

### Inspired by Paul Hellermann

Heat-shrinkable tubes have always made it easy to repair cables and pipes. Strictly speaking, however, Paul Hellermann used rubber bike valves to bring the insulation of damaged household cables to a mass market from 1935. The idea is the only thing that our modern heat-shrinkable tubes have in common with these simple chloroprene sleeves. Take the SA47-LA (see page 266), which was specially developed in line with customer specifications and offers outstanding protection against moisture and corrosion, thus enabling vehicles to retain their functionality.

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**1.1 Cable Ties and Fixings**  
Cable ties, made twisted

**Cable ties for outdoor use (UV-resistant)**  
Twisted 6 Hexamer® tubes

These tubes protect wires and cables from UV radiation and weather. They are suitable for outdoor use and are resistant to weathering. They are made of high-quality polypropylene (PP) and are available in various colors and lengths. They are suitable for use in a wide range of applications, from general wiring to high-voltage applications.

**Material specifications**  
Material specification sheet see page 35

**Specific part numbers according to EN/IEC standards are required.**

TYPE	Length [mm]	Width [mm]	Material	Color	Part number	Stock	Part no. (EN/IEC)
HT10	100	10	PP	Black	HT10-100-10-01	1000	1000
HT15	150	15	PP	Black	HT15-150-15-01	1000	1000
HT20	200	20	PP	Black	HT20-200-20-01	1000	1000
HT25	250	25	PP	Black	HT25-250-25-01	1000	1000
HT30	300	30	PP	Black	HT30-300-30-01	1000	1000
HT35	350	35	PP	Black	HT35-350-35-01	1000	1000
HT40	400	40	PP	Black	HT40-400-40-01	1000	1000
HT45	450	45	PP	Black	HT45-450-45-01	1000	1000
HT50	500	50	PP	Black	HT50-500-50-01	1000	1000
HT55	550	55	PP	Black	HT55-550-55-01	1000	1000
HT60	600	60	PP	Black	HT60-600-60-01	1000	1000
HT65	650	65	PP	Black	HT65-650-65-01	1000	1000
HT70	700	70	PP	Black	HT70-700-70-01	1000	1000
HT75	750	75	PP	Black	HT75-750-75-01	1000	1000
HT80	800	80	PP	Black	HT80-800-80-01	1000	1000
HT85	850	85	PP	Black	HT85-850-85-01	1000	1000
HT90	900	90	PP	Black	HT90-900-90-01	1000	1000
HT95	950	95	PP	Black	HT95-950-95-01	1000	1000
HT100	1000	100	PP	Black	HT100-1000-100-01	1000	1000

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Date of Issue: December 2021





## 2.1 Heat Shrinkable Tubing

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### Thin wall with adhesive liner

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### Medium wall

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### Medium wall with adhesive liner

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## 2.2 Heat Shrinkable Moulded Shapes

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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

HFT-A, TL27, TF21, TF24, VITON®-E, TK20, TK29, 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
	4.8/2.4	2.2 mm
		2.9 mm
6.4/3.2	9.5/4.7	3.8 mm
		4.3 mm
		5.7 mm
12.7/6.4	19.1/9.5	5.8 mm
		7.7 mm
		8.6 mm
		11.4 mm
25.4/12.7	38.1/19.1	15.2 mm
		17.2 mm
		22.9 mm
50.8/25.4	76.2/38.1	30.5 mm
		34.3 mm
		45.7 mm
101.6/50.8		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: 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
	24/8	8.4 mm
		10.4 mm
40/13		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, TA46, EPS-400, MA40, MA47, MU47, LVRK, RMS, LVK, LVK-C, HA40, HA47, SA47-LA, 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
235/40				42.2 mm
				42.3 mm
				58.2 mm
				74.5 mm
				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)	Halogen-free	Colour	Specifications	Page
ShrinKit 321 Basic		Thin-Wall	PO-X	3:1	-55 °C to +135 °C			Black		218
ShrinKit 321 Universal Basic			PO-X	3:1	-55 °C to +135 °C			Black, Blue, Green-Yellow, Red, White		219
ShrinKit 321 Universal			PO-X	3:1	-55 °C to +135 °C			Black, Blue, Green-Yellow, Red, Transparent		220
ShrinKit 321-A Basic		Thin-Wall Hot melt adhesive	PO-X	3:1	-55 °C to +110 °C			Black, Transparent		221
ShrinKit 321-A			PO-X	3:1	-55 °C to +110 °C			Black, Transparent		222
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	223
HIS-3			PO-X	3:1	-55 °C to +135 °C	1.6 - 25.4		Black, Blue, Green-Yellow, Red, Transparent	2, 3	225
HIS-A		Thin-Wall Hot melt adhesive	PO-X	3:1	-55 °C to +125 °C	3.0 - 24.0		Black, Transparent	2, 3	227
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	228
TREDUX			PO-X	2:1, 3:1	-55 °C to +135 °C	1.5 - 101.6		Black, Green-Yellow	2, 3, 9	231
TREDUX MA47		Medium-Wall Hot melt adhesive	PO-X	up to 4:1	-55 °C to +110 °C	12.0 - 95.0	HF ✓	Black		232
TREDUX HA47		Thick-Wall Hot melt adhesive	PO-X	up to 4:1	-55 °C to +110 °C	19.0 - 85.0	HF ✓	Black		233
LVR		Thin-Wall	PVC	2:1	-20 °C to +80 °C	2.4 - 25.4		Black	9	234
TL27			PO-X	2:1	-70 °C to +135 °C	1.2 - 50.8	HF ✓	Black		235
TCN20			PO-X	2:1	-55 °C to +125 °C	1.2 - 50.8		Black	2, 3	236
TCN20 overexpanded			PO-X	3:1	-55 °C to +125 °C	2.4 - 38.0		Black	2, 3	237



## Heat Shrinkable Tubing Overview

TYPE	Packaging Type	Variant	Material	Shrink Ratio	Operating Temperature	Dimension (mm)	Halogen-free	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	238
TF21			PO-X	2:1	-55 °C to +135 °C	1.2 - 101.6		Black, Blue, Green-Yellow, Red, White, Yellow	2, 3, 5	241
TF24			PO-X	2:1	-55 °C to +135 °C	1.2 - 101.6	<b>HF</b> ✓	Transparent	10, 11	244
TF31			PO-X	3:1	-55 °C to +135 °C	1.5 - 40.0		Black, Blue, Green, Green-Yellow, Red, White, Yellow	2, 3	245
TF34			PO-X	3:1	-55 °C to +135 °C	1.5 - 40.0	<b>HF</b> ✓	Transparent		248
TA32		Thin-Wall Hot melt adhesive	PO-X	3:1	-55 °C to +125 °C	3.0 - 40.0		Black	3, 9	249
TA42			PO-X	4:1	-55 °C to +125 °C	4.0 - 52.0		Black	9	250
TA46			PO-X	up to 4:1	-40 °C to +125 °C	5.75 - 52.0		Black		251
EPS-300			PO-X	3:1	-55 °C to +125 °C	3.0 - 40.0		Black		252
EPS-400			PO-X	4:1	-55 °C to +125 °C	4.0 - 32.0		Black		252
MA40		Medium-Wall Hot melt adhesive	PO-X	up to 4:1	-55 °C to +110 °C	8.0 - 55.0		Black	4	253
MA47			PO-X	up to 4:1	-55 °C to +110 °C	8.0 - 140.0	<b>HF</b> ✓	Black		254
MU47		Medium-Wall	PO-X	up to 4:1	-55 °C to +110 °C	12.0 - 140.0	<b>HF</b> ✓	Black		256
LVRK-L		Shrink Cast	PO-X	4:1	-55 °C to +125 °C	24.0 - 24.0		Black		257
RMS		Shrink Cast Hot melt adhesive	PO-X	up to 4.5:1	-40 °C to +120 °C	43.0 - 185.0	<b>HF</b> ✓	Black		258
LVK			PO-X	up to 4:1	-55 °C to +110 °C		<b>HF</b> ✓	Black		259

### Heat Shrinkable Tubing Overview

TYPE	Packaging Type	Variant	Material	Shrink Ratio	Operating Temperature	Dimension (mm)	Halogen-free	Colour	Specifications	Page
LVK-C with connectors		Shrink Cast Hot melt adhesive	PO-X	up to 4:1	-55 °C to +110 °C		HF ✓	Black		260
HA40		Thick-Wall Hot melt adhesive	PO-X	up to 4:1	-55 °C to +110 °C	9.0 - 92.0		Black	4	261
HA47			PO-X	up to 4:1	-55 °C to +110 °C	9.0 - 180.0	HF ✓	Black		262
HA67			PO-X	6:1	-55 °C to +110 °C	19.0 - 119.4	HF ✓	Black		263
TR27		Thin-Wall	PO-X	2:1	-40 °C to +105 °C	3.2 - 50.8	HF ✓	Black	12	264
TA37		Thin-Wall Hot melt adhesive	PO-X	3:1	-40 °C to +105 °C	3.2 - 120.0	HF ✓	Black	12	265
SA47-LA		Standard-Wall Hot melt adhesive	PO-X	4:1	-40 °C to +125 °C	5.75 - 52.0	HF ✓	Black, Transparent		266
SE28		Standard-Wall	POA	2:1	-75 °C to +150 °C	3.2 - 102.0		Black	10, 11	267
TK20		Thin-Wall	PVDF	2:1	-55 °C to +175 °C	1.2 - 50.8		Transparent	9, 10, 11	268
Viton®-E		Standard-Wall	FPMX	2:1	-55 °C to +200 °C	3.2 - 50.8		Black	6, 10, 11	269
TFE2		Thin-Wall	PTFE	2:1	-65 °C to +260 °C	0.86 - 11.94		Transparent		270
TFE4			PTFE	4:1	-65 °C to +260 °C	1.98 - 31.80		Transparent		271

### 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 577.



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

#### ShrinkKit 321 Basic - 220pcs - 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.

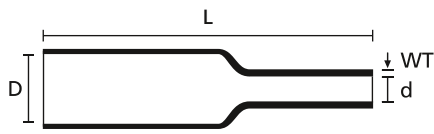
#### Features and benefits

- 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



ShrinkKit 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>Flammability</b>	self-extinguishing
<b>Insulation Class</b>	B (VDE 0530)



Heat Shrinkable Tubing 3:1



COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content	Tools	Article-No.
1	1.5	0.5	35.0	0.45	Black (BK)	50 pcs.	30;32	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	12.0	4.0	80.0	0.70	Black (BK)	5 pcs.		
8	18.0	6.0	80.0	0.80	Black (BK)	5 pcs.		

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.





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

#### ShrinkKit 321 Universal Basic - 177 pcs - coloured

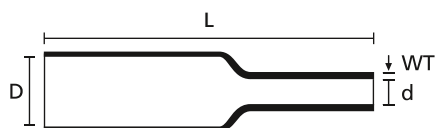
With ShrinkKit 321 HellermannTyton has set a new standard in heat shrink tubing: ShrinkKit tubings cover many applications with their ideal shrink ratio of 3:1.

#### Features and benefits

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



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



Heat Shrinkable Tubing 3:1

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



COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content	Tools	Article-No.
1	12.0	4.0	35.0	0.70	Black (BK)	12 pcs.	30;32	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.

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



Add items to your watchlist!

[www.HT.click/9-219](http://www.HT.click/9-219)





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

#### ShrinKit 321 Universal - 975pcs - 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.

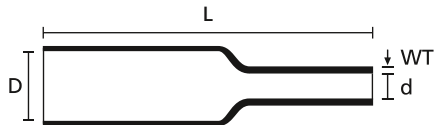
#### Features and benefits

- 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.

<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>Flammability</b>	self-extinguishing (except for transparent)
<b>Insulation Class</b>	B (VDE 0530)



Heat Shrinkable Tubing 3:1



COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content	Tools	Article-No.
1	6.0	2.0	60.0	0.70	Black (BK)	50 pcs.	30;32	380-03002
2	12.0	4.0	100.0	0.70	Black (BK)	15 pcs.		
3	24.0	8.0	200.0	1.00	Black (BK)	10 pcs.		
4	6.0	2.0	60.0	0.70	Green-Yellow (GNYE)	50 pcs.		
5	3.0	1.0	50.0	0.55	Transparent (CL)	100 pcs.		
6	3.0	1.0	50.0	0.55	Black (BK)	100 pcs.		
7	12.0	4.0	100.0	0.70	Transparent (CL)	15 pcs.		
8	12.0	4.0	100.0	0.70	Red (RD)	15 pcs.		
9	3.0	1.0	50.0	0.55	Red (RD)	100 pcs.		
10	3.0	1.0	40.0	0.55	Blue (BU)	100 pcs.		
11	3.0	1.0	40.0	0.55	Green-Yellow (GNYE)	100 pcs.		
12	1.5	0.5	40.0	0.45	Black (BK)	75 pcs.		
	1.5	0.5	40.0	0.45	Green-Yellow (GNYE)	75 pcs.		
13	6.0	2.0	60.0	0.70	Blue (BU)	50 pcs.		
14	6.0	2.0	60.0	0.70	Red (RD)	50 pcs.		
15	6.0	2.0	60.0	0.70	Transparent (CL)	50 pcs.		
16	12.0	4.0	170.0	0.70	Green-Yellow (GNYE)	10 pcs.		
17	12.0	4.0	170.0	0.70	Blue (BU)	10 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-A Basic - with adhesive liner - 130pcs - 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.

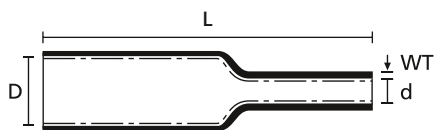
#### Features and benefits

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



ShrinKit 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>Flammability</b>	self-extinguishing (except for transparent)
<b>Insulation Class</b>	A (VDE 0530)



Heat Shrinkable Tubing 3:1 with adhesive



COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content	Tools	Article-No.
1	3.0	1.0	35.0	1.00	Black (BK)	25 pcs.	30;32	380-03004
2	12.0	4.0	35.0	1.70	Black (BK)	10 pcs.		
3	3.0	1.0	35.0	1.00	Transparent (CL)	25 pcs.		
4	6.0	2.0	35.0	1.10	Black (BK)	15 pcs.		
5	6.0	2.0	35.0	1.10	Transparent (CL)	15 pcs.		
6	6.0	2.0	35.0	1.10	Transparent (CL)	15 pcs.		
7	6.0	2.0	35.0	1.10	Black (BK)	15 pcs.		
8	12.0	4.0	80.0	1.70	Black (BK)	5 pcs.		
	12.0	4.0	80.0	1.70	Transparent (CL)	5 pcs.		

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



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

#### ShrinkKit 321-A - with adhesive liner - 210pcs - 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.

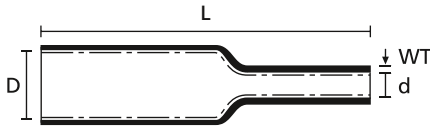
#### Features and benefits

- 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>Flammability</b>	self-extinguishing (except for transparent)
<b>Insulation Class</b>	A (VDE 0530)



Heat Shrinkable Tubing 3:1 with adhesive



COMP.	Supplied Ø D min.	Recov. Ø d max.	Length (L)	Wall (WT)	Colour	Content	Tools	Article-No.
1	24.0	8.0	200.0	2.50	Black (BK)	5 pcs.	30;32	380-03003
2	12.0	4.0	65.0	1.70	Transparent (CL)	15 pcs.		
3	6.0	2.0	50.0	1.10	Black (BK)	20 pcs.		
	6.0	2.0	50.0	1.10	Transparent (CL)	20 pcs.		
4	12.0	4.0	65.0	1.70	Black (BK)	15 pcs.		
5	3.0	1.0	50.0	1.00	Black (BK)	50 pcs.		
	3.0	1.0	50.0	1.00	Transparent (CL)	50 pcs.		
6	6.0	2.0	35.0	1.10	Black (BK)	30 pcs.		
	6.0	2.0	35.0	1.10	Transparent (CL)	30 pcs.		
7	24.0	8.0	200.0	2.50	Transparent (CL)	5 pcs.		
8	12.0	4.0	100.0	1.70	Black (BK)	15 pcs.		
9	12.0	4.0	100.0	1.70	Black (BK)	15 pcs.		
10	12.0	4.0	100.0	1.70	Transparent (CL)	15 pcs.		
11	3.0	1.0	40.0	1.00	Black (BK)	50 pcs.		
	3.0	1.0	40.0	1.00	Transparent (CL)	50 pcs.		

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.





### Storage rack for HIS-Boxes

#### HIS-Service Station

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

#### Features and benefits

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



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

TYPE	Description	Tools	Article-No.
HIS-Service Station	HIS-Service Station incl. cutter, contents: 5 dispensers HIS-3 (shrink ratio: 3:1), black, sizes are as follows: HIS-3/1, HIS-6/2, HIS-12/4 (2 pcs.), HIS-24/8	30;32	365-30100
	HIS-Service Station incl. cutter, empty	-	300-30000

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

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 halogenfree



HIS-Pack.

<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>	self-extinguishing (except transparent), UL 224 VW-1 (except transparent)

RoHS



For product specific approvals and specifications please refer to the Appendix.



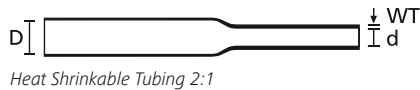
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### Heat shrinkable tubing 2:1 on a reel

#### HIS-PACK



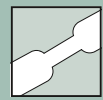
TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Tools	Article-No.
HIS-PACK-1.2/0.6	1.2	3/64 "	0.6	0.40	10 m	Black (BK)	30;32	300-30120
	1.2	3/64 "	0.6	0.40	10 m	Blue (BU)	30;32	300-30126
	1.2	3/64 "	0.6	0.40	10 m	Red (RD)	30;32	300-30122
	1.2	3/64 "	0.6	0.40	10 m	Transparent (CL)	30;32	300-30123
HIS-PACK-1.6/0.8	1.6	1/16 "	0.8	0.40	10 m	Black (BK)	30;32	300-30160
	1.6	1/16 "	0.8	0.40	10 m	Blue (BU)	30;32	300-30166
	1.6	1/16 "	0.8	0.40	10 m	Red (RD)	30;32	300-30162
	1.6	1/16 "	0.8	0.40	10 m	Transparent (CL)	30;32	300-30163
HIS-PACK-2.4/1.2	2.4	3/32 "	1.2	0.50	10 m	Black (BK)	30;32	300-30240
	2.4	3/32 "	1.2	0.50	10 m	Blue (BU)	30;32	300-30246
	2.4	3/32 "	1.2	0.50	10 m	Red (RD)	30;32	300-30242
	2.4	3/32 "	1.2	0.50	10 m	Transparent (CL)	30;32	300-30243
HIS-PACK-3.2/1.6	3.2	1/8 "	1.6	0.50	10 m	Black (BK)	30;32	300-30320
	3.2	1/8 "	1.6	0.50	10 m	Blue (BU)	30;32	300-30326
	3.2	1/8 "	1.6	0.50	10 m	Green-Yellow (GNYE)	30;32	300-30327
	3.2	1/8 "	1.6	0.50	10 m	Red (RD)	30;32	300-30322
	3.2	1/8 "	1.6	0.50	10 m	Transparent (CL)	30;32	300-30323
HIS-PACK-4.8/2.4	4.8	3/16 "	2.4	0.50	10 m	Black (BK)	30;32	300-30480
	4.8	3/16 "	2.4	0.50	10 m	Blue (BU)	30;32	300-30486
	4.8	3/16 "	2.4	0.50	10 m	Green-Yellow (GNYE)	30;32	300-30487
	4.8	3/16 "	2.4	0.50	10 m	Red (RD)	30;32	300-30482
	4.8	3/16 "	2.4	0.50	10 m	Transparent (CL)	30;32	300-30483
HIS-PACK-6.4/3.2	6.4	1/4 "	3.2	0.60	5 m	Black (BK)	30;32	300-30640
	6.4	1/4 "	3.2	0.60	5 m	Blue (BU)	30;32	300-30646
	6.4	1/4 "	3.2	0.60	5 m	Green-Yellow (GNYE)	30;32	300-30647
	6.4	1/4 "	3.2	0.60	5 m	Red (RD)	30;32	300-30642
	6.4	1/4 "	3.2	0.60	5 m	Transparent (CL)	30;32	300-30643
HIS-PACK-9.5/4.7	9.5	3/8 "	4.7	0.60	5 m	Black (BK)	30;32	300-30950
	9.5	3/8 "	4.7	0.60	5 m	Blue (BU)	30;32	300-30956
	9.5	3/8 "	4.7	0.60	5 m	Green-Yellow (GNYE)	30;32	300-30957
	9.5	3/8 "	4.7	0.60	5 m	Red (RD)	30;32	300-30952
	9.5	3/8 "	4.7	0.60	5 m	Transparent (CL)	30;32	300-30953
HIS-PACK-12.7/6.4	12.7	1/2 "	6.4	0.60	5 m	Black (BK)	30;32	300-31270
	12.7	1/2 "	6.4	0.60	5 m	Blue (BU)	30;32	300-31276
	12.7	1/2 "	6.4	0.60	5 m	Green-Yellow (GNYE)	30;32	300-31277
	12.7	1/2 "	6.4	0.60	5 m	Red (RD)	30;32	300-31272
	12.7	1/2 "	6.4	0.60	5 m	Transparent (CL)	30;32	300-31273
HIS-PACK-19.1/9.5	19.1	3/4 "	9.5	0.80	5 m	Black (BK)	30;32	300-31900
	19.1	3/4 "	9.5	0.80	5 m	Blue (BU)	30;32	300-31906
	19.1	3/4 "	9.5	0.80	5 m	Green-Yellow (GNYE)	30;32	300-31907
	19.1	3/4 "	9.5	0.80	5 m	Red (RD)	30;32	300-31902
	19.1	3/4 "	9.5	0.80	5 m	Transparent (CL)	30;32	300-31903
HIS-PACK-25.4/12.7	25.4	1 "	12.7	0.90	5 m	Black (BK)	30;32	300-32540
	25.4	1 "	12.7	0.90	5 m	Blue (BU)	30;32	300-32546
	25.4	1 "	12.7	0.90	5 m	Green-Yellow (GNYE)	30;32	300-32547
	25.4	1 "	12.7	0.90	5 m	Red (RD)	30;32	300-32542
	25.4	1 "	12.7	0.90	5 m	Transparent (CL)	30;32	300-32543

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



For product specific approvals and specifications please refer to the Appendix.





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

#### HIS-3

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 halogenfree



HIS-3 can fit highly variable cable dimensions.

<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>	self-extinguishing (except transparent), UL 224 VW-1 (except transparent)
<b>Insulation Class</b>	B (VDE 0530)



Heat Shrinkable Tubing 3:1



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Reel Length	Colour	Tools	Article-No.
HIS-3-1.5/0.5	1.6	0.5	0.45	10.0 m	10 m	Black (BK)	30;32	308-30150
	1.6	0.5	0.45	10.0 m	10 m	Blue (BU)	30;32	308-30156
	1.6	0.5	0.45	10.0 m	10 m	Red (RD)	30;32	308-30152
	1.6	0.5	0.45	10.0 m	10 m	Transparent (CL)	30;32	308-30153
HIS-3-3/1	3.2	1.0	0.55	10.0 m	10 m	Black (BK)	30;32	308-30300
	3.2	1.0	0.55	10.0 m	10 m	Blue (BU)	30;32	308-30306
	3.2	1.0	0.55	10.0 m	10 m	Green-Yellow (GNYE)	30;32	308-30307
	3.2	1.0	0.55	10.0 m	10 m	Red (RD)	30;32	308-30302
	3.2	1.0	0.55	10.0 m	10 m	Transparent (CL)	30;32	308-30303
HIS-3-6/2	6.4	2.0	0.65	5.0 m	5 m	Black (BK)	30;32	308-30600
	6.4	2.0	0.65	5.0 m	5 m	Blue (BU)	30;32	308-30606
	6.4	2.0	0.65	5.0 m	5 m	Green-Yellow (GNYE)	30;32	308-30607
	6.4	2.0	0.65	5.0 m	5 m	Red (RD)	30;32	308-30602
	6.4	2.0	0.65	5.0 m	5 m	Transparent (CL)	30;32	308-30603

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



For product specific approvals and specifications please refer to the Appendix.



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

**HIS-3**

*Heat Shrinkable Tubing 3:1*

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Reel Length	Colour	Tools	Article-No.
<b>HIS-3-9/3</b>	9.5	3.0	0.75	5.0 m	5 m	Black (BK)	30;32	308-30900
	9.5	3.0	0.75	5.0 m	5 m	Blue (BU)	30;32	308-30906
	9.5	3.0	0.75	5.0 m	5 m	Green-Yellow (GNYE)	30;32	308-30907
	9.5	3.0	0.75	5.0 m	5 m	Red (RD)	30;32	308-30902
	9.5	3.0	0.75	5.0 m	5 m	Transparent (CL)	30;32	308-30903
<b>HIS-3-12/4</b>	12.7	4.0	0.80	5.0 m	5 m	Black (BK)	30;32	308-31200
	12.7	4.0	0.80	5.0 m	5 m	Blue (BU)	30;32	308-31206
	12.7	4.0	0.80	5.0 m	5 m	Green-Yellow (GNYE)	30;32	308-31207
	12.7	4.0	0.80	5.0 m	5 m	Red (RD)	30;32	308-31202
	12.7	4.0	0.80	5.0 m	5 m	Transparent (CL)	30;32	308-31203
<b>HIS-3-18/6</b>	19.1	6.0	0.90	4.0 m	4 m	Black (BK)	30;32	308-31800
	19.1	6.0	0.90	4.0 m	4 m	Blue (BU)	30;32	308-31806
	19.1	6.0	0.90	4.0 m	4 m	Green-Yellow (GNYE)	30;32	308-31807
	19.1	6.0	0.90	4.0 m	4 m	Red (RD)	30;32	308-31802
	19.1	6.0	0.90	4.0 m	4 m	Transparent (CL)	30;32	308-31803
<b>HIS-3-24/8</b>	25.4	8.0	1.00	3.0 m	3 m	Black (BK)	30;32	308-32400
	25.4	8.0	1.00	3.0 m	3 m	Blue (BU)	30;32	308-32406
	25.4	8.0	1.00	3.0 m	3 m	Green-Yellow (GNYE)	30;32	308-32407
	25.4	8.0	1.00	3.0 m	3 m	Red (RD)	30;32	308-32402
	25.4	8.0	1.00	3.0 m	3 m	Transparent (CL)	30;32	308-32403

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.





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

#### HIS-A - with adhesive liner

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

#### Features and benefits

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



HIS-A - with adhesive liner.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>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>	self-extinguishing (except transparent), UL 224 VW-1 (except transparent)
<b>Insulation Class</b>	A (VDE 0530)



Heat Shrinkable Tubing 3:1 with adhesive



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Tools	Article-No.
HIS-A-3/1	3.0	1.0	1.00	10 m	Black (BK)	30;32	308-10300
	3.0	1.0	1.00	10 m	Transparent (CL)	30;32	308-10303
HIS-A-6/2	6.0	2.0	1.00	5 m	Black (BK)	30;32	308-10600
	6.0	2.0	1.00	5 m	Transparent (CL)	30;32	308-10603
HIS-A-9/3	9.0	3.0	1.00	5 m	Black (BK)	30;32	308-10900
	9.0	3.0	1.00	5 m	Transparent (CL)	30;32	308-10903
HIS-A-12/4	12.0	4.0	1.65	5 m	Black (BK)	30;32	308-11200
	12.0	4.0	1.65	5 m	Transparent (CL)	30;32	308-11203
HIS-A-18/6	19.0	6.0	2.10	4 m	Black (BK)	30;32	308-11800
	19.0	6.0	2.10	4 m	Transparent (CL)	30;32	308-11803
HIS-A-24/8	24.0	8.0	2.35	3 m	Black (BK)	30;32	308-12400
	24.0	8.0	2.35	3 m	Transparent (CL)	30;32	308-12403

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



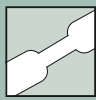
For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!

[www.HT.click/9-227](http://www.HT.click/9-227)





## Heat shrinkable tubing 3:1 in blister bags

### HIS-3 BAG

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

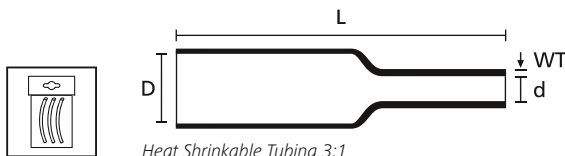
#### Features and benefits

- 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>	self-extinguishing (except transparent), UL 224 VW-1 (except transparent)



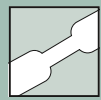
TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Pack Cont.	Colour	Tools	Article-No.
HIS-3-BAG-1.5/0.5	1.6	0.5	0.45	200.0	10 pcs.	Black (BK)	30;32	308-30151
	1.6	0.5	0.45	200.0	10 pcs.	Blue (BU)	30;32	308-30161
	1.6	0.5	0.45	200.0	10 pcs.	Brown (BN)	30;32	308-30163
	1.6	0.5	0.45	200.0	10 pcs.	Green-Yellow (GNYE)	30;32	308-30165
	1.6	0.5	0.45	200.0	10 pcs.	Grey (GY)	30;32	308-30162
	1.6	0.5	0.45	200.0	10 pcs.	Red (RD)	30;32	308-30160
	1.6	0.5	0.45	200.0	10 pcs.	Transparent (CL)	30;32	308-30164
HIS-3-BAG-3/1	3.2	1.0	0.55	200.0	10 pcs.	Black (BK)	30;32	308-30310
	3.2	1.0	0.55	200.0	10 pcs.	Blue (BU)	30;32	308-30312
	3.2	1.0	0.55	200.0	10 pcs.	Brown (BN)	30;32	308-30314
	3.2	1.0	0.55	200.0	10 pcs.	Green-Yellow (GNYE)	30;32	308-30316
	3.2	1.0	0.55	200.0	10 pcs.	Grey (GY)	30;32	308-30313
	3.2	1.0	0.55	200.0	10 pcs.	Red (RD)	30;32	308-30311
	3.2	1.0	0.55	200.0	10 pcs.	Transparent (CL)	30;32	308-30315

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



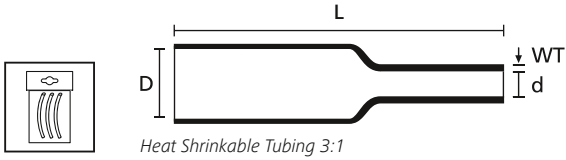
For product specific approvals and specifications please refer to the Appendix.





### Heat shrinkable tubing 3:1 in blister bags

#### HIS-3 BAG



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Pack Cont.	Colour	Tools	Article-No.
<b>HIS-3-BAG-6/2</b>	6.4	2.0	0.65	200.0	10 pcs.	Black (BK)	30;32	308-30610
	6.4	2.0	0.65	200.0	10 pcs.	Blue (BU)	30;32	308-30612
	6.4	2.0	0.65	200.0	10 pcs.	Brown (BN)	30;32	308-30614
	6.4	2.0	0.65	200.0	10 pcs.	Grey (GY)	30;32	308-30613
	6.4	2.0	0.65	200.0	10 pcs.	Red (RD)	30;32	308-30611
	6.4	2.0	0.65	200.0	10 pcs.	Transparent (CL)	30;32	308-30615
	6.4	2.0	0.65	200.0	10 pcs.	Green-Yellow (GNYE)	30;32	308-30617
<b>HIS-3-BAG-12/4</b>	12.7	4.0	0.80	200.0	10 pcs.	Black (BK)	30;32	308-31210
	12.7	4.0	0.80	200.0	10 pcs.	Blue (BU)	30;32	308-31212
	12.7	4.0	0.80	200.0	10 pcs.	Brown (BN)	30;32	308-31214
	12.7	4.0	0.80	200.0	10 pcs.	Grey (GY)	30;32	308-31213
	12.7	4.0	0.80	200.0	10 pcs.	Red (RD)	30;32	308-31211
	12.7	4.0	0.80	200.0	10 pcs.	Transparent (CL)	30;32	308-31215
	12.7	4.0	0.80	200.0	10 pcs.	Green-Yellow (GNYE)	30;32	308-31217

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!

[www.HT.click/9-229](http://www.HT.click/9-229)





### Point of sale display for TREDUX

#### TREDUX-Display

With TREDUX HellermannTyton has set a new standard in heat shrink tubing. TREDUX offers a complete range of thin, medium and thick wall tubing cut into 1 meter length. All tubing are labeled with an EAN barcode securely packed in display boxes. They can be removed individually for occasional use in smaller quantities. With the practical, valuable metal point of sale display is an optimal product presentation guaranteed. The following table is a proposed content for a TREDUX-Display.

#### Features and benefits

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



The TREDUX-Display.



TYPE	Content	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Pack Cont.	Colour	Tools	Article-No.
<b>TREDUX-Display</b>								
TREDUX-Display	-	-	-	-	1 pc.	Blue (BU)	30;32	319-30000
<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 MA47 - medium wall adhesive lined</b>								
TREDUX-MA47-19/6	1	19.0	6.0	2.40	10 pcs.	Black (BK)	30;32	323-50190
TREDUX-MA47-40/12	1	40.0	12.0	2.50	4 pcs.	Black (BK)	30;32	323-50400
TREDUX-MA47-30/8	2	30.0	8.0	2.60	6 pcs.	Black (BK)	30;32	323-50300
<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

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



Add items to your watchlist!

[www.HT.click/9-230](http://www.HT.click/9-230)







### 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



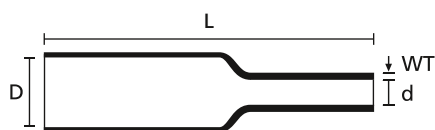
TREDUX shrinks a maximum of 3:1.



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

<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>	self-extinguishing, UL 224 VW-1	

**RoHS** ✓



Heat Shrinkable Tubing 3:1



Heat Shrinkable Tubing 2:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Pack Cont.	Colour	Shrink Ratio	Tools	Article-No.
TREDUX-1.5/0.5	1.5	0.5	0.45	1.0 m	20 pcs.	Black (BK)	3:1	30	319-00150
	1.5	0.5	0.45	1.0 m	20 pcs.	Green-Yellow (GNYE)	3:1	30	319-00157
TREDUX-3/1	3.0	1.0	0.55	1.0 m	20 pcs.	Black (BK)	3:1	30	319-00300
	3.0	1.0	0.55	1.0 m	20 pcs.	Green-Yellow (GNYE)	3:1	30	319-00307
TREDUX-6/2	6.0	2.0	0.65	1.0 m	15 pcs.	Black (BK)	3:1	30	319-00600
	6.0	2.0	0.65	1.0 m	15 pcs.	Green-Yellow (GNYE)	3:1	30	319-00607
TREDUX-12/4	12.0	4.0	0.80	1.0 m	10 pcs.	Black (BK)	3:1	30	319-01200
	12.0	4.0	0.80	1.0 m	10 pcs.	Green-Yellow (GNYE)	3:1	30	319-01207
TREDUX-24/8	24.0	8.0	1.20	1.0 m	5 pcs.	Black (BK)	3:1	30	319-02400
	24.0	8.0	1.20	1.0 m	5 pcs.	Green-Yellow (GNYE)	3:1	30	319-02407
TREDUX-38.1/19.1	38.1	19.1	1.02	1.0 m	6 pcs.	Black (BK)	2:1	30	319-03800
	38.1	19.1	1.02	1.0 m	6 pcs.	Green-Yellow (GNYE)	2:1	30	319-03807
TREDUX-50.8/25.4	50.8	25.4	1.14	1.0 m	6 pcs.	Black (BK)	2:1	30	319-05100
TREDUX-76.2/38.1	76.2	38.1	1.27	1.0 m	3 pcs.	Black (BK)	2:1	30	319-07600
TREDUX-101.6/50.8	101.6	50.8	1.40	1.0 m	2 pcs.	Black (BK)	2:1	30	319-10200

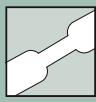
All dimensions in mm. Subject to technical changes.  
Minimum Order Quantity (MOQ) may differ from package content.



For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!  
[www.HT.click/9-231](http://www.HT.click/9-231)



## 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

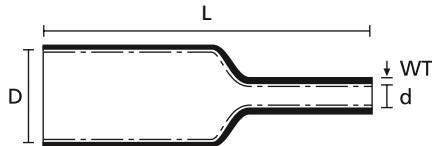
- Medium wall heat shrink tubing
- Thermoplastic adhesive liner for protection from moisture and weathering
- 1 m shrink tubing lengths delivered in handy display carton
- All tubes can be sold in single 1 meter length or entire box



TREDUX MA47 in handy display carton.



[www.HellermannTyton.com/Tredux-cat22](http://www.HellermannTyton.com/Tredux-cat22)



Heat Shrinkable Tubing 4:1 with adhesive

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	up to 4:1
<b>Operating Temperature</b>	-55 °C to +110 °C
<b>Softening Point Adhesive</b>	+85 °C
<b>Min. Shrink Temperature</b>	+120 °C
<b>Longitudinal Change After Shrinkage</b>	-10 % max.
<b>Dielectric Strength</b>	15 kV/mm
<b>Flammability</b>	not flame retardant
<b>Insulation Class</b>	A (VDE 0530)

HF ✓

RoHS ✓

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)	30;32	323-50120
TREDUX-MA47-19/6	19.0	6.0	2.40	1.0 m	10 pcs.	Black (BK)	30;32	323-50190
TREDUX-MA47-30/8	30.0	8.0	2.60	1.0 m	6 pcs.	Black (BK)	30;32	323-50300
TREDUX-MA47-40/12	40.0	12.0	2.50	1.0 m	4 pcs.	Black (BK)	30;32	323-50400
TREDUX-MA47-50/16	50.0	16.0	2.70	1.0 m	2 pcs.	Black (BK)	30;32	323-50500
TREDUX-MA47-63/19	63.0	19.0	2.80	1.0 m	2 pcs.	Black (BK)	30;32	323-50630
TREDUX-MA47-75/22	75.0	22.0	3.00	1.0 m	2 pcs.	Black (BK)	30;32	323-50750
TREDUX-MA47-95/30	95.0	30.0	3.00	1.0 m	1 pc.	Black (BK)	30;32	323-50950

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



Add items to your watchlist!

[www.HT.click/9-232](http://www.HT.click/9-232)





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

#### TREDUX HA47 - thick wall adhesive lined

The toughness and the 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 length or entire box



TREDUX HA47 - application below ground.

<b>MATERIAL</b>	Polyolefin, chemically 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>Flammability</b>	not flame retardant



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

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

Recommended Tools	
	32 CHG900
	563

For more information on toolings please refer to the Application Tooling chapter.



Add items to your watchlist!  
[www.HT.click/9-233](http://www.HT.click/9-233)





### Heat shrinkable tubing 2:1 - PVC

#### LVR

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

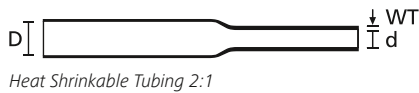
#### Features and benefits

- 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>Shelf Life</b>	12 months
<b>Storage Temperature</b>	+25 °C max.
<b>Flammability</b>	self-extinguishing, UL 224 VW-1



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Tools	Article-No.
LVR-2.4/1.2	2.4	1.2	0.40	250 m	Black (BK)	30;32	344-00240
LVR-3.2/1.6	3.2	1.6	0.40	250 m	Black (BK)	30;32	344-00320
LVR-4.8/2.4	4.8	2.4	0.50	250 m	Black (BK)	30;32	344-00480
LVR-6.4/3.2	6.4	3.2	0.60	250 m	Black (BK)	30;32	344-00640
LVR-9.5/4.8	9.5	4.8	0.60	125 m	Black (BK)	30;32	344-00950
LVR-12.7/6.4	12.7	6.4	0.70	75 m	Black (BK)	30;32	344-01270
LVR-19.1/9.5	19.0	9.5	0.80	100 m	Black (BK)	30;32	344-01900
LVR-25.4/12.7	25.4	12.7	1.00	100 m	Black (BK)	30;32	344-02540

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

Recommended Tools	
30	32
H6100	CHG900
564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!

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### 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>Flammability</b>	self-extinguishing



TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Tools	Article-No.
TL27-1.2/0.6	1.2	3/64 "	0.6	0.31	500 m	Black (BK)	30;32	302-20120
TL27-1.6/0.8	1.6	1/16 "	0.8	0.33	500 m	Black (BK)	30;32	302-20160
TL27-2.4/1.2	2.4	3/32 "	1.2	0.36	500 m	Black (BK)	30;32	302-30240
TL27-3.2/1.6	3.2	1/8 "	1.6	0.39	300 m	Black (BK)	30;32	302-30320
TL27-4.8/2.4	4.8	3/16 "	2.4	0.42	150 m	Black (BK)	30;32	302-30480
TL27-6.4/3.2	6.4	1/4 "	3.2	0.45	100 m	Black (BK)	30;32	302-30640
TL27-9.5/4.8	9.5	3/8 "	4.8	0.48	100 m	Black (BK)	30;32	302-30950
TL27-12.7/6.4	12.7	1/2 "	6.4	0.52	100 m	Black (BK)	30;32	302-21270
TL27-19.1/9.5	19.1	3/4 "	9.5	0.58	100 m	Black (BK)	30;32	302-31900
TL27-25.4/12.7	25.4	1 "	12.7	0.67	100 m	Black (BK)	30;32	302-32540
TL27-38.1/19.1	38.1	1-1/2 "	19.1	0.76	100 m	Black (BK)	30;32	302-23810
TL27-50.8/25.4	50.8	2 "	25.4	0.85	100 m	Black (BK)	30;32	302-25080

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

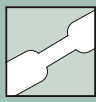
Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



Add items to your watchlist!  
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### Heat shrinkable tubing 2:1 - Self extinguishing

#### TCN20

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



Heat shrink tubing TCN20.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +125 °C
<b>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, self-extinguishing



Heat Shrinkable Tubing 2:1



TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Tools	Article-No.
TCN20-1.2/0.6	1.2	3/64 "	0.6	0.30	300 m	Black (BK)	30;32	300-73010
TCN20-1.6/0.8	1.6	1/16 "	0.8	0.35	300 m	Black (BK)	30;32	300-73020
TCN20-2.4/1.2	2.4	3/32 "	1.2	0.45	300 m	Black (BK)	30;32	300-73030
TCN20-3.2/1.6	3.2	1/8 "	1.6	0.45	300 m	Black (BK)	30;32	300-73040
TCN20-4.8/2.4	4.8	3/16 "	2.4	0.50	300 m	Black (BK)	30;32	300-73050
TCN20-6.4/3.2	6.4	1/4 "	3.2	0.55	300 m	Black (BK)	30;32	300-73060
TCN20-9.5/4.8	9.5	3/8 "	4.8	0.55	100 m	Black (BK)	30;32	300-73070
TCN20-12.7/6.4	12.7	1/2 "	6.4	0.65	100 m	Black (BK)	30;32	300-73080
TCN20-19.1/9.5	19.1	3/4 "	9.5	0.80	60 m	Black (BK)	30;32	300-73090
TCN20-25.4/12.7	25.4	1 "	12.7	0.90	60 m	Black (BK)	30;32	300-73100
TCN20-38.1/19.1	38.1	1-1/2 "	19.1	1.02	30 m	Black (BK)	30;32	300-73110
TCN20-50.8/25.4	50.8	2 "	25.4	1.15	30 m	Black (BK)	30;32	300-73120

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

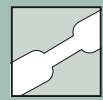
Recommended Tools	
30	32
H6100	CHG900
564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.





### 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
- Self extinguishing and low shrink temperature
- Highly flame-retardant, UL224 VW-1



Heat shrink tubing TCN20 overexpanded.

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



Heat Shrinkable Tubing 3:1



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Tools	Article-No.
TCN20-2.4/0.8	2.4	0.8	0.40	300 m	Black (BK)	30;32	300-73130
TCN20-3.2/1.2	3.2	1.2	0.50	300 m	Black (BK)	30;32	300-73140
TCN20-4.8/1.6	4.8	1.6	0.50	300 m	Black (BK)	30;32	300-73150
TCN20-6.6/2.4	6.6	2.4	0.55	300 m	Black (BK)	30;32	300-73160
TCN20-9.5/3.2	9.5	3.2	0.65	100 m	Black (BK)	30;32	300-73170
TCN20-12.7/4.8	12.7	4.8	0.75	100 m	Black (BK)	30;32	300-73180
TCN20-19.0/6.4	19.0	6.4	0.75	60 m	Black (BK)	30;32	300-73190
TCN20-25.4/9.5	25.4	9.5	0.80	60 m	Black (BK)	30;32	300-73200
TCN20-38.0/12.7	38.0	12.7	0.95	30 m	Black (BK)	30;32	300-73210

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!

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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 101.6 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.



$D$   $\frac{1}{2}$  WT  
 $d$   
 Heat Shrinkable Tubing 2:1



<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +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>	self-extinguishing, UL 224 VW-1

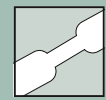
TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Designation as per VG-Norm	Tools	Article-No.
HFT-A-1.2/0.6	1.2	3/64 "	0.6	0.40	400 m	Black (BK)	VG 95343 T05 A 001 A	30;32	305-01200
	1.2	3/64 "	0.6	0.40	400 m	Blue (BU)	VG 95343 T05 A 001 G	30;32	305-01206
	1.2	3/64 "	0.6	0.40	400 m	Red (RD)	VG 95343 T05 A 001 C	30;32	305-01202
	1.2	3/64 "	0.6	0.40	400 m	White (WH)	VG 95343 T05 A 001 L	30;32	305-01209
	1.2	3/64 "	0.6	0.40	400 m	Yellow (YE)	VG 95343 T05 A 001 E	30;32	305-01204
HFT-A-1.6/0.8	1.6	1/16 "	0.8	0.40	400 m	Black (BK)	VG 95343 T05 A 002 A	30;32	305-01600
	1.6	1/16 "	0.8	0.40	400 m	Blue (BU)	VG 95343 T05 A 002 G	30;32	305-01606
	1.6	1/16 "	0.8	0.40	400 m	Red (RD)	VG 95343 T05 A 002 C	30;32	305-01602
	1.6	1/16 "	0.8	0.40	400 m	White (WH)	VG 95343 T05 A 002 L	30;32	305-01609
	1.6	1/16 "	0.8	0.40	400 m	Yellow (YE)	VG 95343 T05 A 002 E	30;32	305-01604
HFT-A-2.4/1.2	2.4	3/32 "	1.2	0.50	100 m	Blue (BU)	VG 95343 T05 A 003 G	30;32	305-02406
	2.4	3/32 "	1.2	0.50	100 m	Red (RD)	VG 95343 T05 A 003 C	30;32	305-02402
	2.4	3/32 "	1.2	0.50	100 m	White (WH)	VG 95343 T05 A 003 L	30;32	305-02409
	2.4	3/32 "	1.2	0.50	100 m	Yellow (YE)	VG 95343 T05 A 003 E	30;32	305-02404
	2.4	3/32 "	1.2	0.50	400 m	Black (BK)	VG 95343 T05 A 003 A	30;32	305-02400

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



For product specific approvals and specifications please refer to the Appendix.





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

#### HFT-A - self extinguishing



TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Designation as per VG-Norm	Tools	Article-No.
HFT-A-3.2/1.6	3.2	1/8 "	1.6	0.50	100 m	Blue (BU)	VG 95343 T05 A 004 G	30;32	305-03206
	3.2	1/8 "	1.6	0.50	100 m	Green-Yellow (GNYE)	VG 95343 T05 A 004 N	30;32	305-03245
	3.2	1/8 "	1.6	0.50	100 m	Red (RD)	VG 95343 T05 A 004 C	30;32	305-03202
	3.2	1/8 "	1.6	0.50	100 m	White (WH)	VG 95343 T05 A 004 L	30;32	305-03209
	3.2	1/8 "	1.6	0.50	100 m	Yellow (YE)	VG 95343 T05 A 004 E	30;32	305-03204
	3.2	1/8 "	1.6	0.50	400 m	Black (BK)	VG 95343 T05 A 004 A	30;32	305-03200
HFT-A-4.8/2.4	4.8	3/16 "	2.4	0.50	75 m	Blue (BU)	VG 95343 T05 A 005 G	30;32	305-04806
	4.8	3/16 "	2.4	0.50	75 m	Green-Yellow (GNYE)	VG 95343 T05 A 005 N	30;32	305-04845
	4.8	3/16 "	2.4	0.50	75 m	Red (RD)	VG 95343 T05 A 005 C	30;32	305-04802
	4.8	3/16 "	2.4	0.50	75 m	White (WH)	VG 95343 T05 A 005 L	30;32	305-04809
	4.8	3/16 "	2.4	0.50	75 m	Yellow (YE)	VG 95343 T05 A 005 E	30;32	305-04804
	4.8	3/16 "	2.4	0.50	300 m	Black (BK)	VG 95343 T05 A 005 A	30;32	305-04800
HFT-A-6.4/3.2	6.4	1/4 "	3.2	0.60	75 m	Blue (BU)	VG 95343 T05 A 006 G	30;32	305-06406
	6.4	1/4 "	3.2	0.60	75 m	Green-Yellow (GNYE)	VG 95343 T05 A 006 N	30;32	305-06445
	6.4	1/4 "	3.2	0.60	75 m	Red (RD)	VG 95343 T05 A 006 C	30;32	305-06402
	6.4	1/4 "	3.2	0.60	75 m	White (WH)	VG 95343 T05 A 006 L	30;32	305-06409
	6.4	1/4 "	3.2	0.60	75 m	Yellow (YE)	VG 95343 T05 A 006 E	30;32	305-06404
	6.4	1/4 "	3.2	0.60	300 m	Black (BK)	VG 95343 T05 A 006 A	30;32	305-06400
HFT-A-9.5/4.8	9.5	3/8 "	4.8	0.60	50 m	Blue (BU)	VG 95343 T05 A 007 G	30;32	305-09506
	9.5	3/8 "	4.8	0.60	50 m	Green-Yellow (GNYE)	VG 95343 T05 A 007 N	30;32	305-09545
	9.5	3/8 "	4.8	0.60	50 m	Red (RD)	VG 95343 T05 A 007 C	30;32	305-09502
	9.5	3/8 "	4.8	0.60	50 m	White (WH)	VG 95343 T05 A 007 L	30;32	305-09509
	9.5	3/8 "	4.8	0.60	50 m	Yellow (YE)	VG 95343 T05 A 007 E	30;32	305-09504
	9.5	3/8 "	4.8	0.60	150 m	Black (BK)	VG 95343 T05 A 007 A	30;32	305-09500
HFT-A-12.7/6.4	12.7	1/2 "	6.4	0.60	50 m	Blue (BU)	VG 95343 T05 A 008 G	30;32	305-12706
	12.7	1/2 "	6.4	0.60	50 m	Green-Yellow (GNYE)	VG 95343 T05 A 008 N	30;32	305-12745
	12.7	1/2 "	6.4	0.60	50 m	Red (RD)	VG 95343 T05 A 008 C	30;32	305-12702
	12.7	1/2 "	6.4	0.60	50 m	White (WH)	VG 95343 T05 A 008 L	30;32	305-12709
	12.7	1/2 "	6.4	0.60	50 m	Yellow (YE)	VG 95343 T05 A 008 E	30;32	305-12704
	12.7	1/2 "	6.4	0.60	100 m	Black (BK)	VG 95343 T05 A 008 A	30;32	305-12700
HFT-A-19.0/9.5	19.0	3/4 "	9.5	0.80	25 m	Blue (BU)	VG 95343 T05 A 009 G	30;32	305-19006
	19.0	3/4 "	9.5	0.80	25 m	Green-Yellow (GNYE)	VG 95343 T05 A 009 N	30;32	305-19045
	19.0	3/4 "	9.5	0.80	25 m	Red (RD)	VG 95343 T05 A 009 C	30;32	305-19002
	19.0	3/4 "	9.5	0.80	25 m	White (WH)	VG 95343 T05 A 009 L	30;32	305-19009
	19.0	3/4 "	9.5	0.80	25 m	Yellow (YE)	VG 95343 T05 A 009 E	30;32	305-19004
	19.0	3/4 "	9.5	0.80	50 m	Black (BK)	VG 95343 T05 A 009 A	30;32	305-19000

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



For product specific approvals and specifications please refer to the Appendix.



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

#### HFT-A - self extinguishing



TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Designation as per VG-Norm	Tools	Article-No.
HFT-A-25.4/12.7	25.4	1 "	12.7	0.90	25 m	Blue (BU)	VG 95343 T05 A 010 G	30;32	305-25406
	25.4	1 "	12.7	0.90	25 m	Green-Yellow (GNYE)	VG 95343 T05 A 010 N	30;32	305-25445
	25.4	1 "	12.7	0.90	25 m	Red (RD)	VG 95343 T05 A 010 C	30;32	305-25402
	25.4	1 "	12.7	0.90	25 m	White (WH)	VG 95343 T05 A 010 L	30;32	305-25409
	25.4	1 "	12.7	0.90	25 m	Yellow (YE)	VG 95343 T05 A 010 E	30;32	305-25404
	25.4	1 "	12.7	0.90	50 m	Black (BK)	VG 95343 T05 A 010 A	30;32	305-25400
HFT-A-38.0/19.0	38.0	1-1/2 "	19.0	1.00	50 m	Black (BK)	VG 95343 T05 A 011 A	30;32	305-38100
	38.0	1-1/2 "	19.0	1.00	50 m	Blue (BU)	VG 95343 T05 A 011 G	30;32	305-38106
	38.0	1-1/2 "	19.0	1.00	50 m	Green-Yellow (GNYE)	VG 95343 T05 A 011 N	30;32	305-38145
	38.0	1-1/2 "	19.0	1.00	50 m	Red (RD)	VG 95343 T05 A 011 C	30;32	305-38102
	38.0	1-1/2 "	19.0	1.00	50 m	White (WH)	VG 95343 T05 A 011 L	30;32	305-38109
	38.0	1-1/2 "	19.0	1.00	50 m	Yellow (YE)	VG 95343 T05 A 011 E	30;32	305-38104
HFT-A-50.8/25.4	51.0	2 "	25.4	1.10	35 m	Black (BK)	VG 95343 T05 A 012 A	30;32	305-50800
	51.0	2 "	25.4	1.10	35 m	Blue (BU)	VG 95343 T05 A 012 G	30;32	305-50806
	51.0	2 "	25.4	1.10	35 m	Red (RD)	VG 95343 T05 A 012 C	30;32	305-50802
	51.0	2 "	25.4	1.10	35 m	White (WH)	VG 95343 T05 A 012 L	30;32	305-50809
	51.0	2 "	25.4	1.10	35 m	Yellow (YE)	VG 95343 T05 A 012 E	30;32	305-50804
HFT-A-76.0/38.0	76.0	3 "	38.0	1.30	25 m	Black (BK)	VG 95343 T05 A 013 A	30;32	305-76200
	76.0	3 "	38.0	1.30	25 m	Blue (BU)	VG 95343 T05 A 013 G	30;32	305-76206
	76.0	3 "	38.0	1.30	25 m	Red (RD)	VG 95343 T05 A 013 C	30;32	305-76202
	76.0	3 "	38.0	1.30	25 m	White (WH)	VG 95343 T05 A 013 L	30;32	305-76209
	76.0	3 "	38.0	1.30	25 m	Yellow (YE)	VG 95343 T05 A 013 E	30;32	305-76204
HFT-A-101.6/50.8	102.0	4 "	51.0	1.40	25 m	Black (BK)	VG 95343 T05 A 014 A	30;32	305-91600
	102.0	4 "	51.0	1.40	25 m	Blue (BU)	VG 95343 T05 A 014 G	30;32	305-91606
	102.0	4 "	51.0	1.40	25 m	Red (RD)	VG 95343 T05 A 014 C	30;32	305-91602
	102.0	4 "	51.0	1.40	25 m	White (WH)	VG 95343 T05 A 014 L	30;32	305-91609
	102.0	4 "	51.0	1.40	25 m	Yellow (YE)	VG 95343 T05 A 014 E	30;32	305-91604

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!

[www.HT.click/9-240](http://www.HT.click/9-240)





### 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 lots of industrial standards
- Big variety of different colours and sizes
- Flame retarded 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!**



Heat Shrinkable Tubing 2:1

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +135 °C
<b>Min. Shrink Temperature</b>	+90 °C
<b>Longitudinal Change After Shrinkage</b>	+/-5 %
<b>Dielectric Strength</b>	≥30 kV/mm
<b>Flammability</b>	self-extinguishing, UL 224 VW-1



TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Tools	Article-No.
TF21-1.2/0.6	1.2	3/64 "	0.6	0.41	100 m	Blue (BU)	30;32	309-20126
	1.2	3/64 "	0.6	0.41	100 m	Red (RD)	30;32	309-20122
	1.2	3/64 "	0.6	0.41	100 m	White (WH)	30;32	309-20129
	1.2	3/64 "	0.6	0.41	100 m	Yellow (YE)	30;32	309-20124
	1.2	3/64 "	0.6	0.41	300 m	Black (BK)	30;32	309-10120
TF21-1.6/0.8	1.6	1/16 "	0.8	0.43	100 m	Blue (BU)	30;32	309-20166
	1.6	1/16 "	0.8	0.43	100 m	Red (RD)	30;32	309-20162
	1.6	1/16 "	0.8	0.43	100 m	White (WH)	30;32	309-20169
	1.6	1/16 "	0.8	0.43	100 m	Yellow (YE)	30;32	309-20164
	1.6	1/16 "	0.8	0.43	300 m	Black (BK)	30;32	309-10160
TF21-2.4/1.2	2.4	3/32 "	1.2	0.51	100 m	Blue (BU)	30;32	309-20246
	2.4	3/32 "	1.2	0.51	100 m	Green-Yellow (GNYE)	30;32	309-40247
	2.4	3/32 "	1.2	0.51	100 m	Red (RD)	30;32	309-20242
	2.4	3/32 "	1.2	0.51	100 m	White (WH)	30;32	309-20249
	2.4	3/32 "	1.2	0.51	100 m	Yellow (YE)	30;32	309-20244
	2.4	3/32 "	1.2	0.51	300 m	Black (BK)	30;32	309-10240

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!  
[www.HT.click/9-241](http://www.HT.click/9-241)



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

**TF21**

*Heat Shrinkable Tubing 2:1*

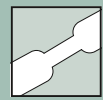
TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Tools	Article-No.
TF21-3.2/1.6	3.2	1/8 "	1.6	0.51	100 m	Blue (BU)	30;32	309-20326
	3.2	1/8 "	1.6	0.51	100 m	Green-Yellow (GNYE)	30;32	309-40327
	3.2	1/8 "	1.6	0.51	100 m	Red (RD)	30;32	309-20322
	3.2	1/8 "	1.6	0.51	100 m	White (WH)	30;32	309-20329
	3.2	1/8 "	1.6	0.51	100 m	Yellow (YE)	30;32	309-20324
	3.2	1/8 "	1.6	0.51	300 m	Black (BK)	30;32	309-10320
TF21-4.8/2.4	4.8	3/16 "	2.4	0.51	60 m	Blue (BU)	30;32	309-50486
	4.8	3/16 "	2.4	0.51	60 m	Green-Yellow (GNYE)	30;32	309-50487
	4.8	3/16 "	2.4	0.51	60 m	Red (RD)	30;32	309-50482
	4.8	3/16 "	2.4	0.51	60 m	White (WH)	30;32	309-50489
	4.8	3/16 "	2.4	0.51	60 m	Yellow (YE)	30;32	309-50484
	4.8	3/16 "	2.4	0.51	300 m	Black (BK)	30;32	309-10480
TF21-6.4/3.2	6.4	1/4 "	3.2	0.64	60 m	Blue (BU)	30;32	309-50646
	6.4	1/4 "	3.2	0.64	60 m	Green-Yellow (GNYE)	30;32	309-50647
	6.4	1/4 "	3.2	0.64	60 m	Red (RD)	30;32	309-50642
	6.4	1/4 "	3.2	0.64	60 m	White (WH)	30;32	309-50649
	6.4	1/4 "	3.2	0.64	60 m	Yellow (YE)	30;32	309-50644
	6.4	1/4 "	3.2	0.64	300 m	Black (BK)	30;32	309-10640
TF21-9.5/4.8	9.5	3/8 "	4.8	0.64	50 m	Blue (BU)	30;32	309-20956
	9.5	3/8 "	4.8	0.64	50 m	Green-Yellow (GNYE)	30;32	309-50957
	9.5	3/8 "	4.8	0.64	50 m	Red (RD)	30;32	309-20952
	9.5	3/8 "	4.8	0.64	50 m	White (WH)	30;32	309-20959
	9.5	3/8 "	4.8	0.64	50 m	Yellow (YE)	30;32	309-20954
	9.5	3/8 "	4.8	0.64	150 m	Black (BK)	30;32	309-10950
TF21-12.7/6.4	12.7	1/2 "	6.4	0.64	50 m	Blue (BU)	30;32	309-21276
	12.7	1/2 "	6.4	0.64	50 m	Green-Yellow (GNYE)	30;32	309-41277
	12.7	1/2 "	6.4	0.64	50 m	Red (RD)	30;32	309-21272
	12.7	1/2 "	6.4	0.64	50 m	White (WH)	30;32	309-21279
	12.7	1/2 "	6.4	0.64	50 m	Yellow (YE)	30;32	309-21274
	12.7	1/2 "	6.4	0.64	100 m	Black (BK)	30;32	309-11270
TF21-19.1/9.5	19.1	3/4 "	9.5	0.76	50 m	Black (BK)	30;32	309-11900
	19.1	3/4 "	9.5	0.76	50 m	Blue (BU)	30;32	309-11906
	19.1	3/4 "	9.5	0.76	50 m	Green-Yellow (GNYE)	30;32	309-11907
	19.1	3/4 "	9.5	0.76	50 m	Red (RD)	30;32	309-11902
	19.1	3/4 "	9.5	0.76	50 m	White (WH)	30;32	309-11909
	19.1	3/4 "	9.5	0.76	50 m	Yellow (YE)	30;32	309-11904

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



For product specific approvals and specifications please refer to the Appendix.





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

TF21



Heat Shrinkable Tubing 2:1

TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Tools	Article-No.
TF21-25.4/12.7	25.4	1 "	12.7	0.89	50 m	Black (BK)	30;32	309-12540
	25.4	1 "	12.7	0.89	50 m	Blue (BU)	30;32	309-12546
	25.4	1 "	12.7	0.89	50 m	Green-Yellow (GNYE)	30;32	309-12547
	25.4	1 "	12.7	0.89	50 m	Red (RD)	30;32	309-12542
	25.4	1 "	12.7	0.89	50 m	White (WH)	30;32	309-12549
	25.4	1 "	12.7	0.89	50 m	Yellow (YE)	30;32	309-12544
TF21-38.0/19.0	38.1	1-1/2 "	19.1	1.02	60 m	Black (BK)	30;32	309-13810
	38.1	1-1/2 "	19.1	1.02	60 m	Blue (BU)	30;32	309-13816
	38.1	1-1/2 "	19.1	1.02	60 m	Green-Yellow (GNYE)	30;32	309-13817
	38.1	1-1/2 "	19.1	1.02	60 m	Red (RD)	30;32	309-13812
	38.1	1-1/2 "	19.1	1.02	60 m	White (WH)	30;32	309-13819
	38.1	1-1/2 "	19.1	1.02	60 m	Yellow (YE)	30;32	309-13814
TF21-50.8/25.4	50.8	2 "	25.4	1.14	60 m	Black (BK)	30;32	309-15080
	50.8	2 "	25.4	1.14	60 m	Blue (BU)	30;32	309-15086
	50.8	2 "	25.4	1.14	60 m	Green-Yellow (GNYE)	30;32	309-15087
	50.8	2 "	25.4	1.14	60 m	Red (RD)	30;32	309-15082
	50.8	2 "	25.4	1.14	60 m	White (WH)	30;32	309-15089
	50.8	2 "	25.4	1.14	60 m	Yellow (YE)	30;32	309-15084
TF21-76.0/38.0	76.2	3 "	38.1	1.27	30 m	Black (BK)	30;32	309-17600
	76.2	3 "	38.1	1.27	30 m	Blue (BU)	30;32	309-17606
	76.2	3 "	38.1	1.27	30 m	Red (RD)	30;32	309-17602
	76.2	3 "	38.1	1.27	30 m	White (WH)	30;32	309-17609
	76.2	3 "	38.1	1.27	30 m	Yellow (YE)	30;32	309-17604
TF21-101.6/50.8	101.6	4 "	50.8	1.40	15 m	Black (BK)	30;32	309-11020
	101.6	4 "	50.8	1.40	15 m	Blue (BU)	30;32	309-11026
	101.6	4 "	50.8	1.40	15 m	Red (RD)	30;32	309-11022
	101.6	4 "	50.8	1.40	15 m	White (WH)	30;32	309-11029
	101.6	4 "	50.8	1.40	15 m	Yellow (YE)	30;32	309-11024

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!  
[www.HT.click/9-243](http://www.HT.click/9-243)



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

#### TF24

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

#### Features and benefits

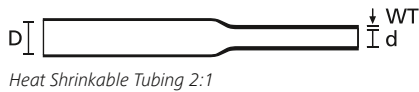
- Transparent, flexible polyolefin tubing
- Protects identification marking perfect
- Halogen free
- Good mechanical and chemical resistance
- VG-approval and additional industrial approvals



TF24 transparent tubing with 2:1 shrink ratio.



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



<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
<b>Flammability</b>	not flame retardant

TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Designation as per VG-Norm	Tools	Article-No.
TF24-1.2/0.6	1.2	3/64 "	0.6	0.41	100 m	Transparent (CL)	VG 95343 T05 B 001 M	30;32	309-40123
TF24-1.6/0.8	1.6	1/16 "	0.8	0.43	100 m	Transparent (CL)	VG 95343 T05 B 002 M	30;32	309-40163
TF24-2.4/1.2	2.4	3/32 "	1.2	0.51	100 m	Transparent (CL)	VG 95343 T05 B 003 M	30;32	309-40243
TF24-3.2/1.6	3.2	1/8 "	1.6	0.51	100 m	Transparent (CL)	VG 95343 T05 B 004 M	30;32	309-40323
TF24-4.8/2.4	4.8	3/16 "	2.4	0.51	60 m	Transparent (CL)	VG 95343 T05 B 005 M	30;32	309-50483
TF24-6.4/3.2	6.4	1/4 "	3.2	0.64	60 m	Transparent (CL)	VG 95343 T05 B 006 M	30;32	309-50643
TF24-9.5/4.8	9.5	3/8 "	4.8	0.64	50 m	Transparent (CL)	VG 95343 T05 B 007 M	30;32	309-40953
TF24-12.7/6.4	12.7	1/2 "	6.4	0.64	50 m	Transparent (CL)	VG 95343 T05 B 008 M	30;32	309-41273
TF24-19.1/9.5	19.1	3/4 "	9.5	0.76	50 m	Transparent (CL)	VG 95343 T05 B 009 M	30;32	309-31903
TF24-25.4/12.7	25.4	1 "	12.7	0.89	50 m	Transparent (CL)	VG 95343 T05 B 010 M	30;32	309-32543
TF24-38.1/19.1	38.1	1-1/2 "	19.1	1.02	60 m	Transparent (CL)	VG 95343 T05 B 011 M	30;32	309-33813
TF24-50.8/25.4	50.8	2 "	25.4	1.14	60 m	Transparent (CL)	VG 95343 T05 B 012 M	30;32	309-35083
TF24-76.2/38.1	76.2	3 "	38.1	1.27	30 m	Transparent (CL)	VG 95343 T05 B 013 M	30;32	309-37603
TF24-101.6/50.8	101.6	4 "	50.8	1.40	15 m	Transparent (CL)	VG 95343 T05 B 014 M	30;32	309-31023

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.

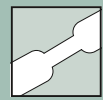


Add items to your watchlist!

[www.HT.click/9-244](http://www.HT.click/9-244)







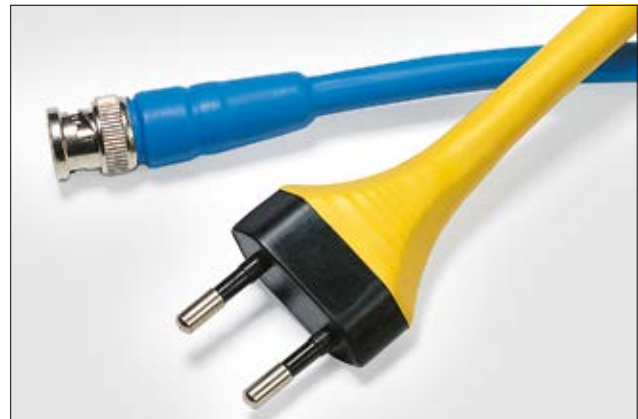
### Heat shrinkable tubing 3:1 - flexible and coloured

#### TF31

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

#### Features and benefits

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



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



[www.HellermannTyton.com/TF31-cat22](http://www.HellermannTyton.com/TF31-cat22)



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

<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 %/-15 %
<b>Dielectric Strength</b>	≥30 kV/mm
<b>Flammability</b>	self-extinguishing, UL 224 VW-1



Heat Shrinkable Tubing 3:1



**More colours on request.**



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Tools	Article-No.
TF31-1.5/0.5	1.5	0.5	0.50	30 m	Black (BK)	30;32	333-30150
	1.5	0.5	0.50	30 m	Blue (BU)	30;32	333-30156
	1.5	0.5	0.50	30 m	Green (GN)	30;32	333-30155
	1.5	0.5	0.50	30 m	Green-Yellow (GNYE)	30;32	333-30157
	1.5	0.5	0.50	30 m	Red (RD)	30;32	333-30152
	1.5	0.5	0.50	30 m	White (WH)	30;32	333-30159
	1.5	0.5	0.50	30 m	Yellow (YE)	30;32	333-30154
	1.5	0.5	0.50	300 m	Black (BK)	30;32	333-20150
TF31-3/1	3.0	1.0	0.60	30 m	Black (BK)	30;32	333-30300
	3.0	1.0	0.60	30 m	Blue (BU)	30;32	333-30306
	3.0	1.0	0.60	30 m	Green (GN)	30;32	333-30305
	3.0	1.0	0.60	30 m	Green-Yellow (GNYE)	30;32	333-30307
	3.0	1.0	0.60	30 m	Red (RD)	30;32	333-30302
	3.0	1.0	0.60	30 m	White (WH)	30;32	333-30309
	3.0	1.0	0.60	30 m	Yellow (YE)	30;32	333-30304
	3.0	1.0	0.60	150 m	Black (BK)	30;32	333-40300

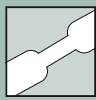
All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content.



For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!  
[www.HT.click/9-245](http://www.HT.click/9-245)



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

TF31



Heat Shrinkable Tubing 3:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Tools	Article-No.
TF31-6/2	6.0	2.0	0.70	30 m	Black (BK)	30;32	333-30600
	6.0	2.0	0.70	30 m	Blue (BU)	30;32	333-30606
	6.0	2.0	0.70	30 m	Green (GN)	30;32	333-30605
	6.0	2.0	0.70	30 m	Green-Yellow (GNYE)	30;32	333-30607
	6.0	2.0	0.70	30 m	Red (RD)	30;32	333-30602
	6.0	2.0	0.70	30 m	White (WH)	30;32	333-30609
	6.0	2.0	0.70	30 m	Yellow (YE)	30;32	333-30604
	6.0	2.0	0.70	150 m	Black (BK)	30;32	333-40600
TF31-9/3	9.0	3.0	0.80	30 m	Black (BK)	30;32	333-30900
	9.0	3.0	0.80	30 m	Blue (BU)	30;32	333-30906
	9.0	3.0	0.80	30 m	Green (GN)	30;32	333-30905
	9.0	3.0	0.80	30 m	Green-Yellow (GNYE)	30;32	333-30907
	9.0	3.0	0.80	30 m	Red (RD)	30;32	333-30902
	9.0	3.0	0.80	30 m	White (WH)	30;32	333-30909
	9.0	3.0	0.80	30 m	Yellow (YE)	30;32	333-30904
	9.0	3.0	0.80	150 m	Black (BK)	30;32	333-20900
TF31-12/4	12.0	4.0	0.85	30 m	Black (BK)	30;32	333-31200
	12.0	4.0	0.85	30 m	Blue (BU)	30;32	333-31206
	12.0	4.0	0.85	30 m	Green (GN)	30;32	333-31205
	12.0	4.0	0.85	30 m	Green-Yellow (GNYE)	30;32	333-31207
	12.0	4.0	0.85	30 m	Red (RD)	30;32	333-31202
	12.0	4.0	0.85	30 m	White (WH)	30;32	333-31209
	12.0	4.0	0.85	30 m	Yellow (YE)	30;32	333-31204
	12.0	4.0	0.85	100 m	Black (BK)	30;32	333-21200
TF31-18/6	18.0	6.0	1.00	30 m	Black (BK)	30;32	333-31800
	18.0	6.0	1.00	30 m	Blue (BU)	30;32	333-31806
	18.0	6.0	1.00	30 m	Green (GN)	30;32	333-31805
	18.0	6.0	1.00	30 m	Green-Yellow (GNYE)	30;32	333-31807
	18.0	6.0	1.00	30 m	Red (RD)	30;32	333-31802
	18.0	6.0	1.00	30 m	White (WH)	30;32	333-31809
	18.0	6.0	1.00	30 m	Yellow (YE)	30;32	333-31804
	18.0	6.0	1.00	60 m	Black (BK)	30;32	333-41800

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



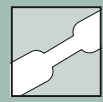
For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!

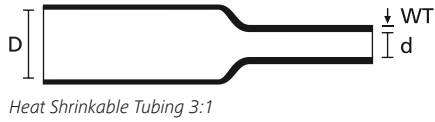
[www.HT.click/9-246](http://www.HT.click/9-246)





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

TF31



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Tools	Article-No.
TF31-24/8	24.0	8.0	1.20	30 m	Black (BK)	30;32	333-32400
	24.0	8.0	1.20	30 m	Blue (BU)	30;32	333-32406
	24.0	8.0	1.20	30 m	Green (GN)	30;32	333-32405
	24.0	8.0	1.20	30 m	Green-Yellow (GNYE)	30;32	333-32407
	24.0	8.0	1.20	30 m	Red (RD)	30;32	333-32402
	24.0	8.0	1.20	30 m	White (WH)	30;32	333-32409
	24.0	8.0	1.20	30 m	Yellow (YE)	30;32	333-32404
	24.0	8.0	1.20	60 m	Black (BK)	30;32	333-42400
TF31-40/13	40.0	13.0	1.25	30 m	Black (BK)	30;32	333-34000
	40.0	13.0	1.25	30 m	Blue (BU)	30;32	333-34006
	40.0	13.0	1.25	30 m	Green (GN)	30;32	333-34005
	40.0	13.0	1.25	30 m	Green-Yellow (GNYE)	30;32	333-34007
	40.0	13.0	1.25	30 m	Red (RD)	30;32	333-34002
	40.0	13.0	1.25	30 m	White (WH)	30;32	333-34009
	40.0	13.0	1.25	30 m	Yellow (YE)	30;32	333-34004
	40.0	13.0	1.25	60 m	Black (BK)	30;32	333-24000

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



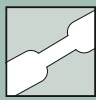
For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!

[www.HT.click/9-247](http://www.HT.click/9-247)





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

### TF34

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

#### Features and benefits

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



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



[www.HellermannTyton.com/TF34-cat22](http://www.HellermannTyton.com/TF34-cat22)



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

<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
<b>Flammability</b>	not flame retardant



Heat Shrinkable Tubing 3:1

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Tools	Article-No.
TF34-1.5/0.5	1.5	0.5	0.50	30 m	Transparent (CL)	30;32	333-30153
TF34-3/1	3.0	1.0	0.50	30 m	Transparent (CL)	30;32	333-30303
TF34-6/2	6.0	2.0	0.70	30 m	Transparent (CL)	30;32	333-30603
TF34-9/3	9.0	3.0	0.80	30 m	Transparent (CL)	30;32	333-30903
TF34-12/4	12.0	4.0	0.85	30 m	Transparent (CL)	30;32	333-31203
TF34-18/6	18.0	6.0	1.00	30 m	Transparent (CL)	30;32	333-31803
TF34-24/8	24.0	8.0	1.20	30 m	Transparent (CL)	30;32	333-32403
TF34-40/13	40.0	13.0	1.25	30 m	Transparent (CL)	30;32	333-34003

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

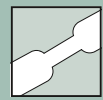
For more information on toolings please refer to the Application Tooling chapter.



Add items to your watchlist!

[www.HT.click/9-248](http://www.HT.click/9-248)





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

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



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



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

<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>	flame-retardant, UL 224

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



Heat Shrinkable Tubing 3:1 with adhesive



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Shrink Ratio	Tools	Article-No.
TA32-3/1	3.0	1.0	0.95	1.2 m	Black (BK)	3:1	30;32	318-30300
TA32-4.5/1.5	4.8	1.5	1.10	1.2 m	Black (BK)	3:1	30;32	318-30450
TA32-6/2	6.4	2.0	1.20	1.2 m	Black (BK)	3:1	30;32	318-30600
TA32-9/3	9.5	3.0	1.30	1.2 m	Black (BK)	3:1	30;32	318-30900
TA32-12/4	12.7	4.0	1.40	1.2 m	Black (BK)	3:1	30;32	318-31200
TA32-19/6	19.0	6.0	1.80	1.2 m	Black (BK)	3:1	30;32	318-31900
TA32-24/8	24.0	8.0	2.50	1.2 m	Black (BK)	3:1	30;32	318-32400
TA32-40/13	40.0	13.0	2.50	1.2 m	Black (BK)	3:1	30;32	318-34000

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!  
[www.HT.click/9-249](http://www.HT.click/9-249)



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

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



Heat Shrinkable Tubing 4:1 with adhesive

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

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Shrink Ratio	Tools	Article-No.
TA42-4/1	4.0	1.0	1.00	1.2 m	Black (BK)	4:1	30;32	318-40400
TA42-8/2	8.0	2.0	1.20	1.2 m	Black (BK)	4:1	30;32	318-40800
TA42-12/3	12.0	3.0	1.40	1.2 m	Black (BK)	4:1	30;32	318-41200
TA42-16/4	16.0	4.0	1.80	1.2 m	Black (BK)	4:1	30;32	318-41600
TA42-24/6	24.0	6.0	2.20	1.2 m	Black (BK)	4:1	30;32	318-42400
TA42-32/8	32.0	8.0	2.50	1.2 m	Black (BK)	4:1	30;32	318-43200
TA42-52/13	52.0	13.0	2.55	1.2 m	Black (BK)	4:1	30;32	318-45200

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

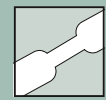
Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.



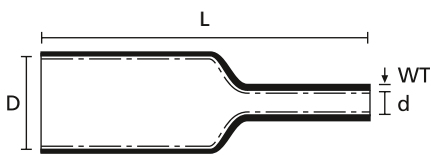


### Heat shrinkable tubing adhesive lined

TA46 heat shrink tubing is designed for insulating, sealing and protecting inline wire splices, wire bundles, terminals and connectors. The adhesive lined heat shrink tubing provides moisture proof environmental sealing of electrical splices in wire harnesses especially complying to automotive industry requirements. Besides electrical insulation, the self-extinguishing polyolefin jacket provides mechanical protection against abrasion, cutting and bending. The highly viscous EVA based adhesive once heated flexibly flows between wires or conductors. The combination of excellent adhesive bonding properties and strong jacket shrink performance provides excellent bonding to cable jackets and environmental sealing of complex profiles.

#### Features and benefits

- High 4:1 shrink ratio to cover various diameters and profiles
- Semi-rigid jacket offers mechanical protection against abrasion, cutting and bending
- EVA based adhesive for efficient environmental sealing
- Insulating, protecting and sealing in one process step
- Suitable for processing in automated heat shrink application equipment
- Continuous operating temperature -40°C to +125°C
- Excellent strain relief due to combination of tough outer jacket and highly efficient adhesive



Heat Shrinkable Tubing 4:1 with adhesive



TA46 - Environmental sealing, insulating and protecting inline wire splices.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Shrink Ratio</b>	up to 4:1
<b>Operating Temperature</b>	-40 °C to +125 °C
<b>Longitudinal Change After Shrinkage</b>	-10 % max.
<b>Dielectric Strength</b>	>10 kV/mm
<b>Flammability</b>	self-extinguishing



#### TA46 - Pre-cut tubing



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Tools	Article-No.
TA46-5.75/1.25-50mm	5.75	1.25	1.30	50.0	Black (BK)	30	318-00001
TA46-7.5/1.65-50mm	7.50	1.65	1.50	50.0	Black (BK)	30	318-00011
TA46-11.0/2.4-65mm	11.00	2.40	1.90	65.0	Black (BK)	30	318-00021
TA46-18.3/4.35-75mm	18.30	4.35	2.40	75.0	Black (BK)	30	318-00031

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

#### TA46 - 1.2m length



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Tools	Article-No.
TA46-5.75/1.25	5.75	1.25	1.30	1.2 m	Black (BK)	30	318-00000
TA46-7.5/1.65	7.50	1.65	1.50	1.2 m	Black (BK)	30	318-00010
TA46-11.0/2.4	11.00	2.40	1.90	1.2 m	Black (BK)	30	318-00020
TA46-18.3/4.35	18.30	4.35	2.40	1.2 m	Black (BK)	30	318-00030
TA46-24/6	24.00	6.00	-	1.2 m	Black (BK)	30	318-00040
TA46-32/8	32.00	8.00	-	1.2 m	Black (BK)	30	318-00050
TA46-52/13	52.00	13.00	-	1.2 m	Black (BK)	30	318-00060

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



Add items to your watchlist!  
[www.HT.click/9-251](http://www.HT.click/9-251)







### Heat shrinkable tubing adhesive lined

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

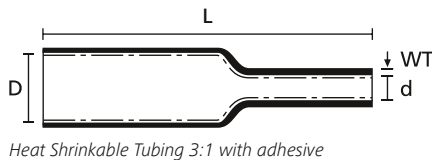
- Flexible, thin wall polyolefin heat shrink tubing
- With coextruded hot melt adhesive inner wall
- Protects against moisture
- Provides an environmental sealing of complex parts



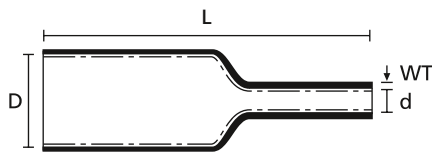
**Cut lengths available on request.  
Please contact us!**



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



Heat Shrinkable Tubing 3:1 with adhesive



Heat Shrinkable Tubing 4:1 with adhesive



<b>MATERIAL</b>	Polyolefin, chemically 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>Flammability</b>	self-extinguishing



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

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Shrink Ratio	Tools	Article-No.
EPS-300-3/1	3.0	1.0	1.00	400 m	Black (BK)	3:1	30;32	340-03010
EPS-300-6/2	6.0	2.0	1.00	300 m	Black (BK)	3:1	30;32	340-06020
EPS-300-9/3	9.0	3.0	1.40	150 m	Black (BK)	3:1	30;32	340-09030
EPS-300-12/4	12.0	4.0	1.80	100 m	Black (BK)	3:1	30;32	340-12040
EPS-300-19/6	19.0	6.0	2.20	50 m	Black (BK)	3:1	30;32	340-19060
EPS-300-24/8	24.0	8.0	2.50	25 m	Black (BK)	3:1	30;32	340-24080
EPS-300-40/13	40.0	13.0	2.50	25 m	Black (BK)	3:1	30;32	340-40130

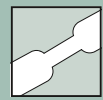
All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content.

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

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Shrink Ratio	Tools	Article-No.
EPS-400-4/1	4.0	1.0	1.00	300 m	Black (BK)	4:1	30;32	341-04010
EPS-400-8/2	8.0	2.0	1.00	150 m	Black (BK)	4:1	30;32	341-08020
EPS-400-12/3	12.0	3.0	1.40	100 m	Black (BK)	4:1	30;32	341-12030
EPS-400-16/4	16.0	4.0	1.80	100 m	Black (BK)	4:1	30;32	341-16040
EPS-400-24/6	24.0	6.0	2.20	50 m	Black (BK)	4:1	30;32	341-24060
EPS-400-32/8	32.0	8.0	2.50	25 m	Black (BK)	4:1	30;32	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

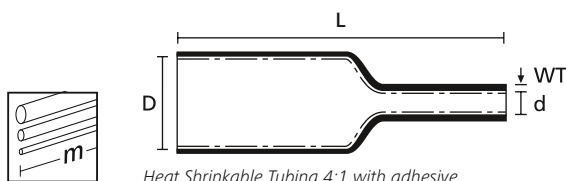
Designed for low voltage cable joints and terminations in shipbuilding. Insulates and protects against moisture.

#### Features and benefits

- Medium wall adhesive lined shrink tubing for low voltage power cables
- Designed for shipbuilding, Germanischer Lloyd approved
- Flame retarded
- 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>Flammability</b>	self-extinguishing



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)	30;32	323-00100
MA40-12/3	12.0	3.0	2.00	1.0 m	Black (BK)	30;32	323-00101
MA40-16/5	16.0	5.0	2.00	1.0 m	Black (BK)	30;32	323-00103
MA40-22/6	22.0	6.0	2.40	1.0 m	Black (BK)	30;32	323-00104
MA40-33/8	33.0	8.0	2.50	1.0 m	Black (BK)	30;32	323-00105
MA40-40/12	40.0	12.0	2.60	1.0 m	Black (BK)	30;32	323-00106
MA40-55/16	55.0	16.0	2.70	1.0 m	Black (BK)	30;32	323-00107

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!  
[www.HT.click/9-253](http://www.HT.click/9-253)



### 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

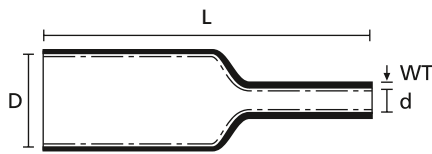
- Medium wall tubing with robust insulation characteristics
- Shrink tubing for above and underground cable applications
- Protects cable joints and terminations in low voltage applications
- Coated inside with thermoplastic adhesive
- Protects against humidity and other environmental impacts after shrinking



[www.HellermannTyton.com/MA47-cat22](http://www.HellermannTyton.com/MA47-cat22)



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



Heat Shrinkable Tubing 4:1 with adhesive



MA47 for above and 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>	15 kV/mm
<b>Flammability</b>	not flame retardant
<b>Insulation Class</b>	A (VDE 0530)



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)	30;32	323-20080
MA47-12/3	12.0	3.0	1.80	1.0 m	Black (BK)	30;32	323-20120
MA47-19/6	22.0	6.0	2.40	1.0 m	Black (BK)	30;32	323-20190
MA47-30/8	33.0	8.0	2.60	1.0 m	Black (BK)	30;32	323-20300
MA47-40/12	40.0	12.0	2.60	1.0 m	Black (BK)	30;32	323-20400
MA47-50/16	55.0	16.0	2.70	1.0 m	Black (BK)	30;32	323-20500
MA47-63/19	65.0	19.0	2.90	1.0 m	Black (BK)	30;32	323-20630
MA47-75/22	75.0	22.0	3.00	1.0 m	Black (BK)	30;32	323-20750
MA47-95/30	95.0	25.0	3.60	1.0 m	Black (BK)	30;32	323-20950
MA47-115/34	115.0	34.0	3.50	1.0 m	Black (BK)	30;32	323-21150
MA47-140/42	140.0	42.0	3.30	1.0 m	Black (BK)	30;32	323-21400

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

Recommended Tools	
30	32
H6100	CHG900
564	563

For more information on toolings please refer to the Application Tooling chapter.



Add items to your watchlist!

[www.HT.click/9-254](http://www.HT.click/9-254)





### 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



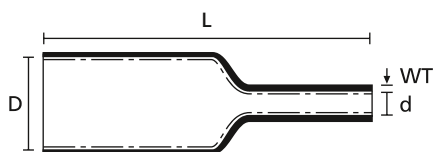
Heatshrink tubing MA47 in a handy, re-usable kit.



**Detailed Information about Heatguns please refer to page 563.**



**Detailed information about MA47 please refer to page 254.**



Heat Shrinkable Tubing 4:1 with adhesive

TYPE	Content	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Tools	Article-No.
MA47 Kit	-	-	-	-	-	Transparent (CL)	30;32	905-50026
MA47-12/3	2 pcs.	12.0	3.0	1.80	1.0 m	Black (BK)	30;32	
MA47-19/6	2 pcs.	22.0	6.0	2.40	1.0 m	Black (BK)	30;32	
MA47-30/8	2 pcs.	33.0	8.0	2.60	1.0 m	Black (BK)	30;32	
MA47-40/12	2 pcs.	40.0	12.0	2.60	1.0 m	Black (BK)	30;32	

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



Add items to your watchlist!  
[www.HT.click/9-255](http://www.HT.click/9-255)





### 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



Medium single wall tubing MU47 and dual wall tubing MA47.

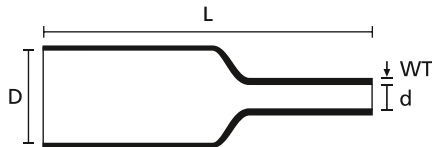


**Detailed Information about Heatguns please refer to page 563.**



**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>Longitudinal Change After Shrinkage</b>	-10 % max.
<b>Dielectric Strength</b>	15 kV/mm
<b>Flammability</b>	not flame retardant



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)	30;32	323-10120
MU47-19/6	22.0	6.0	2.40	1.0 m	Black (BK)	30;32	323-10190
MU47-30/8	33.0	8.0	2.60	1.0 m	Black (BK)	30;32	323-10300
MU47-40/12	40.0	12.0	2.60	1.0 m	Black (BK)	30;32	323-10400
MU47-50/16	55.0	16.0	2.90	1.0 m	Black (BK)	30;32	323-10500
MU47-63/19	65.0	19.0	2.90	1.0 m	Black (BK)	30;32	323-10630
MU47-75/22	75.0	22.0	3.00	1.0 m	Black (BK)	30;32	323-10750
MU47-95/30	95.0	25.0	3.60	1.0 m	Black (BK)	30;32	323-10950
MU47-115/34	115.0	34.0	3.50	1.0 m	Black (BK)	30;32	323-11150
MU47-140/42	140.0	42.0	3.30	1.0 m	Black (BK)	30;32	323-11400

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.





### 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 Q-tie heat stabilised cable ties with innovative and time-saving open-head design



Low Voltage Cable Repair Kit - LVRK-L.

<b>MATERIAL</b>	Polyolefin, chemically 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.	Tools	Article-No.
LVRK-L-24/6-200	200.0	Black (BK)	1 pc.	30;32	380-04019

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



Add items to your watchlist!  
[www.HT.click/9-257](http://www.HT.click/9-257)







### 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

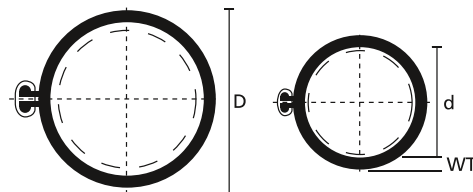
<b>MATERIAL</b>	Polyolefin, chemically cross-linked (PO-X)
<b>Shrink Ratio</b>	up to 4.5:1
<b>Operating Temperature</b>	-40 °C to +120 °C
<b>Min. Shrink Temperature</b>	+110 °C
<b>Softening Point Adhesive</b>	+105 °C
<b>Longitudinal Change After Shrinkage</b>	-10 % max.
<b>Dielectric Strength</b>	30 kV/mm
<b>Flammability</b>	not flame retardant



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



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



Cable Repair Sleeve RMS with adhesive

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Suitable for Cable Ø from/to	Length (L)	Colour	Tools	Article-No.
RMS 43-10	43.0	10.0	2.30	15 - 35	250.0	Black (BK)	30;32	450-20000
	43.0	10.0	2.30	15 - 35	500.0	Black (BK)	30;32	450-20001
	43.0	10.0	2.30	15 - 35	750.0	Black (BK)	30;32	450-20004
	43.0	10.0	2.30	15 - 35	1,000.0	Black (BK)	30;32	450-20002
RMS 52-15	52.0	15.0	2.30	20 - 45	250.0	Black (BK)	30;32	450-20010
	52.0	15.0	2.30	20 - 45	500.0	Black (BK)	30;32	450-20011
	52.0	15.0	2.30	20 - 45	750.0	Black (BK)	30;32	450-20014
	52.0	15.0	2.30	20 - 45	1,000.0	Black (BK)	30;32	450-20012
RMS 76-22	76.0	22.0	2.50	28 - 65	500.0	Black (BK)	30;32	450-20021
	76.0	22.0	2.50	28 - 65	750.0	Black (BK)	30;32	450-20024
	76.0	22.0	2.50	28 - 65	1,000.0	Black (BK)	30;32	450-20022
RMS 100-30	100.0	30.0	2.54	35 - 85	500.0	Black (BK)	30;32	450-20030
	100.0	30.0	2.54	35 - 85	1,000.0	Black (BK)	30;32	450-20031
RMS 139-38	139.0	38.0	2.77	45 - 120	1,000.0	Black (BK)	30;32	450-20041
RMS 185-55	185.0	55.0	2.74	65 - 160	1,000.0	Black (BK)	30;32	450-20050

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



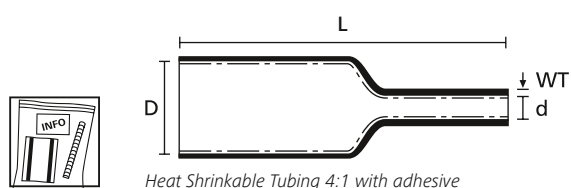
LVK - Heat shrinkable straight-through joint.

<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



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

HF ✓ RoHS ✓



Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.

Without connector!

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	30;32	380-04008
LVK-4x25-150	4	25-150	33.0	8.0	250.0	105.0	25.0	800.0	30;32	380-04010
LVK-4x25-95	4	25-95	33.0	8.0	250.0	75.0	20.0	800.0	30;32	380-04009
LVK-4x95-300	4	95-300	40.0	12.0	280.0	130.0	35.0	900.0	30;32	380-04011
LVK-5x1.5-16	5	1.5-16	19.0	3.2	125.0	48.0	12.0	450.0	30;32	380-04006
LVK-5x1.5-6	5	1.5-6	12.0	3.0	70.0	48.0	12.0	250.0	30;32	380-04005
LVK-5x6-25	5	6-25	22.0	6.0	125.0	55.0	16.0	500.0	30;32	380-04007

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



Add items to your watchlist!  
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## 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



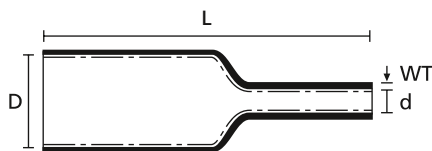
LVK-C - Heat shrinkable straight-through joint with connectors.



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



**With connector!**



Heat Shrinkable 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-C-4x16-50	4	16-50	22.0	6.0	170.0	55.0	16.0	550.0	30;32	380-04016
LVK-C-4x25-150	4	25-150	33.0	8.0	250.0	105.0	25.0	800.0	30;32	380-04018
LVK-C-4x25-95	4	25-95	33.0	8.0	250.0	75.0	20.0	800.0	30;32	380-04017
LVK-C-5x1.5-16	5	1.5-16	19.0	3.2	125.0	48.0	12.0	450.0	30;32	380-04014
LVK-C-5x1.5-6	5	1.5-6	12.0	3.0	70.0	48.0	12.0	250.0	30;32	380-04013
LVK-C-5x6-25	5	6-25	22.0	6.0	125.0	55.0	16.0	500.0	30;32	380-04015

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.

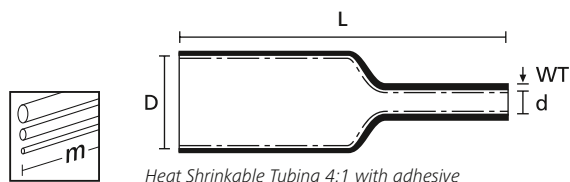
#### Features and benefits

- Thick wall adhesive lined shrink tubing for low voltage power cables
- Designed for shipbuilding, Germanische Lloyd approved
- Flame retarded
- 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>Flammability</b>	self-extinguishing



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)	30	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

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!  
[www.HT.click/9-261](http://www.HT.click/9-261)



### 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.

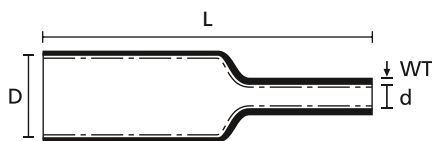
#### Features and benefits

- 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>	15 kV/mm
<b>Flammability</b>	not flame retardant
<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)	Colour	Tools	Article-No.
HA47-9/3	9.0	3.0	2.00	1.0 m	Black (BK)	32	321-20090
HA47-13/4	13.0	4.0	2.40	1.0 m	Black (BK)	32	321-20130
HA47-19/6	19.0	6.0	2.70	1.0 m	Black (BK)	32	321-20180
HA47-33/8	33.0	8.0	3.20	1.0 m	Black (BK)	32	321-20280
HA47-45/12	45.0	12.0	4.00	1.0 m	Black (BK)	32	321-20450
HA47-51/16	51.0	16.0	4.00	1.0 m	Black (BK)	32	321-20510
HA47-68/22	68.0	22.0	4.00	1.0 m	Black (BK)	32	321-20680
HA47-85/25	85.0	25.0	4.20	1.0 m	Black (BK)	32	321-20850
HA47-105/30	105.0	30.0	4.20	1.0 m	Black (BK)	32	321-20900
HA47-130/36	130.0	36.0	4.20	1.0 m	Black (BK)	32	321-21300
HA47-160/50	165.0	50.0	4.20	1.0 m	Black (BK)	32	321-21600
HA47-180/50	180.0	50.0	4.20	1.0 m	Black (BK)	32	321-21850

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

Recommended Tools	
	32 CHG900
	563

For more information on toolings please refer to the Application Tooling chapter.





### 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.

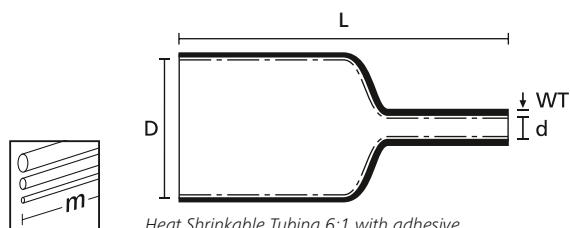
#### Features and benefits

- 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, chemically 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
<b>Flammability</b>	not flame retardant



Heat Shrinkable 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

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

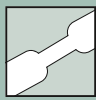
Recommended Tools	
	32 CHG900
	563

For more information on toolings please refer to the Application Tooling chapter.



Add items to your watchlist!  
[www.HT.click/9-263](http://www.HT.click/9-263)





### 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
- Meets various industrial standards

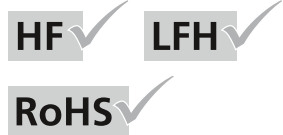


TR27 is ideal for safety sensitive areas.

<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>Flammability</b>	Limited Fire Hazard, halogen free, low generation of toxic gases and corrosive acid, low smoke generation



Heat Shrinkable Tubing 2:1



TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Reel Length	Colour	Tools	Article-No.
TR27-3.2/1.6	3.2	1/8 "	1.6	0.51	150 m	Black (BK)	30;32	315-50320
TR27-4.8/2.4	4.8	3/16 "	2.4	0.51	60 m	Black (BK)	30;32	315-50480
TR27-6.4/3.2	6.4	1/4 "	3.2	0.64	60 m	Black (BK)	30;32	315-50640
TR27-9.5/4.8	9.5	3/8 "	4.8	0.64	60 m	Black (BK)	30;32	315-50950
TR27-12.7/6.4	12.7	1/2 "	6.4	0.64	60 m	Black (BK)	30;32	315-51270
TR27-19.1/9.5	19.1	3/4 "	9.5	0.76	60 m	Black (BK)	30;32	315-51900
TR27-25.4/12.7	25.4	1 "	12.7	0.51	60 m	Black (BK)	30;32	315-52540
TR27-38.1/19.1	38.1	1-1/2 "	19.1	1.02	60 m	Black (BK)	30;32	315-53810
TR27-50.8/25.4	50.8	2 "	25.4	1.14	60 m	Black (BK)	30;32	315-55100

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

Recommended Tools	
30	32
H6100	CHG900
564	563

For more information on toolings please refer to the Application Tooling chapter.

**EN 45545-2**

For product specific approvals and specifications please refer to the Appendix.

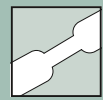


Add items to your watchlist!

[www.HT.click/9-264](http://www.HT.click/9-264)







### 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.

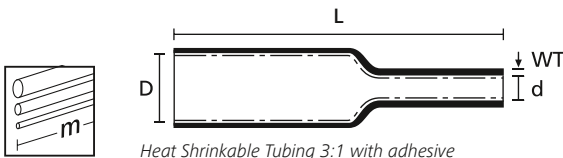
#### Features and benefits

- 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



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

<b>MATERIAL</b>	Polyolefin, chemically 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>Flammability</b>	self-extinguishing, low smoke generation, low generation of toxic gases and corrosive acid



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Tools	Article-No.
TA37 3-1	3.2	1.0	0.95	1.2 m	Black (BK)	30;32	315-13000
TA37 4.5-1.5	4.8	1.5	1.10	1.2 m	Black (BK)	30;32	315-13001
TA37 6-2	6.4	2.0	1.20	1.2 m	Black (BK)	30;32	315-13002
TA37 9-3	9.5	3.0	1.30	1.2 m	Black (BK)	30;32	315-13003
TA37 12-4	12.7	4.0	1.40	1.2 m	Black (BK)	30;32	315-13004
TA37 19-6	19.1	6.0	2.20	1.2 m	Black (BK)	30;32	315-13005
TA37 24-8	24.0	8.0	2.50	1.2 m	Black (BK)	30;32	315-13006
TA37 40-13	40.0	13.0	2.50	1.2 m	Black (BK)	30;32	315-13007
TA37 50-19	50.0	19.0	4.00	1.2 m	Black (BK)	30;32	315-13008
TA37 75-25	75.0	25.0	3.00	1.2 m	Black (BK)	30;32	315-13009
TA37 120-45	120.0	45.0	4.00	1.2 m	Black (BK)	30;32	315-13011

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

**EN 45545-2**

For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!  
[www.HT.click/9-265](http://www.HT.click/9-265)





### Heat shrinkable tubing 4:1 - 1.2 m 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 excellent 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

- Flexible, standard wall polyolefin heat shrink tubing
- Best corrosion protection available
- Excellent tensile strength and strain relief
- Provides excellent moisture protection
- Tubing is clear and hot melt adhesive black
- Provides an environmental sealing of complex parts
- Halogen free



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

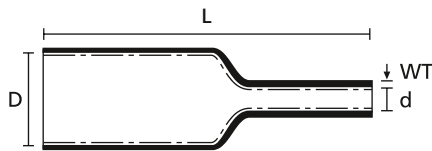


SA47-LA - High performance heat shrink tubing.

<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
<b>Shelf Life</b>	5 years

HF ✓

RoHS ✓



Heat Shrinkable Tubing 4:1 with adhesive



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

TYPE	Supplied Ø D min.	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Tools	Article-No.
SA47-LA 5.75/1.25	5.75	1.25	1.15	1.2 m	Transparent (CL), Black (BK)	30;32	301-10020
SA47-LA 7.5/1.65	7.5	1.65	1.40	1.2 m	Transparent (CL), Black (BK)	30;32	301-10021
SA47-LA 11.0/2.4	11.0	2.4	1.80	1.2 m	Transparent (CL), Black (BK)	30;32	301-10022
SA47-LA 18.3/4.35	18.3	4.35	2.20	1.2 m	Transparent (CL), Black (BK)	30;32	301-10023
SA47-LA 24/6	24.0	6.0	2.54	1.2 m	Transparent (CL), Black (BK)	30;32	301-10024
SA47-LA 32/8	32.0	8.0	2.54	1.2 m	Transparent (CL), Black (BK)	30;32	301-10025
SA47-LA 52/13	52.0	13.0	3.00	1.2 m	Transparent (CL), Black (BK)	30;32	301-10026

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

Recommended Tools	
30	32
H6100	CHG900
564	563

For more information on toolings please refer to the Application Tooling chapter.





### 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.



[www.HellermannTyton.com/SE28-cat22](http://www.HellermannTyton.com/SE28-cat22)



**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>	self-extinguishing



Heat Shrinkable 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	30;32	342-20000
SE28 4.8/2.4	4.8	2.4	0.85	60 m	Black (BK)	VG 95343 T05 D 002 A	30;32	342-20010
SE28 6.4/3.2	6.4	3.2	0.90	60 m	Black (BK)	VG 95343 T05 D 003 A	30;32	342-20020
SE28 9.5/4.8	9.5	4.8	1.00	60 m	Black (BK)	VG 95343 T05 D 004 A	30;32	342-20030
SE28 12.7/6.4	12.7	6.4	1.20	60 m	Black (BK)	VG 95343 T05 D 005 A	30;32	342-20040
SE28 19.0/9.5	19.0	9.5	1.45	30 m	Black (BK)	VG 95343 T05 D 006 A	30;32	342-20050
SE28 25.4/12.7	25.4	12.7	1.80	30 m	Black (BK)	VG 95343 T05 D 007 A	30;32	342-20060
SE28 38.0/19.0	38.0	19.0	2.40	30 m	Black (BK)	VG 95343 T05 D 008 A	30;32	342-20070
SE28 51.0/25.4	51.0	25.4	2.80	30 m	Black (BK)	VG 95343 T05 D 009 A	30;32	342-20080
SE28 76.0/38.0	76.0	38.0	3.20	15 m	Black (BK)	VG 95343 T05 D 010 A	30;32	342-20090
SE28 101.2/51.0	102.0	51.0	3.60	10 m	Black (BK)	VG 95343 T05 D 011 A	30;32	342-20100

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

Recommended Tools	
30	32
H6100	CHG900
564	563

For more information on toolings please refer to the Application Tooling chapter.



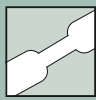
For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!

[www.HT.click/9-267](http://www.HT.click/9-267)





### 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.

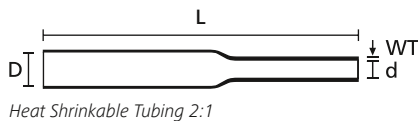
#### Features and benefits

- 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, self-extinguishing



Heat Shrinkable Tubing 2:1



TYPE	Supplied Ø D min.	Size (imperial)	Recov. Ø d max.	Wall (WT)	Length (L)	Colour	Designation as per VG-Norm	Tools	Article-No.
TK20-1.2/0.6	1.2	3/64 "	0.6	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 001 M	30;32	331-00129
TK20-1.6/0.8	1.6	1/16 "	0.8	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 002 M	30;32	311-00169
TK20-2.4/1.2	2.4	3/32 "	1.2	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 003 M	30;32	311-00249
TK20-3.2/1.6	3.2	1/8 "	1.6	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 004 M	30;32	311-00329
TK20-4.8/2.4	4.8	3/16 "	2.4	0.25	1.2 m	Transparent (CL)	VG 95343 T05 F 005 M	30;32	311-00489
TK20-6.4/3.2	6.4	1/4 "	3.2	0.30	1.2 m	Transparent (CL)	VG 95343 T05 F 006 M	30;32	311-00649
TK20-9.5/4.8	9.5	3/8 "	4.75	0.30	1.2 m	Transparent (CL)	VG 95343 T05 F 007 M	30;32	311-00959
TK20-12.7/6.4	12.7	1/2 "	6.4	0.30	1.2 m	Transparent (CL)	VG 95343 T05 F 008 M	30;32	311-01279
TK20-19.1/9.5	19.1	3/4 "	9.5	0.43	1.2 m	Transparent (CL)	VG 95343 T05 F 009 M	30;32	311-01909
TK20-25.4/12.7	25.4	1 "	12.7	0.48	1.2 m	Transparent (CL)	VG 95343 T05 F 010 M	30;32	311-02549
TK20-38.1/19.1	38.1	1-1/2 "	19.1	0.51	1.2 m	Transparent (CL)	-	30;32	311-03819
TK20-50.8/25.4	50.8	2 "	25.4	0.51	1.2 m	Transparent (CL)	-	30;32	311-05089

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!

[www.HT.click/9-268](http://www.HT.click/9-268)





### Heat shrinkable tubing 2:1 - Fluoroelastomer

#### Viton®-E

Viton®-E is used for reliable protection against aggressive chemicals in high temperature environments like engine compartments and turbines. It is also used when protective tubings are required to remain flexible at low temperatures.

#### Features and benefits

- High temperature resistant fluoroelastomeric heat shrink tubing
- Very good electrical, chemical and mechanical features
- Resistant to many fuels, oils and lubricants
- Flexible even at very low temperatures



Viton®-E for flexibility and protection against aggressive chemicals.

<b>MATERIAL</b>	Fluoropolymer, cross-linked (FPMX)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-55 °C to +200 °C
<b>Min. Shrink Temperature</b>	+170 °C
<b>Longitudinal Change After Shrinkage</b>	-10 % max.
<b>Dielectric Strength</b>	8 kV/mm
<b>Flammability</b>	self-extinguishing
<b>Insulation Class</b>	C (VDE 0530)



Heat Shrinkable 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.
VITON®-E-3.2/1.6	3.2	1.6	0.70	50 m	Black (BK)	VG 95343 T05 E 001 A	30;32	330-00320
VITON®-E-4.8/2.4	4.8	2.4	0.80	50 m	Black (BK)	VG 95343 T05 E 002 A	30;32	330-00480
VITON®-E-6.4/3.2	6.4	3.2	0.90	50 m	Black (BK)	VG 95343 T05 E 003 A	30;32	330-00640
VITON®-E-9.5/4.8	9.5	4.8	1.00	25 m	Black (BK)	VG 95343 T05 E 004 A	30;32	330-00950
VITON®-E-12.7/6.4	12.7	6.4	1.20	25 m	Black (BK)	VG 95343 T05 E 005 A	30;32	330-01270
VITON®-E-19.0/9.5	19.0	9.5	1.40	25 m	Black (BK)	VG 95343 T05 E 006 A	30;32	330-01900
VITON®-E-25.4/12.7	25.4	12.7	1.80	25 m	Black (BK)	VG 95343 T05 E 007 A	30;32	330-02540
VITON®-E-38.0/19.0	38.0	19.0	2.40	15 m	Black (BK)	VG 95343 T05 E 008 A	30;32	330-03810
VITON®-E-50.8/25.4	50.8	25.4	2.80	15 m	Black (BK)	VG 95343 T05 E 009 A	30;32	330-05080

All dimensions in mm. Subject to technical changes. Minimum Order Quantity (MOQ) may differ from package content. VITON® is a registered trademark of DuPont.

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!  
[www.HT.click/9-269](http://www.HT.click/9-269)





### 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



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



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



Heat Shrinkable Tubing 2:1

<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>Flammability</b>	non-burning



TYPE	Supplied Ø D min.	Recov. Ø d max.	Wire Size (AWG)	Wall (WT)	Length (L)	Colour	Shrink Ratio	Tools	Article-No.
TFE2-30	0.86	0.38	30	0.23	1.2 m	Transparent (CL)	2:1	30;32	336-00079
TFE2-28	0.96	0.46	28	0.23	1.2 m	Transparent (CL)	2:1	30;32	336-00099
TFE2-26	1.17	0.56	26	0.23	1.2 m	Transparent (CL)	2:1	30;32	336-00109
TFE2-24	1.27	0.69	24	0.25	1.2 m	Transparent (CL)	2:1	30;32	336-00139
TFE2-22	1.39	0.82	22	0.25	1.2 m	Transparent (CL)	2:1	30;32	336-00149
TFE2-20	1.52	0.99	20	0.30	1.2 m	Transparent (CL)	2:1	30;32	336-00159
TFE2-18	1.93	1.25	18	0.30	1.2 m	Transparent (CL)	2:1	30;32	336-00199
TFE2-16	2.36	1.55	16	0.30	1.2 m	Transparent (CL)	2:1	30;32	336-00249
TFE2-14	3.05	1.83	14	0.30	1.2 m	Transparent (CL)	2:1	30;32	336-00319
TFE2-12	3.81	2.26	12	0.30	1.2 m	Transparent (CL)	2:1	30;32	336-00399
TFE2-10	4.85	2.85	10	0.30	1.2 m	Transparent (CL)	2:1	30;32	336-00489
TFE2-8	6.10	3.58	8	0.38	1.2 m	Transparent (CL)	2:1	30;32	336-00619
TFE2-6	7.67	4.52	6	0.38	1.2 m	Transparent (CL)	2:1	30;32	336-00779
TFE2-4	9.40	5.69	4	0.38	1.2 m	Transparent (CL)	2:1	30;32	336-00949
TFE2-2	10.92	7.06	2	0.38	1.2 m	Transparent (CL)	2:1	30;32	336-01109
TFE2-0	11.94	8.81	0	0.38	1.2 m	Transparent (CL)	2:1	30;32	336-01209

All dimensions in mm. Subject to technical changes.

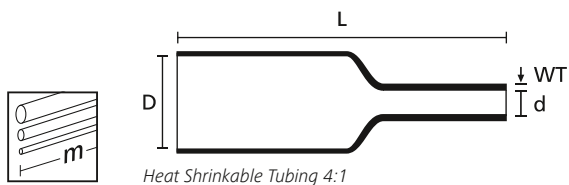
AWG: American Wire Gauge Minimum Order Quantity (MOQ) may differ from package content.





### Heat shrinkable tubing - PTFE

#### TFE4 - 4:1 shrink ratio



TYPE	Supplied Ø D min.	Recov. Ø d max.	Size (imperial)	Wall (WT)	Length (L)	Colour	Shrink Ratio	Tools	Article-No.
TFE4-5/64	1.98	0.64	5/64 "	0.22	1.2 m	Transparent (CL)	4:1	30;32	339-00209
TFE4-1/8	3.17	0.94	1/8 "	0.25	1.2 m	Transparent (CL)	4:1	30;32	339-00329
TFE4-3/16	4.75	1.27	3/16 "	0.30	1.2 m	Transparent (CL)	4:1	30;32	339-00340
TFE4-1/4	6.35	1.60	1/4 "	0.30	1.2 m	Transparent (CL)	4:1	30;32	339-00649
TFE4-3/8	9.52	2.44	3/8 "	0.30	1.2 m	Transparent (CL)	4:1	30;32	339-00959
TFE4-1/2	12.7	3.66	1/2 "	0.38	1.2 m	Transparent (CL)	4:1	30;32	339-01279
TFE4-5/8	15.87	4.52	5/8 "	0.38	1.2 m	Transparent (CL)	4:1	30;32	339-01599
TFE4-3/4	19.05	5.69	3/4 "	0.38	1.2 m	Transparent (CL)	4:1	30;32	339-01909
TFE4-1	25.4	7.06	1 "	0.38	1.2 m	Transparent (CL)	4:1	30;32	339-02549
TFE4-1 1/4	31.80	8.82	1-1/4 "	0.38	1.2 m	Transparent (CL)	4:1	30;32	339-03189

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

Recommended Tools		
	30	32
	H6100	CHG900
	564	563

For more information on toolings please refer to the Application Tooling chapter.



Add items to your watchlist!

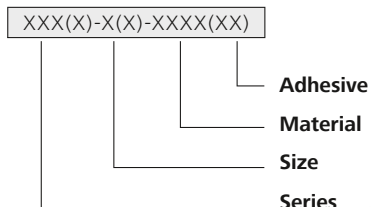
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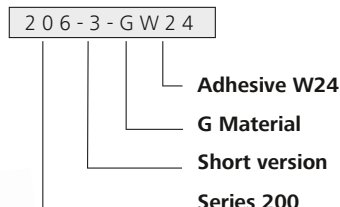
**Product Selection for Heat Shrinkable Moulded Shapes**

**Order Example**

Type:



**Example:**



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

**Low Profile Boots  
Product Overview**

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**Convolute Boots**  
Helashrink 313C Series,  
with adapter lip



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**Shim Boots**  
Helashrink 313E Series,  
without adapter lip



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**Straight Boots**  
Helashrink 313F Series,  
with adapter lip



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**Right Angle Boots**  
Helashrink 333F Series,  
with adapter lip,  
90° angle



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**Low Profile Boots  
Product Overview**

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**Transition Boots**  
Helashrink 412H Series,  
side breakout



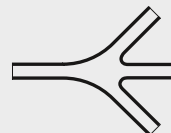
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**Transition Boots**  
Helashrink 492H Series,  
1 to 2 cables



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**Transition Boots**  
Helashrink 573H Series,  
1 to 3 cables









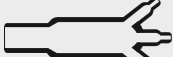
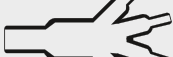





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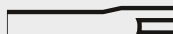
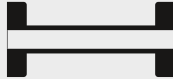


**Bulbous Boots  
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2-Way Outlet Shapes Helashrink 200 Series, in line, low voltage		299
4-Way Outlet Shapes Helashrink 400 Series, in line, low voltage		299
5-Way Outlet Shapes Helashrink 500 Series, in line, low voltage		300
Locating Bushes Helashrink 1760, 1790, 1820 Series		301
Low Voltage Helashrink PEC Series, pinched		302
Low Voltage Helashrink 1600 Series		303

### 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 fluoroelastomer
<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>Features and benefits</b>	Good physical and reasonable chemical resistance	Low smoke Halogen free	Excellent resistance to fuels	Good physical and chemical resistance	Good physical and reasonable chemical resistance	High temperature excellent chemical resistance
<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



**i** 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

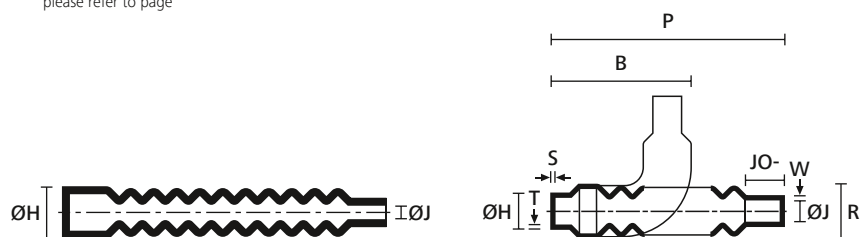


For Material / Adhesive information please refer to page 274, 275.



313C722-774 Series supplied / fully recovered.

For Material / Adhesive information please refer to page



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.	JO ± 10 %	W min.	B nom.	T ± 0.5	S ± 0.5	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	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	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	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	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	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	422-00501

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.



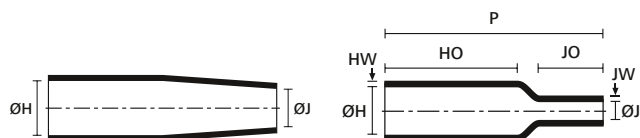


### Low Profile Shim Boots

#### 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



a: Expanded form (supplied)

b: Fully recovered form (after heating)



313E445-457 Series supplied / fully recovered.

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

All dimensions in mm. Subject to technical changes.

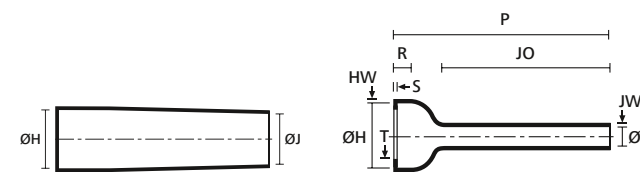
For these moulded shapes a wide range of material / adhesive combinations are available. Please refer to the Moulded Shapes Catalogue.

### Low Profile Straight Boots

#### Helashrink 313F Series, with adapter lip

#### Features and benefits

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



a: Expanded form (supplied)

b: Fully recovered form (after heating)



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	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	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	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	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	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	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	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	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	422-20700

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.



Add items to your watchlist!

[www.HT.click/9-277](http://www.HT.click/9-277)





### Low Profile Right Angle Boots

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

#### Features and benefits

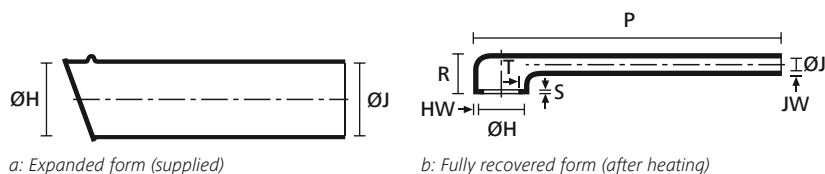
- Connector strain relief for small cable diameters requiring high shrink ratio
- Right angle connector housing with long cable entry and inner lip



333F322-385 Series supplied / fully recovered.



For Material / Adhesive information please refer to page 274, 275.



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	Article-No.
333F322-9	23.8	9.9	17.2	6.6	105.1	18.5	1.3	1.5	1.5	1.5	422-30000
333F332-9	27.1	13.2	20.8	7.6	115.8	19.8	1.3	1.5	1.5	1.5	422-30004
333F343-9	30.9	18.5	24.3	8.9	146.3	20.8	1.3	1.7	1.5	1.7	422-30100
333F353-9	35.3	21.6	28.7	10.1	172.2	21.8	1.3	1.7	1.5	1.7	422-30200
333F364-9	38.8	27.9	31.4	10.9	185.1	24.1	1.8	1.7	1.5	1.7	422-30301
333F374-9	45.2	34.0	38.3	12.1	213.6	27.4	1.8	1.7	1.5	1.7	422-30400
333F385-9	51.5	41.1	44.4	15.0	224.5	29.4	1.7	1.7	1.7	1.7	422-30500

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

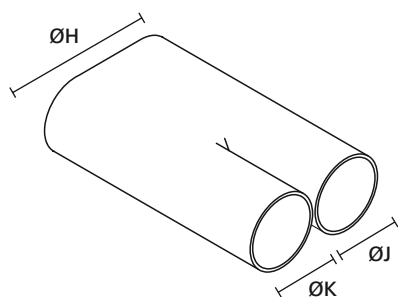
Helashrink 412H Series, side breakout

#### Features and benefits

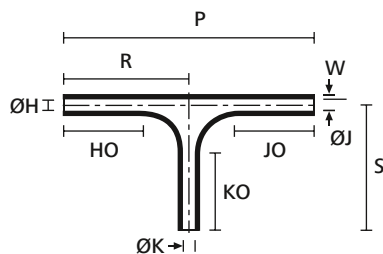
- Connector cable strain relief
- Used with circular adaptors



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.	Article-No.
412H622-9	19.8	6.6	13.2	6.6	25.4	80.7	1.0	40.3	422-40000
412H623-9	34.2	11.4	22.8	11.4	41.1	120.3	1.3	60.1	422-40100
412H624-9	60.1	20.0	40.1	20.0	63.5	175.7	1.5	87.8	422-40200
412H625-9	83.3	33.2	54.8	33.2	88.9	242.3	1.7	121.1	422-40300

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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### Low Profile Transition Boots

Helashrink 492H Series, 1 to 2 cables

#### Features and benefits

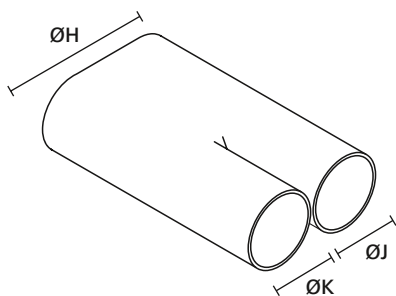
- For cable harness breakouts or transitions
- Strain relief, sealing and mechanical protection



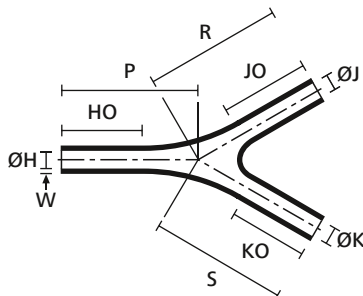
For Material / Adhesive information please refer to page 274, 275.



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.	Article-No.
492H412-9	19.8	6.6	13.2	6.6	25.4	1.0	40.6	422-50000
492H413-9	34.2	11.4	22.8	11.4	41.1	1.3	62.9	422-50101
492H414-9	60.1	20.0	40.1	20.0	63.5	1.5	94.7	422-50202
492H415-9	83.3	33.2	54.8	33.2	49.7	1.7	133.8	422-50302

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

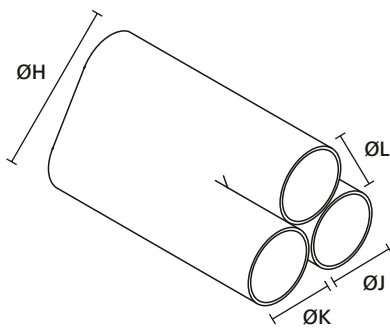
Helashrink 573H Series, 1 to 3 cables

#### Features and benefits

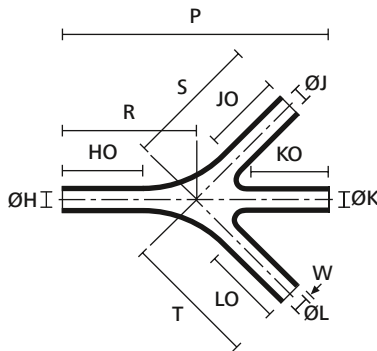
- For cable harness breakouts or transitions
- Strain relief, sealing and mechanical protection



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%	Article-No.
573H532-9	19.8	6.6	13.2	6.6	85.8	42.9	1.0	25.4	422-60000
573H533-9	34.2	11.4	20.5	11.4	135.6	67.8	1.3	41.1	422-60100
573H534-9	60.1	20.0	36.0	20.0	207.2	103.6	1.5	63.5	422-60202
573H535-9	99.8	33.2	54.8	33.2	294.6	147.3	1.7	88.9	422-60302

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.



Add items to your watchlist!

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### Bottle Shapes, VG style

Helashrink 150 Series, with rib

#### Features and benefits

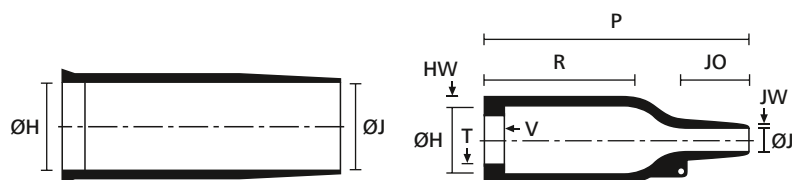
- Use in conjunction with circular grooved adaptors
- Strengthened strain relief by usage of an additional inner lip
- Excellent protection against environment impacts



150 Series boot recovered onto a connectors.



For Material / Adhesive information please refer to page 274, 275.



a: Expanded form (supplied)

b: Fully recovered form (after heating)



150 Series supplied.

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	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	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	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	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	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	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	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	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	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	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	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	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	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	401-58780
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	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	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	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	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	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	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	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	401-60980

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.



For product specific approvals and specifications please refer to the Appendix.





### Bottle Shapes, MIL style

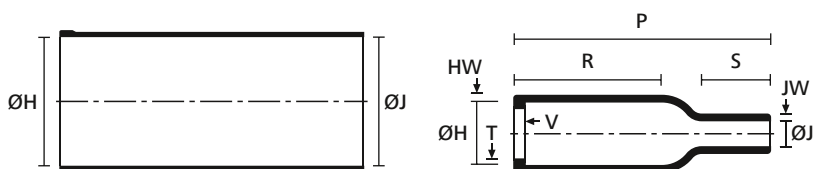
#### Helashrink 100 Series, with rib

#### Features and benefits

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



100 series supplied / fully recovered.



a: Expanded form (supplied)

b: Fully recovered form (after heating)

TYPE	$\varnothing H$ min. a	$\varnothing H$ max. b	$\varnothing J$ min. a	$\varnothing J$ max. b	$P \pm 10\%$	$R \pm 10\%$	$HW \pm 20\%$	$JW \pm 20\%$	$V \pm 10\%$	$T \pm 20\%$	S nom.	Article-No.
113-4-G	10.7	7.9	4.6	2.0	25.4	14.5	1.3	1.0	3.0	1.0	4.6	401-13480

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

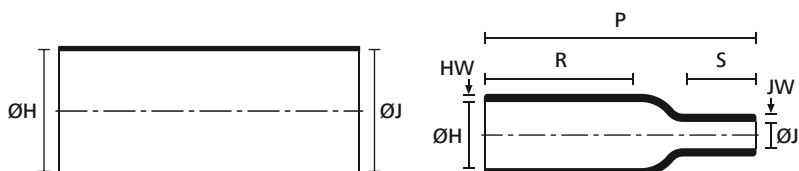
#### Helashrink 100 Series, without rib

#### 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



100 series supplied / fully recovered.



a: Expanded form (supplied)

b: Fully recovered form (after heating)

TYPE	$\varnothing H$ min. a	$\varnothing H$ max. b	$\varnothing J$ min. a	$\varnothing J$ max. b	$P \pm 10\%$	R max.	$HW \pm 20\%$	$JW \pm 30\%$	S nom.	Article-No.
113-1-G	10.7	7.9	4.6	2.0	25.4	14.5	1.3	1.0	4.6	401-13180

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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[www.HT.click/9-283](http://www.HT.click/9-283)





### Long Outlet Shape, VG style

Helashrink 130 Series, with rib, low profile

#### Features and benefits

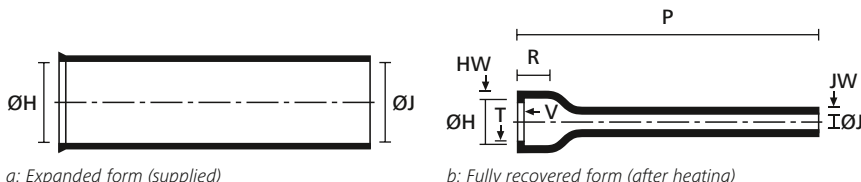
- Low profile and lightweight
- Typically used on airborne harnesses
- Rib locates on circular backshell



135-1 supplied / fully recovered.



For Material / Adhesive information please refer to page 274, 275.



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	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	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	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	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	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	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	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	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	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	401-38180

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.



For product specific approvals and specifications please refer to the Appendix.





### Bottle Shapes, VG style

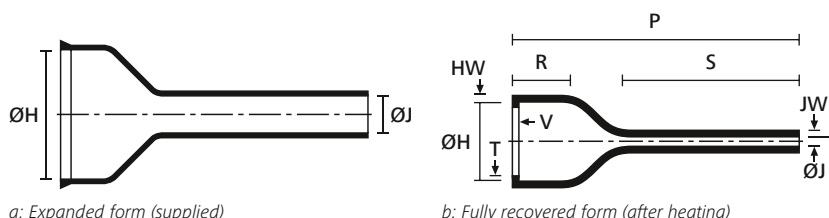
Helashrink 170 Series, with rib

#### Features and benefits

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



177-1-G supplied / fully recovered.



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	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	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	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	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	401-79180

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.



For product specific approvals and specifications please refer to the Appendix.



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### Bottle Shapes, VG style

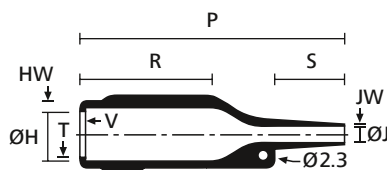
Helashrink 190 Series, with external ribs

#### Features and benefits

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



a: Expanded form (supplied)



b: Fully recovered form (after heating)



199-4-G 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.	Designation as per VG-Norm	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	401-99480

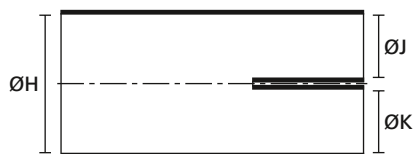
All dimensions in mm. Subject to technical changes. For these moulded shapes a wide range of material / adhesive combinations are available. Please refer to the Moulded Shapes Catalogue.

### 2-Way Outlet Shapes

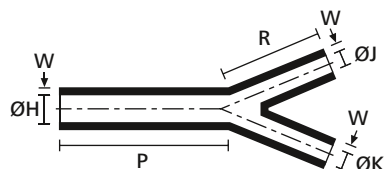
Helashrink 200 Series, low profile

#### Features and benefits

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



a: Expanded form (supplied)



b: Fully recovered form (after heating)



200 series 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 %	W ± 20 %	Article-No.
201-1-G	19.0	9.4	14.0	6.4	14.0	6.4	50.8	30.5	1.5	402-01180
201-2-G	31.8	9.4	15.7	6.4	15.7	6.4	50.8	30.5	1.5	402-01220

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.



For product specific approvals and specifications please refer to the Appendix.







### 2-Way Outlet Shapes, VG style

#### Helashrink 200 Series

#### Features and benefits

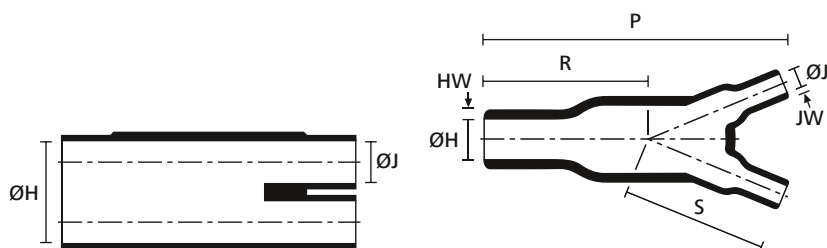
- Mechanical tension relief in cable harnesses



203-1 supplied / fully recovered.



For Material / Adhesive information please refer to page 274, 275.



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.	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	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	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	-	402-13180
203-1-G	27.0	12.0	13.0	6.0	80.0	38.0	2.5	1.5	43.0	VG 95343 T08 C 002 A	402-03180
204-1-G	39.0	18.0	27.0	12.0	-	-	3.0	2.5	81.0	VG 95343 T08 C 003 A	402-04180

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.



For product specific approvals and specifications please refer to the Appendix.



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### 3-Way Outlet Shapes, VG style

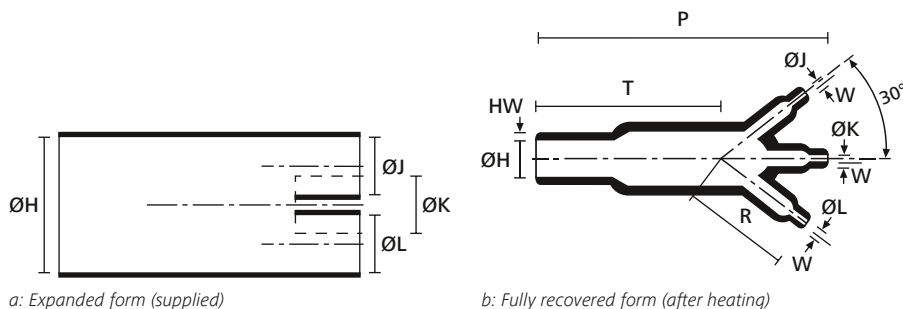
#### Helashrink 300 Series

#### Features and benefits

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



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	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	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	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	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	403-11180

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.



For product specific approvals and specifications please refer to the Appendix.





### 4-Way Outlet Shapes, VG style

#### Helashrink 400 Series

#### Features and benefits

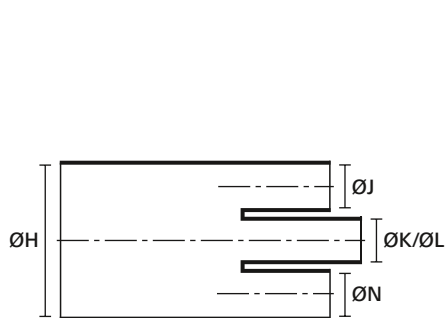
- All outlets clearly marked to aid orientation during installation
- Cable strain relief and mechanical protection at harness transition points



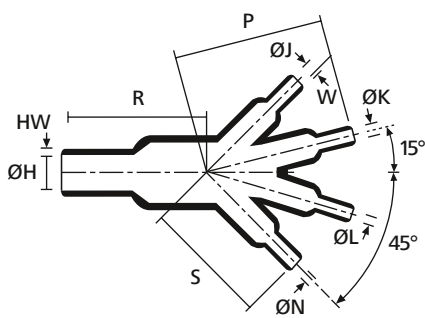
403-1 supplied / fully recovered.



For Material / Adhesive information please refer to page 274, 275.



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 %	S nom.	Designation as per VG-Norm	Article-No.
411-1-G	19.0	10.0	9.5	5.5	-	35.6	2.0	1.0	32.0	VG 95343 T08 E 002 A	404-11180
403-1-G	27.0	13.0	13.0	7.0	102.0	49.0	2.5	1.5	45.0	VG 95343 T08 E 004 A	404-03180
413-1-G	38.5	19.0	19.0	10.0	-	72.0	3.0	2.0	65.0	VG 95343 T08 E 005 A	404-13180

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.



For product specific approvals and specifications please refer to the Appendix.



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### 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



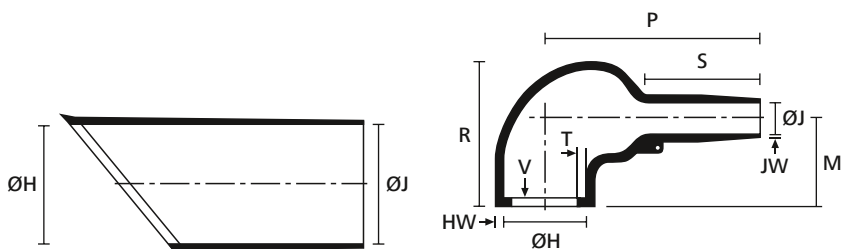
1152-4-G recovered onto a connector.



For Material / Adhesive information please refer to page 274, 275.



1155-4 supplied.



a: Expanded form (supplied)

b: Fully recovered form (after heating)

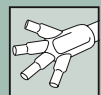
TYPE	$\varnothing H$ min. a	$\varnothing H$ max. b	$\varnothing J$ min. a	$\varnothing J$ max. b	$P \pm 10\%$	$R \pm 10\%$	$HW \pm 20\%$	$JW \pm 20\%$	V max.	$T \pm 20\%$	M nom.	S nom.	Designation as per VG-Norm	Article-No.
1152-4-G	24.0	10.5	24.0	6.0	32.0	25.0	1.3	0.5	3.3	1.0	19.0	10.0	VG 95343 T06 E 001 A	411-52480
1154-4-G	30.0	14.5	30.0	6.0	41.0	27.0	1.5	0.8	3.3	1.0	19.0	12.0	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	1.0	3.3	1.0	21.0	15.0	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	1.0	3.3	1.0	26.0	15.0	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	1.0	3.3	1.7	30.0	16.0	VG 95343 T06 E 005 A	411-57480
1158-4-G	60.0	35.0	60.0	16.0	-	54.0	3.3	1.5	3.3	1.7	35.0	30.0	VG 95343 T06 E 006 A	411-58480
1159-4-G	66.0	45.0	66.0	17.0	-	68.0	3.8	2.0	3.3	2.0	42.0	51.0	VG 95343 T06 E 007 A	411-59480
1160-4-G	82.0	61.0	82.0	25.0	-	84.0	4.0	4.0	3.3	2.0	52.0	39.0	VG 95343 T06 E 008 A	411-60480

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.



For product specific approvals and specifications please refer to the Appendix.





### Right-Angle Shapes, MIL style

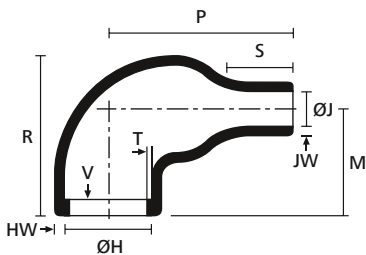
#### Helashrink 1100 Series, with rib

##### Features and benefits

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



a: Expanded form (supplied)



b: Fully recovered form (after heating)



1108-4 supplied / fully recovered.

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.	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	411-08480

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

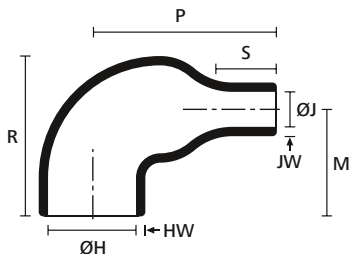
#### Helashrink 1100 Series, without rib

##### Features and benefits

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



a: Expanded form (supplied)



b: Fully recovered form (after heating)



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.	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	411-08180

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

#### Helashrink 1100 Series, with rib, low profile

#### Features and benefits

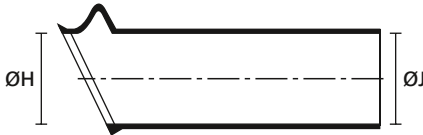
- Lightweight, low profile, compact strain relief and mechanical protection
- Typically used on airborne harnesses



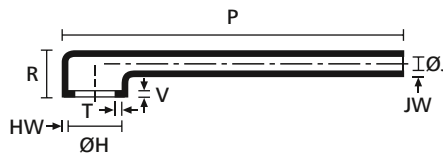
For Material / Adhesive information please refer to page 274, 275.



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	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	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	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	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	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	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	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	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	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	411-29180

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.



For product specific approvals and specifications please refer to the Appendix.





### Right-Angle Shapes, VG style

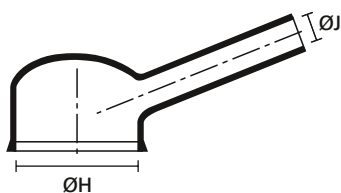
**Helashrink 1100 Series, with rib, low profile, high ratio**

#### Features and benefits

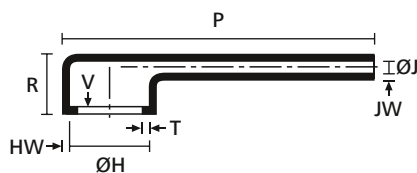
- Use in applications of partially loaded connectors with small cable diameters
- Tail design for easy orientation prior to cooling
- Strain relief for connector cable



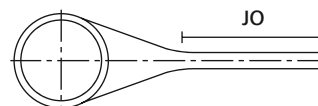
1135-1-G supplied / fully recovered.



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	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	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	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	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	411-36180

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.



For product specific approvals and specifications please refer to the Appendix.



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

#### Helashrink 1200 Series

#### Features and benefits

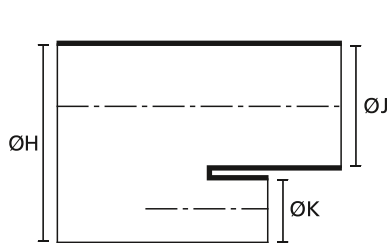
- Strain relief, sealing and mechanical protection on cable harnesses



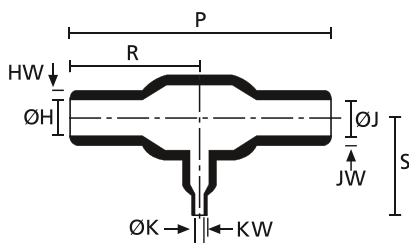
For Material / Adhesive information please refer to page 274, 275.



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 %	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	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	19.3	VG 95343 T08 A 001 A	412-03180
1202-1-G	13.0	7	13.0	7	59.0	29.5	1.5	1.5	1.5	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	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	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	59.9	VG 95343 T08 A 011 A	412-07180
1209-1-G	27.0	13	13.0	6.0	108.0	54.0	2.5	2.5	1.5	38.6	VG 95343 T08 A 002 A	412-09180

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.



For product specific approvals and specifications please refer to the Appendix.



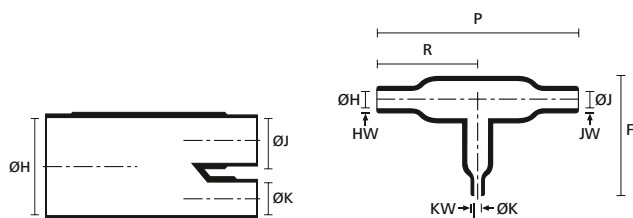


### T-Shapes, VG style

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



a: Expanded form (supplied)

b: Fully recovered form (after heating)



1204-1 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 ± 20 %	JW ± 20 %	KW ± 20 %	F ± 15 %	Designation as per VG-Norm	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	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	-	VG 95343 T08 A 017 A	412-16180

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.



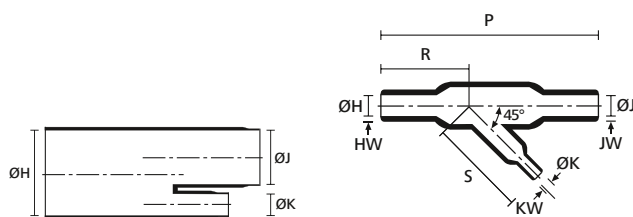
For product specific approvals and specifications please refer to the Appendix.

### 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



a: Expanded form (supplied)

b: Fully recovered form (after heating)



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	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	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	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	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	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	413-11180

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.



For product specific approvals and specifications please refer to the Appendix.



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## Angle Shapes

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

### Features and benefits

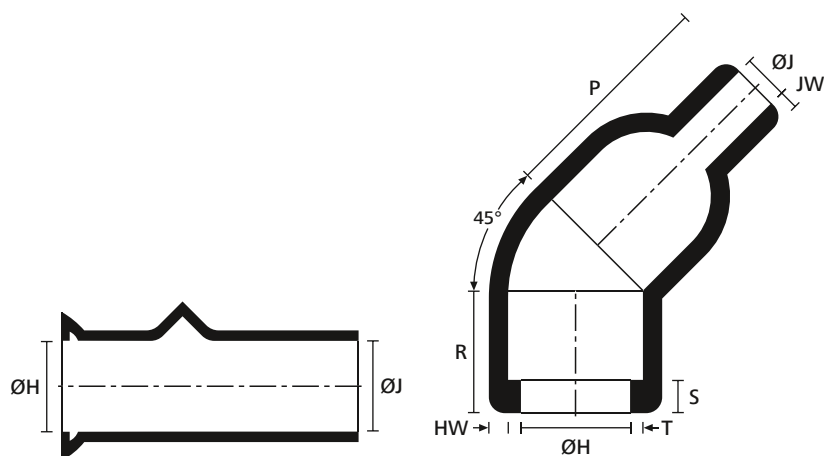
- Provides strain relief and mechanical protection for harness systems
- Use in conjunction with a circular grooved adaptor



For Material / Adhesive information please refer to page 274, 275.



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 %	Article-No.
1820-4-G	30°	36	21.4	36	8.3	46.0	26.0	1.8	1	26.0	8.6	418-20001
1821-42-G	45°	20	14.2	20	4.1	24.0	10.0	2.3	1.8	3.0	1.1	418-21013
1803-4-G	45°	24	17.8	12	5.6	28.0	14.0	2.8	2.3	3.0	1	418-03005
1830-4-G	45°	31	17.9	31	7	55.0	35.0	1.8	1.8	-	2.0	418-30003
1807-4-G	45°	35.6	18	35.6	7.4	43.2	10.2	1.8	1.8	3.0	1	418-07003
1831-4-G	45°	36	22.1	36	8.4	60.0	40.0	2.0	2.0	-	2.0	418-31001
1805-4-G	45°	40	18.8	40	7	28.0	11.0	1.5	1.5	3.0	1	418-05003
1806-4-G	45°	42.6	27.9	42.6	9.7	85.0	17.8	2	2	3.0	1.7	418-06002
1832-4-G	45°	43	27.9	43	9.9	65.0	45.0	2.2	2.2	-	2.0	418-32000
1819-4-G	60°	43	28.2	43	9.9	55.0	18.0	2	1	18.0	3	418-19001
1817-4-G	60°	60	33.7	60	14.8	65.0	32.0	2	1	32.0	3.0	418-17001

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

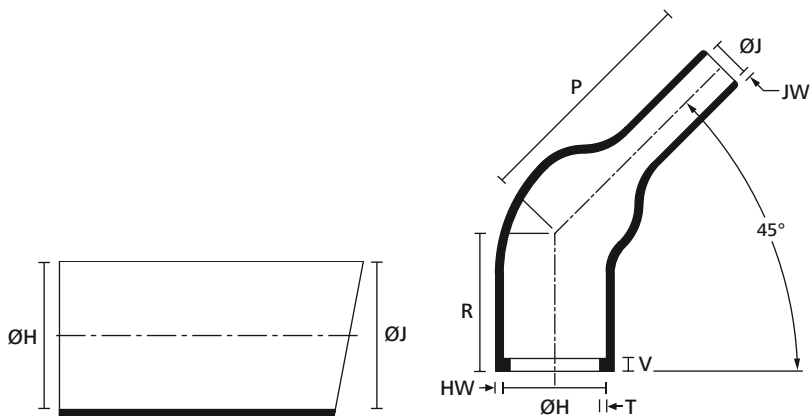
**Helashrink 1800 Series, with rib, 45° angle**

#### Features and benefits

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



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 %	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	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	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	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	418-37001

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

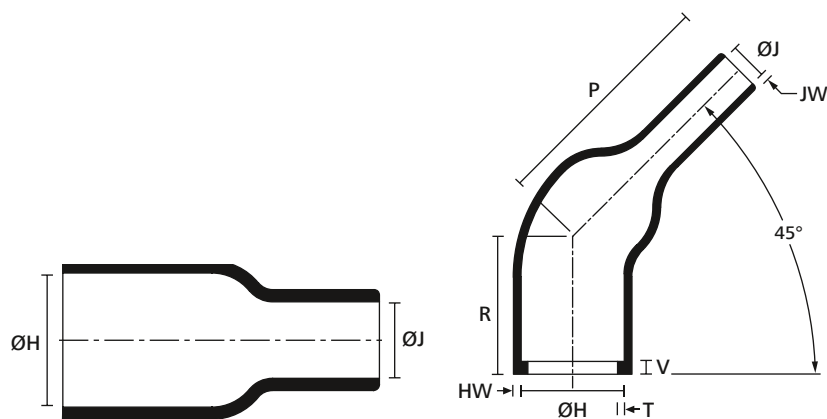
- Provides strain relief and mechanical protection for harness systems
- Use in conjunction with a circular grooved adaptor
- For use in elevated temperature scenarios



For Material / Adhesive information please refer to page 274, 275.



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 %	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	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	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	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	418-37002

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.



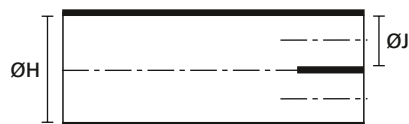


### 2-Way Outlet Shapes, Breakout Boots

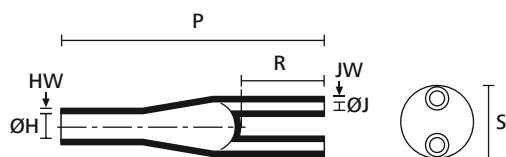
Helashrink 200 Series, in line, low voltage

#### 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



a: Expanded form (supplied)



b: Fully recovered form (after heating)



223-2 supplied / fully recovered.

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

All dimensions in mm. Subject to technical changes. For these moulded shapes a wide range of material / adhesive combinations are available. Please refer to the Moulded Shapes Catalogue.

### 4-Way Outlet Shapes, Breakout Boots

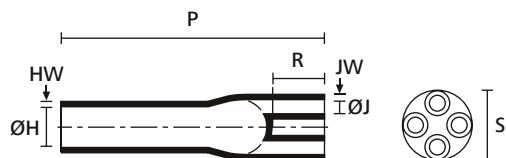
Helashrink 400 Series, in line, low voltage

#### 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



a: Expanded form (supplied)



b: Fully recovered form (after heating)



400 series supplied / fully recovered.

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

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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[www.HT.click/9-299](http://www.HT.click/9-299)





### 5-Way Outlet Shapes, Breakout Boots

Helashrink 500 Series, in line, low voltage

#### Features and benefits

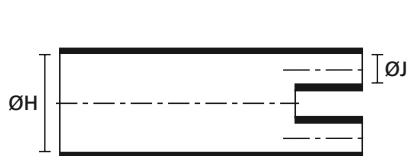
- Cable breakout boots for insulating and sealing cable crotch or conduit system
- Excellent resistance to abrasion and weathering



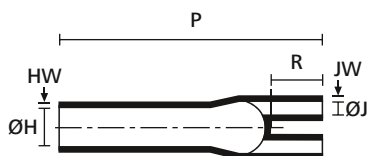
500 Series supplied / fully recovered.



For Material / Adhesive information please refer to page 274, 275.



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

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

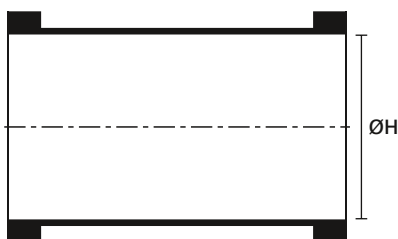
Helashrink 1760, 1790, 1820 Series

#### Features and benefits

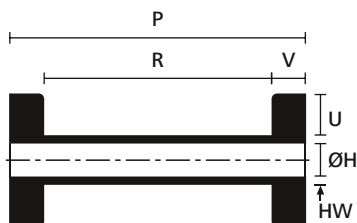
- Provides location, cushioning, shimming and protection on cable runs through bulk head or enclosure entry points
- Available in a range of materials and adhesives for most applications.



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 %	U ± 20 %	Article-No.
1822-1-G	12.0	5.9	30.0	24.0	6.1	3.0	2.0	418-22001
1796-1-G	15.0	6.4	29.0	24.0	1.5	2.5	2.0	417-96001
1823-1-G	16.0	7.8	32.0	24.0	6.2	4.0	2.0	418-23001
1793-1-G	20.0	9.5	35.0	25.0	1.5	5.0	3.0	417-93001
1795-1-G	26.0	12.7	35.0	25.0	2.0	5.0	3.0	417-95001
1794-1-L	30.0	18.0	35.0	25.0	2.0	5.0	3.0	417-94002

All dimensions in mm. Subject to technical changes. For these moulded shapes a wide range of material / adhesive combinations are available. Please refer to the Moulded Shapes Catalogue.





## Pinched End Caps

### Helashrink PEC Series, low voltage

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

#### Features and benefits

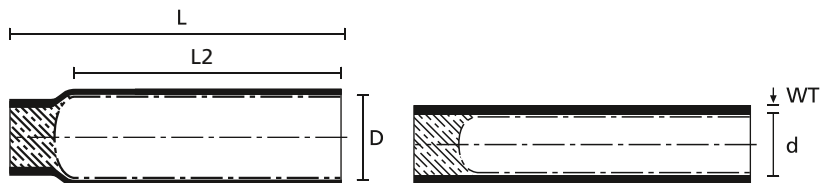
- Small size End Caps
- Fast and easy application
- With Inner adhesive layer for moisture sealing
- 3:1 shrink ratio
- Different diameters for wide application range
- Other lengths available on request



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

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Colour</b>	Black (BK)
<b>Shrink Ratio</b>	3:1
<b>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

RoHS



PEC-Series expanded.

PEC-Series recovered

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.

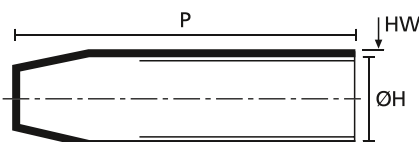


For Material / Adhesive information please refer to page 274, 275.

<b>MATERIAL</b>	Polyolefin, cross-linked (PO-X)
<b>Colour</b>	Black (BK)
<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



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

All dimensions in mm. Subject to technical changes.



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[www.HT.click/9-303](http://www.HT.click/9-303)





### 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



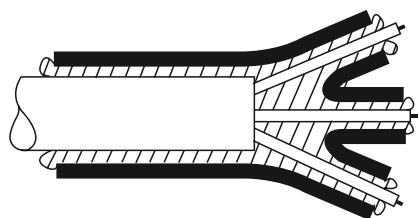
HMT200A-Tape.



[www.HellermannTyton.com/HMT200A-cat22](http://www.HellermannTyton.com/HMT200A-cat22)



Adhesive tape HMT200A for sealing against humidity.



HMT200A

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



TYPE	Thickness (T)	Width (W)	Colour	Reel Length	Tools	Article-No.
HMT200A	0.25	25.0	Translucent (TT)	10 m	30;32	354-02260
	0.25	25.0	Translucent (TT)	50 m	30;32	354-02259

All dimensions in mm. Subject to technical changes.

Recommended Tools	
30	32
H6100	CHG900
564	563

For more information on toolings please refer to the Application Tooling chapter.



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[www.HT.click/9-304](http://www.HT.click/9-304)





### 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 10 g 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



V9500 - VG 95343 approved 2K Epoxy Adhesive Kit.



[www.HellermannTyton.com/V9500-cat22](http://www.HellermannTyton.com/V9500-cat22)



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



TYPE	Description	Designation as per VG-Norm	Tools	Article-No.
<b>V9500 Epoxy Kit</b>	5 x 10g sachets (50g), 5 x mixing pots, 5 x mixing sticks, 5 x emery papers	VG 95343 T15 A001 A	30	627-95000
	1 x dual cartridge, 5 x mixing pots, 5 x mixing sticks, 5 x emery papers	VG 95343 T15 A 002 B	30	627-95001
<b>V9500 Epoxy Cartridge</b>	Two-component adhesive cartridge	VG 95343 T15 D 002 B	30	627-95002
<b>V9500 Applicator Gun</b>	Applicator gun	VG 95343 T15 DA	-	627-95003
<b>V9500 Applicator Nozzle</b>	Mixing nozzle	VG 95343 T15 MA	-	627-95004

All dimensions in mm. Subject to technical changes.

Recommended Tools	
	30 H6100
	564

For more information on toolings please refer to the Application Tooling chapter.



For product specific approvals and specifications please refer to the Appendix.



Add items to your watchlist!  
[www.HT.click/9-305](http://www.HT.click/9-305)





### Chloroprene tubing and grommets

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.

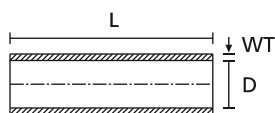
#### Features and benefits

- 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.*

#### Helsyn H



*Chloroprene tubing*

<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</b>	min. 500%



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)	35	608-01200
H15BKX100M	1.5	0.80	3.0	100 m	100 m	Black (BK)	35	608-01201
H25BKX100M	2.5	0.80	4.0	100 m	100 m	Black (BK)	36;39	608-01203
H30BKX100M	3.0	0.80	6.0	100 m	100 m	Black (BK)	36;39	608-01204
H40BKX100M	4.0	1.00	8.0	100 m	100 m	Black (BK)	36;39	608-01205
H50BKX100M	5.0	1.05	9.0	100 m	100 m	Black (BK)	36;39	608-01206
H75BKX25M	7.5	1.25	13.0	25 m	25 m	Black (BK)	37;39-40	608-01207

All dimensions in mm. Subject to technical changes.

Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.



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	1,000 pcs.	Black (BK)	35	600-02498
H15X20BK	1.5	0.80	3.0	20.0	1,000 pcs.	Black (BK)	35	600-02929
H25X25BK	2.5	0.80	4.0	25.0	1,000 pcs.	Black (BK)	36;39	600-02934
H30X25BK	3.0	0.80	6.0	25.0	1,000 pcs.	Black (BK)	36;39	600-02938
H40X30BK	4.0	1.00	8.0	30.0	500 pcs.	Black (BK)	36;39	600-02947
H50X25BK	5.0	1.05	9.0	25.0	500 pcs.	Black (BK)	36;39	600-02949
H75X30BK	7.5	1.25	13.0	30.0	250 pcs.	Black (BK)	37;39-40	600-02198

All dimensions in mm. Subject to technical changes.

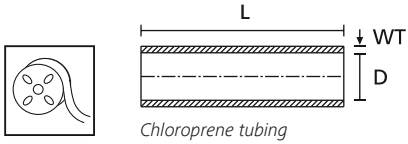
Minimum Order Quantity (MOQ) may differ from package content. Other packaging options may also be available.





## Chloroprene tubing and grommets

### Helsyn TH - thin wall



TYPE	Supplied Ø D min.	Wall (WT)	Bundle Ø max.	Reel Length	Pack Cont.	Colour	Tools	Article-No.
TH100BKX25M	10.0	1.00	20.0	25 m	25 m	Black (BK)	37;39-40	608-01208
TH120BKX25M	12.0	1.00	23.0	25 m	25 m	Black (BK)	38-39;41	608-01209
TH140BKX20M	14.0	1.10	25.0	20 m	20 m	Black (BK)	38-39;41	608-01210
TH170BKX20M	17.0	1.20	28.0	20 m	20 m	Black (BK)	38-39;41	608-01202

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



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)	37;39-40	600-02493
TH120X50BK	12.0	1.00	23.0	50.0	100 pcs.	Black (BK)	38-39;41	600-02495
TH140X50BK	14.0	1.10	25.0	50.0	100 pcs.	Black (BK)	38-39;41	600-02496
TH170X50BK	17.0	1.20	28.0	50.0	100 pcs.	Black (BK)	38-39;41	600-02497

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

Recommended Tools							
	35	36	37	38	39	40	41
	NA0/1	NA1K/3	NA4/5	NA8/10	VA2.5/5	VA2.5/5+8	VA2.5/5+18
	565	565	565	565	566	566	566

For more information on toolings please refer to the Application Tooling chapter.

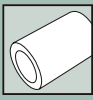


Add items to your watchlist!

[www.HT.click/9-307](http://www.HT.click/9-307)







### 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.
HELLERINE 0.25 LITER	Hellerine assembly aid, 0.25 liter	625-00250
HELLERINE 5 LITER	Hellerine assembly aid, 5 liter	625-05000
HELLERINE 20 LITER	Hellerine assembly aid, 20 liter	625-06000

Subject to technical changes.



# Always stay flexible when it comes to cable protection.

The easy way to protect your cables. Our HelaGuard corrugated conduits offer flexible, abrasion resistant and durable protection for all your cabling needs. With a double-slit design, installing and retrofitting cables is complete in a matter of minutes, while a lateral opening provides easy access to your cables and allows you to stay flexible at all times. That's flexibility made simple.

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