

# ELPROMAN

HEAT SHRINK TUBING  
& CABLE TIES



A combined  
knowledge bank  
of over 100 years



## Trusted Partner in Cable Solutions Since 1967

Elproman was founded in 1967 with a clear vision: to deliver reliable, high-quality power solutions to the Swedish industry. Over the years, our business has evolved, and today we offer one of the most comprehensive ranges of special cables and related products on the market.

We're based in Segeltorp, just south of Stockholm, where our warehouse holds over 7,000 products ready to meet a wide variety of needs.

At Elproman, we believe in building long-term partnerships – not just transactions. Many of our employees have been with us for a long time and that continuity allows us to offer genuine expertise, personal service, and dependable support. With over 100 years of combined experience, we're here to guide you to the right solutions.

Since 2021, Elproman is part of the Electronics business area within the KAMIC Group.

**ELPROMAN**



WITH OUR WIDE RANGE OF HEAT SHRINK MATERIAL WE OFFER OUR CUSTOMERS PRODUCTS FROM SOME OF THE WORLDS STRONGEST MANUFACTURERS.

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HEAT SHRINK INFORMATION

# What is Heat Shrink Tubing?



Heat Shrink is a plastic tube which is subsequently expanded to more than its original size, when heat is applied, it then shrinks back to its original size.

**What is it used for?**

The application possibilities are many, in fact, only your imagination sets the limit. Heat Shrink is highly recognised as a product used for electrical insulation, but also industries such as offshore, automotive, aerospace, windmill and many more use Heat Shrink. It can be used anywhere when there is requirements for insulation or other forms of protection.

**How to use Heat Shrink**

First the Heat Shrinkable tube must be cut to the desired length, it is important for the tubing to be cut cleanly, not with a blunt knife/blade. If the cut is not clean and neat there may be a risk of it running or splitting when it starts to shrink. Be sure to shrink with the correct and appropriate tools. The best result is with a heat gun/torch or an oven. The crimp temperature varies depending on the material used. All materials have a temperature where shrinkage will start, as well as a temperature that is required to achieve full shrinkage.

**Shrink ratio**

A shrink ratio of 2:1 means that a sleeve that is 2.4mm before shrinkage will be 1.2mm after it is fully shrunk. All measurements are always internal dimensions given in millimeters. Elproman provides Heat Shrink tubing with shrink factors of 2:1, 3:1, 4:1 and 6:1.

**Material types**

Plastic raw material is available in many different types such as Polyolefin, Fluoroelastomer, Kynar, Teflon and many more. Your choice depends entirely on the requirements for temperature, flexibility, insulation, wall thickness as well as many other factors.

Some materials are also produced with adhesive inside, which is suitable where there is a requirement for moisture-proofing, etc., but be aware that it is an adhesive and not glue. Some types are available on spools and others in cut lengths, and in many different colours.

Elproman is always available to guide you in choosing the right product.

## HOW IS HEAT SHRINK PRODUCED?



**Heat Shrink production can be divided into 3 steps.**

- 1** First a tube is produced with the precise thickness and the required finished size after full shrinkage.
- 2** Then the plastic material is cross-linked, in this way it will have a kind of built-in memory, which means that this is the size it will always come back to when heat is applied.
- 3** Finally the plastic material is expanded so that it becomes the finished size heat shrink tubing. This process requires great expertise to achieve a satisfactory result with a uniform and correct thickness.

## CHECK LIST BEFORE YOU ORDER



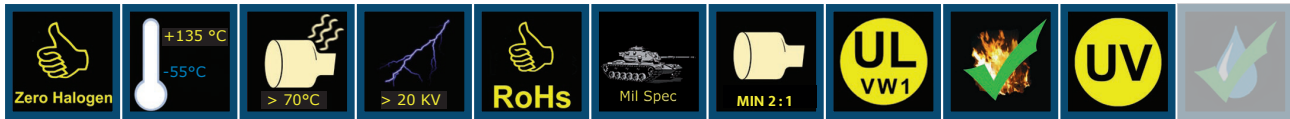
- What size is the object to be crimped?
- How much should the shrink tubing shrink down to?
- How much heat can the object to be crimped tolerate?
- Is there a need for protection against moisture?
- Is coloured shrink tubing required?



If you need more information please contact us or visit our website  
[www.elproman.se](http://www.elproman.se)

We certify that the values provided are as accurate as possible. Use of these values, however, remains the sole responsibility of the customer and cannot in any way substitute for testing the product under real conditions of use. The user must assess whether this product is suitable for a particular use. Elproman shall not be held responsible for any loss or anomaly resulting from the correct or incorrect use of this product.

# THIN WALL TUBING ACS-55-HF



## ACS-55-HF

Thin wall heat shrink tubing | Flexible | Halogen Free  
Flame retardant | 2:1

### Features

- Thin-wall heat shrink tubing / flexible / halogen free / flame retardant / 2:1

### Approvals

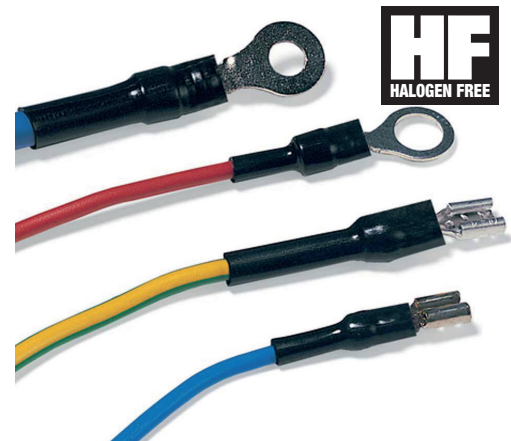
- UL224 125 °C VW-1 600 V file E527507 • CSA C22.2 No. 198.1-06
- Meets: RoHS, Sony-SS-00259. Meets: SAE-AMS-DTL-23053/5 Class 2 & 3

### Application

- Operating temperature: -55°C to +135°C
- Minimum shrink temperature: +70°C
- Minimum full recovery temperature: +100°C
- Longitudinal change: 0 ± 10% max.

### Order information

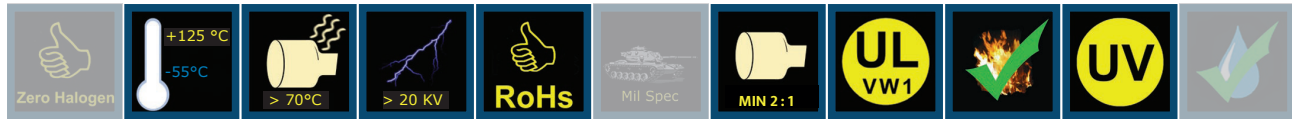
- Colors: Black • Other colors are available on request



Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Reel / Meter
ACS-55-HF-1,2	1,2	0,6	0,33	150
ACS-55-HF-1,6	1,6	0,8	0,36	150
ACS-55-HF-2,4	2,4	1,2	0,44	150
ACS-55-HF-3,2	3,2	1,6	0,44	150
ACS-55-HF-4,8	4,8	2,4	0,51	75
ACS-55-HF-6,4	6,4	3,2	0,56	75
ACS-55-HF-9,5	9,5	4,8	0,56	75
ACS-55-HF-12,7	12,7	6,4	0,65	50
ACS-55-HF-16,0	16,0	8,0	0,69	50
ACS-55-HF-19,0	19,0	9,5	0,80	30
ACS-55-HF-25,4	25,4	12,7	0,90	30
ACS-55-HF-32,0	32,0	16,0	0,90	30
ACS-55-HF-38,1	38,1	19,0	1,00	30
ACS-55-HF-50,8	50,8	25,4	1,00	30
ACS-55-HF-76,2	76,2	38,1	1,20	15
ACS-55-HF-102,0	102,0	38,1	1,30	15
ACS-55-HF-126,0	126,0	63,5	1,30	15
ACS-55-HF-150,0	150,0	76,0	1,30	15



# THIN WALL TUBING ACS-55



## ACS-55

Thin wall heat shrink tubing | Flexible | Flame retardant | 2:1

### Features

- Crosslinked Polyolefin • Shrink ratio: 2:1 • Flame retardant
- General purpose • High flexibility

### Approvals

- UL224 125°C VW-1 600 V file E527507 • CSA file no.: 1934614
- Meets: RoHS, Sony-SS-00259

### Application

- Operating temperature: -55°C to +125°C • Minimum shrink temperature: +70°C
- Minimum full recovery temperature: +100°C • Longitudinal change: 0 ± 10% max.

### Order information

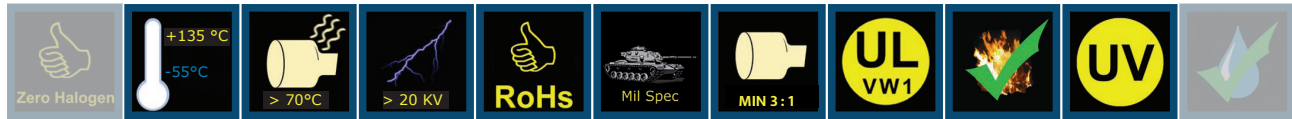
- Colors: black, red, blue, yellow, green, white, purple, brown, orange, grey
- Other colors are available on request



Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Reel / Meter
ACS-55 1,2/0,6	1,2	0,6	0,33	150
ACS-55 1,6/0,8	1,6	0,8	0,36	150
ACS-55 2,4/1,2	2,4	1,2	0,44	150
ACS-55 3,2/1,6	3,2	1,6	0,44	150
ACS-55 4,8/2,4	4,8	2,4	0,51	75
ACS-55 6,4/3,2	6,4	3,2	0,56	75
ACS-55 9,5/4,8	9,5	4,8	0,56	75
ACS-55 12,7/6,4	12,7	6,4	0,65	50
ACS-55 16,0/8,0	16,0	8,0	0,69	50
ACS-55 19,0/9,5	19,0	9,5	0,80	30
ACS-55 25,4/12,7	25,4	12,7	0,90	30
ACS-55 32,0/16,0	32,0	16,0	0,90	30
ACS-55 38,1/19,0	38,1	19,0	1,00	30
ACS-55 50,8/25,4	50,8	25,4	1,00	30
ACS-55 76,2/38,1	76,2	38,1	1,20	15
ACS-55 102,0/50,8	102,0	50,8	1,30	15
ACS-55 126,0/63,5	126,0	63,5	1,30	15
ACS-55 150,0/76,0	150,0	76,0	1,30	15



# THIN WALL TUBING ACS-300



## ACS-300

Thin wall heat shrink tubing | Flexible | Flame retardant  
Mil spec 135 degrees | 3:1

### Features:

- Crosslinked Polyolefin
- Shrink ratio: 3:1
- Flame retardant
- High flexibility

### Approvals

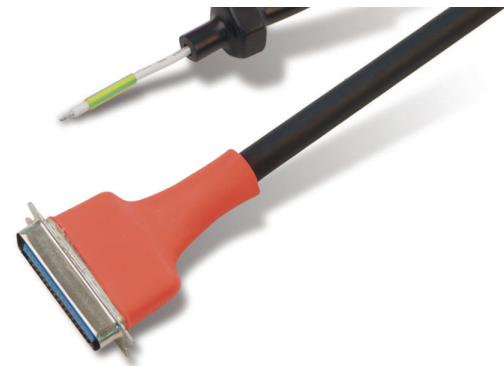
- UL224 125°C VW-1 600 V file E527507
- CSA file no.: 1934614
- Meets: RoHS
- Meets: SAE-AMS-DTL-23053/5 Class 2 & 3

### Application

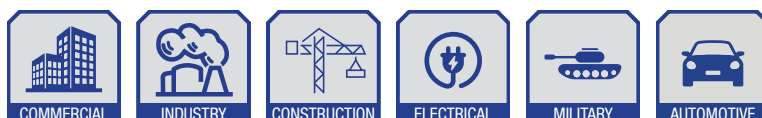
- Operating temperature: -55°C to +135°C
- Minimum shrink temperature: +70°C
- Minimum full recovery temperature: +100°C
- Longitudinal change: 0 ± 10% max.

### Order information

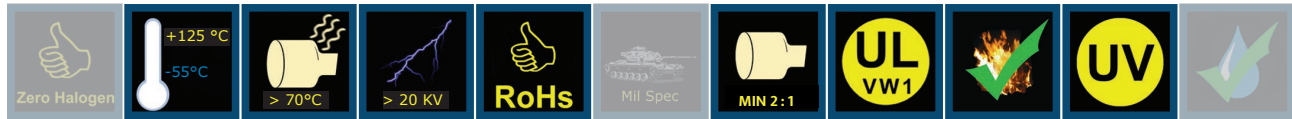
- Color: black
- Other colors: red, blue, yellow, green, white (flame retardant class 1)  
Transparent (class 2, not flame retardant)



Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Reel / Meter
ACS-300 - 1,5/0,5	1,5	0,5	0,45	150
ACS-300 - 3,0/1,0	3,0	1,0	0,55	150
ACS-300 - 4,5/1,5	4,8	1,5	0,60	75
ACS-300 - 6,0/2,0	6,4	2,0	0,65	75
ACS-300 - 9,0/3,0	9,5	3,0	0,75	75
ACS-300 - 12,0/4,0	12,7	4,0	0,80	50
ACS-300 - 18,0/6,0	19,1	6,0	0,90	30
ACS-300 - 24,0/8,0	25,4	8,0	1,20	30
ACS-300 - 39,0/13,0	39,0	13,0	1,25	30



# MINI BOXES AMB-55 | AMB-300 | AMB-DW



## AMB-55 | AMB-300 | AMB-DW

### Applications

• AMB Series are Mini-Boxes tubing dispensers ideal for wholesalers, small shops, automotive repair shops or any electrical work shops.

**AMB-55:** 2:1 ratio, 125°C, ULVW1, high quality, environment friendly tubing (refer to ACS-55 data sheet for details).

**AMB-300:** provides 3:1 ratio, 125°C, Yellow/Green tubing ideal for grounding.

**AMB-DW:** provides 3:1 ratio, adhesive lined tubing (refer to ADW-300 datasheet for details).

### Features

• Sizes available: from 1,6 mm up to 25,4 mm.

### Order information

**AMB-55 / AMB-300:** Black, Clear, Red, Blue, Yellow, Green, White (others on request). • **AMB-DW:** Black



AMB-55

Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Box / Meter
AMB-55 1,2/0,6	1,2	0,6	0,33	10
AMB-55 1,6/0,8	1,6	0,8	0,36	10
AMB-55 2,4/1,2	2,4	1,2	0,44	10
AMB-55 3,2/1,6	3,2	1,6	0,44	10
AMB-55 4,8/2,4	4,8	2,4	0,51	10
AMB-55 6,4/3,2	6,4	3,2	0,56	5
AMB-55 9,5/4,8	9,5	4,8	0,56	5
AMB-55 12,7/6,4	12,7	6,4	0,65	5
AMB-55 16,0/8,0	16,0	8,0	0,69	5
AMB-55 19,0/9,5	19,0	9,5	0,80	5
AMB-55 25,4/12,7	25,4	12,7	0,90	5

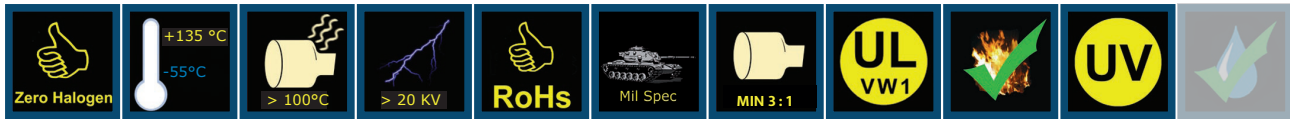
AMB-300

Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Box / Meter
AMB-300 3,0/1,0	3,0	1,0	0,55	10
AMB-300 4,5/1,5	4,5	1,5	0,60	10
AMB-300 6,0/2,0	6,0	2,0	0,65	10
AMB-300 9,0/3,0	9,0	3,0	0,75	5
AMB-300 12,0/4,0	12,0	4,0	0,80	5
AMB-300 18,0/6,0	18,0	6,0	0,90	5
AMB-300 24,0/8,0	24,0	8,0	1,00	5

AMB-DW

Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Box / Meter
AMB-DW 3,0/1,0	3,0	1,0	1,00	5,0
AMB-DW 4,8/1,5	4,8	1,5	1,00	4,0
AMB-DW 6,0/2,0	6,0	2,0	1,00	3,5
AMB-DW 9,0/3,0	9,0	3,0	1,40	3,0
AMB-DW 12,0/4,0	12,0	4,0	1,60	2,5
AMB-DW 19,0/6,0	19,0	6,0	2,15	2,0
AMB-DW 24,0/8,0	24,0	8,0	2,40	1,5

# THIN WALL TUBING AIMS-300



## AIMS-300

Flat | Zero Halogen | Flame Retarded | 3:1

### Features

- Shrink ratio 3:1 • Supplied flat, ideal for use in printers
- The tube shows excellent flame retardant, insulation and flexible properties.

### Applications

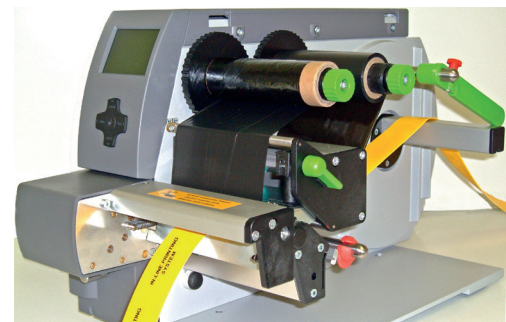
- This flat tubing is an environmental friendly heat shrinkable tube made with specially designed halogen free polyolefin ideal for underground applications where zero halogen cables & accessories are in demand.

### Various

- Operating temperature: -55°C to +135°C
- Minimum shrink temperature: 100°C

### Order information

- Color: yellow, white.
- Other colors on request.

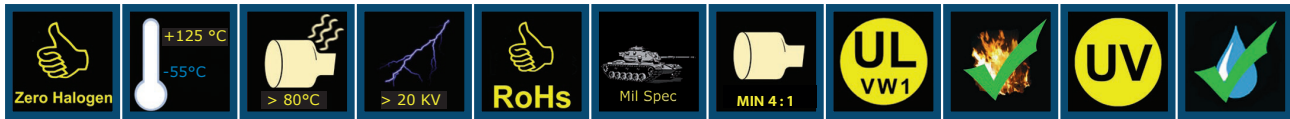


Property	Test Method	Typical Data
Operating temperature		-55°C to +135°C
Tensile strength	ASTM D 2671	>10 MPa
Elongation at break	ASTM D 2671	>250%
Longitudinal shrinkage	UL 224	≥5%
Dielectric strength	IEC 243	22Kv/mm
Eccentricity	ADTM D 2761	<30%
Heat shock	250°C/4 hrs	No cracking
Heat aging Tensile strength Ultimate elongation	175°C, 168hrs	9.0MPa >150%
Flammability	ASTM D8763	pass

Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Reel / Meter
AIMS-300 - 3,0/1,0	3,0	1,0	0.57	30M
AIMS-300 - 4,5/1,5	4,8	1,5	0.57	30M
AIMS-300 - 6,0/2,0	6,4	2,0	0.58	30M
AIMS-300 - 9,0/3,0	9,5	3,0	0.60	30M
AIMS-300 - 12,0/4,0	12,7	4,0	0.60	30M
AIMS-300 - 18,0/6,0	19,1	6,0	0.60	30M
AIMS-300 - 24,0/8,0	25,4	8,0	0.65	30M



# DUAL WALL TUBING ADW-HF



## ADW-HF

Dual wall heat shrink tubing | Flexible  
Flame retardant | Adhesive lined | 3:1 | 4:1

### Features

- Crosslinked co-extruded adhesive lined Polyolefin
- Shrink ratio: 3:1 and 4:1 • Flame retardant
- Excellent sealing and insulation properties • UV resistant

### Approvals

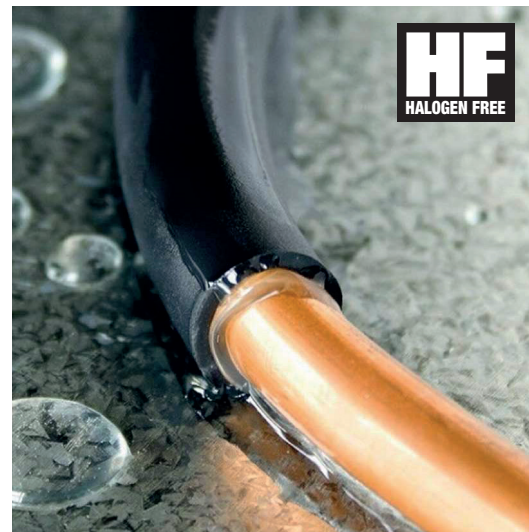
- UL 224 125°C VW-1 600 V file E527507 • CSA C22.2 No. 198.1-06 (except clear)
- Meets: SAE-AMS-DTL-23053/4 Class 2 & 3 • Meets: RoHS

### Application

- Operating temperature: -55 °C to +135°C
- Minimum shrink temperature: +80°C
- Minimum full recovery temperature: +110°C
- Longitudinal change: 0 ± 10% max.

### Order information

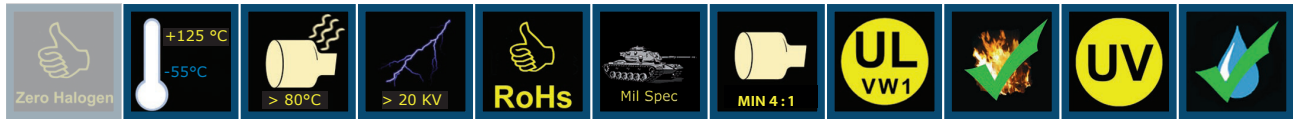
- Color: black • Other colors: available on request
- Also available in various lengths and in mini boxes



Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Standard length
ADWHF 3/1	3,0	1,0	1,00	1,22 m / 150 m
ADW-HF 4,8/1,5	4,8	1,5	1,00	1,22 m / 75 m
ADW-HF 6/2	6,0	2,0	1,00	1,22 m / 75 m
ADW-HF 9/3	9,0	3,0	1,40	1,22 m / 50 m
ADW-HF 12/4	12,0	4,0	1,60	1,22 m / 30 m
ADW-HF 19/6	19,0	6,0	2,15	1,22 m / 30 m
ADW-HF 24/8	24,0	8,0	2,40	1,22 m / 30 m
ADW-HF 30/10	30,0	10,0	2,40	1,22 m / 30 m
ADW-HF 40/13	40,0	13,0	2,40	1,22 m / 30 m
ADW-HF 4/1	4,0	1,0	1,00	1,22 m / 150 m
ADW-HF 6/1,5	6,0	1,5	1,00	1,22 m / 75 m
ADW-HF 8/2	8,0	2,0	1,00	1,22 m / 75 m
ADW-HF 12/3	12,0	3,0	1,40	1,22 m / 50 m
ADW-HF 16/4	16,0	4,0	1,60	1,22 m / 30 m
ADW-HF 24/6	24,0	6,0	2,15	1,22 m / 30 m
ADW-HF 32/8	32,0	8,0	2,40	1,22 m / 30 m
ADW-HF 52/13	52,0	13,0	2,40	1,22 m



# DUAL WALL TUBING ADW-300/400



## ADW-300/400

Dual wall heat shrink tubing | flexible  
flame retardant | adhesive lined | 3:1 | 4:1

### Features:

- Crosslinked co-extruded adhesive lined Polyolefin
- Shrink ratio: 3:1 and 4:1
- Flame retardant
- Excellent sealing and insulation properties
- UV resistant

### Approvals

- UL 224 125°C VW-1 600V File No.E204071 (except clear)
- Meets: SAE-AMS-DTL-23053/4 • Meets: RoHS

### Application

- Operating temperature: -55 °C to +125°C
- Minimum shrink temperature: +70°C
- Minimum full recovery temperature: +110°C
- Longitudinal change: 0 ± 10% max.

### Order information

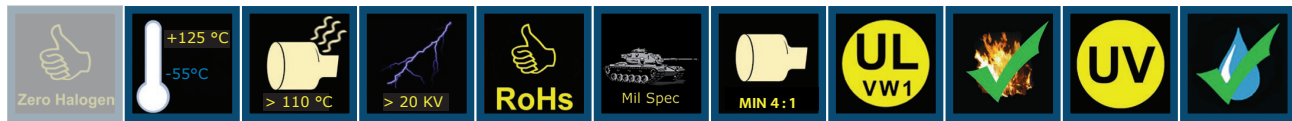
- Color: black • Other colors: red, blue, yellow, green, white, clear
- Also available in various lengths and in mini boxes



Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (min.)	Standard length
ADW-300 3/1	3,0	1,0	1,00	1,22 m / 150 m
ADW-300 4,8/1,5	4,8	1,5	1,00	1,22 m / 75 m
ADW-300 6/2	6,0	2,0	1,00	1,22 m / 75 m
ADW-300 9/3	9,0	3,0	1,40	1,22 m / 50 m
ADW-300 12/4	12,0	4,0	1,60	1,22 m / 30 m
ADW-300 19/6	19,0	6,0	2,15	1,22 m / 30 m
ADW-300 24/8	24,0	8,0	2,40	1,22 m / 30 m
ADW-300 30/10	30,0	10,0	2,40	1,22 m / 30 m
ADW-300 40/13	40,0	13,0	2,40	1,22 m / 30 m
ADW-400 4/1	4,0	1,0	1,00	1,22 m / 150 m
ADW-400 6/1,5	6,0	1,5	1,00	1,22 m / 75 m
ADW-400 8/2	8,0	2,0	1,00	1,22 m / 75 m
ADW-400 12/3	12,0	3,0	1,40	1,22 m / 50 m
ADW-400 16/4	16,0	4,0	1,60	1,22 m / 30 m
ADW-400 24/6	24,0	6,0	2,15	1,22 m / 30 m
ADW-400 32/8	32,0	8,0	2,40	1,22 m / 30 m
ADW-400 52/13	52,0	13,0	2,40	1,22 m



# DUAL WALL TUBING ABK



## ABK

Dual wall heat shrink tubing | Automotive Adhesive lined | 4:1

### Features:

- Crosslinked adhesive lined Polyolefin
- Shrink ratio: 4:1
- High performance adhesive
- Designed for wire harnesses / splices
- Tubing for automotive industry
- Excellent mechanical performance

### Approvals

- Meets: UL224 125°C 600V SAE-AMS-DTL-23053/4

### Application

- Operating temperature: -55°C to +125°C
- Minimum shrink temperature: +110°C
- Minimum full recovery temperature: +135°C
- Longitudinal change: 0 ± 10% max.

### Order information

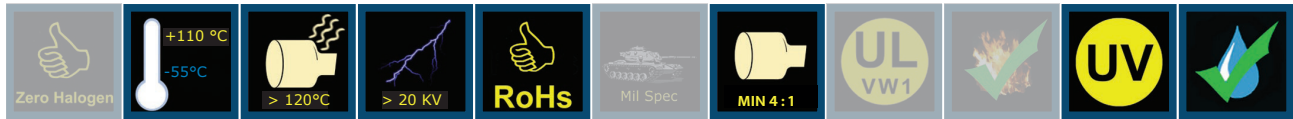
- Colors: black, transparent



Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Standard length in mm
ABK 6,0/1,27	6,0	1,27	1,30	1220
ABK 8,0/1,65	8,0	1,65	1,52	1220
ABK 12,0/2,41	12,0	2,41	1,91	1220
ABK 18,0/4,45	18,0	4,45	2,41	1220



# MEDIUM WALL TUBING AMW/AMWA



## AMW/AMWA

### Medium wall tubing (AMW), adhesive lined (AMWA)

#### Features

- Medium-wall tubing with and without hot melt adhesive • Good environmental protection
- Good electrical and mechanical performance • Ideal for low voltage applications
- UV resistant

#### Approvals

- Meets: RoHS

#### Application

- Operating temperature: -55 °C to +110°C • Minimum full recovery temperature: +120°C
- Longitudinal change: 0 ± 10% max.

#### Order information

- Also available in lengths of 1 and 1,5 meter • Color: black

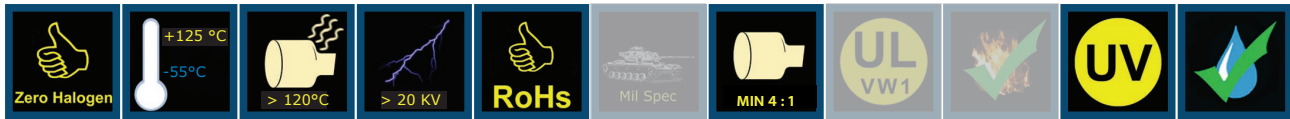


Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Standard length in mm
AMW/AMWA 8/2	8,0	2,0	1,6	1220
AMW/AMWA 12/3	12,0	3,0	2,0	1220
AMW/AMWA 16/5	16,0	5,0	2,2	1220
AMW/AMWA 22/6	22,0	6,0	2,4	1220
AMW/AMWA 28/6	28,0	6,0	2,5	1220
AMW/AMWA 33/8	33,0	8,0	2,5	1220
AMW/AMWA 40/12	40,0	12,0	2,5	1220
AMW/AMWA 55/16	55,0	16,0	2,7	1220
AMW/AMWA 65/19	65,0	19,0	2,9	1220
AMW/AMWA 75/22	75,0	22,0	3,0	1220
AMW/AMWA 85/25	85,0	25,0	3,0	1220
AMW/AMWA 95/25	95,0	25,0	3,0	1220
AMW/AMWA 115/34	115,0	34,0	3,2	1220
AMW/AMWA 140/42	140,0	42,0	3,3	1220
AMW/AMWA 160/50	160,0	50,0	3,3	1220
AMW/AMWA 180/58	180,0	58,0	3,3	1220
AMW/AMWA 205/65	205,0	65,0	3,3	1220
AMW/AMWA 235/65	235,0	65,0	3,7	1220
AMW/AMWA 265/75	265,0	75,0	3,8	1220
AMW/AMWA 300/75	300,0	75,0	3,8	1220
AMW/AMWA 350/100	350,0	100,0	4,2	1220
AMW/AMWA 380/150	380,0	150,0	4,2	1220
AMW/AMWA 410/150	410,0	150,0	4,2	1220



SPECIAL PURPOSE TUBING

# MEDIUM WALL TUBING ACPT



## ACPT

### Anti corrosive mastic adhesive lined medium wall tubing

Crosslinked polyolefin heat shrink tubing, manufactured with an inner layer of special formula hot-melt mastic adhesive which provides sealing after shrinkage and upon cooling. Used to protect metal pipeline joints against corrosion.

**Approvals**

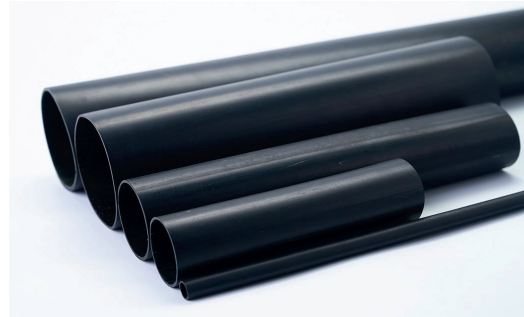
- Meets: RoHS

**Application:**

- Operating temperature: -55°C to +125°C
- Minimum full recovery temperature: +120°C
- Longitudinal change: 0 ± 10% max.

**Order information**

- Color: black

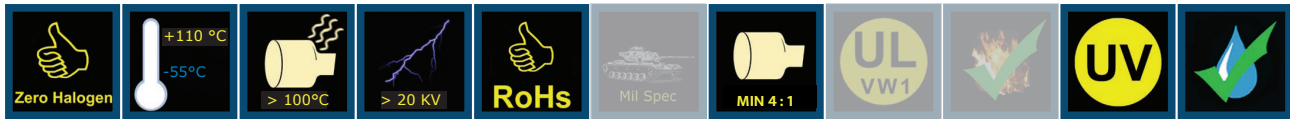


Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Standard length in mm
12/3	12	3	1,5	1,0
19/6	19	6	2,2	1,0
30/8	30	8	2,2	1,0
40/12	40	12	2,2	1,0
50/16	50	16	2,5	1,0
63/19	63	19	2,7	1,0
75/22	75	22	2,8	1,0
95/30	95	30	3,4	1,0
115/34	115	34	3,3	1,0
140/42	140	42	3,5	1,0
165/50	165	50	4,3	1,0
190/60	190	60	3,7	1,0

Property	Units	Value	Standard
Density	g/cm <sup>3</sup>	1,08±5%	ASTM D 792
Tensile strength	N/mm <sup>2</sup>	≥18	ASTM D 638
Elongation at break	%	≥600	ASTM D 638
Volym resistivity	Ω*cm	≥10 <sup>13</sup>	IEC 93
Dielectric strength	kV/mm	≥25	IEC 243
Resistance to fungi	-	Pass rate 1	ASTM G 21
Carbon black content	%	≥2,5	ASTM 2671
Cemivcal resistance (0,1N-Na2SO4, H2SO4, NaOH, Na Cl)	-	Pass	-
Continuous reperature range	°C	-55 – +125	-



# HEAVY WALL TUBING AHW/AHWA



## AHW/AMWA

Flexible flame retardant, high shrink ratio | With and without hot melt adhesive

### Features

- Heavy-wall tubing with and without hot melt adhesive
- Superior electrical and environmental insulation
- Excellent abrasion and impact resistance
- Ideal for low voltage applications • UV resistant

### Approvals

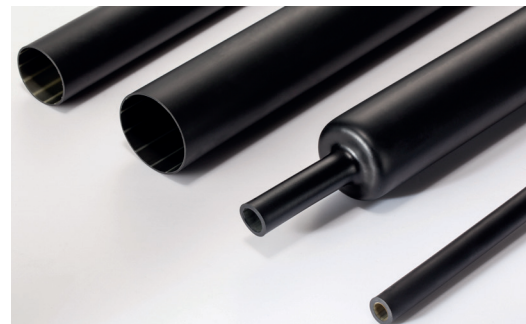
- Meets: RoHS

### Application

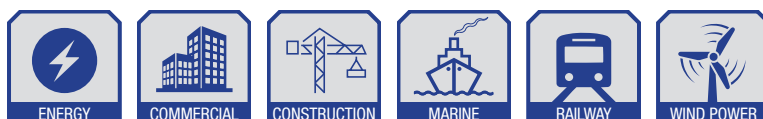
- Operating temperature: -55 °C to +110°C
- Minimum full recovery temperature: +120°C
- Longitudinal change: 0 ± 10% max.

### Order information

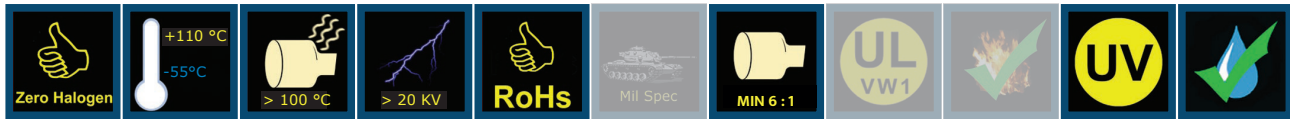
- Also available in lengths of 1 and 1,5 meter • Color: black



Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Standard length in mm
AHW/AHWA 9/3	9,0	3,0	1,8	1220
AHW/AHWA 13/4	13,0	4,0	2,2	1220
AHW/AHWA 22/6	22,0	6,0	2,7	1220
AHW/AHWA 33/8	33,0	8,0	3,2	1220
AHW/AHWA 40/12	40,0	12,0	4,0	1220
AHW/AHWA 45/12	45,0	12,0	4,0	1220
AHW/AHWA 55/16	55,0	16,0	4,0	1220
AHW/AHWA 65/19	65,0	19,0	4,0	1220
AHW/AHWA 75/22	75,0	22,0	4,0	1220
AHW/AHWA 85/25	85,0	25,0	4,2	1220
AHW/AHWA 95/30	95,0	30,0	4,2	1220
AHW/AHWA 105/30	105,0	30,0	4,2	1220
AHW/AHWA 115/34	115,0	34,0	4,2	1220
AHW/AHWA 130/36	130,0	36,0	4,2	1220
AHW/AHWA 160/50	160,0	50,0	4,2	1220
AHW/AHWA 180/50	180,0	50,0	4,2	1220
AHW/AHWA 200/60	200,0	60,0	4,2	1220
AHW/AHWA 235/65	235,0	65,0	4,1	1220
AHW/AHWA 265/75	265,0	75,0	4,3	1220
AHW/AHWA 300/85	300,0	85,0	4,4	1220
AHW/AHWA 350/100	350,0	100,0	4,5	1220



# HEAVY WALL TUBING AHWA-6X



## AHWA-6X

Heavy-wall heat shrink tubing | With hot melt adhesive and extra high shrink ratio | 6:1

### Features:

- Heavy-wall tubing with hot melt adhesive
- Shrink ratio: 6:1
- Crosslinked Polyolefin
- Excellent sealing properties
- Extra heavy-wall
- UV resistant

### Approvals:

- Meets: RoHS

### Application:

- Operating temperature: -55 °C to +110°C
- Minimum full recovery temperature: +120°C
- Longitudinal change: 0 ± 10% max.

### Order information:

- Color: black



Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (min.)	Standard length in mm
AHWA-6X 19,0/3,2	19,0	3,2	3,2	1220
AHWA-6X 33,0/5,5	33,0	5,5	3,4	1220
AHWA-6X 44,4/7,4	44,4	7,4	3,6	1220
AHWA-6X 50,8/8,3	50,8	8,3	4,7	1220
AHWA-6X 69,8/11,7	69,8	11,7	4,7	1220
AHWA-6X 88,9/17,1	88,9	17,1	4,7	1220
AHWA-6X 119,4/22,9	119,4	22,9	4,7	1220
AHWA-6X 235,0/40,0	235,0	40,0	4,7	1220



**COLD SHRINK**

# EPDM TUBING CPE

## CPE

### Cold Shrink EPDM tubing

**Description**

Cold shrink connector insulator CPE are open-ended, tubular, rubber sleeves which are factory expanded and assembled onto a removable core. The core is removed after the tube has been positioned for installation over an inline connection, terminal lug, etc., allowing the tube to shrink and form a waterresistant seal. The insulating tube is made of EPDM rubber which contains no chlorides or sulfur.

**Features/Benefits**

- Simple installation, requires no tools.
- Accommodates a wide range of cable sizes.
- No torches or heat required. Good thermal stability.
- Seals tight, retains its resiliency and pressure even after prolonged years of aging and exposure.
- Excellent wet electrical properties.
- Improved, tougher rubber formulation to withstand backfilling.
- Water-resistant. Sealing class IP68, IP67(Equivalent to ANSI C119.1)
- No mastic or tape required to seal.
- Resists acids and alkalis, resists ozone.

**Typical Applications**

- Primary electrical insulation for all solid dielectric (rubber and plastic) insulated wire and cable splicing rated to 1000 volts.
- Direct burial or submersible. For indoor, outdoor.
- Physical protection and moisture sealing for air-insulated connectors and lugs such as spacer cable and lug connections to bus bar.
- Insulation of secondary splices, copper or aluminum conductors.
- Relocation of service. Dig-in repairs.
- Sheath repairs.
- Environmental sealing for communication and other non-electrical applications.
- Insulation of inline conductor transition connectors



**Typical Properties (Mechanical & Electrical)**

**EPDM Rubber**

Properties	Typical Data	Test Method
300% Modulus	4.7Mpa	ASTM D 412-75
Ultimate Tensile Strength	11.8 MPa	ASTM D 412-75
Ultimate Elongation	750%	ASTM D 412-75
Tear Strength	38.6N/mm	ASTM D624C-73
Dielectric Strength	19.1KV/mm	ASTM D149-75
Moisture Absorption	Weight gain 1.8%	7 days, 90°C, H <sub>2</sub> O
UV Resistance	2,000hrs, UVB-313 fluorescent lamp, exposure	ASTM G-53

For sizes: Contact Elproman at [order@elproman.se](mailto:order@elproman.se)



# WRAPAROUND REPAIR AWAS



## AWAS

Heavy-wall heat shrink tubing | Heat shrinkable cable repair Adhesive | 4:1

**Features:**

- Heat shrinkable wrap around sleeve
- Good environmental protection
- Good electrical and mechanical performance
- Ideal for low voltage applications
- UV and weather resistant

**Approvals:**

- Meets: RoHS

**Application:**

- Operating temperature: -40°C to +110°C
- Longitudinal change: 0 ± 10% max.

**Order information:**

- Color: black



Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (min.)	Standard lengths in mm
AWAS 36/10	36,0	10,0	3,2	500, 750, 1000, 1500
AWAS 55/13	55,0	13,0	3,4	500, 750, 1000, 1500
AWAS 85/22	85,0	22,0	3,6	500, 750, 1000, 1500
AWAS 108/27	108,0	27,0	4,7	500, 750, 1000, 1500
AWAS 136/30	136,0	30,0	4,7	500, 750, 1000, 1500
AWAS 180/50	180,0	50,0	4,7	500, 750, 1000, 1500

**Other wrap around sleeves are also available on special request**

- AWAS-S: fiber glass reinforcing layer with aluminum moisture vapour barrier layer.
- AWAS-G: Thermochromic Paint.
- AWAS-M: Mastic Inner Layer.



**BUSBAR**

# INSULATION TUBING ABBM/ABBH



## ABBM/ABBH

### Halogen Free flexible busbar insulation tubing

**Features**

- ABBM = medium wall tubing • Medium wall flexible busbar insulation tubing
- ABBH = heavy wall tubing • Heavy wall flexible busbar insulation tubing
- Modified Polyolefin
- Excellent electrical properties and creeping resistance
- Halogen free • UV and weather resistant • Up to 36 kV

**Approvals**

- Meets: RoHS

**Application**

- Minimum full recovery temperature: +120°C
- Longitudinal change: 0 ± 10% max.

**Order information**

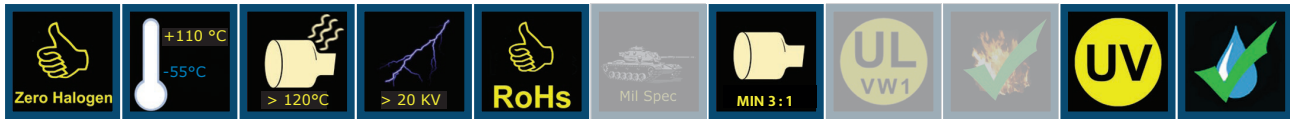
- Color: red



Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Reel / Meter & Standard length in mm
ABBM 15/6	15,0	6,0	2,5	30 meter
ABBM 25/10	25,0	10,0	2,9	30 meter
ABBM 30/12	30,0	12,0	2,9	30 meter
ABBM 40/16	40,0	16,0	2,9	30 meter
ABBM 50/20	50,0	20,0	2,9	15 meter
ABBM 65/25	65,0	25,0	2,9	15 meter
ABBM 75/30	75,0	30,0	2,9	15 meter
ABBM 100/40	100,0	40,0	2,9	15 meter
ABBM 120/50	120,0	50,0	2,9	15 meter
ABBH 25/10	25,0	10,0	4,0	1220 mm
ABBH 40/16	40,0	16,0	4,0	1220 mm
ABBH 50/20	50,0	20,0	4,0	1220 mm
ABBH 75/25	75,0	25,0	4,0	1220 mm
ABBH 95/30	95,0	30,0	4,0	1220 mm
ABBH 120/40	120,0	40,0	4,1	1220 mm
ABBH 180/58	180,0	58,0	4,1	1220 mm



# MOULDED PARTS AEC



## AEC

### Moulded parts | Cable end caps with spiral adhesive coating

#### Features

- AEC = standard end cap
- AEC-L = standard end cap, extended length
- Crosslinked Polyolefin • Excellent sealing properties
- Ideal for low voltage applications • UV and weather resistant

#### Approvals

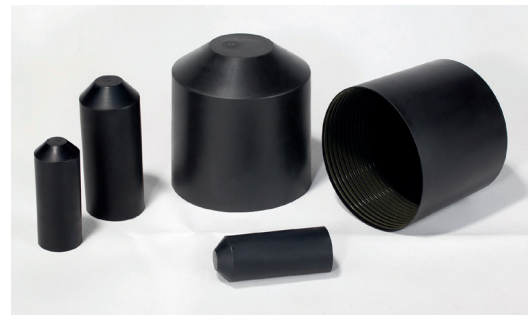
- Meets: RoHS

#### Application

- Operating temperature: -55 °C to +110°C
- Minimum full recovery temperature: +120°C
- Longitudinal change: 0 ± 10% max.

#### Order information

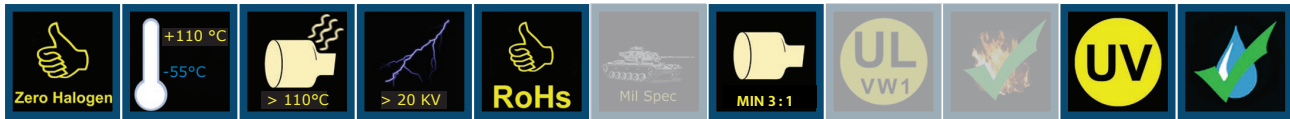
- Color: black



Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	After recovery: length in mm
AEC 12/4	12,0	4,0	2,6	40,0
AEC 14/5	14,0	5,0	2,2	45,0
AEC 20/6	20,0	6,0	2,8	55,0
AEC 25/8,5	25,0	8,5	2,8	68,0
AEC 35/16	35,0	16,0	3,3	90,0
AEC 40/16	40,0	16,0	3,3	83,0
AEC 55/26	55,0	26,0	3,5	103,0
AEC 75/36	75,0	36,0	4,0	120,0
AEC 100/52	100,0	52,0	4,0	140,0
AEC 120/60	120,0	60,0	4,0	150,0
AEC 145/60	145,0	60,0	4,0	150,0
AEC 160/80	160,0	80,0	4,0	150,0
AEC-L 14/4	14,0	4,0	2,2	60,0
AEC-L 40/15	40,0	15,0	3,3	90,0
AEC-L 55/23	55,0	23,0	3,8	140,0
AEC-L 62/23	62,0	23,0	3,8	140,0
AEC-L 75/36	75,0	36,0	4,0	150,0
AEC-L 75/36	75,0	36,0	4,2	170,0
AEC-L 100/47	100,0	47,0	4,0	155,0



# MOULDED PARTS ABOS



## ABOS

Moulded parts | Low voltage cable breakouts 2 - 5 cores

### Features

- ABOS-LV2 = low voltage cable breakout 2 – cores
- ABOS-LV3 = low voltage cable breakout 3 – cores
- ABOS-LV3 L = low voltage cable breakout 3 – cores (extended length)
- Crosslinked Polyolefin
- Available for 2 – 5 cores
- Excellent sealing properties
- Ideal for low voltage applications • UV resistant

### Approvals

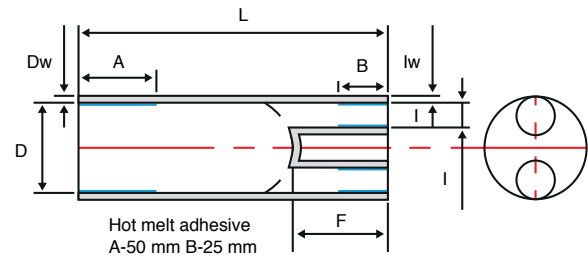
- Meets: RoHS

### Application

- Operating temperature: -55 °C to +110°C
- Minimum shrink temperature: +110°C
- Minimum full recovery temperature: +130°C
- Longitudinal change: 0 ± 10% max.

### Order information

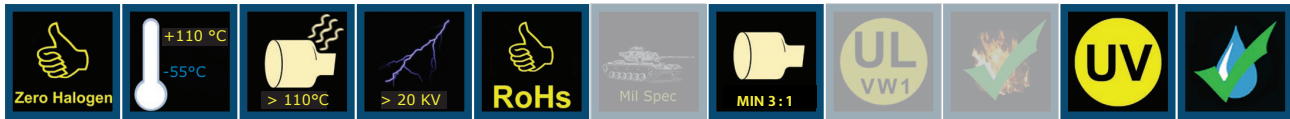
- Color: black



Type / Size	As supplied: inside diameter large in mm (min.)	As supplied: inside diameter small in mm (min.)	After recovery: inside diameter large in mm (max.)	After recovery: inside diameter small in mm (min.)	After recovery: wall thickness in mm (+/- 0,05)	After recovery: length in mm
ABOS-LV2 22/8	22,0	9,0	8,0	3,5	2,2	55,0
ABOS-LV2 30/12	30,0	12,0	12,0	4,5	2,6	93,0
ABOS-LV2 40/15	40,0	15,0	16,0	5,0	2,1	125,0
ABOS-LV2 60/25	60,0	25,0	23,0	7,5	2,6	118,0
ABOS-LV2 L 60/25	60,0	25,0	23,0	7,5	2,6	155,0
ABOS-LV2 100/30	100,0	30,0	42,0	9,0	3,1	155,0
ABOS-LV2 150/20	150,0	20,0	75,0	6,0	3,8	170,0
ABOS-LV3 38/14	38,0	14,0	17,0	4,5	2,7	98,0
ABOS-LV3 60/25	60,0	25,0	25,0	8,0	3,0	165,0
ABOS-LV3 80/35	80,0	35,0	38,0	11,0	3,5	185,0
ABOS-LV3 110/46	110,0	46,0	50,0	17,5	4,0	250,0
ABOS-LV3 125/55	125,0	55,0	57,0	20,0	4,0	260,0
ABOS-LV3 140/62	140,0	62,0	70,0	26,0	4,0	280,0
ABOS-LV3 170/75	170,0	75,0	77,0	28,0	4,0	280,0
ABOS-LV3 L 40/15	40,0	15,0	16,0	4,5	2,1	125,0
ABOS-LV3 L 60/25	60,0	25,0	24,0	8,0	3,2	180,0
ABOS-LV3 L 80/35	80,0	35,0	38,0	11,0	4,0	215,0



# MOULDED PARTS ABOS



## ABOS

Moulded parts | Low voltage cable breakouts 2 - 5 cores

### Features

- ABOS-LV4 = low voltage cable breakout 4 – cores
- ABOS-LV5 = voltage cable breakout 5 – cores
- Crosslinked Polyolefin
- Available for 2 – 5 cores
- Excellent sealing properties
- Ideal for low voltage applications
- UV resistant

### Approvals

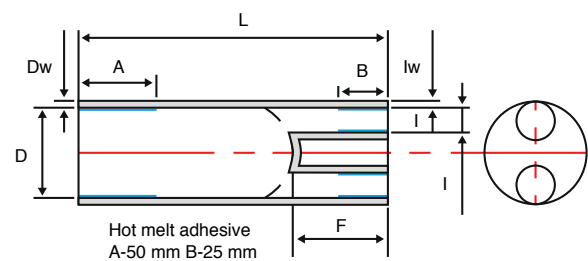
- Meets: RoHS

### Application

- Operating temperature: -55 °C to +110°C
- Minimum shrink temperature: +110°C
- Minimum full recovery temperature: +130°C
- Longitudinal change: 0 ± 10% max.

### Order information

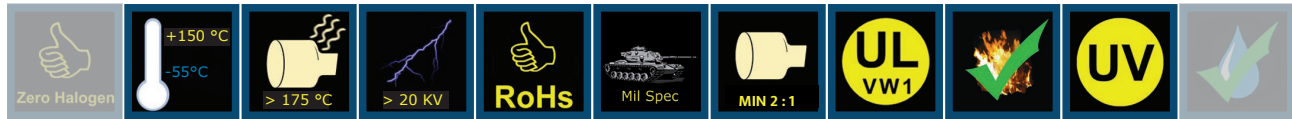
- Color: black



Type / Size	As supplied: inside diameter large in mm (min.)	As supplied: inside diameter small in mm (min.)	After recovery: inside diameter large in mm (max.)	After recovery: inside diameter small in mm (min.)	After recovery: wall thickness in mm (+/- 0,05)	After recovery: length in mm
ABOS-LV4 42/14	42,0	14,0	15,0	3,5	2,2	105,0
ABOS-LV4 55/20	55,0	20,0	21,0	5,0	3,1	150,0
ABOS-LV4 65/26	65,0	26,0	26,0	7,0	3,3	175,0
ABOS-LV4 75/28	75,0	28,0	26,0	7,0	3,3	175,0
ABOS-LV4 82/30	82,0	30,0	37,0	9,0	4,0	190,0
ABOS-LV4 90/32	90,0	32,0	37,0	9,0	4,0	190,0
ABOS-LV4 102/38	102,0	38,0	47,0	12,0	4,0	198,0
ABOS-LV4 130/52	130,0	52,0	52,0	15,0	4,0	240,0
ABOS-LV4 160/64	160,0	64,0	70,0	19,0	4,0	260,0
ABOS-LV5 40/13	40,0	13,0	19,0	4,0	2,5	98,0
ABOS-LV5 55/18	55,0	18,0	24,0	5,0	3,2	155,0
ABOS-LV5 80/26	80,0	26,0	33,0	8,0	3,0	175,0
ABOS-LV5 100/34	100,0	34,0	42,0	10,0	3,0	190,0



# SPECIAL TUBING ADR-25



## ADR-25

**Diesel Resistant | Flexible | Elastomeric heat shrinkable tubing**

ADR-25 is designed for protecting cables, wire harness and brake lines in transportation and military applications where resistance to diesel, oil, hydraulic fluids is critical.

### Material

Crosslinked modified elastomer

### Features

Operation temp.: -65°C to +150°C • High flame retardant  
 High abrasion and cut resistance • Excellent diesel, hydraulic fluids resistance  
 Shrink ration: 2:1 • Meets: SAE-AMS-DTL-23053/16

Colors: Black



Properties	Test method	Typical data
Tensile strength	ASTM D 2671	12 Mpa Min.
Elongation at break	ASTM D 2671	300% Min.
Tensile strength after ageing	158°C 168hours	8 Mpa Min.
Elongation at break after ageing	158°C 168hours	200% Min.
Dielectric strenght	ASTM D 150	17.5kV/mm
Volume resistance	ASTM D 2671	10 <sup>9</sup> .Ω·cm Min.
Flammability	ASTM D 2671	Self-extinguish in 15 sec.
Fuilds resistance tensile trength	ISO 37, 24hrs (diesel 70°C, Hydraulic 70°C, Lubricant 100°C)	10 Mpa Min.
Fluid resistance elongation		200% Min.



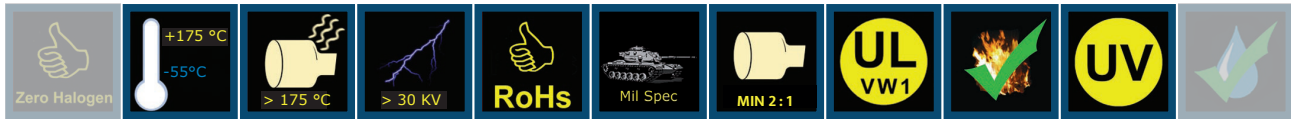
D\* = Inner diameter as supplied  
 d\* = Inner diameter after fully recovered  
 w = wall thickness after recovered

Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Reel / Meter & Standard length in mm
ADR-25 3.2/1.6	3.2	1.6	0.76+/-0.15	50 meter
ADR-25 4.8/2.4	4.8	2.4	0.85+/-0.15	50 meter
ADR-25 6.4/3.2	6.4	3.2	0.90+/-0.15	50 meter
ADR-25 9.5/4.8	9.5	4.8	1.02+/-0.15	50 meter
ADR-25 12.7/6.4	12.7	6.4	1.22+/-0.20	50 meter
ADR-25 19.1/9.5	19.1	9.5	1.45+/-0.25	50 meter
ADR-25 25.4/12.7	25.4	12.7	1.78+/-0.25	50 meter
ADR-25 38.1/19.1	38.1	19.1	2.41+/-0.40	50 meter
ADR-25 50.8/25.4	50.8	25.4	2.80+/-0.40	50 meter
ADR-25 76.2/38.1	76.2	38.1	3.15+/-0.50	50 meter
ADR-25 100/50	101.6	50.0	3.50+/-0.50	50 meter



Special specification are available upon request.

# SPECIAL TUBING AKY-175



## AKY-175

Special heat shrink tubing | Kynar® | 175 degrees | 2:1

### Features:

- Crosslinked PVDF
- Shrink ratio: 2:1
- Superior mechanical and abrasion resistance
- Highly flame retardant
- High temperature resistance
- Excellent chemical and solvent resistance

### Approvals

- Meets: UL, VW-1. Meets: SAE-AMS-DTL-23053/ 18. RoHS

### Application

- Operating temperature: -55 °C to +175°C
- Minimum shrink temperature: +175°C
- Longitudinal change: 0 ± 10% max.

### Order information

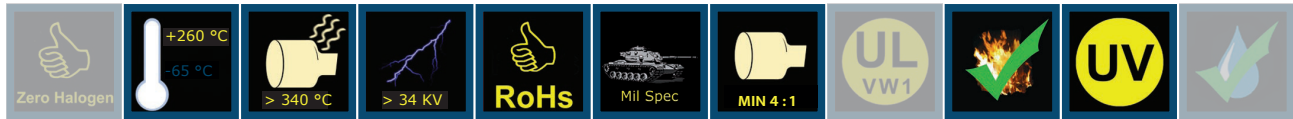
- Color: transparent (black available on request)



Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Reel / Length
AKY-175 1,2/0,6	1,2	0,6	0,20	150m / 1,22m
AKY-175 1,6/0,8	1,6	0,8	0,20	150m / 1,22m
AKY-175 2,4/1,2	2,4	1,2	0,23	150m / 1,22m
AKY-175 3,2/1,6	3,2	1,6	0,23	150m / 1,22m
AKY-175 4,8/2,4	4,8	2,4	0,23	75m / 1,22m
AKY-175 6,4/3,2	6,4	3,2	0,28	75m / 1,22m
AKY-175 9,5/4,8	9,5	4,8	0,28	1,22m
AKY-175 12,7/6,4	12,7	6,4	0,28	1,22m
AKY-175 19,1/9,5	19,1	9,5	0,36	1,22m
AKY-175 25,4/12,7	25,4	12,7	0,41	1,22m



# SPECIAL TUBING ATFE 4:1



## ATFE 2:1

Special heat shrink tubing | Teflon® | 260 degrees | 4:1

### Features

- Modified Tetrafluoroethylene • Shrink ratio: 4:1 • Superior chemical and mechanical performance • Very low friction coefficient • Excellent electrical properties

### Approvals

- Meets: RoHS • Meets: SAE-AMS-DTL-23053/12

### Application

- Operating temperature: -65 °C to +260°C • Minimum full recovery temperature: +350°C
- Longitudinal change: 0 ± 10% max.

### Key properties

- Excellent electrical properties • Excellent chemical resistance • Smoothness
- High dielectric constant • Durable • Application temperature 340°C • UV resistant



Type / Size	As supplied: inside diameter in mm (min.)	After recovery: inside diameter in mm (max.)	After recovery: wall thickness in mm (+/- 0,05)	Standard length in mm
V 5/64	1.98	0.64	0.22	1220
V 1/8	3.18	0.94	0.25	1220
V 3/16	4.75	1.27	0.30	1220
V 1/4	6.35	1.60	0.30	1220
V 5/16	7.92	2.00	0.30	1220
V 3/8	9.52	2.44	0.30	1220
V 7/16	11.13	2.85	0.30	1220
V 1/2	12.70	3.66	0.30	1220
V 9/16	14.27	3.94	0.38	1220
V 5/8	15.88	4.52	0.38	1220
V 11/16	17.45	5.03	0.38	1220
V 3/4	19.05	5.70	0.38	1220
V 7/8	22.23	6.20	0.38	1220
V 1	25.40	7.06	0.38	1220
V 1 1/4	31.75	8.82	0.38	1220
V 1 1/2	38.10	10.20	0.38	1220
V 1 3/4	44.45	11.43	0.38	1220
V 2	50.80	13.20	0.50	1220
V 2 1/4	57.15	14.85	0.50	1220
V 2 1/2	63.50	16.50	0.50	1220
V 2 3/4	69.85	18.00	0.50	1220
V 3	76.20	19.70	0.50	1220
V 3 1/4	82.55	21.20	0.50	1220
V 3 1/2	88.90	23.00	0.63	1220
V 3 3/4	95.25	24.40	0.63	1220
V 4	101.60	26.00	0.63	1220



# SPECIALITY PRODUCT ACSC

## ACSC Crimp Seals Connectors

### Applications

- Heat Shrinkable splices provide a permanent environmental seal.
- The polymer used in the production of the heat shrink tube is specially adapted to be crimped.
- Ideal for electrical equipment repairs, maintenance and outdoor electrical cabling

### Features

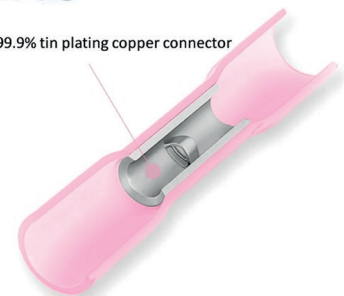
- RoHS compliant. Excellent fluid resistance (100% waterproof).
- Very high abrasion resistance.
- Shrink ratio: 3:1

### Various

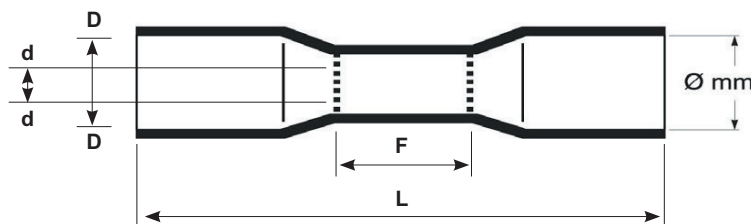
- Minimum shrink temperature: 110°C
- Operating temperature: -55°C to +125°C



99.9% tin plating copper connector



Property	Specification Requirement	Test Method	Typical Value
Tensile strength (Room temp.)	Min. 10.4Mpa	UL224	18.5Mpa
Elongation at break (Room temp.)	Min. 200%	UL224	450%
Tensile strength after aging (158°C 168hrs)	Min. 7.3Mpa	UL224	15Mpa
Elongation after aging (158°C 168hrs)	Min. 100%	UL224	220%
Voltage withstand (Un-aged)	Withstand 2.5kV for 1 minute and breakdown	UL224	Pass
Voltage withstand (Aged)	Withstand at least half of un-aged breakdown voltage for 1 minute and breakdown	UL224	Pass
Copper corrosion (158°C 168hrs)	No corrosion of bare copper	UL224	No sign of deg.
Copper stability (158°C 168hrs)	No sign of degradation (min. elongation 100%)	UL224	Pass
Cold bend (-30°C 1hrs)	No crack	UL224	Pass
Maximum secant modulus (2%)	173Mpa	UL224	Pass
Volume resistivity	Min. 10 <sup>14</sup> Ω·cm	UL224	Pass
Heat shock (250°C 4hrs)	No crack	ASTM D2671	Pass
Dielectric strength	>15.8kV/mm	ASTM D2671	>25kV/mm



Property	Butt Splice Dimensions (mm)		F (mm)	d (mm)
	D Min.	L Nom.		
WHITE 0,25 - 0,5 mm <sup>2</sup>	3.2	28.0	12	1.0
RED 0,5 - 1,5 mm <sup>2</sup>	4.8	35.0	15	1.6
BLUE 1,5 - 2,5 mm <sup>2</sup>	5.8	35.0	15	2.2
YELLOW 4 - 6 mm <sup>2</sup>	6.8	41.0	15	3.4

# SPECIALITY PRODUCT ASSC

## ASSC

### Solder Sleeves Connectors

#### Applications

Heat shrinkable solder sleeves with the thin ring and PE outer layer provide a permanent encapsulation, insulation and strain relief on motor tabs, connectors pins and switch terminals.

#### Features

Thermoplastic inner insert at each end of the terminator, sealing against water and moisture. Refluxed solder ring, offers controlled soldering process.

#### Various

- Operating temperature: -55°C to + 125°C
- RoHS compliant • REACH compliant
- Fully contraction temperature: 130°C
- Solder began to melt temperature: 125°C
- Solder completely melt temperature: 150°C

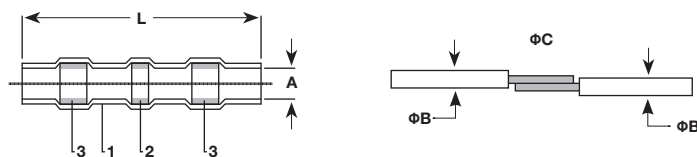
#### Standard colors

Transparent outer layer

Inner thermoplastic insert White, Red, Blue, Yellow



Property	Specification Requirement	Test Method	Typical Value
Tensile strength	exceeds strength of conductor	NAS1745	passed
Tensile strength after aging	exceeds strength of conductor	NAS1745	passed
Voltage Drop	<2.5MV	NAS1745	passed
Voltage Resistant	>600V	UL224	passed
Protection type	-	IEC 60529	IP67
Volume resistivity	>10 <sup>15</sup> Ω·m	ASTM D876	passed
Dielectric strength	>15.8kV/mm	ASTM D2671	>25kV/mm



**Item 1:** Heat shrinkable sleeve, transparent, radiation cross-linked modified polyolefin.

**Item 2:** Solder ring with flux.

**Item 3:** Meltable rings.

Product Code	Size Code Color Item 3	L (mm)	Qty Item 2	∅A Min (mm)	Wire Dimensions (mm)			Cable Size
					∅B Min	∅B Max ∅C Max	∅C Min	
ASSC-1	White	26	1	1.7	0.4	1.7	0.76	0.25-0.5mm <sup>2</sup> (26-24 AWG)
ASSC-2	Red	40	1	2.7	1.3	2.7	1.2	0.5-1.5mm <sup>2</sup> (22-18 AWG)
ASSC-3	Blue	40	1	4.5	1.8	4.5	2.0	1.5-2.5mm <sup>2</sup> (16-14 AWG)
ASSC-4	Yellow	40	1	6.0	2.8	6.0	3.4	4-6mm <sup>2</sup> (12-10 AWG)

Other sizes are available upon request.

Standard color: White, Red, Blue, Yellow. Other colors are available upon request.

HEAT GUNS

# SPECIALITY PRODUCTS

## Professional Heat Guns from Steinel

### - The Ideal Solution for Heat Shrink Tubing






Whether for precise shrinking of heat shrink tubing, assembly work, or continuous industrial use – Steinel’s professional heat guns offer the right performance for every application. As a reliable partner in connection technology, WKK presents five carefully selected models specifically designed for professional use.

The models differ in temperature and airflow settings, heating power, power supply (corded or cordless), and included accessories. From compact solutions for mobile use to high-performance units with fine temperature control – you’ll find the right tool to meet your needs.

All models are compatible with a wide range of nozzles and attachments and are particularly suited for the precise and efficient shrinking of heat shrink tubing.

The following table provides a compact overview of all five models and their key technical specifications.



HEAT GUNS					
Art. No.	2508116	2505116	2506116	2507116	2509116
Model	HM Stick	HM 1620 S	HM 1920 E	HM 2120 E (Set)	MH 3
Temperature steps	2	2	9	9	2
Air volume steps	1	2	3	3	1
Temperature range	400 - 500°C	300 - 500°C	80 - 600°C	80 - 630°C	300 - 500°C
Air volume	100 l/Min	240 - 450 l/Min	150 - 500 l/Min	150 - 500 l/Min	200 l/Min.
Voltage	220 - 240 V	220 - 230 V	220 - 230 V	220 - 230 V	18 V
Power	350 W	1600 W	2000 W	2200 W	600 W
Power supply	Cable: 2,2m	Cable: 2,2m	Cable: 2,2m	Cable: 2,2m	Battery
Dimensions		252 x 86 x 200 mm	253 x 85 x 200 mm	253 x 87 x 200 mm	225 x 72 x 204 mm
Weight	0,594 kg	0,717 kg	0,840 kg	0,837 kg	2,210 kg
Supplied in	Box	Box	Box	Case incl. 24 mm Reflector nozzle, 50mm Wide Reflector Nozzle, 9mm Reduce Nozzle	Case incl. 18V CAS Metabo Battery & Charger

HM 1620 S   HM 1920 E   HM 2120 E   MH 3					HM 1620 S   HM 1920 E   HM 2120 E
					
Reduce Nozzle 9 mm	Reduce Nozzle 14 mm	Solder Reflector Nozzle 24 mm	Wide Reflector Nozzle 50 mm	Reflector Nozzle 24 mm	Protection Casing

# INSTALLATION MANUALS HEAT SHRINK TUBES

## Thin wall, medium wall and thick wall

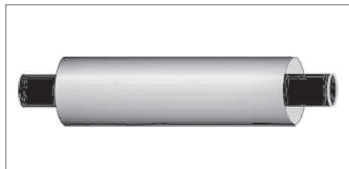
### Quick and easy

The installation of heat shrink products by Boxco is quick and easy. In order to reach maximum satisfaction from the heat shrink products it is suggested to follow the instructions below.

### Tools

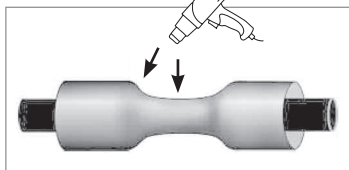
The heat shrink products should be shrunk with hot-air blowers (thin wall), gas heating torches (medium/heavy wall) and other equipment able to reach the temperature of over +120°C.

## INSTALLATION OF HEAT SHRINK TUBES THIN WALL, MEDIUM WALL AND THICK WALL



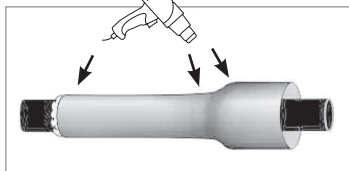
### Prepare the surface of the object on which the heat shrink tube will be installed

1. Un-dust and degrease the surface of the object, e.g. with a non-oil solvent.
2. Metal surfaces should be polished with abrasive cloth and heated up.



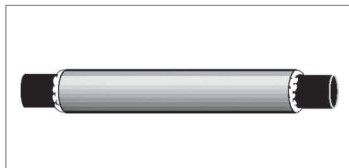
### Prepare the heat shrink tube

1. Choose the tube with the required insulation parameters and diameter (the diameter of the fully recovered heat shrink tubing shall be smaller than the diameter of the object).

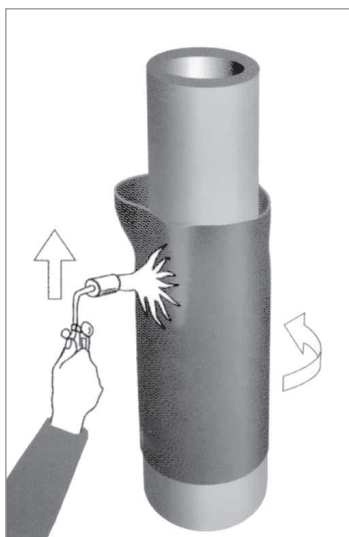


### Shrinking

1. Slide the heat shrink tube to the right position.
2. Set the temperature of the hot-air blower to the appropriate level for the material and wall-thickness of the Heat Shrink Tubing. Different materials have different minimum shrinking temperatures (+65°C up to 360°C). Higher temperatures can speed up the shrinking process. The hot-air blower should always be in constant movement (around the tube and out to the sides), be careful not to heat constant at one spot as this could cause local overheating of the material.
3. Start the shrinking process from the middle of the tube with constant round movements around the tube to achieve steady shrink. The middle part of the tube should shrink down and stick closely to the object.
4. Shrink the ends of the tube with constant movements from the middle towards the ends. The properly shrunk tube should be smooth, with no bulges and notches.
5. If the installed tube is a double layer tube - with adhesive - the adhesive should flow out at the ends of the heat shrink tube.
6. Leave the shrunk tube to cool down.



## INSTALLATION OF HEAT SHRINK TUBE OF LARGE DIAMETER ON POSTS (RENOVATION)



### Prepare the post

1. Dismantle all the post's elements, e.g. lighting elements, for better heat shrink tube set up.
2. Clean and apply the ground coating on the bare part of the post.

### Prepare the heat shrink tube

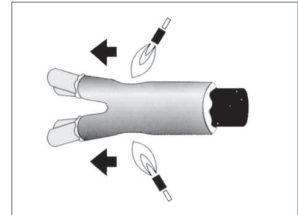
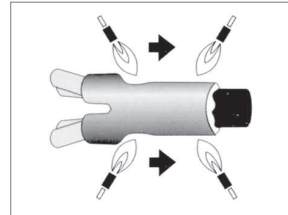
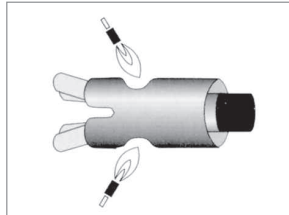
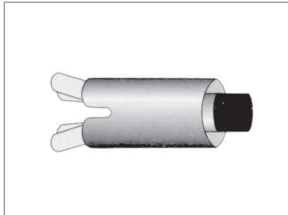
1. Choose the heat shrink tube with the required parameters and diameter.

### Shrinking

1. Slide the heat shrink tube.
2. Set the temperature of the hot-air blower to the appropriate level for the material and wall-thickness of the Heat Shrink Tubing. Different materials have different minimum shrinking temperatures (+65°C up to 360°C). Higher temperatures can speed up the shrinking process. The hot-air blower should always be in constant movement (around the tube and out to the sides), be careful not to heat constant at one spot as this could cause local overheating of the material.
3. Start the shrinking process from the bottom of the tube with constant round movements around the tube to achieve steady shrink. The bottom part of the tube should shrink down and stick closely to the object.
4. Shrink the other part of the tube with constant movements from the bottom up. The properly shrunk tube should be smooth, with no bulges and notches.
5. If the installed tube is a double layer tube - with adhesive - the adhesive should flow out at the ends of the heat shrink tube.
6. Leave the shrunk tube to cool down.

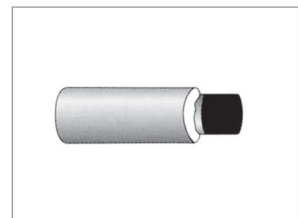
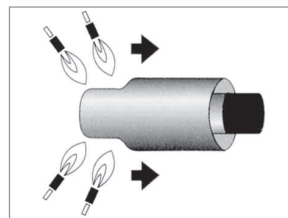
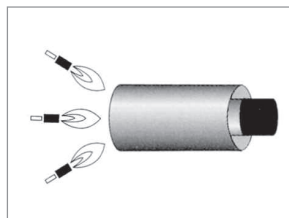
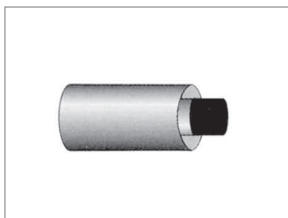
# INSTALLATION MANUALS HEAT SHRINK TUBES

## Thin wall, medium wall and thick wall



### Installation of heat shrink breakout boots

Installation steps are similar to the installation of thin wall, medium wall and thick wall heat shrink tubes.



### Installation of heat shrink end caps

Start the heating of the heat shrink end cap from the top of it towards the end. Keep the continuous movements of the heat torch or blower to gain a steady shrink. After proper installation the adhesive should flow out at the end of the end cap.

## TECHNICAL DETAILS AND OPERATIONAL PROPERTIES OF HEAT SHRINK TUBES

### Material

Main part of the wide range of the heat shrink tubes by BOXCO are made from radiated crosslinked polyolefin (e.g. polyethylene).

The excellent insulate and seal characteristics play an important role of protective layers, anti-corroding shields and decorative elements.

Heat shrinkable tubing's protect against changing weather conditions, aggressive underground factors and makes a perfect protection against moisture.

The heat shrink tubing adopt the shape of the object on which they are shrunk down to and improves the mechanical protection.

The tubing is resistant to UV radiation, fungus, mould and other corrosive agents; urine, salts, majority of oils, petrol, alcohols and grease.

### Colours

Heat shrink tubing is available in many different colours but the most common is black.

The non-standard colours are produced on request.

Heat shrink tubes of large diameters and with heavier walls are almost always in black colour.

### Lengths

Thin wall tubes – is normally supplied on reels, on request we can cut into various length from e.g. 2 cm, 20 cm etc.

Dual wall – is supplied both on reels and in 1,22 m pcs.

Medium and heavy wall tubes have a standard length of 1,22 m / pcs, with the possibility to be cut in other lengths on request, and the medium wall without adhesive can be supplied on reel.

The cutting of tubes according to a requested length must be done with a sharp tool, and the front surface of the cut part should be equal, smooth, without burrs, etc.

On special demand, we can make tubes with custom diameters and insulation properties.

### Shrink temperature

Minimum shrink temperature is between + 65°C to + 360°C depending on material of the tubing.

Pay attention for overheating the tube.

### Storage

Based on the test result we guarantee more than 10 year's shelf life for our heat shrinkable products in the storage condition of cool, dry and away from sunlight.

The recommended storage condition is -10°C to +40°C and maximum 75% relative humidity.

# CABLE TIES 2-LOCK™

## Double tooth

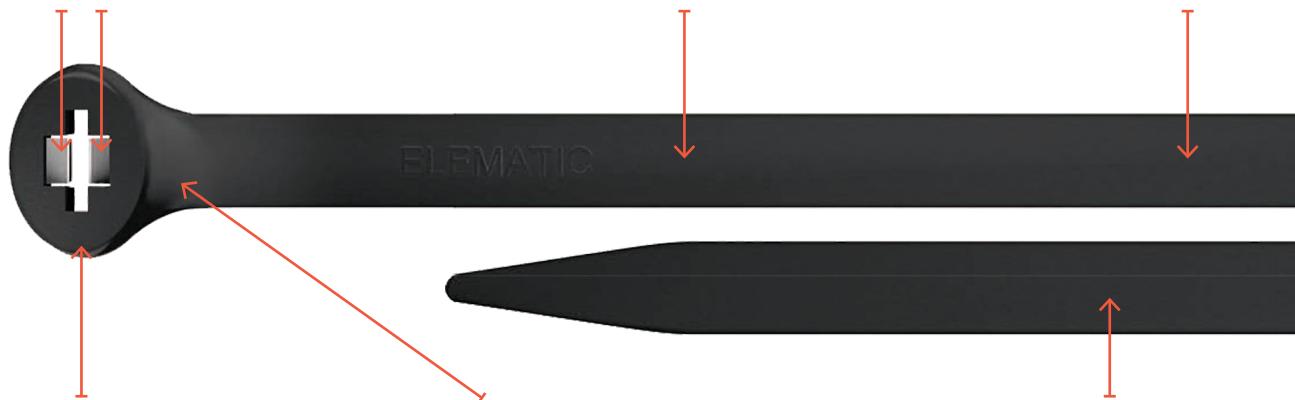
It acts on the cable tie body in a symmetrical way, allowing tensile strength values up to 50% more than the single tooth cable ties.

## UV Resistant

In 2-LOCK™ black cable ties the added carbon black gives an UV resistance for outside applications.

## Perfect tightening

Thanks to the smooth body that allows a continuous tightening adjustment.



## Incorporated Cage

The stainless steel 316 cage with double tooth is incorporated during injection molding. This makes the system "steel + polyamide" practically inseparable in the event of collapse too.

## Maximum protection

The rounded shape of the head and tail and the lack of sharp edges avoid any kind of damage to the cable or the body to be tightened.

## Easy insertion

The perfect smoothness on both sides ensures a much lower effort of insertion than other products in the market.

## Tensile strength\*

Width (mm)

3,5	Elematic 2-Lock cable ties	315	+36%
	Single tooth cable ties	231	
4,5	Elematic 2-Lock cable ties	454	+38%
	Single tooth cable ties	329	
7,5	Elematic 2-Lock cable ties	930	+53%
	Single tooth cable ties	608	

\*Average value at maximum tensile strength in Newton (N). 10 N ~ 1 Kg.

## Patent

The 2-LOCK™ cable ties and its own production process are patented to guarantee the developed innovation and the exclusivity of the product.

## Inserting force\*

Width (mm)

3,5	Elematic 2-Lock cable ties	6,15	-17%
	Single tooth cable ties	7,40	
4,5	Elematic 2-Lock cable ties	5,72	-39%
	Single tooth cable ties	9,39	
7,5	Elematic 2-Lock cable ties	5,81	-47%
	Single tooth cable ties	11,04	

\*Average value for insertion force in Newton (N). 10 N ~ 1 Kg.

## Low installation temperature

Excellent performance at low temperature for applications up to -40°C.

# CABLE TIES 2-LOCK™

## 2-LOCK™

### Cable tie - Double Tooth - Perfect grip

Cable ties in PA 6.6 with double tooth in stainless steel 316. The innovative locking system with over-molded stainless steel cage (patented) grants superior mechanical performances than any other cable tie on the market; 2-LOCK™ combine the highest tensile resistance with the lowest effort of insertion, redefining new higher performance standards.

Mechanical excellence, easy to use, very low installation temperature, maximum reliability, innovative packaging... all that make 2-LOCK™ the new reference on the market for polyamide cable ties.

#### Technical characteristics:

Material: Body in polyamide double tooth (cage) in stainless steel 316 grade

Humidity absorption: 2,7% (50% relative humidity)

Temperatures: Working: from -40°C up to 85°C. Installation: from -40°C up to 60°C.

Melting: 256°C

Flammability rating: UL 94 class V2

According to CEI EN 62275 standa



Code Nat.	Dimensions (mm)	Ø Max (mm)	Tensile Stregnth		Bag pcs	Carton pcs
			(kg)	(N)		
1203	2,5x100	21	18,34	180	100	15.000
1207	2,5x200	50	18,34	180	100	8.000
1209	3,5x140	35	25,51	250	100	7.000
1214	3,5x200	50	25,51	250	100	7.000
1210	3,5x290	80	25,51	250	100	4.500
1215	4,5x200	50	36,70	360	100	4.000
1216	4,5x250	68	36,70	360	100	4.500
1217	4,5x290	80	36,70	360	100	3.500
1219	4,5x360	101	36,70	360	100	3.000
1225	7,5x220	56	79,51	780	100	2.000
1227	7,5x360	101	79,51	780	100	1.500

Black UV resistant	Dimensions (mm)	Ø Max (mm)	Tensile Stregnth		Bag pcs	Carton pcs
			(kg)	(N)		
1303	2,5x100	21	18,34	180	100	15.000
1307	2,5x200	50	18,34	180	100	8.000
1309	3,5x140	35	25,51	250	100	7.000
1314	3,5x200	50	25,51	250	100	7.000
1310	3,5x290	80	25,51	250	100	4.500
1315	4,5x200	50	36,70	360	100	4.000
1316	4,5x250	68	36,70	360	100	4.500
1317	4,5x290	80	36,70	360	100	3.500
1319	4,5x360	101	36,70	360	100	3.000
1325	7,5x220	56	79,51	780	100	2.000
1327	7,5x360	101	79,51	780	100	1.500

# CABLE TIES STANDARD ATIE

## STANDARD - ATIE

**Material:** Polyamide 6.6

**Color:** Transparent / black (UV resistant). Other colors available on request

**Temperature range:** -40°C up to +85°C

**Flammability:** UL 94 V2 (VO available)

**Certification:** UL, Lloyd's, GL 59425-08HH



Typenr.	Length (mm)	Width (mm)	Max. bundle diameter (mm)	Tensile strength (kg)	Packing (pcs)	Pcs per carton	
						100 pcs / pack	1.000 pcs / pack
80x2,4mm	80	2,4	15	8,0	100 / 1.000	70.000	90.000
100x2,5mm	100	2,5	22	8,1	100 / 1.000	55.000	70.000
120x2,5mm	120	2,5	30	8,1	100 / 1.000	45.000	65.000
140x2,5mm	140	2,5	33	8,1	100 / 1.000	45.000	55.000
160x2,5mm	160	2,5	40	8,1	100 / 1.000	40.000	45.000
200x2,5mm	200	2,5	53	8,1	100 / 1.000	30.000	32.000
140x3,6mm	140	3,6	33	18,2	100 / 1.000	30.000	30.000
150x3,6mm	150	3,6	35	18,2	100 / 1.000	30.000	30.000
200x3,6mm	200	3,6	53	18,2	100 / 1.000	20.000	22.000
300x3,6mm	300	3,6	76	18,2	100 / 1.000	17.000	17.000
370x3,6mm	370	3,6	102	18,2	100 / 1.000	12.000	12.000
120x4,8mm	120	4,8	24	22,2	100 / 1.000	20.000	25.000
160x4,8mm	160	4,8	38	22,2	100 / 1.000	16.000	18.000
190x4,8mm	190	4,8	46	22,2	100 / 1.000	16.000	16.000
200x4,8mm	200	4,8	50	22,2	100 / 1.000	16.000	16.000
250x4,8mm	250	4,8	60	22,2	100 / 1.000	12.000	12.000
280x4,8mm	280	4,8	70	22,2	100 / 1.000	11.000	11.000
300x4,8mm	300	4,8	76	22,2	100 / 1.000	11.000	11.000
370x4,8mm	370	4,8	102	22,2	100	9.000	-
390x4,8mm	390	4,8	105	22,2	100	8.500	-
430x4,8mm	430	4,8	110	22,2	100	7.500	-
530x4,8mm	530	4,8	140	22,2	100	5.600	-
150x7,6mm	150	7,6	33	54,4	100	8.000	-
200x7,6mm	200	7,6	50	54,4	100	7.000	-
250x7,6mm	250	7,6	65	54,4	100	6.000	-
300x7,6mm	300	7,6	76	54,4	100	5.000	-
370x7,6mm	370	7,6	102	54,4	100	4.000	-
450x7,6mm	450	7,6	132	54,4	100	2.500	-
530x7,6mm	530	7,6	140	54,4	100	2.000	-
615x7,6mm	615	7,6	176	54,4	100	2.000	-
750x7,6mm	750	7,6	218	54,4	100	2.000	-
430x9,0mm	430	9,0	110	79,4	100	2.500	-
530x9,0mm	530	9,0	140	79,4	100	2.000	-
610x9,0mm	610	9,0	187	79,4	100	2.000	-
710x9,0mm	710	9,0	190	79,4	100	2.000	-
780x9,0mm	780	9,0	228	79,4	100	2.000	-
830x9,0mm	830	9,0	239	79,4	100	1.500	-
920x9,0mm	920	9,0	263	79,4	100	1.200	-
1020x9,0mm	1020	9,0	295	79,4	100	1.000	-
1220x9,0mm	1220	9,0	365	79,4	100	1.000	-
1530x9,0mm	1530	9,0	460	79,4	100	500	-
230x13,0mm	230	13,0	50	114,0	100	3.000	-
480x13,0mm	480	13,0	120	114,0	100	1.500	-
580x13,0mm	580	13,0	152	114,0	100	1.200	-
730x13,0mm	730	13,0	204	114,0	100	1.000	-
880x13,0mm	880	13,0	248	114,0	100	600	-
1030x13,0mm	1030	13,0	295	114,0	100	600	-

**COLORED**

# CABLE TIES STANDARD ATIE

## STANDARD - ATIE COLORED

**Material:** Polyamide 6.6

**Color:** red, blue, green, yellow, orange, silver, purple & brown (Part numbers marked with an asterisk are only available in red, blue, green, yellow & orange.)

**Temperature range:** -40°C up to +85°C

**Flammability:** UL 94 V2 (V0 available)

**Certification:** UL, Lloyd's, GL 59425-08HH



Typenr.	Length (mm)	Width (mm)	Max. bundle diameter (mm)	Tensile strength (kg)	Packing (pcs)	Pcs per carton	
						100 pcs / pack	1.000 pcs / pack
100x2.5mm	100	2,5	22	8,0	100	55.000	-
140x3.6mm	140	3,6	33	18	100	30.000	-
200x2.5mm*	200	2,5	50	8	100	30.000	-
200x3.6mm*	200	3,6	50	18	100	20.000	-
200x4.8mm	200	4,8	50	22	100	15.000	-
300x4.8mm	300	4,8	80	22	100	11.000	-
370x4.8mm	370	4,8	102	22	100	9.000	-
370x7.6mm	370	7,6	102	54,4	100	4.000	-
430x9.0mm	430	9,0	116	79,4	100	2.500	-
530x9.0mm*	530	9,0	155	79,4	100	1.200	-
580x13mm*	580	13,0	152	114	100	1.200	-
780x9.0mm*	780	9,0	228	79,4	100	1.800	-
1220x9.0mm*	1200	9,0	367	79,4	100	1.000	-

\*Only available in red, blue, green, yellow & orange.

## STAINLESS STEEL

# CABLE TIES MLG

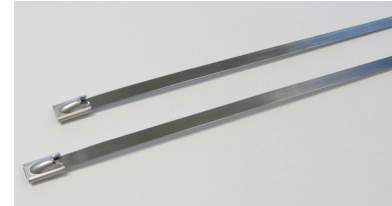
## STAINLESS STEEL

**Material:** Stainless steel AISI 304 or AISI 316L

**Color:** Steel

**Temperature range:** -80°C up to +538°C

**Certification:** UL



Typenr.	Length (mm)	Width (mm)	Max. bundle diameter (mm)	Tensile strength (kg)	Packing (pcs)
ST.STEEL 125x4,6mm	125	4,6	38,0	90	100
ST.STEEL 200x4,6mm	200	4,6	61,9	90	100
ST.STEEL 300x4,6mm	300	4,6	90,6	90	100
ST.STEEL 360x4,6mm	360	4,6	112,8	90	100
ST.STEEL 520x4,6mm	520	4,6	163,8	90	100
ST.STEEL 680x4,6mm	680	4,6	214,8	90	100
ST.STEEL 840x4,6mm	840	4,6	265,7	90	100
ST.STEEL 200x7,9mm	200	7,9	61,9	160	100
ST.STEEL 300x7,9mm	300	7,9	90,6	160	100
ST.STEEL 360x7,9mm	360	7,9	112,8	160	100
ST.STEEL 450x7,9mm	450	7,9	141,0	160	100
ST.STEEL 520x7,9mm	520	7,9	163,8	160	100
ST.STEEL 680x7,9mm	680	7,9	214,8	160	100
ST.STEEL 840x7,9mm	840	7,9	265,7	160	100
ST.STEEL 1020x7,9mm	1020	7,9	320,0	160	100

## STAINLESS STEEL - COATED

**Material:** Stainless steel AISI 304 or AISI 316

**Color:** Steel (coated with Polyester for insulation purpose and a better outdoor application)

**Temperature range:** -40°C up to +150°C

**Certification:** UL



Typenr.	Length (mm)	Width (mm)	Max. bundle diameter (mm)	Tensile strength (kg)	Packing (pcs)
ST.STEEL 125x4,6mm COATED	125	4,6	38,0	90	100
ST.STEEL 200x4,6mm COATED	200	4,6	61,9	90	100
ST.STEEL 290x4,6mm COATED	290	4,6	90,6	90	100
ST.STEEL 360x4,6mm COATED	360	4,6	112,8	90	100
ST.STEEL 520x4,6mm COATED	520	4,6	163,8	90	100
ST.STEEL 680x4,6mm COATED	680	4,6	214,8	90	100
ST.STEEL 840x4,6mm COATED	840	4,6	265,7	90	100
ST.STEEL 200x7,9mm COATED	200	7,9	61,9	160	100
ST.STEEL 290x7,9mm COATED	290	7,9	90,6	160	100
ST.STEEL 360x7,9mm COATED	360	7,9	112,8	160	100
ST.STEEL 450x7,9mm COATED	450	7,9	141,0	160	100
ST.STEEL 520x7,9mm COATED	520	7,9	163,8	160	100
ST.STEEL 680x7,9mm COATED	680	7,9	214,8	160	100
ST.STEEL 840x7,9mm COATED	840	7,9	265,7	160	100
ST.STEEL 1020x7,9mm COATED	1020	7,9	320,0	160	100

**FOOD & MEDICAL**

# CABLE TIES DETECTABLE

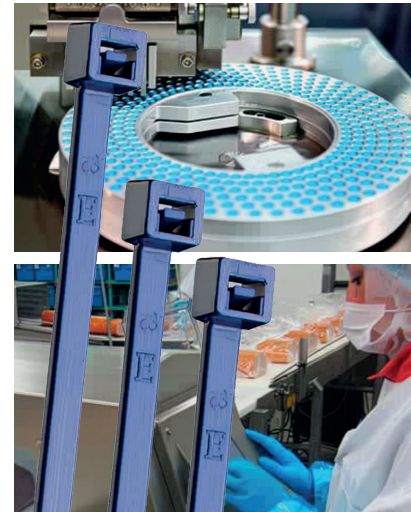
## DETECTABLE CABLE TIES - ELEMATIC

**Product description**

Detectable cable ties for food and pharmaceutical industries.

**Features and benefits**

- The inclusion of an iron oxide additive in the polyamide material enables cable ties or related small sections to be detected by the metal detectors or X-ray inspection systems.
- The blue colour allows an easy visual inspection and detection.
- Use of detectable cable ties in plants installation, machines cabling and maintenance allows the agro-food and pharmaceutical industries to comply with the Hazard Analysis Critical Control Points principles (HACCP). This preventive approach is implemented to identify and eliminate potential hazard and contaminations in the food production processes.



Item Description	Width	Length	Diameter Bundle Max	Tensile Strength KG	Colour	Tensile Strength N	Quantity	Product Code
Detectable 4,5x290	4.5 mm	290 mm	78 mm	22.44 kg	Blue	220 N	100 pcs	5217DT
Detectable 2,5x98	2.5 mm	98 mm	21 mm	8.16 kg	Blue	80 N	100 pcs	5203CDT
Detectable 3,5x140	3.5 mm	140 mm	32 mm	13.26 kg	Blue	130 N	100 pcs	5209CDT
Detectable 3,5x200	3.5 mm	200 mm	50 mm	13.26 kg	Blue	130 N	100 pcs	5214CDT
Detectable 4,5x200	4.5 mm	200 mm	50 mm	22.44 kg	Blue	220 N	100 pcs	5215CDT
Detectable 4,5x360	4.5 mm	360 mm	100 mm	22.44 kg	Blue	220 N	100 pcs	5219DT
Detectable 7,5x365	7.5 mm	365 mm	100 mm	55.08 kg	Blue	540 N	100 pcs	5227DT

# ELPROMAN

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*Part of the KAMIC Group since 2021*

