

## HEAT-SHRINKABLE ACCESSORIES, TAPES & MASTICS

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**RED ANTI-TRACKING MASTIC**
**Application**

MBA is a red colored anti-tracking mastic with good electrical insulating properties used mainly in heat-shrinkable terminations. Ideal for creating an environmental seal between tubing and cable structure. Supplied in strips of various lengths. Anti track property meets ESI 09-13 and IEC 507 requirements.


**Technical characteristics**

Colour	Red	
Tensile strength	1,5 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	>350%	ASTM D-412 / ISO 37
Dielectric constant	>3	IEC 250
Volume resistivity	>1x10 <sup>14</sup> Ohm.cm	IEC93
Dielectric strength	>15kV/mm	IEC243

type	width (mm)	thickness (mm)	Length (mm)
MBA25-0,5	25	1	500
MBA50x2-0,15	2x50	1,5	150

**STRESS GRADING MASTIC (HIGH K)**
**Application**

MNAC stress grading mastic is specially designed to be used in heat-shrinkable joints up to 52kV. The mastic is designed specifically to be used on the cable semi-conductive cut, and ferrule area.


**Technical characteristics**

Colour	Light grey	
Tensile strength	>1 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	>200%	ASTM D-412 / ISO 37
Dielectric constant	>8-12	IEC 250
Volume resistivity	>1x10 <sup>10</sup> Ohm.cm	IEC93
Dielectric strength	>10kV/mm	IEC243

type	width (mm)	thickness (mm)	Length (mm)
MNAC30-1x0,13	30	1	130
MNAC30-2x0,5	30	2	500
MNAC140-0,22N	140	2,5	220
MNAC140-0,195N	140	2,5	195
MNAC130-0,03N	130	1,2	30
MNAC130-0,11N	130	2,5	110
MNAC130-0,22N	130	2,5	220

## STRESS CONTROL MASTIC

### Application

MACD is a stress control mastic, specifically designed for terminations, up to 52kV. Available in strips or as mastic plates.

### Technical characteristics

Colour	Black	
Tensile strength	>0,3 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	>300%	ASTM D-412 / ISO 37
Dielectric constant	5-10	IEC 250
Volume resistivity	1x10 <sup>10</sup> Ohm.cm	IEC93
Dielectric strength	>3kV/mm	IEC243



type	width (mm)	thickness (mm)	Length (mm)
MACD38-0,5	38	2	500
MACD38-0,125	38	2	125
MACD110-2x0,09	110	2	90
MACD110-2x0,15	110	2	150
MACD130-0,15N	130	2,5	150
MACD140-2x0,15	140	2	150
MACD180-2x0,15	180	2	150

## STRESS GRADING MASTIC

### Application

MACDC stress grading mastic is specifically designed for paper cables up to 52kV.

Also performs as a void filler.

Available in strips or plates.

### Technical characteristics

Colour	Grey	
Tensile strength	0,1-0,5 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	>300%	ASTM D-412 / ISO 37
Dielectric constant	>9-15	IEC 250
Volume resistivity	>1x10 <sup>9</sup> Ohm.cm	IEC93
Dielectric strength	>3kV/mm	IEC243



type	width (mm)	thickness (mm)	Length (mm)
MACDC38-0,4	38	2	400

**SEALING MASTIC**
**Application**

NGAF black colored sealing mastic. Ideal for environmental seal in LV joints and terminations, as well as covering armor connection on MV applications. NGAF meets ESI 09-13 specifications. Available in various lengths as strips or plates.

**Technical characteristics**

Colour	Black	
Tensile strength	2 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	>200%	ASTM D-412 / ISO 37
Volume resistivity	>1x10 <sup>14</sup> Ohm.cm	IEC93
Dielectric strength	>10kV/mm	IEC243



type	width (mm)	thickness (mm)	L (mm)
NGAF38-0,3	38	2	300
NGAF38-0,5	38	2	500
NGAF115-0,245	115	2	245
4 x NGAF12-2x0,08	12	4	80

**STRESS GRADING MASTIC (HIGH K)**
**Application**

OM is a soft and tacky orange colored rubber based stress grading (Hi K) mastic, with excellent physical and electrical performance. Designed for both joints and terminations for screen cut area as well as ferrule area, functioning as a void filler up to 42kV. Available as plates or strips.

**Technical characteristics**

Colour	Orange	
Tensile strength	>2 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	>200%	ASTM D-412 / ISO 37
Dielectric constant	>7	IEC 250
Volume resistivity	>1x10 <sup>8</sup> Ohm.cm	IEC93
Dielectric strength	>10kV/mm	IEC243



type	width (mm)	thickness (mm)	L (mm)
OM 30-1x0,1	30	1	100
OM 30-2x0,5	30	2	500
OM 145-0,25N	145	2,5	250
OM 145-0,195N	145	2,5	195
OM 130-0,03N	130	1,2	30
OM 130-0,11N	130	2,5	110
OM 130-0,22N	130	2,5	220

## SELF-AMALGAMATING EPR TAPE

### Application

NGA is a self amalgamating rubber tape, used as primary insulation buildup material on both LV and MV joints.

Excellent adhesion to any cable substrate.

### Technical characteristics

Colour	Black	
Thickness	0,5 or 0,75 mm	
Tensile strength	3 MPa	BS 903
Ultimate elongation	>550%	BS 903
Dielectric strength	>40kV/mm	ASTM D 150
Volume resistivity	>1x10 <sup>15</sup> Ohm.cm	ASTM D 257
Loss factor	<0,005	ASTM D 149
UV resistance / Ozone resistance	Pass	ASTM D4388



type	width (mm)	thickness (mm)	L (mm)
NGA19-5S	19	0,75	5
NGA19-5R	19	0,5	5
NGA19-10S	19	0,75	10
NGA19-10R	19	0,5	10

## SELF-AMALGAMATING SEMI-CONDUCTIVE TAPE

### Application

NGS is a rubber based flexible semi-conductive tape.

Used in joints to cover the ferrule on higher voltages (52kV) as well as in PILC terminations on the cable crutch area.

### Technical characteristics

Colour	Black	
Thickness	0,75 mm	
Tensile strength	>1,0 MPa	BS 903
Ultimate elongation	>700%	BS 903
Volume resistivity	<1,5 Ohm.cm	ASTM D 257



type	width (mm)	L (mm)
NGS19-1,5	19	1,5
NGS19-5	19	5

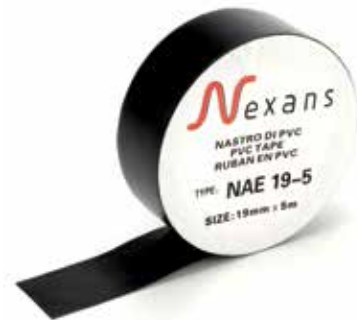
## GENERAL PURPOSE PVC TAPE

### Application

NAE is a commercial grade PVC insulating tape up to 0.6kV. Widely used in both joints and terminations.

### Technical characteristics

Colour	Black	
	on demand Blue-Red-Grey-White-Yellow-Green	
Thickness	0,13 mm	
Tensile strength	>20 N/cm	CEI EN60454
Ultimate elongation	>150%	CEI EN60454
Dielectric strength	>40kV/mm	CEI EN60454
Flammability	Self extinguishing	CEI EN60454



type	width (mm)	L (m)
NAE19-5	19	5
NAE19-10	19	10
NAE19-20	19	20

## GLASS FIBER REINFORCED ADHESIVE TAPE

### Application

NVC is a glass fiber reinforced adhesive tape with excellent mechanical properties.

Ideal for compacting joint cores and armor canister.

Used also for covering sharp edges or armor components such as bolts of worm drive clamps.

### Technical characteristics

Colour	White	
Thickness	0,13 mm	
Tensile strength	>20 daN/cm	AFERA4004
Ultimate elongation	5%	AFERA4004



type	width (mm)	L (m)
NCV38-10	38	10

**TRANSPARENT ADHESIVE INSULATING TAPE**
**Application**

NCT is a transparent insulating tape, used in resin injected LV or MV joints. Excellent environmental and physical properties.


**Technical characteristics**

Colour	Transparent	
Thickness	0,13 mm	
Tensile strength	25 N/cm	CEI EN60454
Ultimate elongation	150%	CEI EN60454
Dielectric strength	>40kV/mm	CEI EN60454
Flammability	Self extinguishing	CEI EN60454

type	width (mm)	L (m)
NCT38-20	38	20

**SPACER TAPE**
**Application**

NS is a polyester spacer mesh tape, specifically used in LV or MV resin injected joints.



type	width (mm)	L (m)
NS 50-8	50	8

## TINNED COPPER MESH

**Application**

CACU is a tinned copper mesh, used extensively in various accessories in both low and medium voltages.  
Available in various roll lengths.

**Technical characteristics**

Material: electrolytic copper 99.95%



type	width (mm)	L (m)
CACU-60X1,5	60	1,5
CACU-60X2	60	2
CACU-60X3	60	3
CACU-60X5	60	5
CACU-60X10	60	10
CACU-100X2	100	2
CACU-100X3	100	3

**F / F IS**

## TINNED COPPER FLEXIBLE BRAID WITH OR WITHOUT INSULATION

**Application**

Earth braid, made of tinned copper.  
Available in various customized forms, kitted, insulated, solder blocked.  
Available with or without lug.



type	cross sections (mm <sup>2</sup> )
F 10	10
F 16	16
F 25	25
F 35	35
F 10 IS	10 (insulated)



**HOSE CLAMP**
**Application**

M/MO are stainless steel worm drive clamps for fixing braids or amour canister in both LV or MV applications.  
Available with steel grades: AISI430, or AISI 304.

**Technical characteristics**

Material AISI 430 (Steel) / Material AISI 304 (Stainless steel)



type	Ø min/max (mm)
M300	10/18
M400	16/25
M500	20/32
M600	25/40
M700	32/50
M800	40/60
M100	50/100
M140	50/140
M160	50/160

type	Ø min/max (mm)
MO400	16/38
MO500	27/51
MO600	33/57
MO700	40/64
MO800	46/70

**CONSTANT FORCE ROLL SPRING**
**Application**

MS are stainless steel, non magnetic, constant force springs for both LV & MV applications.  
Stainless steel, grade AISI 301.

**Technical characteristics**

Material: AISI 301 Stainless steel



type	Ø min (mm)	Ø max (mm)	width (mm)
MS9-15I	9	15	16
MS9-15	11	15	16
MS14-22	14	22	19
MS18-29	18	29	19
MS23-37	23	37	19
MS31-50	31	50	19
MS44-70	44	70	19
MS58-94	58	94	19

## NYLON CABLE TIE

### Application

NT/FAIS is a commercial grade plastic cable tie for various fastening purposes during LV or MV kit assembly. Material: nylon.

### Technical characteristics

Material: Nylon



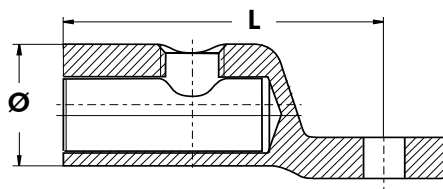
type	width (mm)	L (mm)
NT90	4,8	90
NT150	4,8	150
NT250	4,8	250
NT330	4,8	330
NT501	4,8	500
FAIS 50	8	50
FAIS 100	8	100
FAIS 125	8	125

**SHEAR HEAD MECHANICAL LUGS**
**Application**

Designed for LV & MV aluminium or copper cables.  
Single bolted, the lug is suitable for both in and outdoor terminations.

**Kit contents**

High strength aluminium alloy body tin plated with tinned brass bolt.  
Installation instructions and color coded cable centering rings are supplied w. each lug.



Type tested acc. to:  
EN 61238-1

type	cross sections Al (mm <sup>2</sup> )		cross sections Cu (mm <sup>2</sup> )		dimensions (mm)		
	round	sector shape	round	sector shape	Ø lug hole	Ø overall	L
6-25SKVK	16-35	16-25	10-25	16-25	13	16	40
25-95SKVK	25-95	25-95	25-95	25-95	13	28	60
25-185SKVK	35-185	35-185	25-150	25-150	13	33	95
120-240SKVK	120-240	120-240	120-185	120-185	13	38	100

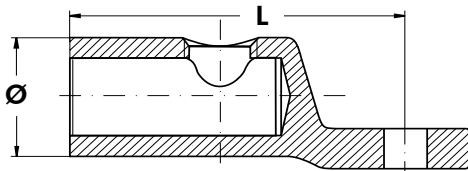
## SHEAR HEAD MECHANICAL LUGS

### Application

Designed for MV cables copper or aluminium up to 52kV.  
Bolt designed, the lug is suitable for both in and outdoor terminations.

### Kit contents

High strength aluminium alloy body tin plated with tinned brass bolts.  
Installation instructions and color coded cable centering rings are supplied w. each lug.

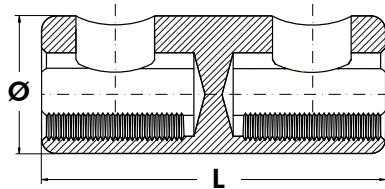


Type tested acc. to:  
EN 61238-1

type	cross sections Al (mm <sup>2</sup> )		cross sections Cu (mm <sup>2</sup> )		dimensions (mm)		
	round	sector shape	round	sector shape	Ø lug hole	Ø overall	L
C 16-95X12	16÷95	25÷70	10÷70	25÷70	13	24	60
C 25-150X12 C 25-150X16	25÷150	25÷120	25÷120	25÷120	13 17	30	79
C 70-240X12 C 70-240X16	70÷240	70÷185	70÷240	70÷185	13 17	33	93,5
C 120-300X12 C 120-300X16	120÷300	120÷240	120÷300	120÷240	13 17	38	105
C 185-400X12 C 185-400X16	185÷400	185÷300	185÷400	185÷300	13 17	42	120
C 400-630X12 C 400-630X16 C 400-630X20	400÷630	400÷500	400÷500	400÷500	13 17 21	52	130
C 630-1000X20	630÷1000	630÷800	630÷800	630÷800	21	65	165

**SHEAR HEAD MECHANICAL CONNECTOR**
**Application**

The D range is designed for jointing aluminium or copper cables up to 11kV, also for sector shapes conductors. All cross sectional sizes for both Al & Cu indicated, refer to VDE0295 Table5-9 normative standards. The body of the connector is made from high strength aluminium. Various bolt designs are available, to be selected acc. to requirements.



Type tested acc. to:  
EN 61238-1

type	cross sections Al (mm <sup>2</sup> )		cross sections Cu (mm <sup>2</sup> )		dimensions (mm)	
	round	sector shape	round	sector shape	Ø overall	L
D1,5-16 SV-T-V-K	10-16		1,5-16		12	30
D10-35 SV-T-V-K	10-35	35	10-35	35	16	36
D25-50 SV-T-V-K	25-50	35-50	25-50	35-50	18	36
D4-50 SV-T-V-K	10-50	35-50	4-50	35-50	18	36
D25-150 SV-T-V-K	25-150	35-150	25-150	35-150	28	70
D35-150 SV-T-V-K	35-150	35-150	35-150	35-150	28	70
D25-185 SV-T-V-K	25-185	35-185	25-185	35-185	32	80
D70-185 SV-T-V-K	70-185	70-185	70-185	70-185	32	80
D50-240 SV-T-V-K	50-240	50-240	50-240	50-240	35	120

**SHEAR HEAD MECHANICAL CONNECTOR**  
Up to 52kV

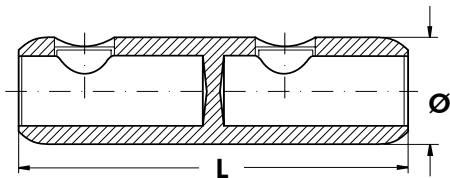
**Application**

The M series range of mechanical connectors are designed for both aluminium and copper cables.

**Technical description**

High strength aluminium alloy body tin plated with tinned aluminium alloy bolts.

Installation instructions and color coded cable centering rings are supplied w. each connector.



Type tested acc. to:  
EN 61238-1

type	cross sections Al (mm <sup>2</sup> )		cross sections Cu (mm <sup>2</sup> )		dimensions (mm)	
	round	sector shape	round	sector shape	Ø overall	L
M 16-95	16÷95	25÷70	10÷70	25÷70	24	70
M 25-150	25÷150	25÷120	35÷120	25÷120	30	85
M 70-240	70÷240	70÷185	70÷240	70÷185	35	120
M 120-300	120÷300	120÷240	120÷300	120÷240	38	142
M 185-400	185÷400	185÷300	185÷400	185÷300	42	170
M 400-630	400÷630	400÷500	400÷500	400÷500	52	200
M 630-1000	630÷1000	630÷1000	630÷800	630÷800	65	200

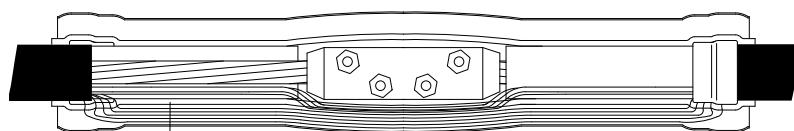
HEAT-SHRINKABLE STRESS CONTROL TUBE, DESIGNED FOR CABLE JOINTS  
Up to  $U_{max}$  52kV

### Application

GT J is a stress control tube, specifically designed for MV, polymeric or paper, cable joints. The tube is soft flexible, has excellent adhesion to various cable insulations.

### Technical characteristics

Material	Crosslinked polyolefin	
Colour	Black	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1,3 g/cm <sup>3</sup> ± 10%	ASTM D-1505 / ISO R1183
Tensile strength	> 6 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	400% ÷ 600%	ASTM D-412 / ISO 37
Dielectric constant	> 12	IEC 250
Volume resistivity	> 1x10 <sup>10</sup> Ohm.cm	IEC 93



GT1 J



type	Ø as supplied (mm)	Ø after full recovery (mm)	Tk wall thickness after full recovery (mm)	spool L (mm)	nr. spool/box
GT1-30 J	≥ 36,0	≤ 10,0	≥ 3,0	30	7
GT1-40 J	≥ 45,0	≤ 15,0	≥ 3,5	30	5
GT1-50 J	≥ 56,0	≤ 18,0	≥ 4,0	20	4
GT1-60 J	≥ 66,0	≤ 20,0	≥ 4,0	20	4
GT1-76 J	≥ 82,0	≤ 25,0	≥ 4,0	20	3
GT1-95 J	≥ 101,0	≤ 34,0	≥ 4,0	20	2

## HEAT-SHRINKABLE STRESS CONTROL TUBE, DESIGNED FOR CABLE TERMINATIONS

Up to U<sub>max</sub> 52kV

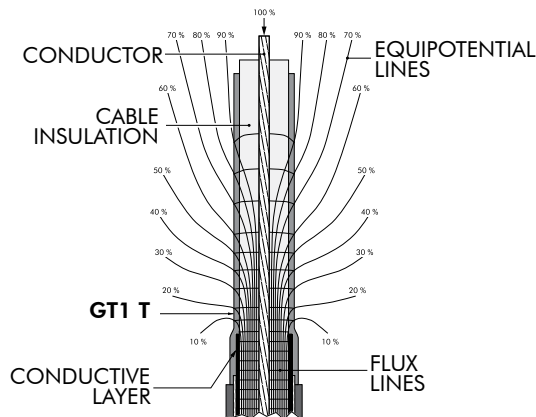
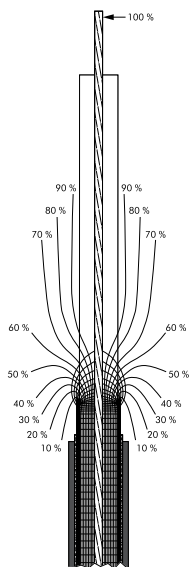
### Application

GT1- T is a stress control tube, specifically designed for MV, polymeric or paper, cable terminations.

The tube is soft and flexible, has excellent adhesion to various cable insulations.

### Technical characteristics

Material:	Crosslinked polyolefin	
Colour	Black	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	>100°C	
Density	1,3 g/cm <sup>3</sup> ±10%	ASTM D-1505 / ISO R1183
Tensile strength	>4 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	300%÷500%	ASTM D-412 / ISO 37
Dielectric constant	>15	IEC 250
Volume resistivity	>1x10 <sup>10</sup> Ohm.cm	IEC 93



type	Ø as supplied (mm)	Ø after full recovery (mm)	Tk wall thickness after full recovery (mm)	spool L (mm)	nr. spool/box
GT1-30 T	≥ 36,0	≤ 10,0	≥ 3,0	30	7
GT1-40 T	≥ 45,0	≤ 15,0	≥ 3,5	30	5
GT1-50 T	≥ 56,0	≤ 18,0	≥ 4,0	20	4
GT1-60 T	≥ 66,0	≤ 20,0	≥ 4,0	20	4
GT1-76 T	≥ 82,0	≤ 25,0	≥ 4,0	20	3
GT1-95 T	≥ 101,0	≤ 34,0	≥ 4,0	20	2



**HEAT-SHRINKABLE ANTI-TRACKING TUBE**

 Up to  $U_{max}$  52kV

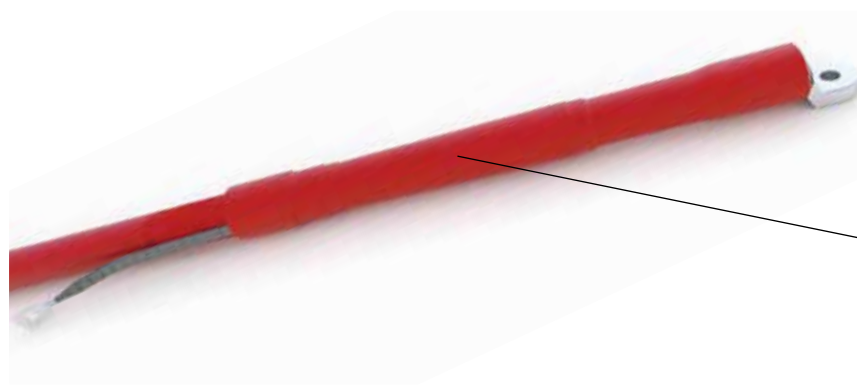
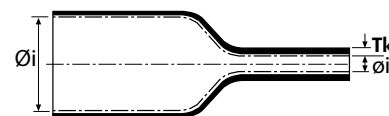
**Application**

GT2 is a non tracking tubing designed for cable terminations. The tube provides protection for cable termination cores both in or outdoor.

UV and erosion resistant.

**Technical characteristics**

Material	Crosslinked polyolefin	
Colour	Red	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1,2 g/cm <sup>3</sup> ±10%	ASTM D-1505/ISO R1183
Tensile strength	17 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	500%	ASTM D-412 / ISO 37
Water absorption	<0,2%	DIN 53495 / ISO 92
Dielectric constant	<3,5	IEC 250
Dielectric strength	>20 kV/mm	IEC 243
Volume resistivity	>1x10 <sup>14</sup> Ohm.cm	IEC 93
Tracking resistance	V applied: 4,5 kV	IEC 507



type	Ø as supplied (mm)	Ø after full recovery (mm)	Tk wall thickness after full recovery (mm)	spool L (mm)	nr. spool/box
GT2-20	≥ 24,0	≤ 7,5	≥ 1,4	40	9
GT2-30	≥ 34,0	≤ 9,0	≥ 2,8	30	7
GT2-35	≥ 40,0	≤ 9,0	≥ 3,0	30	6
GT2-40	≥ 50,0	≤ 13,0	≥ 3,0	30	5
GT2-50	≥ 60,5	≤ 20,0	≥ 3,0	20	4
GT2-60	≥ 67,0	≤ 22,0	≥ 3,2	20	4
GT2-70	≥ 83,0	≤ 30,0	≥ 3,3	20	3
GT2-100	≥ 122,0	≤ 37,0	≥ 3,8	20	2
GT2-130	≥ 148,5	≤ 44,0	≥ 4,0	20	2

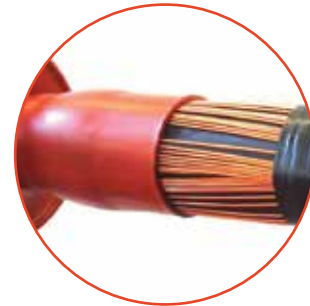
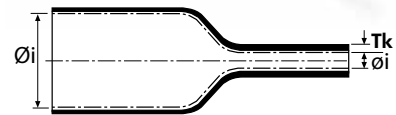
HEAT-SHRINKABLE HEAVY WALL ANTI-TRACKING/INSULATING TUBE  
Up to U<sub>max</sub> 52kV

### Application

GT2-S tubing is a heavy wall version of the standard GT2 tubing, also used in MV joints from 36kV to 52kV.

### Technical characteristics

Material	Crosslinked polyolefin	
Colour	Red	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1,2 g/cm <sup>3</sup> ±10%	ASTM D-1505 / ISO R1183
Tensile strength	17 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	500%	ASTM D-412 / ISO 37
Water absorption	<0,2%	DIN 53495 / ISO 92
Dielectric constant	<3,5	IEC 250
Dielectric strength	>20 kV/mm	IEC 243
Volume resistivity	>1x10 <sup>14</sup> Ohm.cm	IEC 93
Tracking resistance	V applied: 4,5 kV	IEC 507



type	Ø as supplied (mm)	Ø after full recovery (mm)	TK wall thickness after full recovery (mm)	spool L (mm)	nr. spool/box
GT2-30 S	≥ 33,0	≤ 9,0	≥ 4,2	25	7
GT2-40 S	≥ 49,0	≤ 13,0	≥ 4,2	20	5
GT2-50 S	≥ 59,0	≤ 20,0	≥ 4,5	15	4
GT2-60 S	≥ 66,0	≤ 22,0	≥ 4,5	15	4
GT2-70 S	≥ 81,5	≤ 30,0	≥ 4,5	15	3
GT2-100 S	≥ 121,5	≤ 37,0	≥ 5,2	10	2
GT2-130 S	≥ 147,0	≤ 44,0	≥ 5,5	10	2

**HEAT-SHRINKABLE BUS BAR INSULATING TUBE**

 Up to U<sub>max</sub> 52kV



**Application**

GT2 BB tubing is designed to insulate bus bar in MV switchgears and equipment.

**Technical characteristics**



Material	Crosslinked polyolefin	
Colour	Red	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1,2 g/cm <sup>3</sup> ±10%	ASTM D-1505 / ISO R1183
Tensile strength	17 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	500%	ASTM D-412 / ISO 37
Water absorption	<0,2%	DIN 53495 / ISO 92
Dielectric constant	<3,5	IEC 250
Dielectric strength	>20 kV/mm	IEC 243
Volume resistivity	>1x10 <sup>14</sup> Ohm.cm	IEC 93
Tracking resistance	V applied: 4,5 kV IEC 507	



type	Application on rectangle <sup>A</sup> 		Application on round 	
	A+B min (mm)	A+B max (mm)	Ø min (mm)	Ø max (mm)
GT2-20 (BB)	15	30	10	18
GT2-30 (BB)	18	44	12	29
GT2-35 (BB)	22	50	14	34
GT2-40 (BB)	35	62	21	43
GT2-50 (BB)	44	76	26	54
GT2-60 (BB)	53	84	31	60
GT2-70 (BB)	69	103	40	75
GT2-100 (BB)	91	165	52	110

type	Ø as supplied (mm)	Ø after full recovery (mm)	TK wall thickness after full recovery (mm)	spool L (m)
GT2-20 (BB)	≥ 24,0	≤ 7,5	≥ 1,4	40
GT2-30 (BB)	≥ 34,0	≤ 9,0	≥ 2,8	30
GT2-35 (BB)	≥ 40,0	≤ 9,0	≥ 3	30
GT2-40 (BB)	≥ 50,0	≤ 13,0	≥ 3	30
GT2-50 (BB)	≥ 60,5	≤ 20,0	≥ 3,0	20
GT2-60 (BB)	≥ 67,0	≤ 22,0	≥ 3,2	20
GT2-70 (BB)	≥ 83,0	≤ 30,0	≥ 3,3	20
GT2-100 (BB)	≥ 122,0	≤ 37,0	≥ 3,8	20

**CLEARANCE DISTANCES** (distance spacing shown in this table are typical measurements, users must verify/test distances prior to installation)

voltage max	Application on rectangle bar 		Application on round bar 	
	ph/ph (mm)	ph/ground (mm)	ph/ph (mm)	ph/ground (mm)
Um=12 kV	35	45	30	40
Um=17,5 kV	55	65	45	60
Um=24 kV	70	100	60	90

HEAT-SHRINKABLE DUAL WALL TUBE (OUTER LAYER CONDUCTING/INNER LAYER INSULATING)  
Up to U<sub>max</sub> 52kV

**Application**

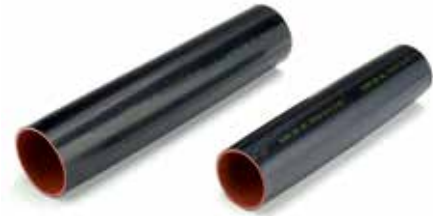
GT25 is a co extruded, screened insulating tube.  
Designed for MV joints up to 52kV.  
The tube has an insulating inner wall (red color) and a conducting outer later (black).

**Technical characteristics**
**Insulating material**

Material	Crosslinked polyolefin	
Colour	Red	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1,2 g/cm <sup>3</sup> ±10%	ASTM D-1505 / ISO R1183
Tensile strength	17 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	500%	ASTM D-412 / ISO 37
Water absorption	<0,2%	DIN 53495 / ISO 92
Dielectric constant	<3,5	IEC 250
Dielectric strength	>20 kV/mm	IEC 243
Volume resistivity	1x10 <sup>14</sup> Ohm.cm	IEC 93

**Semi-conductive material**

Material	Crosslinked polyolefin	
Colour	Black	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1,0 g/cm <sup>3</sup> ±10%	ASTM D-1505 / ISO R1183
Tensile strength	20 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	500%	ASTM D-412 / ISO 37
Contents of carbon black	>10%	ASTM 2671
Water absorption	<0,4%	DIN 53495 / ISO 92
Volume resistivity	<20 Ohm.cm	IEC 93



type	Ø as supplied (mm)	Ø after full recovery (mm)	Tk wall thickness after full recovery (mm)
GT25-60	≥ 65,0	≤ 15,0	≥ 6,5
GT25-80	≥ 74,0	≤ 15,0	≥ 7,5
GT25-80S	≥ 72,0	≤ 15,0	≥ 9,5
GT25-100	≥ 104,0	≤ 34,0	≥ 7,5
GT25-120	≥ 124,0	≤ 38,0	≥ 7,5

**HEAT-SHRINKABLE SEMI-CONDUCTIVE TUBE**

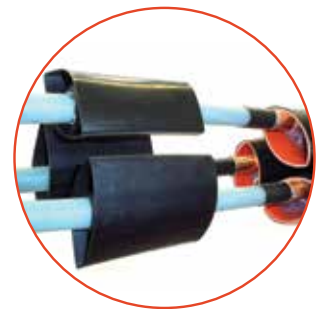
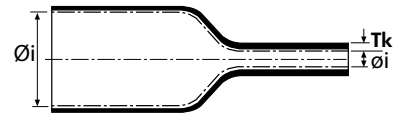
Max voltage: 52 kV

**Application**

GT5 is a semi-conductive tube, used on PILC joints and terminations up to 52kV.

**Technical characteristics**

Material	Crosslinked polyolefin	
Colour	Black	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1,0 g/cm <sup>3</sup> ±10%	ASTM D-1505 / ISO R1183
Tensile strength	20 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	500%	ASTM D-412 / ISO 37
Contents of carbon black	>10%	ASTM 2671
Water absorption	<0,4%	DIN 53495 / ISO 92
Volume resistivity	<20 Ohm.cm	IEC 93



type	Ø as supplied (mm)	Ø after full recovery (mm)	Tk wall thickness after full recovery (mm)	spool L (mm)	nr. spool/box
GT5-35	≥ 44,5	≤ 10,0	≥ 3,0	30	6
GT5-50	≥ 54,5	≤ 14,0	≥ 3,0	30	4
GT5-60	≥ 67,5	≤ 18,0	≥ 3,0	30	4
GT5-80	≥ 86,0	≤ 20,0	≥ 3,0	30	3
GT5-95	≥ 102,5	≤ 25,0	≥ 3,0	30	2
GT5-140	≥ 149,5	≤ 34,0	≥ 4,0	30	2

HEAT-SHRINKABLE OIL RESISTANT TUBE  
Up to U<sub>max</sub> 52kV

### Application

GT10 is a rigid transparent oil barrier tube, designed specifically for PILC (MIND) insulated cables.

Ideal to build up insulation thickness on small cross section cables.

GT10 F is a flexible oil barrier tube.

Provides flexibility and quick shrinking. Designed for MIND cables from 1kV.

### Technical characteristics GT10

Material	Crosslinked polyolefin	
Colour	Trasparent	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1,3 g/cm <sup>3</sup> ±10%	ASTM D-1505 / ISO R1183
Tensile strength	16 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	400%	ASTM D-412 / ISO 37
Heat ageing	(168h / 150°C)	ISO 188
Corrosion	Non corrosive	ASTM D2671 (Method A)
Water absorption	<0,2%	DIN 53495 / ISO 92
Dielectric strength	>15 kV/mm	IEC 243
Volume resistivity	>1x10 <sup>12</sup> Ohm.cm	IEC 93

### Technical characteristics GT10 F

Operating temperature	UL 224	-55 to +125°C
Tensile strength	ASTM D 2671	>14MPa
Elongation at break	ASTM D 2671	>400%
Longitudinal shrinkage	UL 224	0 to -10%
Eccentricity	ASTM D 2671	<30%
Elongation at break after aging	158°C, 168 hrs.	>300%
Flammability	VW-1	Pass
Dielectric strength	IEC243	>20kV/mm
Volume resistance	IEC93	>1014 Ω.cm
Copper stability	ASTM D 2671	Pass



type	Ø as supplied (mm)	Ø after full recovery (mm)	Tk wall thickness after full recovery (mm)	spool L (mm)	nr. spool/box
GT10-25	≥ 31,5	≤ 10,0	≥ 3,0	30	9
GT10-40	≥ 44,5	≤ 12,0	≥ 3,0	30	5
GT10-60	≥ 68,5	≤ 19,0	≥ 3,3	30	4
GT10 F 12,7	12,7±0,3	4	0,8	50	n/a
GT10 F 19,1	19,1±0,4	6	0,9	50	n/a
GT10 F 25,4	25,4±0,4	8	1	50	n/a
GT10 F 39	39±0,5	13	1,25	50	n/a

**HEAT-SHRINKABLE MEDIUM WALL INSULATING TUBE WITH ADHESIVE**
**Application**

GT3 is a medium wall co extruded tubing with adhesive.

Provides excellent adhesion to a variety of cable substrates, and various metals.

Ideal for LV joints and termination as core insulation, or as cable sheath replacement in LV and MV joints.

The adhesive layer ensures a water tight seal and eliminates moisture ingress.

The tube is UV and weather resistant.


**Technical characteristics**

Material	Crosslinked polyolefin	
Colour	Black	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1,1 g/cm <sup>3</sup> ± 10%	ASTM D-1505 / ISO R1183
Tensile strength	20 ÷ 25 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	500% ÷ 600%	ASTM D-412 / ISO 37
Dielectric constant	< 5	IEC 250
Volume resistivity	> 1x10 <sup>13</sup> Ohm.cm	IEC 93
Dielectric strength	> 15 kV/mm	IEC 243
Water absorption	< 0,2%	DIN 53495 / ISO 92
Fungus and mildew resistance	GL0	ASTM G 21
Contents of carbon black	> 2,5%	ASTM 2671
Chemical resistance	(Treatment with 0,1N Na <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> SO <sub>4</sub> , NaOH, NaCl)	



type	Ø as supplied (mm)	Ø after full recovery (mm)	Tk wall thickness after full recovery (mm)	L (m)	pieces/box
GT3-30	≥ 34,0	≤ 10,0	≥ 2,5	1,5	80
GT3-40	≥ 44,0	≤ 12,0	≥ 2,5	1,5	50
GT3-50	≥ 55,5	≤ 16,0	≥ 2,5	1,5	40
GT3-70	≥ 82,0	≤ 22,0	≥ 2,8	1,5	15
GT3-95	≥ 93,5	≤ 29,0	≥ 3,1	1,5	12
GT3-120	≥ 127,0	≤ 34,0	≥ 3,1	1,5	8
GT3-140	≥ 149,5	≤ 42,0	≥ 3,5	1,5	6
GT3-160	≥ 169,5	≤ 50,0	≥ 3,5	1,5	5
GT3-180	≥ 191,5	≤ 60,0	≥ 3,5	1,5	4
GT3-200	≥ 207,0	≤ 70,0	≥ 3,5	1,5	4

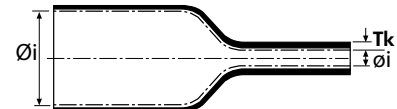
GT3 tubing also available without adhesive. Please contact our sales offices. MOQ applies.

**HEAT-SHRINKABLE HEAVY WALL INSULATING TUBE WITH ADHESIVE**
**Application**

GT4 is a heavy wall co extruded tubing with adhesive. The tube sizes and recovered wall thicknesses are in full compliance with the DIN47640 specifications. UV and weather resistant, provides excellent abrasion and impact resistance for LV or MV joints.

**Technical characteristics**

Material	Crosslinked polyolefin	
Colour	Black	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1,1 g/cm <sup>3</sup> ± 10%	ASTM D-1505 / ISO R1183
Tensile strength	20 ÷ 25 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	500% ÷ 600%	ASTM D-412 / ISO 37
Dielectric constant	< 5	IEC 250
Volume resistivity	> 1x10 <sup>13</sup> Ohm.cm	IEC 93
Dielectric strength	> 15 kV/mm	IEC 243
Water absorption	< 0,2%	DIN 53495 / ISO 92
Fungus and mildew resistance	GL0	ASTM G 21
Contents of carbon black	> 2,5%	ASTM 2671
Chemical resistance	(Treatment with 0,1N Na <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> SO <sub>4</sub> , NaOH, NaCl)	



type	Ø as supplied (mm)	Ø after full recovery (mm)	Tk wall thickness after full recovery (mm)	L (m)	pieces/box
GT4-15	≥ 16,0	≤ 4,0	≥ 2,4	1,5	250
GT4-20	≥ 22,5	≤ 5,0	≥ 2,8	1,5	200
GT4-30	≥ 33,0	≤ 7,0	≥ 4,0	1,5	80
GT4-40	≥ 45,0	≤ 12,0	≥ 4,5	1,5	40
GT4-50	≥ 55	≤ 16,0	≥ 4,5	1,5	35
GT4-70	≥ 70,0	≤ 20,0	≥ 4,5	1,5	20
GT4-90	≥ 92,5	≤ 22,0	≥ 4,5	1,5	12
GT4-120	≥ 130	≤ 30,0	≥ 4,5	1,5	8
GT4-140	≥ 149,0	≤ 42,0	≥ 4,5	1,5	6
GT4-160	≥ 160,0	≤ 48,0	≥ 4,5	1,5	5
GT4-180	≥ 177,5	≤ 48,0	≥ 4,5	1,5	4
GT4-200	≥ 200,0	≤ 48,0	≥ 4,5	1,5	4

GT4 tubing also available without adhesive. Please contact our sales offices. MOQ applies.

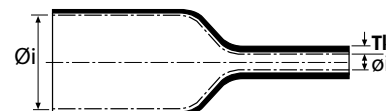


**HEAT-SHRINKABLE THIN WALL TUBE W/O ADHESIVE**
**Application**

GT7 is a commercial grade thin wall insulating sleeve. Ideal for covering earth braids or smaller cross section LV termination cores. UV resistant (black color). Other colors available on request.

**Technical characteristics**

Material	Crosslinked polyolefin	
Colour	Black	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1,1 g/cm <sup>3</sup> ±10%	ASTMD-1505 / ISO R1183
Tensile strength	20 ÷ 25 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	500% ÷ 600%	ASTM D-412 / ISO 37
Dielectric constant	<5	IEC 250
Volume resistivity	>1x10 <sup>13</sup> Ohm.cm	IEC 93
Dielectric strength	>15 kV/mm	IEC 243
Water absorption	<0,2%	DIN 53495 / ISO 92
Fungus and mildew resistance	GL0	ASTM G 21
Contents of carbon black	>2,5%	ASTM 2671
Chemical resistance	(treatment with 0,1N Na <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> SO <sub>4</sub> , NaOH, NaCl)	



type	Ø as supplied / after full recovery (mm)	Tk wall thickness after full recovery (mm)	spool L (m)
GT7-4,8	4,8/2,4	0,51	200
GT7-6,4	6,4/3,2	0,64	150
GT7-9,5	9,5/4,8	0,64	150
GT7-12,7	12,7/6,4	0,64	100
GT7-16	16-8,2	0,76	50
GT7-19	19/9,5	0,76	50
GT7-25,4	25,4/12,7	0,89	50
GT7-32	32/16	1,02	50
GT7-38,1	38,1/19	1,02	25

## HEAT-SHRINKABLE ADHESIVE LINED WRAP AROUND REPAIR SLEEVE

### Application

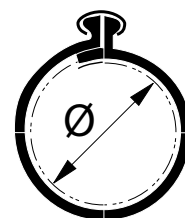
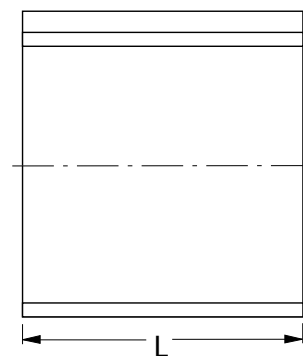
GT11 is an adhesive lined wraparound sleeve, while GT11R is a fiber reinforced version. Ideal for joint outer sheath rebuilding on both LV and MV applications when space is limited, or when parking the outer jacket tubing is difficult. GT11 R provides superior impact and cut through resistance.

### Technical characteristics

Material	Crosslinked polyolefin	
Colour	Black	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1,1 g/cm <sup>3</sup> ±10%	ASTMD-1505 / ISO R1183
Tensile strength	20 ÷ 25 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	500% ÷ 600%	ASTM D-412 / ISO 37
Dielectric constant	<5	IEC 250
Volume resistivity	> 1x10 <sup>13</sup> Ohm.cm	IEC 93
Dielectric strength	> 15 kV/mm	IEC 243
Water absorption	<0,2%	DIN 53495 / ISO 92
Fungus and mildew resistance	V applied: 1, with: GLO	ASTM G 21
Contents of carbon black	>2,5%	ASTM 2671
Chemical resistance	(Treatment with 0,1N Na <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> SO <sub>4</sub> , NaOH, NaCl)	



type	Ø as supplied / after full recovery (mm)	Tk wall thickness after full recovery (mm)	L standard (m)
GT11-34 / GT11-34 R	41/10	2,5	1,5
GT11-50 / GT11-50 R	55/15	2,5	1,5
GT11-75 / GT11-75 R	75/22	2,8	1,5
GT11-105 / GT11-105 R	105/30	3	1,5
GT11-120 / GT11-120 R	120/40	3,5	1,5
GT11-146 / GT11-146 R	146/38	3,5	1,5
GT11-164 / GT11-164 R	164/42	3,5	1,5
GT11-200 / GT11-200 R	200/55	3,5	1,5



HEAT-SHRINKABLE SEMI-CONDUCTIVE CABLE BREAKOUT ADHESIVE LINED  
Up to U<sub>max</sub> 52kV

### Application

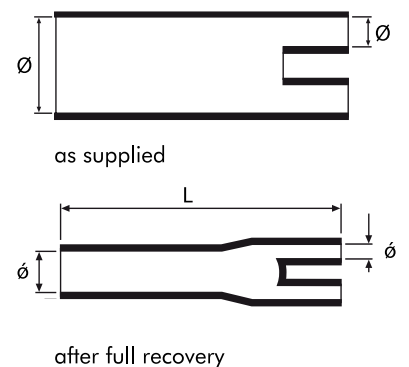
36TTS injection molded three finger semi-conductive breakout.  
Ideal for PILC joints and terminations up to 52kV.  
The breakout's fingers are fully, while the body is partially covered with anti-tracking sealant mastic.  
Watertight, UV and weather resistant.

### Technical characteristics

Material	Crosslinked polyolefin	
Colour	Black	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1 g/cm <sup>3</sup> ±10%	ASTM D-1505 / ISO R1183
Tensile strength	>10 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	300%	ASTM D-412 / ISO 37
Volume resistivity	<20 Ohm.cm	IEC 93



type	Ø body as supplied/after full recovery (mm)	Ø finger as supplied/after full recovery (mm)	L after full recovery (mm)
36TTS13	55/23	23/8	135
36TTS23	75/31	32/14	170
36TTS33	110/46	52/22	170
36TTS43	135/56	64/28	230



## HEAT-SHRINKABLE ANTI-TRACKING CABLE BREAKOUT Up to U<sub>max</sub> 52kV

### Application

36TTE injection molded three finger anti-tracking breakout.  
The finger and breakout body are covered with a red anti-tracking mastic, providing an complete environmental seal.  
To be used on MV terminations both in and outdoor.  
UV resistant.

### Technical characteristics

Material	Crosslinked polyolefin	
Colour	Red	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	> 125 °C	
Density	1,2 g/cm <sup>3</sup> ± 10%	ASTM D-1505 / ISO R-1183
Tensile strength	>6 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	>200%	ASTM D-412/ ISO 37
Dielectric constant	≤5	IEC 250
Volume resistivity	> 1x10 <sup>12</sup> Ohm.cm	IEC 93
Dielectric strength	> 10 kV / mm	IEC 243
Tracking resistance	V applied: 3,25 kV ASTM D-23-03	



type	Ø body as supplied/after full recovery (mm)	Ø finger as supplied/after full recovery (mm)	L after full recovery (mm)
36TTE13	55/23	23/8	135
36TTE23	75/31	32/14	170
36TTE33	110/46	52/22	170
36TTE53	135/56	64/28	230



as supplied



after full recovery

**HEAT-SHRINKABLE LOW VOLTAGE INSULATING BREAKOUT**  
Up to U<sub>max</sub> 1,2kV

**Application**




1TTI injection molded LV insulating breakouts.  
Available from 2 finger up to 4 fingers.  
The fingers and part of the breakout body are covered with adhesive.  
Provides an excellent environmental seal for LV terminations.  
The complete range of the breakouts are UV resistant.

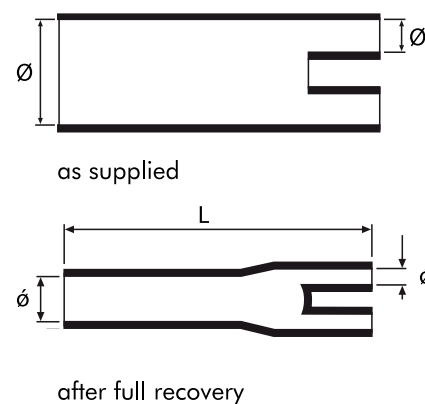


**Technical characteristics**

Material	Crosslinked polyolefin	
Colour	Black	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125 °C	
Density	1 g/cm <sup>3</sup> ± 10%	ASTM D-1505 / ISO R-1183
Tensile strength	>8 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	300%	ASTM D-412 / ISO 37
Dielectric constant	≤5	IEC 250
Volume resistivity	>1x10 <sup>13</sup> Ohm.cm	IEC 93
Dielectric strength	>10 kV/mm	IEC 243



type	Ø body as supplied/after full recovery (mm)	Ø finger as supplied/after full recovery (mm)	L after full recovery (mm)
2 finger breakouts 			
1TTI02	20/8	10/4	60
1TTI12	28/9	12/4	70
3 finger breakouts 			
1TTI13	35/13	13/4	85
1TTI23	60/22	24/8	140
1TTI33	80/33	36/16	170
1TTI43	110/47	38/20	170
1TTI53	135/55	65/27	200
1TTI63	155/55	65/27	210
4 finger breakouts 			
1TTI04	28/9	8/4	70
1TTI14	38/14	12/4	85
1TTI24	55/20	21/7	140
1TTI34	72/22	25/9	170
1TTI44	90/35	34/14	170
1TTI54	125/50	50/20	200



**HEAT-SHRINKABLE ANTI-TRACKING RAIN SHEDS**  
 Up to U<sub>max</sub> 52kV

**Application**

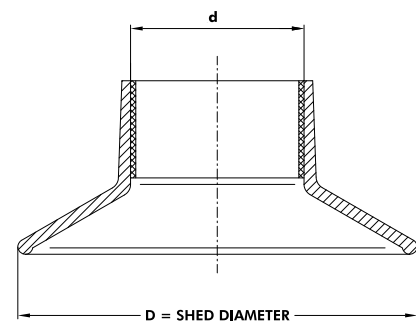
DPA injection molded anti-tracking rain sheds.  
 The inside of the collar area is coated with anti-tracking erosion resistant mastic.  
 To be used as creepage extender on MV in- or outdoor terminations.

**Technical characteristics**

Material	Crosslinked polyolefin	
Colour	Red	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1,2 g/cm <sup>3</sup> ±10%	ASTM D-1505 / ISO R1183
Tensile strength	>6 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	200%	ASTM D-412 / ISO 37
Dielectric constant	>5	IEC 250
Volume resistivity	1x10 <sup>12</sup> Ohm.cm	IEC 93



type	d as supplied/after full recovery (mm)	D (mm)
DPA4317	35/16	92
DPA4307	52/26	124
DPA4318	72/35	142
DPA5853	100/35	200



**HEAT-SHRINKABLE ANTI-TRACKING RIGHT ANGLE AND STRAIGHT BUSHING BOOTS**  
 Up to U<sub>max</sub> 52kV

**Application**

PTD and PTS are injection molded, heat-shrinkable, anti-tracking, bushing boots.  
 Designed for medium voltage terminations.  
 Erosion and UV resistant.  
 Ideal for indoor installation as the thick wall ensures mechanical support for the terminations.  
 Both designs, straight and right angle have non tracking mastic sealing both at the cable and bushing area.


**Technical characteristics**

Material	Crosslinked polyolefin	
Colour	Red	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1,2 g/cm <sup>3</sup> ±10%	ASTM D-1505 / ISO R1183
Tensile strength	>6 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	200%	ASTM D-412 / ISO 37
Dielectric constant	>5	IEC 250
Volume resistivity	1x10 <sup>12</sup> Ohm.cm	IEC 93
Dielectric strength	>10 kV/mm	IEC 243
Tracking resistance	V applied: 3,25 kV ASTM D-23-03	

type	bushing side as supplied/after full recovery (mm)	cable termination side as supplied/after full recovery (mm)
PTD1	80/33	34/20
PTD2	80/33	58/20
PTS1	70/37	36/20
PTS2	95/37	67/27

**HEAT-SHRINKABLE CABLE END CAPS WITH ADHESIVE**  
 Up to U<sub>max</sub> 1,2kV

**Application**

CAPT injection molded, heat-shrinkable, insulating cable end caps. The caps are available with or without adhesive. The caps are weather and UV resistant, and the adhesive lined versions prevent moisture and water ingress. The CAPT with adhesive can also be utilized as low voltage live end seals. Sold as separate kits, with appropriate marking.

**Technical characteristics**

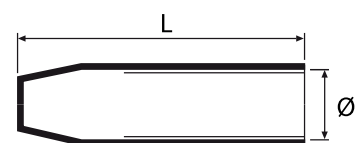
Material	Crosslinked polyolefin	
Colour	Black	
Continuous operating temp.	-40°C to +135°C	
Minimum shrink temp.	125°C	
Density	1 g/cm <sup>3</sup> ±10%	ASTM D-1505 / ISO R1183
Tensile strength	>8 N/mm <sup>2</sup>	ASTM D-412 / ISO 37
Ultimate elongation	300%	ASTM D-412 / ISO 37
Dielectric constant	<5	IEC 250
Volume resistivity	>1x10 <sup>13</sup> Ohm.cm	IEC 93
Dielectric strength	>10 kV/mm	IEC 243



type	as supplied/after full recovery Ø (mm)	L after full recovery (mm)
CAPT12	12/4,5	35
CAPT14	14/6	35
CAPT20	20/8	45
CAPT26	26/11	60
CAPT40	40/16	100
CAPT57	57/22	100
CAPT75	75/32	120
CAPT105	105/45	120
CAPT130	128/58	140
CAPT145	145/57	140
CAPT160	158/60	140



as supplied



after full recovery