



## 2.1 Heat Shrink Tubing

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## 2.2 Heat Shrink Moulded Shapes

### Product Selection

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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

LVR, HFT-A, TL27, TF21, TF24, TK20, TFE2, TR27, TCN20, SE28

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
6.4/3.2	4.8/2.4	3.8 mm
		4.3 mm
		5.7 mm
12.7/6.4	9.5/4.7	5.8 mm
		7.7 mm
		8.6 mm
		11.4 mm
25.4/12.7	19.1/9.5	15.2 mm
		17.2 mm
50.8/25.4	38.1/19.1	22.9 mm
		30.5 mm
		34.3 mm
101.6/50.8	76.2/38.1	45.7 mm
		61.0 mm
		68.6 mm
		91.4 mm

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

With the optimal shrink 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: TREDUX, TF34, TF31, EPS-300, TCN20 overexpanded, TA32, TA37

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

**4:1 and 6:1 heat shrink tubing** is able to shrink down to 1/4 or 1/6 of its original supplied diameter. The higher shrink ratio allows 4:1 and 6:1 tubing to cover a large substrate and enables the tubing to fit over

large objects, like connectors and shrink down onto much smaller cable jackets.

**Heat Shrinkable Tubing with a shrink ratio of 4:1**

TREDUX MA47, TREDUX HA47, TA42, EPS-400, MA40, MA47, MU47, LVRK-L, RMS, LVK, LVK-C, HA40, HA47, SA47-LA, TX46, TFE4

Shrink ratio 4:1 Size mm			Cable/ Wire Diameter	
4/1			1.6 mm	
			3.2 mm	
			3.4 mm	
12/3	8/2		4.8 mm	
			6.4 mm	
			6.8 mm	
			9.6 mm	
			10.2 mm	
32/8	24/6	16/4	12.8 mm	
			13.6 mm	
			20.4 mm	
			52/13	20.8 mm
				27.2 mm
				44.2 mm

**Heat Shrinkable Tubing with a shrink ratio of 6:1**

HA67

Shrink ratio 6:1 Size mm				Cable/ Wire Diameter
19.0/3.2				6.4 mm
				11.0 mm
				14.8 mm
				15.8 mm
50.8/8.3	33.0/5.5	44.4/7.4	69.8/11.7	16.8 mm
				23.3 mm
				27.5 mm
				31.5 mm
				37.0 mm
	88.9/17.1	119.4/22.9		42.2 mm
				42.3 mm
				58.2 mm
				74.5 mm
235/40				79.0 mm
				100.1 mm
				196.0 mm

## 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 %)



Total shrinkage of 4 mm (6 mm – 2 mm)

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



Shrinkage of 3.2 mm (4 mm x 0.8)

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

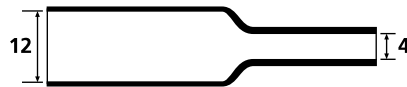


Shrinkage of 0.8 mm (4 mm x 0.2)

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

#### Size 12/4

##### Maximum shrink (100 %)



Shrinkage of 8 mm (12 mm – 4 mm)

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



Shrinkage of 6.4 mm (8 mm x 0.8)

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



Shrinkage of 1.6 mm (8 mm x 0.2)

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


### 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

[www.HellermannTyton.com/heatshrink-calculator](http://www.HellermannTyton.com/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 [www.HellermannTyton.com](http://www.HellermannTyton.com) website.












### Heat Shrinkable Tubing Overview

TYPE	Packaging Type	Variant	Material	Shrink Ratio	Operating Temperature	Dimension (mm)	Colour	Specifications	Page
ShrinKit 321 Basic		Thin-Wall	PO-X	3:1	-55 °C to +135 °C		Black		259
ShrinKit 321 Universal Basic		Thin-Wall	PO-X	3:1	-55 °C to +135 °C		Black, Blue, Green-Yellow, Red, White		260, 261
ShrinKit 321 Universal		Thin-Wall	PO-X	3:1	-55 °C to +135 °C		Black, Blue, Green-Yellow, Red, Transparent		262
ShrinKit 321-A Basic		Thin-Wall Hot melt adhesive	PO-X	3:1	-55 °C to +110 °C		Black, Transparent		263
ShrinKit 321-A		Thin-Wall Hot melt adhesive	PO-X	3:1	-55 °C to +110 °C		Black, Transparent		264
HIS-PACK		Thin-Wall	PO-X	2:1	-55 °C to +125 °C	1.2 - 25.4	Black, Blue, Green-Yellow, Red, Transparent	2, 3	265, 266, 267
HIS-3		Thin-Wall	PO-X	3:1	-55 °C to +135 °C	1.6 - 25.4	Black, Blue, Green-Yellow, Red, Transparent	2, 3	269, 270, 271
HIS-A		Thin-Wall Hot melt adhesive	PO-X	3:1	-55 °C to +125 °C	3.0 - 24.0	Black, Transparent	2, 3	272, 273
HIS-3 BAG		Thin-Wall	PO-X	3:1	-55 °C to +135 °C	1.6 - 12.7	Black, Blue, Brown, Green-Yellow, Grey, Red, Transparent	2, 3	274, 275
TREDUX		Thin-Wall	PO-X	2:1, 3:1	-55 °C to +135 °C	1.5 - 101.6	Black, Green-Yellow	2, 3	277, 278
TREDUX MA47		Medium-Wall Hot melt adhesive	PO-X	up to 4:1	-55 °C to +110 °C	12.0 - 95.0	Black		279
TREDUX HA47		Thick-Wall Hot melt adhesive	PO-X	up to 4:1	-55 °C to +110 °C	19.0 - 85.0	Black		280
LVR		Thin-Wall	PVC	2:1	-20 °C to +80 °C	2.4 - 25.4	Black		281
TL27		Thin-Wall	PO-X	2:1	-70 °C to +135 °C	1.2 - 50.8	Black		282
TCN20		Thin-Wall	PO-X	2:1	-55 °C to +125 °C	1.2 - 50.8	Black	2, 3	283
TCN20 overexpanded		Thin-Wall	PO-X	3:1	-55 °C to +125 °C	2.4 - 38.0	Black	2, 3	284












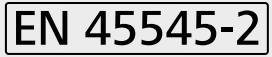
## Heat Shrinkable Tubing Overview

TYPE	Packaging Type	Variant	Material	Shrink Ratio	Operating Temperature	Dimension (mm)	Colour	Specifications	Page
HFT-A		Thin-Wall	PO-X	2:1	-55 °C to +135 °C	1.2 - 102.0	Black, Blue, Green-Yellow, Red, White, Yellow	3, 9, 10, 11	285
TF21		Thin-Wall	PO-X	2:1	-55 °C to +135 °C	1.2 - 101.6	Black, Blue, Green-Yellow, Red, White, Yellow	3, 9	288, 289, 290
TF24		Thin-Wall	PO-X	2:1	-55 °C to +135 °C	1.2 - 101.6	Transparent	10, 11	291
TF31		Thin-Wall	PO-X	3:1	-55 °C to +135 °C	1.5 - 40.0	Black, Blue, Green, Green-Yellow, Red, White, Yellow	3, 9	292, 293, 294
TF34		Thin-Wall	PO-X	3:1	-55 °C to +135 °C	1.5 - 40.0	Transparent		295
TA32		Thin-Wall Hot melt adhesive	PO-X	3:1	-55 °C to +125 °C	3.0 - 40.0	Black	3, 9	296
TA42		Thin-Wall Hot melt adhesive	PO-X	4:1	-55 °C to +125 °C	4.0 - 52.0	Black	9	297
EPS-300		Thin-Wall Hot melt adhesive	PO-X	3:1	-55 °C to +125 °C	3.0 - 40.0	Black		298
EPS-400		Thin-Wall Hot melt adhesive	PO-X	4:1	-55 °C to +125 °C	4.0 - 32.0	Black		299
MA40		Medium-Wall Hot melt adhesive	PO-X	up to 4:1	-55 °C to +110 °C	8.0 - 55.0	Black	4	300
MA47		Medium-Wall Hot melt adhesive	PO-X	up to 4:1	-55 °C to +110 °C	8.0 - 140.0	Black		301
MU47		Medium-Wall	PO-X	up to 4:1	-55 °C to +110 °C	12.0 - 140.0	Black		303
LVRK-L		Shrink Cast	PO-X	4:1	-55 °C to +125 °C	24.0 - 24.0	Black		304
RMS		Shrink Cast Hot melt adhesive	PO-X	up to 4.5:1	-40 °C to +120 °C	43.0 - 185.0	Black		305, 306
LVK		Shrink Cast Hot melt adhesive	PO-X	up to 4:1	-55 °C to +110 °C		Black		307
LVK-C with connectors		Shrink Cast Hot melt adhesive	PO-X	up to 4:1	-55 °C to +110 °C		Black		308

**Heat Shrinkable Tubing Overview**

TYPE	Packaging Type	Variant	Material	Shrink Ratio	Operating Temperature	Dimension (mm)	Colour	Specifications	Page
HA40		Thick-Wall Hot melt adhesive	PO-X	up to 4:1	-55 °C to +110 °C	9.0 - 92.0	Black	4	309
HA47		Thick-Wall Hot melt adhesive	PO-X	up to 4:1	-55 °C to +110 °C	9.0 - 180.0	Black		310
HA67		Thick-Wall Hot melt adhesive	PO-X	6:1	-55 °C to +110 °C	19.0 - 119.4	Black		311
TR27		Thin-Wall	PO-X	2:1	-40 °C to +105 °C	3.2 - 50.8	Black	12	312
TA37		Thin-Wall Hot melt adhesive	PO-X	3:1	-40 °C to +105 °C	3.2 - 120.0	Black	12	313
SA47-LA		Thin-Wall EVA hot melt adhesive	PO-X	4:1	-40 °C to +125 °C	5.75 - 52.0	Black, Transparent		314
TX46		Thin-Wall Hot melt adhesive	PO-X	4:1	-40 °C to +150 °C	7.6 - 32.0	Black		315
SE28		Standard-Wall	POA	2:1	-75 °C to +150 °C	3.2 - 102.0	Black	10,11	316
TK20		Thin-Wall	PVDF	2:1	-55 °C to +175 °C	1.2 - 50.8	Transparent	9, 10,11	317
TFE2		Thin-Wall	PTFE	2:1	-65 °C to +260 °C	0.86 - 11.94	Transparent		318
TFE4		Thin-Wall	PTFE	4:1	-65 °C to +260 °C	1.98 - 31.80	Transparent		319

**CERTIFICATION / SPECIFICATION**

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

Please refer to the Approvals Overview for further information, see page 620.

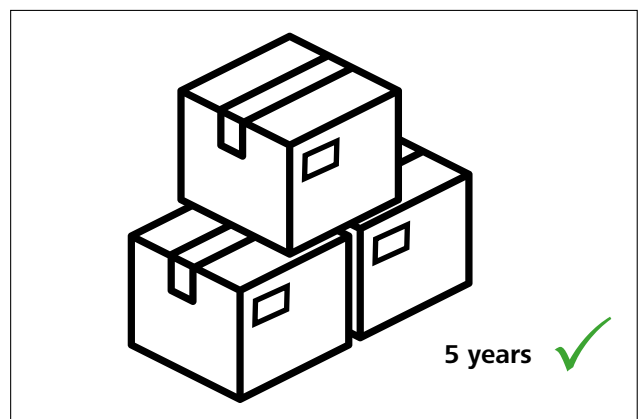
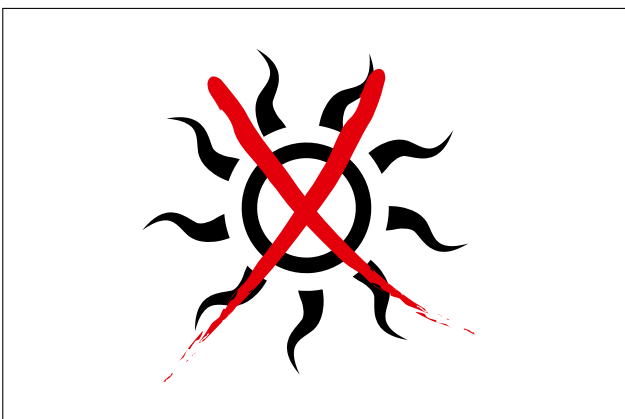
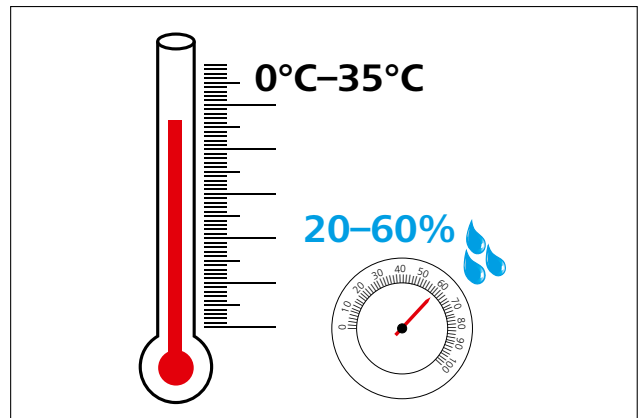
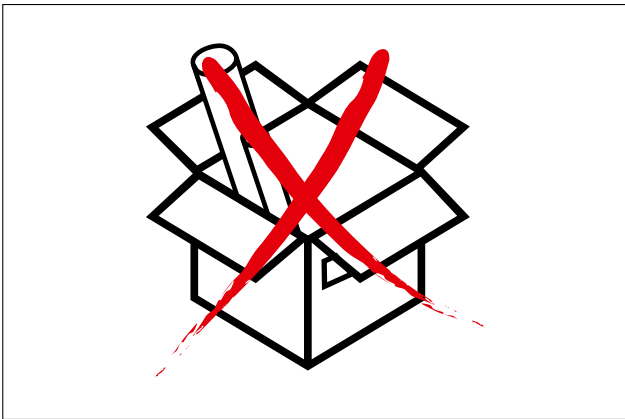
**Storage Instructions for Heat Shrinkable Tubing****Storage Conditions / Environment:**

- Store in the original packaging
- Storage Temperature: 0°C to +35°C
- Humidity: 20% to 60%
- Keep away from direct sunlight

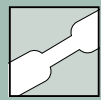
**Recommended maximum storage time: 5 years**

When stored properly, the product properties remain intact beyond the specified storage duration.

This applies to heat shrink tubing with an inner adhesive layer concerning the tubing material. However, the inner adhesive performance may be affected if the storage duration is significantly exceeded.



Instructions apply to our heat-shrink tubing unless otherwise stated. For VG products respective storage requirements apply.



### Heat shrinkable tubing 3:1 in a kit

#### ShrinKit 321 Basic - 220 pcs. - 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

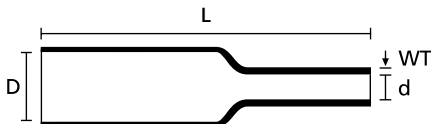
- Compact and handy kit
- Black tubing
- Available in a wide size range of 1.5 mm to 18.0 mm
- 220 precut pieces in five sizes



ShrinKit 321 Basic - 220 pcs 3:1 heat shrink assortment.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Min. Shrink Temperature</b>	+90 °C
<b>Longitudinal Change After Shrinkage</b>	+5%/-10% max.
<b>Dielectric Strength</b>	20 kV/mm
<b>Self extinguishing</b>	Yes
<b>Insulation Class</b>	B (VDE 0530)

RoHS

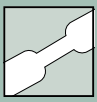


Heat Shrink Tubing 3:1



COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content	Article-No.
1	1,5	0,5	35,0	0,45	Black (BK)	50 pcs.	380-03001
2	6,0	2,0	35,0	0,70	Black (BK)	30 pcs.	
3	3,0	1,0	35,0	0,55	Black (BK)	25 pcs.	
4	6,0	2,0	35,0	0,70	Black (BK)	15 pcs.	
5	6,0	2,0	35,0	0,70	Black (BK)	15 pcs.	
6	3,0	1,0	35,0	0,55	Black (BK)	25 pcs.	
7	1,5	0,5	35,0	0,45	Black (BK)	50 pcs.	
8	18,0	6,0	80,0	0,80	Black (BK)	5 pcs.	
8	12,0	4,0	80,0	0,70	Black (BK)	5 pcs.	

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 Universal Basic - 177 pcs. - coloured

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

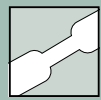
- Compact and handy kit
- Black and coloured tubing
- Available in a wide size range of 3 mm to 18.0 mm
- 177 precut pieces in five sizes



ShrinKit 321 Universal Basic - 177 pcs 3:1 heat shrink assortment.

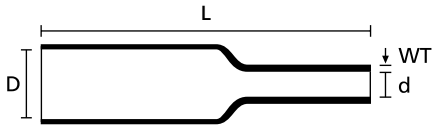
<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Min. Shrink Temperature</b>	+90 °C
<b>Longitudinal Change After Shrinkage</b>	+5%/-10% max.
<b>Dielectric Strength</b>	20 kV/mm
<b>Self extinguishing</b>	Yes
<b>Insulation Class</b>	B (VDE 0530)

RoHS



### Heat shrinkable tubing 3:1 in a kit

ShrinkKit 321 Universal Basic - 177 pcs. - coloured

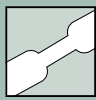


Heat Shrink Tubing 3:1



COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content	Article-No.
1	12,0	4,0	35,0	0,70	Black (BK)	12 pcs.	380-03005
2	6,0	2,0	80,0	0,70	Blue (BU)	5 pcs.	
	6,0	2,0	80,0	0,70	Red (RD)	5 pcs.	
	6,0	2,0	80,0	0,70	White (WH)	5 pcs.	
	12,0	4,0	80,0	0,70	Black (BK)	2 pcs.	
	12,0	4,0	80,0	0,70	Blue (BU)	2 pcs.	
	12,0	4,0	80,0	0,70	Red (RD)	2 pcs.	
3	6,0	2,0	35,0	0,70	Blue (BU)	10 pcs.	
	6,0	2,0	35,0	0,70	Red (RD)	10 pcs.	
	6,0	2,0	35,0	0,70	White (WH)	10 pcs.	
4	9,0	3,0	35,0	0,70	Green-Yellow (GNYE)	15 pcs.	
5	9,0	3,0	35,0	0,70	Black (BK)	20 pcs.	
6	3,0	1,0	35,0	0,55	Black (BK)	10 pcs.	
	3,0	1,0	35,0	0,55	Blue (BU)	10 pcs.	
	3,0	1,0	35,0	0,55	Red (RD)	10 pcs.	
	3,0	1,0	35,0	0,55	White (WH)	10 pcs.	
7	6,0	2,0	35,0	0,70	Black (BK)	20 pcs.	
	6,0	2,0	35,0	0,70	Green-Yellow (GNYE)	10 pcs.	
8	18,0	6,0	160,0	0,80	Black (BK)	3 pcs.	
	18,0	6,0	160,0	0,80	Green-Yellow (GNYE)	3 pcs.	
	18,0	6,0	160,0	0,80	White (WH)	3 pcs.	

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 Universal - 975 pcs. - coloured

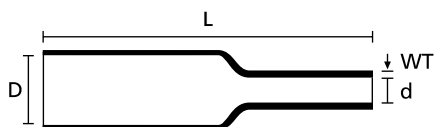
With ShrinKit 321 HellermannTyton has set a new standard in heat shrink tubing: ShrinKit tubings cover many applications with their ideal shrink ratio of 3:1.

#### Features and benefits

- Wide range of sizes, colours and lengths
- For insulation, bend protection and identification
- Compartment sizes changeable by simply moving yellow space dividers



ShrinKit 321 Universal - 975 pcs 3:1 heat shrink assortment.



Heat Shrink Tubing 3:1

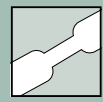


<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Min. Shrink Temperature</b>	+90 °C
<b>Longitudinal Change After Shrinkage</b>	+5%/-10% max.
<b>Dielectric Strength</b>	20 kV/mm
<b>Insulation Class</b>	B (VDE 0530)

RoHS

COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content	Self extinguishing	Article-No.
1	6,0	2,0	60,0	0,70	Black (BK)	50 pcs.	Yes	380-03002
2	12,0	4,0	100,0	0,70	Black (BK)	15 pcs.	Yes	
3	24,0	8,0	200,0	1,00	Black (BK)	10 pcs.	Yes	
4	6,0	2,0	60,0	0,70	Green-Yellow (GNYE)	50 pcs.	Yes	
5	3,0	1,0	50,0	0,55	Transparent (CL)	100 pcs.	No	
6	3,0	1,0	50,0	0,55	Black (BK)	100 pcs.	Yes	
7	12,0	4,0	100,0	0,70	Transparent (CL)	15 pcs.	No	
8	12,0	4,0	100,0	0,70	Red (RD)	15 pcs.	Yes	
9	3,0	1,0	50,0	0,55	Red (RD)	100 pcs.	Yes	
10	3,0	1,0	40,0	0,55	Blue (BU)	100 pcs.	Yes	
11	3,0	1,0	40,0	0,55	Green-Yellow (GNYE)	100 pcs.	Yes	
12	1,5	0,5	40,0	0,45	Black (BK)	75 pcs.	Yes	
	1,5	0,5	40,0	0,45	Green-Yellow (GNYE)	75 pcs.	Yes	
13	6,0	2,0	60,0	0,70	Blue (BU)	50 pcs.	Yes	
14	6,0	2,0	60,0	0,70	Red (RD)	50 pcs.	Yes	
15	6,0	2,0	60,0	0,70	Transparent (CL)	50 pcs.	No	
16	12,0	4,0	170,0	0,70	Green-Yellow (GNYE)	10 pcs.	Yes	
17	12,0	4,0	170,0	0,70	Blue (BU)	10 pcs.	Yes	

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

#### ShrinkKit 321-A Basic - with adhesive liner - 130 pcs. - BK/CL

ShrinkKit 321-A tubing seals against moisture and dust and with the ideal shrink ratio of 3:1 protects a wide variety of electrical applications. 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

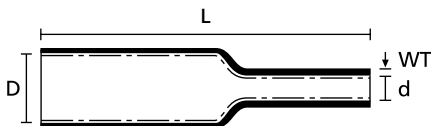
- Adhesive lined heat shrink tubing
- Inner wall melts when heated and is forced into gaps
- Adhesive forms seal against moisture as tubing cools
- Black tubes mainly for the protection of connectors and splices
- Clear tubing ideal for protection of printed label markers
- 130 precut pieces in three sizes.



ShrinkKit 321-A Basic - 130 pcs 3:1 dual wall heat shrink assortment.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +110 °C
<b>Min. Shrink Temperature</b>	+110 °C
<b>Longitudinal Change After Shrinkage</b>	+1%/-15% max.
<b>Dielectric Strength</b>	15 kV/mm
<b>Insulation Class</b>	A (VDE 0530)

RoHS

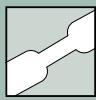


Heat Shrink Tubing 3:1 with adhesive



COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content	Self extinguishing	Article-No.
1	3,0	1,0	35,0	1,00	Black (BK)	25 pcs.	Yes	380-03004
2	12,0	4,0	35,0	1,70	Black (BK)	10 pcs.	Yes	
3	3,0	1,0	35,0	1,00	Transparent (CL)	25 pcs.	No	
4	6,0	2,0	35,0	1,10	Black (BK)	15 pcs.	Yes	
5	6,0	2,0	35,0	1,10	Transparent (CL)	15 pcs.	No	
6	6,0	2,0	35,0	1,10	Transparent (CL)	15 pcs.	No	
7	6,0	2,0	35,0	1,10	Black (BK)	15 pcs.	Yes	
8	12,0	4,0	80,0	1,70	Black (BK)	5 pcs.	Yes	
	12,0	4,0	80,0	1,70	Transparent (CL)	5 pcs.	No	

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

#### ShrinkKit 321-A - with adhesive liner - 210 pcs. - BK/CL

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

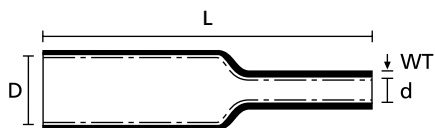
- Adhesive lined heat shrink tubing
- Inner wall melts when heated and is forced into gaps
- Adhesive forms seal against moisture as tubing cools
- Black tubing mainly for the protection of connectors and splices
- Clear tubing ideal for protection of printed label markers
- Compartment size changeable by simply moving yellow space dividers



ShrinkKit 321-A - 210 pcs 3:1 dual wall heat shrink assortment.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +110 °C
<b>Min. Shrink Temperature</b>	+110 °C
<b>Longitudinal Change After Shrinkage</b>	+1%/-15% max.
<b>Dielectric Strength</b>	15 kV/mm
<b>Insulation Class</b>	A (VDE 0530)

RoHS

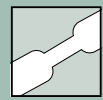


Heat Shrink Tubing 3:1 with adhesive



COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content	Self extinguishing	Article-No.
1	24,0	8,0	200,0	2,50	Black (BK)	5 pcs.	Yes	380-03003
2	12,0	4,0	65,0	1,70	Transparent (CL)	15 pcs.	No	
3	6,0	2,0	50,0	1,10	Black (BK)	20 pcs.	Yes	
	6,0	2,0	50,0	1,10	Transparent (CL)	20 pcs.	No	
4	12,0	4,0	65,0	1,70	Black (BK)	15 pcs.	Yes	
5	3,0	1,0	50,0	1,00	Black (BK)	50 pcs.	Yes	
	3,0	1,0	50,0	1,00	Transparent (CL)	50 pcs.	No	
6	6,0	2,0	35,0	1,10	Black (BK)	30 pcs.	Yes	
	6,0	2,0	35,0	1,10	Transparent (CL)	30 pcs.	No	
7	24,0	8,0	200,0	2,50	Transparent (CL)	5 pcs.	No	
8	12,0	4,0	100,0	1,70	Black (BK)	15 pcs.	Yes	
9	12,0	4,0	100,0	1,70	Black (BK)	15 pcs.	Yes	
10	12,0	4,0	100,0	1,70	Transparent (CL)	15 pcs.	No	
11	3,0	1,0	40,0	1,00	Black (BK)	50 pcs.	Yes	
	3,0	1,0	40,0	1,00	Transparent (CL)	50 pcs.	No	

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



### Heat shrinkable tubing 2:1 on a reel

#### HIS-PACK - coloured

HIS-PACK is used in general purpose of electrical insulation with a high level of 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
- Transparent color is halogen free



HIS Pack Heat Shrink Tubing 2:1 Dispenser Box. Perfect fit in multiple colours.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Min. Shrink Temperature</b>	+100 °C
<b>Longitudinal Change After Shrinkage</b>	+/-5%
<b>Dielectric Strength</b>	20 kV/mm
<b>Flammability</b>	UL 224 VW-1
<b>Self extinguishing</b>	Yes



Heat Shrink Tubing 2:1

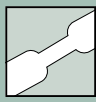


TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
HIS-PACK-1.2/0.6	1.2	3/64 "	0.6	0.40	10 m	Black (BK)	300-30120
	1.2	3/64 "	0.6	0.40	10 m	Blue (BU)	300-30126
	1.2	3/64 "	0.6	0.40	10 m	Red (RD)	300-30122
HIS-PACK-1.6/0.8	1.6	1/16 "	0.8	0.40	10 m	Black (BK)	300-30160
	1.6	1/16 "	0.8	0.40	10 m	Blue (BU)	300-30166
	1.6	1/16 "	0.8	0.40	10 m	Red (RD)	300-30162
HIS-PACK-2.4/1.2	2.4	3/32 "	1.2	0.50	10 m	Black (BK)	300-30240
	2.4	3/32 "	1.2	0.50	10 m	Blue (BU)	300-30246
	2.4	3/32 "	1.2	0.50	10 m	Red (RD)	300-30242
HIS-PACK-3.2/1.6	3.2	1/8 "	1.6	0.50	10 m	Black (BK)	300-30320
	3.2	1/8 "	1.6	0.50	10 m	Blue (BU)	300-30326
	3.2	1/8 "	1.6	0.50	10 m	Green-Yellow (GNYE)	300-30327
	3.2	1/8 "	1.6	0.50	10 m	Red (RD)	300-30322
HIS-PACK-4.8/2.4	4.8	3/16 "	2.4	0.50	10 m	Black (BK)	300-30480
	4.8	3/16 "	2.4	0.50	10 m	Blue (BU)	300-30486
	4.8	3/16 "	2.4	0.50	10 m	Green-Yellow (GNYE)	300-30487
	4.8	3/16 "	2.4	0.50	10 m	Red (RD)	300-30482

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

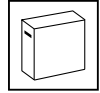


Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Heat shrinkable tubing 2:1 on a reel

HIS-PACK - coloured



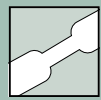
Heat Shrink Tubing 2:1

TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
HIS-PACK-6.4/3.2	6.4	1/4 "	3.2	0.60	5 m	Black (BK)	300-30640
	6.4	1/4 "	3.2	0.60	5 m	Blue (BU)	300-30646
	6.4	1/4 "	3.2	0.60	5 m	Green-Yellow (GNYE)	300-30647
	6.4	1/4 "	3.2	0.60	5 m	Red (RD)	300-30642
HIS-PACK-9.5/4.7	9.5	3/8 "	4.7	0.60	5 m	Black (BK)	300-30950
	9.5	3/8 "	4.7	0.60	5 m	Blue (BU)	300-30956
	9.5	3/8 "	4.7	0.60	5 m	Green-Yellow (GNYE)	300-30957
	9.5	3/8 "	4.7	0.60	5 m	Red (RD)	300-30952
HIS-PACK-12.7/6.4	12.7	1/2 "	6.4	0.60	5 m	Black (BK)	300-31270
	12.7	1/2 "	6.4	0.60	5 m	Blue (BU)	300-31276
	12.7	1/2 "	6.4	0.60	5 m	Green-Yellow (GNYE)	300-31277
	12.7	1/2 "	6.4	0.60	5 m	Red (RD)	300-31272
HIS-PACK-19.1/9.5	19.1	3/4 "	9.5	0.80	5 m	Black (BK)	300-31900
	19.1	3/4 "	9.5	0.80	5 m	Blue (BU)	300-31906
	19.1	3/4 "	9.5	0.80	5 m	Green-Yellow (GNYE)	300-31907
	19.1	3/4 "	9.5	0.80	5 m	Red (RD)	300-31902
HIS-PACK-25.4/12.7	25.4	1 "	12.7	0.90	5 m	Black (BK)	300-32540
	25.4	1 "	12.7	0.90	5 m	Blue (BU)	300-32546
	25.4	1 "	12.7	0.90	5 m	Green-Yellow (GNYE)	300-32547
	25.4	1 "	12.7	0.90	5 m	Red (RD)	300-32542

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



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### HIS-PACK - transparent



Heat Shrink Tubing 2:1

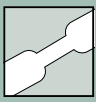


<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Min. Shrink Temperature</b>	+100 °C
<b>Longitudinal Change After Shrinkage</b>	+/-5%
<b>Dielectric Strength</b>	20 kV/mm



TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
<b>HIS-PACK-1.2/0.6</b>	1.2	3/64 "	0.6	0.40	10 m	Transparent (CL)	300-30123
<b>HIS-PACK-1.6/0.8</b>	1.6	1/16 "	0.8	0.40	10 m	Transparent (CL)	300-30163
<b>HIS-PACK-2.4/1.2</b>	2.4	3/32 "	1.2	0.50	10 m	Transparent (CL)	300-30243
<b>HIS-PACK-3.2/1.6</b>	3.2	1/8 "	1.6	0.50	10 m	Transparent (CL)	300-30323
<b>HIS-PACK-4.8/2.4</b>	4.8	3/16 "	2.4	0.50	10 m	Transparent (CL)	300-30483
<b>HIS-PACK-6.4/3.2</b>	6.4	1/4 "	3.2	0.60	5 m	Transparent (CL)	300-30643
<b>HIS-PACK-9.5/4.7</b>	9.5	3/8 "	4.7	0.60	5 m	Transparent (CL)	300-30953
<b>HIS-PACK-12.7/6.4</b>	12.7	1/2 "	6.4	0.60	5 m	Transparent (CL)	300-31273
<b>HIS-PACK-19.1/9.5</b>	19.1	3/4 "	9.5	0.80	5 m	Transparent (CL)	300-31903
<b>HIS-PACK-25.4/12.7</b>	25.4	1 "	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.



### 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

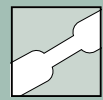
- Contains up to 6 dispenser boxes
- Place on bench or mount to wall
- Special cutter included for easily cutting tubing length to size



*HIS-Service-Station contains 6 dispenser boxes and a cutter.*

TYPE	Description	Article-No.
HIS-Service-Station	HIS-Service-Station 6 HIS-dispenser boxes in the sizes HIS-3-3/1, HIS-3-6/2, HIS-3-9/3, HIS-3-12/4, HIS-3-24/8, HIS-A-12/4	365-30105
	HIS-Service-Station, empty	300-30002

All dimensions in mm. Subject to technical changes.



### Heat shrinkable tubing 3:1 on a reel

#### HIS-3 - coloured

HIS-3 is used in general purpose of electrical insulation with a high level of protection against mechanical abrasion.

#### Features and benefits

- Unlined tubing in handy dispenser packs
- High shrink ratio 3:1
- Fits highly variable cable dimensions
- Only 7 sizes for application diameter range of 1 mm up to 20 mm, reduce inventory by half
- Transparent color is halogen free



HIS-3 Heat Shrink Tubing 3:1 Dispenser Box. Multi-fit in various colours.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Min. Shrink Temperature</b>	+100 °C
<b>Longitudinal Change After Shrinkage</b>	+/-5%
<b>Dielectric Strength</b>	32 kV/mm
<b>Flammability</b>	UL 224 VW-1
<b>Insulation Class</b>	B (VDE 0530)
<b>Self extinguishing</b>	Yes

RoHS



Heat Shrink Tubing 3:1

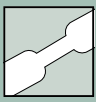


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
HIS-3-1.5/0.5	1.6	0.5	0.45	10 m	Black (BK)	308-30150
	1.6	0.5	0.45	10 m	Blue (BU)	308-30156
	1.6	0.5	0.45	10 m	Red (RD)	308-30152
HIS-3-3/1	3.2	1.0	0.55	10 m	Black (BK)	308-30300
	3.2	1.0	0.55	10 m	Blue (BU)	308-30306
	3.2	1.0	0.55	10 m	Green-Yellow (GNYE)	308-30307
	3.2	1.0	0.55	10 m	Red (RD)	308-30302
HIS-3-6/2	6.4	2.0	0.65	5 m	Black (BK)	308-30600
	6.4	2.0	0.65	5 m	Blue (BU)	308-30606
	6.4	2.0	0.65	5 m	Green-Yellow (GNYE)	308-30607
	6.4	2.0	0.65	5 m	Red (RD)	308-30602

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

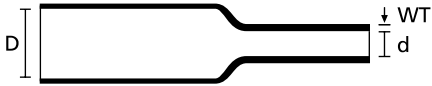


Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.

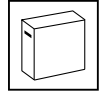


### Heat shrinkable tubing 3:1 on a reel

#### HIS-3 - coloured



Heat Shrink Tubing 3:1

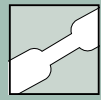


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
HIS-3-9/3	9.5	3.0	0.75	5 m	Black (BK)	308-30900
	9.5	3.0	0.75	5 m	Blue (BU)	308-30906
	9.5	3.0	0.75	5 m	Green-Yellow (GNYE)	308-30907
	9.5	3.0	0.75	5 m	Red (RD)	308-30902
HIS-3-12/4	12.7	4.0	0.80	5 m	Black (BK)	308-31200
	12.7	4.0	0.80	5 m	Blue (BU)	308-31206
	12.7	4.0	0.80	5 m	Green-Yellow (GNYE)	308-31207
	12.7	4.0	0.80	5 m	Red (RD)	308-31202
HIS-3-18/6	19.1	6.0	0.90	4 m	Black (BK)	308-31800
	19.1	6.0	0.90	4 m	Blue (BU)	308-31806
	19.1	6.0	0.90	4 m	Green-Yellow (GNYE)	308-31807
	19.1	6.0	0.90	4 m	Red (RD)	308-31802
HIS-3-24/8	25.4	8.0	1.00	3 m	Black (BK)	308-32400
	25.4	8.0	1.00	3 m	Blue (BU)	308-32406
	25.4	8.0	1.00	3 m	Green-Yellow (GNYE)	308-32407
	25.4	8.0	1.00	3 m	Red (RD)	308-32402

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



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### HIS-3 - transparent



Heat Shrink 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>Min. Shrink Temperature</b>	+100 °C
<b>Longitudinal Change After Shrinkage</b>	+/-5%
<b>Dielectric Strength</b>	32 kV/mm
<b>Insulation Class</b>	B (VDE 0530)

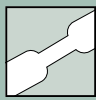


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
HIS-3-1.5/0.5	1.6	0.5	0.45	10 m	Transparent (CL)	308-30153
HIS-3-3/1	3.2	1.0	0.55	10 m	Transparent (CL)	308-30303
HIS-3-6/2	6.4	2.0	0.65	5 m	Transparent (CL)	308-30603
HIS-3-9/3	9.5	3.0	0.75	5 m	Transparent (CL)	308-30903
HIS-3-12/4	12.7	4.0	0.80	5 m	Transparent (CL)	308-31203
HIS-3-18/6	19.1	6.0	0.90	4 m	Transparent (CL)	308-31803
HIS-3-24/8	25.4	8.0	1.00	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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### Heat shrinkable tubing 3:1 on a reel

#### HIS-A - with adhesive liner - black

HIS-A forms a seal against moisture and protects 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 Heat Shrink Tubing 3:1+Adhesive Dispenser Box. Perfect sealing.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Min. Shrink Temperature</b>	+100 °C
<b>Longitudinal Change After Shrinkage</b>	-10% max.
<b>Softening Point Adhesive</b>	+85 °C
<b>Dielectric Strength</b>	24 kV/mm
<b>Flammability</b>	UL 224 VW-1
<b>Self extinguishing</b>	Yes
<b>Insulation Class</b>	A (VDE 0530)



Heat Shrink Tubing 3:1 with adhesive

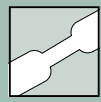


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
HIS-A-3/1	3.0	1.0	1.00	10 m	Black (BK)	308-10300
HIS-A-6/2	6.0	2.0	1.00	5 m	Black (BK)	308-10600
HIS-A-9/3	9.0	3.0	1.00	5 m	Black (BK)	308-10900
HIS-A-12/4	12.0	4.0	1.65	5 m	Black (BK)	308-11200
HIS-A-18/6	19.0	6.0	2.10	4 m	Black (BK)	308-11800
HIS-A-24/8	24.0	8.0	2.35	3 m	Black (BK)	308-12400

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



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### HIS-A - with adhesive liner - transparent



Heat Shrink 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 +125 °C
<b>Min. Shrink Temperature</b>	+100 °C
<b>Longitudinal Change After Shrinkage</b>	-10% max.
<b>Softening Point Adhesive</b>	+85 °C
<b>Dielectric Strength</b>	24 kV/mm
<b>Insulation Class</b>	A (VDE 0530)

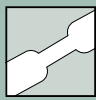


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
HIS-A-3/1	3.0	1.0	1.00	10 m	Transparent (CL)	308-10303
HIS-A-6/2	6.0	2.0	1.00	5 m	Transparent (CL)	308-10603
HIS-A-9/3	9.0	3.0	1.00	5 m	Transparent (CL)	308-10903
HIS-A-12/4	12.0	4.0	1.65	5 m	Transparent (CL)	308-11203
HIS-A-18/6	19.0	6.0	2.10	4 m	Transparent (CL)	308-11803
HIS-A-24/8	24.0	8.0	2.35	3 m	Transparent (CL)	308-12403

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 in blister bags

#### HIS-3 BAG - coloured

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

#### Features and benefits

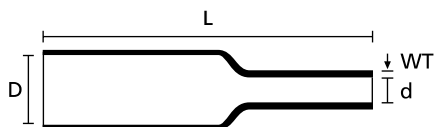
- Thin wall and flexible tubing made of cross-linked Polyolefin
- High shrink ratio 3:1
- Handy, small packaging with 10 pre-cut pieces of 200 mm
- Fits highly variable cable diameters



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>Min. Shrink Temperature</b>	+100 °C
<b>Longitudinal Change After Shrinkage</b>	+/-5%
<b>Dielectric Strength</b>	32 kV/mm
<b>Flammability</b>	UL 224 VW-1
<b>Self extinguishing</b>	Yes

RoHS



Heat Shrink Tubing 3:1

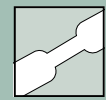


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Pack Cont.	Colour	Article-No.
HIS-3-BAG-1.5/0.5	1.6	0.5	0.45	200.0	10 pcs.	Black (BK)	308-30151
	1.6	0.5	0.45	200.0	10 pcs.	Blue (BU)	308-30161
	1.6	0.5	0.45	200.0	10 pcs.	Brown (BN)	308-30163
	1.6	0.5	0.45	200.0	10 pcs.	Green-Yellow (GNYE)	308-30165
	1.6	0.5	0.45	200.0	10 pcs.	Grey (GY)	308-30162
	1.6	0.5	0.45	200.0	10 pcs.	Red (RD)	308-30160

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 in blister bags

#### HIS-3 BAG - coloured

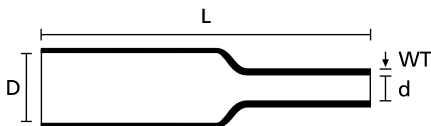
TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Pack Cont.	Colour	Article-No.
HIS-3-BAG-3/1	3.2	1.0	0.55	200.0	10 pcs.	Black (BK)	308-30310
	3.2	1.0	0.55	200.0	10 pcs.	Blue (BU)	308-30312
	3.2	1.0	0.55	200.0	10 pcs.	Brown (BN)	308-30314
	3.2	1.0	0.55	200.0	10 pcs.	Green-Yellow (GNYE)	308-30316
	3.2	1.0	0.55	200.0	10 pcs.	Grey (GY)	308-30313
	3.2	1.0	0.55	200.0	10 pcs.	Red (RD)	308-30311
HIS-3-BAG-6/2	6.4	2.0	0.65	200.0	10 pcs.	Black (BK)	308-30610
	6.4	2.0	0.65	200.0	10 pcs.	Blue (BU)	308-30612
	6.4	2.0	0.65	200.0	10 pcs.	Brown (BN)	308-30614
	6.4	2.0	0.65	200.0	10 pcs.	Green-Yellow (GNYE)	308-30617
	6.4	2.0	0.65	200.0	10 pcs.	Grey (GY)	308-30613
	6.4	2.0	0.65	200.0	10 pcs.	Red (RD)	308-30611
HIS-3-BAG-12/4	12.7	4.0	0.80	200.0	10 pcs.	Black (BK)	308-31210
	12.7	4.0	0.80	200.0	10 pcs.	Blue (BU)	308-31212
	12.7	4.0	0.80	200.0	10 pcs.	Brown (BN)	308-31214
	12.7	4.0	0.80	200.0	10 pcs.	Green-Yellow (GNYE)	308-31217
	12.7	4.0	0.80	200.0	10 pcs.	Grey (GY)	308-31213
	12.7	4.0	0.80	200.0	10 pcs.	Red (RD)	308-31211

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



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#### HIS-3 BAG - transparent



Heat Shrink 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>Min. Shrink Temperature</b>	+100 °C
<b>Longitudinal Change After Shrinkage</b>	+/-5%
<b>Dielectric Strength</b>	32 kV/mm
<b>Self extinguishing</b>	No



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	1.6	0.5	0.45	200.0	10 pcs.	Transparent (CL)	308-30164
HIS-3-BAG-3/1	3.2	1.0	0.55	200.0	10 pcs.	Transparent (CL)	308-30315
HIS-3-BAG-6/2	6.4	2.0	0.65	200.0	10 pcs.	Transparent (CL)	308-30615
HIS-3-BAG-12/4	12.7	4.0	0.80	200.0	10 pcs.	Transparent (CL)	308-31215

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



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### 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 labled 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

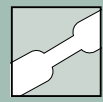


The TREDUX-Display.



TYPE	Content	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Pack Cont.	Colour	Tools	Article-No.
<b>TREDUX - thin wall</b>								
TREDUX-1.5/0.5	1	1.5	0.5	0.45	20 pcs.	Black (BK)	-	319-00150
TREDUX-3/1	1	3.0	1.0	0.55	20 pcs.	Green-Yellow (GNYE)	-	319-00307
TREDUX-6/2	1	6.0	2.0	0.65	15 pcs.	Green-Yellow (GNYE)	-	319-00607
TREDUX-12/4	1	12.0	4.0	0.80	10 pcs.	Green-Yellow (GNYE)	-	319-01207
TREDUX-24/8	1	24.0	8.0	1.20	5 pcs.	Black (BK)	-	319-02400
TREDUX-3/1	2	3.0	1.0	0.55	20 pcs.	Black (BK)	-	319-00300
TREDUX-6/2	2	6.0	2.0	0.65	15 pcs.	Black (BK)	-	319-00600
TREDUX-12/4	4	12.0	4.0	0.80	10 pcs.	Black (BK)	-	319-01200
<b>TREDUX HA47 - thick wall adhesive lined</b>								
TREDUX-HA47-19/6	1	19.0	6.0	2.70	10 pcs.	Black (BK)	32	321-50190
TREDUX-HA47-33/8	1	33.0	8.0	3.20	5 pcs.	Black (BK)	32	321-50330
TREDUX-HA47-45/12	1	45.0	12.0	4.10	4 pcs.	Black (BK)	32	321-50450
<b>TREDUX MA47 - medium wall adhesive lined</b>								
TREDUX-MA47-19/6	1	19.0	6.0	2.40	10 pcs.	Black (BK)	32	323-50190
TREDUX-MA47-40/12	1	40.0	12.0	2.50	4 pcs.	Black (BK)	32	323-50400
TREDUX-MA47-30/8	2	30.0	8.0	2.60	6 pcs.	Black (BK)	32	323-50300
<b>TREDUX-Display</b>								
TREDUX-Display	-	-	-	-	1 pc.	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 wall, flexible, cross-linked polyolefin tubing
- 1m shrink tubing lengths delivered in handy display carton
- 9 sizes from 1.5 mm to 101.6 mm
- All tubings can be sold in single 1 meter length or entire box

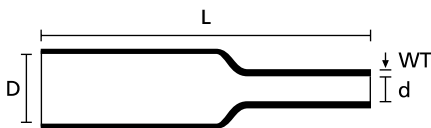
**More colours on request. Please contact us.**



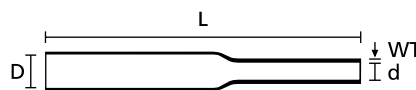
TREDUX shrinks a maximum of 3:1.

<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>Min. Shrink Temperature</b>	+70 °C	
<b>Longitudinal Change After Shrinkage</b>	+/-5%	
<b>Dielectric Strength</b>	20 kV/mm	
<b>Flammability</b>	UL 224 VW-1	
<b>Self extinguishing</b>	Yes	

**RoHS** ✓



Heat Shrink Tubing 3:1



Heat Shrink Tubing 2:1

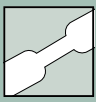


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Pack Cont.	Colour	Shrink Ratio	Article-No.
TREDUX-1.5/0.5	1.5	0.5	0.45	1.0 m	20 pcs.	Black (BK)	3:1	319-00150
	1.5	0.5	0.45	1.0 m	20 pcs.	Green-Yellow (GNYE)	3:1	319-00157
TREDUX-3/1	3.0	1.0	0.55	1.0 m	20 pcs.	Black (BK)	3:1	319-00300
	3.0	1.0	0.55	1.0 m	20 pcs.	Green-Yellow (GNYE)	3:1	319-00307
TREDUX-6/2	6.0	2.0	0.65	1.0 m	15 pcs.	Black (BK)	3:1	319-00600
	6.0	2.0	0.65	1.0 m	15 pcs.	Green-Yellow (GNYE)	3:1	319-00607
TREDUX-12/4	12.0	4.0	0.80	1.0 m	10 pcs.	Black (BK)	3:1	319-01200
	12.0	4.0	0.80	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
	24.0	8.0	1.20	1.0 m	5 pcs.	Green-Yellow (GNYE)	3:1	319-02407

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

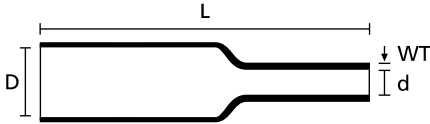


Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Heat shrinkable tubing up to 3:1 - 1 m lengths

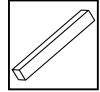
#### TREDUX - thin wall



Heat Shrink Tubing 3:1



Heat Shrink Tubing 2:1

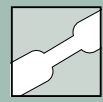


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Pack Cont.	Colour	Shrink Ratio	Article-No.
TREDUX-38.1/19.1	38.1	19.1	1.02	1.0 m	6 pcs.	Black (BK)	2:1	319-03800
	38.1	19.1	1.02	1.0 m	6 pcs.	Green-Yellow (GNYE)	2:1	319-03807
TREDUX-50.8/25.4	50.8	25.4	1.14	1.0 m	6 pcs.	Black (BK)	2:1	319-05100
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.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Heat shrinkable tubing up to 4:1 - 1 m lengths

#### TREDUX MA47 - medium wall adhesive lined

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

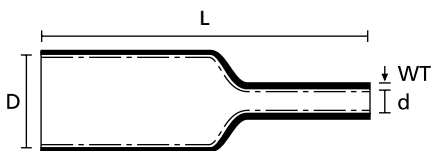
#### Features and benefits

- Medium wall heat shrink tubing
- Thermoplastic adhesive liner for protection from moisture and weathering
- 1 m shrink tubing lengths delivered in handy display carton
- All tubes can be sold in single 1 meter lengths or entire box



TREDUX MA47 in handy display carton.

<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>Min. Shrink Temperature</b>	+120 °C
<b>Longitudinal Change After Shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	15 kV/mm
<b>Insulation Class</b>	A (VDE 0530)



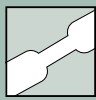
Heat Shrink Tubing 4:1 with adhesive



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Pack Cont.	Colour	Tools	Article-No.
TREDUX-MA47-12/3	12.0	3.0	2.00	1.0 m	6 pcs.	Black (BK)	32	323-50120
TREDUX-MA47-19/6	19.0	6.0	2.40	1.0 m	10 pcs.	Black (BK)	32	323-50190
TREDUX-MA47-30/8	30.0	8.0	2.60	1.0 m	6 pcs.	Black (BK)	32	323-50300
TREDUX-MA47-40/12	40.0	12.0	2.50	1.0 m	4 pcs.	Black (BK)	32	323-50400
TREDUX-MA47-50/16	50.0	16.0	2.70	1.0 m	2 pcs.	Black (BK)	32	323-50500
TREDUX-MA47-63/19	63.0	19.0	2.80	1.0 m	2 pcs.	Black (BK)	32	323-50630
TREDUX-MA47-75/22	75.0	22.0	3.00	1.0 m	2 pcs.	Black (BK)	32	323-50750
TREDUX-MA47-95/30	95.0	30.0	3.00	1.0 m	1 pc.	Black (BK)	32	323-50950

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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 HA47 - thick wall adhesive lined

The toughness and weatherability make TREDUX thick wall tubing suitable for exposed applications and underground cable joints.

#### Features and benefits

- Thick wall polyolefin adhesive-lined tubing
- 1 m shrink tubing lengths delivered in handy display carton
- All tubes can be sold in single 1 meter lengths or entire box



TREDUX HA47 - application below ground.

<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>Min. 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



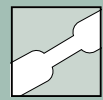
Heat Shrinkable Tubing 4:1 with adhesive



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Pack Cont.	Colour	Tools	Article-No.
TREDUX-HA47-19/6	19.0	6.0	2.70	1.0 m	10 pcs.	Black (BK)	32	321-50190
TREDUX-HA47-33/8	33.0	8.0	3.20	1.0 m	5 pcs.	Black (BK)	32	321-50330
TREDUX-HA47-45/12	45.0	12.0	4.10	1.0 m	4 pcs.	Black (BK)	32	321-50450
TREDUX-HA47-51/16	51.0	16.0	4.10	1.0 m	2 pcs.	Black (BK)	32	321-50510
TREDUX-HA47-68/22	68.0	22.0	4.10	1.0 m	1 pc.	Black (BK)	32	321-50680
TREDUX-HA47-85/25	85.0	25.4	4.30	1.0 m	1 pc.	Black (BK)	32	321-50850

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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



### 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>Min. Shrink Temperature</b>	+80 °C
<b>Longitudinal Change After Shrinkage</b>	+/-10% max
<b>Dielectric Strength</b>	22 kV/mm
<b>Flammability</b>	UL 224 VW-1
<b>Self extinguishing</b>	Yes
<b>Storage Temperature</b>	+25 °C max.
<b>Shelf Life</b>	12 months

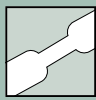
RoHS



Heat Shrink 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.



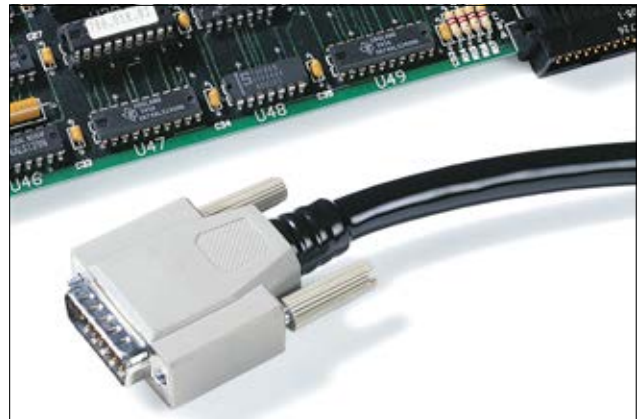
### Heat shrinkable tubing 2:1 - Halogen free

#### TL27

TL27 has a low shrink temperature which offers very fast recovery. Application fields include covering of heat sensitive parts, mechanical protection and cosmetic covering.

#### Features and benefits

- Very low shrink temperature
- Fast shrinking
- Halogen free



TL27 – a very flexible tubing for automotive applications or applications where halogens cannot be accepted.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-70 °C to +135 °C
<b>Min. Shrink Temperature</b>	+90 °C
<b>Longitudinal Change After Shrinkage</b>	+5%/-15%
<b>Dielectric Strength</b>	23 kV/mm
<b>Self extinguishing</b>	Yes

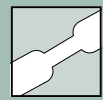


Heat Shrink Tubing 2:1



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
TL27-1.2/0.6	1.2	0.6	0.31	500 m	Black (BK)	302-20120
TL27-1.6/0.8	1.6	0.8	0.33	500 m	Black (BK)	302-20160
TL27-2.4/1.2	2.4	1.2	0.36	500 m	Black (BK)	302-30240
TL27-3.2/1.6	3.2	1.6	0.39	300 m	Black (BK)	302-30320
TL27-4.8/2.4	4.8	2.4	0.42	150 m	Black (BK)	302-30480
TL27-6.4/3.2	6.4	3.2	0.45	100 m	Black (BK)	302-30640
TL27-9.5/4.8	9.5	4.8	0.48	100 m	Black (BK)	302-30950
TL27-12.7/6.4	12.7	6.4	0.52	100 m	Black (BK)	302-21270
TL27-19.1/9.5	19.1	9.5	0.58	100 m	Black (BK)	302-31900
TL27-25.4/12.7	25.4	12.7	0.67	100 m	Black (BK)	302-32540
TL27-38.1/19.1	38.1	19.1	0.76	100 m	Black (BK)	302-23810
TL27-50.8/25.4	50.8	25.4	0.85	100 m	Black (BK)	302-25080

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



### 2:1 Heat shrink tubing - on reel & customized cut lengths

#### TCN20 - thin wall, up to +125°C, self-extinguishing

TCN20 is suitable for a wide range of applications like electrical insulations, mechanical protection and cable bundling.

#### Features and benefits

- Thin wall general purpose polyolefin tubing
- Self extinguishing, UL224 VW-1, CSA
- Fast shrinking
- Low shrink temperature



TCN20 - reliable insulation that stands up to rigorous use.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Min. Shrink Temperature</b>	+100 °C
<b>Longitudinal Change After Shrinkage</b>	+/-5%
<b>Dielectric Strength</b>	20 kV/mm
<b>Flammability</b>	UL 224 VW-1
<b>Self extinguishing</b>	Yes

RoHS



Heat Shrink Tubing 2:1

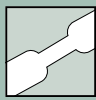


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Reel Length	Colour	Article-No.
TCN20-1.2/0.6	1.2	0.6	0.32	300.0 m	300 m	Black (BK)	300-73010
TCN20-1.6/0.8	1.6	0.8	0.32	300.0 m	300 m	Black (BK)	300-73020
TCN20-2.4/1.2	2.4	1.2	0.42	300.0 m	300 m	Black (BK)	300-73030
TCN20-3.2/1.6	3.2	1.6	0.45	300.0 m	300 m	Black (BK)	300-73040
TCN20-4.8/2.4	4.8	2.4	0.52	300.0 m	300 m	Black (BK)	300-73050
TCN20-6.4/3.2	6.4	3.2	0.54	300.0 m	300 m	Black (BK)	300-73060
TCN20-9.5/4.8	9.5	4.8	0.54	100.0 m	100 m	Black (BK)	300-73070
TCN20-12.7/6.4	12.7	6.4	0.62	100.0 m	100 m	Black (BK)	300-73080
TCN20-19.1/9.5	19.1	9.5	0.75	60.0 m	60 m	Black (BK)	300-73090
TCN20-25.4/12.7	25.4	12.7	0.85	60.0 m	60 m	Black (BK)	300-73100
TCN20-38.1/19.1	38.1	19.1	0.96	30.0 m	30 m	Black (BK)	300-73110
TCN20-50.8/25.4	50.8	25.4	0.96	30.0 m	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 and electrical protection applications for parts with high diameter variances. This fast shrinking tubing makes it suitable for high volume production.

#### Features and benefits

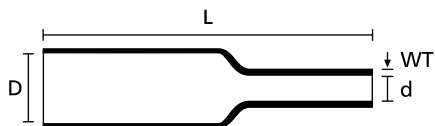
- Thin wall overexpanded polyolefin tubing
- Overexpanded tubes fit more applications (e.g. big cable lugs)
- Self extinguishing and low shrink temperature
- Highly flame-retardant, UL224 VW-1



TCN20 Overexpanded - reliable insulation with an enhanced shrink ratio.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Min. Shrink Temperature</b>	+100 °C
<b>Longitudinal Change After Shrinkage</b>	+/-5%
<b>Dielectric Strength</b>	20 kV/mm
<b>Flammability</b>	UL 224 VW-1
<b>Self extinguishing</b>	Yes

RoHS



Heat Shrink Tubing 3:1

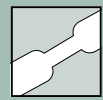


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Reel Length	Colour	Article-No.
TCN20-2.4/0.8	2.4	0.8	0.40	300.0 m	300 m	Black (BK)	300-73130
TCN20-3.2/1.2	3.2	1.2	0.50	300.0 m	300 m	Black (BK)	300-73140
TCN20-4.8/1.6	4.8	1.6	0.50	300.0 m	300 m	Black (BK)	300-73150
TCN20-6.6/2.4	6.6	2.4	0.50	300.0 m	300 m	Black (BK)	300-73160
TCN20-9.5/3.2	9.5	3.2	0.60	100.0 m	100 m	Black (BK)	300-73170
TCN20-12.7/4.8	12.7	4.8	0.70	100.0 m	100 m	Black (BK)	300-73180
TCN20-19.0/6.4	19.0	6.4	0.70	60.0 m	60 m	Black (BK)	300-73190
TCN20-25.4/9.5	25.4	9.5	0.80	60.0 m	60 m	Black (BK)	300-73200
TCN20-38.0/12.7	38.0	12.7	0.90	30.0 m	30 m	Black (BK)	300-73210

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



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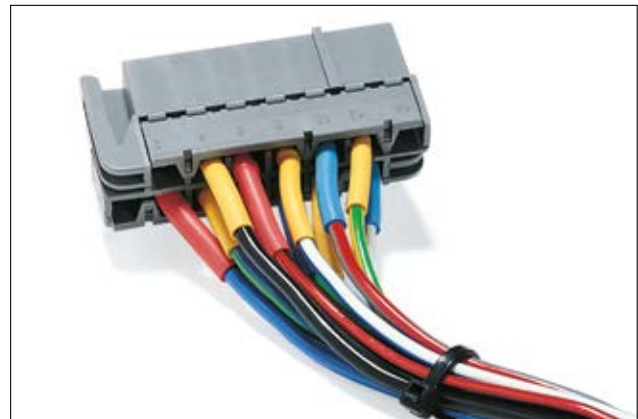
### Heat shrinkable tubing 2:1 - flexible and coloured

#### HFT-A - self extinguishing

This high performance thin wall tubing is used extensively for electrical and mechanical protection. It is also well proven for sleeve marking to identify wiring circuits.

#### Features and benefits

- Flexible heat shrink tubing
- Fast shrinking, easy handling, good mechanical strength
- Wide range of colours
- Internal diameters up to 102 mm (4 inches)
- UL-224 ,CSA listed and VG approved



HFT-A conforms to major standards (VG) used in all Defence industries.

Standard sizes available in colours black, red, blue, yellow, white and green-yellow.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Min. Shrink Temperature</b>	+135 °C
<b>Longitudinal Change After Shrinkage</b>	-5% max.
<b>Dielectric Strength</b>	21 kV/mm
<b>Flammability</b>	UL 224 VW-1
<b>Self extinguishing</b>	Yes

RoHS



Heat Shrink Tubing 2:1

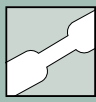


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Designation as per VG-Norm	Tools	Article-No.
HFT-A-1.2/0.6	1.2	0.6	0.40	400 m	Black (BK)	VG 95343 T05 A 001 A	30	305-01200
	1.2	0.6	0.40	400 m	Blue (BU)	VG 95343 T05 A 001 G	30	305-01206
	1.2	0.6	0.40	400 m	Red (RD)	VG 95343 T05 A 001 C	30	305-01202
	1.2	0.6	0.40	400 m	White (WH)	VG 95343 T05 A 001 L	30	305-01209
	1.2	0.6	0.40	400 m	Yellow (YE)	VG 95343 T05 A 001 E	30	305-01204
HFT-A-1.6/0.8	1.6	0.8	0.40	400 m	Black (BK)	VG 95343 T05 A 002 A	30	305-01600
	1.6	0.8	0.40	400 m	Blue (BU)	VG 95343 T05 A 002 G	30	305-01606
	1.6	0.8	0.40	400 m	Red (RD)	VG 95343 T05 A 002 C	30	305-01602
	1.6	0.8	0.40	400 m	White (WH)	VG 95343 T05 A 002 L	30	305-01609
	1.6	0.8	0.40	400 m	Yellow (YE)	VG 95343 T05 A 002 E	30	305-01604

Recommended Tools: 30=H6100. For more information on toolings please refer to the Application Tooling chapter on page 346.  
All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content.



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### Heat shrinkable tubing 2:1 - flexible and coloured

#### HFT-A - self extinguishing

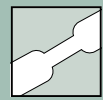
TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Designation as per VG-Norm	Tools	Article-No.
HFT-A-2.4/1.2	2.4	1.2	0.50	100 m	Blue (BU)	VG 95343 T05 A 003 G	30	305-02406
	2.4	1.2	0.50	100 m	Red (RD)	VG 95343 T05 A 003 C	30	305-02402
	2.4	1.2	0.50	100 m	White (WH)	VG 95343 T05 A 003 L	30	305-02409
	2.4	1.2	0.50	100 m	Yellow (YE)	VG 95343 T05 A 003 E	30	305-02404
	2.4	1.2	0.50	400 m	Black (BK)	VG 95343 T05 A 003 A	30	305-02400
HFT-A-3.2/1.6	3.2	1.6	0.50	100 m	Blue (BU)	VG 95343 T05 A 004 G	30	305-03206
	3.2	1.6	0.50	100 m	Green-Yellow (GNYE)	VG 95343 T05 A 004 N	30	305-03245
	3.2	1.6	0.50	100 m	Red (RD)	VG 95343 T05 A 004 C	30	305-03202
	3.2	1.6	0.50	100 m	White (WH)	VG 95343 T05 A 004 L	30	305-03209
	3.2	1.6	0.50	100 m	Yellow (YE)	VG 95343 T05 A 004 E	30	305-03204
	3.2	1.6	0.50	400 m	Black (BK)	VG 95343 T05 A 004 A	30	305-03200
HFT-A-4.8/2.4	4.8	2.4	0.50	75 m	Blue (BU)	VG 95343 T05 A 005 G	30	305-04806
	4.8	2.4	0.50	75 m	Green-Yellow (GNYE)	VG 95343 T05 A 005 N	30	305-04845
	4.8	2.4	0.50	75 m	Red (RD)	VG 95343 T05 A 005 C	30	305-04802
	4.8	2.4	0.50	75 m	White (WH)	VG 95343 T05 A 005 L	30	305-04809
	4.8	2.4	0.50	75 m	Yellow (YE)	VG 95343 T05 A 005 E	30	305-04804
	4.8	2.4	0.50	300 m	Black (BK)	VG 95343 T05 A 005 A	30	305-04800
HFT-A-6.4/3.2	6.4	3.2	0.60	75 m	Blue (BU)	VG 95343 T05 A 006 G	30	305-06406
	6.4	3.2	0.60	75 m	Green-Yellow (GNYE)	VG 95343 T05 A 006 N	30	305-06445
	6.4	3.2	0.60	75 m	Red (RD)	VG 95343 T05 A 006 C	30	305-06402
	6.4	3.2	0.60	75 m	White (WH)	VG 95343 T05 A 006 L	30	305-06409
	6.4	3.2	0.60	75 m	Yellow (YE)	VG 95343 T05 A 006 E	30	305-06404
	6.4	3.2	0.60	300 m	Black (BK)	VG 95343 T05 A 006 A	30	305-06400
HFT-A-9.5/4.8	9.5	4.8	0.60	50 m	Blue (BU)	VG 95343 T05 A 007 G	30	305-09506
	9.5	4.8	0.60	50 m	Green-Yellow (GNYE)	VG 95343 T05 A 007 N	30	305-09545
	9.5	4.8	0.60	50 m	Red (RD)	VG 95343 T05 A 007 C	30	305-09502
	9.5	4.8	0.60	50 m	White (WH)	VG 95343 T05 A 007 L	30	305-09509
	9.5	4.8	0.60	50 m	Yellow (YE)	VG 95343 T05 A 007 E	30	305-09504
	9.5	4.8	0.60	150 m	Black (BK)	VG 95343 T05 A 007 A	30	305-09500
HFT-A-12.7/6.4	12.7	6.4	0.60	50 m	Blue (BU)	VG 95343 T05 A 008 G	30	305-12706
	12.7	6.4	0.60	50 m	Green-Yellow (GNYE)	VG 95343 T05 A 008 N	30	305-12745
	12.7	6.4	0.60	50 m	Red (RD)	VG 95343 T05 A 008 C	30	305-12702
	12.7	6.4	0.60	50 m	White (WH)	VG 95343 T05 A 008 L	30	305-12709
	12.7	6.4	0.60	50 m	Yellow (YE)	VG 95343 T05 A 008 E	30	305-12704
	12.7	6.4	0.60	100 m	Black (BK)	VG 95343 T05 A 008 A	30	305-12700
HFT-A-19.0/9.5	19.0	9.5	0.80	25 m	Blue (BU)	VG 95343 T05 A 009 G	30	305-19006
	19.0	9.5	0.80	25 m	Green-Yellow (GNYE)	VG 95343 T05 A 009 N	30	305-19045
	19.0	9.5	0.80	25 m	Red (RD)	VG 95343 T05 A 009 C	30	305-19002
	19.0	9.5	0.80	25 m	White (WH)	VG 95343 T05 A 009 L	30	305-19009
	19.0	9.5	0.80	25 m	Yellow (YE)	VG 95343 T05 A 009 E	30	305-19004
	19.0	9.5	0.80	50 m	Black (BK)	VG 95343 T05 A 009 A	30	305-19000
HFT-A-25.4/12.7	25.4	12.7	0.90	25 m	Blue (BU)	VG 95343 T05 A 010 G	30	305-25406
	25.4	12.7	0.90	25 m	Green-Yellow (GNYE)	VG 95343 T05 A 010 N	30	305-25445
	25.4	12.7	0.90	25 m	Red (RD)	VG 95343 T05 A 010 C	30	305-25402
	25.4	12.7	0.90	25 m	White (WH)	VG 95343 T05 A 010 L	30	305-25409
	25.4	12.7	0.90	25 m	Yellow (YE)	VG 95343 T05 A 010 E	30	305-25404
	25.4	12.7	0.90	50 m	Black (BK)	VG 95343 T05 A 010 A	30	305-25400

Recommended Tools: 30=H6100. For more information on toolings please refer to the Application Tooling chapter on page 346.

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



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Heat shrinkable tubing 2:1 - flexible and coloured

#### HFT-A - self extinguishing



Heat Shrink Tubing 2:1



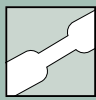
TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Designation as per VG-Norm	Tools	Article-No.
HFT-A-38.0/19.0	38.0	19.0	1.00	50 m	Black (BK)	VG 95343 T05 A 011 A	30	305-38100
	38.0	19.0	1.00	50 m	Blue (BU)	VG 95343 T05 A 011 G	30	305-38106
	38.0	19.0	1.00	50 m	Green-Yellow (GNYE)	VG 95343 T05 A 011 N	30	305-38145
	38.0	19.0	1.00	50 m	Red (RD)	VG 95343 T05 A 011 C	30	305-38102
	38.0	19.0	1.00	50 m	White (WH)	VG 95343 T05 A 011 L	30	305-38109
	38.0	19.0	1.00	50 m	Yellow (YE)	VG 95343 T05 A 011 E	30	305-38104
HFT-A-50.8/25.4	51.0	25.4	1.10	35 m	Black (BK)	VG 95343 T05 A 012 A	30	305-50800
	51.0	25.4	1.10	35 m	Blue (BU)	VG 95343 T05 A 012 G	30	305-50806
	51.0	25.4	1.10	35 m	Red (RD)	VG 95343 T05 A 012 C	30	305-50802
	51.0	25.4	1.10	35 m	White (WH)	VG 95343 T05 A 012 L	30	305-50809
	51.0	25.4	1.10	35 m	Yellow (YE)	VG 95343 T05 A 012 E	30	305-50804
HFT-A-76.0/38.0	76.0	38.0	1.30	25 m	Black (BK)	VG 95343 T05 A 013 A	30	305-76200
	76.0	38.0	1.30	25 m	Blue (BU)	VG 95343 T05 A 013 G	30	305-76206
	76.0	38.0	1.30	25 m	Red (RD)	VG 95343 T05 A 013 C	30	305-76202
	76.0	38.0	1.30	25 m	Yellow (YE)	VG 95343 T05 A 013 E	30	305-76204
HFT-A-101.6/50.8	102.0	51.0	1.40	25 m	Black (BK)	VG 95343 T05 A 014 A	30	305-91600
	102.0	51.0	1.40	25 m	Blue (BU)	VG 95343 T05 A 014 G	30	305-91606
	102.0	51.0	1.40	25 m	Red (RD)	VG 95343 T05 A 014 C	30	305-91602
	102.0	51.0	1.40	25 m	White (WH)	VG 95343 T05 A 014 L	30	305-91609
	102.0	51.0	1.40	25 m	Yellow (YE)	VG 95343 T05 A 014 E	30	305-91604

Recommended Tools: 30=H6100. For more information on toolings please refer to the Application Tooling chapter on page 346.

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



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### 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 wall, flexible polyolefin tubing
- Fast shrinking and low shrink temperature
- Meets and exceeds a range of industrial standards
- Big variety of different colours and sizes
- Flame retardant and UL224 VW1 listed



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

**More colours on request.**

**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>Min. Shrink Temperature</b>	+105 °C
<b>Longitudinal Change After Shrinkage</b>	+/-5%
<b>Dielectric Strength</b>	30 kV/mm
<b>Flammability</b>	UL 224 VW-1
<b>Self extinguishing</b>	Yes

**RoHS** ✓



Heat Shrink 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

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



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## Heat shrinkable tubing 2:1 - flexible and coloured

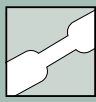
### TF21

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
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
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

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



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### Heat shrinkable tubing 2:1 - flexible and coloured

**TF21**

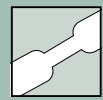
*Heat Shrink Tubing 2:1*


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
<b>TF21-19.1/9.5</b>	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
<b>TF21-25.4/12.7</b>	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
<b>TF21-38.0/19.0</b>	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
<b>TF21-50.8/25.4</b>	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
<b>TF21-76.0/38.0</b>	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
<b>TF21-101.6/50.8</b>	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.



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### 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 and additional industrial approvals



TF24 transparent tubing with 2:1 shrink ratio.

**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>Min. Shrink Temperature</b>	+110 °C
<b>Longitudinal Change After Shrinkage</b>	+/-5% max.
<b>Dielectric Strength</b>	30 kV/mm



Heat Shrink Tubing 2:1

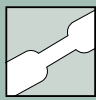


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Designation as per VG-Norm	Article-No.
<b>TF24-1.2/0.6</b>	1.2	0.6	0.41	100 m	Transparent (CL)	VG 95343 T05 B 001 M	309-40123
<b>TF24-1.6/0.8</b>	1.6	0.8	0.43	100 m	Transparent (CL)	VG 95343 T05 B 002 M	309-40163
<b>TF24-2.4/1.2</b>	2.4	1.2	0.51	100 m	Transparent (CL)	VG 95343 T05 B 003 M	309-40243
<b>TF24-3.2/1.6</b>	3.2	1.6	0.51	100 m	Transparent (CL)	VG 95343 T05 B 004 M	309-40323
<b>TF24-4.8/2.4</b>	4.8	2.4	0.51	60 m	Transparent (CL)	VG 95343 T05 B 005 M	309-50483
<b>TF24-6.4/3.2</b>	6.4	3.2	0.64	60 m	Transparent (CL)	VG 95343 T05 B 006 M	309-50643
<b>TF24-9.5/4.8</b>	9.5	4.8	0.64	50 m	Transparent (CL)	VG 95343 T05 B 007 M	309-40953
<b>TF24-12.7/6.4</b>	12.7	6.4	0.64	50 m	Transparent (CL)	VG 95343 T05 B 008 M	309-41273
<b>TF24-19.1/9.5</b>	19.1	9.5	0.76	50 m	Transparent (CL)	VG 95343 T05 B 009 M	309-31903
<b>TF24-25.4/12.7</b>	25.4	12.7	0.89	50 m	Transparent (CL)	VG 95343 T05 B 010 M	309-32543
<b>TF24-38.1/19.1</b>	38.1	19.1	1.02	60 m	Transparent (CL)	VG 95343 T05 B 011 M	309-33813
<b>TF24-50.8/25.4</b>	50.8	25.4	1.14	60 m	Transparent (CL)	VG 95343 T05 B 012 M	309-35083
<b>TF24-76.2/38.1</b>	76.2	38.1	1.27	30 m	Transparent (CL)	VG 95343 T05 B 013 M	309-37603
<b>TF24-101.6/50.8</b>	101.6	50.8	1.40	15 m	Transparent (CL)	VG 95343 T05 B 014 M	309-31023

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### Heat shrinkable tubing 3:1 - flexible and coloured

#### TF31

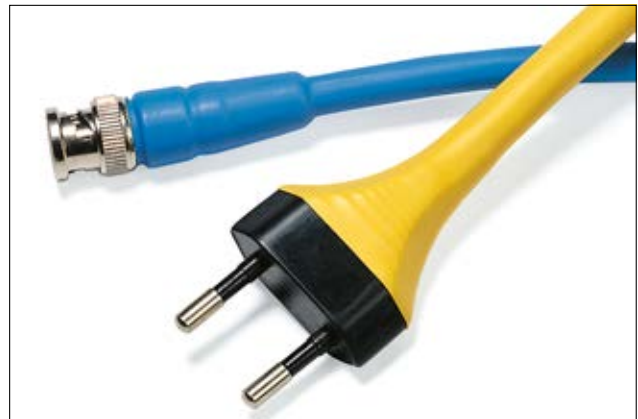
If higher fire protection is a requirement TF31 heat shrinkable tubing is a good choice. It is used for protection, insulation and identification wires, cables and light duty harnesses.

#### Features and benefits

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

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

**More colours on request.**



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

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Min. Shrink Temperature</b>	+105 °C
<b>Longitudinal Change After Shrinkage</b>	+5%/-15%
<b>Dielectric Strength</b>	30 kV/mm
<b>Flammability</b>	UL 224 VW-1
<b>Self extinguishing</b>	Yes

**RoHS** ✓



Heat Shrink Tubing 3:1



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

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

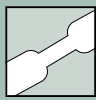
#### TF31

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
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)
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)
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)
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)

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



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Heat shrinkable tubing 3:1 - flexible and coloured

**TF31**


Heat Shrink Tubing 3:1

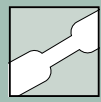


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
TF31-18/6	18.0	6.0	1.00	30 m	Black (BK)	333-31800
	18.0	6.0	1.00	30 m	Blue (BU)	333-31806
	18.0	6.0	1.00	30 m	Green (GN)	333-31805
	18.0	6.0	1.00	30 m	Green-Yellow (GNYE)	333-31807
	18.0	6.0	1.00	30 m	Red (RD)	333-31802
	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
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: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### 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 perfectly
- A small range of sizes required to cover a wide range of diameters allowing reduced inventory
- Halogen free

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



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

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Min. Shrink Temperature</b>	+110 °C
<b>Longitudinal Change After Shrinkage</b>	-5% max.
<b>Dielectric Strength</b>	46 kV/mm

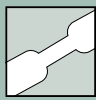


Heat Shrink Tubing 3:1



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 adhesive lined - 1.2 m lengths

#### TA32 - thin wall, 3:1 shrink ratio

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

#### Features and benefits

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

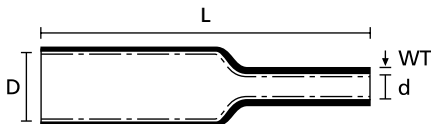
**Cut lengths available on request. Please contact us!**



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

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Min. Shrink Temperature</b>	+110 °C
<b>Softening Point Adhesive</b>	+110 °C
<b>Longitudinal Change After Shrinkage</b>	-15% max.
<b>Dielectric Strength</b>	25 kV/mm
<b>Flammability</b>	UL 224 VW-1
<b>Flammable</b>	No

**RoHS** ✓



Heat Shrink Tubing 3:1 with adhesive

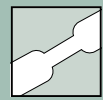


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Shrink Ratio	Article-No.
TA32-3/1	3.0	1.0	0.95	1.2 m	Black (BK)	3:1	318-30300
TA32-4.5/1.5	4.8	1.5	1.10	1.2 m	Black (BK)	3:1	318-30450
TA32-6/2	6.4	2.0	1.20	1.2 m	Black (BK)	3:1	318-30600
TA32-9/3	9.5	3.0	1.30	1.2 m	Black (BK)	3:1	318-30900
TA32-12/4	12.7	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: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Heat shrinkable tubing adhesive lined - 1.2 m lengths

#### TA42 - thin wall, 4:1 shrink ratio

The high expansion ratio makes it possible to repair most damaged cable jackets without removing connectors.

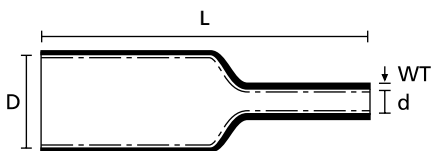
#### Features and benefits

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



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

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Min. Shrink Temperature</b>	+110 °C
<b>Dielectric Strength</b>	20 kV/mm
<b>Flammability</b>	UL 224 VW-1
<b>Flammable</b>	No



Heat Shrink Tubing 4:1 with adhesive

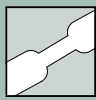


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Shrink Ratio	Article-No.
TA42-4/1	4.0	1.0	1.00	1.2 m	Black (BK)	4:1	318-40400
TA42-8/2	8.0	2.0	1.20	1.2 m	Black (BK)	4:1	318-40800
TA42-12/3	12.0	3.0	1.40	1.2 m	Black (BK)	4:1	318-41200
TA42-16/4	16.0	4.0	1.80	1.2 m	Black (BK)	4:1	318-41600
TA42-24/6	24.0	6.0	2.20	1.2 m	Black (BK)	4:1	318-42400
TA42-32/8	32.0	8.0	2.50	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: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Heat shrinkable tubing adhesive lined

#### EPS-300 - 3:1 shrink ratio

Heatshrinkable tubing EPS seals and protects a wide variety of electrical applications like back end connector sealing, connector-to-cable transitions and splices.

#### Features and benefits

- Flexible, thin wall polyolefin heat shrink tubing
- With coextruded hot melt adhesive inner wall
- Protects against moisture
- Provides an environmental sealing of complex parts

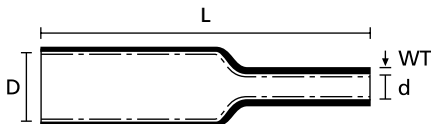
**Cut lengths available on request. Please contact us!**



EPS300 and EPS400 offer high shrink ratios and protection against humidity.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Min. Shrink Temperature</b>	+120 °C
<b>Longitudinal Change After Shrinkage</b>	-5% max.
<b>Softening Point Adhesive</b>	+90 °C
<b>Dielectric Strength</b>	45 kV/mm
<b>Self extinguishing</b>	Yes

**RoHS** ✓

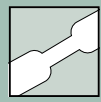


Heat Shrink Tubing 3:1 with adhesive

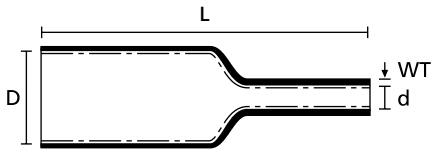


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Shrink Ratio	Article-No.
EPS-300-3/1	3.0	1.0	1.00	400 m	Black (BK)	3:1	340-03010
EPS-300-6/2	6.0	2.0	1.00	300 m	Black (BK)	3:1	340-06020
EPS-300-9/3	9.0	3.0	1.40	150 m	Black (BK)	3:1	340-09030
EPS-300-12/4	12.0	4.0	1.80	100 m	Black (BK)	3:1	340-12040
EPS-300-19/6	19.0	6.0	2.20	50 m	Black (BK)	3:1	340-19060
EPS-300-24/8	24.0	8.0	2.50	25 m	Black (BK)	3:1	340-24080
EPS-300-40/13	40.0	13.0	2.50	25 m	Black (BK)	3:1	340-40130

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



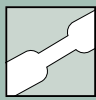
**EPS-400 - 4:1 shrink ratio**



Heat Shrink Tubing 4:1 with adhesive

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Shrink Ratio	Article-No.
EPS-400-4/1	4.0	1.0	1.00	300 m	Black (BK)	4:1	341-04010
EPS-400-8/2	8.0	2.0	1.00	150 m	Black (BK)	4:1	341-08020
EPS-400-12/3	12.0	3.0	1.40	100 m	Black (BK)	4:1	341-12030
EPS-400-16/4	16.0	4.0	1.80	100 m	Black (BK)	4:1	341-16040
EPS-400-24/6	24.0	6.0	2.20	50 m	Black (BK)	4:1	341-24060
EPS-400-32/8	32.0	8.0	2.50	25 m	Black (BK)	4:1	341-32080

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



### Heat shrinkable tubing 4:1 - Flame retardant

#### MA40 - medium wall adhesive lined

Designed for low voltage cable joints and terminations in shipbuilding. Insulates and protects against moisture.

#### Features and benefits

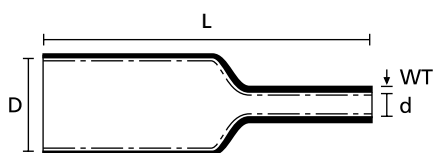
- Medium wall adhesive lined shrink tubing for low voltage power cables
- Designed for shipbuilding, Germanische Lloyd approved
- Flame retardant
- UV and weather resistant
- Excellent mechanical performance



MA40 medium wall, adhesive lined and flame retarded tubing for shipbuilding applications.

<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>Min. Shrink Temperature</b>	+120 °C
<b>Softening Point Adhesive</b>	+85 °C
<b>Longitudinal Change After Shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	15 kV/mm
<b>Self extinguishing</b>	Yes

RoHS



Heat Shrink Tubing 4:1 with adhesive



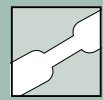
TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Tools	Article-No.
MA40-8/2	8.0	2.0	1.70	1.0 m	Black (BK)	32	323-00100
MA40-12/3	12.0	3.0	2.00	1.0 m	Black (BK)	32	323-00101
MA40-16/5	16.0	5.0	2.00	1.0 m	Black (BK)	32	323-00103
MA40-22/6	22.0	6.0	2.40	1.0 m	Black (BK)	32	323-00104
MA40-33/8	33.0	8.0	2.50	1.0 m	Black (BK)	32	323-00105
MA40-40/12	40.0	12.0	2.60	1.0 m	Black (BK)	32	323-00106
MA40-55/16	55.0	16.0	2.70	1.0 m	Black (BK)	32	323-00107

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Heat shrinkable tubing up to 4:1 - 1 m lengths

#### MA47 - medium wall adhesive lined

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

#### Features and benefits

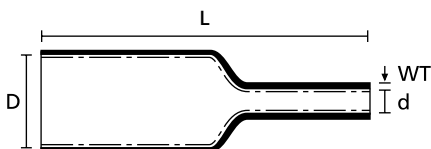
- Medium wall tubing with robust insulation characteristics
- Shrink tubing for above and underground cable applications
- Protects cable joints and terminations in low voltage applications
- Internally coated with a thermoplastic adhesive
- Protects against humidity and other environmental impacts



MA47 for above and below ground.

**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>Min. Shrink Temperature</b>	+120 °C
<b>Softening Point Adhesive</b>	+85 °C
<b>Longitudinal Change After Shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	15 kV/mm
<b>Insulation Class</b>	A (VDE 0530)



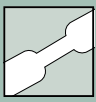
Heat Shrink Tubing 4:1 with adhesive



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Tools	Article-No.
MA47-8/2	8.0	2.0	1.80	1.0 m	Black (BK)	32	323-20080
MA47-12/3	12.0	3.0	1.80	1.0 m	Black (BK)	32	323-20120
MA47-19/6	22.0	6.0	2.40	1.0 m	Black (BK)	32	323-20190
MA47-30/8	33.0	8.0	2.60	1.0 m	Black (BK)	32	323-20300
MA47-40/12	40.0	12.0	2.60	1.0 m	Black (BK)	32	323-20400
MA47-50/16	55.0	16.0	2.70	1.0 m	Black (BK)	32	323-20500
MA47-63/19	65.0	19.0	2.90	1.0 m	Black (BK)	32	323-20630
MA47-75/22	75.0	22.0	3.00	1.0 m	Black (BK)	32	323-20750
MA47-95/30	95.0	25.0	3.60	1.0 m	Black (BK)	32	323-20950
MA47-115/34	115.0	34.0	3.50	1.0 m	Black (BK)	32	323-21150
MA47-140/42	140.0	42.0	3.30	1.0 m	Black (BK)	32	323-21400

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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 in a Kit

#### MA47 - medium wall adhesive lined

MA47 heat shrinkable tubing in 4 sizes packed in a handy transportation tube. Insulation and protection of low voltage cable joints and terminations above and below ground.

#### Features and benefits

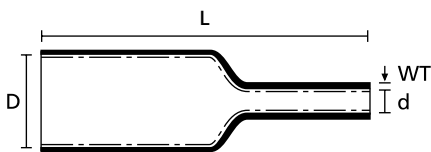
- Re-usable transportation tube in adjustable length
- 4 sizes of MA47 for different applications in 1 kit
- Medium wall tubing with robust insulation characteristics
- Shrink tubing for above and underground cable applications
- Protects against humidity and other environmental impacts after shrinking



Heatshrink tubing MA47 in a handy, re-usable kit.

**Detailed Information about Heatguns please refer to page 613.**

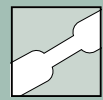
**Detailed information about MA47 please refer to pages 301, 302.**



Heat Shrink Tubing 4:1 with adhesive

TYPE	Content	Article-No.	Page
MA47-Kit	-	905-50026	-
MA47-12/3	2	323-20120	301, 302
MA47-19/6	2	323-20190	301, 302
MA47-30/8	2	323-20300	301, 302
MA47-40/12	2	323-20400	301, 302

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

#### MU47 - medium wall unlined

Insulation and production of low voltage cable joints and terminations.

#### Features and benefits

- Medium wall heat shrink tubing
- Not adhesive lined
- Provides good mechanical strength
- Resistant to solvents, acids and alkaline solutions

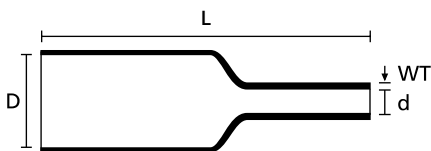
**Detailed Information about Heatguns please refer to page 613.**

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



Medium single wall tubing MU47 and dual wall tubing MA47.

<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>Min. Shrink Temperature</b>	+120 °C
<b>Longitudinal Change After Shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	15 kV/mm



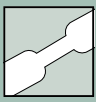
Heat Shrinkable Tubing 4:1



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Tools	Article-No.
MU47-12/3	12.0	3.0	1.80	1.0 m	Black (BK)	32	323-10120
MU47-19/6	22.0	6.0	2.40	1.0 m	Black (BK)	32	323-10190
MU47-30/8	33.0	8.0	2.60	1.0 m	Black (BK)	32	323-10300
MU47-40/12	40.0	12.0	2.60	1.0 m	Black (BK)	32	323-10400
MU47-50/16	55.0	16.0	2.90	1.0 m	Black (BK)	32	323-10500
MU47-63/19	65.0	19.0	2.90	1.0 m	Black (BK)	32	323-10630
MU47-75/22	75.0	22.0	3.00	1.0 m	Black (BK)	32	323-10750
MU47-95/30	95.0	25.0	3.60	1.0 m	Black (BK)	32	323-10950
MU47-115/34	115.0	34.0	3.50	1.0 m	Black (BK)	32	323-11150
MU47-140/42	140.0	42.0	3.30	1.0 m	Black (BK)	32	323-11400

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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



### Cable repair kit

#### LVRK-L

The Cable Repair Kit LVRK-L is a solution for the fast and safe repair of damaged cable and wires in electrical installations. Damaged cable jackets and wires can be repaired safely and durably, saving time and labour

#### Features and benefits

- Fast, safe and labour-saving repair of cable and wires
- No need for concealed sockets or wire insertion, with subsequent cost savings
- Available as a kit for simple and easy handling
- 1x heat shrinkable tubing, length 200 mm, shrink ratio 4:1, excellent insulation and can be cut for installation
- 5x crimp connectors with heat shrinkable insulation and adhesive liner
- 4x T-tie heat stabilised cable ties



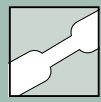
Low Voltage Cable Repair Kit - LVRK-L.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	4:1
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>Min. 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



TYPE	Length (L)	Colour	Pack Cont.	Article-No.
LVRK-L-24/6-200	200.0	Black (BK)	1 pc.	380-04019

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 closed with a steel channel. The sleeve is adhesive lined and will effectively seal the cable after shrinkage. RMS sleeves provide fast, watertight and reliable insulation.

#### Features and benefits

- Fast, moisture proof and permanent repair of cable jackets
- Only 6 sizes for a wide range of cable diameters: from 15 mm up to 160 mm
- Available in 4 standard lengths and also in custom lengths on request
- Each RMS kit is ready for use and comes with instruction sheet, abrasive strip and cleaning sachet
- The metal closure is made of 316 stainless steel for high overall corrosion resistance
- Weather resistant and halogen free
- TCP (thermo chromatic paint) spots indicate the sleeve has been sufficiently heated



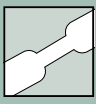
RMS: Repair sleeve, steel closure, abrasive strip, cleaning sachet, instruction sheet.



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

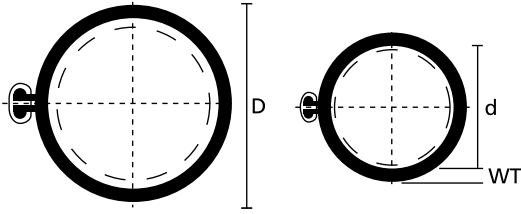
<b>MATERIAL</b>	Polyolefin, chemically cross-linked (PO-X)
<b>Shrink Ratio</b>	up to 4.5:1
<b>Operating Temperature</b>	-40 °C to +120 °C
<b>Min. Shrink Temperature</b>	+110 °C
<b>Softening Point Adhesive</b>	+105 °C
<b>Longitudinal Change After Shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	30 kV/mm



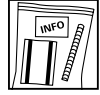


### Heat shrinkable cable repair sleeves

#### RMS



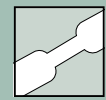
Cable Repair Sleeve RMS with adhesive



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Suitable for Cable Ø from/to	Length (L)	Colour	Tools	Article-No.
RMS 43-10	43.0	10.0	2.30	15 - 35	250.0	Black (BK)	32	450-20000
	43.0	10.0	2.30	15 - 35	500.0	Black (BK)	32	450-20001
	43.0	10.0	2.30	15 - 35	750.0	Black (BK)	32	450-20004
	43.0	10.0	2.30	15 - 35	1000.0	Black (BK)	32	450-20002
RMS 52-15	52.0	15.0	2.30	20 - 45	250.0	Black (BK)	32	450-20010
	52.0	15.0	2.30	20 - 45	500.0	Black (BK)	32	450-20011
	52.0	15.0	2.30	20 - 45	750.0	Black (BK)	32	450-20014
	52.0	15.0	2.30	20 - 45	1000.0	Black (BK)	32	450-20012
RMS 76-22	76.0	22.0	2.50	28 - 65	500.0	Black (BK)	32	450-20021
	76.0	22.0	2.50	28 - 65	750.0	Black (BK)	32	450-20024
	76.0	22.0	2.50	28 - 65	1000.0	Black (BK)	32	450-20022
RMS 100-30	100.0	30.0	2.54	35 - 85	500.0	Black (BK)	32	450-20030
	100.0	30.0	2.54	35 - 85	1000.0	Black (BK)	32	450-20031
RMS 139-38	139.0	38.0	2.77	45 - 120	1000.0	Black (BK)	32	450-20041
RMS 185-55	185.0	55.0	2.74	65 - 160	1000.0	Black (BK)	32	450-20050

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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



### Heat shrinkable straight-through joint

#### LVK - adhesive lined

LVK is a heat shrinkable straight-through joint for universal connecting of unarmoured polymeric cables or conductors insulated with PVC, PE and XLPE. Suitable for compression and mechanical connectors on aluminium or copper cables. Voltage level 0.6/1.0 (1.2) kV.

#### Features and benefits

- Universally suitable to connect cables and conductors
- Immediately ready for use
- Using a high-quality thermoplastic inner adhesive
- Good corrosion protection properties with excellent abrasion resistance and weather resistance
- TCP (thermo chromatic paint) spots indicate the sleeve has been sufficiently heated
- Resistant to chemical agents and alkaline earths
- Excellent shrink behavior
- High UV resistance
- Halogen free

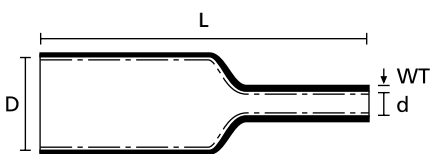
#### Without connector!



LVK - Heat shrinkable straight-through joint.



LVK: Outer sleeve, inner sleeves, cleaning cloth, emery cloth, installation instructions.



Heat Shrink Tubing 4:1 with adhesive



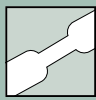
<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Colour</b>	Black (BK)
<b>Shrink Ratio</b>	up to 4:1
<b>Operating Temperature</b>	-55 °C to +110 °C
<b>Min. Shrink Temperature</b>	+120 °C
<b>Softening Point Adhesive</b>	+105 °C
<b>Longitudinal Change After Shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	20 kV/mm



TYPE	No. of Inner sleeves	Conductor Size Range (mm <sup>2</sup> )	Inner Tubing Supplied Ø D min.	Inner Tubing Recov. Ø d max.	Inner Tubing Length (L)	Outer Tubing Supplied Ø D min.	Outer Tubing Recov. Ø d max.	Outer Tubing Length (L)	Tools	Article-No.
LVK-4x16-50	4	16-50	22.0	6.0	170.0	55.0	16.0	550.0	32	380-04008
LVK-4x25-150	4	25-150	33.0	8.0	250.0	105.0	25.0	800.0	32	380-04010
LVK-4x25-95	4	25-95	33.0	8.0	250.0	75.0	20.0	800.0	32	380-04009
LVK-4x95-300	4	95-300	40.0	12.0	280.0	130.0	35.0	900.0	32	380-04011
LVK-5x1.5-16	5	1.5-16	19.0	3.2	125.0	48.0	12.0	450.0	32	380-04006
LVK-5x1.5-6	5	1.5-6	12.0	3.0	70.0	48.0	12.0	250.0	32	380-04005
LVK-5x6-25	5	6-25	22.0	6.0	125.0	55.0	16.0	500.0	32	380-04007

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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



### Heat shrinkable straight-through joint with mechanical connectors

#### LVK-C - adhesive lined

LVK-C is a heat shrinkable straight-through joint for universal connecting of unarmoured polymeric cables or conductors insulated with PVC, PE and XLPE. With mechanical connectors for aluminium or copper cables. Voltage level 0.6/1.0 (1.2) kV.

#### Features and benefits

- Universally suitable to connect cables and conductors
- Immediately ready for use
- Using a high-quality thermoplastic inner adhesive
- Good corrosion protection properties with excellent abrasion resistance and weather resistance
- TCP (thermo chromatic paint) spots indicate the sleeve has been sufficiently heated
- Resistant to chemical agents and alkaline earths
- Excellent shrink behavior
- High UV resistance
- With mechanical connectors
- Halogen free

#### With connector!

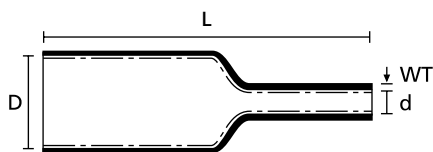


LVK-C - Heat shrinkable straight-through joint with connectors.



LVK-C: Outer sleeve, inner sleeves, mechanical connectors, cleaning cloth, emery cloth, installation instructions.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Colour</b>	Black (BK)
<b>Shrink Ratio</b>	up to 4:1
<b>Operating Temperature</b>	-55 °C to +110 °C
<b>Min. Shrink Temperature</b>	+120 °C
<b>Softening Point Adhesive</b>	+105 °C
<b>Longitudinal Change After Shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	20 kV/mm



Heat Shrink Tubing 4:1 with adhesive



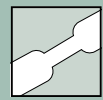
HF ✓

RoHS ✓

TYPE	No. of Inner sleeves	Conductor Size Range (mm <sup>2</sup> )	Inner Tubing Supplied Ø D min.	Inner Tubing Recov. Ø d max.	Inner Tubing Length (L)	Outer Tubing Supplied Ø D min.	Outer Tubing Recov. Ø d max.	Outer Tubing Length (L)	Tools	Article-No.
LVK-C-4x16-50	4	16-50	22.0	6.0	170.0	55.0	16.0	550.0	32	380-04016
LVK-C-4x25-150	4	25-150	33.0	8.0	250.0	105.0	25.0	800.0	32	380-04018
LVK-C-5x1.5-16	5	1.5-16	19.0	3.2	125.0	48.0	12.0	450.0	32	380-04014
LVK-C-5x1.5-6	5	1.5-6	12.0	3.0	70.0	48.0	12.0	250.0	32	380-04013
LVK-C-5x6-25	5	6-25	22.0	6.0	125.0	55.0	16.0	500.0	32	380-04015

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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



### Heat shrinkable tubing 4:1 - Flame retardant

#### HA40 - thick wall adhesive lined

Designed for low voltage cable joints and terminations in shipbuilding. Insulates and protects against moisture.

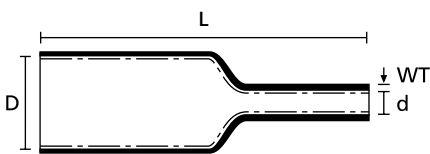
#### Features and benefits

- Thick wall adhesive lined shrink tubing for low voltage power cables
- Designed for shipbuilding, Germanische Lloyd approved
- Flame retardant
- UV and weather resistant
- Excellent mechanical performance



HA40 thick wall, adhesive lined and flame retarded tubing for shipbuilding applications.

<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>Min. Shrink Temperature</b>	+120 °C
<b>Softening Point Adhesive</b>	+85 °C
<b>Longitudinal Change After Shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	15 kV/mm
<b>Self extinguishing</b>	Yes



Heat Shrink Tubing 4:1 with adhesive

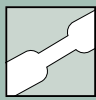


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Tools	Article-No.
HA40-9/3	9.0	3.0	2.00	1.0 m	Black (BK)	32	321-00100
HA40-13/4	13.0	4.0	2.20	1.0 m	Black (BK)	32	321-00101
HA40-22/6	22.0	6.0	2.70	1.0 m	Black (BK)	32	321-00102
HA40-33/8	33.0	8.0	3.20	1.0 m	Black (BK)	32	321-00103
HA40-40/12	40.0	12.0	4.10	1.0 m	Black (BK)	32	321-00104
HA40-55/16	55.0	16.0	4.10	1.0 m	Black (BK)	32	321-00105
HA40-75/22	75.0	22.0	4.10	1.0 m	Black (BK)	32	321-00106
HA40-92/25	92.0	25.0	4.20	1.0 m	Black (BK)	32	321-00107

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593. All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Heat shrinkable tubing up to 3.5:1 - 1 m lengths

#### HA47 - thick wall adhesive lined

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

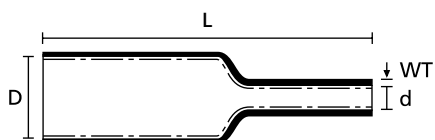
#### Features and benefits

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



HA47 - Halogenfree 4:1 Heavy Dual Wall Heat Shrink Tubing.

<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>Min. 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>Insulation Class</b>	A (VDE 0530)



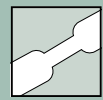
Heat Shrinkable Tubing 3.5:1 with adhesive



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Tools	Article-No.
HA47-9/3	9.0	3.0	2.00	1.0 m	32	321-20090
HA47-13/4	13.0	4.0	2.40	1.0 m	32	321-20130
HA47-19/6	19.0	6.0	2.70	1.0 m	32	321-20180
HA47-33/8	33.0	8.0	3.20	1.0 m	32	321-20280
HA47-45/12	45.0	12.0	4.00	1.0 m	32	321-20450
HA47-51/16	51.0	16.0	4.00	1.0 m	32	321-20510
HA47-68/22	68.0	22.0	4.00	1.0 m	32	321-20680
HA47-85/25	85.0	25.0	4.20	1.0 m	32	321-20850
HA47-105/30	105.0	30.0	4.20	1.0 m	32	321-20900
HA47-130/36	130.0	36.0	4.20	1.0 m	32	321-21300
HA47-160/50	165.0	50.0	4.20	1.0 m	32	321-21600
HA47-180/50	180.0	50.0	4.20	1.0 m	32	321-21850

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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 1.2 m cuts

#### HA67 - thick wall adhesive lined

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

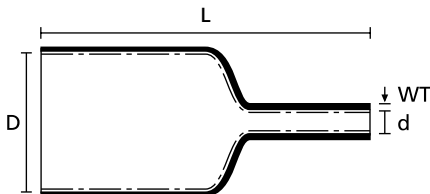
#### Features and benefits

- 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.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	6:1
<b>Operating Temperature</b>	-55 °C to +110 °C
<b>Min. 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



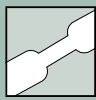
Heat Shrink Tubing 6:1 with adhesive



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Tools	Article-No.
HA67-19.0/3.2	19.0	3.2	3.20	1.2 m	Black (BK)	32	321-30000
HA67-33.0/5.5	33.0	5.5	3.40	1.2 m	Black (BK)	32	321-30100
HA67-44.4/7.4	44.4	7.4	3.60	1.2 m	Black (BK)	32	321-30200
HA67-50.8/8.3	50.8	8.3	4.80	1.2 m	Black (BK)	32	321-30300
HA67-69.8/11.7	69.8	11.7	4.80	1.2 m	Black (BK)	32	321-30400
HA67-88.9/17.1	88.9	17.1	4.80	1.2 m	Black (BK)	32	321-30500
HA67-119.4/22.9	119.4	22.9	4.80	1.2 m	Black (BK)	32	321-30600

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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



### Heat shrinkable tubing 2:1 - Flame retardant

#### TR27

TR27 is used in applications where toxic emissions evolved in a fire must be minimised, e.g. for heavily populated buildings or safety sensitive areas like tunnels, hospitals, schools, theatres, mass transit vehicles and computer centres.

#### Features and benefits

- Thin wall, flexible polyolefin tubing
- Optional available with adhesive or as thick wall version (SR27)
- Halogen free and excellent flame-retardant properties
- Limited Fire Hazard
- Low generation of toxic gases and corrosive acid
- Low smoke generation
- Meets various industrial standards



TR27 is ideal for safety sensitive areas.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-40 °C to +105 °C
<b>Min. Shrink Temperature</b>	+115 °C
<b>Longitudinal Change After Shrinkage</b>	+5%/-10% max.
<b>Dielectric Strength</b>	15 kV/mm
<b>Self extinguishing</b>	Yes

HF ✓

LFH ✓

RoHS ✓



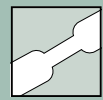
Heat Shrink Tubing 2:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Article-No.
TR27-3.2/1.6	3.2	1.6	0.51	150 m	Black (BK)	315-50320
TR27-4.8/2.4	4.8	2.4	0.51	60 m	Black (BK)	315-50480
TR27-6.4/3.2	6.4	3.2	0.64	60 m	Black (BK)	315-50640
TR27-9.5/4.8	9.5	4.8	0.64	60 m	Black (BK)	315-50950
TR27-12.7/6.4	12.7	6.4	0.64	60 m	Black (BK)	315-51270
TR27-19.1/9.5	19.1	9.5	0.76	60 m	Black (BK)	315-51900
TR27-25.4/12.7	25.4	12.7	0.51	60 m	Black (BK)	315-52540
TR27-38.1/19.1	38.1	19.1	1.02	60 m	Black (BK)	315-53810
TR27-50.8/25.4	50.8	25.4	1.14	60 m	Black (BK)	315-55100

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

**EN 45545-2**

Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Heat shrinkable tubing 3:1 - Flame retardant

#### TA37 – thin wall adhesive lined

TA37 shrink tubing has a low smoke index and excellent flame retardant properties to meet strict fire security standards in electrical insulation.

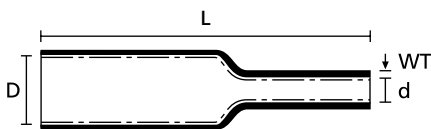
#### Features and benefits

- Thin wall adhesive lined heat shrink tubing
- Halogen free
- Flame retardant
- Combination of these three (halogen free, adhesive lined and flame retardant) product properties is unique
- Low smoke generation
- Low generation of toxic gases and corrosive acid

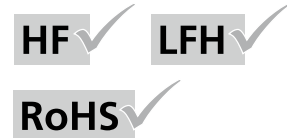


TA37 - Halogenfree and self-extinguishing 3:1 Thin Dual Wall Heat Shrink Tubing.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-40 °C to +105 °C
<b>Min. Shrink Temperature</b>	+120 °C
<b>Softening Point Adhesive</b>	+85 °C
<b>Longitudinal Change After Shrinkage</b>	+3%/-15%
<b>Dielectric Strength</b>	19.7 kV/mm
<b>Self extinguishing</b>	Yes



Heat Shrink Tubing 3:1 with adhesive

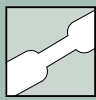


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Article-No.
TA37 3-1	3.2	1.0	0.95	1.2 m	Black (BK)	315-13000
TA37 4.5-1.5	4.8	1.5	1.10	1.2 m	Black (BK)	315-13001
TA37 6-2	6.4	2.0	1.20	1.2 m	Black (BK)	315-13002
TA37 9-3	9.5	3.0	1.30	1.2 m	Black (BK)	315-13003
TA37 12-4	12.7	4.0	1.40	1.2 m	Black (BK)	315-13004
TA37 19-6	19.1	6.0	2.20	1.2 m	Black (BK)	315-13005
TA37 24-8	24.0	8.0	2.50	1.2 m	Black (BK)	315-13006
TA37 40-13	40.0	13.0	2.50	1.2 m	Black (BK)	315-13007
TA37 50-19	50.0	19.0	4.00	1.2 m	Black (BK)	315-13008
TA37 75-25	75.0	25.0	3.00	1.2 m	Black (BK)	315-13009
TA37 120-45	120.0	45.0	4.00	1.2 m	Black (BK)	315-13011

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

## EN 45545-2

Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### 4:1 Heat shrink tubing - 1.2m lengths

**SA47-LA - standard wall adhesive lined for perfect corrosion protection**

SA47-LA is a semi-rigid halogen free polyolefin tubing with an inner liner of hot melt adhesive. It has excellent tensile strength and strain relief. The adhesive liner provides superb moisture protection. Ideal for electrical connections and splices in automobiles. Tubing is transparent and hot melt adhesive is black.

SA47-LA is specially designed with less adhesive for cable connections.

#### Features and benefits

- Standard wall polyolefin heat shrink tubing
- Industry leading corrosion protection
- Excellent tensile strength and strain relief
- Provides excellent moisture protection
- Tubing is clear and hot melt adhesive black
- Provides environmental sealing of complex parts
- Halogen free

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

**Available with transparent inner adhesive on request.**

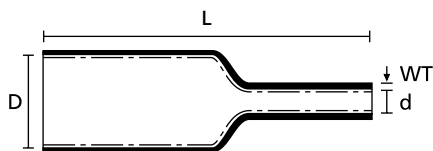


SA47-LA - strongest thermoplastic adhesive.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	4:1
<b>Operating Temperature</b>	-40 °C to +125 °C
<b>Min. Shrink Temperature</b>	+130 °C
<b>Melting Point</b>	starting from +110 °C
<b>Longitudinal Change After Shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	20 kV/mm

HF ✓

RoHS ✓

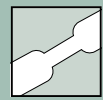


Heat Shrink Tubing 4:1 with adhesive



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Article-No.
SA47-LA-5.75/1.25	5.75	1.25	1.10	1.2 m	Transparent (CL), Black (BK)	301-10020
SA47-LA-7.5/1.65	7.5	1.65	1.40	1.2 m	Transparent (CL), Black (BK)	301-10021
SA47-LA-11.0/2.4	11.0	2.4	1.80	1.2 m	Transparent (CL), Black (BK)	301-10022
SA47-LA-18.3/4.35	18.3	4.35	2.20	1.2 m	Transparent (CL), Black (BK)	301-10023
SA47-LA-24.0/6.0	24.0	6.0	2.50	1.2 m	Transparent (CL), Black (BK)	301-10024
SA47-LA-32.0/8.0	32.0	8.0	2.50	1.2 m	Transparent (CL), Black (BK)	301-10025
SA47-LA-52.0/13.0	52.0	13.0	3.00	1.2 m	Transparent (CL), Black (BK)	301-10026

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



### 4:1 Heat shrink tubing - 1.2 m lengths

#### TX46 - high-temp adhesive, self-extinguishing

TX46 is a 4:1 thin-walled adhesive lined heat shrink tubing. The special adhesive has a high melting point and is ideal for high temperature sealing applications. In combination with its superior shrink performance it can be used to seal the most challenging cable lugs or any other terminals, connections and inline splices in a high temperature environment.

#### Features and benefits

- Thin-walled: flexible, light weight, space saving
- 4:1 shrink ratio covers a large range and offers great contact pressure
- Thermoplastic adhesive with high melting point provides a reliable seal up to +150°C
- The outer jacket has good mechanical strength
- Resistant to typical automotive fluids

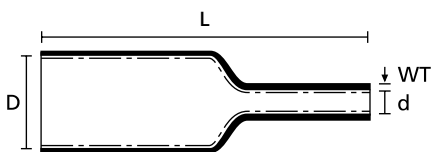
**Additional colors, sizes, and custom cut lengths upon request.**



TX46 - high temperature adhesive and self-extinguishing.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	4:1
<b>Operating Temperature</b>	-40 °C to +150 °C
<b>Min. Shrink Temperature</b>	+135 °C
<b>Longitudinal Change After Shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	22 kV/mm
<b>Self extinguishing</b>	Yes

**RoHS**

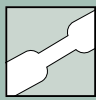


Heat Shrink Tubing 4:1 with adhesive



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Article-No.
TX46-7.6/1.7	7.6	1.7	0.40	1.2 m	Black (BK)	317-00070
TX46-9.0/2.3	9.0	2.3	0.40	1.2 m	Black (BK)	317-00071
TX46-11.6/2.5	11.6	2.5	0.50	1.2 m	Black (BK)	317-00072
TX46-17.8/4.4	17.8	4.4	0.70	1.2 m	Black (BK)	317-00073
TX46-24.0/6.0	24.0	6.0	1.40	1.2 m	Black (BK)	317-00074
TX46-32.0/8.0	32.0	8.0	1.60	1.2 m	Black (BK)	317-00075

All dimensions in mm. Subject to technical changes.



### Heat shrinkable tubing 2:1 - Elastomer

#### SE28

SE28 is used for long-term protection of cables and wire harnesses in military equipment, motor sports and aviation.

#### Features and benefits

- Flexible, high performance elastomeric heat shrink tubing
- Used in aerospace, defence, railway and automotive applications
- Resistant to diesel fuel, aviation and hydraulic fluids
- Provides a reliable protection against abrasion and mechanical damage
- Very suitable for protecting cables and wire harnesses
- For high temperature applications up to 150 °C



SE28 - Diesel resistant 2:1 high performance elastomer heat shrink tubing.

Product also available with thin wall (TE28). See more info on our internet page.

<b>MATERIAL</b>	Elastomer, cross-linked (POA)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-75 °C to +150 °C
<b>Min. Shrink Temperature</b>	+170 °C
<b>Longitudinal Change After Shrinkage</b>	-10% max.
<b>Dielectric Strength</b>	20 kV/mm
<b>Flammability</b>	VG 95343-5
<b>Self extinguishing</b>	Yes

RoHS



Heat Shrink Tubing 2:1

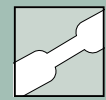
TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Designation as per VG-Norm	Tools	Article-No.
SE28 3.2/1.6	3.2	1.6	0.75	150 m	Black (BK)	VG 95343 T05 D 001 A	32	342-20000
SE28 4.8/2.4	4.8	2.4	0.85	60 m	Black (BK)	VG 95343 T05 D 002 A	32	342-20010
SE28 6.4/3.2	6.4	3.2	0.90	60 m	Black (BK)	VG 95343 T05 D 003 A	32	342-20020
SE28 9.5/4.8	9.5	4.8	1.00	60 m	Black (BK)	VG 95343 T05 D 004 A	32	342-20030
SE28 12.7/6.4	12.7	6.4	1.20	60 m	Black (BK)	VG 95343 T05 D 005 A	32	342-20040
SE28 19.0/9.5	19.0	9.5	1.45	30 m	Black (BK)	VG 95343 T05 D 006 A	32	342-20050
SE28 25.4/12.7	25.4	12.7	1.80	30 m	Black (BK)	VG 95343 T05 D 007 A	32	342-20060
SE28 38.0/19.0	38.0	19.0	2.40	30 m	Black (BK)	VG 95343 T05 D 008 A	32	342-20070
SE28 51.0/25.4	51.0	25.4	2.80	30 m	Black (BK)	VG 95343 T05 D 009 A	32	342-20080
SE28 76.0/38.0	76.0	38.0	3.20	15 m	Black (BK)	VG 95343 T05 D 010 A	32	342-20090
SE28 101.2/51.0	102.0	51.0	3.60	10 m	Black (BK)	VG 95343 T05 D 011 A	32	342-20100

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Heat shrinkable tubing 2:1 - PVDF

#### TK20

Typical applications of this translucent tubing are where high-temperature performance is required. Also very suitable for applications that ask for visual inspection of covered components, or if low friction surface is needed. TK20 is also used as oil stop for energy cables. This thin walled, translucent heat shrink tubing is often used for chemical applications.

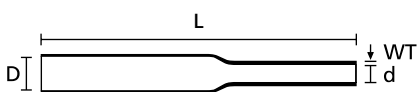
#### Features and benefits

- Semi-rigid heat shrinkable tubing made of PVDF
- Thin wall and tough
- For higher temperature applications
- Very good mechanical strength, abrasion resistance and chemical resistance
- Meets various industrial standards
- Self extinguishing, UL 224 VW1 listed



TK20 is often used for chemical applications.

<b>MATERIAL</b>	Polyvinylidene Fluoride (PVDF)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +175 °C
<b>Min. Shrink Temperature</b>	+170 °C
<b>Longitudinal Change After Shrinkage</b>	+/-10% max
<b>Dielectric Strength</b>	30 kV/mm
<b>Flammability</b>	UL 224 VW-1
<b>Self extinguishing</b>	Yes



Heat Shrink Tubing 2:1



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Designation as per VG-Norm	Article-No.
TK20-1.2/0.6	1.2	0.6	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 001 M	331-00129
TK20-1.6/0.8	1.6	0.8	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 002 M	311-00169
TK20-2.4/1.2	2.4	1.2	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 003 M	311-00249
TK20-3.2/1.6	3.2	1.6	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 004 M	311-00329
TK20-4.8/2.4	4.8	2.4	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 005 M	311-00489
TK20-6.4/3.2	6.4	3.2	0.30	1.2 m	Transparent (CL)	VG 95343 T05 F 006 M	311-00649
TK20-9.5/4.8	9.5	4.75	0.30	1.2 m	Transparent (CL)	VG 95343 T05 F 007 M	311-00959
TK20-12.7/6.4	12.7	6.4	0.30	1.2 m	Transparent (CL)	VG 95343 T05 F 008 M	311-01279
TK20-19.1/9.5	19.1	9.5	0.43	1.2 m	Transparent (CL)	VG 95343 T05 F 009 M	311-01909
TK20-25.4/12.7	25.4	12.7	0.48	1.2 m	Transparent (CL)	VG 95343 T05 F 010 M	311-02549
TK20-38.1/19.1	38.1	19.1	0.51	1.2 m	Transparent (CL)	-	311-03819
TK20-50.8/25.4	50.8	25.4	0.51	1.2 m	Transparent (CL)	-	311-05089

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



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Heat shrinkable tubing - PTFE

#### TFE2 - 2:1 shrink ratio

TFE is ideal for high temperature applications, when resistance to aggressive fluids is required or a very thin walled tubing is needed, for example in pH-measuring instruments. TFE tubing is also used to reduce movement due to friction, covering cylinders for example.

#### Features and benefits

- PTFE heat shrink tubing
- Very high temperature resistance
- Extra thin wall translucent tubing
- High abrasion resistance and good resistance against aggressive chemicals
- Available in either 2:1 (TFE2) or 4:1 (TFE4) shrink ratios

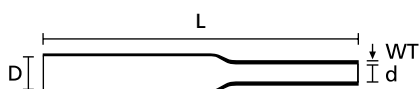
**Cut lengths available on request. Please contact us!**



TFE is available in either 2:1 or 4:1 shrink ratios.

<b>MATERIAL</b>	Polytetrafluoroethylene (PTFE)
<b>Operating Temperature</b>	-65 °C to +260 °C
<b>Min. Shrink Temperature</b>	+330 °C
<b>Longitudinal Change After Shrinkage</b>	-20% max.
<b>Dielectric Strength</b>	40 kV/mm
<b>Flammable</b>	No

**RoHS** ✓

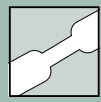


Heat Shrink Tubing 2:1

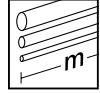
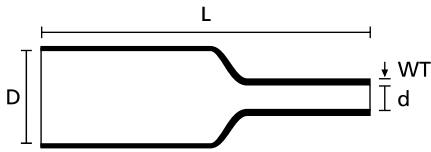


TYPE	Supplied Ø D min.	Recov. Ø d max.	Wire Size (AWG)	Wall (WT)	Length (L)	Colour	Shrink Ratio	Article-No.
TFE2-30	0.86	0.38	30	0.23	1.2 m	Transparent (CL)	2:1	336-00079
TFE2-28	0.96	0.46	28	0.23	1.2 m	Transparent (CL)	2:1	336-00099
TFE2-26	1.17	0.56	26	0.23	1.2 m	Transparent (CL)	2:1	336-00109
TFE2-24	1.27	0.69	24	0.25	1.2 m	Transparent (CL)	2:1	336-00139
TFE2-22	1.39	0.82	22	0.25	1.2 m	Transparent (CL)	2:1	336-00149
TFE2-20	1.52	0.99	20	0.30	1.2 m	Transparent (CL)	2:1	336-00159
TFE2-18	1.93	1.25	18	0.30	1.2 m	Transparent (CL)	2:1	336-00199
TFE2-16	2.36	1.55	16	0.30	1.2 m	Transparent (CL)	2:1	336-00249
TFE2-14	3.05	1.83	14	0.30	1.2 m	Transparent (CL)	2:1	336-00319
TFE2-12	3.81	2.26	12	0.30	1.2 m	Transparent (CL)	2:1	336-00399
TFE2-10	4.85	2.85	10	0.30	1.2 m	Transparent (CL)	2:1	336-00489
TFE2-8	6.10	3.58	8	0.38	1.2 m	Transparent (CL)	2:1	336-00619
TFE2-6	7.67	4.52	6	0.38	1.2 m	Transparent (CL)	2:1	336-00779
TFE2-4	9.40	5.69	4	0.38	1.2 m	Transparent (CL)	2:1	336-00949
TFE2-2	10.92	7.06	2	0.38	1.2 m	Transparent (CL)	2:1	336-01109
TFE2-0	11.94	8.81	0	0.38	1.2 m	Transparent (CL)	2:1	336-01209

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



### TFE4 - 4:1 shrink ratio



Heat Shrinkable Tubing 4:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Size (imperial)	Wall (WT)	Length (L)	Colour	Shrink Ratio	Article-No.
TFE4-5/64	1.98	0.64	5/64 "	0.22	1.2 m	Transparent (CL)	4:1	339-00209
TFE4-1/8	3.17	0.94	1/8 "	0.25	1.2 m	Transparent (CL)	4:1	339-00329
TFE4-3/16	4.75	1.27	3/16 "	0.30	1.2 m	Transparent (CL)	4:1	339-00340
TFE4-1/4	6.35	1.60	1/4 "	0.30	1.2 m	Transparent (CL)	4:1	339-00649
TFE4-3/8	9.52	2.44	3/8 "	0.30	1.2 m	Transparent (CL)	4:1	339-00959
TFE4-1/2	12.7	3.66	1/2 "	0.38	1.2 m	Transparent (CL)	4:1	339-01279
TFE4-5/8	15.87	4.52	5/8 "	0.38	1.2 m	Transparent (CL)	4:1	339-01599
TFE4-3/4	19.05	5.69	3/4 "	0.38	1.2 m	Transparent (CL)	4:1	339-01909
TFE4-1	25.4	7.06	1 "	0.38	1.2 m	Transparent (CL)	4:1	339-02549
TFE4-1 1/4	31.80	8.82	1-1/4 "	0.38	1.2 m	Transparent (CL)	4:1	339-03189

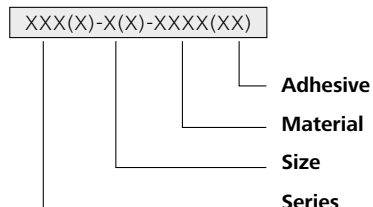
All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content.



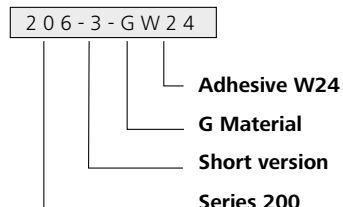
### Product Selection for Heat Shrinkable Moulded Shapes

#### Order Example

Type:



#### Example:



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

#### Low Profile Boots Product Overview

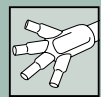
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#### Low Profile Boots Product Overview

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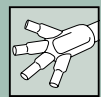
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### Materials for Heat Shrinkable Moulded Shapes

Material Specifications						
	-9	H	G	B7	B8	L
<b>Material</b>	Modified elastomer blend	Flexible limited fire hazard material	Fluid resistant elastomer	Semi-rigid flame retarded polyolefin	Semi-rigid flame retarded polyolefin	Flexible flame retarded fluoroe elastomer
<b>Operating Temperature</b>	-55 °C to +120 °C	-55 °C to +105 °C	-75 °C to +150 °C	-55 °C to +135 °C	-55 °C to +100 °C	-55 °C to +200 °C
<b>Min. Shrink Temperature</b>	+135 °C	+135 °C	+135 °C	+135 °C	+135 °C	+175 °C
<b>Specifications</b>	SCX15112	DEF STAN 59-97, BSG198 Part 5, VG 95343 NAVSEA 5617649	DEF STAN 59-97, BSG198 Part 5, VG 95343 Part 6, 18	MIL-I-81765/1 Type 1, DEF STAN 59-97, BSG198 Part 5	EA-TS 09-11	DEF STAN 59-97, BSG198 Part 5, MIL-81765/4
<b>Tensile Strength</b>	12 MPa	10 MPa	15 MPa	13 MPa	15 MPa	12 MPa
<b>Elongation at break</b>	500%	450%	580%	500%	500%	300%
<b>Dielectric Strength</b>	20 kV/mm	15 kV/mm	14 kV/mm	14 kV/mm	15 kV/mm	8 kV/mm
<b>Flammability for Material</b>	excellent	excellent	excellent	excellent	good	excellent
<b>Typical Application</b>	Military and general high performance harnessing	Ships, submarines & railways	Military and general high performance harnessing	Military and general high performance harnessing	Power/utility shapes	Military and high performance harnessing



### Adhesive for Heat Shrinkable Moulded Shapes

Adhesive Specifications							
	W / W2	W8	W21	W24	WM250	V9500	HMT200A
<b>Adhesive</b>	Hot melt adhesive	Hot melt adhesive	Hot melt adhesive	High performance, pre-coat, 1 part epoxy	Hot melt adhesive	Two part, black, epoxy adhesive	Hot melt adhesive tape
<b>Operating Temperature</b>	-55 °C to +80 °C	-55 °C to +105 °C	-55 °C to +120 °C	-75 °C to +200 °C	-55 °C to +80 °C	-75 °C to +150 °C	-55 °C to +105 °C
<b>Softening Point Adhesive</b>	+95 °C	+110 °C	+120 °C	+80 °C	+95 °C		+110 °C
<b>Supplied Form</b>	pre-applied	pre-applied	pre-applied	pre-applied	pre-applied	cardridge	tape
<b>Shelf Life</b>	5 years	5 years	5 years	5 years	5 years	18 months	5 years
<b>Solvent Resistance</b>	Fair under splash conditions	Fair under splash conditions	Saline: Very good De-icing fluid: Good Diesel: Excellent Lubricating Oil: Good Hydraulic Oil: Excellent Aviation Fuel: Good Automotive Fuel: Good	De-icing fluid: Excellent Petrol: Excellent Lubricating Oil: Excellent Hydraulic Oil: Excellent	Fair under splash conditions	De-icing fluid: Excellent, Petrol: Excellent, Lubricating Oil: Excellent, Hydraulic Oil: Excellent	Fair under splash conditions



**A wider range of material / adhesive combinations are available in the Moulded Shapes catalogue.**



### Low Profile Convolute Boots

Helashrink 313C Series, with adapter lip

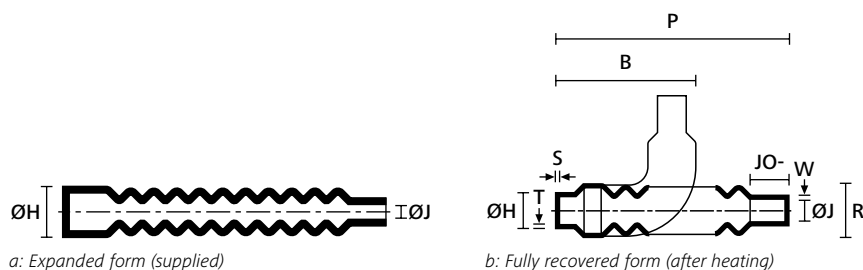
#### Features and benefits

- For circular grooved adapters to provide strain relief
- Excellent environmental sealing with adhesive
- Convoluted design grants flexibility for different cable outlet angles

For material / adhesive information please refer to page 322, 323.



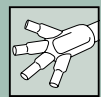
313C722-774 Series supplied / fully recovered.



TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R max.	JO ± 10 %	W min.	B nom.	T ± 0.5	S ± 0.5	Tools	Article-No.
313C722-9	14.2	6.9	11.1	4.8	120.6	21.1	17.3	1.5	62.4	1.3	1.5	32	422-00001
313C732-9	22.4	11.7	17.7	8.1	133.3	26.5	19.8	1.5	67.8	1.3	1.5	32	422-00101
313C743-9	34.0	17.5	26.9	12.7	146.0	32.7	22.3	1.5	73.4	1.3	1.8	32	422-00201
313C753-9	44.2	22.3	36.5	17.5	158.7	37.8	25.4	1.5	78.2	1.3	1.8	32	422-00302
313C764-9	53.8	40.6	45.7	22.3	171.4	42.9	28.4	1.5	82.8	2.0	1.8	32	422-00400
313C774-9	77.2	40.6	54.6	22.8	236.2	62.2	25.4	1.5	138.4	2.0	2.0	32	422-00501

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### Low Profile Shim Boots

Helashrink 313E Series, without adapter lip

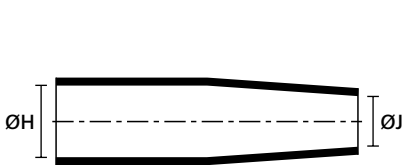
#### Features and benefits

- Used to build up or shim a cable diameter
- Facilitates better fit for components in cable harness

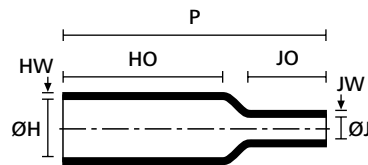
For material / adhesive information please refer to page 322, 323.



313E445-457 Series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	HO ± 10%	HW ± 25%	JW ± 25%	JO ± 10%	Tools	Article-No.
313E445-9	12.7	12.7	11.1	3.3	63.5	41.1	1.5	1.5	15.7	32	422-10000
313E447-9	20.8	14.7	20.6	9.9	63.5	41.1	1.5	1.5	16.5	32	422-10100
313E455-9	22.1	22.1	11.2	3.3	53.3	27.9	2.3	1.5	15.7	32	422-10200
313E457-9	22.1	22.1	20.6	9.9	53.3	27.9	2.3	1.5	14.0	32	422-10300

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### Low Profile Straight Boots

Helashrink 313F Series, with adapter lip

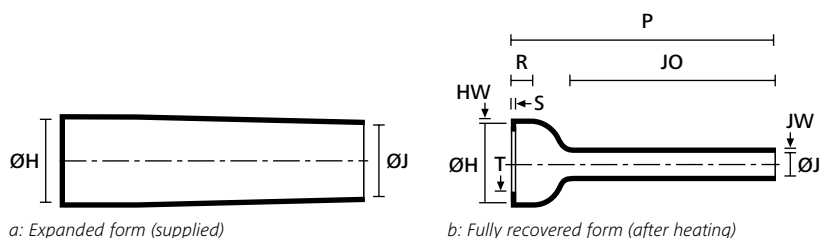
#### Features and benefits

- Lightweight strain relief for small cable diameters requiring high shrink ratio

For material / adhesive information please refer to page 322, 323.



313F322-396 Series supplied / fully recovered.



TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 15%	T ± 0.8	JO ± 10%	HW ± 1.5	JW ± 0.8	S ± 1.5	Tools	Article-No.
313F322-9	23.8	9.9	17.2	6.6	105.9	11.6	1.3	86.3	1.5	1.5	1.5	32	422-20000
313F332-9	27.1	13.2	20.8	7.6	121.1	12.1	1.3	98.5	1.5	1.5	1.5	32	422-20100
313F343-9	30.9	18.5	24.3	8.9	138.6	12.1	1.3	112.7	1.7	1.5	1.7	32	422-20200
313F353-9	35.6	22.1	28.7	10.1	159.5	12.1	1.3	130.8	1.7	1.5	1.7	32	422-20300
313F364-9	38.8	28.2	31.4	10.9	177.8	13.9	1.8	142.2	1.7	1.5	1.7	32	422-20400
313F374-9	42.2	32.2	38.3	12.7	203.2	15.2	1.8	163.0	1.7	1.5	1.7	32	422-20500
313F385-9	51.5	45.4	45.4	14.9	203.2	15.2	1.8	157.7	1.7	1.7	1.7	32	422-20600
313F396-9	62.7	45.4	53.3	16.7	228.6	16.0	1.8	153.1	1.7	1.7	1.7	32	422-20700

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### Low Profile Right Angle Boots

Helashrink 333F Series, with adapter lip, 90° angle

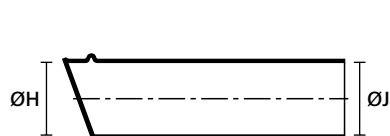
#### Features and benefits

- Lightweight strain relief for small cable diameters requiring high shrink ratio
- Right angle connector housing with long cable entry and inner lip

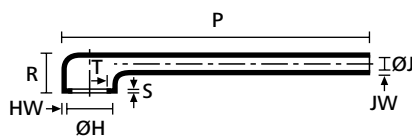
**For material / adhesive information please refer to page 322, 323.**



333F322-385 Series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 15%	T ± 0.8	HW ± 1.5	JW ± 0.8	S ± 1.5	Tools	Article-No.
333F322-9	23.8	9.9	17.2	6.6	105.1	18.5	1.3	1.5	1.5	1.5	32	422-30000
333F332-9	27.1	13.2	20.8	7.6	115.8	19.8	1.3	1.5	1.5	1.5	32	422-30004
333F343-9	30.9	18.5	24.3	8.9	146.3	20.8	1.3	1.7	1.5	1.7	32	422-30100
333F353-9	35.3	21.6	28.7	10.1	172.2	21.8	1.3	1.7	1.5	1.7	32	422-30200
333F364-9	38.8	27.9	31.4	10.9	185.1	24.1	1.8	1.7	1.5	1.7	32	422-30301
333F374-9	45.2	34.0	38.3	12.1	213.6	27.4	1.8	1.7	1.5	1.7	32	422-30400
333F385-9	51.5	41.1	44.4	15.0	224.5	29.4	1.7	1.7	1.7	1.7	32	422-30500

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### Low Profile Transition Boots

Helashrink 412H Series, side breakout

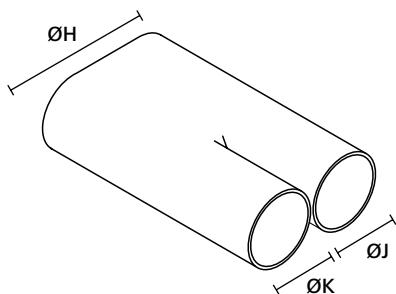
#### Features and benefits

- Connector cable strain relief
- Used with circular adaptors

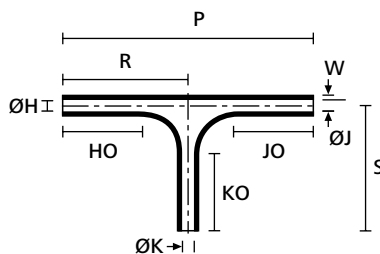
For material / adhesive information please refer to page 322, 323.



412H622-625 Series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ/K min. a	ØJ/K max. b	HO/JO/KO ± 10%	P ± 10%	W nom.	R/S nom.	Tools	Article-No.
412H622-9	19.8	6.6	13.2	6.6	25.4	80.7	1.0	40.3	32	422-40000
412H623-9	34.2	11.4	22.8	11.4	41.1	120.3	1.3	60.1	32	422-40100
412H624-9	60.1	20.0	40.1	20.0	63.5	175.7	1.5	87.8	32	422-40200
412H625-9	83.3	33.2	54.8	33.2	88.9	242.3	1.7	121.1	32	422-40300

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### Low Profile Transition Boots

**Helashrink 492H Series, 1 to 2 cables**

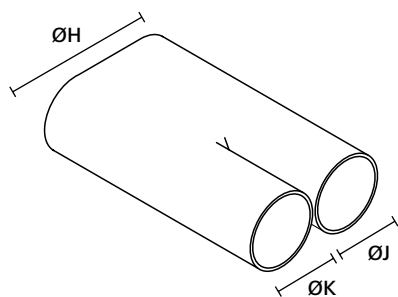
#### Features and benefits

- For cable harness breakouts or transitions
- Strain relief, sealing and mechanical protection

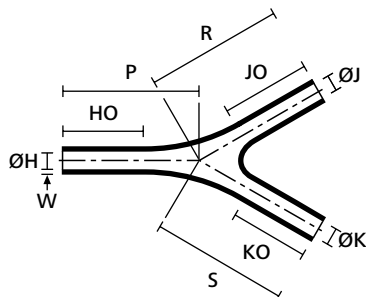
**For material / adhesive information please refer to page 322, 323.**



492H412-415 Series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ/K min. a	ØJ/K max. b	HO/JO/KO ± 15%	W nom.	P/R/S nom.	Tools	Article-No.
492H412-9	19.8	6.6	13.2	6.6	25.4	1.0	40.6	32	422-50000
492H413-9	34.2	11.4	22.8	11.4	41.1	1.3	62.9	32	422-50101
492H414-9	60.2	20.1	40.1	20.1	63.5	1.5	94.7	32	422-50202
492H415-9	83.3	33.2	54.8	33.2	49.7	1.7	133.8	32	422-50302

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### Low Profile Transition Boots

Helashrink 573H Series, 1 to 3 cables

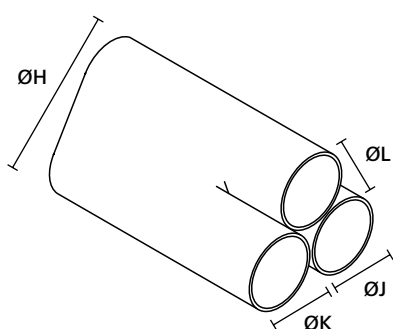
#### Features and benefits

- For cable harness breakouts or transitions
- Strain relief, sealing and mechanical protection

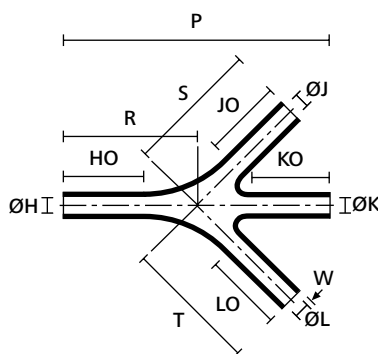
For material / adhesive information please refer to page 322, 323.



573H532-535 Series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ/K/L min. a	ØJ/K/L max. b	P nom.	R/S/T nom.	W nom.	HO/JO/KO/LO ± 15%	Tools	Article-No.
573H532-9	19.8	6.6	13.2	6.6	85.8	42.9	1.0	25.4	32	422-60000
573H533-9	34.2	11.4	20.5	11.4	135.6	67.8	1.3	41.1	32	422-60100
573H534-9	60.1	20.0	36.0	20.0	207.2	103.6	1.5	63.5	32	422-60202
573H535-9	99.8	33.2	54.8	33.2	294.6	147.3	1.7	88.9	32	422-60302

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### Bottle Shapes, VG style

Helashrink 150 Series, with rib

#### Features and benefits

- Use in conjunction with circular grooved adaptors
- Strengthened strain relief by usage of an additional inner lip
- Excellent protection against environment impacts
- Eliminates moisture ingress to harness

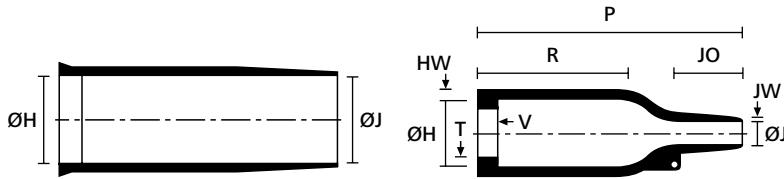
For material / adhesive information please refer to page 322, 323.



150 Series boot recovered onto a connectors.



150 Series supplied.



a: Expanded form (supplied)

b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	JO ± 10%	HW ± 20%	JW ± 20%	V max.	T ± 20%	Designation as per VG-Norm	Tools	Article-No.
152-41-G	24.0	10.5	24.0	6.0	26.0	9.0	10.0	1.6	0.5	3.3	1.0	VG 95343 T06 A 001 A	32	401-52780
152-42-G	24.0	10.5	24.0	6.0	38.0	21.0	10.0	1.6	0.5	3.3	1.0	VG 95343 T06 B 001 A	32	401-52880
153-41-G	25.0	14.0	9.0	3.5	40.0	13.0	16.0	1.8	0.5	3.3	1.0	VG 95343 T06 A 002 A	32	401-53780
153-42-G	25.0	14.0	9.0	3.5	55.0	28.0	16.0	1.8	0.5	3.3	1.0	VG 95343 T06 B 002 A	32	401-53880
154-41-G	30.0	14.0	30.0	6.0	43.0	20.0	13.0	1.8	1.0	3.3	1.0	VG 95343 T06 A 003 A	32	401-54780
154-42-G	30.0	14.0	30.0	6.0	55.0	32.0	13.0	1.8	1.0	3.3	1.0	VG 95343 T06 B 003 A	32	401-54880
155-42-G	31.0	18.0	31.0	7.0	67.0	35.0	18.0	1.8	1.0	3.3	1.0	VG 95343 T06 B 004 A	32	401-55880
156-41-G	36.0	22.5	36.0	8.5	60.0	22.0	20.0	2.0	1.0	3.3	1.0	VG 95343 T06 A 005 A	32	401-56780
156-42-G	36.0	22.5	36.0	8.5	80.0	42.0	20.0	2.0	1.0	3.3	1.0	VG 95343 T06 B 005 A	32	401-56880
157-41-G	43.0	28.0	43.0	10.0	60.0	21.0	20.0	2.2	1.0	3.3	1.7	VG 95343 T06 A 006 A	32	401-57780
157-42-G	43.0	28.0	43.0	10.0	79.0	41.0	20.0	2.2	1.0	3.3	1.7	VG 95343 T06 B 006 A	32	401-57880
157-43-G	43.0	28.0	43.0	10.0	99.0	61.0	20.0	2.2	1.0	3.3	1.7	VG 95343 T06 C 001 A	32	401-57980
158-41-G	60.0	35.0	60.0	16.0	90.0	32.0	38.0	3.2	1.5	3.3	1.7	VG 95343 T06 A 007 A	32	401-58780

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.

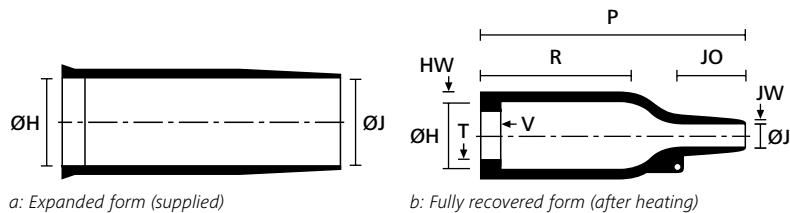


Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



## Bottle Shapes, VG style

Helashrink 150 Series, with rib



a: Expanded form (supplied)

b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	JO ± 10%	HW ± 20%	JW ± 20%	V max.	T ± 20%	Designation as per VG-Norm	Tools	Article-No.
158-42-G	60.0	35.0	60.0	16.0	110.0	52.0	38.0	3.2	1.5	3.3	1.7	VG 95343 T06 B 007 A	32	401-58880
158-43-G	60.0	35.0	60.0	16.0	130.0	72.0	38.0	3.2	1.5	3.3	1.7	VG 95343 T06 C 002 A	32	401-58980
159-41-G	66.0	45.0	66.0	17.0	130.0	50.0	50.0	3.8	2.0	3.3	2.0	VG 95343 T06 A 008 A	32	401-59780
159-42-G	66.0	45.0	66.0	17.0	150.0	70.0	50.0	3.8	2.0	3.3	2.0	VG 95343 T06 B 008 A	32	401-59880
159-43-G	66.0	45.0	66.0	17.0	171.0	90.0	50.0	3.8	2.0	3.3	2.0	VG 95343 T18 C 003 A	32	401-59980
160-41-G	82.0	58.0	82.0	27.0	137.0	37.0	62.0	3.8	3.8	3.3	2.0	VG 95343 T06 A 009 A	32	401-60780
160-42-G	82.0	58.0	82.0	27.0	158.0	58.0	62.0	3.8	3.8	3.3	2.0	VG 95343 T06 B 009 A	32	401-60880
160-43-G	82.0	58.0	82.0	27.0	213.0	113.0	62.0	3.8	3.8	3.3	2.0	VG 95343 T06 C 004 A	32	401-60980

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Bottle Shapes, MIL style

**Helashrink 100 Series, with rib**

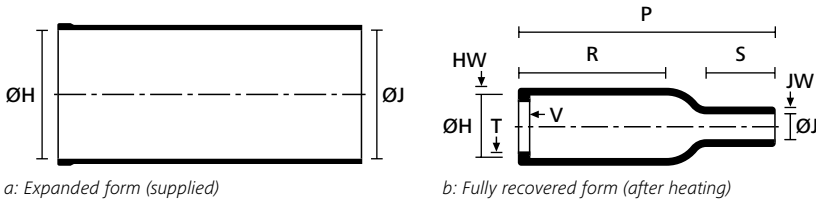
#### Features and benefits

- With circular grooved adaptor for strain relief
- Combine with complementary adhesives for environmental sealing
- Suitable for small cable diameters

**For material / adhesive information please refer to page 322, 323.**



100 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%	V ± 10%	T ± 20%	S nom.	Tools	Article-No.
<b>113-4-G</b>	10.7	7.9	4.6	2.0	25.4	14.5	1.3	1.0	3.0	1.0	4.6	32	401-13480

**Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.**

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.



### Bottle Shapes

#### Helashrink 100 Series, without rib

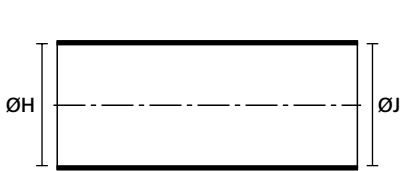
#### Features and benefits

- Strain relief for connector cable
- Easy re-entry for repair when combined with hot melt adhesive
- For mechanical protection and protection against environment impacts

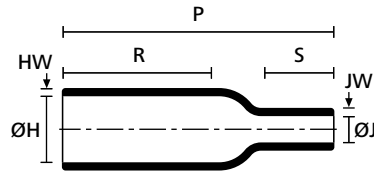
For material / adhesive information please refer to page 322, 323.



100 series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R max.	HW ± 20 %	JW ± 30 %	S nom.	Tools	Article-No.
113-1-G	10.7	7.9	4.6	2.0	25.4	14.5	1.3	1.0	4.6	32	401-13180

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### Long Outlet Shape, VG style

Helashrink 130 Series, with rib, low profile

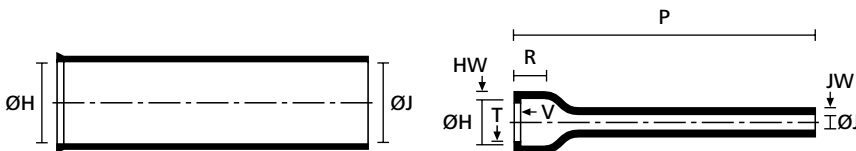
#### Features and benefits

- Low profile and lightweight
- Typically used on airborne harnesses
- Rib locates on circular backshell

For material / adhesive information please refer to page 322, 323.



135-1 supplied / fully recovered.



a: Expanded form (supplied)

b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 20%	V max.	T ± 10%	Designation as per VG-Norm	Tools	Article-No.
129-1-G	22.0	12.0	22.0	6.5	76.0	12.0	1.5	1.1	3.3	1.0	VG 95343 T06 D 001 A	32	401-29180
130-1-G	25.5	15.0	25.5	7.5	83.0	12.0	1.5	1.1	3.3	1.0	VG 95343 T06 D 002 A	32	401-30180
131-1-G	29.0	19.0	29.0	8.5	89.0	12.0	1.8	1.1	3.3	1.0	VG 95343 T06 D 003 A	32	401-31180
132-1-G	34.0	23.0	34.0	10.0	102.0	12.0	1.8	1.1	3.3	1.0	VG 95343 T06 D 004 A	32	401-32180
133-1-G	37.0	30.0	37.0	11.0	108.0	14.0	2.0	1.1	3.3	1.7	VG 95343 T06 D 005 A	32	401-33180
134-1-G	43.5	34.0	43.5	12.0	114.0	15.0	2.0	1.1	3.3	1.7	VG 95343 T06 D 006 A	32	401-34180
135-1-G	50.0	41.0	50.0	14.5	118.0	15.0	2.3	1.4	3.3	1.7	VG 95343 T06 D 007 A	32	401-35180
136-1-G	62.5	47.0	62.5	18.0	121.0	16.0	2.5	1.4	3.3	2.0	VG 95343 T06 D 008 A	32	401-36180
138-1-G	69.0	60.0	69.0	20.0	127.0	16.0	2.5	1.4	3.3	2.0	VG 95343 T06 D 009 A	32	401-38180

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Bottle Shapes, VG style

Helashrink 170 Series, with rib

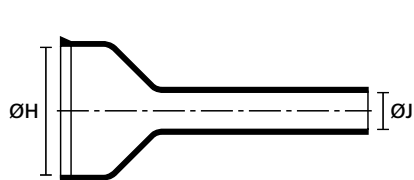
#### Features and benefits

- Cable strain relief for partially loaded connectors
- Small cable diameters
- Use with our W24 adhesive for excellent chemical resistance

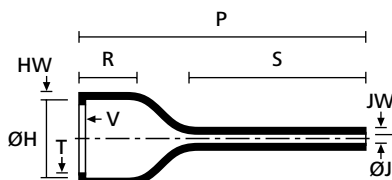
For material / adhesive information please refer to page 322, 323.



177-1-G supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

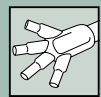
TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	T ± 20%	HW ± 20%	JW nom.	V max.	S nom.	Designation as per VG-Norm	Tools	Article-No.
176-1-G	19.3	13.0	6.3	2.1	60.0	11.7	1.0	1.5	1.1	3.3	38.0	VG 95343 T06 D 011 A	32	401-76180
177-1-G	26.1	19.1	7.6	2.6	74.0	12.2	1.0	1.8	1.1	3.3	45.0	VG 95343 T06 D 012 A	32	401-77180
178-1-G	34.2	26.0	9.6	3.1	84.0	12.2	1.0	1.8	1.1	3.3	51.0	VG 95343 T06 D 013 A	32	401-78180
179-1-G	43.6	34.1	11.4	3.6	100.0	12.2	1.7	1.8	1.1	3.3	58.0	VG 95343 T06 D 014 A	32	401-79180

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



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### Bottle Shapes, VG style

**Helashrink 190 Series, with external ribs**

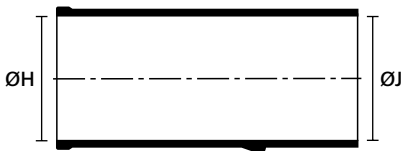
#### Features and benefits

- Specifically for small audio connectors
- Multiple external ribs to improve grip in harsh conditions

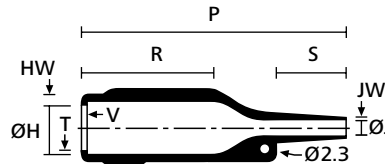
**For material / adhesive information please refer to page 322, 323.**



199-4-G supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 20%	V ± 10%	T ± 20%	S nom.	Designation as per VG-Norm	Tools	Article-No.
199-4-G	17.5	14.0	7.0	4.3	70.0	35.0	1.8	0.5	1.5	1.0	20.0	VG 95343 T06 A 010 A	32	401-99480

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### 2-Way Outlet Shapes

#### Helashrink 200 Series, low profile

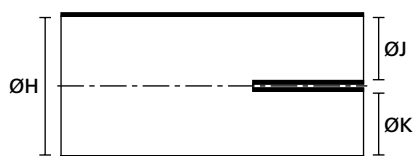
#### Features and benefits

- For harnesses which route multi-core cables in different directions
- High ratio expansion for quick and easy installation
- Mechanical tension relief

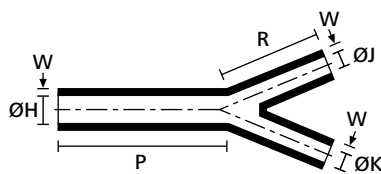
**For material / adhesive information please refer to page 322, 323.**



200 series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	ØK min. a	ØK max. b	P ± 10%	R ± 10%	W ± 20%	Tools	Article-No.
201-1-G	19.0	9.4	14.0	6.4	14.0	6.4	50.8	30.5	1.5	32	402-01180
201-2-G	31.8	9.4	15.7	6.4	15.7	6.4	50.8	30.5	1.5	32	402-01220

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### 2-Way Outlet Shapes, VG style

#### Helashrink 200 Series

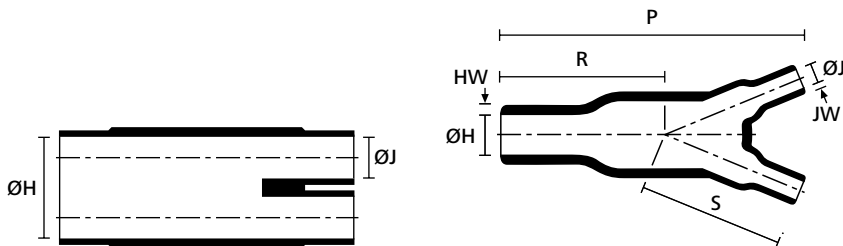
#### Features and benefits

- Mechanical tension relief in cable harnesses

For material / adhesive information please refer to page 322, 323.



203-1 supplied / fully recovered.



a: Expanded form (supplied)

b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW nom.	S nom.	Tools	Designation as per VG-Norm	Article-No.
206-1-G	13.0	6.0	7.0	3.0	41.0	22.0	1.5	1.0	19.0	32	VG 95343 T08 C 001 A	402-06180
212-1-G	14.5	8.0	8.5	5.5	136.0	83.0	2.5	2.0	63.0	32	VG 95343 T08 C 005 A	402-12180
213-1-G	17.3	7.9	11.1	7.9	140.0	83.1	2.3	-	64.0	32	-	402-13180
203-1-G	27.0	12.0	13.0	6.0	80.0	38.0	2.5	1.5	43.0	32	VG 95343 T08 C 002 A	402-03180
204-1-G	39.0	18.0	27.0	12.0	131.0	66.0	3.0	2.5	81.0	32	VG 95343 T08 C 003 A	402-04180

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### 3-Way Outlet Shapes, VG style

#### Helashrink 300 Series

#### Features and benefits

- Cable strain relief and mechanical protection at harness transition points
- All outlets clearly marked to aid orientation during installation

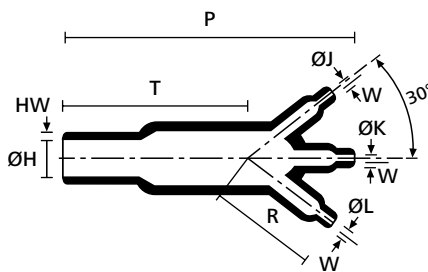
For material / adhesive information please refer to page 322, 323.



304-1-G supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ/K/L min. a	ØJ/K/L max. b	P ± 10%	R ± 10%	HW ± 30%	W ± 20%	T ± 10%	Designation as per VG-Norm	Tools	Article-No.
306-1-G	13.0	6.5	6.5	3.5	46.0	21.0	1.5	1.0	20.3	VG 95343 T08 D 001 A	32	403-06180
304-1-G	27.0	13.5	13.0	7.0	93.0	43.0	2.5	1.5	42.9	VG 95343 T08 D 002 A	32	403-04180
310-1-G	38.5	19.0	19.0	10.0	135.0	62.0	3.0	1.8	61.0	VG 95343 T08 D 003 A	32	403-10180
311-1-G	55.5	25.5	27.0	12.5	192.0	89.0	4.5	3.1	88.9	VG 95343 T08 D 004 A	32	403-11180

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### 4-Way Outlet Shapes, VG style

#### Helashrink 400 Series

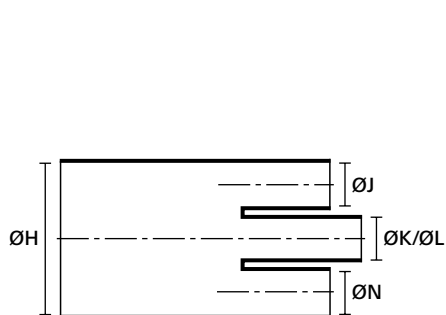
#### Features and benefits

- All outlets clearly marked to aid orientation during installation
- Cable strain relief and mechanical protection at harness transition points

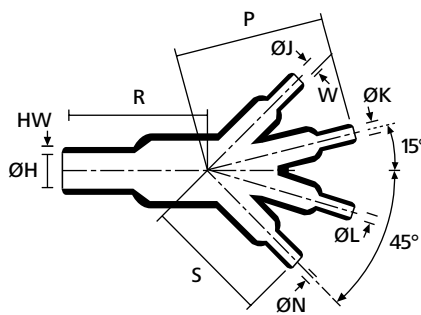
**For material / adhesive information please refer to page 322, 323.**



403-1 supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ/K/L/N min. a	ØJ/K/L/N max. b	P ± 10%	R ± 10%	HW ± 20%	W ± 10%	T ± 20%	S nom.	Designation as per VG-Norm	Tools	Article-No.
411-1-G	19.0	10.0	9.5	5.5	71.0	35.6	2.0	1.0	36.0	32.0	VG 95343 T08 E 002 A	32	404-11180
403-1-G	27.0	13.0	13.0	7.0	102.0	49.0	2.5	1.5	52.0	45.0	VG 95343 T08 E 004 A	32	404-03180
413-1-G	38.5	19.0	19.0	10.0	150.0	72.0	3.0	2.0	75.0	65.0	VG 95343 T08 E 005 A	32	404-13180

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Right-Angle Shapes, VG style

Helashrink 1100 Series, with rib

#### Features and benefits

- Used in conjunction with a circular grooved adaptor
- Provides strain relief and an environmental seal

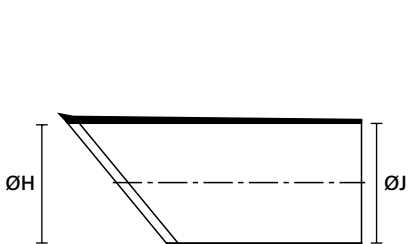
For material / adhesive information please refer to page 322, 323.



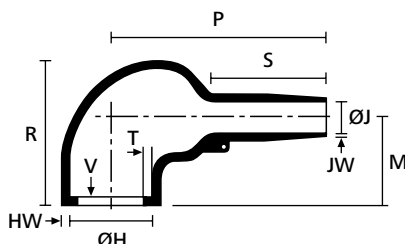
1152-4-G recovered onto a connector.



1155-4 supplied.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	HW ± 30%	JW ± 20%	V max.	T ± 20%	M nom.	S nom.	Tools	Designation as per VG-Norm	Article-No.
1152-4-G	24.0	10.5	24.0	6.0	32.0	25.0	1.3	1.3	0.5	3.3	1.0	19.0	10.0	32	VG 95343 T06 E 001 A	411-52480
1154-4-G	30.0	14.5	30.0	6.0	41.0	27.0	1.5	1.5	1.5	3.3	1.0	19.0	12.0	32	VG 95343 T06 E 002 A	411-54480
1155-4-G	31.0	18.0	31.0	7.0	51.0	31.0	1.8	1.8	1.0	3.3	1.0	21.0	15.0	32	VG 95343 T06 E 003 A	411-55480
1156-4-G	36.0	22.5	36.0	8.5	59.0	38.0	1.8	1.8	1.0	3.3	1.0	26.0	15.0	32	VG 95343 T06 E 004 A	411-56480
1157-4-G	43.0	28.5	43.0	10.0	71.0	45.0	2.0	2	1.0	3.3	1.7	30.0	16.0	32	VG 95343 T06 E 005 A	411-57480
1158-4-G	60.0	35.0	60.0	16.0	101.0	54.0	3.3	-	1.5	3.3	1.7	35.0	30.0	32	VG 95343 T06 E 006 A	411-58480
1159-4-G	66.0	45.0	66.0	17.0	108.0	68.0	3.8	3.8	2.0	3.3	2.0	42.0	51.0	32	VG 95343 T06 E 007 A	411-59480
1160-4-G	82.0	61.0	82.0	25.0	152.0	84.0	4.0	4	4.0	3.3	2.0	52.0	39.0	32	VG 95343 T06 E 008 A	411-60480

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Right-Angle Shapes, MIL style

Helashrink 1100 Series, with rib

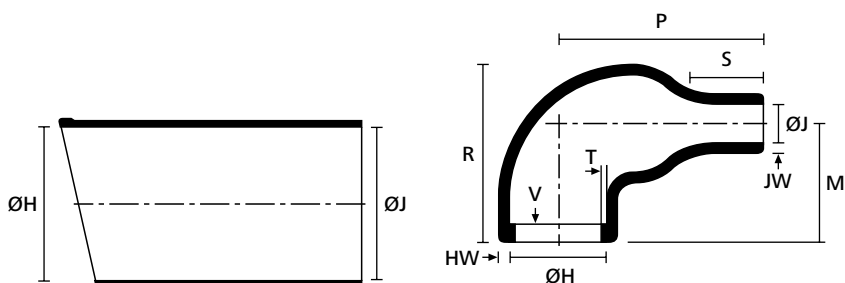
#### Features and benefits

- Used in conjunction with a circular grooved adaptor for strain relief

For material / adhesive information please refer to page 322, 323.



1108-4 supplied / fully recovered.



a: Expanded form (supplied)

b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 30%	V max.	T ± 20%	M nom.	S nom.	Tools	Article-No.
1108-4-G	16.5	7.9	16.5	3.8	17.3	20.1	1.0	1.6	3.3	1.0	15.2	5.1	32	411-08480

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### Right-Angle Shapes

Helashrink 1100 Series, without rib

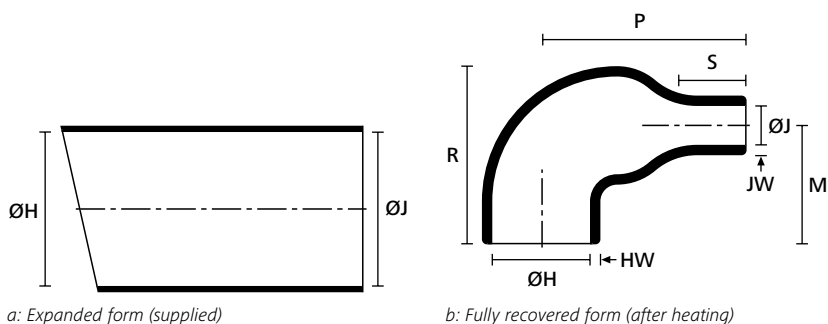
#### Features and benefits

- Strain relief for connector cable
- Easy re-entry for repair when combined with hot melt adhesive

For material / adhesive information please refer to page 322, 323.



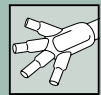
1108-1 supplied / fully recovered.



TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 30%	M nom.	S nom.	Tools	Article-No.
1108-1-G	16.5	7.9	16.5	2.5	18.3	20.1	1.0	1.6	15.2	5.1	32	411-08180

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### Right-Angle Shapes, VG style/MIL style

Helashrink 1100 Series, with rib, low profile

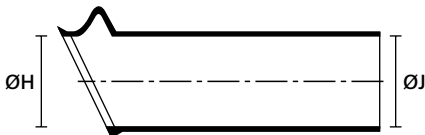
#### Features and benefits

- Lightweight, low profile, compact strain relief and mechanical protection
- Typically used on airborne harnesses

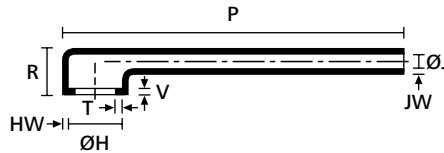
For material / adhesive information please refer to page 322, 323.



1123-1-G supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 30%	T ± 10%	V ± 10%	Designation as per VG-Norm	Tools	Article-No.
1121-1-G	22.0	12.0	22.0	6.5	70.0	19.0	1.5	1.1	1.0	3.0	VG 95343 T06 F 001 A	32	411-21180
1122-1-G	25.5	15.0	25.5	7.5	79.0	20.0	1.5	1.1	1.0	3.0	VG 95343 T06 F 002 A	32	411-22180
1123-1-G	29.0	19.0	29.0	8.5	89.0	21.0	1.8	1.1	1.0	3.0	VG 95343 T06 F 003 A	32	411-23180
1124-1-G	34.0	23.0	34.0	10.0	102.0	22.0	1.8	1.1	1.0	3.0	VG 95343 T06 F 004 A	32	411-24180
1125-1-G	37.0	30.0	37.0	11.0	108.0	24.0	2.0	1.1	1.7	3.0	VG 95343 T06 F 005 A	32	411-25180
1126-1-G	43.5	34.0	43.5	12.0	121.0	27.0	2.0	1.1	1.7	3.0	VG 95343 T06 F 006 A	32	411-26180
1127-1-G	50.0	41.5	50.0	14.5	132.0	30.0	2.3	1.4	1.7	3.0	VG 95343 T06 F 007 A	32	411-27180
1128-1-G	62.5	47.0	62.5	1.0	133.0	33.0	2.5	1.4	2.0	3.0	VG 95343 T06 F 008 A	32	411-28180
1129-1-G	69.0	60.0	69.0	20.0	137.0	35.0	2.5	1.4	2.0	3.0	VG 95343 T06 F 009 A	32	411-29180

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Right-Angle Shapes, VG style

Helashrink 1100 Series, with rib, low profile, high ratio

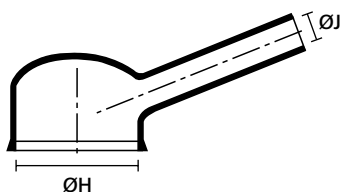
#### Features and benefits

- Use in applications of partially loaded connectors with small cable diameters
- Tail design for easy orientation prior to cooling
- Strain relief for connector cable

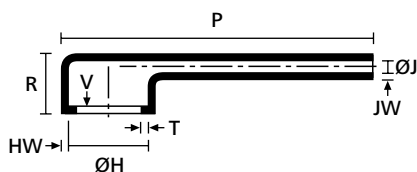
For material / adhesive information please refer to page 322, 323.



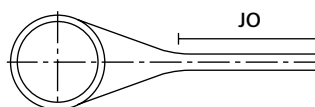
1135-1-G supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)



Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 20%	JO ± 10%	V max.	T ± 20%	Designation as per VG-Norm	Tools	Article-No.
1133-1-G	19.0	13.0	6.0	2.0	45.0	16.0	1.5	1.1	21.8	3.3	1.0	VG 95343 T06 F 011 A	32	411-33180
1134-1-G	26.0	19.0	7.5	2.5	67.0	18.0	1.8	1.1	29.2	3.3	1.0	VG 95343 T06 F 012 A	32	411-34180
1135-1-G	34.0	26.0	9.5	3.0	81.0	19.0	1.8	1.1	35.3	3.3	1.0	VG 95343 T06 F 013 A	32	411-35180
1136-1-G	43.5	34.0	11.5	3.5	116.0	21.0	1.8	1.1	47.0	3.3	1.7	VG 95343 T06 F 014 A	32	411-36180

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### T-Shapes, VG style/MIL style

Helashrink 1200 Series

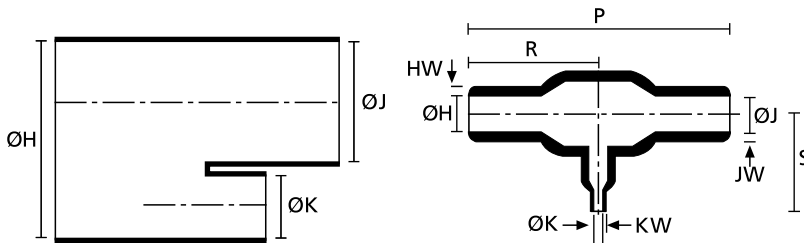
#### Features and benefits

- Strain relief, sealing and mechanical protection on cable harnesses

For material / adhesive information please refer to page 322, 323.



1202-1-G recovered onto a cable harness.



a: Expanded form (supplied)

b: Fully recovered form (after heating)

TYPE	ØH/J min. a	ØH/J max. b	ØK min. a	ØK max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 30%	KW ± 20%	Tools	S ± 10%	Designation as per VG-Norm	Article-No.
1206-1-G	6.5	3.5	6.5	3.5	30.0	15.0	1.0	1.0	1.0	32	15.0	VG 95343 T08 A 009 A	412-06180
1203-1-G	13.0	6.0	6.5	3.0	52.0	26.0	1.5	1.5	1.0	32	19.3	VG 95343 T08 A 001 A	412-03180
1202-1-G	13.0	7.0	13.0	7.0	59.0	29.5	1.5	1.5	1.5	32	29.2	VG 95343 T08 A 010 A	412-02180
1205-1-G	17.5	9.0	7.5	4.0	51.0	25.5	1.5	1.5	1.0	32	25.5	-	412-05180
1201-1-G	17.5	9.0	10.0	5.0	47.0	23.5	1.5	1.5	1.0	32	23.5	VG 95343 T08 A 007 A	412-01180
1207-1-G	27.0	12.4	27.0	13.5	120.0	60.0	2.5	2.5	2.5	32	59.9	VG 95343 T08 A 011 A	412-07180
1209-1-G	27.0	13.0	13.0	6.0	108.0	54.0	2.5	2.5	1.5	32	38.6	VG 95343 T08 A 002 A	412-09180

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### T-Shapes, VG style

Helashrink 1200 Series, Offset

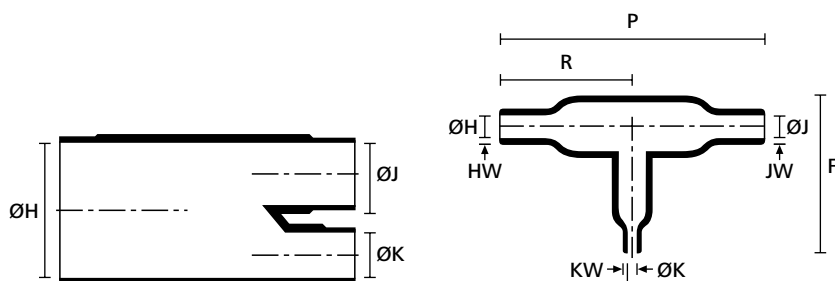
#### Features and benefits

- For strain relief, sealing and mechanical protection
- Use adhesive for cable transition on harness, if environmental sealing is required

For material / adhesive information please refer to page 322, 323.



1204-1 supplied / fully recovered.



a: Expanded form (supplied)

b: Fully recovered form (after heating)

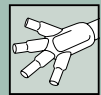
TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	ØK min. a	ØK max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 20%	KW ± 20%	F ± 15%	Designation as per VG-Norm	Tools	Article-No.
1204-1-G	13.0	7.5	6.5	4.0	6.5	4.0	56.0	33.0	1.5	1.0	1.0	27.0	VG 95343 T08 A 016 A	32	412-04180
1216-1-G	33.0	13.0	16.5	6.5	16.5	6.5	97.0	54.0	2.5	1.5	1.5	52	VG 95343 T08 A 017 A	32	412-16180

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Angled T-Shapes, VG style

Helashrink 1300 Series, 30° & 45° angle

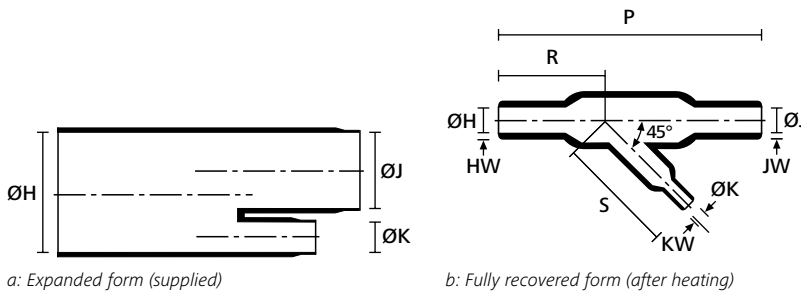
#### Features and benefits

- Strain relief, sealing and mechanical protection on cable harnesses
- Branching part 30° & 45° Y-joint
- Mechanical strain relief for cable harnesses

For material / adhesive information please refer to page 322, 323.



1303-1-G supplied / fully recovered.



TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	ØK min. a	ØK max. b	P ± 10%	R ± 10%	HW ± 30%	JW ± 30%	KW ± 20%	S ± 10%	Angle	Designation as per VG-Norm	Tools	Article-No.
1306-1-G	13.0	6.0	6.5	3.0	6.5	3.0	45.0	23.0	1.5	1.0	1.0	21.5	45°	VG 95343 T06 B 010 A	32	413-06180
1301-1-G	13.0	7.0	13.0	7.0	7.0	3.5	50.0	23.0	1.5	1.5	1.0	23.0	45°	VG 95343 T08 B 001 A	32	413-01180
1302-1-G	27.0	13.0	27.0	13.0	7.0	3.5	92.0	41.0	2.5	2.5	1.0	36.0	45°	VG 95343 T08 B 004 A	32	413-02180
1303-1-G	27.0	14.0	27.0	14.0	13.0	7.5	145.0	70.0	2.5	2.5	1.5	54.0	45°	VG 95343 T08 B 002 A	32	413-03180
1311-1-G	30.4	15.2	30.4	15.2	20.3	10.2	82.6	31.8	2.5	2.5	1.8	50.8	30°	VG 95343 T08 B 003 A	32	413-11180

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Angle Shapes

Helashrink 1800 Series, with rib, 30°, 45°, 60° angle

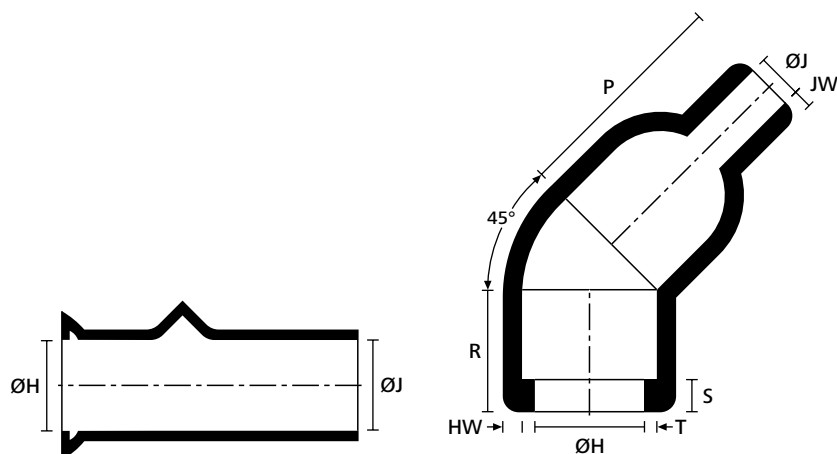
#### Features and benefits

- Provides strain relief and mechanical protection for harness systems
- Use in conjunction with a circular grooved adaptor

For material / adhesive information please refer to page 322, 323.



1821-42 supplied / fully recovered.



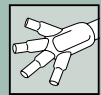
a: Expanded form (supplied)

b: Fully recovered form (after heating)

TYPE	Angle	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 20%	S ± 10%	T ± 10%	Tools	Article-No.
1820-4-G	30°	36.0	21.4	36.0	8.3	46.0	26.0	1.8	1.0	26.0	8.6	32	418-20001
1817-4-G	30°	60.0	33.7	60.0	14.8	65.0	32.0	2.0	1.0	32.0	3.0	32	418-17001
1821-42-G	45°	20.0	14.2	20.0	4.1	24.0	10.0	2.3	1.8	3.0	1.1	32	418-21013
1803-4-G	45°	24.0	17.8	12.0	5.6	28.0	14.0	2.8	2.3	3.0	1.0	32	418-03005
1830-4-G	45°	31.0	17.9	31.0	7.0	55.0	35.0	1.8	1.8	-	2.0	32	418-30003
1807-4-G	45°	35.6	18.0	35.6	7.4	43.2	10.2	1.8	1.8	3.0	1.0	32	418-07003
1831-4-G	45°	36.0	22.1	36.0	8.4	60.0	40.0	2.0	2.0	-	2.0	32	418-31001
1805-4-G	45°	40.0	18.8	40.0	7.0	28.0	11.0	1.5	1.5	3.0	1.0	32	418-05003
1806-4-G	45°	42.6	27.9	42.6	9.7	85.0	17.8	2.0	2.0	3.0	1.7	32	418-06002
1832-4-G	45°	43.0	27.9	43.0	9.9	65.0	45.0	2.2	2.2	-	2.0	32	418-32000
1819-4-G	60°	43.0	28.2	43.0	9.9	55.0	18.0	2.0	1.0	18.0	3.0	32	418-19001

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### Angle Shapes

Helashrink 1800 Series, with rib, 45° angle

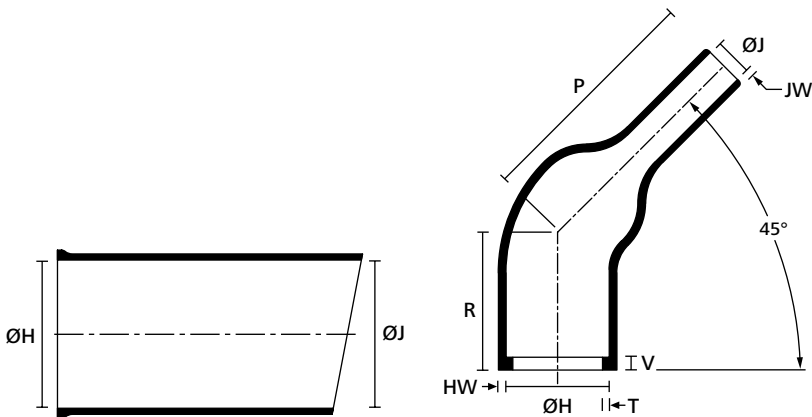
#### Features and benefits

- Provides strain relief and mechanical protection for harness systems
- Use in conjunction with a circular grooved adaptor

For material / adhesive information please refer to page 322, 323.



1837-4 supplied / fully recovered.



a: Expanded form (supplied)

b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R nom.	HW ± 20 %	JW ± 30 %	V max.	T ± 20 %	Tools	Article-No.
1834-4-G	10.0	6.6	10.0	2.0	14.2	15.2	1.0	0.6	1.5	0.6	32	418-34001
1835-4-G	17.0	7.6	17.0	3.5	15.7	16.3	1.0	0.6	1.5	0.6	32	418-35001
1836-4-G	24.0	9.9	24.0	4.0	19.0	12.7	1.0	0.6	1.5	0.6	32	418-36001
1837-4-G	30.0	13.9	30.0	5.8	29.9	19.0	1.0	0.6	1.5	0.6	32	418-37001

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### Angle Shapes

**Helashrink 1800 Series, with rib, 45° angle**

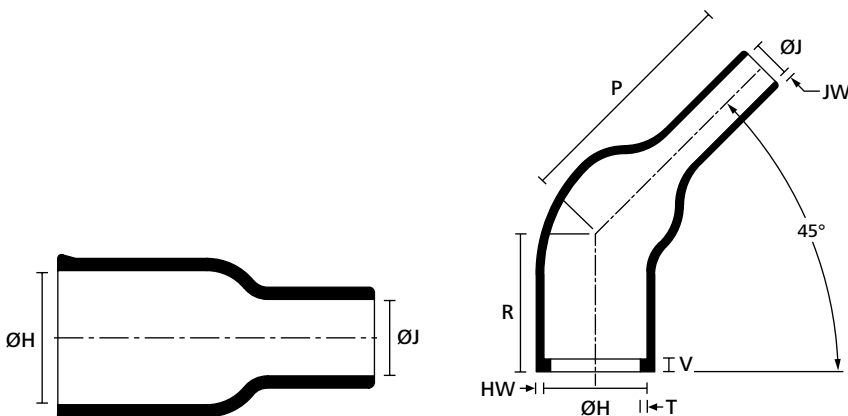
**Features and benefits**

- Provides strain relief and mechanical protection for harness systems
- Use in conjunction with a circular grooved adaptor
- For use in elevated temperature scenarios

**For material / adhesive information please refer to page 322, 323.**



1837-5 supplied / fully recovered.



a: Expanded form (supplied)

b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R nom.	HW ± 20 %	JW ± 30 %	V max.	T ± 20 %	Tools	Article-No.
1834-5-L	10.0	6.6	4.0	2.0	14.2	15.2	1.0	0.6	1.5	0.6	32	418-34002
1835-5-L	15.0	7.6	7.0	3.5	15.7	16.3	1.0	0.6	1.5	0.6	32	418-35002
1836-5-L	19.0	9.9	8.0	4.0	19.0	12.7	1.0	0.6	1.5	0.6	32	418-36002
1837-5-L	27.0	13.9	11.0	5.8	29.9	19.0	1.0	0.6	1.5	0.6	32	418-37002

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### 2-Way Outlet Shapes, Breakout Boots

**Helashrink 200 Series, in line, low voltage**

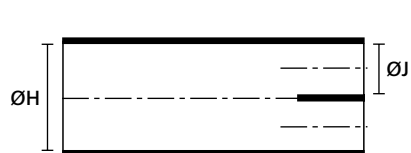
#### Features and benefits

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

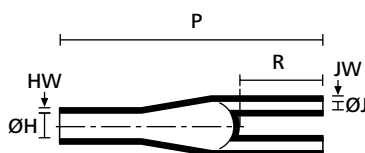
**For material / adhesive information please refer to page 322, 323.**



223-2 supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)



Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 20%	S nom.	Tools	Article-No.
216-3-B8W	21.0	9.4	9.0	2.8	76.5	20.0	1.6	1.6	14.0	32	402-16039
223-2-B8W	33.0	9.4	17.5	4.1	94.0	30.0	1.5	1.2	20.0	32	402-23058
218-2-B8W	49.0	22.9	20.0	7.6	119.0	34.0	3.2	3.2	30.0	32	402-18051

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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

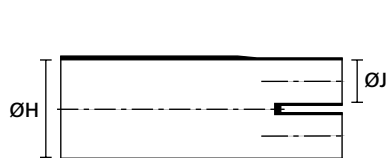
#### Features and benefits

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

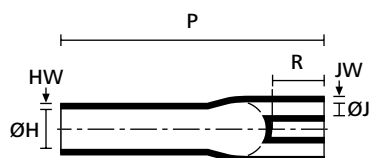
For material / adhesive information please refer to page 322, 323.



400 series supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)



Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	ØJ min. a	ØJ max. b	P ± 10%	R ± 10%	HW ± 20%	JW ± 20%	S nom.	Tools	Article-No.
442-1-B8WM250	28.0	9.0	9.0	1.8	78.0	17.0	2.7	2.0	20.0	32	404-42009
408-2-B8W2	35.0	12.0	15.0	3.0	95.0	24.0	2.5	2.0	22.0	32	404-08022
418-4-B8W2	60.0	22.9	30.0	6.4	202.0	38.1	4.1	3.3	38.1	32	404-18020

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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**

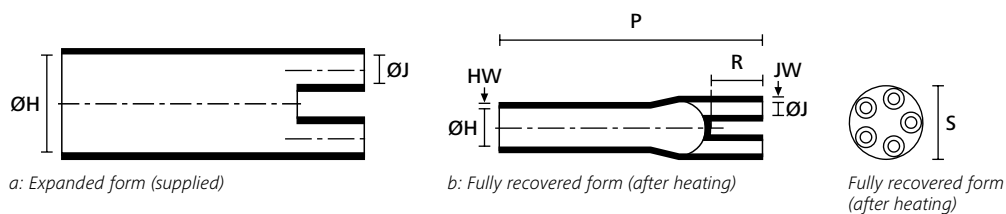
#### Features and benefits

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

**For material / adhesive information please refer to page 322, 323.**



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.	Tools	Article-No.
508-5-B8W	41.9	24.5	16.9	7.5	180.0	30.0	3.5	3.0	48.0	32	405-08049

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



## Locating Bushes

Helashrink 1760, 1790, 1820 Series

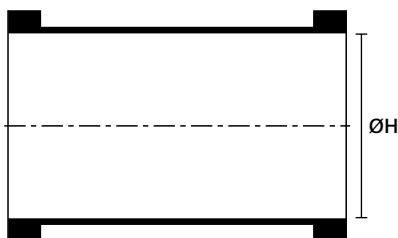
### Features and benefits

- Provides location, cushioning, shimming and protection on cable runs through bulk head or enclosure entry points
- Available in a range of materials and adhesives for most applications.
- Designed for use on aerospace engine applications

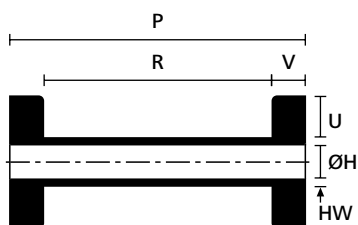
For material / adhesive information please refer to page 322, 323.



1793-1 supplied / fully recovered.



a: Expanded form (supplied)



b: Fully recovered form (after heating)

TYPE	ØH min. a	ØH max. b	P ± 10%	R ± 10 %	HW ± 20 %	V ± 10 %	Tools	U ± 20%	Article-No.
1822-1-G	12.0	5.9	30.0	24.0	6.1	3.0	32	2.0	418-22001
1796-1-G	15.0	6.4	29.0	24.0	1.5	2.5	32	2.0	417-96001
1823-1-G	16.0	7.8	32.0	24.0	6.2	4.0	32	2.0	418-23001
1793-1-G	20.0	9.5	35.0	25.0	1.5	5.0	32	3.0	417-93001
1795-1-G	26.0	12.7	35.0	25.0	2.0	5.0	32	3.0	417-95001
1794-1-L	30.0	18.0	35.0	25.0	2.0	5.0	32	3.0	417-94002

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.



### Heat shrinkable caps 3:1

#### PEC - thin wall, adhesive, self-extinguishing

Pinched end caps (PEC) are pieces of heat shrink tubing shrunk onto a filler to create an end cap. These heat shrink caps are designed to seal and protect wire ends, such as stub splices.

#### Features and benefits

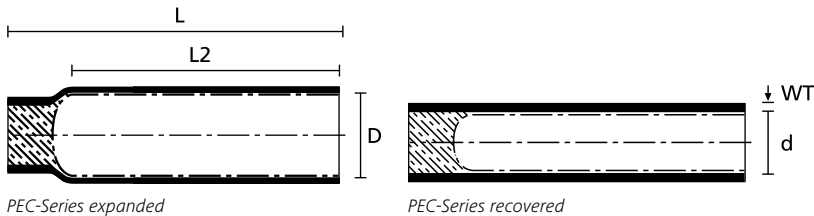
- Thin-walled (short shrink time, lightweight, flexible)
- 3:1 shrink ratio (wider range of applications, higher contact pressure)
- With thermoplastic (hot-melt) adhesive
- Continuous operating temperature up to +125°C
- Peak temperature up to 250°C/4h (heat shock test)
- Self-extinguishing



The appropriate End Cap for every cable diameter and cable type.

**Additional colors, sizes, and custom cut lengths upon request.**

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



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
- Can be fitted with air valves for pressurised cable applications
- High shrink ratio to minimise number of sizes needed

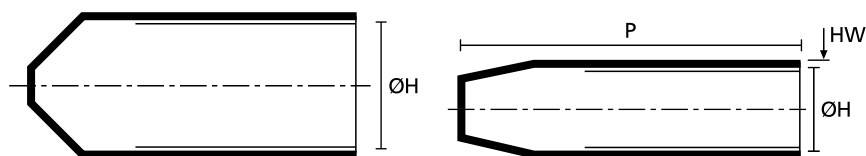


The appropriate end cap for every cable diameter and cable types.

For material / adhesive information please refer to page 322, 323.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Colour</b>	Black (BK)
<b>Flexibility</b>	semi rigid
<b>Shrink Ratio</b>	up to 3:1
<b>Min. 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

RoHS



a: Expanded form (supplied)

b: Fully recovered form (after heating)

TYPE	Bundle Ø min.	Bundle Ø max.	ØH min. a	ØH max. b	P ± 10%	HW ± 20 %	Tools	Article-No.
1612-1-B5W2	4.0	8.0	12.0	4.0	40.0	2.6	32	416-12046
1613-1-B5W2	6.5	16.0	20.0	6.0	55.0	2.8	32	416-13060
1602-1-B5W2	10.0	20.0	25.0	8.5	65.0	2.8	32	416-02008
1614-1-B5W2	16.0	32.0	40.0	15.0	75.0	3.3	32	416-14047
1615-1-B5W2	26.0	51.0	62.0	23.0	132.0	3.8	32	416-15035
1617-1-B5W2	32.0	61.0	75.0	32.0	140.0	4.0	32	416-17033
1616-1-B5W2	48.0	80.0	105.0	45.0	135.0	4.0	32	416-16053
1609-1-B5W2	65.0	110.0	120.0	60.0	150.0	4.2	32	416-09000
1610-1-B5W2	90.0	135.0	160.0	82.0	135.0	4.5	32	416-10000

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.

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.

#### Features and benefits

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

**For material / adhesive information please refer to page 322, 323.**

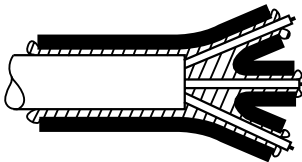


HMT200A-Tape.



Adhesive tape HMT200A for sealing against humidity.

<b>MATERIAL</b>	Ethylenevinylacetate (EVA)
<b>Operating Temperature</b>	-55 °C to +105 °C



HMT200A in combination with unlined heat shrinkable shapes

TYPE	Thickness (T)	Width (W)	Colour	Reel Length	Tools	Article-No.
HMT200A	0.25	25.0	Translucent (TT)	10 m	32	354-02260
	0.25	25.0	Translucent (TT)	50 m	32	354-02259

Recommended Tools: 32=CHG900. For more information on toolings please refer to the Application Tooling chapter on page 593.  
All dimensions in mm. Subject to technical changes.



## Two-Component Adhesive for Heat Shrinkable Tubing and Shapes

### V9500

#### Features and benefits

- High performance, two-part epoxy adhesive
- Very resistant to most solvents and fuels, even at elevated temperatures
- Two different packages available
- V9500 available in 10g sachets for manual mixing
- Processing set: emery paper, small mixing bowl and wooden spatula
- High performance bonding
- Meets military requirements for heat shrinkable components for harnesses

For material / adhesive information please refer to page 322, 323.



Two-component epoxy adhesive V9500.



The V9500 applicator gun guarantees the clean and precise coating of special fittings.

<b>MATERIAL</b>	Epoxy resins (EP)
<b>Colour</b>	Black (BK)
<b>Curing Temperature</b>	+135 °C
<b>Curing Time</b>	24 hours at +25 °C, 2 hours at +85 °C
<b>Operating Temperature</b>	-75 °C to +150 °C

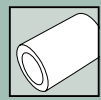
RoHS

TYPE	Description	Designation as per VG-Norm	Article-No.
V9500NOZZLE-N10	-	VG 95343 T15 MA	627-95011
V9500 Epoxy Kit	5 x 10g sachets (50g), 5 x mixing pots, 5 x mixing sticks, 5 x emery papers	-	627-95000
	1 x dual cartridge, 5 x mixing pots, 5 x mixing sticks, 5 x emery papers	VG 95343 T15 A 002 B	627-95001
V9500 Epoxy Cartridge	Two-component adhesive cartridge	-	627-95002
V9500 Applicator Gun	Applicator gun	VG 95343 T15 DA	627-95003

All dimensions in mm. Subject to technical changes.



Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Chloroprene tubing and grommets

#### Helsyn H

The chloroprene tubings are ideally suited to rigorous environments such as automotive, 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 three prong tools and the Hellerine lubricant, which are specially designed for use with HellermannTyton chloroprene tubing.

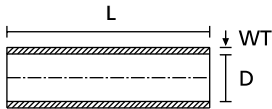
#### Features and benefits

- Highly elastic, easy to fit 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 Rubber (CR)
<b>Operating Temperature</b>	-65 °C to +95 °C, intermittent +120 °C
<b>Flammability</b>	UL 94 HB
<b>Elongation at break (min.)</b>	500 %



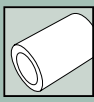
Chloroprene tubing



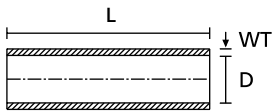
TYPE	Supplied Ø D min.	Wall (WT)	Bundle Ø max.	Reel Length	Pack Cont.	Colour	Tools	Article-No.
H12BKX100M	1.2	0.80	2.0	100 m	100 m	Black (BK)	37	608-01200
H15BKX100M	1.5	0.80	3.0	100 m	100 m	Black (BK)	37	608-01201
H25BKX100M	2.5	0.80	4.0	100 m	100 m	Black (BK)	37	608-01203
H30BKX100M	3.0	0.80	6.0	100 m	100 m	Black (BK)	37;39	608-01204
H40BKX100M	4.0	1.00	8.0	100 m	100 m	Black (BK)	37;39	608-01205
H50BKX100M	5.0	1.05	9.0	100 m	100 m	Black (BK)	37-38	608-01206
H75BKX25M	7.5	1.25	13.0	25 m	25 m	Black (BK)	37-40	608-01207

Recommended Tools: 37=TPPexpand\_3.3, 38=TPPexpand\_3.7, 39=VA2.5/5, 40=VA2.5/5 PRONG 8. For more information on toolings please refer to the Application Tooling chapter on page 593.

All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available. Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### Helsyn H



Chloroprene tubing



TYPE	Supplied Ø D min.	Wall (WT)	Bundle Ø max.	Length (L)	Pack Cont.	Colour	Tools	Article-No.
H12X20BK	1.2	0.80	2.0	20.0	1000 pcs.	Black (BK)	37	600-02498
H15X20BK	1.5	0.80	3.0	20.0	1000 pcs.	Black (BK)	37	600-02929
H25X25BK	2.5	0.80	4.0	25.0	1000 pcs.	Black (BK)	37	600-02934
H30X25BK	3.0	0.80	6.0	25.0	1000 pcs.	Black (BK)	37;39	600-02938
H40X30BK	4.0	1.00	8.0	30.0	500 pcs.	Black (BK)	37;39	600-02947
H50X25BK	5.0	1.05	9.0	25.0	500 pcs.	Black (BK)	37-38	600-02949
H75X30BK	7.5	1.25	13.0	30.0	250 pcs.	Black (BK)	37-40	600-02198

Recommended Tools: 37=TPPexpand\_3.3, 38=TPPexpand\_3.7, 39=VA2.5/5, 40=VA2.5/5 PRONG 8. For more information on toolings please refer to the Application Tooling chapter on page 593.

All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.

Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.

## Chloroprene tubing and grommets

### Helsyn TH - thin wall

The chloroprene tubings are ideally suited to rigorous environments such as automotive, 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 three prong tools and the Hellerine lubricant, which are specially designed for use with HellermannTyton chloroprene tubing.

#### Features and benefits

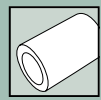
- Highly elastic, easy to fit chloroprene tubing
- Withstands up to 120°C intermittent temperature
- Covers many cable diameters with one size
- Available in cut lengths



H rubber tubing is highly flexible and easy to apply.

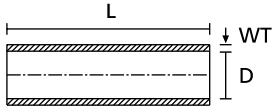
<b>MATERIAL</b>	Chloroprene Rubber (CR)
<b>Operating Temperature</b>	-65 °C to +95 °C, intermittent +120 °C
<b>Flammability</b>	UL 94 HB
<b>Elongation at break (min.)</b>	500 %

RoHS



### Chloroprene tubing and grommets

#### Helsyn TH - thin wall



Chloroprene tubing



TYPE	Supplied Ø D min.	Wall (WT)	Bundle Ø max.	Reel Length	Colour	Tools	Article-No.
TH100BKX25M	10.0	1.00	20.0	25 m	Black (BK)	38-40	608-01208
TH120BKX25M	12.0	1.00	23.0	25 m	Black (BK)	38-41	608-01209
TH140BKX20M	14.0	1.10	25.0	20 m	Black (BK)	39;41	608-01210
TH170BKX20M	17.0	1.20	28.0	20 m	Black (BK)	39;41	608-01202

Recommended Tools: 38=TPPexpand\_3.7, 39=VA2.5/5, 40=VA2.5/5 PRONG 8, 41=VA2.5/5 PRONG 18. For more information on toolings please refer to the Application Tooling chapter on page 593.

All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available. Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.

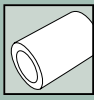
#### Helsyn TH - thin wall



TYPE	Supplied Ø D min.	Wall (WT)	Bundle Ø max.	Length (L)	Pack Cont.	Colour	Tools	Article-No.
TH100X35BK	10.0	1.00	20.0	35.0	100 pcs.	Black (BK)	38-40	600-02493
TH120X50BK	12.0	1.00	23.0	50.0	100 pcs.	Black (BK)	38-41	600-02495
TH140X50BK	14.0	1.10	25.0	50.0	100 pcs.	Black (BK)	39;41	600-02496
TH170X50BK	17.0	1.20	28.0	50.0	100 pcs.	Black (BK)	39;41	600-02497

Recommended Tools: 38=TPPexpand\_3.7, 39=VA2.5/5, 40=VA2.5/5 PRONG 8, 41=VA2.5/5 PRONG 18. For more information on toolings please refer to the Application Tooling chapter on page 593.

All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available. Please note: Some or all of the products listed here have these approvals, or have one or more sustainable attributes. Please see our website for the latest details.



### 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 l or 20 l



Hellerine lubricant in 250 ml plastic bottle.

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

Subject to technical changes.

## A cut above the rest: Quality Heat Shrink Tubing begins here

From practical dispenser boxes for convenient daily use to specialised solutions that meet high performance demands: Find just the right Heat Shrink Tubing for your application needs.

Discover our comprehensive portfolio here or get in touch for expert advice.

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### MADE FOR REAL



**HellermannTyton**

Article-No.: 308-31806

**HIS-3 18/6-PO-X-BU**

Qty: 1 PCS Col: Blue Mat: PO-X

Lot: 88317-1118-175698/110



3 0 8 - 3 1 8 0 6



4 031026 218938

S: 7/708 2  
N: 18 005 56  
FIN: 52 327 58

Made in PRC

LA324 / B14825 / 180V / 128°C

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## Heat Shrink Tubing 3:1

Heat Shrink Tubing  
Warmschrumpfschlauch  
Gainés thermoretractables  
Tubos termoretractiles  
Tubos termoretrácteis  
Gaine termorestringenti  
Krimpkaus  
Krympselange  
Värmekrympslang  
Kutistemuoviletku  
Rury / kuszulki termokurcziwe  
Teplem smršťitelné hadice  
Zsugorcsó  
Toploskrčne cevi  
Tuburi termocontractibile  
Термосвиваемые трубки  
Isyala Daraban Makonlar  
Термоусаживаемые трубки

3:1