

HEAT SHRINK TUBES AND ACCESSORIES



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About the company

RADPOL S.A. is a leader on the market of heat-shrinkable products. We specialise in products made of refined polyethylene, which are manufactured on the basis of our own material mixtures.

We care about the high quality of our products, while respecting the requirements of environmental protection. The guarantee of realization of such an environmental policy is the implemented, maintained and constantly improved Integrated Management System, consistent with the requirements of PN EN ISO 9001:2009 and PN EN ISO 14001:2005 standards.

RADPOL S.A. applies a unique technology of using on an industrial scale – electron accelerators, as one of few European companies.

The crosslinking process consists in modifying the structure of polyethylene (with chemical methods or physical methods by irradiation), leading to the formation of additional bonds between carbon atoms, which connect neighbouring chains of the polymer.

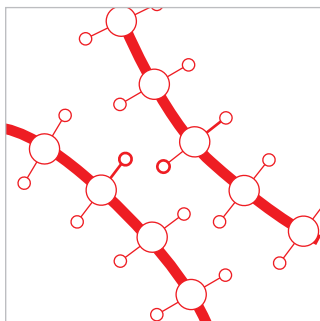
In the plastics industry, mainly chemical crosslinking is used. Radiation crosslinking, on the other hand, does not require crosslinking chemicals and is superior to chemical methods as there are no chemical residues in the crosslinked material. This makes radiation crosslinking more environmentally friendly.

We supervise all the processes which may have an impact on the environment

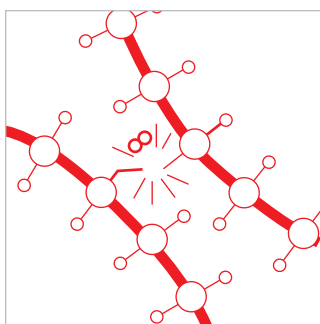


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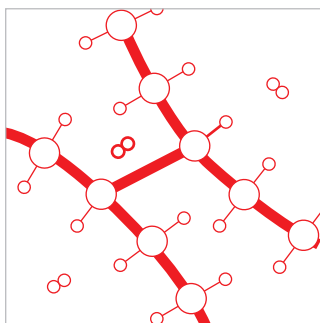
Radiation crosslinked polyolefin



Polymer chains before crosslinking



Splitting of hydrogen atoms during crosslinking



New stronger polymer bonds

What polyolefin is?

Polyolefin is made as an effect of polymerisation of unsaturated hydrocarbons.

Among the mostly used polyolefins there are:

- Polyethylene (PE)
- Ethylene copolymer / vinyl acetate (EVA).

Kinds of PE

Linear low density polyethylene (LLDPE).

Low density polyethylene (LDPE).

Medium density polyethylene (MDPE).

High density polyethylene (HDPE).

Non-crosslinked polyethylene

Despite many advantages (goods dielectric properties, good mechanical and chemical properties, easiness in processing) non-crosslinked polyethylene has many disadvantages.

To improve its parameters (see the chart below), polyethylene should undergo the process of radiation crosslinking.

What is the radiation crosslinking consist of?

This process consists in exposing the material to the electron beams accelerated in vacuum up to the energy of several electron volts.

Thermoplastics, like polyethylene, are built of long irregular polymer chains. When exposed to radiation, two neighbouring chains make bonds in the places where hydrogen atoms split. This strong bond of chains is called "linked chains" (see the pictures at left).

The crosslinked polyethylene when heated to the temperature higher than crystal thawing, becomes soft and elastic, caoutchouc-like material. The non-crosslinked polyethylene would become ductile-fluid mass.

RADPOL S.A. is the only Polish company, which possesses an accelerator for industrial radiation crosslinking.

Shape memory

The crosslinked products obtain the property called "shape memory". This is the most interesting property of the heat shrink. The heat shrink may be shaped variously but when heated it shrinks down returning to its initial shape. This property is mainly used for insulation recovery.

For that purpose a crosslinked expanded heat shrink product with adhesive layer is put on the broken insulation and heated up. The new insulation layer shrinks down tightly on the place of repair. This method of repair and insulation is considered to be the most effective as far as the work costs and time and also life-length are concerned. Crosslinked heat shrink products are used for insulation, protection, anti-corrosion layers and decorative elements.

Comparison of non-crosslinked PE to radiation crosslinked PE

Non-crosslinked polyethylene	Radiation crosslinked polyethylene
in temperature over +120°C gets softened and thaws	in temperature over +120°C gets its initial form ("shape memory"), gets soft and flexible
maximum operation temperature up to +70°C	maximum operation temperature up to +135°C
does not resist thermal shock (over 4 hours)	withstands thermal shock up to +200°C (even up to +250°C)
susceptible to stress corrosion	fully stress corrosion resistant
low resistance to material creeping	high resistance to material creeping (in low temperatures)
resistant to chemical factors	resistant to aggressive chemical factors
soluble in solvents	almost non-soluble in solvents (susceptible for swelling)
low mechanical resistance	high mechanical resistance
resistant to incomplete discharge	highly resistant to incomplete discharges

Installation manuals

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

Tools

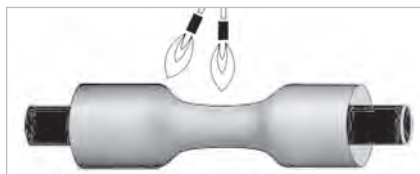
The heat shrink products should be shrunk with hot-air blowers, gas heating torches and other equipment able to reach the temperature of over $+120^{\circ}\text{C}$.

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. The PVC cable surface should be ground with a piece of abrasive cloth and heated up.
3. Metal surfaces should be polished with abrasive cloth and heated up.

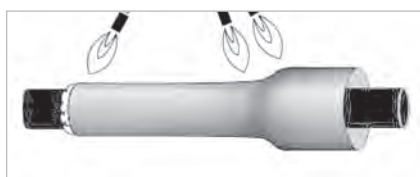


Prepare the heat shrink tube

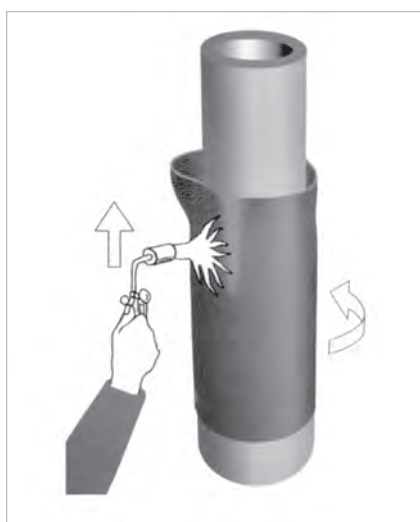
1. Choose the tube with the required insulation parameters and diameter (the diameter of the recovered heat shrink tube should be smaller than the circumference of the object).

Shrinking

1. Slide the heat shrink tube.
2. Set the temperature of hot-air blower between $+120^{\circ}\text{C}$ and $+200^{\circ}\text{C}$. The shrinking temperature should not exceed $+200^{\circ}\text{C}$ which 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

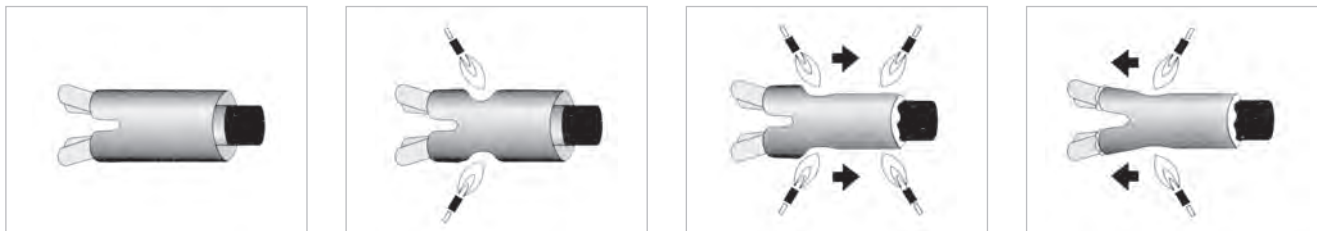
1. Choose the heat shrink tube with the required parameters and diameter.

Shrinking

1. Slide the heat shrink tube.
2. Set the temperature of hot air blower between $+120^{\circ}\text{C}$ and $+200^{\circ}\text{C}$. The shrinking temperature should not exceed $+200^{\circ}\text{C}$ which 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.

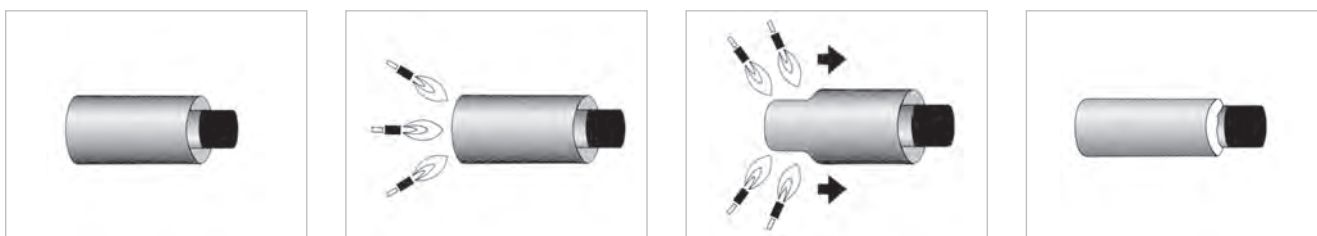
Installation of heat shrink breakout boots

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 the 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

The heat shrink tubes by RADPOL are made of polyolefin (e.g. polyethylene) radiation crosslinked. They excellent insulate and seal also play roles of protective layers, anti-corroding shields and decorative elements. Used as a part of the final product they increase its technical level. The heat shrink tubes protect against changing weather conditions and aggressive underground factors. They make perfect protection against moisture. They adopt the shape of the object on which they are shrink and improve its mechanical protection. Have very high shrink strength and unlimited storage time. They don't undergo fatigue corrosion and are resistant to UV radiation, fungus, mould and other corrosive agents; urine, salts, majority of oils, petrol, alcohols and grease. The black tubes are UV radiation resistant. They perform a cathodic protection function, involving the shift of the potential of the protected object (steel pipe) towards more negative potentials.

Colours

Consult some tables for available colours of heat shrink tubes. The non-standard colours (e.g. grey, fluorescent) are produced on request. Heat shrink tubes of large diameters have black colour.

Lengths

Standard length is 1 meter. Thin wall tubes – possibility on request of cutting into various length e.g. 2 cm, 20 cm etc. or producing on 50, 100, 300 m spools. Medium, thick wall tubes and tubes of large dimensions to the size of 195/90 – possibility on request manufacturing longer than 1 meter. The cutting of the tubes according to a demanding 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 make tubes of different diameters and insulation properties. We guarantee short realisations of non-standard products' orders.

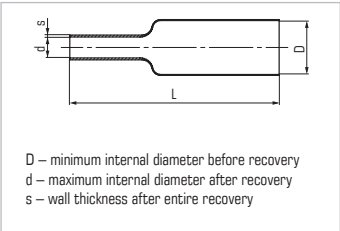
Shrink temperature

Shrink temperature is between +120°C to +200°C. In case of temperature higher than +200°C, the overheating may occur.

Storage

Heat shrink products should be protected against direct sunray and stored in closed warehouses in temperatures between -10°C to +35°C.

Heat shrink thin wall tubes, heat-resistant – type +125°C – type RCH1



Application:
Universal heat shrinkable tubes applied to perform electrical insulation, technical and moisture protection.
 They assume a shape of the object on which they are shrinking down, form a tightly adherent layer of an insulating, anticorrosion and decorative character.

Operating temperature: -55°C up +125°C
 Shrink ratio: 2:1, 4:1
 The minimum shrink temperature: +115°C
 Colours: standard: black, mix, other on request



Not self-extinguishing, halogen-free
 UV resistant
 In accordance with REACH, RoHS

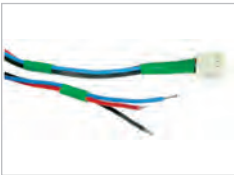
Tube type shrink ratio: 2:1	Index (black color)	Dimensions [mm]			Packing [pcs. 1 m]	Spools [m]	Availability
		D	d	s			
RCH1 1,6/0,8	WRJCC1600080010030C1	1,6	0,8	0,45	100	100	IN STOCK
RCH1 2,4/1,2	WRJCC2400120010030C1	2,4	1,2	0,5	100	100	IN STOCK
RCH1 3,2/1,6	WRJCC3200160010030C1	3,2	1,6	0,5	100	100	IN STOCK
RCH1 4,8/2,4	WRJCC4800240010030C1	4,8	2,4	0,5	100	100	IN STOCK
RCH1 6,4/3,2	WRJCC6400320010030C1	6,4	3,2	0,6	100	100	IN STOCK
RCH1 9,5/4,8	WRJCC9500480010030C1	9,5	4,8	0,6	100	100	IN STOCK
RCH1 12,7/6,4	WRJCC1271640010030C1	12,7	6,4	0,6	100	100	IN STOCK
RCH1 15,8/7,9	WRJCC1581790010030C1	15,8	7,9	0,8	100	100	IN STOCK
RCH1 19/9,5	WRJCC1901950010030C1	19,0	9,5	0,9	20	100	IN STOCK
RCH1 25,4/12,7	WRJCC2541127110030C1	25,4	12,7	0,9	20	100	IN STOCK
RCH1 31,8/15,9	WRJCC3181159110030C1	31,8	15,9	1,0	10	50	IN STOCK
RCH1 38/19	WRJCC3801190110030C1	38,0	19,0	1,1	10	50	IN STOCK
RCH1 51/25,5	WRJCC5101255110030C1	51,0	25,5	1,1	10	25	IN STOCK
RCH1 76/38	WRJCC7601380110030C1	76,0	38,0	2,3	5	25	IN STOCK
RCH1 102/51	WRJCC1022510110030C1	102,0	51,0	2,0	5	25	IN STOCK

Tube type shrink ratio: 4:1	Index (black color)	Dimensions [mm]			Packing [pcs. 1 m]	Spools [m]	Availability
		D	d	s			
RCH1 4/1	WRJCC4000100010030C1	4,0	1,0	1,0	100	100	IN STOCK
RCH1 8/2	WRJCC8000200010030C1	8,0	2,0	1,0	100	100	IN STOCK

Standard length 1 meter. Tubes on spools are supplied round or flat up to dimension 12,7/6,4. Tubes on spools of larger dimensions than 12,7/6,4 are supplied flat. Tubes of other colors and length (cut into pieces) are supplied on special request.
 Tubes of other colours and length (cut into pieces) are supplied on special request. Color MIX+ Standard packagingt black+other colors.

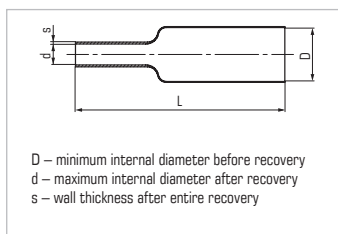
Indexes: when selecting pipes of other colors, please replace the last two characters in the index of the black pipe (C1) with:
D1 (red), **E1** (blue), **I1** (green), **J1** (yellow), **L1** (color mix), **K1** (yellow-green), **O1** (colorless), **A1** (white),
P1 (purple), **B1** (brown), **H1** (gray).

Examples of applications of heat shrink tubes



Properties	Test method	Tubes RCH1
Operating temperature		-55°C up to +125°C
Length change after shrinking	EN 60684-2	+5% ÷ -10%
Tensile strength, min.	EN 60684-2	15MPa
Elongation at rupture, min.	EN 60684-2	350%
Heat ageing 168 hours	EN 60684-2	
Tensile strength after heat ageing, min.	EN 60684-2	12MPa
Elongation at rupture after heat ageing, min.	EN 60684-2	250%
Heat shock (4 hours, temperature)	EN 60684-2	175°C no dripping, breaking and wall spreading
Contact with Cu after heat ageing (168 hours, temperature): elongation at rupture, min.	EN 60684-2	100%
Cu corrosion	EN 60684-2	doesn't corrode
Cold bend; 4 hours	EN 60684-2	doesn't break in temp. -55°C
Flammability	EN 60684-2	firearms
Water absorptivity, max	ISO 62	0,1%
Dielectric resistance, min.	EN 60684-2; IEC 60243-1	16kV/mm
Volume resistivity, min.	EN 60684-2; IEC 60093	10 ¹² Ωm

Heat shrink thin wall tubes, flexible, heat-resistant +125°C – type RCEH1



Application:

Heat shrinkable tubes, flexible, rapidly shrinkable are used for insulating components that are sensitive to high temperatures, perfectly fit to the steel and aluminum components.

Operating temperature: RCEH1 -40°C up to +125°C.
Shrink ratio: 2:1, 4:1
The minimum shrink temperature: +95°C
Colours: standard black, others on request

Do not self-extinguishing,
halogen-free
UV resistant
In accordance with REACH, RoHS



Tube type shrink ratio: 2:1	Index (black color)	Dimensions [mm]			Packing [pcs. 1 m]	Spools [m]	Availability
		D	d	s			
RCEH1 1,6/0,8	WRJCI1600080010030C1	1,6	0,8	0,45	100	100	ON REQUEST
RCEH1 2,4/1,2	WRJCI2400120010030C1	2,4	1,2	0,5	100	100	ON REQUEST
RCEH1 3,2/1,6	WRJCI3200160010030C1	3,2	1,6	0,5	100	100	ON REQUEST
RCEH1 4,8/2,4	WRJCI4800240010030C1	4,8	2,4	0,5	100	100	ON REQUEST
RCEH1 6,4/3,2	WRJCI6400320010030C1	6,4	3,2	0,6	100	100	ON REQUEST
RCEH1 9,5/4,8	WRJCI9500480010030C1	9,5	4,8	0,6	100	100	ON REQUEST
RCEH1 12,7/6,4	WRJCI1271640010030C1	12,7	6,4	0,6	100	100	ON REQUEST
RCEH1 19/9,5	WRJCI1901950010030C1	19,0	9,5	0,9	20	100	ON REQUEST
RCEH1 25,4/12,7	WRJCI2541127110030C1	25,4	12,7	0,9	20	100	ON REQUEST
RCEH1 38/19	WRJCI3801190010030C1	38,0	19,0	1,1	10	50	ON REQUEST
RCEH1 51/25,5	WRJCI5101255110030C1	51,0	25,5	1,1	10	50	ON REQUEST
RCEH1 76/38	WRJCI7601380110030C1	76,0	38,0	2,3	5	–	ON REQUEST
RCEH1 102/51	WRJCI1022510110030C1	102,0	51,0	2,0	5	–	ON REQUEST

Tube type shrink ratio: 4:1	Index (black color)	Dimensions [mm]			Packing [pcs. 1 m]	Spools [m]	Availability
		D	d	s			
RCEH1 4/1	WRJCI4000100010030C1	4,0	1,0	1,0	100	100	ON REQUEST
RCEH1 8/2	WRJCI8000200010030C1	8,0	2,0	1,0	100	100	ON REQUEST

Standard length 1 meter. Tubes on spools are supplied round or flat up to dimension 12,7/6,4. Tubes on spools of larger dimensions than 12,7/6,4 are supplied flat. Tubes of other colours and length (cut into pieces) are supplied on special request.
If a minimum quantity is agreed with Client. Colour MIX+Standard packaging black +other colours.

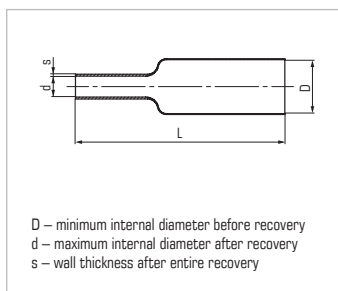
Indexes: when selecting pipes of other colors, please replace the last two characters in the index of the black pipe (**C1**) with:
D1 (red), **E1** (blue), **J1** (yellow), **L1** (color mix), **O1** (colorless), **B1** (brown), **F1** (orange).

Properties	Test method	Tubes RCEH1
Operating temperature		-40 up to +125°C
Length change after shrinking	EN 60684-2	+5 ÷ -10%
Tensile strength, min.	EN 60684-2	15 MPa
Elongation at rupture, min.	EN 60684-2	450%
Heat ageing 168 hours	EN 60684-2	158°C
Tensile strength after heat ageing, min.	EN 60684-2	13 MPa
Elongation at rupture after heat ageing, min.	EN 60684-2	300%
Heat shock (4 hours, temperature)	EN 60684-2	200°C no dripping, breaking and wall spreading
Contact with Cu after heat ageing (168 hours, temperature): elongation at rupture, min.	EN 60684-2	158°C 100%
Cu corrosion	EN 60684-2	doesn't corrode
Cold bend; 4 hours	EN 60684-2	doesn't break in temp. -40°C
Flammability	EN 60684-2	firearms
Water absorptivity, max	ISO 62	0,1%
Dielectric resistance, min.	EN 60684-2; IEC 60243-1	20kV/mm
Volume resistivity, min.	EN 60684-2; IEC 60093	10 ¹² Ωm

Examples of applications of heat shrink tubes



Heat shrink thin wall tubes, self-extinguishing, heat-resistant +125°C – type RCH1S

**Application:**

Heat shrinkable tubes flame retardant used to perform an electrical insulation, bonding cable harnesses, provide a mechanical shield and marking cables in the automotive and electronics industry, as well as in household appliances.

Operating temperature: RCH1S -40°C up to +125°C.

Shrink ratio: 2:1, 4:1

The minimum shrink temperature: +105°C

Colours: standard black,
others on request
black color

UV resistant

Tubes self-extinguishing

In accordance with REACH, RoHS



Tube type shrink ratio: 2:1	Index (black color)	Dimensions [mm]			Packing [pcs. 1 m]	Spools [m]	Availability
		D	d	s			
RCH1S 1,6/0,8	WRJCE1600080010030C1	1,6	0,8	0,45	100	100	ON REQUEST
RCH1S 2,4/1,2	WRJCE2400120010030C1	2,4	1,2	0,5	100	100	ON REQUEST
RCH1S 3,2/1,6	WRJCE3200160010030C1	3,2	1,6	0,5	100	100	ON REQUEST
RCH1S 4,8/2,4	WRJCE4800240010030C1	4,8	2,4	0,5	100	100	ON REQUEST
RCH1S 6,4/3,2	WRJCE6400320010030C1	6,4	3,2	0,6	100	100	ON REQUEST
RCH1S 9,5/4,8	WRJCE9500480010030C1	9,5	4,8	0,6	100	100	ON REQUEST
RCH1S 12,7/6,4	WRJCE1271640010030C1	12,7	6,4	0,6	100	100	ON REQUEST
RCH1S 19/9,5	WRJCE1901950010030C1	19,0	9,5	0,9	20	100	ON REQUEST
RCH1S 25,4/12,7	WRJCE2541127110030C1	25,4	12,7	0,9	20	100	ON REQUEST
RCH1S 38/19	WRJCE3801190110030C1	38,0	19,0	1,1	10	50	ON REQUEST
RCH1S 51/25,5	WRJCE5101255110030C1	51,0	25,5	1,1	10	50	ON REQUEST
RCH1S 76/38	WRJCE7600380010030C1	76,0	38,0	2,3	5	–	ON REQUEST
RCH1S 102/51	WRJCE1022510110030C1	102,0	51,0	2,0	5	–	ON REQUEST

Tube type shrink ratio: 4:1	Index (black color)	Dimensions [mm]			Packing [pcs. 1 m]	Spools [m]	Availability
		D	d	s			
RCH1S 4/1	WRJCE4000100010030C1	4,0	1,0	1,0	100	100	ON REQUEST
RCH1S 8/2	WRJCE8000200010030C1	8,0	2,0	1,0	100	100	ON REQUEST

Standard length 1 meter. Tubes on spools are supplied round or flat up to dimension 12,7/6,4. Tubes on spools of larger dimensions than 12,7/6,4 are supplied flat. Tubes of other colors and length (cut into pieces) are supplied on special request. If a minimum quantity is agreed with Client.

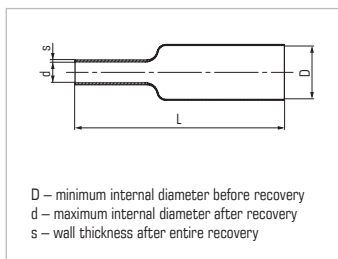
Colour MIX+Standard packaging black +other colours

Indexes: when selecting pipes of other colors, please replace the last two characters in the index of the black pipe (**C1**) with:

D1 (red), **E1** (blue), **I1** (green), **J1** (yellow), **A1** (white), **F1** (orange).

Properties	Test method	Tubes RCH1S
Operating temperature		-40°C up to +125°C
Length change after shrinking	EN 60684-2	+5% ÷ -10%
Tensile strength, min.	EN 60684-2	10 MPa
Elongation at rupture, min.	EN 60684-2	200%
Heat ageing 168 hours	EN 60684-2	
Tensile strength after heat ageing, min.	EN 60684-2	7 MPa
Elongation at rupture after heat ageing, min.	EN 60684-2	100%
Heat shock (4 hours, temperature)	EN 60684-2	200°C no dripping, breaking and wall spreading
Contact with Cu after heat ageing (168 hours, temperature): elongation at rupture, min.	EN 60684-2	158°C 100%
Cu corrosion	EN 60684-2	doesn't corrode
Cold bend; 4 hours	EN 60684-2	doesn't break in temp. -40°C
Flammability	EN 60684-2	self-extinguishing
Water absorptivity, max	ISO 62	0,5%
Dielectric resistance, min.	EN 60684-2; IEC 60243-1	16kV/mm
Volume resistivity, min.	EN 60684-2; IEC 60093	10 ¹² Ωm

Heat shrink thin wall tubes, flexible, self-extinguishing, quick-shrink, heat-resistant +125°C – type RCEH1S



Application:
Heat shrinkable tubes used to perform electrical insulation in conditions requiring increased resistance to high temperatures.

Operating temperature: RCEH1S -30°C up to +125°C.
Shrink ratio: 2:1, 4:1
The minimum shrink temperature: +105°C
Colours: standard black, others on request
black color

UV resistant
Tubes self-extinguishing
In accordance with REACH, RoHS



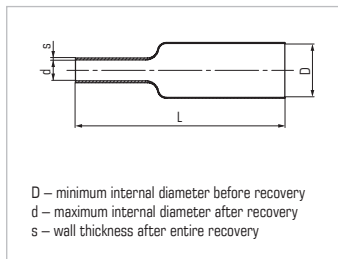
Tube type shrink ratio: 2:1	Index (black color)	Dimensions [mm]			Packing [pcs. 1 m]	Spools [m]	Availability
		D	d	s			
RCEH1S 1,6/0,8	WRJCH1600080010030C1	1,6	0,8	0,45	100	100	ON REQUEST
RCEH1S 2,4/1,2	WRJCH2400120010030C1	2,4	1,2	0,5	100	100	ON REQUEST
RCEH1S 3,2/1,6	WRJCH3200160010030C1	3,2	1,6	0,5	100	100	ON REQUEST
RCEH1S 4,8/2,4	WRJCH4800240010030C1	4,8	2,4	0,5	100	100	ON REQUEST
RCEH1S 6,4/3,2	WRJCH6400320010030C1	6,4	3,2	0,6	100	100	ON REQUEST
RCEH1S 9,5/4,8	WRJCH9500480010030C1	9,5	4,8	0,6	100	100	ON REQUEST
RCEH1S 12,7/6,4	WRJCH1270640010030C1	12,7	6,4	0,6	100	100	ON REQUEST
RCEH1S 19/9,5	WRJCH1900950010030C1	19,0	9,5	0,9	20	100	ON REQUEST
RCEH1S 25,4/12,7	WRJCH2540127010030C1	25,4	12,7	0,9	20	100	ON REQUEST
RCEH1S 38/19	WRJCH3800190010030C1	38,0	19,0	1,1	10	50	ON REQUEST
RCEH1S 51/25,5	WRJCH5100255010030C1	51,0	25,5	1,1	10	50	ON REQUEST
RCEH1S 76/38	WRJCH760380010030C1	76,0	38,0	2,3	5	–	ON REQUEST
RCEH1S 102/51	WRJCH1020510010030C1	102,0	51,0	2,0	5	–	ON REQUEST

Tube type shrink ratio: 4:1	Index (black color)	Dimensions [mm]			Packing [pcs. 1 m]	Spools [m]	Availability
		D	d	s			
RCEH1S 4 / 1	WRJCH4000100010030C1	4,0	1,0	1,0	100	100	ON REQUEST
RCEH1S 8 / 2	WRJCH8000200010030C1	8,0	2,0	1,0	100	100	ON REQUEST

Standard length 1 meter. Tubes on spools are supplied round or flat up to dimension 12,7/6,4. Tubes on spools of larger dimensions than 12,7/6,4 are supplied flat. Tubes of other colors and length (cut into pieces) are supplied on special request.
If a minimum quantity is agreed with Client. Colour MIX+Standard packaging black+other colours.

Properties	Test method	Tubes RCH1S
Operating temperature		-30°C up to +125°C
Length change after shrinking	EN 60684-2	+ 5% ÷ -10%
Tensile strength, min.	EN 60684-2	10 MPa
Elongation at rupture, min.	EN 60684-2	200%
Heat ageing 168 hours	EN 60684-2	158°C
Tensile strength after heat ageing, min.	EN 60684-2	10 MPa
Elongation at rupture after heat ageing, min.	EN 60684-2	150%
Heat shock (4 hours, temperature)	EN 60684-2	250°C no dripping, breaking and wall spreading
Contact with Cu after heat ageing (168 hours, temperature): elongation at rupture, min.	EN 60684-2	158°C 100%
Cu corrosion	EN 60684-2	doesn't corrode
Cold bend; 4 hours	EN 60684-2	doesn't break in temp. -30°C
Flammability	EN 60684-2	self-extinguishing
Water absorptivity, max	ISO 62	0,5%
Dielectric resistance, min.	EN 60684-2; IEC 60243-1	16kV/mm
Volume resistivity, min.	EN 60684-2; IEC 60093	10 ¹² Ωm

Heat shrink thin wall tubes, flexible, self-extinguishing, quick-shrink, heat-resistant +135°C – type RCEH2S



Standards UL224, 125°C, 600 V

Application:

Heat shrinkable tubes used to perform electrical insulation in conditions requiring increased resistance to high temperatures.

Operating temperature: RCEH2S -40°C up to +135°C
Shrink ratio: 2:1, 4:1
The minimum shrink temperature: +90°C
Colours: standard black, others on request

UV resistant
Tubes self-extinguishing
In accordance with UL, REACH, RoHS



Tube type shrink ratio: 2:1	Index (black color)	Dimensions [mm]			Packing [pcs. 1 m]	Spools [m]	Availability
		D	d	s			
RCEH2S 1,6/0,8	WRJCL1600080010030C1	1,6	0,8	0,5	100	100	ON REQUEST
RCEH2S 2,4/1,2	WRJCL2400120010030C1	2,4	1,2	0,5	100	100	ON REQUEST
RCEH2S 3,2/1,6	WRJCL3200160010030C1	3,2	1,6	0,5	100	100	ON REQUEST
RCEH2S 4,8/2,4	WRJCL4800240010030C1	4,8	2,4	0,5	100	100	ON REQUEST
RCEH2S 6,4/3,2	WRJCL6400320010030C1	6,4	3,2	0,6	100	100	ON REQUEST
RCEH2S 9,5/4,8	WRJCL9500480010030C1	9,5	4,8	0,6	100	100	ON REQUEST
RCEH2S 12,7/6,4	WRJCL1271640010030C1	12,7	6,4	0,6	20	100	ON REQUEST
RCEH2S 19/9,5	WRJCL1901950010030C1	19,0	9,5	0,9	20	100	ON REQUEST
RCEH2S 25,4/12,7	WRJCL2541127110030C1	25,4	12,7	0,9	20	100	ON REQUEST
RCEH2S 38/19	WRJCL3801190110030C1	38,0	19,0	1,1	10	50	ON REQUEST
RCEH2S 51/25,5	WRJCL5101255110030C1	51,0	25,5	1,1	10	50	ON REQUEST
RCEH2S 76/38	WRJCL7601380110030C1	76,0	38,0	2,3	5	–	ON REQUEST
RCEH2S 102/51	WRJCL1022510110030C1	102,0	51,0	2,0	5	–	ON REQUEST

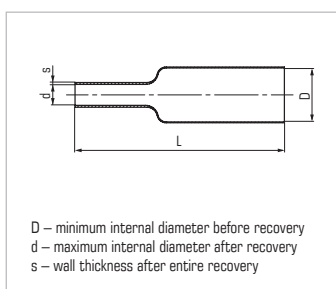
Tube type shrink ratio: 4:1	Index (black color)	Dimensions [mm]			Packing [pcs. 1 m]	Spools [m]	Availability
		D	d	s			
RCEH2S 4/1	WRJCL4000100010030C1	4,0	1,0	1,0	50	100	ON REQUEST
RCEH2S 8/2	WRJCL8000200010030C1	8,0	2,0	1,0	50	100	ON REQUEST

Standard length 1 meter. Tubes on spools are supplied round or flat up to dimension 12,7/6,4. Tubes on spools of larger dimensions than 12,7/6,4 are supplied flat. Tubes of other colors and length (cut into pieces) are supplied on special request.

If a minimum quantity is agreed with Client. Colour MIX+ Standard packaging black+other colours.

Properties	Test method	Tubes RCEH2S
Operating temperature		-40°C up to +135°C
Rated voltage	UL 224	600 V
Length change after shrinking	UL 224	±3%
Tensile strength, min.	UL 224	min. 10,4 MPa
Elongation at rupture, min.	UL 224	min. 200%
Secant module at elongation	UL 224	max. 175%
Heat shock (4 hours, temperature 250°C)	UL 224	no dripping, breaking and wall spreading
Heat ageing 168 hours	EN 60684-2	168 h, temperature 175°C
Tensile strength after heat ageing	UL 224	min. 7,3 MPa
Elongation at rupture after heat ageing, min.	UL 224	min. 200%
Cold bend (4 h, temperature -40°C)	UL 224	doesn't break in temp. -40°C
Cu corrosion (168 h, temperature 158°C)	UL 224	doesn't corrode
Flammability (test all tubes)	UL 224	self-extinguishing – max 30 sec
Dielectric resistance, min.	UL 224	min. 16kV/mm
Volume resistivity, min.	UL 224	min. 1014 cm

Polyolefin heat shrink tubes, very flexible, self-extinguishing, shrink ratio 3:1 and 4:1 – type RC3S and RC4S



Application:

RC3S: wide application in the performance of electrical insulation, connecting cable bundles and marking to protect against corrosion and to provide a mechanical shield.

Shrink ratio 3:1 is more suitable for applications in irregular shapes.

RC4S: widely used in the military, aircraft and electronics industry. Also applied to insulate and repair of wire, cable and line bundles.

Pipes are manufactured using a special utility and technology formula. It is easy to slide on a large diameter and after shrink down on a small diameter of connector or transition.

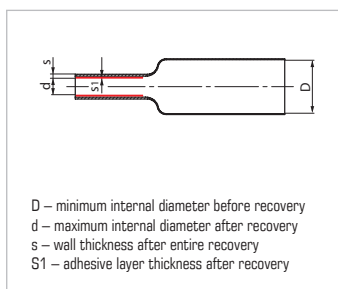
Operating temperature: -55°C up to +135°C
Shrink ratio: 3:1, 4:1
The minimum shrink temperature: +70°C
Standard colours: black
Tubes self-extinguishing

Tube type shrink ratio: 3:1	Index (black color)	Dimensions [mm]			Standard length of the spool [m]	Availability
		D	d	s		
RC3S 1,6/0,5	TRJHL1600050020050C1	1,6	0,5	0,45	200	ON REQUEST
RC3S 3,2/1	TRJHL3200100020050C1	3,2	1,0	0,55	200	ON REQUEST
RC3S 4,8/1,5	TRJHL4800150010050C1	4,8	1,5	0,60	100	IN STOCK
RC3S 6,4/2	TRJHL6400200010050C1	6,4	2,0	0,65	100	ON REQUEST
RC3S 9,5/3	TRJHL9500300010050C1	9,5	3,0	0,75	100	ON REQUEST
RC3S 12,7/4	TRJHL1271400050020C1	12,7	4,0	0,80	50	ON REQUEST
RC3S 19,1/6	TRJHL1911600050040C1	19,1	6,0	0,90	50	IN STOCK
RC3S 25,4/8	TRJHL2541800050040C1	25,4	8	1,00	50	ON REQUEST
RC3S 39/13	TRJHL3901130150040C1	39,0	13	1,25	50	ON REQUEST

Tube type shrink ratio: 4:1	Index (black color)	Dimensions [mm]			Packing [pcs. 1 m]	Cut in lengths [m]	Availability
		D	d	s			
RC4S 19,1/4,6	TRJHL1911460012230C1	19,1	4,6	1,7	12,2	1,22	ON REQUEST
RC4S 25,4/7	TRJHL2541700012230C1	25,4	7,0	1,7	6,1	1,22	ON REQUEST
RC4S 38,1/9,5	TRJHL3811950012230C1	38,1	9,5	1,7	6,1	1,22	IN STOCK
RC4S 50,8/14	TRJHL5081140112230C1	50,8	14,0	1,7	6,1	1,22	IN STOCK

Properties	Test method	Tubes RC3S/RC4S
Tensile strength	ASTM D 2671	14 MPa
Elongation at rupture	ASTM D 2671	800%
Tensile strength after heat ageing, (+175°C, 168 h)	ASTM D 2671	14 MPa
Elongation at rupture after heat ageing (+175°C, 168 h)	ASTM D 2671	350%
Attempt of flammability	UL 224 VW1, SAE-AMS-DTL-23053/5	positive
Heat shock (+250°C, 4 h)	ASTM D 2671	no breaking
Cold bend test (-55°C, 4 h)	ASTM D 2671	no breaking
Dielectric resistance	ASTM D 150	20kV/mm
Volume resistivity	ASTM D 876	10 ¹⁴ Ωm
Cu corrosion	UL 224	doesn't corrode
Water absorptivity	ASTM D 570	0,15%
Chemical resistance	SAE-AMS-DTL-23053/5	positive
Length change after shrinking	UL 224	0 ± 5

Thin wall heat shrink tubes, heat-resistant +125 with adhesive – type RCKH1



Application:

Heat shrinkable tubes with adhesive layer protect against water and moisture also among others cables and other cable bundles exposed to moisture penetration.

They are also used in the performance and repair of electrical insulation, connecting cable bundles and as protection against corrosion.

Operating temperature: RCKH1 -25°C up to +125°C*

Tubes self-extinguishing.

Tubes halogen-free: RCKH1

Shrink ratio: 3:1, 4:1

Minimum shrink temperature: +115°C

Colours standard: black, mix, other on request

UV resistant: black color

In accordance with REACH, RoHS



Thin wall tubes with adhesive, heat-resistant +125°C – RCKH1

Tube type	Index (black color)	Dimensions [mm]			Adhesive layer thickness after recovery [mm] – S1	Packing [pcs. 1 m]	Availability
		D	d	s			
RCKH1 3/1	WRDCC300010011003KC1	3	1	1,0	0,40	10	IN STOCK
RCKH1 4/1	WRDCC400010001003KC1	4	1	1,0	0,40	10	IN STOCK
RCKH1 6/2	WRDCC600020001003KC1	6	2	1,2	0,50	10	IN STOCK
RCKH1 8/2	WRDCC800020001003KC1	8	2	1,2	0,50	10	IN STOCK
RCKH1 12/3	WRDCC120130001003KC1	12	3	1,2	0,50	10	IN STOCK

Standard length 1 meter. Mixed – tubes of 5 different colors. Tubes of other colors and length (cut into pieces) are supplied on special request.

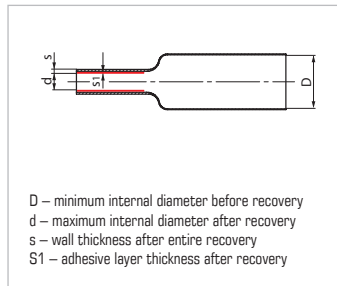
If a minimum quantity is agreed with Client

Indexes: if you choose pipes with different colors, please replace the last two characters in the index black tubes (**C1**) on: **D1** (red colour), **E1** (blue), **I1** (green), **J1** (yellow), **L1** (mix of colors), **O1** (colorless).

Properties	Test method	Tubes RCKH1
Operating temperature	EN 60684-2	-25°C up to +125°C*, *outer shell
Length change after shrinking	EN 60684-2	+5% ÷ -10%
Tensile strength, min.	EN 60684-2	15 MPa
Elongation at rupture, min.	EN 60684-2	350%
Heat ageing 168 hours	EN 60684-2	
Tensile strength after heat ageing, min.	EN 60684-2	12 MPa
Elongation at rupture after heat ageing, min.	EN 60684-2	250%
Heat shock (4 hours, temperature)	EN 60684-2	no dripping, breaking and wall spreading
Contact with Cu after heat ageing (168 hours, temperature): elongation at rupture, min.	EN 60684-2	100%
Cu corrosion	EN 60684-2	doesn't corrode
Cold bend; 4 hours	EN 60684-2 no	doesn't break in temp. -55°C
Flammability	EN 60684-2	self-extinguishing
Water absorptivity, max	ISO 62	0,1%
Dielectric resistance, min.	EN 60684-2; IEC 60243-1	16kV/mm
Volume resistivity, min.	EN 60684-2; IEC 60093	10 ¹² Ωm

*outer shell

Polyolefin heat shrink tubes, very flexible, adhesive-layered, shrink ratio 3:1, 4:1 – RC3K and RC4K



Application:

Designed for making protection on cable bundles and metal pipes against water and moisture.

They make both good insulation and sealing.

Manufactured by coextrusion of polyolefin and a hotmelt.

Operating temperature: od -45°C up to +125°C

Shrink ratio: 3:1, 4:1

Minimum shrink temperature: +80°C

Standard colour: black

Custom color: colorless

Outer shell – self-extinguishing (except a colorless)

Tube type shrink ratio: 3:1	Index (black color)	Dimensions [mm]			Adhesive layer thickness after recovery [mm] – S1	Standard length of the spool [m]	Availability
		D	d	s			
RC3K 3/0,6	TRDHL300006002005KC1	3,0	0,6	1,0	0,50	200	ON REQUEST
RC3K 4,8/1,5	TRDHL480015001005KC1	4,8	1,5	1,1	0,50	100	ON REQUEST
RC3K 6/2	TRDHL600020001005KC1	6,0	2,0	1,2	0,50	100	ON REQUEST
RC3K 9/3	TRDHL900030005004KC1	9,0	3,0	1,3	0,60	50	IN STOCK
RC3K 12/4	TRDHL120140002504KC1	12,0	4,0	1,7	0,80	25	IN STOCK
RC3K 19/6	TRDHL190160002504KC1	19,0	6,0	2,0	0,80	25	IN STOCK
RC3K 24/8	TRDHL240180002504KC1	24,0	8,0	2,2	1,05	25	ON REQUEST
RC3K 30/10	TRDHL300110011223KC1	30,0	10,0	2,4	1,05	Cut into 1,22 m, packed after 12,2 m	ON REQUEST
RC3K 40/13	TRDHL400113012504KC1	40,0	13,0	2,5	1,05	25	IN STOCK
RC3K 50/19	TRDHL500119011223KC1	50,0	19,0	2,5	1,05	Cut into 1,22 m, packed after 12,2 m	ON REQUEST

Tube type shrink ratio: 4:1	Index (black color)	Dimensions [mm]			Adhesive layer thickness after recovery [mm] – S1	Standard length of the spool [m]	Availability
		D	d	s			
RC4K 4/1	TRDHL400010001005KC1	4	1,00	1,00	0,50	100	ON REQUEST
RC4K 6/1,27	TRDHL600012701005KC1	6	1,27	1,20	0,60	100	ON REQUEST
RC4K 8/1,65	TRDHL800016505004KC1	8	1,65	1,55	0,75	50	ON REQUEST
RC4K 12/2,41	TRDHL120124102504KC1	12	2,41	1,95	1,00	25	IN STOCK
RC4K 16/4	TRDHL160140002504KC1	16	4,00	2,10	1,05	25	IN STOCK
RC4K 18/4,45	TRDHL180144502504KC1	18	4,45	2,40	1,20	25	ON REQUEST
RC4K 24/6	TRDHL240160002504KC1	24	6,00	2,50	1,25	25	ON REQUEST
RC4K 32/8	TRDHL320180002504KC1	32	8,00	2,50	1,25	25	IN STOCK
RC4K 52/13	TRDHL520113011223KC1	52	13,00	2,50	1,25	Cut into 1,22 m, packed after 12,2 m	ON REQUEST

Properties	Test method	Tubes RC3K/RC4K
Tensile strength	ASTM D 2671	minimum 10,4 MPa
Tensile strength after heat ageing (+158°C, 168 h)	ASTM D 2671	remains 70%
Elongation at rupture	ASTM D 2671	minimum 200%
Length change after shrinking	UL 224	0-10%
Heat shock (+250°C, 4 h)	ASTM D 2671	no cracks
Cold bend (-30°C, 1 h)	ASTM D 2671	no cracks
Voltage test AC (2500 V, 60 s)	ASTM D 2671	no breakdowns
Volume resistivity	ASTM D 876	minimum 10 ¹⁴ Ωcm
Inflammability test	SAE-AMS-DTL-23053/5	self-extinguishing after 30 s
Influence on copper (+158°C, 168 h)	UL 224	no corrosion

Mix of heat shrink tubes in phase colors – type RCH1



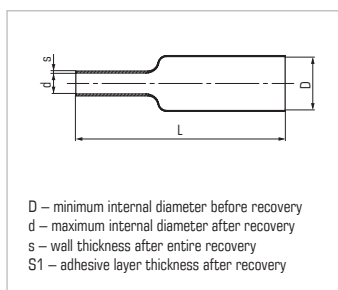
Application:

One package contains most popular colors used by fitters and electricians (50 m of each dimension).

There are 5 most popular colors used by installers and electricians. Below is a detailed list.

Type of tube	Index	Mix of phase colors Quantity [szt. 1 m]					Availability
		black	brown	blue	red	yellow-green	
RCH1 6,4/3,2×1-MF	WRJCC6400320000000T1	20	10	10	5	5	ON REQUEST
RCH1 8/2×1-MF	WRJCC8000200010030T1	20	10	10	5	5	ON REQUEST
RCH1 9,5/4,8×1-MF	WRJCC9500480010030T1	20	10	10	5	5	ON REQUEST
RCH1 12,7/6,4×1-MF	WRJCC1271640010030T1	20	10	10	5	5	ON REQUEST
RCH1 19/9,5×1-MF	WRJCC1901950010030T1	20	10	10	5	5	ON REQUEST
RCH1 25,4/12,7×1-MF	WRJCC2541127110030T1	20	10	10	5	5	ON REQUEST
RCH1 38/19×1-MF	WRJCC3801190110030T1	20	10	10	5	5	ON REQUEST

Thin wall tube on spools – type BOX



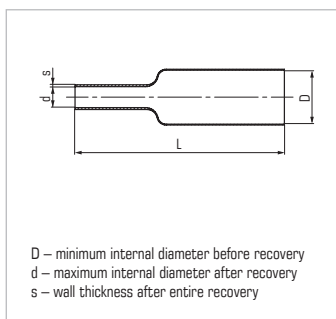
Application:

Thin wall heat shrink tubes supplied on spools in convenient boxes.

You may cut a piece of tube to whatever length is needed.

Type of tube	Index	Dimensions [mm]			Spool [m]	Availability
		D	d	s		
BOX RCH1 1,6/0,8×20-C	WRJCC1600080020040C1	1,6	0,8	0,45	20	ON REQUEST
BOX RCH1 2,4/1,2×20-C	WRJCC2400120020040C1	2,4	1,2	0,5	20	ON REQUEST
BOX RCH1 3,2/1,6×20-C	WRJCC3200160020040C1	3,2	1,6	0,5	20	ON REQUEST
BOX RCH1 4/1×10-C	WRJCC4000100010040C1	4,0	1,0	1,0	10	ON REQUEST
BOX RCH1 4,8/2,4×10-C	WRJCC4800240010040C3	4,8	2,4	0,5	10	ON REQUEST
BOX RCH1 6,4/3,2×10-C	WRJCC6400320010040C2	6,4	3,2	0,6	10	ON REQUEST
BOX RCH1 8/2×10-C	WRJCC8000200010040C2	8,0	2,0	1,0	10	ON REQUEST
BOX RCH1 9,5/4,8×10-C	WRJCC9500480010040C2	9,5	4,8	0,6	10	ON REQUEST
BOX RCH1 12,7/6,4×10-C	WRJCC1271640010040C2	12,7	6,4	0,6	10	ON REQUEST
BOX RCH1 19/9,5×5-C	WRJCC1901950050030C2	19	9,5	0,9	5	ON REQUEST
BOX RCH1 25,4/12,7×5-C	WRJCC2541127150030C2	25,4	12,7	0,9	5	ON REQUEST

Medium wall heat shrink heat-resistant tubes – type RPH1, RPKH1



Application:

Used to restore the insulation and the outer cable coating, high shrink ratio and a wall thickness guarantee excellent insulating properties, and provide a close fit to a wide variety of irregular shapes.

The applied hot-melt adhesive provides an additional moisture barrier needed in the construction cable joints and terminations.



Operating temperature:
RPH1 -55°C up to +125°C*
RPKH1 -25°C up to +125°C

Tube with glue RPKH1

Tubes halogen-free:

RPH1, RPKH1

Tubes self-extinguishing

Shrink ratio:

3:1, 4:1

The minimum shrink temperature:

+120°C

Colours:

black, yellow-green

UV resistant

In accordance with REACH, RoHS

Tube type	Index (black color)	Dimensions [mm]			Packing [pcs. 1 m]	Availability
		D	d	s		
RPH1 9/3	WRJPC9000300010030C1	9	3	2,0	10	ON REQUEST
RPH1 12/4	WRJPC1200400010030C1	12	4	2,0	10	ON REQUEST
RPH1 18/6	WRJPC1800600010030C1	18	6	2,0	10	ON REQUEST
RPH1 22/6	WRJPC2200600010030C1	22	6	2,0	10	ON REQUEST
RPH1 25/10	WRJPC2500100010030C1	25	10	2,0	10	ON REQUEST
RPH1 35/12	WRJPC3500120010030C1	35	12	2,0	5	ON REQUEST
RPH1 40/16	WRJPC4000160010030C1	40	16	2,0	5	IN STOCK
RPH1 52/20	WRJPC5200200010030C1	52	20	2,5	5	ON REQUEST
RPH1 63/19	WRJPC6300190010030C1	63	19	2,5	1	ON REQUEST
RPH1 80/35	WRJPC8000350010030C1	80	35	4,0	1	IN STOCK
RPH1 103/45	WRJPC1030450010030C1	103	45	4,5	1	ON REQUEST
RPH1 132/58	WRJPC1320580010030C1	132	58	4,5	1	IN STOCK

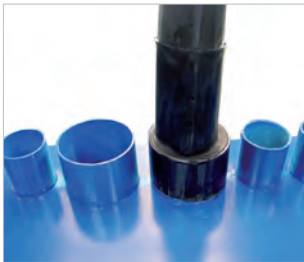
Tube type	Index (black color)	Dimensions [mm]			Packing [pcs. 1 m]	Availability
		D	d	s		
RPKH1 9/3	WRDPC900030001003KC1	9	3	2,0	10	IN STOCK
RPKH1 12/4	WRDPC120040001003KC1	12	4	2,0	10	IN STOCK
RPKH1 18/6	WRDPC170030001003KC1	18	6	2,0	10	IN STOCK
RPKH1 22/6	WRDPC180160001003KC1	22	6	2,0	10	IN STOCK
RPKH1 25/10	WRDPC220060001003KC1	25	10	2,0	10	IN STOCK
RPKH1 35/12	WRDPC250110001003KC1	35	12	2,0	5	IN STOCK
RPKH1 40/16	WRDPC300080001003KC1	40	16	2,0	5	IN STOCK
RPKH1 52/20	WRDPC350012001003KC1	52	20	2,5	5	IN STOCK
RPKH1 63/19	WRDPC400016001003KC1	63	19	2,5	1	IN STOCK
RPKH1 80/35	WRDPC520020001003KC1	80	35	4,0	1	IN STOCK
RPKH1 103/45	WRDPC630019001003KC1	103	45	4,5	1	IN STOCK
RPKH1 132/58	WRDPC800035001003KC1	132	58	4,5	1	IN STOCK

Tube type	Index (yellow-green)	Dimensions [mm]			Packing [pcs. 1 m]	Availability
		D	d	s		
RPKH1 12/4	WRDPC120140001003KK1	12	4	2,0	10	ON REQUEST
RPKH1 22/6	WRDPC220160001003KK1	22	6	2,0	10	IN STOCK
RPKH1 25/10	WRDPC250110011003KK1	25	10	2,0	10	IN STOCK
RPKH1 35/12	WRDPC350112011003KK1	35	12	2,0	5	ON REQUEST

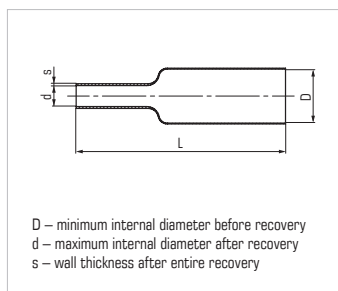
*outer layer

Properties	Test method	Tubes RPH1, RPKH1
Operating temperature	EN 60684-2	RPH1 -55°C up to +125°C*, RPKH1 -55°C up to +125°C *outer layer
Length change after shrinking	EN 60684-2	+5 ÷ -10%
Tensile strength, min.	EN 60684-2	14 MPa
Elongation at rupture, min.	EN 60684-2	350%
Heat ageing 168 hours	EN 60684-2	
Tensile strength after heat ageing, min.	EN 60684-2 EN 60684-2	12 MPa
Elongation at rupture after heat ageing, min.	EN 60684-2	250%
Heat shock (4 hours, temperature)	EN 60684-2	no dripping, breaking and wall spreading
Contact with Cu after heat ageing (168 hours, temperature): elongation at rupture, min.	EN 60684-2	100%
Cu corrosion	EN 60684-2	doesn't corrode
Cold bend; 4 hours	ISO 62	doesn't break in temp. -55°C
Flammability	EN 60684-2	firearms
Water absorptivity, max	EN 60684-2	0,1%
Dielectric resistance, min.	EN 60684-2; IEC 60243-1	16kV/mm
Volume resistivity, min.	EN 60684-2; IEC 60093	10 ¹² Ωm

Examples of applications of heat shrink tubes.



Medium wall heat shrink tubes with mastic – type RPM



RPM tubes are on all length covered with mastic sealing. They are designed for the protection of metal pipes' joints and other connections which require reliable sealing.

Radiation crosslinked covering guarantee effective mechanical protection. Mastic layer protects against moisture and water penetration.

Operating temperature: -35°C up to +110°C (IEC 216)

Shrink ratio: 3:1

The minimum shrink temperature: +120°C

Standard color: black

UV resistant

Covered on all length with mastic sealing

Good insulation properties



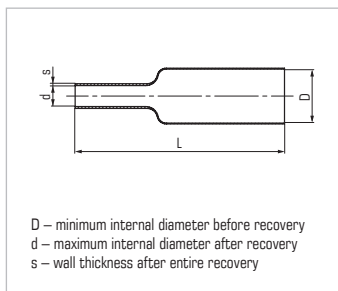
Tube type	Index	Dimensions [mm]			Packing [pcs. 1 m]	Availability
		D	d	s		
RPM 30/6	TRJHA300160001003MC1	30	6	2,5	4	ON REQUEST
RPM 33/8	TRJHA330180001003MC1	33	8	2,5	4	ON REQUEST
RPM 40/12	TRJHA400112011003MC1	40	12	2,5	3	IN STOCK
RPM 55/20	TRJHA550120011003MC1	55	20	2,0	2	IN STOCK
RPM 75/25	TRJHA750125011003MC1	75	25	2,0	2	ON REQUEST
RPM 95/30	TRJHA950130011003MC1	95	30	2,0	2	IN STOCK
RPM 120/40	TRJHA120240011003MC1	120	40	2,0	2	ON REQUEST
RPM 140/50	TRJHA140250011003MC1	140	50	2,3	2	ON REQUEST
RPM 160/50	TRJHA160250011003MC1	160	50	2,3	2	ON REQUEST
RPM 180/66	TRJHA180266011003MC1	180	66	2,5	2	IN STOCK
RPM 205/66	TRJHA205266011003MC1	205	66	2,5	2	ON REQUEST
RPM 235/70	TRJHA235270001003MC1	235	70	2,5	2	ON REQUEST
RPM 265/75	TRJHA265275011003MC1	265	75	3,0	2	IN STOCK
RPM 300/85	TRJHA300285011003MC1	300	85	3,0	2	ON REQUEST
RPM 350/100	TRJHA350210021003MC1	350	100	3,0	2	ON REQUEST

Properties	Test method	Rury RPM
Tensile strength	ASTM D 2671	≥ 14 MPa
Elongation at rupture	ASTM D 2671	≥ 400%
Longitudinal change after recovery	UL 224	0-10%
Elongation at rupture after heat ageing, min.	+150°C, 168h	≥ 300%
Dielectric strength	IEC 243	≥ 20kV/mm
Volume resistivity	IEC 93	≥ 10 ¹⁴ Ωcm
Influence on copper	ASTM D 2671	doesn't corrode
Stress cracking resistance (+50°C)	ASTM D 1693	doesn't break
Cold bend (-55°C, 4h)	ASTM D 2671	doesn't break

Properties of mastic

Water absorption	ISO 62	< 0,1%
Softening point	ASTM D E8	80°C
Peel strength	ASTM D 1000	50N/25 mm
Influence on copper	ASTM D 2671	doesn't corrode
Fungus resistance	ISO 846	resistant

Heat shrink tubes of large diameters – type RDK



Application:

They are designed for insulation of metal elements, lampposts, masts, pipelines and elements of bridges.

Due to high shrink ratio, they are a great insulation for cable culverts ends e.g. under the streets. RDK tubes are wholly adhesive-layered and RDM are supplied with mastic stripes at the ends. Both adhesive layer and mastic stripes are tight insulation and protect against any moist penetration under the heat shrink layer.

The dimensions of RDK and RDM tubes are specially matched to the sizes of lampposts. They protect them effectively against salt, animals' urine and gases in the air.



Operating temperature:

On special request

Shrink ratio:

The minimum shrink temperature:

Colours:

Tubes halogen-free

UV resistant

In accordance with REACH, RoHS

RDK -15°C up to +125°C*

thick-walled tubes available without glue or covered at their ends with butyl-rubber mass.

2:1, 4:1

+120°C

black

Tube type	Tube with adhesive Index	Dimensions [mm]			Packing [pcs. 1 m]	Availability
		D	d	s		
RDK 55/15	WRDDA550115011003KC1	55	15	4,5	1	ON REQUEST
RDK 76/18	WRDDA760118011003KC1	76	18	4,0	1	IN STOCK
RDK 95/25	WRDDA950125011003KC1	95	25	4,5	1	IN STOCK
RDK 105/32	WRDDA105232011003KC1	105	32	4,0	1	ON REQUEST
RDK 140/34	WRDDA140234011003KC1	140	34	4,5	1	IN STOCK
RDK 155/90	WRDDA155290011003KC1	155	90	2,9	1	ON REQUEST
RDK 175/90	WRJDA175290011003KC1	175	90	2,9	1	IN STOCK
RDK 195/90	WRJDA195290011003KC1	195	90	2,5	1	ON REQUEST
RDK 225/90	WRJDA225290011003KC1	225	90	2,5	1	IN STOCK
RDK 245/125	WRJDA245212521003KC1	245	125	2,8	1	ON REQUEST
RDK 255/125	WRJDA255212521003KC1	255	125	2,8	1	ON REQUEST
RDK 275/125	WRJDA275212521003KC1	275	125	2,8	1	ON REQUEST
RDK 300/125	WRJDA300212521003KC1	300	125	2,8	1	ON REQUEST
RDK 350/125	WRJDA350212521003KC1	350	125	2,8	1	ON REQUEST
RDK 390/200	WRJDA390220021003KC1	390	200	3,0	1	ON REQUEST
RDK 400/200	WRJDA400220021003KC1	400	200	3,0	1	ON REQUEST
RDK 440/200	WRJDA440220021003KC1	440	200	3,0	1	ON REQUEST
RDK 460/200	WRJDA460220021003KC1	460	200	3,0	1	ON REQUEST
RDK 500/200	WRJDA500220021003KC1	500	200	3,0	1	ON REQUEST
RDK 530/200	WRJDA530220021003KC1	530	200	3,0	1	ON REQUEST
RDK 560/250	WRJDA560225021003KC1	560	250	3,2	1	ON REQUEST
RDK 620/250	WRJDA620225021003KC1	620	250	3,2	1	ON REQUEST
RDK 710/250	WRJDA710225021003KC1	710	250	3,2	1	ON REQUEST

Standard length 1 m. Up to the dimension 140/34 lengths > 1 m are possible.

On special demand we can produce tubes of non standard sizes.

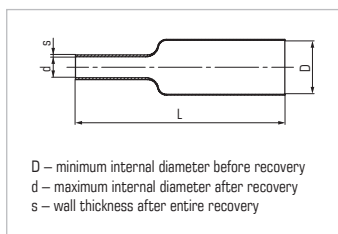
*outer layer

Properties	Test method	Tubes RDK
Operating temperature	EN 60684-2	-15°C up to +125°C/-40°C up to +125°C/-55°C Up to +125°C *outer layer
Length change after shrinking	EN 60684-2	+5 ÷ -15%
Tensile strength, min	EN 60684-2	12 MPa
Elongation at rupture, min.	EN 60684-2	300%
Heat ageing (168 h, temperature)	EN 60684-2	
Tensile strength after heat ageing, min.	EN 60684-2	10 MPa
Elongation at rupture after heat ageing, min.	EN 60684-2	200%
Heat shock (4 hours, temperature)	EN 60684-2	no dripping, breaking and wall spreading
Contact with Cu after heat ageing (168 hours, temperature): elongation at rupture, min.)	EN 60684-2	100%
Cu corrosion	EN 60684-2	doesn't corrode
Cold bend; 4 hours	EN 60684-2	doesn't break in temp. -55°C
Flammability	EN 60684-2	firearms
Water absorptivity, max	ISO 62	0,1%
Dielectric resistance, min.	EN 60684-2; IEC 60243-1	16kV/mm
Volume resistivity, min.	EN 60684-2; IEC 60093	10 ¹² Ωm

Examples of applications of heat shrink tubes.



Thick wall heat shrink tubes, adhesive-layered, high shrink ratio 6:1 – type RBG



Application:

Ideal insulation on objects with different diameters – cables, connectors and other elements.

High shrink strength guarantees good adherence to the objects of various shapes. They make a good mechanical protection of cable joints and terminations. Full protection against environmental influence.



Operating temperature: -55°C up to +110°C (IEC 216)

Shrink ratio: 6:1

The minimum shrink temperature: +120°C

Colours: black

UV resistant

Very high mechanical protection

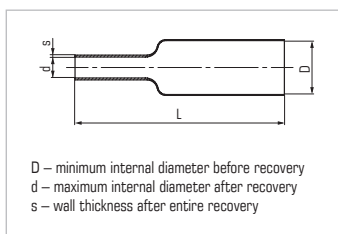
Tube type	Index	Dimensions [mm]			Packing [pcs. 1 m]	Cut into [m]	Availability
		D	d	s			
RBG 19,0/3,2	TRDHA190132001223KC1	19,0	3,2	3,2	12,2	1,22	ON REQUEST
RBG 33,0/5,5	TRDHA330155001223KC1	33,0	5,5	3,4	3,66	1,22	ON REQUEST
RBG 44,4/7,4	TRDHA444174001223KC1	44,4	7,4	3,6	3,66	1,22	ON REQUEST
RBG 50,8/8,3	TRDHA508183001223KC1	50,8	8,3	4,3	2,44	1,22	ON REQUEST
RBG 69,8/11,7	TRDHA698111711223KC1	69,8	11,7	4,8	2,44	1,22	ON REQUEST
RBG 88,9/17,1	TRDHA889117111223KC1	88,9	17,1	4,8	2,44	1,22	IN STOCK
RBG 119,4/22,9	TRDHA119222911223KC1	119,4	22,9	4,8	2,44	1,22	IN STOCK

Properties	Test method	Tubs RBG
Tensile strength	ASTM D 2671	> 14 MPa
Elongation at rupture	ASTM D 2671	> 400%
Density	ASTM D 792	1,05 g/cm ³
Longitudinal change after shrink	UL 224	0-10%
Elongation at rupture after heat ageing, min.	+150°C, 168h	> 300%
Dielectric strength	IEC 243	> 20kV/mm
Volume resistivity	IEC 93	> 10 ¹⁴ Ωm
Influence on copper	ASTM D 2671	doesn't corrode
Stress cracking resistance (+50°C)	ASTM D 1 693	doesn't break

Properties of adhesive

Water absorption	ISO 62	< 0,2%
Softening temperature	ASTM D E8	85°C
Peel strength	DIN 30672	4 N/cm
Influence on copper	ASTM D 2671	doesn't corrode
Fungus resistance	ISO 846	resistant

Medium wall heat shrink tubes, insulation, for Medium Voltage up to 36kV, anti-tracking – type RPAT



Application:

Designed for insulation in cable terminations and joints for Medium Voltage up to 36kV.

Their anti-tracking properties guarantee maximum reliability when installed.

Operating temperature: -55°C up to +125°C

The minimum shrink temperature: +110°C

Standard color: red

Halogen-free

UV resistant

Produced from special formula
of radiation crosslinked polyethylene

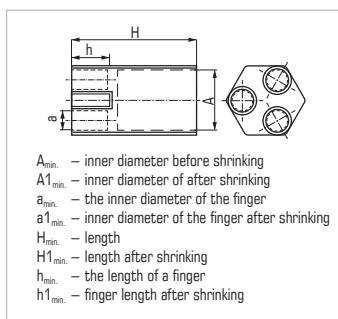


Tube type	Index	Dimensions [mm]			Standard length of spool [m]	Availability
		D	d	s		
RPAT 19/6	TRJHQ1901600030040D1	19	6	2,5	30	IN STOCK
RPAT 30/10	TRJHQ3001100115040D1	30	10	3,0	15	IN STOCK
RPAT 35/12	TRJHQ3501120115040D1	35	12	3,0	15	IN STOCK
RPAT 40/16	TRJHQ4001160115040D1	40	16	3,0	15	ON REQUEST
RPAT 45/18	TRJHQ4501180115040D1	45	18	3,0	15	ON REQUEST
RPAT 54/24	TRJHQ5401240115040D1	54	24	3,0	15	ON REQUEST
RPAT 60/29	TRJHQ6001290115040D1	60	29	3,0	15	ON REQUEST
RPAT 76/38	TRJHQ7601380115040D1	76	38	3,0	15	ON REQUEST
RPAT 100/49	TRJHQ1002490115040D1	100	49	3,0	15	ON REQUEST
RPAT 130/50	TRJHQ1302500100000D1	130	50	4,0	cut into 1 [m] lengths	ON REQUEST

Properties	Test method	Tubs RPAT
Tensile strength	ASTM D 2671	minimum 11 MPa
Elongation at rupture	ASTM D 2671	minimum %
Longitudinal change after shrink	ASTM D 2671	0-10%
Tensile strength after ageing (+120°C, 168h)	ASTM D 2671	minimum 13 MPa
Elongation at rupture after ageing (+120°C, 168h)	ASTM D 2671	minimum 350%
Dielectric strength	IEC 243	minimum 19kV/mm
Anti-tracking test	ASTM D 2303	3,75kV, 1 h, lack
Dielectric constant	IEC 250	maksimum 3,0
Volume resistivity	ASTM D 2303	minimum 10 ¹³ Ωcm
Flammability (oxygen index)	IEC 93	minimum 25
Influence on copper (+120°C, 168 h)	ASTM D 2671	doesn't corrode
Cold bend (-40°C, 4 h)	ASTM D 2671	doesn't break

HEAT SHRINK BREAKOUT BOOTS

Heat shrink breakout boots: 2-core, 3-core, 4-core and 5-core – type AK



Properties:

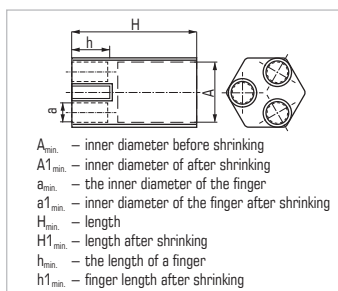
Heat shrink breakout boots AK are designed for insulation of cable ends at separated cores.

They are elements for both indoor and outdoor terminations and cable joints of polymer or paper insulated cables.

Voltage: 0,6/1kV and 3,5/6kV

Product name	Index	Number of cores	Dimensions [mm]								Wall thickness	Core thickness	Cumulative packing [sets]	Availability
			A	A1	a	a1	H	H1	h	h1				
AK2 1,5-25	TKP2K030101204C1	2	30,0	10,0	12,0	4,0	70,0	95,0	18,0	28,0	2,0	2,0	1	ON REQUEST
AK2 25-120	TKP2K050242107C1	2	50,0	24,0	21,0	7,0	85,0	120,0	29,0	40,0	3,0	3,0	1	ON REQUEST
AK2 120-240	TKP2K098422808C1	2	98,0	42,6	28,4	8,2	147,4	165,3	65,8	68,8	3,3	3,3	1	ON REQUEST
AK3 1,5-16	TKP3K025090903C1	3	25,0	9,0	9,0	3,0	45,0	76,0	14,0	20,0	2,5	1,2	1	ON REQUEST
AK3 4-35	TKP3K035151304C1	3	35,0	11,6	13,0	3,5	85,0	117,0	18,0	31,0	2,2	1,4	1	ON REQUEST
AK3 25-120	TKP3K050212209C1	3	50,0	21,1	22,0	9,0	165,4	164,3	31,0	50,0	3,5	2,2	1	ON REQUEST
AK3 95-300	TKP3K075313214C1	3	75,0	31,0	32,0	14,0	190,0	220,0	55,0	60,0	3,5	2,7	1	IN STOCK
AK4 1,5-10	TKP4K028090802C1	4	28,0	9,0	8,0	2,0	50,0	78,0	16,0	21,0	2,7	2,7	1	ON REQUEST
AK4 6-35	TKP4K035161205C1	4	35,0	16,0	12,0	5,0	85,0	105,0	14,0	20,0	2,3	1,4	1	IN STOCK
AK4 25-95	TKP4K055202006C1	4	55,0	20,0	20,0	6,0	140,0	150,0	30,0	38,0	3,0	2,5	1	IN STOCK
AK4 35-150	TKP4K060262210C1	4	60,0	26,0	22,0	10,0	154,5	187,4	38,4	51,5	5,6	2,5	1	IN STOCK
AK4 95-300	TKP4K090353414C1	4	90,0	35,0	34,0	14,0	170,0	218,0	51,0	58,0	4,0	2,8	1	IN STOCK
AK4 240-400	TKP4K135515114C1	4	135,0	50,6	51,5	13,9	213,2	241,8	68,0	78,7	4,2	4,2	1	ON REQUEST
AKF1	TKP4K162706418C1	4	162,0	70,0	64,0	18,0	240,0	260,0	75,0	80,0	4,2	4,2	1	IN STOCK
AK5 1,5-16	TKP5K032071103C1	5	31,5	6,1	11,2	2,7	50,0	60,0	20,0	28,0	1,5	1,8	1	IN STOCK
AK5 10-70	TKP5K058151604C1	5	57,0	14,7	15,8	2,9	83,0	112,0	20,5	30,5	2,0	1,9	1	IN STOCK
AK5 70-185	TKP5K081312707C1	5	81	31	27	6,9	155	190	46	66	1,6	2,6	1	ON REQUEST
AK5 150-240	TKP5K102423308C1	5	102,0	41,8	33,6	7,7	162,9	196,7	64,5	71,3	4,1	3,2	1	ON REQUEST

3-core heat shrink breakout boots for MV up to 36kV – type AKR



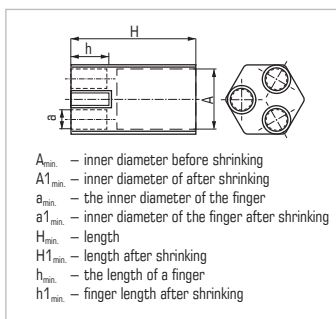
Application:

Heat shrink breakout boots AKR are designed for insulation of MV cable ends at separated cores.

They are an integral part of MV indoor and outdoor cable terminations.

Product name	Index	Number of cores	Dimensions [mm]								Wall thickness	Core thickness	Cumulative packing [sets]	Availability
			A	A1	a	a1	H	H1	h	h1				
AKR 1	TKP3K050212209D1	3	50	21	22	9	180	187	45	50	3,0	2,5	1	ON REQUEST
AKR 2	TKP3K075313214D1	3	75	31	32	14	160	210	56	60	4,0	2,2	1	ON REQUEST
AKR 3	TKP3K110455521D1	3	110	45	55	21	160	230	53	55	3,5	2,2	1	ON REQUEST
AKR 4	TKP3K135566428D1	3	135	55	64	27	230	250	52	56	3,8	2,8	1	IN STOCK
AKR 5	TKP3K170568528D1	3	170	56	68	28	230	250	40	65	3,8	2,8	1	IN STOCK

Heat shrink breakout boots – type AKB, AKF



Application:

Heat shrink breakout boots AK, AKB and AKF (black ones) are designed for cable insulation at the end of mechanical casing (plastic or metal) on the overhead transmission line of MV.

The heat shrink boots protect the cable against water penetration, dust, insects and other dirt. These breakout boots are meant for Low and Medium Voltage cables.

Product name	Index	Number of cores	Dimensions [mm]								Wall thickness	Core thickness	Cumulative packing [sets]	Availability
			A	A1	a	a1	H	H1	h	h1				
AKB 3	TKP3K125465222C1	3	125	46	52	22	160	230	40	60	3,8	2,5	1	ON REQUEST
AKB 4	TKP3K135606426C1	3	135	60	64	26	230	250	40	65	3,8	2,8	1	ON REQUEST
AKB 5	TKP3K170568528C1	3	170	56	68	28	230	250	40	65	3,8	2,8	1	IN STOCK
AK 4 240-400	TKP4K135515114C1	4	135	50,6	51,5	13,9	213,2	241,8	68	78,7	4,2	4,2	1	ON REQUEST
AKF1	TKP4K162706418C1	4	162	70,0	64	18	240	260	75	80	4,2	4,2	1	IN STOCK

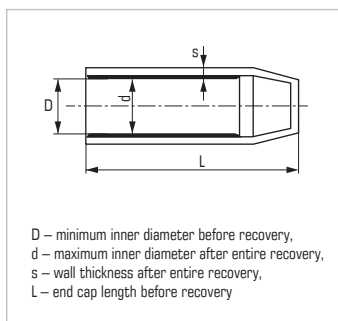
Properties

Operating temperature	AK, AKB, AKF: from -30°C up to +135°C	AKR: from -40°C up to +120°C
Shrink temperature	> +125°C	
Elongation at rupture	minimum 300%	
Tensile strength	no less than 13 MPa	
Longitudinal shrink	not more than 10%	
Volume resistivity	AK, AKB, AKF: minimum 10 ¹³ Ωcm	AKR: minimum 10 ¹² Ωcm
Self-extinguishing	relates to AKR	
No corrosion In contact with CU		
Resistant to UV radiation		
Resistant to creeping current	(breakouts red – AKR)	
Dielectric strength	minimum 10kV/mm	
Resistance to heat shock	no cracks, no flow (measurement for 4 hours at 250°C)	
Heat ageing	no cracks, no flow (measurement for 500 hours at 120°C)	
They have excellent insulating properties and sealing		
Colours	AK, AKB, AKF: black color, AKR: red colour	

Example of applications of breakout boots.



Heat shrink cable end caps – type KTK



Application:

They are applied as insulation of power and telecommunication cables' ends. They also make an ideal insulation on bolts against the weather conditions at e.g. bridges or lampposts.

They are resistant to acids and basics.

The inner double layer of end caps – melt adhesive – increases the tightness of the insulation.

Product name	Index	Dimensions [mm]				Packing [pcs.]	Availability
		D	d	s	L		
KTK 3/1	TKKK34001000025C0	3,4	1,0	1,0	25	100	ON REQUEST
KTK 4,8/1,5	TKKK50001500030C0	5,0	1,5	1,0	30	100	ON REQUEST
KTK 6/2	TKKK64002000030C0	6,4	2,0	1,0	30	100	IN STOCK
KTK 9/3	TKKK10013000035C0	10,0	3,0	1,4	35	100	ON REQUEST
KTK 10/4	WKKK11014000048C0	11,0	4,0	2,4	48,5	100	IN STOCK
KTK 14/4	WKKK14514000048C0	14,5	4,0	2,4	48,5	100	IN STOCK
KTK 16/8	WKKK16018000085C0	16,0	7,9	2,9	85,0	100	ON REQUEST
KTK 18/6	WKKK18016000020C0	18,0	6,0	2,1	20,0	100	ON REQUEST
KTK 21/6	WKKK21016000020C0	21,0	6,0	2,1	20,0	100	ON REQUEST
KTK 23/8	WKKK23017900085C0	23,0	7,9	2,9	85,0	100	IN STOCK
KTK 33/15	WKKK33011461106C0	33,0	14,6	3,5	106,0	10	IN STOCK
KTK 40/15	WKKK40011461106C0	40,0	14,6	3,5	106,0	100	IN STOCK
KTK 52/25	WKKK53012421160C0	53,0	24,2	3,5	160,0	50	IN STOCK
KTK 70/25	WKKK70012421115C0	70,0	24,2	3,5	115,0	50	IN STOCK
KTK 90/45	WKKK91014381160C0	91,0	43,8	4,7	160,0	10	IN STOCK
KTK 120/60	TKKK12026001150C0	121,0	43,8	4,7	160,0	1	ON REQUEST

Caps with non-standard dimensions: on special request, we can make caps with other dimensions.

Heat shrink protection kits for 0,6/1kV – type ZO 4, ZO 5



Application:

Protection kits are meant for cable ends protection.
They allow the operation of cable under tension of 1kV.

The cleaning tissue attached to the kit should be used for degreasing of cable surface before the installation.

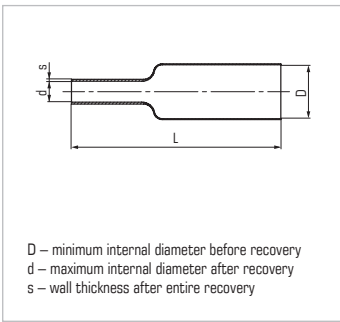
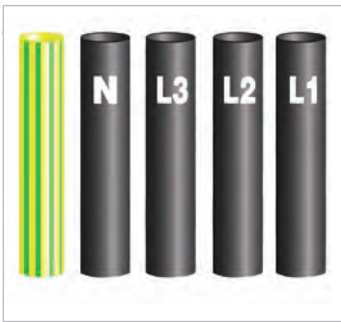
For 4-core cables

Product name	Index	Cable cross-section [mm ²]			Components of set				Cleaning tissue Quantity [pcs]	Availability
					Insulation cap		Covering cap			
		from	to	Type	Quantity [pcs]	Type	Quantity [pcs]			
ZO 4 16-25	WGE0AI4FGKK01	16	25	10/4×48,5	4	33/15×106	1	1	ON REQUEST	
ZO 4 35	WGE0AI4HOKK01		35	16/8×50	4	40/15×106	1	1	ON REQUEST	
ZO 4 50-70	WGE0AI4IJKK01	50	70	16/8×50	4	52/25×160	1	1	ON REQUEST	
ZO 4 95-120	WGE0AI4KLKK01	95	120	23/8×50	4	52/25×160	1	1	ON REQUEST	
ZO 4 150	WGE0AI4MOKK01		150	23/8×50	4	70/25×160	1	1	ON REQUEST	
ZO 4 185	WGE0AI4NOKK01		185	33/15×50	4	70/25×160	1	1	ON REQUEST	
ZO 4 240	WGE0AI4OOKK01		240	33/15×50	4	90/45×160	1	1	ON REQUEST	

For 5-core cables

Product name	Index	Cable cross-section			Components of set				Cleaning tissue	Availability
		[mm²]			Insulation cap		Covering cap			
		from		to	Type	Quantity [pcs]	Type	Quantity [pcs]		
ZO 5 16-25	WGE0AI5FGKK01	16		25	10/4×48,5	5	40/15×106	1	1	ON REQUEST
ZO 5 35	WGE0AI5HOKK01		35		16/8×50	5	52/25×160	1	1	ON REQUEST
ZO 5 50-70	WGE0AI5IJKK01	50		70	16/8×50	5	70/25×160	1	1	ON REQUEST
ZO 5 95-120	WGE0AI5KLKK01	95		120	23/8×50	5	70/25×160	1	1	ON REQUEST
ZO 5 150	WGE0AI5MOKK01		150		23/8×50	5	90/45×160	1	1	ON REQUEST
ZO 5 185-240	WGE0AI5NOKK01	185		240	33/15×50	5	90/45×160	1	1	ON REQUEST

Heat shrink phase markers – type ZOK, ZOKzt



Designed for phase marking of conductors finished with copper or aluminum lugs for installation outdoor, indoor and underground.

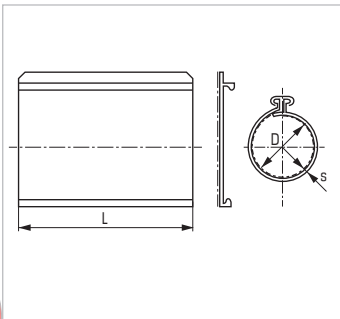
They are good electrical insulators, they protect against mechanical and corrosion damages. The double layer hot-melt protection guarantees tightness of insulated connection.

Colours: set ZOK – 4 black phase markers with white marking: L1, L2, L3 i N. set ZOKzt – 4 black phase markers with white marking: L1, L2, L3 i N and one yellow-green phase marker.

Material: made of medium wall heat shrink adhesive layered tubes (RPK).

Type of ph. marker	Index	Type of ph. marker	Index	Type of terminals		Dim. of phase marker [mm]			Cumulative packing [sets]	Availability
				Al	Cu	D	d	L		
ZOK-1	WGE0AI4FGOF01	ZOKzt-1	WGE0AI4FGOF0Z	–	16, 25	12	4	40	1	ON REQUEST
ZOK-2	WGE0AI4FJOF01	ZOKzt-2	WGE0AI4FJOF0Z	16, 25, 35	35, 50, 70	22	6	50	1	ON REQUEST
ZOK-3	WGE0AI4INOF01	ZOKzt-3	WGE0AI4INOF0Z	50, 70, 95	95, 120, 150, 185	25	10	80	1	ON REQUEST
ZOK-4	WGE0AI4LOOF01	ZOKzt-4	WGE0AI4LOOF0Z	120, 150, 185	240	35	12	100	1	ON REQUEST
ZOK-5	WGE0AI4OOF01	ZOKzt-5	WGE0AI4OOF0Z	240	–	40	16	120	1	ON REQUEST

Heat shrink repair wrap-arounds – type RM



Application: They are designed for installation on single cores of multicore cables. They are also used for making and repairing straight and branch power cable joints and for telecommunication cables.

The wrap-arounds are supplied covered with thermosensitive paint (visible spots) which plays role of shrink temperature indicator protecting against local overheating. The spots disappear when the shrink temperature is appropriate.



Tensile strength: minimum 13 MPa
Longitudinal shrink: not more than 10%
The unit dielectric strength: no less than 12kV/mm
Resistance to UV

Product name	Index for length				Dimensions [mm]		
	250 [mm]	500 [mm]	1000 [mm]	1500 [mm]	D	d	s
RM 52/14	TKR152011402	TKR252011402	TKR452011402 IN STOCK	TKR552011402	52	14	3,0
RM 62/22	TKR162012201	TKR262012201	TKR462012201 IN STOCK	TKR562012201	62	22	3,0
RM 92/30	TKR192013001	TKR292013001	TKR492013001 IN STOCK	TKR592013001	92	30	3,0
RM 122/38	TKR112223801	TKR212223801	TKR412223801 IN STOCK	TKR512223801	122	38	3,0
RM 160/55	TKR116025501	TKR216025501	TKR416025501	TKR516025501	160	55	3,0
RM 210/55	TKR121025501	TKR221025501	TKR421025501	TKR521025501 IN STOCK	210	55	3,0

others on request

Heat shrink tapes – type TKT



Application:

They are mainly applied for cable bundling, repair and insulation of damaged cables and wires and for protecting the cables against mechanical defects and corrosion.

Advised for application for any constructional joints as a tight and durable protection.

Good adherence of applied adhesive layer to metals, wood, ceramics and plastics guarantees good insulation of ventilation ducts, jacket pipes, wires, power and telecommunication cables.

The conjunctions with TKT tape aren't prone to abrasion and corrosion.



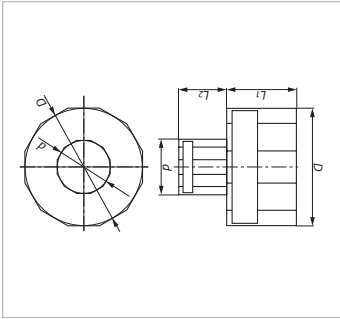
Tensile strength: minimum 13 MPa
 Longitudinal shrink: not more than 10%
 The unit dielectric strength: no less than 12kV/mm
 Resistance to UV

Type of tape	Index	Length [m]	Width [mm]	Thickness [mm]	Thickness of adhesive layer [mm]	Availability
TKT-25 (15 m)	TTHNK025151	15	25	1,0	0,1	ON REQUEST
TKT-50 (15 m)	TTHNK050151	15	50	1,0	0,1	IN STOCK
TKT-75 (15 m)	TTHNK075151	15	75	1,0	0,1	ON REQUEST
TKT-100 (15 m)	TTHNK100151	15	100	1,0	0,1	ON REQUEST
TKT-150 (15 m)	TTHNK150151	15	150	1,0	0,1	IN STOCK

Example of use of tapes.



Heat shrink end caps pipe



Application:
Designed for insulation of cable outlets from cable ducts and for insulation of pre-insulated pipes' ends.
They seal and protect against moisture penetration.
They are applied in district heating industry, power engineering, construction engineering and telecommunication. They are resistant to: UV radiation, corrosive agents, fungus and mildew.



Tensile strength: minimum 13 MPa
Longitudinal shrink: not more than 10%
The unit dielectric strength: no less than 12kV/mm

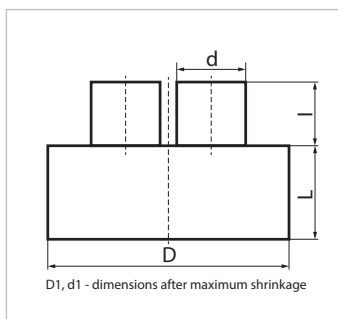
Type of end caps	Index	End cap dimension [mm]						Cumulative packing [sets]	Availability
		D	D1	d	d1	L1	L2		
REC 50	TKE1K0600	60	30	45	10	70	50	10	IN STOCK
REC 75	WKE1M0850	85	20	42	20	60	40	5	IN STOCK
REC 90	WKE1M1050	105	27	45	27	60	40	5	IN STOCK
REC 110	WKE1M1250	125	27	65	27	60	40	5	IN STOCK
REC 125	WKE1M1400	140	35	76	35	60	40	5	IN STOCK
REC 140	WKE1M1560	156	45	95	45	60	40	5	IN STOCK
REC 160	WKE1M1780	178	58	105	58	80	50	5	IN STOCK
REC 160(S)	TKE1K1700	170	92	60	20	80	40	5	ON REQUEST

Attention – dimensions D1, d1 diameter after entire shrink.

Example of use of end caps.



Heat shrink double end caps pipe – type REC 2x



Application:

Radiation cross-linked heat shrinkable sealing fittings (end-cap)– REC 2x type are used to seal the exit of two single protective cables / pipes from the mechanical sheath. They effectively insulate the ends of double pre-insulated pipes and seal and protect against the ingress of moisture and dust.

Heat shrinkable radiation cross-linked (end-cap) sealing fittings – REC 2x type are widely used in heating, power engineering, construction and telecommunications.

They are resistant to UV radiation, atmospheric agents, aggressive liquids, fungi and molds.



Index	Type fittings	Fitting dimensions [mm]						Package collective [pcs.]	Availability
		D	D1	d	d1	L	l		
WKE2M1050	End-cap REC 2×20(25)/90	114	65	35	15	60	40	1	ON REQUEST
WKE2M1250	End-cap REC 2×25(32)/110	125	65	44	15	60	40	1	ON REQUEST
WKE2M1400	End-cap REC 2×25(40)/125	152	65	52	15	60	40	1	ON REQUEST
WKE2M1561	End-cap REC 2×20/125(140)	156	65	45	15	60	40	1	ON REQUEST
WKE2M1780	End-cap REC 2×25/140(160)	175	72	60	19	80	50	1	ON REQUEST
WKE2M2000	End-cap REC 2×40/160(180)	195	72	60	19	80	50	1	ON REQUEST
WKE2M2450	End-cap REC 2×50/200(225)	240	134	72	24	80	50	1	ON REQUEST
WKE2M2700	End-cap REC 2×65/225(250)	265	169	88	53	80	50	1	ON REQUEST
WKE2M3000	End-cap REC 2×80/250(280)	295	169	102	53	80	50	1	ON REQUEST

Properties	Test method	REC 2x
Breaking strength without mastic	18 N/mm (MPa) (min.)	ASTM D638
Break elongation without mastic	350% (min.)	ASTM D638
Water absorption	0.1% (max.)	ASTM D570
Heat aging	(120°C for 500 h)	ASTM D2671
Tensile strength after aging	11 N/mm ² (MPa) (min.)	ASTM D638
Elongation at Break	300 % (min.)	ASTM D638
Resistance to heat shock (250°C for 30 min.)	No cracks, no flow	ESI 09-11
Working temperature	-40°C up to +100°C	IEC 216
Dielectric Strength:	12 kV/mm. (min.)	ASTM D149
Volume resistivity	1×10 ¹⁴ Ωcm (min.)	ASTM D257

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HEAT-SHRINKABLE TECHNOLOGY



PIPE SOLUTIONS



PRE-INSULATED SYSTEMS