties. Ideal for marine, offshore oils and gas platforms, rail and mass transit applications.

#### **Features & Benefits**

- · Low smoke emission
- Low evolution of acid gasses
- No added halogens
- · Very flexible

#### **Operating Temperature**

From -30°C to +105°C

#### Installation

- Minimum shrink temperature +80°C
- Minimum full recovery +120°C



#### **Specifications & Approvals**

- BR 1326A
- RW-2031

Inside Diameter		Wall Thickness	Pack Size	Part Number
Minimum Supplied (mm)			Spools (SP)	
3.2	1.6	0.50	150m	ZH-100-1/8-0-SP
4.8	2.4	0.50	150m	ZH-100-3/16-0-SP
6.4	3.2	0.65	75m	ZH-100-1/4-0r-SP
9.5	4.8	0.65	75m	ZH-100-3/8-0-SP
12.7	6.4	0.65	75m	ZH-100-1/2-0-SP
19.0	9.5	0.75	75m	ZH-100-3/4-0-SP
25.4	12.7	0.90	30m	ZH-100-1-0-SP
38.0	19.0	1.00	30m	ZH-100-1-1/2-0-SP
51.0	25.4	1.15	30m	ZH-100-2-0-SP

#### Note:

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

Part Number Example; ZH-100-3/16-0-SP 4.8mm inside diameter, Black tubing, supplied on spools.

**Ordering Information** 

Standard colours: 0=Black

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: Supplied on spools only - SP



ZHTM Polyolefin

Low fire hazard, medium wall

A thicker wall, flexible tubing with excellent fire safety characteristics, combined with low smoke emission and good mechanical and fluid resistance.

#### **Features & Benefits**

- · Low smoke emission
- · Low evolution of acid gasses
- · No added halogens
- · Very flexible
- Low fire hazard

#### **Operating Temperature**

From -30°C to +105°C

#### Installation

- Minimum shrink temperature +80°C
- Minimum full recovery +121°C

#### **Specifications & Approvals**

- BS 4G-198 Part 3 Type 15
- BR 1326A
- · VDE 0341 Part 9005
- RW-2058

Inside D	Inside Diameter		Pack Size	Part Number
Minimum Supplied (mm)	Maximum Recovered (mm)	Nominal Recovered (mm)	Spools (SP)	
3.0	1.5	0.70	60m	ZHTM-3/1.5-0-SP
5.0	2.5	0.75	60m	ZHTM-5/2.5-0-SP
8.0	4.0	0.80	60m	ZHTM-8/4-0-SP
12.0	6.0	0.90	30m	ZHTM-12/6-0-SP
18.0	9.0	1.00	30m	ZHTM-18/9-0-SP
24.0	12.0	1.10	30m	ZHTM-24/12-0-SP
40.0	20.0	1.30	30m	ZHTM-40/20-0-SP
50.0	30.0	1.50	30m	ZHTM-50/30-0-SP

#### Note:

- · Wall thickness will be less if tubing recovery is restricted during shrinkage.
- For supply to BS 4G-198 add -BS to ordering description.

Part Number Example; ZHTM-18/9-0-SP 18.0mm inside diameter, black tubing, supplied on spools.

**Ordering Information** 

Standard colour: 0=Black

Size selection: The largest size that will recover snugly over the component(s).

Standard packaging: Supplied on spools only - SP

## PD Caps Polyolefin

#### Encapsulant-lined, semi-rigid

Inexpensive way to encapsulate crimped electrical connections. Encapsulant lining melts and flows to fill surface irregularities of the substrate. These vibration proof caps are used to insulate and terminate deadend electrical cables, fixtures, connectors and other electrical components.

#### **Features & Benefits**

- · Rapid and simple installation
- · Splash and moisture resistant
- 3:1 Shrink ratio

#### **Operating Temperature**

• From -55°C to +110°C

#### Installation

- Minimum shrink temperature +125°C
- Minimum full recovery +135°C



#### **Specifications & Approvals**

UL E85381 600v, 125°C

Length :	Length Supplied		Inside Diameter		Part Number
Nominal Overall	Minimum Open Barrel	Maximum Supplied	Maximum Recovered	Nominal Recovered	
25.4	12.7	3.18	0.58	1.22	PD-CAP-1/8-0
25.4	15.2	4.75	1.52	1.57	PD-CAP-3/16-0
28.4	15.2	6.35	2.03	1.98	PD-CAP-1/4-0
31.8	18.3	9.53	2.29	2.08	PD-CAP-3/8-0
38.1	21.6	12.7	2.29	2.54	PD-CAP-1/2-0

#### Notes:

- · Wall thickness will be less if tubing recovery is restricted during shrinkage.
- All dimensions in millimetres unless otherwise stated.

# As Supplied

**Fully Recovered** 



Part Number Example; PD-CAP-1/4-0 6.35mm inside diameter, Black end cap.

**Ordering Information** 

Standard colours: 0=Black

Size selection: The largest size that will recover snugly over the component(s).



UL E85381 600v, 125°C

## TC Caps Polyolefin Flame retardant

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.

#### **Features & Benefits**

- · 2.5:1 Shrink ratio
- Flame retardant
- · Rapid and simple installation

#### **Operating Temperature**

From -55°C to +135°C

#### Installation

- Minimum shrink temperature +110°C
- · Minimum full recovery +135°C

Length Supplied		Inside Diameter		Wall Thickness	Part Number
Nominal Overall	Minimum Open Barrel	Maximum Supplied	Maximum Recovered	Nominal Recovered	
19.1	10.2	1.6	0.8	0.51	TC-CAPS-4001-9
25.4	14.0	3.2	1.3	0.64	TC-CAPS-4003-2
28.6	14.0	6.4	2.5	0.69	TC-CAPS-4005-8

#### Notes:

- · Wall thickness will be less if tubing recovery is restricted during shrinkage.
- All dimensions in millimetres unless otherwise stated.

Part Number Example; TC-CAPS-4003-2 25.4mm inside diameter, Red end cap.

**Ordering Information** 

Standard colour: 9=White, 2=Red, 8=Grey. One colour per size only, as per table Size selection: The largest size that will recover snugly over the component(s).