





## 2.1 Heat Shrinkable Tubing

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### Overview of applications for Heat Shrink Tubing

When selecting the correct heat shrink tubing size, it is important to bear in mind the 80:20 rule. The heat shrink tubing must shrink by at least 20% and not more than 80% of its complete shrinkage

capacity to achieve the right result. In our overview of applications you will find the best heat shrink tube for every cable diameter. The 80:20 rule has of course been taken into account in the table.

#### Heat Shrinkable Tubing with a shrink ratio of 2:1

HIS-Pack, LVR, TF21, TF24, TCN20, TREDUX

Shrink ratio 2:1 Size mm		Cable/Wire Diameter
1.2/0.6		0.7 mm
		1.1 mm
3.2/1.6	2.4/1.2	1.4 mm
		1.9 mm
		2.2 mm
		2.9 mm
		3.8 mm
6.4/3.2	4.8/2.4	4.3 mm
		5.7 mm
		5.8 mm
12.7/6.4	9.5/4.7	7.7 mm
		8.6 mm
		11.4 mm
		15.2 mm
25.4/12.7	19.1/9.5	17.2 mm
		22.9 mm
50.8/25.4	38.1/19.1	30.5 mm
		34.3 mm
		45.7 mm
101.6/50.8	76.2/38.1	61.0 mm
		68.6 mm
		91.4 mm

#### Heat Shrinkable Tubing with a shrinkage ratio of 3:1

With the optimal shrinkage ratio of 3:1, you can cover a wide range of applications with just a few sizes. This leads to reduced stock expenditure and requires less space. 3:1 heat shrink tubes: HIS-3, HIS-A, TREDUX, TF34, TF31, TCN20 overexpanded; HIS-3 BAG, ShrinKits 321, TA32

Shrink ratio 3:1 Size mm		Cable/Wire Diameter
1.5/0.5		0.7 mm
		1.3 mm
6/2	3/1	1.4 mm
		2.6 mm
		2.8 mm
18/6	12/4	5.2 mm
		5.6 mm
		8.4 mm
		10.4 mm
40/13	24/8	11.2 mm
		15.6 mm
		18.4 mm
		20.8 mm
		34.6 mm

#### Conversion from imperial to metric

<b>Inch</b>	1/32"	3/64"	1/16"	5/64"	3/32"	1/8"	3/16"	1/4"	3/8"
<b>mm</b>	0.8	1.2	1.6	2.0	2.4	3.2	4.8	6.4	9.5
<b>Inch</b>	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"
<b>mm</b>	12.7	15.9	19.1	25.4	31.8	38.1	50.8	76.2	101.6

## The right Heat Shrink Tube

The 80:20 rule means that a heat shrink tube should shrink by a maximum of 80% and a minimum of 20%.

### For example:

A cable with a diameter of 5mm is to be wrapped in heat shrink tubing. In theory both sizes 6/2 and 12/4 would be suitable, since the required diameter of 5mm lies within the shrink range of both tube sizes.

#### Size 6/2

##### Maximum shrink (100%)



Maximum shrinkage = 4 mm

##### Optimum shrinkage max. (80%)



Shrinkage of 3.2 mm

##### Optimum shrinkage min. (20%)



Shrinkage of 0.8 mm

Size 6/2 has a range of application of between 2.8mm and 5.2mm and is therefore suitable for the cable diameter of 5mm.

#### Size 12/4

##### Maximum shrink (100%)



Maximum shrinkage = 8 mm

##### Optimum shrinkage max. (80%)



Shrinkage of 6.4 mm

##### Optimum shrinkage min. (20%)



Shrinkage of 1.6 mm

The smallest application diameter of size 12/4 is 5.6mm. This size is therefore unsuitable for a cable diameter of 5mm.

### Calculator tool for Heat Shrink Tubing

The calculator tool for heat shrink tubing is a selection guide for shrink tubing sizes based on the object to be covered. Fill in your specification and the calculator presents the right tubing size according to the 80:20 rule. Find more information under <http://www.hellermannntyton.co.uk/heatshrink-calculator/>

The calculator tool also checks if the heat shrink tubing you have chosen is suitable for your application. For example you can find the heat shrink tubing with the Product Search on the HellermannTyton website.

## Heatshrinkable Tubing Overview

	Type	Material	Shrink Ratio	Operating Temperature	Dimension (mm)	Halogen-free	Colour	Specification	Page
Thin-Wall	LVR	PVC	2:1	-30 °C to +105 °C	2.4 - 25.4		Black	11, 12	112
	TCN20	PO-X	2:1	-55 °C to +125 °C	1.2 - 50.8		Black	2, 11, 12	113
	TCN20 overexpanded	PO-X	3:1	-55 °C to +125 °C	2.4 - 38.0		Black	2, 11, 12	114
	TREDUX	PO-X	2:1, 3:1	-55 °C to +135 °C	1.5 - 101.6		Black (BK), Green-Yellow	2, 10, 11, 12	120
	HIS-Pack	PO-X	2:1	-55 °C to +125 °C	1.2 - 25.4		Black (BK), Blue (BU), Green-Yellow (GNYE), Red (RD), Transparent	10, 11, 12	122
	HIS-3	PO-X	3:1	-55 °C to +135 °C	1.5 - 24.0		Black (BK), Blue (BU), Green-Yellow (GNYE), Red (RD), Transparent	2, 10, 11, 12	124
	HIS-3 BAG	PO-X	3:1	-55 °C to +135 °C	1.5 - 12.0		Black (BK), Blue (BU), Brown (BN), Green-Yellow (GNYE), Grey (GY), Red (RD), Transparent	10, 11, 12	126
	TF21	PO-X	2:1	-55 °C to +135 °C	1.2 - 101.6		Black (BK), Blue (BU), Green-Yellow (GNYE), Red (RD), White (WH), Yellow	2, 6, 9, 10, 11, 12	128
	TF24	PO-X	2:1	-55 °C to +135 °C	1.2 - 101.6	HF ✓	Transparent	3, 10, 13	131
	TF31	PO-X	3:1	-55 °C to +135 °C	1.5 - 40.0		Black (BK), Blue (BU), Green (GN), Green-Yellow (GNYE), Red (RD), White (WH), Yellow	2, 11, 12	132
	TF34	PO-X	3:1	-55 °C to +135 °C	1.5 - 40.0	HF ✓	Transparent		135
	Thin-Wall Hot melt adhesive	HIS-A	PO-X	3:1	-55 °C to +125 °C	3.0 - 24.0		Black (BK), Trans-parent	2, 10
TA32		PO-X	3:1	-55 °C to +125 °C	3.2 - 40.0		Black	2, 10, 11, 12	139
TA42		PO-X	4:1	-55 °C to +125 °C	4.0 - 52.0		Black	10, 11, 12	139

### Heatshrinkable Tubing Overview

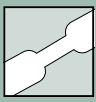
	Type	Material	Shrink Ratio	Operating Temperature	Dimension (mm)	Halogen-free	Colour	Specification	Page
Medium-Wall	MU47	PO-X	up to 4:1	-55 °C to +110 °C	12.0 - 140.0	HF ✓	Black		140
Medium-Wall Hot melt adhesive	MA47	PO-X	up to 4:1	-55 °C to +110 °C	12.0 - 140.0	HF ✓	Black		140
	TREDUX MA47	PO-X	up to 4:1	-55 °C to +110 °C	12.0 - 95.0	HF ✓	Black		142
	RMS	PO-X	up to 4.5:1	-40 °C to +120 °C	43 - 185	HF ✓	Black		143
	Thick-Wall	HU47	PO-X	up to 3.5:1	-55 °C to +110 °C	9.0 - 180.0	HF ✓	Black	
Thick-Wall Hot melt adhesive	TREDUX HA47	PO-X	up to 3.5:1	-55 °C to +110 °C	13.0 - 85.0	HF ✓	Black		144
	HA47	PO-X	up to 3.5:1	-55 °C to +110 °C	9.0 - 180.0	HF ✓	Black		145
	HA67	PO-X	6:1	-55 °C to +110 °C	19.0 - 235.0	HF ✓	Black		147

### Specification

1	2	3	4	5	6	7
8	9	10	11	12	13	

Please refer to the Approvals Overview for further information, see page: 330, 331





### Heat Shrinkable Tubing 2:1 - PVC

- LVR

LVR can be used for cable joints, low voltage bus bars and batteries.

#### Features and Benefits

- PVC heat shrinkable tubing
- Self-extinguishing
- Good chemical resistance and mechanical protection



LVR used for mechanical protection.

<b>MATERIAL</b>	Flexible Polyvinyl Chloride, cadmium free (PVC)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-30 °C to +105 °C
<b>Minimum Shrink Temperature</b>	+135 °C
<b>Longitudinal change after shrinkage</b>	+/-10% max
<b>Dielectric Strength</b>	15 kV/mm according to IEC 243
<b>Shelf life</b>	12 Months max.
<b>Stocking Temperature</b>	+25 °C max.
<b>Flammability</b>	ASTM D2671
<b>Specifications</b>	UL224 105 °C 600V



Heat Shrinkable Tubing 2:1



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
LVR-2.4/1.2	2.4	1.2	0.40	250 m	Black (BK)	344-00240
LVR-3.2/1.6	3.2	1.6	0.40	250 m	Black (BK)	344-00320
LVR-4.8/2.4	4.8	2.4	0.50	250 m	Black (BK)	344-00480
LVR-6.4/3.2	6.4	3.2	0.60	250 m	Black (BK)	344-00640
LVR-9.5/4.8	9.5	4.8	0.60	125 m	Black (BK)	344-00950
LVR-12.7/6.4	12.7	6.4	0.70	75 m	Black (BK)	344-01270
LVR-19.1/9.5	19.0	9.5	0.80	100 m	Black (BK)	344-01900
LVR-25.4/12.7	25.4	12.7	1.00	100 m	Black (BK)	344-02540

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval.  
For product specific approvals please refer to the Appendix.



### Low-Heat Shrinkable Tubing 2:1

- **TCN20 - self extinguishing**

TCN20 is suitable for a wide range of applications such as electrical insulation, mechanical protection and cable bundling.

#### Features and Benefits

- Thin walled general purpose polyolefin tubing
- Highly flame-retardant, UL224 VW-1 , CSA
- Fast shrinking
- Low shrink temperature



Heat Shrink Tubing TCN20.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Minimum Shrink Temperature</b>	+100 °C
<b>Longitudinal change after shrinkage</b>	+/-5%
<b>Dielectric Strength</b>	20kV/mm according to ASTM D2671
<b>Flammability</b>	Self extinguishing
<b>Specifications</b>	CSA, UL224 125 °C 600V VW-1



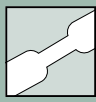
Heat Shrinkable Tubing 2:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
TCN20-1.2/0.6	1.2	0.6	0.30	300 m	Black (BK)	300-73010
TCN20-1.6/0.8	1.6	0.8	0.35	300 m	Black (BK)	300-73020
TCN20-2.4/1.2	2.4	1.2	0.45	300 m	Black (BK)	300-73030
TCN20-3.2/1.6	3.2	1.6	0.45	300 m	Black (BK)	300-73040
TCN20-4.8/2.4	4.8	2.4	0.50	300 m	Black (BK)	300-73050
TCN20-6.4/3.2	6.4	3.2	0.55	300 m	Black (BK)	300-73060
TCN20-9.5/4.8	9.5	4.8	0.55	100 m	Black (BK)	300-73070
TCN20-12.7/6.4	12.7	6.4	0.65	100 m	Black (BK)	300-73080
TCN20-19.1/9.5	19.1	9.5	0.80	60 m	Black (BK)	300-73090
TCN20-25.4/12.7	25.4	12.7	0.90	60 m	Black (BK)	300-73100
TCN20-38.1/19.1	38.1	19.1	1.02	30 m	Black (BK)	300-73110
TCN20-50.8/25.4	50.8	25.4	1.15	30 m	Black (BK)	300-73120

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



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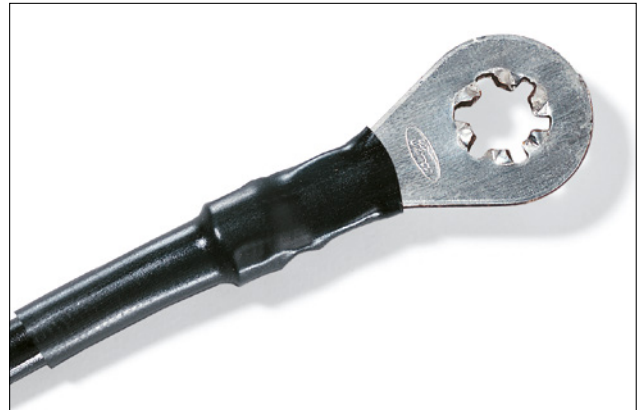
### Heat Shrinkable Tubing 3:1 - Self extinguishing

- TCN20 overexpanded

Mechanical, electrical and corrosion protection applications for parts with high diameter variances. This fast shrinking tubing makes it suitable for high volume production.

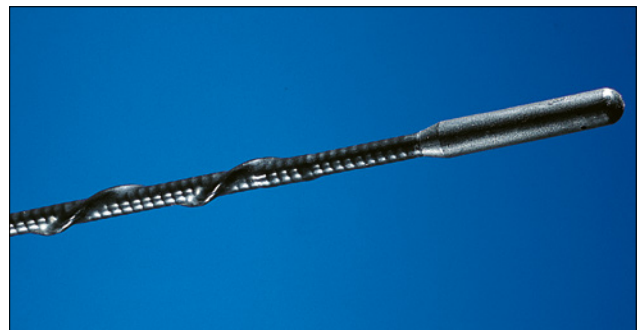
#### Features and Benefits

- Thin walled overexpanded polyolefin tubing
- Inch size tubing with 3:1 shrink ratio
- Very fast shrinking and low shrink temperature
- Highly flame-retardant, UL224 VW-1



Heat shrink tubing TCN20 overexpanded.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Minimum Shrink Temperature</b>	+100 °C
<b>Longitudinal change after shrinkage</b>	+/-5%
<b>Dielectric Strength</b>	20kV/mm according to ASTM D2671
<b>Flammability</b>	Self extinguishing
<b>Specifications</b>	CSA, UL224 125 °C 600V VW-1



Due to its thin wall TCN20 overexpanded is suitable for insulation of antennas.

RoHS



Heat Shrinkable Tubing 3:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
TCN20-2.4/0.8	2.4	0.8	0.40	300 m	Black (BK)	300-73130
TCN20-3.2/1.2	3.2	1.2	0.50	300 m	Black (BK)	300-73140
TCN20-4.8/1.6	4.8	1.6	0.50	300 m	Black (BK)	300-73150
TCN20-6.6/2.4	6.6	2.4	0.55	300 m	Black (BK)	300-73160
TCN20-9.5/3.2	9.5	3.2	0.65	100 m	Black (BK)	300-73170
TCN20-12.7/4.8	12.7	4.8	0.75	100 m	Black (BK)	300-73180
TCN20-19.0/6.4	19.0	6.4	0.75	60 m	Black (BK)	300-73190
TCN20-25.4/9.5	25.4	9.5	0.79	60 m	Black (BK)	300-73200
TCN20-38.0/12.7	38.0	12.7	0.95	30 m	Black (BK)	300-73210

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval.  
For product specific approvals please refer to the Appendix.

Ideal for all on site installations:  
Our ShrinKit 321 family!

ShrinKit 321- A

HellermannTyton



ShrinKit 321 Universal Basic.  
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ShrinKit 321-A Basic. Page 137



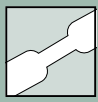
ShrinKit 321 Universal.  
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ShrinKit 321-A. Page 136



ShrinKit 321 Basic. Page 116



### Heat Shrinkable Tubing 3:1 in a Kit

- **ShrinKit 321 Basic - black**

The compact and handy kit belongs to the basic equipment for every assembler. Its ideal shrink ratio of 3:1 replaces many differently sized tubing.

#### Features and Benefits

- Compact and handy kit
- Black tubing
- Application range from 1mm to 16 mm
- 220 precut pieces in five sizes



ShrinKit 321 Basic.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Minimum Shrink Temperature</b>	+90 °C
<b>Longitudinal change after shrinkage</b>	+5%/-10% max.
<b>Dielectric Strength</b>	20 kV/mm according to ASTM D 2671
<b>Flammability</b>	Self extinguishing
<b>Insulation Class</b>	B (VDE 0530)
<b>Specifications</b>	SAE - AMS - DTL-23053/5 Class 1



Heat Shrinkable Tubing 3:1

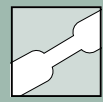
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COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content (pcs.)	Article-No.
1	1.5	0.5	35.0	0.45	Black (BK)	50	380-03001
2	6.0	2.0	35.0	0.70	Black (BK)	30	
3	3.0	1.0	35.0	0.55	Black (BK)	25	
4	6.0	2.0	35.0	0.70	Black (BK)	15	
5	6.0	2.0	35.0	0.70	Black (BK)	15	
6	3.0	1.0	35.0	0.55	Black (BK)	25	
7	1.5	0.5	35.0	0.45	Black (BK)	50	
8	12.0	4.0	80.0	0.70	Black (BK)	5	
	18.0	6.0	80.0	0.80	Black (BK)	5	

All dimensions in mm. Subject to technical changes.



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### Heat Shrinkable Tubing 3:1 in a Kit

- **ShrinkKit 321 Universal Basic**

With ShrinkKit 321 HellermannTyton has set a new standard in heat shrink tubing; ShrinkKit tubings cover many applications with their ideal shrink ratio of 3:1.

#### Features and Benefits

- Compact and handy kit
- Black and coloured tubing
- Application range from 1 mm up to 16 mm



ShrinkKit 321 Universal Basic.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Minimum Shrink Temperature</b>	+90 °C
<b>Longitudinal change after shrinkage</b>	+5%/-10% max.
<b>Dielectric Strength</b>	20 kV/mm according to ASTM D 2671
<b>Flammability</b>	Self extinguishing
<b>Insulation Class</b>	B (VDE 0530)
<b>Specifications</b>	SAE - AMS - DTL-23053/5 Class 1



Heat Shrinkable Tubing 3:1

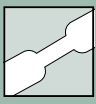


COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content (pcs.)	Article-No.
1	12.0	4.0	35.0	0.70	Black (BK)	12	380-03005
2	6.0	2.0	80.0	0.70	Blue (BU)	5	
	6.0	2.0	80.0	0.70	Red (RD)	5	
	6.0	2.0	80.0	0.70	White (WH)	5	
	12.0	4.0	80.0	0.70	Black (BK)	2	
	12.0	4.0	80.0	0.70	Blue (BU)	2	
	12.0	4.0	80.0	0.70	Red (RD)	2	
3	6.0	2.0	35.0	0.70	Blue (BU)	10	
	6.0	2.0	35.0	0.70	Red (RD)	10	
	6.0	2.0	35.0	0.70	White (WH)	10	
4	9.0	3.0	35.0	0.70	Green/Yellow (GNYE)	15	
5	9.0	3.0	35.0	0.70	Black (BK)	20	
6	3.0	1.0	35.0	0.55	Black (BK)	10	
	3.0	1.0	35.0	0.55	Blue (BU)	10	
	3.0	1.0	35.0	0.55	Red (RD)	10	
	3.0	1.0	35.0	0.55	White (WH)	10	
7	6.0	2.0	35.0	0.70	Black (BK)	20	
	6.0	2.0	35.0	0.70	Green/Yellow (GNYE)	10	
8	18.0	6.0	160.0	0.80	Black (BK)	3	
	18.0	6.0	160.0	0.80	Green/Yellow (GNYE)	3	
	18.0	6.0	160.0	0.80	White (WH)	3	

All dimensions in mm. Subject to technical changes.



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## Heat Shrinkable Tubing 3:1 in a Kit

### • ShrinKit 321 Universal

With ShrinKit 321 HellermannTyton has set a new standard in heat shrink tubing: ShrinKit tubings cover many applications with their ideal shrink ratio of 3:1.

#### Features and Benefits

- Attractive and reusable kit
- Wide range of sizes, colours and lengths
- For insulation, bend protection and identification
- Case can be re-used for storing nails, screws, nuts, fish hooks, etc.
- Size of compartments changeable by simply moving yellow space dividers



ShrinKit 321 Universal.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Minimum Shrink Temperature</b>	+90 °C
<b>Longitudinal change after shrinkage</b>	+5%/-10% max.
<b>Dielectric Strength</b>	20 kV/mm according to ASTM D 2671
<b>Flammability</b>	self-extinguishing (except for transparent)
<b>Insulation Class</b>	B (VDE 0530)
<b>Specifications</b>	SAE - AMS - DTL-23053/5 Class 1 (colours), SAE - AMS - DTL-23053/5 Class 2 (clear)



Heat Shrinkable Tubing 3:1



COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content (pcs.)	Article-No.
1	6.0	2.0	60.0	0.70	Black (BK)	50	380-03002
2	12.0	4.0	100.0	0.70	Black (BK)	15	
3	24.0	8.0	200.0	1.00	Black (BK)	10	
4	6.0	2.0	60.0	0.70	Green/Yellow (GNYE)	50	
5	3.0	1.0	50.0	0.55	Transparent (CL)	100	
6	3.0	1.0	50.0	0.55	Black (BK)	100	
7	12.0	4.0	100.0	0.70	Transparent (CL)	15	
8	12.0	4.0	100.0	0.70	Red (RD)	15	
9	3.0	1.0	50.0	0.55	Red (RD)	100	
10	3.0	1.0	40.0	0.55	Blue (BU)	100	
11	3.0	1.0	40.0	0.55	Green/Yellow (GNYE)	100	
12	1.5	0.5	40.0	0.45	Black (BK)	75	
	1.5	0.5	40.0	0.45	Green/Yellow (GNYE)	75	
13	6.0	2.0	60.0	0.70	Blue (BU)	50	
14	6.0	2.0	60.0	0.70	Red (RD)	50	
15	6.0	2.0	60.0	0.70	Transparent (CL)	50	
16	12.0	4.0	170.0	0.70	Green/Yellow (GNYE)	10	
17	12.0	4.0	170.0	0.70	Blue (BU)	10	

All dimensions in mm. Subject to technical changes.



Please note! Not all products listed on this page may have this approval. For product specific approvals please refer to the Appendix.



### Point of Sale Display for TREDUX

- TREDUX-Display**

With TREDUX HellermannTyton has set a new standard in heat shrink tubing.

TREDUX offers a complete range of thin, medium and thick wall tubing cut into 1 meter length.

All tubing are labeled with an EAN barcode securely packed in display boxes.

They can be removed individually for occasional use in smaller quantities.

With the practical, valuable metal point of sale display is an optimal product presentation guaranteed.

The following table is a proposed content for a TREDUX-Display.

#### Features and Benefits

- Complete range of thin, medium- and thick wall heatshrink tubing in one display
- All tubings can be sold in single 1 meter length or entire carton
- Pick of single tube possible allowing job specific purchasing
- Optimised stock based on usage based display content
- Holder for end user brochures available attached to display



The TREDUX display.



One Step to the Web!

TYPE	Content Proposal	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Pack Cont.	Colour	Article-No.
<b>TREDUX thin wall</b>							
TREDUX-1.5/0.5	1	1.5	0.5	0.50	20 pcs.	Black (BK)	319-00150
TREDUX-3/1-GNYE	1	3.0	1.0	0.60	20 pcs.	Green-Yellow (GNYE)	319-00307
TREDUX-3/1	2	3.0	1.0	0.60	20 pcs.	Black (BK)	319-00300
TREDUX-6/2-GNYE	1	6.0	2.0	0.70	15 pcs.	Green-Yellow (GNYE)	319-00607
TREDUX-6/2	2	6.0	2.0	0.70	15 pcs.	Black (BK)	319-00600
TREDUX-12/4-GNYE	1	12.0	4.0	0.85	10 pcs.	Green-Yellow (GNYE)	319-01207
TREDUX-12/4	4	12.0	4.0	0.85	10 pcs.	Black (BK)	319-01200
TREDUX-24/8	1	24.0	8.0	1.20	5 pcs.	Black (BK)	319-02400
<b>TREDUX MA47 medium wall - with adhesive liner</b>							
TREDUX-MA47-12/3	2	12.0	3.0	2.00	6 pcs.	Black (BK)	323-50120
TREDUX-MA47-19/6	1	19.0	6.0	2.50	10 pcs.	Black (BK)	323-50190
TREDUX-MA47-30/8	2	30.0	8.0	2.50	6 pcs.	Black (BK)	323-50300
TREDUX-MA47-40/12	1	40.0	12.0	2.50	4 pcs.	Black (BK)	323-50400
<b>TREDUX HA47 thick wall - with adhesive liner</b>							
TREDUX-HA47-13/4	2	13.0	4.0	2.40	6 pcs.	Black (BK)	321-50130
TREDUX-HA47-19/6	1	19.0	6.0	2.70	10 pcs.	Black (BK)	321-50190
TREDUX-HA47-33/8	1	33.0	8.0	3.20	5 pcs.	Black (BK)	321-50330
TREDUX-HA47-45/12	1	45.0	12.0	4.10	4 pcs.	Black (BK)	321-50450
<b>TREDUX-Display</b>							
TREDUX-Display	-	-	-	-	1 pcs.	Blue (BU)	319-30000

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.





## Heat Shrinkable Tubing up to 3:1 - 1 m lengths

### • TREDUX thin wall

TREDUX thin wall heat shrink tubing is used for general electrical insulation and mechanical protection of cables and wires.

### Features and Benefits

- Thin walled, flexible, cross-linked polyolefin tubing
- 1m shrink tubing lengths delivered in handy display carton
- 9 sizes from 1.5 mm to 101.6 mm
- Colours: black and yellow/green



TREDUX shrinks a maximum of 3:1.

More colours on request.  
Please contact us!



One Step to the Web!



Heat Shrinkable Tubing 2:1



Heat Shrinkable Tubing 3:1

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)	
<b>Shrink Ratio</b>	2:1	3:1
<b>Operating Temperature</b>	-55 °C to +135 °C	
<b>Minimum Shrink Temperature</b>	+100 °C	
<b>Longitudinal change after shrinkage</b>	+/-5% max.	
<b>Dielectric Strength</b>	20 kV/mm according to ASTM D 150	
<b>Flammability</b>	UL224 VW-1	
<b>Specifications</b>	CSA, SAE - AMS - DTL-23053/5 Class 1 and 3, SAE - AMS - DTL-23053/5 Class 2 (clear), UL224 125 °C 600V VW-1	

RoHS

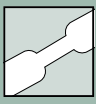
TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Pack Cont.	Colour	Shrink Ratio	Article-No.
TREDUX-1.5/0.5	1.5	0.5	0.50	1.0 m	20 pcs.	Black (BK)	3:1	319-00150
TREDUX-1.5/0.5-GNYE	1.5	0.5	0.50	1.0 m	20 pcs.	Green-Yellow (GNYE)	3:1	319-00157
TREDUX-3/1	3.0	1.0	0.60	1.0 m	20 pcs.	Black (BK)	3:1	319-00300
TREDUX-3/1-GNYE	3.0	1.0	0.60	1.0 m	20 pcs.	Green-Yellow (GNYE)	3:1	319-00307
TREDUX-6/2	6.0	2.0	0.70	1.0 m	15 pcs.	Black (BK)	3:1	319-00600
TREDUX-6/2-GNYE	6.0	2.0	0.70	1.0 m	15 pcs.	Green-Yellow (GNYE)	3:1	319-00607
TREDUX-12/4	12.0	4.0	0.85	1.0 m	10 pcs.	Black (BK)	3:1	319-01200
TREDUX-12/4-GNYE	12.0	4.0	0.85	1.0 m	10 pcs.	Green-Yellow (GNYE)	3:1	319-01207
TREDUX-24/8	24.0	8.0	1.20	1.0 m	5 pcs.	Black (BK)	3:1	319-02400
TREDUX-24/8-GNYE	24.0	8.0	1.20	1.0 m	5 pcs.	Green-Yellow (GNYE)	3:1	319-02407
TREDUX-38.1/19.1	38.1	19.1	1.02	1.0 m	6 pcs.	Black (BK)	2:1	319-03800
TREDUX-38.1/19.1-GNYE	38.1	19.1	1.02	1.0 m	6 pcs.	Green-Yellow (GNYE)	2:1	319-03807
TREDUX-50.8/25.4	50.8	25.4	1.14	1.0 m	6 pcs.	Black (BK)	2:1	319-05100
TREDUX-76.2/38.1	76.2	38.1	1.27	1.0 m	3 pcs.	Black (BK)	2:1	319-07600
TREDUX-101.6/50.8	101.6	50.8	1.40	1.0 m	2 pcs.	Black (BK)	2:1	319-10200

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



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### Storage Rack for HIS-Boxes

- HIS-Service Station**

HIS general purpose heat shrink tubing provides a reliable insulation and protects against corrosion and mechanical influences. The handy dispenser is ideal for small and medium size projects on-site. The sturdy metal HIS Service Station comes with a cutter and can store all sizes and colours. The Service Station can be mounted to the wall in the work shop or service-van.

#### Features and Benefits

- Contains up to 5 dispenser boxes
- Place on bench or mount to wall
- Special cutter included for easily cutting tubing length to size



*HIS-Service Station contains 5 dispensers and a special cutter.*

TYPE	Description	Article-No.
HIS Service Station	HIS-Service Station incl. cutter, contents: 5 dispensers HIS-3 (shrink ratio: 3:1), black, sizes are as follows: HIS-3/1, HIS-6/2, HIS-12/4 (2 pcs.), HIS-24/8	365-30100
	HIS-Service Station incl. cutter, contents: 5 dispensers HIS-Pack (shrink ratio: 2:1), black, sizes are as follows: HIS-1/8, HIS-3/16, HIS-1/4, HIS-3/8, HIS 1/2 and one RiteOn Starter Pack	365-20000
	HIS-Service Station incl. cutter, empty	300-30000

All dimensions in mm. Subject to technical changes.

### Heat Shrinkable Tubing 2:1 on a Reel

- HIS-PACK**

- General purpose electrical insulation
- Protection against corrosion and mechanical abrasion

#### Features and Benefits

- Cross-linked Polyolefin, thin-wall and flexible
- Handy dispenser box including table showing application size range
- Available in black, red, blue, transparent and yellow/green
- 10 sizes from 1.2 mm to 25.4 mm



*HIS-Pack.*



*Heat Shrinkable Tubing 2:1*

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Minimum Shrink Temperature</b>	+100 °C
<b>Longitudinal change after shrinkage</b>	+/-5%
<b>Dielectric Strength</b>	20kV/mm according to ASTM D2671
<b>Flammability</b>	UL224 VW-1 (except clear)
<b>Specifications</b>	SAE - AMS - DTL-23053/5 Class 1 and 3, SAE - AMS - DTL-23053/5 Class 2 (clear), UL224 125 °C 600V VW-1



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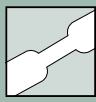


### Heat Shrinkable Tubing 2:1 on a Reel

- HIS-PACK

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
HIS-PACK-1.2/0.6	1.2	0.6	0.40	10 m	Black (BK)	300-30120
	1.2	0.6	0.40	10 m	Blue (BU)	300-30126
	1.2	0.6	0.40	10 m	Red (RD)	300-30122
	1.2	0.6	0.40	10 m	Transparent (CL)	300-30123
HIS-PACK-1.6/0.8	1.6	0.8	0.40	10 m	Black (BK)	300-30160
	1.6	0.8	0.40	10 m	Blue (BU)	300-30166
	1.6	0.8	0.40	10 m	Red (RD)	300-30162
	1.6	0.8	0.40	10 m	Transparent (CL)	300-30163
HIS-PACK-2.4/1.2	2.4	1.2	0.50	10 m	Black (BK)	300-30240
	2.4	1.2	0.50	10 m	Blue (BU)	300-30246
	2.4	1.2	0.50	10 m	Red (RD)	300-30242
	2.4	1.2	0.50	10 m	Transparent (CL)	300-30243
HIS-PACK-3.2/1.6	3.2	1.6	0.50	10 m	Black (BK)	300-30320
	3.2	1.6	0.50	10 m	Blue (BU)	300-30326
	3.2	1.6	0.50	10 m	Green-Yellow (GNYE)	300-30327
	3.2	1.6	0.50	10 m	Red (RD)	300-30322
	3.2	1.6	0.50	10 m	Transparent (CL)	300-30323
HIS-PACK-4.8/2.4	4.8	2.4	0.50	10 m	Black (BK)	300-30480
	4.8	2.4	0.50	10 m	Blue (BU)	300-30486
	4.8	2.4	0.50	10 m	Green-Yellow (GNYE)	300-30487
	4.8	2.4	0.50	10 m	Red (RD)	300-30482
	4.8	2.4	0.50	10 m	Transparent (CL)	300-30483
HIS-PACK-6.4/3.2	6.4	3.2	0.60	5 m	Black (BK)	300-30640
	6.4	3.2	0.60	5 m	Blue (BU)	300-30646
	6.4	3.2	0.60	5 m	Green-Yellow (GNYE)	300-30647
	6.4	3.2	0.60	5 m	Red (RD)	300-30642
	6.4	3.2	0.60	5 m	Transparent (CL)	300-30643
HIS-PACK-9.5/4.7	9.5	4.7	0.60	5 m	Black (BK)	300-30950
	9.5	4.7	0.60	5 m	Blue (BU)	300-30956
	9.5	4.7	0.60	5 m	Green-Yellow (GNYE)	300-30957
	9.5	4.7	0.60	5 m	Red (RD)	300-30952
	9.5	4.7	0.60	5 m	Transparent (CL)	300-30953
HIS-PACK-12.7/6.4	12.7	6.4	0.60	5 m	Black (BK)	300-31270
	12.7	6.4	0.60	5 m	Blue (BU)	300-31276
	12.7	6.4	0.60	5 m	Green-Yellow (GNYE)	300-31277
	12.7	6.4	0.60	5 m	Red (RD)	300-31272
	12.7	6.4	0.60	5 m	Transparent (CL)	300-31273
HIS-PACK-19.1/9.5	19.1	9.5	0.80	5 m	Black (BK)	300-31900
	19.1	9.5	0.80	5 m	Blue (BU)	300-31906
	19.1	9.5	0.80	5 m	Green-Yellow (GNYE)	300-31907
	19.1	9.5	0.80	5 m	Red (RD)	300-31902
	19.1	9.5	0.80	5 m	Transparent (CL)	300-31903
HIS-PACK-25.4/12.7	25.4	12.7	0.90	5 m	Black (BK)	300-32540
	25.4	12.7	0.90	5 m	Blue (BU)	300-32546
	25.4	12.7	0.90	5 m	Green-Yellow (GNYE)	300-32547
	25.4	12.7	0.90	5 m	Red (RD)	300-32542
	25.4	12.7	0.90	5 m	Transparent (CL)	300-32543

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



### Heat Shrinkable Tubing 3:1 on a Reel

- **HIS-3**

- General purpose electrical insulation
- Coloured Identification
- Protection against corrosion and mechanical abrasion

#### Features and Benefits

- Unlined tubing in handy dispenser packs
- High shrink ratio (3:1) tubing
- Fits highly variable substrate dimensions
- Only 6 sizes for application diameter range of 1 mm up to 20 mm, reduce inventory by half



HIS-3 can fit highly variable substrate dimensions.



One Step to the Web!



Heat Shrinkable Tubing 3:1

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Minimum Shrink Temperature</b>	+100 °C
<b>Longitudinal change after shrinkage</b>	-5% max.
<b>Dielectric Strength</b>	20 kV/mm according to ASTM D 150
<b>Flammability</b>	UL224 VW-1 (except clear)
<b>Insulation Class</b>	B (VDE 0530)
<b>Specifications</b>	CSA, SAE - AMS - DTL-23053/5 Class 1 and 3, SAE - AMS - DTL-23053/5 Class 2 (clear), UL224 125 °C 600V VW-1



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
<b>HIS-3-1.5/0.5</b>	1.5	0.5	0.45	10 m	Black (BK)	308-30150
	1.5	0.5	0.45	10 m	Blue (BU)	308-30156
	1.5	0.5	0.45	10 m	Red (RD)	308-30152
	1.5	0.5	0.45	10 m	Transparent (CL)	308-30153
<b>HIS-3-3/1</b>	3.0	1.0	0.55	10 m	Black (BK)	308-30300
	3.0	1.0	0.55	10 m	Blue (BU)	308-30306
	3.0	1.0	0.55	10 m	Green-Yellow (GNYE)	308-30307
	3.0	1.0	0.55	10 m	Red (RD)	308-30302
	3.0	1.0	0.55	10 m	Transparent (CL)	308-30303

All dimensions in mm. Subject to technical changes.  
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### Heat Shrinkable Tubing 3:1 on a Reel

- HIS-3



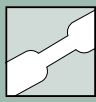
Heat Shrinkable Tubing 3:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
HIS-3-6/2	6.0	2.0	0.65	5 m	Black (BK)	308-30600
	6.0	2.0	0.65	5 m	Blue (BU)	308-30606
	6.0	2.0	0.65	5 m	Green-Yellow (GNYE)	308-30607
	6.0	2.0	0.65	5 m	Red (RD)	308-30602
	6.0	2.0	0.65	5 m	Transparent (CL)	308-30603
HIS-3-9/3	9.0	3.0	0.75	5 m	Black (BK)	308-30900
	9.0	3.0	0.75	5 m	Blue (BU)	308-30906
	9.0	3.0	0.75	5 m	Green-Yellow (GNYE)	308-30907
	9.0	3.0	0.75	5 m	Red (RD)	308-30902
	9.0	3.0	0.75	5 m	Transparent (CL)	308-30903
HIS-3-12/4	12.0	4.0	0.80	5 m	Black (BK)	308-31200
	12.0	4.0	0.80	5 m	Blue (BU)	308-31206
	12.0	4.0	0.80	5 m	Green-Yellow (GNYE)	308-31207
	12.0	4.0	0.80	5 m	Red (RD)	308-31202
	12.0	4.0	0.80	5 m	Transparent (CL)	308-31203
HIS-3-18/6	18.0	6.0	0.90	4 m	Black (BK)	308-31800
	18.0	6.0	0.90	4 m	Blue (BU)	308-31806
	18.0	6.0	0.90	4 m	Green-Yellow (GNYE)	308-31807
	18.0	6.0	0.90	4 m	Red (RD)	308-31802
	18.0	6.0	0.90	4 m	Transparent (CL)	308-31803
HIS-3-24/8	24.0	8.0	1.20	3 m	Black (BK)	308-32400
	24.0	8.0	1.20	3 m	Blue (BU)	308-32406
	24.0	8.0	1.20	3 m	Green-Yellow (GNYE)	308-32407
	24.0	8.0	1.20	3 m	Red (RD)	308-32402
	24.0	8.0	1.20	3 m	Transparent (CL)	308-32403

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



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For product specific approvals please refer to the Appendix.



## Heat Shrinkable Tubing 3:1 in blister bags

### • HIS-3 BAG

HIS-3 BAG tubings are useable for insulation and protection of cables and harnesses.

#### Features and Benefits

- Thin walled and flexible tubing made of cross-linked Polyolefin
- High shrink ratio (3:1) tubing
- Handy, small packaging with 10 pre-cut pieces of 200 mm



HIS-3 BAG available in seven colours and four sizes.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Minimum Shrink Temperature</b>	+100 °C
<b>Longitudinal change after shrinkage</b>	-5% max.
<b>Dielectric Strength</b>	20 kV/mm according to ASTM D 150
<b>Flammability</b>	UL224 VW-1 (except clear)
<b>Specifications</b>	SAE - AMS - DTL-23053/5 Class 1 and 3, SAE - AMS - DTL-23053/5 Class 2 (clear), UL224 125 °C 600V VW-1



Heat Shrinkable Tubing 3:1



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Pack Cont.	Colour	Article-No.
HIS-3-BAG-1.5/0.5	1.5	0.5	0.45	200.0	10 pcs.	Black (BK)	308-30151
	1.5	0.5	0.45	200.0	10 pcs.	Blue (BU)	308-30161
	1.5	0.5	0.45	200.0	10 pcs.	Brown (BN)	308-30163
	1.5	0.5	0.45	200.0	10 pcs.	Green-Yellow (GNYE)	308-30165
	1.5	0.5	0.45	200.0	10 pcs.	Grey (GY)	308-30162
	1.5	0.5	0.45	200.0	10 pcs.	Red (RD)	308-30160
	1.5	0.5	0.45	200.0	10 pcs.	Transparent (CL)	308-30164
HIS-3-BAG-3/1	3.0	1.0	0.55	200.0	10 pcs.	Black (BK)	308-30310
	3.0	1.0	0.55	200.0	10 pcs.	Blue (BU)	308-30312
	3.0	1.0	0.55	200.0	10 pcs.	Brown (BN)	308-30314
	3.0	1.0	0.55	200.0	10 pcs.	Green-Yellow (GNYE)	308-30316
	3.0	1.0	0.55	200.0	10 pcs.	Grey (GY)	308-30313
	3.0	1.0	0.55	200.0	10 pcs.	Red (RD)	308-30311
	3.0	1.0	0.55	200.0	10 pcs.	Transparent (CL)	308-30315

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval.  
For product specific approvals please refer to the Appendix.



### Heat Shrinkable Tubing 3:1 in blister bags

- HIS-3 BAG



Heat Shrinkable Tubing 3:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Pack Cont.	Colour	Article-No.
HIS-3-BAG-6/2	6.0	2.0	0.65	200.0	10 pcs.	Black (BK)	308-30610
	6.0	2.0	0.65	200.0	10 pcs.	Blue (BU)	308-30612
	6.0	2.0	0.65	200.0	10 pcs.	Brown (BN)	308-30614
	6.0	2.0	0.65	200.0	10 pcs.	Grey (GY)	308-30613
	6.0	2.0	0.65	200.0	10 pcs.	Red (RD)	308-30611
	6.0	2.0	0.65	200.0	10 pcs.	Transparent (CL)	308-30615
	6.0	2.0	0.65	200.0	10 pcs.	Green-Yellow (GNYE)	308-30617
HIS-3-BAG-12/4	12.0	4.0	0.80	200.0	10 pcs.	Black (BK)	308-31210
	12.0	4.0	0.80	200.0	10 pcs.	Blue (BU)	308-31212
	12.0	4.0	0.80	200.0	10 pcs.	Brown (BN)	308-31214
	12.0	4.0	0.80	200.0	10 pcs.	Grey (GY)	308-31213
	12.0	4.0	0.80	200.0	10 pcs.	Red (RD)	308-31211
	12.0	4.0	0.80	200.0	10 pcs.	Transparent (CL)	308-31215
	12.0	4.0	0.80	200.0	10 pcs.	Green-Yellow (GNYE)	308-31217

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval.  
For product specific approvals please refer to the Appendix.





## Heat Shrinkable Tubing 2:1 flexible and coloured

### • TF21

Due to its versatility TF21 is suitable for a wide range of applications like electrical insulations, mechanical protection and marking.

#### Features and Benefits

- Thin walled, flexible polyolefin tubing
- Fast shrinking and low shrink temperature
- Meets and exceeds lots of industrial standards
- Big variety of different colours and sizes
- Printable
- Flame retarded and UL224 VW1 listed



TF21 – available in a wide range of colours and sizes.

Detailed Information about Heatguns please refer to page 317/318.



One Step to the Web!

Cut lengths available on request. Please contact us!

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Minimum Shrink Temperature</b>	+90 °C
<b>Longitudinal change after shrinkage</b>	+/-5%
<b>Dielectric Strength</b>	37 kV/mm
<b>Flammability</b>	ASTM D876
<b>Specifications</b>	CSA, JAR/FAR 25.853, NF F 00-608, SAE - AMS - DTL-23053/5 Class 1, UL224 125 °C 600V VW-1



Heat Shrinkable Tubing 2:1



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
TF21-1.2/0.6	1.2	0.6	0.41	100 m	Blue (BU)	309-20126
	1.2	0.6	0.41	100 m	Red (RD)	309-20122
	1.2	0.6	0.41	100 m	White (WH)	309-20129
	1.2	0.6	0.41	100 m	Yellow (YE)	309-20124
	1.2	0.6	0.41	300 m	Black (BK)	309-10120
TF21-1.6/0.8	1.6	0.8	0.43	100 m	Blue (BU)	309-20166
	1.6	0.8	0.43	100 m	Red (RD)	309-20162
	1.6	0.8	0.43	100 m	White (WH)	309-20169
	1.6	0.8	0.43	100 m	Yellow (YE)	309-20164
	1.6	0.8	0.43	300 m	Black (BK)	309-10160
TF21-2.4/1.2	2.4	1.2	0.51	100 m	Blue (BU)	309-20246
	2.4	1.2	0.51	100 m	Green-Yellow (GNYE)	309-40247
	2.4	1.2	0.51	100 m	Red (RD)	309-20242
	2.4	1.2	0.51	100 m	White (WH)	309-20249
	2.4	1.2	0.51	100 m	Yellow (YE)	309-20244
	2.4	1.2	0.51	300 m	Black (BK)	309-10240

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval. For product specific approvals please refer to the Appendix.



### Heat Shrinkable Tubing 2:1 flexible and coloured

- TF21



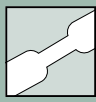
Heat Shrinkable Tubing 2:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
TF21-3.2/1.6	3.2	1.6	0.51	100 m	Blue (BU)	309-20326
	3.2	1.6	0.51	100 m	Green-Yellow (GNYE)	309-40327
	3.2	1.6	0.51	100 m	Red (RD)	309-20322
	3.2	1.6	0.51	100 m	White (WH)	309-20329
	3.2	1.6	0.51	100 m	Yellow (YE)	309-20324
	3.2	1.6	0.51	300 m	Black (BK)	309-10320
TF21-4.8/2.4	4.8	2.4	0.51	60 m	Blue (BU)	309-50486
	4.8	2.4	0.51	60 m	Green-Yellow (GNYE)	309-50487
	4.8	2.4	0.51	60 m	Red (RD)	309-50482
	4.8	2.4	0.51	60 m	White (WH)	309-50489
	4.8	2.4	0.51	60 m	Yellow (YE)	309-50484
	4.8	2.4	0.51	300 m	Black (BK)	309-10480
TF21-6.4/3.2	6.4	3.2	0.64	60 m	Blue (BU)	309-50646
	6.4	3.2	0.64	60 m	Green-Yellow (GNYE)	309-50647
	6.4	3.2	0.64	60 m	Red (RD)	309-50642
	6.4	3.2	0.64	60 m	White (WH)	309-50649
	6.4	3.2	0.64	60 m	Yellow (YE)	309-50644
	6.4	3.2	0.64	300 m	Black (BK)	309-10640
TF21-9.5/4.8	9.5	4.8	0.64	50 m	Blue (BU)	309-20956
	9.5	4.8	0.64	50 m	Green-Yellow (GNYE)	309-50957
	9.5	4.8	0.64	50 m	Red (RD)	309-20952
	9.5	4.8	0.64	50 m	White (WH)	309-20959
	9.5	4.8	0.64	50 m	Yellow (YE)	309-20954
	9.5	4.8	0.64	150 m	Black (BK)	309-10950
TF21-12.7/6.4	12.7	6.4	0.64	50 m	Blue (BU)	309-21276
	12.7	6.4	0.64	50 m	Green-Yellow (GNYE)	309-41277
	12.7	6.4	0.64	50 m	Red (RD)	309-21272
	12.7	6.4	0.64	50 m	White (WH)	309-21279
	12.7	6.4	0.64	50 m	Yellow (YE)	309-21274
	12.7	6.4	0.64	100 m	Black (BK)	309-11270
TF21-19.0/9.5	19.1	9.5	0.76	50 m	Black (BK)	309-11900
	19.1	9.5	0.76	50 m	Blue (BU)	309-11906
	19.1	9.5	0.76	50 m	Green-Yellow (GNYE)	309-11907
	19.1	9.5	0.76	50 m	Red (RD)	309-11902
	19.1	9.5	0.76	50 m	White (WH)	309-11909
	19.1	9.5	0.76	50 m	Yellow (YE)	309-11904

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval. For product specific approvals please refer to the Appendix.



## Heat Shrinkable Tubing 2:1 flexible and coloured

## • TF21



Heat Shrinkable Tubing 2:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
TF21-25.4/12.7	25.4	12.7	0.89	50 m	Black (BK)	309-12540
	25.4	12.7	0.89	50 m	Blue (BU)	309-12546
	25.4	12.7	0.89	50 m	Green-Yellow (GNYE)	309-12547
	25.4	12.7	0.89	50 m	Red (RD)	309-12542
	25.4	12.7	0.89	50 m	White (WH)	309-12549
	25.4	12.7	0.89	50 m	Yellow (YE)	309-12544
TF21-38.0/19.0	38.1	19.1	1.02	60 m	Black (BK)	309-13810
	38.1	19.1	1.02	60 m	Blue (BU)	309-13816
	38.1	19.1	1.02	60 m	Green-Yellow (GNYE)	309-13817
	38.1	19.1	1.02	60 m	Red (RD)	309-13812
	38.1	19.1	1.02	60 m	White (WH)	309-13819
	38.1	19.1	1.02	60 m	Yellow (YE)	309-13814
TF21-50.8/25.4	50.8	25.4	1.14	60 m	Black (BK)	309-15080
	50.8	25.4	1.14	60 m	Blue (BU)	309-15086
	50.8	25.4	1.14	60 m	Green-Yellow (GNYE)	309-15087
	50.8	25.4	1.14	60 m	Red (RD)	309-15082
	50.8	25.4	1.14	60 m	White (WH)	309-15089
	50.8	25.4	1.14	60 m	Yellow (YE)	309-15084
TF21-76.0/38.0	76.2	38.1	1.27	30 m	Black (BK)	309-17600
	76.2	38.1	1.27	30 m	Blue (BU)	309-17606
	76.2	38.1	1.27	30 m	Red (RD)	309-17602
	76.2	38.1	1.27	30 m	White (WH)	309-17609
	76.2	38.1	1.27	30 m	Yellow (YE)	309-17604
TF21-101.6/50.8	101.6	50.8	1.40	15 m	Black (BK)	309-11020
	101.6	50.8	1.40	15 m	Blue (BU)	309-11026
	101.6	50.8	1.40	15 m	Red (RD)	309-11022
	101.6	50.8	1.40	15 m	White (WH)	309-11029
	101.6	50.8	1.40	15 m	Yellow (YE)	309-11024

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval. For product specific approvals please refer to the Appendix.



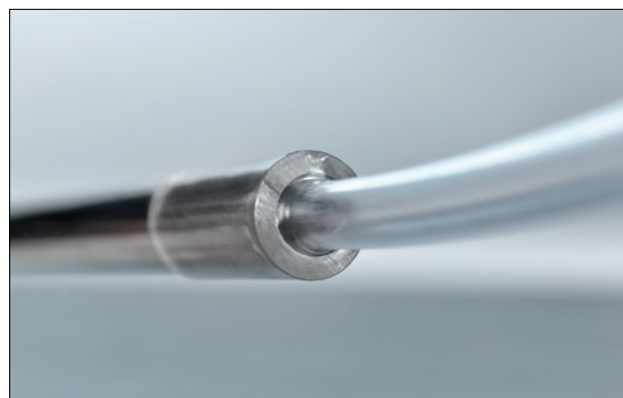
### Heat Shrinkable Tubing 2:1 flexible and transparent

- TF24

Protects wire and cable markers subject to abuse, while permitting inspectability of each item covered. Protects electronic components while permitting their identification and inspection.

#### Features and Benefits

- Transparent, flexible polyolefin tubing
- Protects identification marking perfect
- Halogen free
- Good mechanical and chemical resistance
- VG-approval and additional industrial approvals



TF24 transparent tubing with 2:1 shrink ratio.

Cut lengths available on request. Please contact us!



One Step to the Web!

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Minimum Shrink Temperature</b>	+110 °C
<b>Longitudinal change after shrinkage</b>	+/-5% max.
<b>Dielectric Strength</b>	≥ 30 kV/mm min. according to ASTM D2171
<b>Flammability</b>	not flame retarded
<b>Specifications</b>	DEF STAN 59-97 Type 2B, SAE - AMS - DTL-23053/5 Class 2, VG 95343



Heat Shrinkable Tubing 2:1

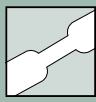


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Designation as per VG-Norm	Article-No.
TF24-1.2/0.6	1.2	0.6	0.41	100 m	Transparent (CL)	VG95343T05B001M	309-40123
TF24-1.6/0.8	1.6	0.8	0.43	100 m	Transparent (CL)	VG95343T05B002M	309-40163
TF24-2.4/1.2	2.4	1.2	1.51	100 m	Transparent (CL)	VG95343T05B003M	309-40243
TF24-3.2/1.6	3.2	1.6	0.51	100 m	Transparent (CL)	VG95343T05B004M	309-40323
TF24-4.8/2.4	4.8	2.4	0.51	60 m	Transparent (CL)	VG95343T05B005M	309-50483
TF24-6.4/3.2	6.4	3.2	0.64	60 m	Transparent (CL)	VG95343T05B006M	309-50643
TF24-9.5/4.8	9.5	4.8	0.64	50 m	Transparent (CL)	VG95343T05B007M	309-40953
TF24-12.7/6.4	12.7	6.4	0.64	50 m	Transparent (CL)	VG95343T05B008M	309-41273
TF24-19.1/9.5	19.1	9.5	0.76	50 m	Transparent (CL)	VG95343T05B009M	309-31903
TF24-25.4/12.7	25.4	12.7	0.89	50 m	Transparent (CL)	VG95343T05B010M	309-32543
TF24-38.1/19.1	38.1	19.1	1.02	60 m	Transparent (CL)	VG95343T05B011M	309-33813
TF24-50.8/25.4	50.8	25.4	1.14	60 m	Transparent (CL)	VG95343T05B012M	309-35083
TF24-76.2/38.1	76.2	38.1	1.27	30 m	Transparent (CL)	VG95343T05B013M	309-37603
TF24-101.6/50.8	101.6	50.8	1.40	15 m	Transparent (CL)	VG95343T05B014M	309-31023

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



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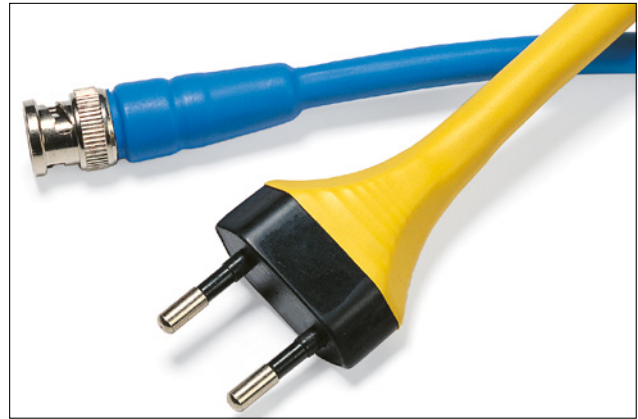
### Heat Shrinkable Tubing 3:1 flexible and coloured

#### • TF31

If higher fire protection is a requirement heat shrinkable tubing TF31 is a good choice. It is used for protection insulation and identification wires, cables and light duty harnesses.

#### Features and Benefits

- Thin walled, very flexible polyolefin tubing
- Few sizes cover a wide range of diameters allowing reduced inventory
- Fast shrinking and low shrink temperature
- Flame-retardant, UL224 VW1 listed



TF31 with 3:1 shrink ratio allowing for a wider range of application.

Detailed Information about Heatguns please refer to page 317/318.



One Step to the Web!

Cut lengths available on request. Please contact us!



Heat Shrinkable Tubing 3:1

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Minimum Shrink Temperature</b>	+90 °C
<b>Longitudinal change after shrinkage</b>	+5%/-15%
<b>Dielectric Strength</b>	37 kV/mm
<b>Flammability</b>	ASTM D876
<b>Specifications</b>	CSA, UL224 125 °C 600V VW-1

RoHS

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
TF31-1.5/0.5	1.5	0.5	0.50	30 m	Black (BK)	333-30150
	1.5	0.5	0.50	30 m	Blue (BU)	333-30156
	1.5	0.5	0.50	30 m	Green (GN)	333-30155
	1.5	0.5	0.50	30 m	Green-Yellow (GNYE)	333-30157
	1.5	0.5	0.50	30 m	Red (RD)	333-30152
	1.5	0.5	0.50	30 m	White (WH)	333-30159
	1.5	0.5	0.50	30 m	Yellow (YE)	333-30154
	1.5	0.5	0.50	300 m	Black (BK)	333-20150
TF31-3/1	3.0	1.0	0.60	30 m	Black (BK)	333-30300
	3.0	1.0	0.60	30 m	Blue (BU)	333-30306
	3.0	1.0	0.60	30 m	Green (GN)	333-30305
	3.0	1.0	0.60	30 m	Green-Yellow (GNYE)	333-30307
	3.0	1.0	0.60	30 m	Red (RD)	333-30302
	3.0	1.0	0.60	30 m	White (WH)	333-30309
	3.0	1.0	0.60	30 m	Yellow (YE)	333-30304
	3.0	1.0	0.60	150 m	Black (BK)	333-40300

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval.  
For product specific approvals please refer to the Appendix.



### Heat Shrinkable Tubing 3:1 flexible and coloured

- TF31



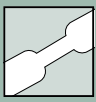
Heat Shrinkable Tubing 3:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
TF31-6/2	6.0	2.0	0.70	30 m	Black (BK)	333-30600
	6.0	2.0	0.70	30 m	Blue (BU)	333-30606
	6.0	2.0	0.70	30 m	Green (GN)	333-30605
	6.0	2.0	0.70	30 m	Green-Yellow (GNYE)	333-30607
	6.0	2.0	0.70	30 m	Red (RD)	333-30602
	6.0	2.0	0.70	30 m	White (WH)	333-30609
	6.0	2.0	0.70	30 m	Yellow (YE)	333-30604
	6.0	2.0	0.70	150 m	Black (BK)	333-40600
TF31-9/3	9.0	3.0	0.80	30 m	Black (BK)	333-30900
	9.0	3.0	0.80	30 m	Blue (BU)	333-30906
	9.0	3.0	0.80	30 m	Green (GN)	333-30905
	9.0	3.0	0.80	30 m	Green-Yellow (GNYE)	333-30907
	9.0	3.0	0.80	30 m	Red (RD)	333-30902
	9.0	3.0	0.80	30 m	White (WH)	333-30909
	9.0	3.0	0.80	30 m	Yellow (YE)	333-30904
	9.0	3.0	0.80	150 m	Black (BK)	333-20900
TF31-12/4	12.0	4.0	0.85	30 m	Black (BK)	333-31200
	12.0	4.0	0.85	30 m	Blue (BU)	333-31206
	12.0	4.0	0.85	30 m	Green (GN)	333-31205
	12.0	4.0	0.85	30 m	Green-Yellow (GNYE)	333-31207
	12.0	4.0	0.85	30 m	Red (RD)	333-31202
	12.0	4.0	0.85	30 m	White (WH)	333-31209
	12.0	4.0	0.85	30 m	Yellow (YE)	333-31204
	12.0	4.0	0.85	100 m	Black (BK)	333-21200
TF31-18/6	18.0	6.0	1.00	30 m	Black (BK)	333-31800
	18.0	6.0	1.00	30 m	Blue (BU)	333-31806
	18.0	6.0	1.00	30 m	Green (GN)	333-31805
	18.0	6.0	1.00	30 m	Green-Yellow (GNYE)	333-31807
	18.0	6.0	1.00	30 m	Red (RD)	333-31802
	18.0	6.0	1.00	30 m	White (WH)	333-31809
	18.0	6.0	1.00	30 m	Yellow (YE)	333-31804
	18.0	6.0	1.00	60 m	Black (BK)	333-41800

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval.  
For product specific approvals please refer to the Appendix.



### Heat Shrinkable Tubing 3:1 flexible and coloured

- TF31



Heat Shrinkable Tubing 3:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
TF31-24/8	24.0	8.0	1.20	30 m	Black (BK)	333-32400
	24.0	8.0	1.20	30 m	Blue (BU)	333-32406
	24.0	8.0	1.20	30 m	Green (GN)	333-32405
	24.0	8.0	1.20	30 m	Green-Yellow (GNYE)	333-32407
	24.0	8.0	1.20	30 m	Red (RD)	333-32402
	24.0	8.0	1.20	30 m	White (WH)	333-32409
	24.0	8.0	1.20	30 m	Yellow (YE)	333-32404
	24.0	8.0	1.20	60 m	Black (BK)	333-42400
TF31-40/13	40.0	13.0	1.25	30 m	Black (BK)	333-34000
	40.0	13.0	1.25	30 m	Blue (BU)	333-34006
	40.0	13.0	1.25	30 m	Green (GN)	333-34005
	40.0	13.0	1.25	30 m	Green-Yellow (GNYE)	333-34007
	40.0	13.0	1.25	30 m	Red (RD)	333-34002
	40.0	13.0	1.25	30 m	White (WH)	333-34009
	40.0	13.0	1.25	30 m	Yellow (YE)	333-34004
	40.0	13.0	1.25	60 m	Black (BK)	333-24000

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval.  
For product specific approvals please refer to the Appendix.



### Heat Shrinkable Tubing 3:1 flexible and transparent

- TF34

Protects wire and cable markers subject to abuse, while permitting inspectability of each item covered. Protects electronic components while permitting their identification and inspection.

#### Features and Benefits

- Transparent, flexible polyolefin tubing
- Protects identification marking perfect
- Few sizes cover a wide range of diameters allowing reduced inventory
- Halogen free



TF34 transparent tubing with 3:1 shrink ratio allowing for a wider range of application.

Cut lengths available on request. Please contact us!



One Step to the Web!

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Minimum Shrink Temperature</b>	+110 °C
<b>Longitudinal change after shrinkage</b>	-5% max.
<b>Dielectric Strength</b>	46 kV/mm
<b>Flammability</b>	not flame retarded



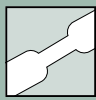
Heat Shrinkable Tubing 3:1



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
TF34-1.5/0.5	1.5	0.5	0.50	30 m	Transparent (CL)	333-30153
TF34-3/1	3.0	1.0	0.50	30 m	Transparent (CL)	333-30303
TF34-6/2	6.0	2.0	0.70	30 m	Transparent (CL)	333-30603
TF34-9/3	9.0	3.0	0.80	30 m	Transparent (CL)	333-30903
TF34-12/4	12.0	4.0	0.85	30 m	Transparent (CL)	333-31203
TF34-18/6	18.0	6.0	1.00	30 m	Transparent (CL)	333-31803
TF34-24/8	24.0	8.0	1.20	30 m	Transparent (CL)	333-32403
TF34-40/13	40.0	13.0	1.25	30 m	Transparent (CL)	333-34003

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.





### Heat Shrinkable Tubing 3:1 in a Kit

- **ShrinKit 321-A - with adhesive liner**

The black tubing is mainly used for environmental sealing of splices and connectors. The transparent tubing is typically used for protection of cable markers.

#### Features and Benefits

- Adhesive lined heat shrink tubing
- Attractive and reusable kit ideal for assembling and identification
- Inner wall melts when heated and is forced into gaps
- Adhesive forms seal against moisture as tubing cools
- Black tubing mainly for the protection of connectors and splices
- Clear tubing ideal for protection of printed label markers
- Case can be re-used for storing nails, screws, nuts, fish hooks, etc.
- Compartment size changeable by simply moving yellow space dividers



ShrinKit 321-A.



One Step to the Web!



Heat Shrinkable Tubing 3:1 with adhesive

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +110 °C
<b>Minimum Shrink Temperature</b>	+110 °C
<b>Longitudinal change after shrinkage</b>	+1%/-15% max.
<b>Dielectric Strength</b>	15 kV/mm according to IEC 60684 P2
<b>Flammability</b>	self-extinguishing outer wall (black only)
<b>Insulation Class</b>	A (VDE 0530)
<b>Specifications</b>	SAE - AMS - DTL-23053/4 Class 3 (except clear)

RoHS

COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content (pcs.)	Article-No.
1	24.0	8.0	200.0	2.50	Black (BK)	5	380-03003
2	12.0	4.0	65.0	1.70	Transparent (CL)	15	
3	6.0	2.0	50.0	1.10	Black (BK)	20	
	6.0	2.0	50.0	1.10	Transparent (CL)	20	
4	12.0	4.0	65.0	1.70	Black (BK)	15	
5	3.0	1.0	50.0	1.00	Black (BK)	50	
	3.0	1.0	50.0	1.00	Transparent (CL)	50	
6	6.0	2.0	35.0	1.10	Black (BK)	30	
	6.0	2.0	35.0	1.10	Transparent (CL)	30	
7	24.0	8.0	200.0	2.50	Transparent (CL)	5	
8	12.0	4.0	100.0	1.70	Black (BK)	15	
9	12.0	4.0	100.0	1.70	Black (BK)	15	
10	12.0	4.0	100.0	1.70	Transparent (CL)	15	
11	3.0	1.0	40.0	1.00	Black (BK)	50	
	3.0	1.0	40.0	1.00	Transparent (CL)	50	

All dimensions in mm. Subject to technical changes.



Please note! Not all products listed on this page may have this approval. For product specific approvals please refer to the Appendix.



### Heat Shrinkable Tubing 3:1 in a Kit

- Shrinkit 321-A Basic - with adhesive liner

The black tubing is mainly used for environmental sealing of splices and connectors. The transparent tubing is typically used for protection of cable markers.

#### Features and Benefits

- Adhesive lined heat shrink tubing
- Attractive and reusable kit ideal for assembling and identification
- Inner wall melts when heated and is forced into gaps
- Adhesive forms seal against moisture as tubing cools
- Black tubes mainly for the protection of connectors and splices
- Clear tubing ideal for protection of printed label markers
- Case can be re-used for storing nails, screws, nuts, fish hooks, etc.



Shrinkit 321-A Basic.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +110 °C
<b>Minimum Shrink Temperature</b>	+110 °C
<b>Longitudinal change after shrinkage</b>	+1%/-15% max.
<b>Dielectric Strength</b>	15 kV/mm according to ASTM D2671
<b>Flammability</b>	self-extinguishing outer wall (black only)
<b>Insulation Class</b>	A (VDE 0530)
<b>Specifications</b>	SAE - AMS - DTL-23053/4 Class 3 (except clear)



Heat Shrinkable Tubing 3:1 with adhesive

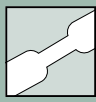


COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content (pcs.)	Article-No.
1	3.0	1.0	35.0	1.00	Black (BK)	25	380-03004
2	12.0	4.0	35.0	1.70	Black (BK)	10	
3	3.0	1.0	35.0	1.00	Transparent (CL)	25	
4	6.0	2.0	35.0	1.10	Black (BK)	15	
5	6.0	2.0	35.0	1.10	Transparent (CL)	15	
6	6.0	2.0	35.0	1.10	Transparent (CL)	15	
7	6.0	2.0	35.0	1.10	Black (BK)	15	
8	12.0	4.0	80.0	1.70	Black (BK)	5	
	12.0	4.0	80.0	1.70	Transparent (CL)	5	

All dimensions in mm. Subject to technical changes.



Please note! Not all products listed on this page may have this approval. For product specific approvals please refer to the Appendix.



### Heat Shrinkable Tubing 3:1 on a Reel

- **HIS-A - with adhesive liner**

HIS-A forms a seal against moisture and protect against corrosion and mechanical abrasion.

#### Features and Benefits

- Adhesive lined heat shrink tubing
- Inner wall melts when heated and is forced into gaps
- Adhesive forms seal against moisture as tubing cools
- Protects components
- Available in black and transparent
- 6 sizes for wide range of applications



HIS-A - with adhesive liner

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Minimum Shrink Temperature</b>	+100 °C
<b>Longitudinal change after shrinkage</b>	-10% max.
<b>Softening Point Adhesive</b>	+85 °C
<b>Dielectric Strength</b>	15 kV/mm according to IEC 60684 P2
<b>Flammability</b>	UL224 VW-1 (except clear)
<b>Insulation Class</b>	A (VDE 0530)
<b>Specifications</b>	CSA, SAE - AMS - DTL-23053 / 4



Heat Shrinkable Tubing 3:1 with adhesive



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
HIS-A-3/1	3.0	1.0	1.00	10 m	Black (BK)	308-10300
	3.0	1.0	1.00	10 m	Transparent (CL)	308-10303
HIS-A-6/2	6.0	2.0	1.00	5 m	Black (BK)	308-10600
	6.0	2.0	1.00	5 m	Transparent (CL)	308-10603
HIS-A-9/3	9.0	3.0	1.40	5 m	Black (BK)	308-10900
	9.0	3.0	1.40	5 m	Transparent (CL)	308-10903
HIS-A-12/4	12.0	4.0	1.80	5 m	Black (BK)	308-11200
	12.0	4.0	1.80	5 m	Transparent (CL)	308-11203
HIS-A-18/6	18.0	6.0	2.25	4 m	Black (BK)	308-11800
	18.0	6.0	2.25	4 m	Transparent (CL)	308-11803
HIS-A-24/8	24.0	8.0	2.50	3 m	Black (BK)	308-12400
	24.0	8.0	2.50	3 m	Transparent (CL)	308-12403

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval.  
For product specific approvals please refer to the Appendix.



### Heat Shrinkable Tubing adhesive lined - 1.2 m lengths

- TA32 - thin wall, 3:1 shrink ratio
- TA42 - thin wall, 4:1 shrink ratio

TA32/TA42 is designed for environmental sealing and electrical insulation of wire splices, terminations and components.

#### Features and Benefits

- Thin walled adhesive-lined heat shrink tubing
- Highly flame retardant
- Outer wall conforms to UL224



TA32 and TA42 are UL224 listed adhesive lined tubing. Available in 3:1 and 4:1 shrink ratio.

**Cut lengths available on request. Please contact us!**



Heat Shrinkable Tubing 3:1 with adhesive

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Minimum Shrink Temperature</b>	+110 °C
<b>Softening Point Adhesive</b>	+110 °C
<b>Longitudinal change after shrinkage</b>	-15% max.
<b>Dielectric Strength</b>	15 kV/mm according to IEC 60684 P2
<b>Flammability</b>	UL224
<b>Specifications</b>	CSA, SAE - AMS - DTL-23053/4 Class 3, UL224 125 °C 600V

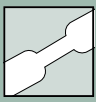


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Shrink Ratio	Article-No.
TA32-3/1	3.2	0.6	0.95	1.2 m	Black (BK)	3:1	318-30300
TA32 4.5/1.5	4.5	1.5	1.10	1.2 m	Black (BK)	3:1	318-30450
TA32-6/2	6.0	2.0	1.20	1.2 m	Black (BK)	3:1	318-30600
TA32-9/3	9.0	3.0	1.30	1.2 m	Black (BK)	3:1	318-30900
TA32-12/4	12.0	4.0	1.40	1.2 m	Black (BK)	3:1	318-31200
TA32-19/6	19.0	6.0	1.80	1.2 m	Black (BK)	3:1	318-31900
TA32-24/8	24.0	8.0	2.50	1.2 m	Black (BK)	3:1	318-32400
TA32-40/13	40.0	13.0	2.50	1.2 m	Black (BK)	3:1	318-34000

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.

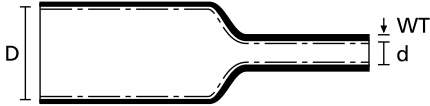


Please note! Not all products listed on this page may have this approval. For product specific approvals please refer to the Appendix.



## Heat Shrinkable Tubing adhesive lined - 1.2 m lengths

- TA42 - thin wall, 4:1 shrink ratio



Heat Shrinkable Tubing 4:1 with adhesive

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Shrink Ratio	Article-No.
TA42-4/1	4.0	1.0	1.00	1.2 m	Black (BK)	4:1	318-40400
TA42-8/2	8.0	2.0	1.20	1.2 m	Black (BK)	4:1	318-40800
TA42-12/3	12.0	3.0	1.40	1.2 m	Black (BK)	4:1	318-41200
TA42-16/4	16.0	4.0	1.80	1.2 m	Black (BK)	4:1	318-41600
TA42-24/6	24.0	6.0	2.25	1.2 m	Black (BK)	4:1	318-42400
TA42-32/8	32.0	8.0	2.55	1.2 m	Black (BK)	4:1	318-43200
TA42-52/13	52.0	13.0	2.55	1.2 m	Black (BK)	4:1	318-45200

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval.  
For product specific approvals please refer to the Appendix.

## Heat Shrinkable Tubing up to 4:1 - 1 m lengths

- MA47 - medium wall adhesive lined
- MU47 - medium wall unlined

Insulation and Protection of low voltage cable joints and terminations above and below ground.

### Features and Benefits

- Medium walled tubing with robust insulation characteristics
- Shrink tubing for above and underground cable applications
- Protects cable joints and terminations in low voltage applications
- Coated inside with thermoplastic adhesive
- Protects against humidity and other environmental impacts after shrinking



MA47 and MU47 medium wall tubing - lined and unlined.

Cut lengths available on request. Please contact us!

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	up to 4:1
<b>Operating Temperature</b>	-55 °C to +110 °C
<b>Minimum Shrink Temperature</b>	+120 °C
<b>Softening Point Adhesive</b>	+85 °C
<b>Longitudinal change after shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	20 kV/mm
<b>Flammability</b>	not flame retarded
<b>Insulation Class</b>	A (VDE 0530)





### Heat Shrinkable Tubing up to 4:1 - 1 m lengths

- MA47 - medium wall adhesive lined



Heat Shrinkable Tubing 4:1 with adhesive

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Article-No.
MA47-12/3	12.0	3.0	2.00	1.0 m	Black (BK)	323-20120
MA47-19/6	19.0	6.0	2.50	1.0 m	Black (BK)	323-20190
MA47-30/8	30.0	8.0	2.50	1.0 m	Black (BK)	323-20300
MA47-40/12	40.0	12.0	2.50	1.0 m	Black (BK)	323-20400
MA47-50/16	50.0	16.0	2.70	1.0 m	Black (BK)	323-20500
MA47-63/19	63.0	19.0	2.80	1.0 m	Black (BK)	323-20630
MA47-75/22	75.0	22.0	3.00	1.0 m	Black (BK)	323-20750
MA47-95/30	95.0	30.0	3.00	1.0 m	Black (BK)	323-20950
MA47-115/34	115.0	34.0	3.00	1.0 m	Black (BK)	323-21150
MA47-140/42	140.0	42.0	3.00	1.0 m	Black (BK)	323-21400

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.

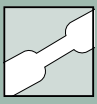
- MU47 - medium wall unlined



Heat Shrinkable Tubing 4:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Article-No.
MU47-12/3	12.0	3.0	2.00	1.0 m	Black (BK)	323-10120
MU47-19/6	19.0	6.0	2.20	1.0 m	Black (BK)	323-10190
MU47-30/8	30.0	8.0	2.50	1.0 m	Black (BK)	323-10300
MU47-40/12	40.0	12.0	2.50	1.0 m	Black (BK)	323-10400
MU47-50/16	50.0	16.0	2.70	1.0 m	Black (BK)	323-10500
MU47-63/19	63.0	19.0	2.80	1.0 m	Black (BK)	323-10630
MU47-75/22	75.0	22.0	3.00	1.0 m	Black (BK)	323-10750
MU47-95/30	95.0	30.0	3.00	1.0 m	Black (BK)	323-10950
MU47 115/34	115.0	34.0	3.00	1.0 m	Black (BK)	323-11150
MU47-140/42	140.0	42.0	3.00	1.0 m	Black (BK)	323-11400

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



## Heat Shrinkable Tubing up to 4:1 - 1 m lengths

- TREDUX MA47 medium wall - with adhesive liner

Suitable for insulation and protection of low voltage cable joints and terminations.

### Features and Benefits

- Medium walled heat shrink tubing
- Securely packed in display boxes for use in smaller quantities
- Supplied in lengths of 1 m
- Thermoplastic adhesive liner for protection from moisture and weathering

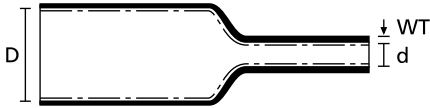


MA47 and MU47 medium wall tubing - lined and unlined.

Detailed Information about Heatguns please refer to page 317/318.



One Step to the Web!



Heat Shrinkable Tubing 4:1 with adhesive

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	up to 4:1
<b>Operating Temperature</b>	-55 °C to +110 °C
<b>Softening Point Adhesive</b>	+85 °C
<b>Minimum Shrink Temperature</b>	+120 °C
<b>Longitudinal change after shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	20 kV/mm
<b>Flammability</b>	not flame retarded
<b>Insulation Class</b>	A (VDE 0530)



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Pack Cont.	Colour	Article-No.
TREDUX-MA47-12/3	12.0	3.0	2.00	1.0 m	6 pcs.	Black (BK)	323-50120
TREDUX-MA47-19/6	19.0	6.0	2.50	1.0 m	10 pcs.	Black (BK)	323-50190
TREDUX-MA47-30/8	30.0	8.0	2.50	1.0 m	6 pcs.	Black (BK)	323-50300
TREDUX-MA47-40/12	40.0	12.0	2.50	1.0 m	4 pcs.	Black (BK)	323-50400
TREDUX-MA47-50/16	50.0	16.0	2.70	1.0 m	2 pcs.	Black (BK)	323-50500
TREDUX-MA47-63/19	63.0	19.0	2.80	1.0 m	2 pcs.	Black (BK)	323-50630
TREDUX-MA47-75/22	75.0	22.0	3.00	1.0 m	2 pcs.	Black (BK)	323-50750
TREDUX-MA47-95/30	95.0	30.0	3.00	1.0 m	1 pcs.	Black (BK)	323-50950

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



### Heat Shrinkable Cable Repair Sleeves

- RMS

RMS wrap-around sleeves are easy to install.

#### Features and Benefits

- Fast, moisture proof and permanent repair of cable jackets
- Only 6 sizes for a wide range of cable diameters: from 10 mm up to 160 mm
- Available in 4 standard lengths, custom lengths available on request
- Each RMS kit is ready for use and comes with instruction sheet, abrasive strip and cleaning sachet
- Weather resistant and halogen free
- TCP (thermo-chromatic paint) spots indicate the sleeve has been sufficiently heated



One Step to the Web!

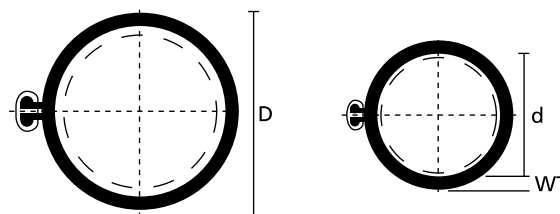
<b>MATERIAL</b>	Polyolefin, Chemically cross-linked (PO-X)
<b>Shrink Ratio</b>	up to 4.5:1
<b>Operating Temperature</b>	-40 °C to +120 °C
<b>Minimum Shrink Temperature</b>	+110 °C
<b>Softening Point Adhesive</b>	+105 °C
<b>Longitudinal change after shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	12 kV/mm
<b>Flammability</b>	not flame retarded



RMS wrap-around sleeves for rapid and secure cable repair on site.



RMS: Repair sleeve, steel closure, abrasive strip, cleaning sachet, instruction sheet.



Cable Repair Sleeve RMS with adhesive

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Suitable for Cable Ø from/to	Length (L)	Colour	Article-No.
<b>RMS 43-10</b>	43.0	10.0	2.30	15 - 35	250.0	Black (BK)	450-20000
	43.0	10.0	2.30	15 - 35	500.0	Black (BK)	450-20001
	43.0	10.0	2.30	15 - 35	750.0	Black (BK)	450-20004
	43.0	10.0	2.30	15 - 35	1,000.0	Black (BK)	450-20002
<b>RMS 52-15</b>	52.0	15.0	2.30	20 - 45	250.0	Black (BK)	450-20010
	52.0	15.0	2.30	20 - 45	500.0	Black (BK)	450-20011
	52.0	15.0	2.30	20 - 45	750.0	Black (BK)	450-20014
	52.0	15.0	2.30	20 - 45	1,000.0	Black (BK)	450-20012
<b>RMS 76-22</b>	76.0	22.0	2.50	28 - 65	500.0	Black (BK)	450-20021
	76.0	22.0	2.50	28 - 65	750.0	Black (BK)	450-20024
	76.0	22.0	2.50	28 - 65	1,000.0	Black (BK)	450-20022
<b>RMS 100-30</b>	100.0	30.0	2.54	35 - 85	500.0	Black (BK)	450-20030
	100.0	30.0	2.54	35 - 85	1,000.0	Black (BK)	450-20031
<b>RMS 139-38</b>	139.0	38.0	2.77	45 - 120	1,000.0	Black (BK)	450-20041
<b>RMS 185-55</b>	185.0	55.0	2.74	65 - 160	1,000.0	Black (BK)	450-20050

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.





## Heat Shrinkable Tubing up to 3,5:1 - 1 m lengths

- TREDUX HA47 thick wall - with adhesive liner

The toughness and the weatherability of TREDUX thick wall tubing makes it suitable for exposed applications and underground cable joints.

### Features and Benefits

- Thick walled polyolefin adhesive-lined tubing
- Standard 1m lengths
- Securely packed in display carton for use in smaller quantities
- For low and medium voltage power applications

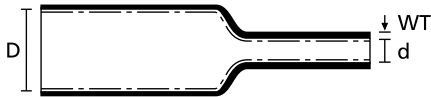


TREDUX HA47 - application below ground.

**Detailed Information about Heatguns please refer to page 317/318.**



One Step to the Web!



Heat Shrinkable Tubing 3.5:1 with adhesive

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	up to 3.5:1
<b>Operating Temperature</b>	-55 °C to +110 °C
<b>Minimum Shrink Temperature</b>	+120 °C
<b>Softening Point Adhesive</b>	+85 °C
<b>Longitudinal change after shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	20 kV/mm
<b>Flammability</b>	not flame retarded



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Pack Cont.	Colour	Article-No.
TREDUX-HA47-13/4	13.0	4.0	2.40	1.0 m	6 pcs.	Black (BK)	321-50130
TREDUX-HA47-19/6	19.0	6.0	2.70	1.0 m	10 pcs.	Black (BK)	321-50190
TREDUX-HA47-33/8	33.0	8.0	3.20	1.0 m	5 pcs.	Black (BK)	321-50330
TREDUX-HA47-45/12	45.0	12.0	4.10	1.0 m	4 pcs.	Black (BK)	321-50450
TREDUX-HA47-51/16	51.0	16.0	4.10	1.0 m	2 pcs.	Black (BK)	321-50510
TREDUX-HA47-68/22	68.0	22.0	4.10	1.0 m	1 pcs.	Black (BK)	321-50680
TREDUX-HA47-85/25	85.0	25.4	4.30	1.0 m	1 pcs.	Black (BK)	321-50850

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



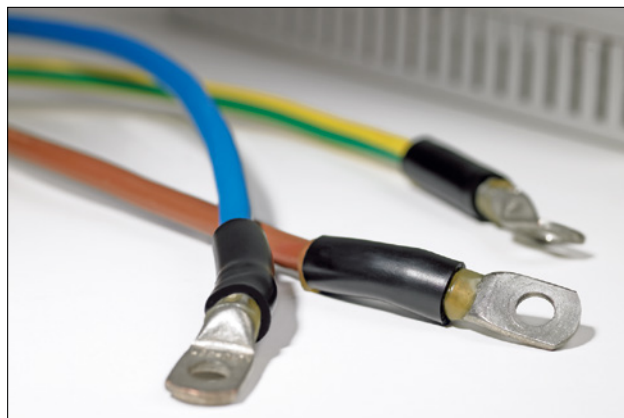
### Heat Shrinkable Tubing up to 3,5:1 - 1 m lengths

- HA47 - thick wall adhesive lined
- HU47 - thick wall unlined

The toughness and weatherability makes it well suited for exposed applications and underground cable joints and cable terminations.

#### Features and Benefits

- Thick walled polyolefin adhesive-lined sleeving
- Thermoplastic adhesive protects against moisture and weathering
- Used for low voltage power applications



HA47 – Heavy wall adhesive lined tubing.

Cut lengths available on request. Please contact us!



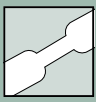
Heat Shrinkable Tubing 3.5:1 with adhesive

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	up to 3.5:1
<b>Operating Temperature</b>	-55 °C to +110 °C
<b>Minimum Shrink Temperature</b>	+120 °C
<b>Softening Point Adhesive</b>	+85 °C
<b>Longitudinal change after shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	20 kV/mm
<b>Flammability</b>	not flame retarded
<b>Insulation Class</b>	A (VDE 0530)



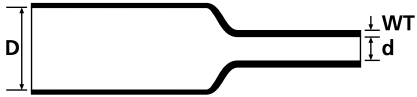
TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Article-No.
HA47-9/3	9.0	3.0	1.80	1.0 m	Black (BK)	321-20090
HA47-13/4	13.0	4.0	2.40	1.0 m	Black (BK)	321-20130
HA47-19/6	19.0	6.0	2.70	1.0 m	Black (BK)	321-20180
HA47-33/8	33.0	8.0	3.20	1.0 m	Black (BK)	321-20280
HA47-45/12	45.0	12.0	4.10	1.0 m	Black (BK)	321-20450
HA47-51/16	51.0	16.0	4.10	1.0 m	Black (BK)	321-20510
HA47-68/22	68.0	22.0	4.10	1.0 m	Black (BK)	321-20680
HA47-85/25	85.0	25.0	4.30	1.0 m	Black (BK)	321-20850
HA47-105/30	105.0	30.0	4.30	1.0 m	Black (BK)	321-20900
HA47-130/36	130.0	36.0	4.30	1.0 m	Black (BK)	321-21300
HA47-160/50	160.0	50.0	4.30	1.0 m	Black (BK)	321-21600
HA47-180/50	180.0	50.0	4.30	1.0 m	Black (BK)	321-21850

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



### Heat Shrinkable Tubing up to 3,5:1 - 1 m lengths

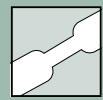
- HU47 - thick wall unlined



Heat Shrinkable Tubing 3.5:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Article-No.
HU47-9/3	9.0	3.0	1.80	1.0 m	Black (BK)	321-10090
HU47-13/4	13.0	4.0	2.40	1.0 m	Black (BK)	321-10130
HU47-19/6	19.0	6.0	2.70	1.0 m	Black (BK)	321-10180
HU47-33/8	33.0	8.0	3.20	1.0 m	Black (BK)	321-10280
HU47-45/12	45.0	12.0	4.10	1.0 m	Black (BK)	321-10450
HU47-51/16	51.0	16.0	4.10	1.0 m	Black (BK)	321-10510
HU47-68/22	68.0	22.0	4.10	1.0 m	Black (BK)	321-10680
HU47-85/25	85.0	25.0	4.30	1.0 m	Black (BK)	321-10850
HU47-105/30	105.0	30.0	4.30	1.0 m	Black (BK)	321-10900
HU47-130/36	130.0	36.0	4.30	1.0 m	Black (BK)	321-11300
HU47-160/50	160.0	50.0	4.30	1.0 m	Black (BK)	321-11600
HU47-180/50	180.0	50.0	4.30	1.0 m	Black (BK)	321-11850

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



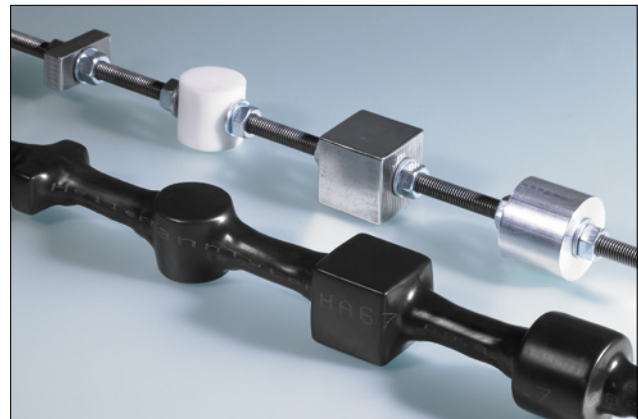
### Heat Shrinkable Tubing 6:1, adhesive lined in 1 m cuts

- HA67

Insulates, seals and protects large size differences between connectors and cables.

#### Features and Benefits

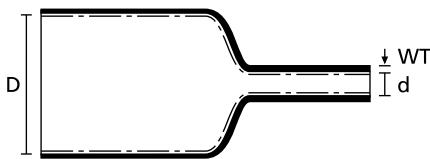
- High shrink ratio, heavy-duty heat shrinkable tubing
- Thermoplastic adhesive-lined tubing
- Conforms well to highly variable substrate dimensions
- Simplifies cable repair
- Passes over large connectors and shrinks onto much smaller cable jackets
- Environmental sealing and excellent insulation
- Resistant to impact and abrasion



Due to the high shrink ratio HA67 is suitable for complex shapes and dimensions.



One Step to the Web!



Heat Shrinkable Tubing 6:1 with adhesive

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	6:1
<b>Operating Temperature</b>	-55 °C to +110 °C
<b>Minimum Shrink Temperature</b>	+120 °C
<b>Softening Point Adhesive</b>	+85 °C
<b>Longitudinal change after shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	20kV/mm according to ASTM D2671
<b>Flammability</b>	not flame retarded



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Article-No.
HA67-19.0/3.2	19.0	3.2	3.20	1,220.0	Black (BK)	321-30000
HA67-33.0/5.5	33.0	5.5	3.40	1,220.0	Black (BK)	321-30100
HA67-44.4/7.4	44.4	7.4	3.60	1,220.0	Black (BK)	321-30200
HA67-50.8/8.3	50.8	8.3	4.80	1,220.0	Black (BK)	321-30300
HA67-69.8/11.7	69.8	11.7	4.80	1,220.0	Black (BK)	321-30400
HA67-88.9/17.1	88.9	17.1	4.80	1,220.0	Black (BK)	321-30500
HA67-119.4/22.9	119.4	22.9	4.80	1,220.0	Black (BK)	321-30600
HA67-235.0/40.0	235.0	40.0	4.80	1,220.0	Black (BK)	321-30700

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.

# Heat Shrinkable Moulded Shapes



The moulded shapes catalogue offers a wide range of moulded parts. The extensive product line includes low profile, bulbous and lipped types for use on circular and D-type connectors as well as complex multiway transitions.

They can be sealed with our special adhesives and encapsulants to ensure the proper degree of mechanical support, strain relief and environmental protection.

A range of specially formulated materials is available to meet a variety of performance requirements.

A wider range of material / adhesive combinations are available in the moulded shapes catalogue.

### Adhesive for Heat Shrinkable Moulded Shapes

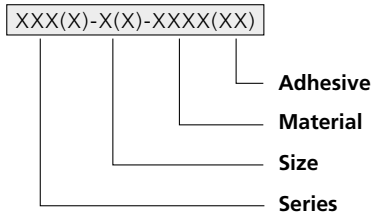
Adhesive Specifications			
	W / W2	WM250	HMT200A
<b>Adhesive</b>	Hot melt adhesive	Hot melt adhesive	Hot melt adhesive tape
<b>Operating Temperature</b>	-55 °C to +80 °C	-55 °C to +80 °C	-55 °C to +105 °C
<b>Softening Point Adhesive</b>	+95 °C	+95 °C	+110 °C
<b>Supplied Form</b>	pre-applied	pre-applied	tape
<b>Shelf life</b>	5 years	5 years	5 years
<b>Solvent Resistance</b>	Fair under splash conditions	Fair under splash conditions	Fair under splash conditions

### Materials for Heat Shrinkable Moulded Shapes

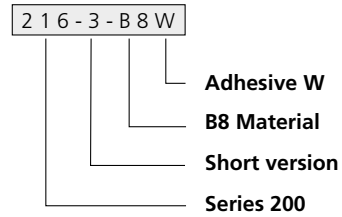
Material Specifications		
	B8	B7
<b>Material</b>	Semi-rigid flame retarded polyolefin	Semi-rigid flame retarded polyolefin
<b>Operating Temperature</b>	-55 °C to +100 °C	-55 °C to +135 °C
<b>Minimum Shrink Temperature</b>	+135 °C	+135 °C
<b>Specification</b>	EA-TS 09-11	MIL-I-81765/1 Type 1, DEF STAN 59-97, BSG198 Part 5
<b>Tensile Strength</b>	15 MPa	13 MPa
<b>Elongation at break</b>	500 %	500 %
<b>Dielectric Strength</b>	15 kV/mm	14 kV/mm
<b>Flammability for Material</b>	good	excellent
<b>Features and Benefits</b>	Good physical and reasonable chemical resistance	Good physical and chemical resistance
<b>Typical Application</b>	Power/utility shapes	Military and general high performance harnessing

**Order Example**

Type:



**Example:**



Other product styles are available. Please refer to Moulded Shapes catalogue.

Bulbous Boots Product Overview		Page
<b>2-Way Outlet Shapes</b> Helashrink 200 Series, in line, low voltage		151
<b>3-Way Outlet Shapes</b> Helashrink 300 Series, in line, low voltage		
<b>4-Way Outlet Shapes</b> Helashrink 400 Series, in line, low voltage		
<b>5-Way Outlet Shapes</b> Helashrink 500 Series, in line, low voltage		152

Bulbous Boots Product Overview		Page
<b>6-Way Outlet Shapes</b> Helashrink 600 Series, in line, low voltage		153
<b>Low voltage</b> Helashrink PEC Series, pinched		154
<b>Low voltage</b> Helashrink 1600 Series		155



One Step to the Web!



### 2-Way Outlet Shapes, Breakout Boots

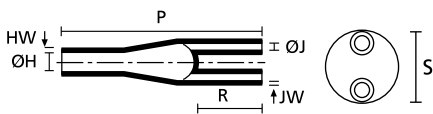
- Helashrink 200 Series, in line, low voltage

#### Features and Benefits

- Easy, time-saving insulation of cable branch point where it splits into single wires
- Adhesive to relieve mechanical tension in cable harnesses



a: Expanded form (supplied)



b: Fully recovered form (after heating)



223-2 supplied / fully recovered.

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 20%	S nom	Article-No.
216-3-B8W	21.0	9.4	9.0	2.8	76.5	20.0	1.6	1.6	14.0	402-16039
223-2-B8W	33.0	9.4	17.5	4.1	94.0	30.0	1.5	1.2	20.0	402-23058
218-2-B8W	49.0	22.9	20.0	7.6	119.0	34.0	3.2	3.2	30.0	402-18051

All dimensions in mm. Subject to technical changes.

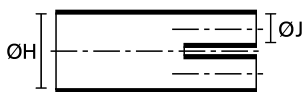
For these moulded shapes a wide range of material / adhesive combinations are available. Please refer to the moulded shapes catalogue.

### 3-Way Outlet Shapes, Breakout Boots

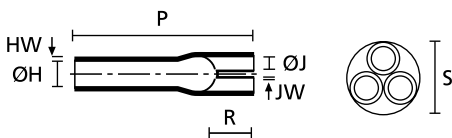
- Helashrink 300 Series, in line, low voltage

#### Features and Benefits

- Easy, time-saving insulation of cable branch point where it splits into single wires
- Adhesive to relieve mechanical tension in cable harnesses



a: Expanded form (supplied)



b: Fully recovered form (after heating)



300 Series supplied / fully recovered.

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 20%	S nom	Article-No.
354-1-B8W	45.0	10.0	16.0	4.0	100.0	25.0	3.0	2.0	-	403-54004
320-1-B8W2	55.8	22.5	30.4	9.0	180.0	44.0	3.0	2.0	37.0	403-20014
355-1-B8W2	100.0	28.0	40.0	13.0	210.0	50.0	3.5	2.5	-	403-55008
342-1-B8W2	110.0	35.0	40.0	17.5	230.0	45.0	4.0	3.5	65.0	403-42006

All dimensions in mm. Subject to technical changes.

For these moulded shapes a wide range of material / adhesive combinations are available. Please refer to the moulded shapes catalogue.



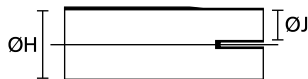


### 4-Way Outlet Shapes, Breakout Boots

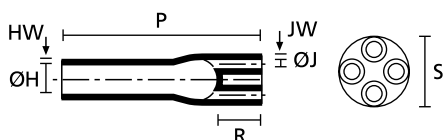
- Helashrink 400 Series, in line, low voltage

#### Features and Benefits

- Easy, time-saving insulation of cable branch point where it splits into single wires
- Made of tough, cross-linked, Polyolefin
- Adhesive to relieve mechanical tension in cable harnesses



a: Expanded form (supplied)



b: Fully recovered form (after heating)



400 series supplied / fully recovered.

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 20%	S nom	Article-No.
442-1-B8WM250	28.0	9.0	9.0	1.8	78.0	17.0	2.7	2.0	20.0	404-42009
408-2-B8W2	35.0	12.0	15.0	3.0	95.0	24.0	2.5	2.0	22.0	404-08022
409-2-B8W2	47.4	22.9	21.5	6.4	165.0	38.1	4.1	3.3	38.1	404-09021
418-4-B8W2	60.0	22.9	30.0	6.4	202.0	38.1	4.1	3.3	38.1	404-18020
444-2-B8W2	95.0	35.6	35.6	12.5	240.0	55.0	4.0	3.5	50.8	404-44022

All dimensions in mm. Subject to technical changes.

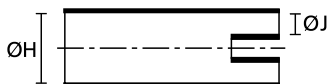
For these moulded shapes a wide range of material / adhesive combinations are available. Please refer to the moulded shapes catalogue.

### 5-Way Outlet Shapes, Breakout Boots

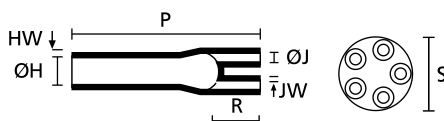
- Helashrink 500 Series, in line, low voltage

#### Features and Benefits

- Cable breakout boots for insulating and sealing cable crotch or conduit system
- Excellent resistance to abrasion and weathering



a: Expanded form (supplied)



b: Fully recovered form (after heating)



500 Series supplied / fully recovered.

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 20%	S nom	Article-No.
508-3-B7W	89.0	24.5	33.0	7.5	180.0	30.0	3.5	3.0	48.0	405-08035
508-3-B7	89.0	24.5	33.0	7.5	180.0	30.0	3.5	3.0	48.0	405-08036

All dimensions in mm. Subject to technical changes.

For these moulded shapes a wide range of material / adhesive combinations are available. Please refer to the moulded shapes catalogue.



### 6-Way Outlet Shapes, Breakout Boots

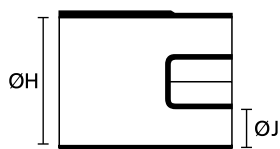
- Helashrink 600 Series, in line, low voltage

#### Features and Benefits

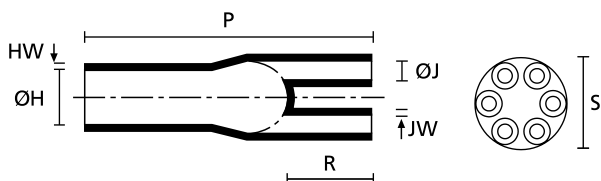
- Cable breakout boots for insulating and sealing cable crotch or conduit system
- Excellent resistance to abrasion and weathering



600 Series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

For Material / Adhesive information please refer to page 149.

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 20%	S nom	Article-No.
609-2-B7W	40.0	16.0	12.0	4.0	75.0	20.0	2.5	1.5	25.0	406-09027
609-2-B7	40.0	16.0	12.0	4.0	75.0	20.0	2.5	1.5	25.0	406-09023
608-2-B7W	61.0	37.0	21.0	9.0	152.0	56.0	3.2	3.2	46.0	406-08024
608-2-B7	61.0	37.0	21.0	9.0	152.0	56.0	3.2	3.2	46.0	406-08023
610-1-B8HW	114.3	35.0	45.7	14.0	241.3	50.8	4.0	2.3	101.6	406-10000

All dimensions in mm. Subject to technical changes.

For these moulded shapes a wide range of material / adhesive combinations are available. Please refer to the moulded shapes catalogue.



### Pinched End Caps

- Helashrink PEC Series, low voltage

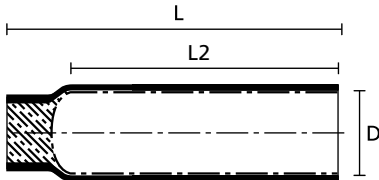
Pinched End Caps can be used for mechanical and environmental protection of stub splices in electrical harnesses. Due to the fast and easy installation, these caps can be used for non-electrical applications as well.

#### Features and Benefits

- Small size End Caps
- Fast and easy application
- With Inner adhesive layer for moisture sealing
- 3:1 shrink ratio
- Different diameters for wide application range
- Other lengths available on request



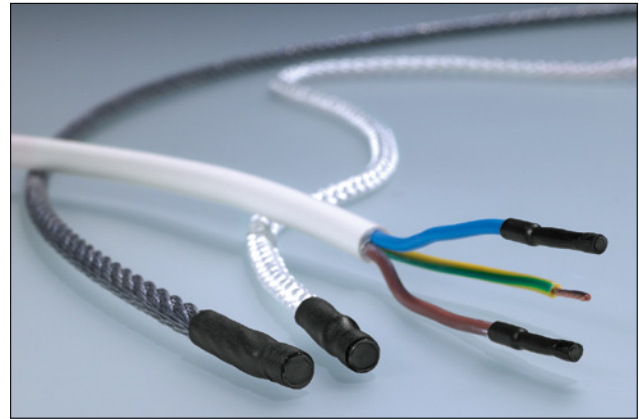
One Step to the Web!



PEC-Series expanded.



PEC-Series recovered.



The appropriate end cap for every cable diameter, and cable types.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Colour</b>	Black (BK)
<b>Shrink Ratio</b>	3:1
<b>Minimum Shrink Temperature</b>	+120 °C
<b>Operating Temperature</b>	-45 °C to +125 °C
<b>Dielectric Strength</b>	15 kV/mm according to IEC 60684 P2
<b>Flammability</b>	self extinguishing in 30 seconds according to SAE-AMS-DTL-23053/4



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Length (L2)	Pack Cont.	Article-No.
PEC-3/1	3.0	1.0	1.00	25.0	20.0	50 pcs.	416-00000
PEC-4.8/1.5	4.8	1.5	1.00	30.0	25.0	50 pcs.	416-00003
PEC-6/2	6.0	2.0	1.00	30.0	25.0	50 pcs.	416-00001
PEC-9/3	9.0	3.0	1.40	35.0	27.0	50 pcs.	416-00002

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



### End Caps

- Helashrink 1600 Series, low voltage

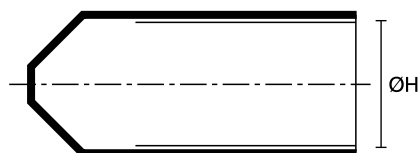
End caps are suitable for use on both polymeric and paper insulated, lead jacketed cables which may include aluminium or steel armouring.

#### Features and Benefits

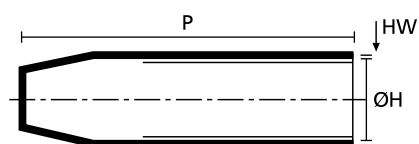
- Seal cables during storage or transportation
- Insulating cap for live LV cables (0.6/1kV)
- Adhesive lining for excellent environmental seal
- High shrink ratio to minimise number of sizes needed
- Outer end seal marked with lightning flashes to indicate live circuit
- Can be fitted with air valves for pressurised cable applications
- High shrink ratio to minimise number of sizes needed



The appropriate end cap for every cable diameter, and cable types.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Colour</b>	Black (BK)
<b>Shrink Ratio</b>	up to 3:1
<b>Minimum Shrink Temperature</b>	+135 °C
<b>Operating Temperature</b>	-55 °C to +80 °C
<b>Dielectric Strength</b>	15 kV/mm
<b>Flammability</b>	ASTM D635



TYPE	Bundle Ø min.	Bundle Ø max.	ØH min. a	ØH max. b	P ± 10%	HW ± 20%	Article-No.
1612-1-B8W	4.0	8.0	10.0	4.0	33.5	2.0	416-12046
1613-1-B8W	6.5	16.0	20.0	6.0	55.3	2.3	416-13054
1601-1-B8W	10.0	19.0	23.8	9.4	89.0	2.0	416-01013
1602-1-B8W	10.0	20.0	23.0	9.4	64.0	2.0	416-02008
1620-1-B5W2	13.0	28.0	35.0	12.7	184.0	3.3	416-20028
1614-1-B8W2	16.0	32.0	40.0	15.0	90.0	3.0	416-14047
1615-1-B8W2	26.0	51.0	63.0	25.0	143.0	3.3	416-15035
1617-1-B8W2	32.0	61.0	76.0	30.0	158.0	4.0	416-17033
1616-1-B8W2	48.0	80.0	100.0	45.0	162.0	4.0	416-16053
1609-1-B5W2	65.0	110.0	120.0	60.0	150.0	4.0	416-09000
1610-1-B5W2	90.0	135.0	160.0	82.0	146.0	4.0	416-10000

All dimensions in mm. Subject to technical changes.

For these moulded shapes a wide range of material / adhesive combinations are available. Please refer to the moulded shapes catalogue.



### Hot Melt Tape for Heat Shrinkable Tubing and Shapes

- HMT200A

Designed for use with heat shrink sleeving and mouldings.

#### Application Method

1. Clean and preheat the part to be protected.
2. Wrap the tape around the part and overlap.
3. Put the tubing or heat shrinkable shape over the tape and shrink down.

#### Features and Benefits

- Hot melt tape flows when heated to seal against moisture
- For heat shrink tubing and mouldings

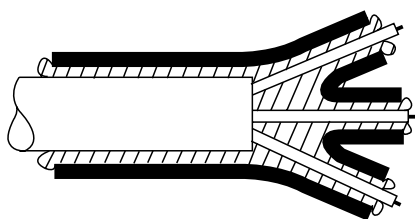


HMT200A-tape.



Adhesive tape HMT200A for sealing against humidity.

<b>MATERIAL</b>	Ethylenevinylacetate (EVA)
<b>Operating Temperature</b>	-55 °C to +105 °C
<b>Melting Point</b>	Starting from +95 °C
<b>Specifications</b>	DEF Stan 59-97 Type W (w)



HMT200A

TYPE	Thickness (T)	Width (W)	Colour	Reel Length	Article-No.
HMT200A	0.25	25.0	Translucent (TT)	10 m	354-02260
	0.25	25.0	Translucent (TT)	50 m	354-02259

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



Please note! Not all products listed on this page may have this approval.  
For product specific approvals please refer to the Appendix.



### Rubber Tubing, Chloroprene

- Helsen H

The chloroprene tubings (H) are ideally suited to rigorous environments such as aerospace, mass transit and defence markets.

As the material is highly elastic, it's original size can be expanded 500% on application and 200% in continuous use.

To save time and effort when fitting the tubing, try the HellermannTyton K, S and SS three prong tools (see Chapter 6.3) and the Hellerine lubricant (see Chapter 2.3), which are specially designed for use with HellermannTyton chloroprene tubing.

#### Features and Benefits

- Highly elastic Chloroprene tubing
- Withstands up to 120°C intermittent temperature
- Covers many cable diameters with one size
- Available in cut lengths



H rubber tubing is highly flexible and easy to apply.

<b>MATERIAL</b>	Chloroprene (CR)
<b>Operating Temperature</b>	-65 °C to +95 °C, intermittent 120 °C
<b>Flammability</b>	UL94 HB
<b>Specifications</b>	BS-3858 Type 1, BS-4G-198 Part 1 Type 1, DEF STAN 59-15 D2, IEC 684-3-116



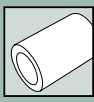
Chloroprene tubing

TYPE	Supplied Ø D min.	Wall (WT)	Length (L)	Pack Cont.	Colour	Article-No.
H12	1.2	0.70	20.0	1,000 pcs.	Black (BK)	600-01520
H15	1.5	0.80	20.0	1,000 pcs.	Black (BK)	600-01600
H20	2.0	0.80	20.0	1,000 pcs.	Black (BK)	600-01700
H30	3.0	0.80	25.0	1,000 pcs.	Black (BK)	600-01841
H50	5.0	1.00	25.0	1,000 pcs.	Black (BK)	600-01982
H75	7.5	1.30	25.0	1,000 pcs.	Black (BK)	600-02063
H100	10.0	1.50	25.0	1,000 pcs.	Black (BK)	600-02105
H150	15.0	1.70	25.0	1,000 pcs.	Black (BK)	600-02155

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



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For product specific approvals please refer to the Appendix.



### Chloroprene tubing and grommets

- HS
- HT

For years, HellermannTyton tubing and grommets have been the engineer's preferred choice for electrical insulation and mechanical protection in a diverse range of electronic and electrical industries.

To save time and effort when fitting the tubing, try the HellermannTyton NA three pronged pliers (see Chapter 6.3) and the Hellerine lubricant (see end of Chapter), which are specially designed for use with HellermannTyton chloroprene tubing.

#### Features and Benefits

- Highly elastic Chloroprene tubing
- Easy to fit
- Very good insulating characteristics
- Available on reels



Chloroprene tubing.

<b>MATERIAL</b>	Chloroprene (CR)
<b>Operating Temperature</b>	-25 °C to +100 °C
<b>Flammability</b>	UL94 HB and FMVSS-302
<b>Elongation at break</b>	min. 400%

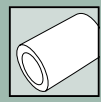
RoHS



Chloroprene tubing

TYPE	Supplied Ø D min.	Wall (WT)	Bundle Ø max.	Reel Length	Colour	Article-No.
HS0	1.25	0.50	2.0	100 m	Black (BK)	608-00100
HS1	1.75	0.50	3.5	100 m	Black (BK)	608-00150
HS1K	2.50	0.90	4.0	100 m	Black (BK)	608-00200
HS2	3.00	0.60	6.0	100 m	Black (BK)	608-00250
HS2K	4.00	1.50	8.5	50 m	Black (BK)	608-00300
HS3	5.00	0.70	9.0	100 m	Black (BK)	608-00350
HS4	7.50	0.80	13.0	25 m	Black (BK)	608-00400
HS5	10.00	1.00	20.0	25 m	Black (BK)	608-00450
HS8	12.00	1.00	23.0	25 m	Black (BK)	608-00500
HS9	14.00	1.00	25.0	20 m	Black (BK)	608-00550
HS10	17.00	1.00	28.0	20 m	Black (BK)	608-00600

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



### Chloroprene tubing and grommets

- HT

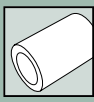


Chloroprene tubing

TYPE	Supplied Ø D min.	Wall (WT)	Bundle Ø max.	Length (L)	Pack Cont.	Colour	Article-No.
HT0	1.25	0.50	2.0	20.0	1,000 pcs.	Black (BK)	600-10200
HT1	1.75	0.50	3.5	20.0	1,000 pcs.	Black (BK)	600-15200
HT1K	2.50	0.90	4.0	25.0	500 pcs.	Black (BK)	600-20250
HT2	3.00	0.60	6.0	25.0	500 pcs.	Black (BK)	600-25250
HT2K	4.00	1.50	8.0	30.0	500 pcs.	Black (BK)	600-30300
HT3	5.00	0.70	9.0	25.0	500 pcs.	Black (BK)	600-35250
HT4	7.50	0.80	13.0	30.0	200 pcs.	Black (BK)	600-40300
HT5	10.00	1.00	20.0	35.0	200 pcs.	Black (BK)	600-45350
HT8	12.00	1.00	23.0	50.0	100 pcs.	Black (BK)	600-50500
HT9	14.00	1.00	25.0	50.0	100 pcs.	Black (BK)	600-55500
HT10	17.00	1.00	28.0	50.0	100 pcs.	Black (BK)	600-60500

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.





### Rubber Tubing, Silicone

- Helsyn SLP

The silicone sleeves (SLP) are halogen free and ideally suited to rigorous environments such as aerospace, mass transit and defence markets.

SLP can be used in areas where there will be large numbers of people in confined areas and sensitive equipment is housed.

Sleeves are available in international resistor colour code, pink and transparent

#### Features and Benefits

- Highly elastic rubber tubing made of Silicone
- Withstands up to +250°C intermittent temperature
- Covers many cable diameters with one size
- Available in cut lengths

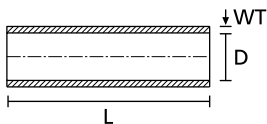


SLP rubber tubing is highly flexible and easy to apply.

<b>MATERIAL</b>	Silicone (SI)
<b>Operating Temperature</b>	-65 °C to +180 °C, intermittent 250 °C
<b>Flammability</b>	UL94 HB
<b>Specifications</b>	BS-2848 Type 5 Class 180T, BS-3858 Type 5, BS-3G-198 Type 4

HF ✓

RoHS ✓



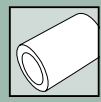
Silicone tubing

TYPE	Supplied Ø D min.	Wall (WT)	Length (L)	Pack Cont.	Colour	Article-No.
SLP15	1.5	0.50	15.0	1,000 pcs.	Black (BK)	606-00381
SLP30	3.0	0.50	20.0	1,000 pcs.	Black (BK)	606-00471
SLP40	4.0	0.50	20.0	1,000 pcs.	Black (BK)	606-00493
SLP50	5.0	0.50	20.0	1,000 pcs.	Black (BK)	606-00714
SLP70	7.0	0.50	20.0	1,000 pcs.	Black (BK)	606-00523

All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



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### Installation aid for tubing and grommets

- **Hellerine**

Hellerine lubricant for tubing and grommets installations.

#### Features and Benefits

- Effective aid for affixing elastomer sleeves
- Universally employable
- Evaporates after installation
- Consists of 99% vegetable oils
- Discoloration-free
- Offered in 250 ml bottle or in cans of 5 lt or 20 lt



Hellerine lubricant in 284ml plastic bottle.

TYPE	Description	Article-No.
<b>HELLERINE 0.25 LITER</b>	Hellerine assembly aid, 0.25 litre	625-00250
<b>HELLERINE 5 LITER</b>	Hellerine assembly aid, 5 litre	625-05000
<b>HELLERINE 20 LITER</b>	Hellerine assembly aid, 20 litre	625-06000

All dimensions in mm. Subject to technical changes.