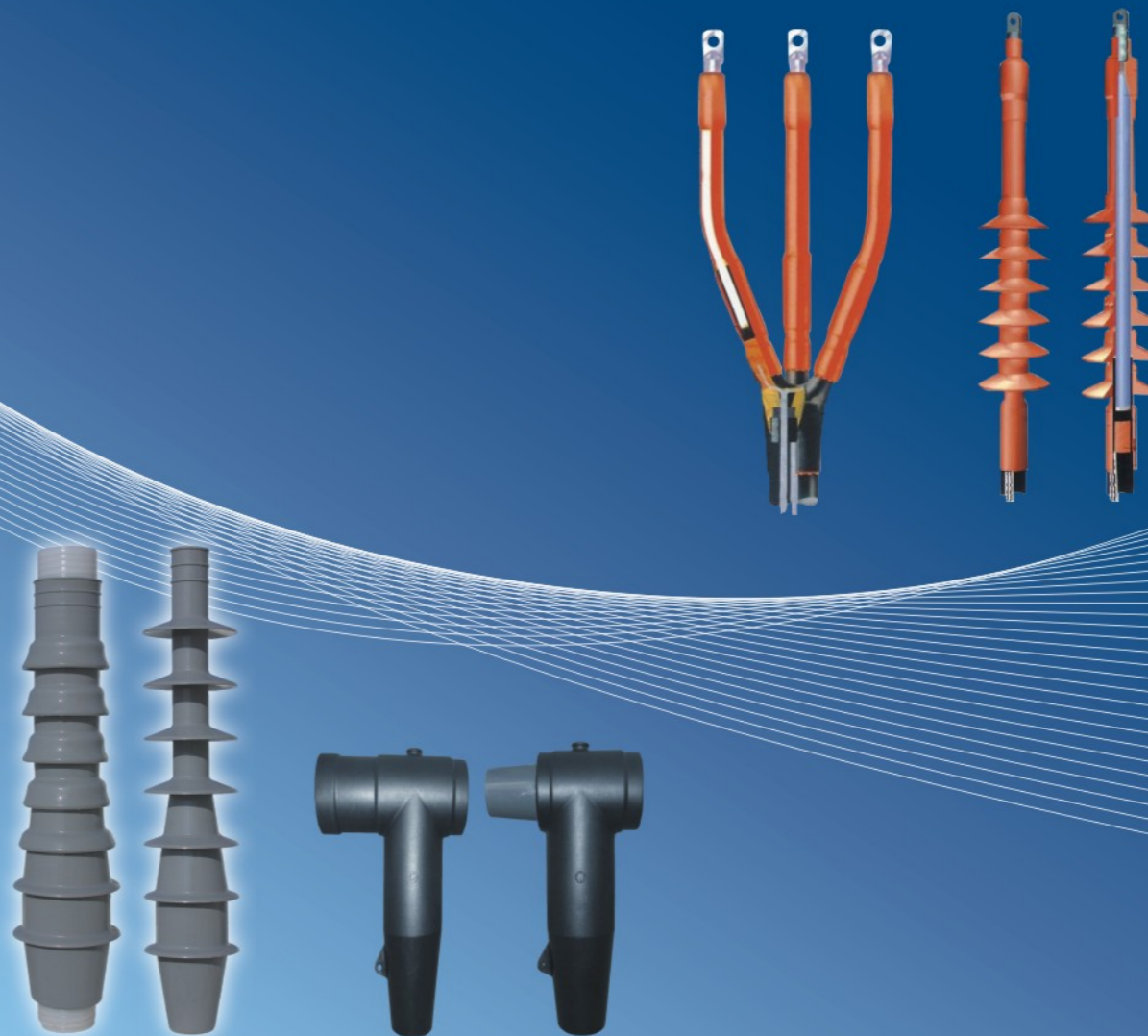




WOER HEAT-SHRINKABLE MATERIAL

## Power Cable Accessories



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## Profile



Our corporation is situated in Shenzhen, China, which links the Hong Kong by mountains and rivers.

Shenzhen Woer Heat-Shrinkable Material Co., Ltd is a high-tech enterprise which manufactures professional heat & cold shrink electrical insulation material. Established in 1998, Woer Corporation has undergone dynamic growth and became the largest heat & cold shrink cable accessories manufacturer in China.

Woer Corporation is devoted to establishing a worldwide sales and service network and becoming a global supplier. Woer brand and products are now well recognized and received by the markets of Asia, Middle East, Europe, North America & Latin America, Africa and Australia. We strive to offer the most effective and convenient services and technical supports for customers all over the world.

### Catalog

Our entire product range includes heat & cold shrink cable accessories, separable connectors and electrical insulation protection material. We own the patent for the design of our products, and most of the cable accessories have passed KEMA Type Test.

- Heat shrink cable accessories 1-36kV
- Cold shrink cable accessories 1-36kV
- Cable accessories 110kV
- Separable connectors 12-24kV
- Electrical insulation protection material 1-36kV



### Our management idea is :

“We provide the top quality products and services for the worldwide customers, developing together.” We have a wealth of experience in designing cable accessories that ensure cables to connect safely and easily.

We work continuously to improve the products quality and environment, which are our important and self-evident parts of the strategic plan. Here are the certifications:

- ◆ ISO 9001 quality standard
- ◆ ISO 14001 environmental standard.



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## Standards

### Definition of voltages

Cable accessories are classified according to the voltages at which they operate. IEC designations gives a clear picture of used vocabulary. The voltages normally used in this context are:

$U_0$  = the rated r.m.s (root mean square) power-frequency voltage between each conductor and screen or sheath for which cable accessories are designed;

$U$  = the rated r.m.s power-frequency voltage between two different conductors for which the cable accessories are designed;

$U_m$  = the maximum r.m.s power-frequency voltage between two different conductors for which the cable accessories are designed. It's the highest voltage that can be sustained under normal operating conditions at any time at any point in the system. It excludes temporary voltage variation due to fault conditions and the sudden connection of large loads.

### Standards and type testing

Electrical components must meet numerous requirements in areas such as functional safety, technical performance, personal safety and so on. For cable accessories, compliance with the quality requirements is checked by type and routine testing. We perform these tests to various standards, both international and national.

### These are the standards on which our tests are based:

IEC  
 (International Electrotechnical Commission) An international standard

IEEE  
 (The Institute of Electrical and Electronics Engineers)  
 The standard is mainly used in the USA

### GB/T 12706.4

These standards are the national standards in China. In most cases, the standards harmonize with IEC standards, and there may be some special requirements.

### Voltage range $U_m$ 1.2kV

In this voltage range, the function of cable accessories is to provide mechanical protection and insulation. There is no need for controlling the electrical field.



Tests in the high-voltage laboratory of WOER corporation

### Voltage range $U_m$ 3.6 – 36kV.

IEC: Current standards are IEC 61442, which covers test methods, and IEC 60502-4, which sets out the testing requirements

### ■ Voltage Classes: (kV)

$U_0$	$U$	$U_m$
1.8	3	3.6
3.6	6	7.2
6	10	12
8.7	15	17.5
12	20	24
18	30	36
19	33	36
36	66	72.5
64	110	123



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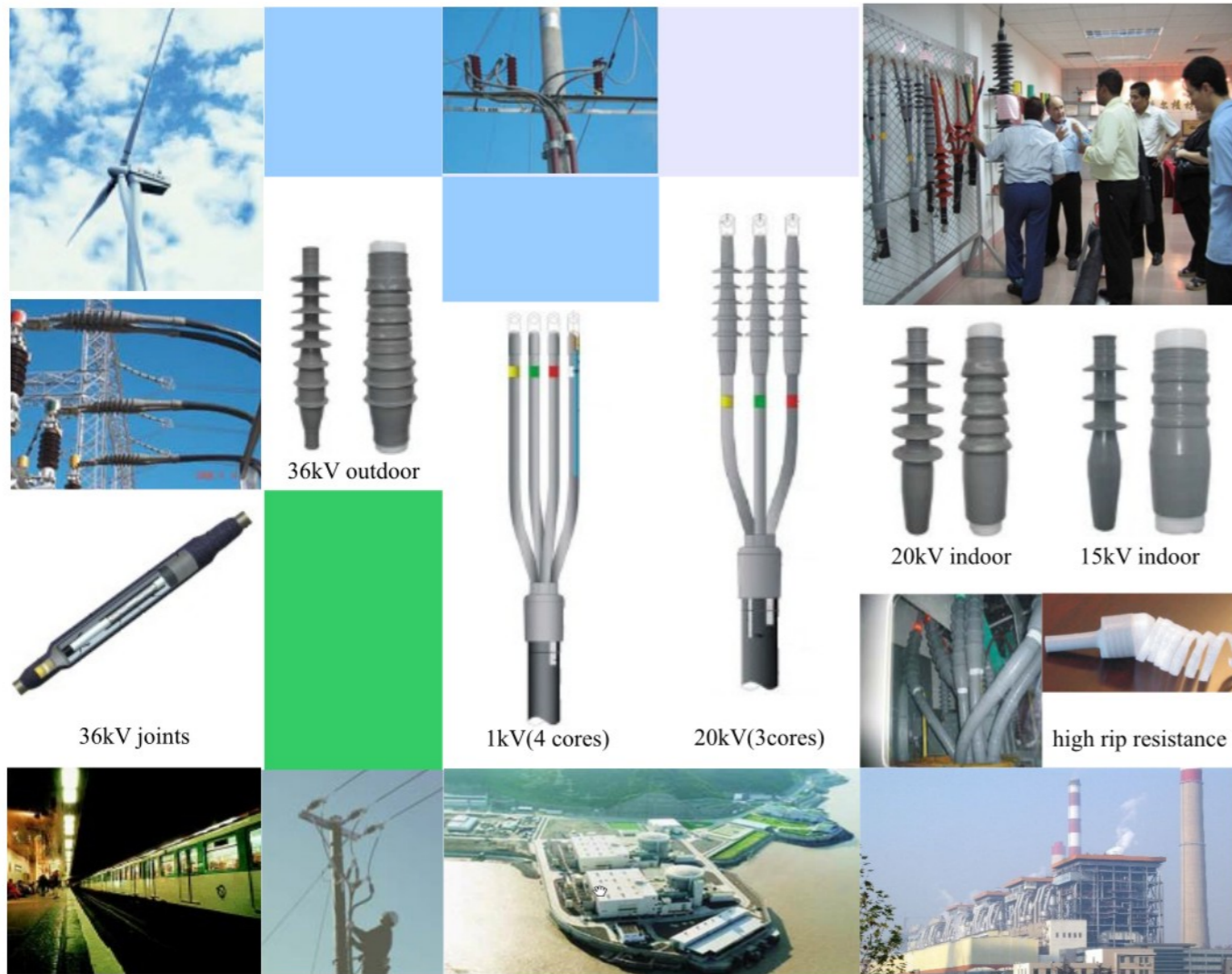
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## Cold Shrink Terminations Kits & Joints 1-36kV



### WOER Cold Shrink Terminations Kits & Joints

WOER cold shrink cable accessories are manufactured with advanced liquid silicon rubber, which has high resilience and strength, good electrical insulation, is UV stable and adverse to water. The cold shrink cable terminations & joints applications from 1 to 36kV (1kV, 12kV, 17.5kV, 24kV, 36kV). Most of the cable accessories have passed KEMA type test. The simple installation of cold shrink cables accessories can help you save time and physical force. It improves your work efficiency, make the cables connect safely and reliably, assure your every connection correctly sealed and insulated for long protection. So our cold shrink MV terminations & joints are widely applied in power plant (nuclear), wind farm, substations, city subway etc.

## WOER Cold Shrink Termination Kits 1-36kV (for XLPE, Screened Armored Cables)

VOLTAGE	CORES	DESCRIPTION	CABLE SIZE	MAIN INSULATION OUTER DIAMETER	PRODUCT NUMBER
18/30kV (36)	1/3	Indoor	25-50mm <sup>2</sup> 70-150mm <sup>2</sup> 185-400mm <sup>2</sup> 500-630mm <sup>2</sup>	20-26 27-33 33-42 43-49	18/30kVWLN-1/1(3/1) 18/30kVWLN-1/2(3/2) 18/30kVWLN-1/3(3/3) 18/30kVWLN-1/4(3/4)
	1/3	Outdoor	25-50mm <sup>2</sup> 70-150mm <sup>2</sup> 185-400mm <sup>2</sup> 500-630mm <sup>2</sup>	20-26 27-33 33-42 43-49	18/30kVWLW-1/1(3/1) 18/30kVWLW-1/2(3/2) 18/30kVWLW-1/3(3/3) 18/30kVWLW-1/4(3/4)
12/20kV (24)	1/3	Indoor	25-50mm <sup>2</sup> 70-120mm <sup>2</sup> 150-240mm <sup>2</sup> 300-400mm <sup>2</sup>	16-22 20-27 24-32 30-37	12/20kVWLN-1/1(3/1) 12/20kVWLN-1/2(3/2) 12/20kVWLN-1/3(3/3) 12/20kVWLN-1/4(3/4)
	1/3	Outdoor	25-50mm <sup>2</sup> 70-120mm <sup>2</sup> 150-240mm <sup>2</sup> 300-400mm <sup>2</sup>	16-22 20-27 24-32 30-37	12/20kVWLW-1/1(3/1) 12/20kVWLW-1/2(3/2) 12/20kVWLW-1/3(3/3) 12/20kVWLW-1/4(3/4)
8.7/15kV(17.5)	1/3	Indoor	25-50mm <sup>2</sup> 70-120mm <sup>2</sup> 150-240mm <sup>2</sup> 300-400mm <sup>2</sup>	16-20 20-25 24-30 30-36	8.7/15kVWLN- 1/1(3/1) 8.7/15kVWLN- 1/2(3/2) 8.7/15kVWLN- 1/3(3/3) 8.7/15kVWLN-1/4(3/4)
	1/3	Outdoor	25-50mm <sup>2</sup> 70-120mm <sup>2</sup> 150-240mm <sup>2</sup> 300-400mm <sup>2</sup>	16-20 20-25 24-30 30-36	8.7/15kVWLW- 1/1(3/1) 8.7/15kVWLW- 1/2(3/2) 8.7/15kVWLW- 1/3(3/3) 8.7/15kVWLW-1/4(3/4)
6/10kV(12)	1/3	Indoor	50-70mm <sup>2</sup> 95-150mm <sup>2</sup> 185-300mm <sup>2</sup> 400-500mm <sup>2</sup>	16-20 20-24 25-31 32-39	6/10kVWLN- 1/1(3/1) 6/10kVWLN- 1/2(3/2) 6/10kVWLN-1/3(3/3) 6/10kVWLN-1/4(3/4)
	1/3	Outdoor	50-70mm <sup>2</sup> 95-150mm <sup>2</sup> 185-300mm <sup>2</sup> 400-500mm <sup>2</sup>	16-20 20-24 25-31 32-39	6/10kVWLW- 1/1(3/1) 6/10kVWLW- 1/2(3/2) 6/10kVWLW- 1/3(3/3) 6/10kVWLW- 1/4(3/4)
0.6/1kV(1.2)	1or3 or 4 or 5	Indoor or Outdoor	25-50mm <sup>2</sup> 70-120mm <sup>2</sup> 150-240mm <sup>2</sup> 300-400mm <sup>2</sup>	-	0.6/1kVWLT-1(3,4,5)/1 0.6/1kVWLT-1(3,4,5)/2 0.6/1kVWLT-1(3,4,5)/3 0.6/1kVWLT-1(3,4,5)/4



## WOER Cold Shrink Cable Joints 1-36kV



### Use

Cold shrink cable joint for XLPE -insulated 1 or 3 cores cables with Al or Cu conductor, 1-36kV.

### Design

The joint body is made of advanced liquid silicone rubber with three layers : a conductive outer layer, an insulating layer and a conductive inner layer.

The joints kit contains all mounting material. It improves reliability , reduces time and labor. It fits cable sizes from 25mm<sup>2</sup> to 500mm<sup>2</sup>.

## WOER Cold Shrink Cable Joints

VOLTAGE	CORES	CABLE SIZE	MAIN INSULATION OUTER DIAMETER	PRODUCT NUMBER
18/30kV (36)	1/3	50-70mm <sup>2</sup>	25-30	18/30kVWLJ-1/1(3/1)
		95-150mm <sup>2</sup>	31-35	18/30kVWLJ-1/2(3/2)
		185-300mm <sup>2</sup>	36-42	18/30kVWLJ-1/3(3/3)
		400-500mm <sup>2</sup>	43-49	18/30kVWLJ-1/4(3/4)
12/20kV (24)	1/3	25-50mm <sup>2</sup>	16-22	12/20kVWLJ-1/1(3/1)
		70-120mm <sup>2</sup>	20-27	12/20kVWLJ-1/2(3/2)
		150-240mm <sup>2</sup>	24-32	12/20kVWLJ-1/3(3/3)
		300-400mm <sup>2</sup>	30-37	12/20kVWLJ-1/4(3/4)
8.7/15kV(17.5)	1/3	25-50mm <sup>2</sup>	16-22	8.7/15kVWLJ-1/1(3/1)
		70-120mm <sup>2</sup>	20-27	8.7/15kVWLJ-1/2(3/2)
		150-240mm <sup>2</sup>	24-32	8.7/15kVWLJ-1/3(3/3)
		300-400mm <sup>2</sup>	30-37	8.7/15kVWLJ-1/4(3/4)
6/10kV(12)	1/3	50-70mm <sup>2</sup>	16-22	6/10kVWLJ-1/1(3/1)
		95-150mm <sup>2</sup>	20-27	6/10kVWLJ-1/2(3/2)
		185-300mm <sup>2</sup>	24-32	6/10kVWLJ-1/3(3/3)
		400-500mm <sup>2</sup>	30-37	6/10kVWLJ-1/4(3/4)
0.6/1kV(1.2)	1or3or 4or5	25-50mm <sup>2</sup>	---	0.6/1kVWLJ-1(3,4,5)/1
		70-120mm <sup>2</sup>		0.6/1kVWLJ-1(3,4,5)/2
		150-240mm <sup>2</sup>		0.6/1kVWLJ-1(3,4,5)/3
		300-400mm <sup>2</sup>		0.6/1kVWLJ-1(3,4,5)/4

## Performance of WOER Cold Shrink Cable Accessories

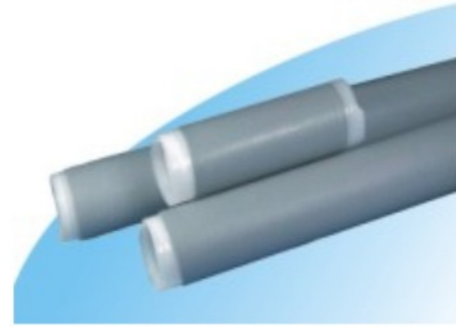
when tested according to IEC 60502-4

SEQ.	Test Project	Requirement acc. to IEC 60502.4			Result
		18/30kV(36)	12/20kV(24)	6/10kV(12)	
1	AC voltage (in air and ambient temperature)	AC for 5min. at 81kV no breakdown, no flashover	AC for 5min. at 54kV . no breakdown, no flashover	AC for 5min. at 27kV no breakdown, no flashover	PASS
2	Partial discharge test	≤10pc at 30kV	≤10pc at 20kV	≤10pc at 10kV	PASS
3	Impulse test	10 impulses of each polarity at 170kV	10 impulses of each polarity at 125kV	10 impulses of each polarity at 75kV	PASS
4	Heating cycle in air (for termination )	60 cycles at 95°C~100°C and 45kV in air, no breakdown	60 cycles at 95°C~100°C and 30kV in air, no breakdown	60 cycles at 95°C~100°C and 15kV in air, no breakdown	PASS
5	Heating cycle in air (for joints )	30 cycles at 95°C~100°C and 45kV in air, no breakdown	30 cycles at 95°C~100°C and 30kV in air, no breakdown	30 cycles at 95°C~100°C and 15kV in air, no breakdown	PASS
6	Heating cycle voltage test under water	30 cycles at 95°C~100°C and 45kV under water, no breakdown	30 cycles at 95°C~100°C and 30kV under water, no breakdown	30 cycles at 95°C~100°C and 15kV under water, no breakdown	PASS
7	Thermal shortcircuit (screen)	no visible deterioration at current 1.97kA for 2s	no visible deterioration at current 1.97kA for 2s	no visible deterioration at current 1.97kA for 2s	PASS
8	Thermal shortcircuit (conductor)	no visible deterioration at current 3.0kA for 1s	no visible deterioration at current 3.0kA for 1s	no visible deterioration at current 3.0kA, for 1s	PASS
9	Dynamic shortcircuit	no visible deterioration at current 23.0kA for 2s	no visible deterioration at current 23.0kA for 2s	no visible deterioration at current 23.0kA for 2s	PASS
10	AC voltage for 15 min	AC for 15 min at 45kV. no breakdown, no flashover	AC for 15 min at 30kV. no breakdown, no flashover	AC for 15 min at 15kV. no breakdown, no flashover	PASS
11	Salt fog (for outdoor terminations only)	1000H at 22.5kV, no breakdown, no flashover	1000H at 15kV, no breakdown, no flashover	1000H at 7.5kV, no breakdown, no flashover	PASS
12	Humidity (for indoor terminations only)	300H at 22.5kV, no breakdown, no flashover	300H at 15kV, no breakdown, no flashover	300H at 7.5kV, no breakdown, no flashover	PASS



## WCST Cold Shrink Tubing

Cold shrink tubings are insulated, open-ended, rubber sleeve which is factory expanded and assembled onto removable plastic cores. The core is removed after the tubes have been positioned for installation over an inline connection, coupling cable or terminations, allowing the tubes to shrink and form a water resistant seal. The cold shrink tubing are made of liquid silicon rubber.



### Application:

- Primary electrical insulation for all solid dielectric (rubber and plastic) insulated wire and cable splices rated to 1000V;
- Physical protection and moisture sealing for high voltage, air insulated connectors and lugs;
- For indoor, outdoor, in cable tray for overhead use.
- Environmental sealing for communication connectors and other non-electrical applications.

As supplied Inner Diameter (mm)	After recovery Inner Diameter (mm)	After recovery Length (mm)	After recovery Thickness (mm)	Application range (mm)	Product Number
∅ 20	∅ 6	450	2±0.2	∅ 9 ~ ∅16	WCST-1
∅ 28	∅ 8	500	2.5±0.2	∅ 11 ~ ∅21	WCST-2
∅ 32	∅ 9.2	490	2.5±0.2	∅ 12.2 ~ ∅22.2	WCST-3
∅ 32	∅ 10	490	2±0.2	∅ 13 ~ ∅23	WCST-4
∅ 35	∅ 14	450	2±0.2	∅ 17 ~ ∅27	WCST-5
∅ 40	∅ 16	450	2±0.2	∅ 19 ~ ∅29	WCST-6
∅ 47	∅ 19	470	2±0.2	∅ 22 ~ ∅32	WCST-7
∅ 53	∅ 23	500	2±0.2	∅ 26 ~ ∅36	WCST-8
∅ 65	∅ 23	500	3±0.2	∅ 26 ~ ∅46	WCST-9
∅ 70	∅ 28	500	3±0.2	∅ 31 ~ ∅41	WCST-10
∅ 80	∅ 34	500	3±0.2	∅ 37 ~ ∅47	WCST-11
∅ 104	∅ 40	500	3±0.2	∅ 43 ~ ∅53	WCST-12
∅ 120	∅ 35	430	6±0.2	∅ 38 ~ ∅58	WCST-13
∅ 110	∅ 58	430	6±0.2	∅ 61 ~ ∅81	WCST-14
∅ 150	∅ 73	480	3±0.2	∅ 76 ~ ∅86	WCST-15

## WCSF

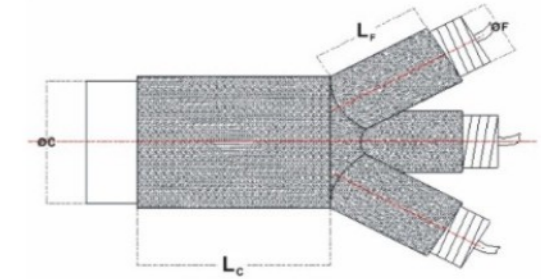
### Cold Shrink Breakouts Product description

Cold shrink silicone rubber breakouts are factory expanded and mounted on removable inner supporting plastic cores. They are supplied for field installation in a pre-stretched condition. The supporting cores are removed after the seal has been positioned for installation around the breakout area of a 3,4,5,6/C (3,4,5,6 conductor) cable. Core removal allows the silicone rubber boot to shrink down to a pre-determined diameter; creating an environmental enclosure for individual cable phase legs and the overall cable jacket.



### Features and Benefits

- Versatile : installs quickly and accommodates a wide range of cable sizes ;
- No torches or heat required ;
- No specific user skills or craftsmanship required ;
- Excellent resistance to ozone and ultra-violet radiation ;
- Good solvent resistance compatible with industry approved cable cleaners ;
- Excellent thermal stability.



Product Number	Core	ID (As supplied/After recovery) ∅ C	Application range Rc	ID (As supplied/After recovery) ∅ F	Application range Rc	LF	LC
WCSF 3-1	3	∅77/ ∅36	∅38-∅67	∅32/ ∅14	∅16- ∅26	45	130
WCSF 3-2		∅88/ ∅ 43	∅45-∅78	∅35/ ∅16	∅18- ∅29	45	135
WCSF 3-3		∅104/ ∅50	∅52-∅94	∅40/ ∅ 20	∅22- ∅34	45	150
WCSF 3-4		∅120/ ∅59	∅61-∅110	∅47/ ∅23	∅25- ∅41	45	165
WCSF 3-5		∅140/ ∅72	∅74-∅130	∅60/ ∅ 28	∅30- ∅54	55	180
WCSF 4-1	4	∅65/∅20	∅22-∅55	∅20/∅6	∅8-∅14	35	126
WCSF 4-2		∅80/∅28	∅30-∅70	∅25/∅8	∅10-∅19	40	137
WCSF 4-3		∅88/∅40	∅42-∅78	∅32/∅10	∅12-∅26	40	145
WCSF 4-4		∅120/∅45	∅42-∅94	∅47/∅15	∅12-∅36	40	145
WCSF 5-1	5	∅80/∅26	∅28-∅70	∅20/∅6	∅8-∅14	40	123
WCSF 5-2		∅88/∅36	∅38-∅78	∅25/∅8	∅10-∅19	40	134
WCSF 5-3		∅110/∅47	∅49-∅100	∅35/∅11	∅13-∅29	45	138
WCSF 5-4		∅120/∅47	∅49-∅110	∅40/∅11	∅13-∅36	45	138
WCSF 6-1	6	∅104/∅35	∅37-∅94	∅32/∅10	∅12- ∅26	60	135



## European Style Bolted-type Separable Connectors 24kV

### FEATURES :

- (1) The improved traditional separable connectors use the liquid silicone rubber imported from U.S. New separable connectors use imported EPDM rubber. That has excellent electrical properties ;
- (2) Unique structure designed to be fully shielded and sealed connection, underwater running while it act in concert with suited bushing ;
- (3) The new separable connector use the international advanced three layer injection technology , which effectively guarantee the properties the interface, and minimize the partial discharge ;
- (4) Separable connectors comply with IEC60502, the CENELEC HD629.1 S1 standards, including BS, VDE and other international regulatory requirements ;
- (5) Compact design, easy double "T"-type conductor, the connector ring network cabinet and other equipment installed applications;
- (6) The cable conductor and WOER of crimping lug to take over the connection, lug material is copper or bi-metallic;
- (7) 100% factory testing to ensure product quality and reliability.

### 24kV bolted-type separabel deadbreak connector

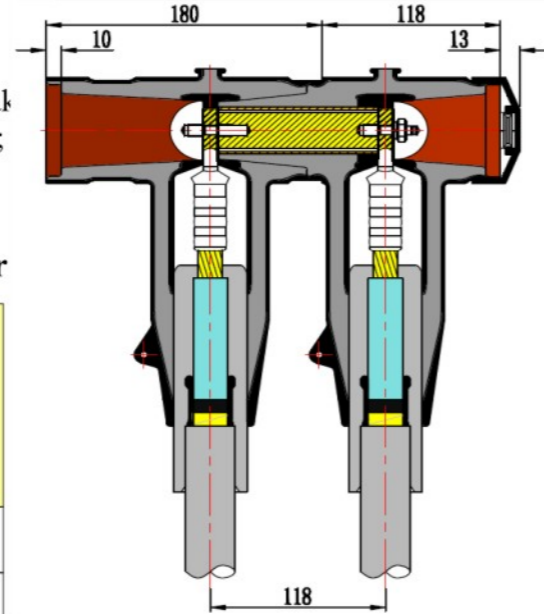
Type	Appliance diameter over main insulation(mm)	Appliance 12/20kV Cable section (mm <sup>2</sup> )
WEB24-630/Ø15	Ø19-22	35-50
WEB24-630/Ø18.5	Ø22-25.1	70-95
WEB24-630/Ø21.5	Ø25-28.1	120-150
WEB24-630/Ø24	Ø27.8-32	185-240
WEB24-630/Ø27.5	Ø32-35	300
WEB24-630/Ø30	Ø35-37.6	400
WEB24-630/Ø33	Ø37.6-40.3	500

WEBK24-630 rear connector specification and same as WEB24-630 front connector, add a "K" letter in the middle of the type.



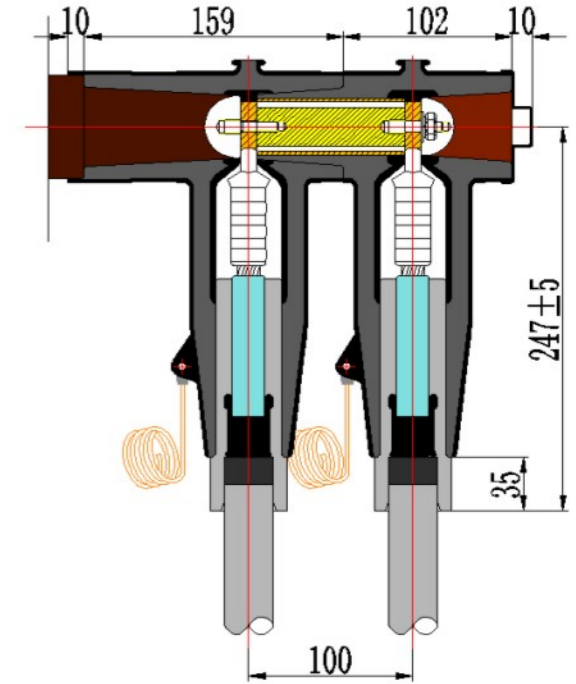
24kV bolted-type separabel deadbreak connector

Designed to comply with EN50180 and EN50181 standard "C" type bushing requirements.



## European Style Bolted-type Separable Deadbreak Connector 15kV

Designed to comply with EN50180 and EN50181 standard "C" type bushing requirements.



Type	Appliance diameter over main insulation(mm)	Appliance 8.7/15kV Cable section (mm <sup>2</sup> )
WEB15-630/Ø12	Ø16-18	25
WEB15-630/Ø13.5	Ø17-20	35-50
WEB15-630/Ø16.5	Ø20-23	70-95
WEB15-630/Ø19.5	Ø23-26	120-150
WEB15-630/Ø22.5	Ø26-30	185-240
WEB15-630/Ø24.5	Ø30-33	300
WEB15-630/Ø27.5	Ø33-36	400
WEB15-630/Ø30	Ø36-39	500

WEBK15-630 rear connector specification and same as WEB15-630 front connector, add a "K" letter in the middle of the type.



## European Style Plug-in Type Separable Connectors 24kV

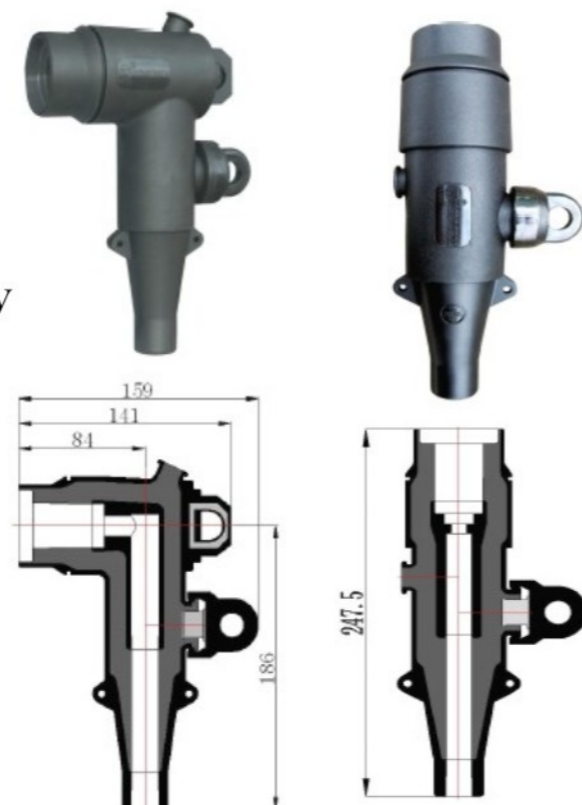
24kV plug-in type separable deadbreak connector  
Designed to comply with EN50180 and EN50181 standard "A" type bushing requirements.  
Interface assorting size complies with IEEE386

### Separable Elbow Connectors -Rated to 12/20(24)kV

Kit Ref	Application Range(mm <sup>2</sup> ) 12/20(24)kV	Diameter over main insulation (mm)
WEZT24-250-1	35-50	Ø17-22
WEZT24-250-2	70-95	Ø20-25
WEZT24-250-3	120	Ø23-28

### Separable Straight Connectors -Rated to 12/20(24)kV

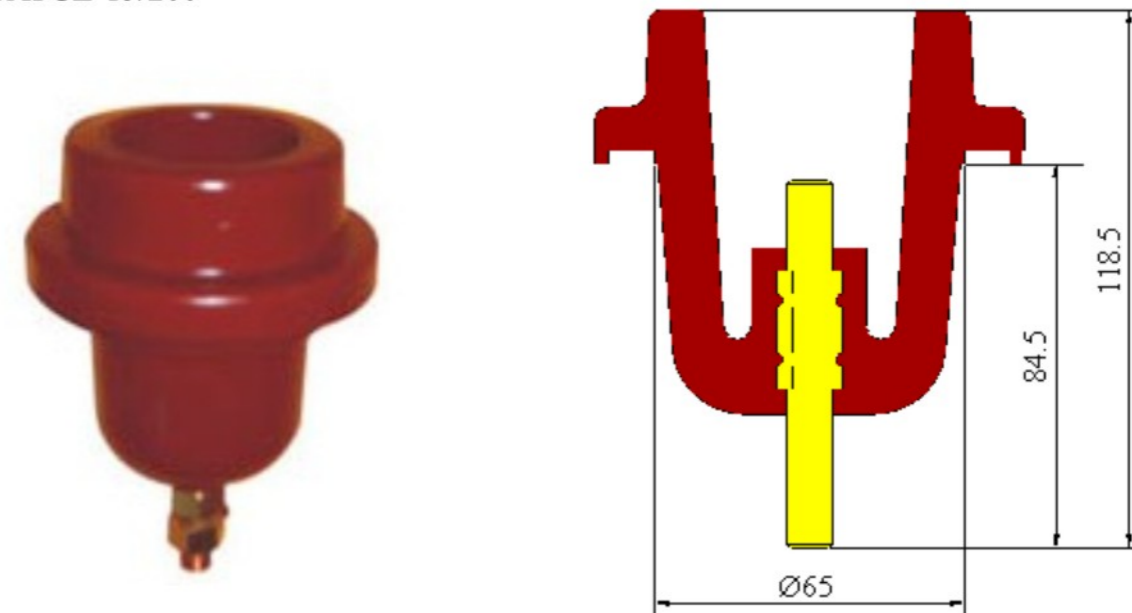
Kit Ref	Application Range(mm <sup>2</sup> ) 12/20(24)kV	Diameter over main insulation (mm)
WEZC24-250-1	35-50	Ø17-22
WEZC24-250-2	70-95	Ø20-25
WEZC24-250-1	120	Ø23-28



24kV plug-in type separable deadbreak connector

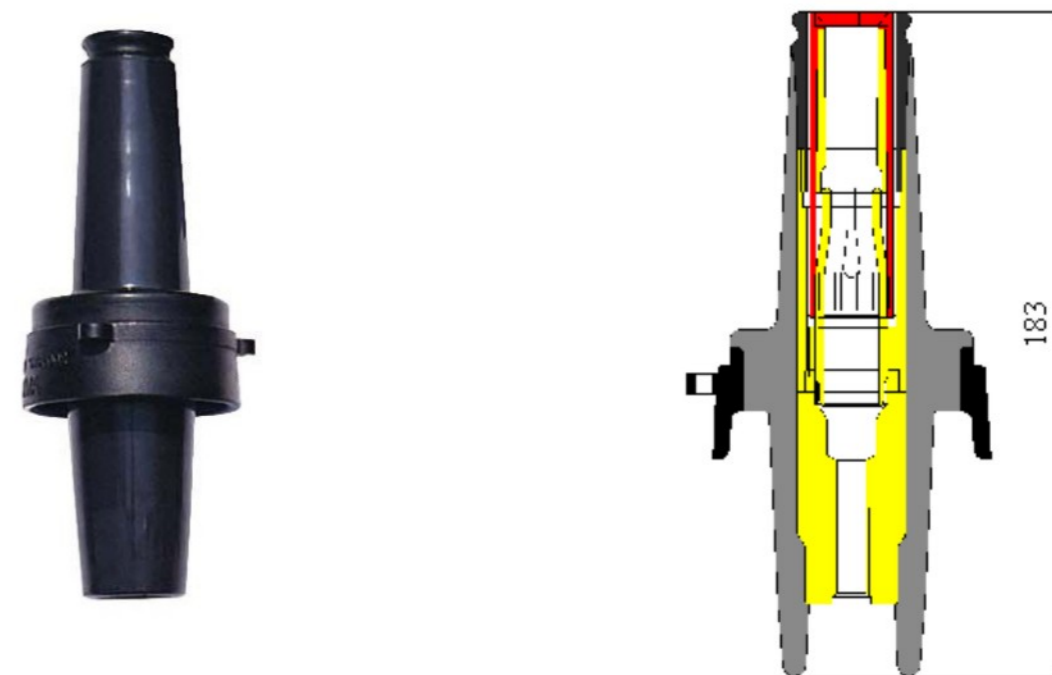
## American Style 200A 15kV Bushing Well

Interface assorting size complies with IEEE386 Figure 3-200A bushing well interface, 8.3kV,15.2kV, and 21.1kV.  
Type: WATGZ-15/200



### American Style 200A 15kV Loadbreak Bushing Insert

Interface assorting size complies with IEEE386 .  
Type:WADT-15/200

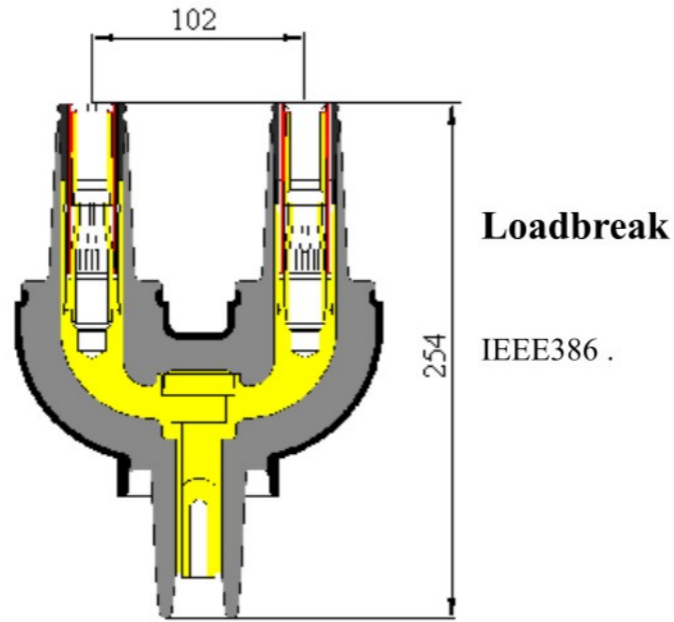




## American Style 200A 15kV

### Bushing Bilateral

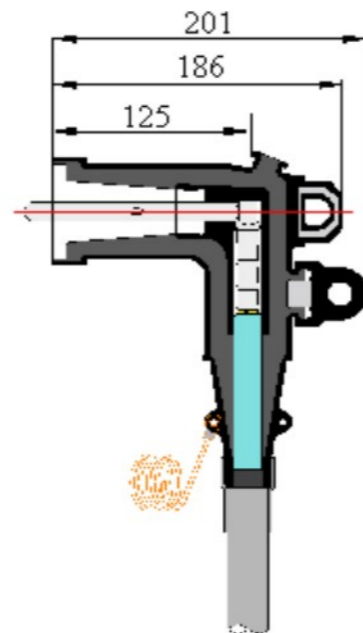
Interface assorting size complies with  
Type: WAST-15/200



## American Style 200A/15kV Loadbreak Elbow Connectors

Interface assorting size complies with IEEE386  
WAZT-15/200

Cable section: 35-120mm<sup>2</sup>



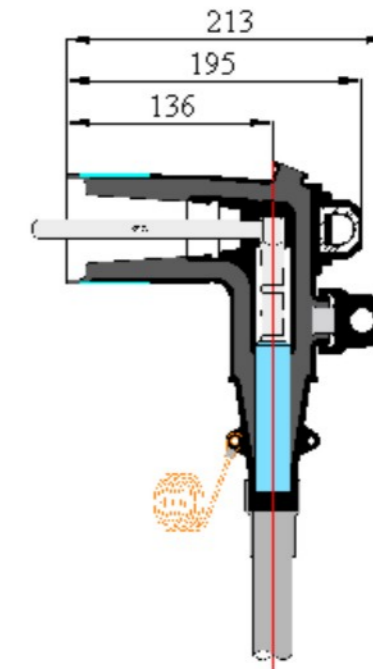
Number	Product Number	Cable Insulation Outer Diameter	Main body	Lug
1	WALE215B02C3	17-20mm	2#	35 mm <sup>2</sup> Copper Lug
2	WALE215B03C3	17-20mm	2#	50 mm <sup>2</sup> Copper Lug
3	WALE215C04C3	20-23mm	3#	70 mm <sup>2</sup> Copper Lug
4	WALE215C06C3	20-23mm	3#	95 mm <sup>2</sup> Copper Lug
5	WALE215D07C3	23-25mm	4#	120mm <sup>2</sup> Copper Lug

## American Style 200A/25kV Loadbreak Elbow Connectors

Interface assorting size complies with IEEE386

Type: WAZT-25/200

Cable section: 25-120mm<sup>2</sup>



Number	Product Number	Cable Insulation Outer Diameter	Main body	Lug
1	WALE225A01C3	16-21 mm	1#	25 mm <sup>2</sup> Copper Lug
2	WALE225A02C3	16-21mm	1#	35 mm <sup>2</sup> Copper Lug
3	WALE225B03C3	18-24mm	2#	50 mm <sup>2</sup> Copper Lug
4	WALE225C03C3	22-28mm	3#	50 mm <sup>2</sup> Copper Lug
5	WALE225C04C3	22-28mm	3#	70 mm <sup>2</sup> Copper Lug
6	WALE225C06C3	22-28mm	3#	95 mm <sup>2</sup> Copper Lug
7	WALE225D06C3	25-32mm	4#	95mm <sup>2</sup> Copper Lug
8	WALE225D07C3	25-32mm	4#	120 mm <sup>2</sup> Copper Lug

Number

Number	1	2	3	4	5	6	7	8	9
Code	W	A	LE	2	25	A~D	01~07	C/A	3
Instruction	WO	A	Loadbreak	200A	25 kV	A~D:The code of connector	01~07:The code of lug	C:Cu lug A:Al lug	3 pcs/suit

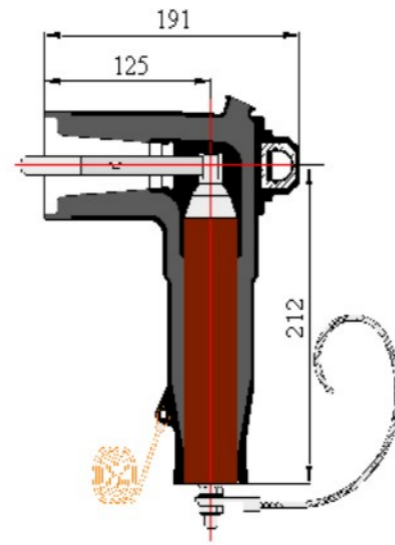


## American Style 200A Elbow Type Surge Arrester

### MOA

Interface assorting size complies with IEEE386

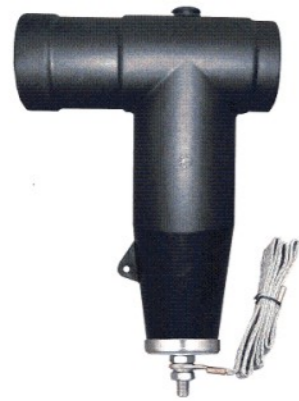
Type: WAZT-BLQ-17/45 ,WAZT-BLQ-17/50



Front connector surge Arrester

Type:WEBYH5WS-17/50

WEBYH5WZ-17/45



Rearconnector surge Arrester

Type:WEBKYH5WS-17/50 ;

WEBKYH5WZ-17/45

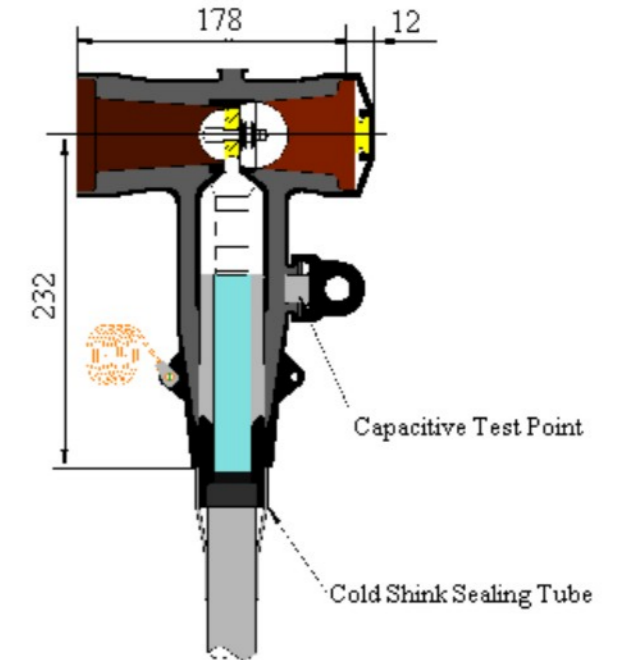


Surge Arrester Property Data:			
Item	Unit	Data	
Type	-	YH5WS-17/50	YH5WZ-17/45
System nominal voltage	kV	8.7/15	8.7/15
MOA rated voltage	kV	17	17
Continuous operation voltage	kV	13.6	13.6
Reference voltage at D.C. 1mA	kV	≥25	≥24
Steep current impulse residual voltage	kV	≤57.5	≤51.8
Lightning impulse residual voltage	kV	≤50	≤45
Switching impulse residual voltage	kV	≤42.5	≤35
Long duration current impulse withstand	A	100	200
High current impulse withstand	kA	100	100

## American Style T type Connectors

Interface assorting size complies with IEEE386

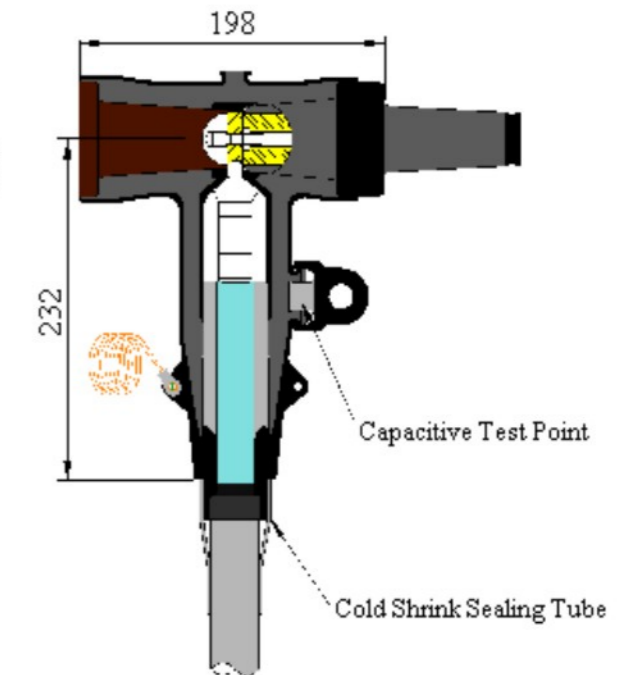
Type: WABT15/600



## American Style T- II Type Connectors

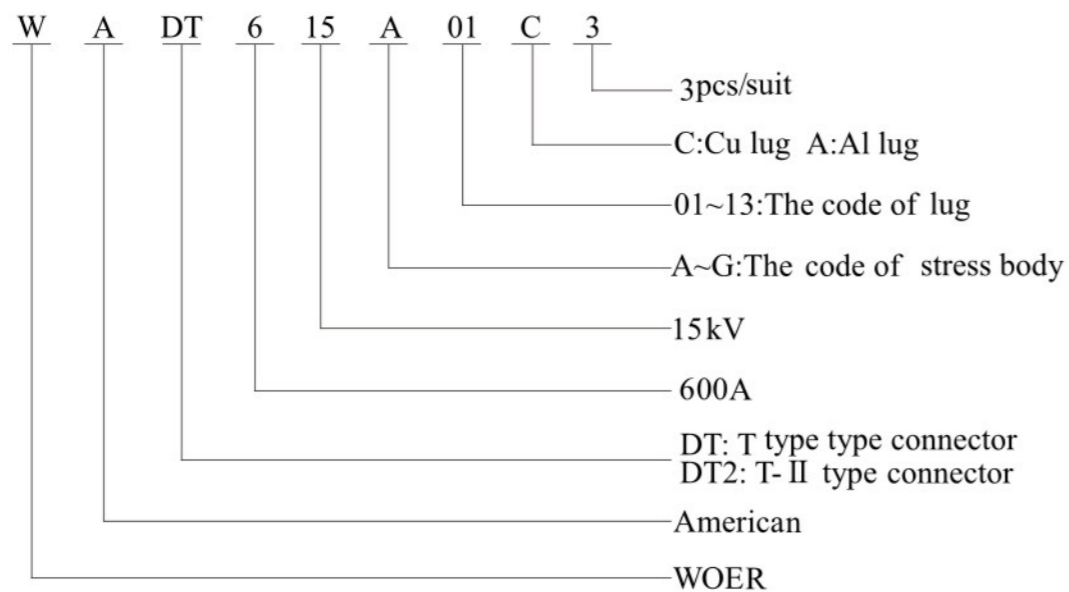
Interface assorting size complies with IEEE386 Figure

Type: WABT2-15/600





Number	WABT-15/600	WABT2-15/600	Stress Control	Cable Insulation	Lug
	Product Number	Product Number	body Indiameter (mm)	Outer Diameter (mm)	
1	WADT615A01C3	WADT2615A01C3	Ø 12	Ø16-18	25 mm <sup>2</sup> Copper Lug
2	WADT615B02C3	WADT2615B02C3	Ø 13.5	Ø17-20	35 mm <sup>2</sup> Copper Lug
3	WADT615B03C3	WADT2615B03C3	Ø 13.5	Ø17-20	50 mm <sup>2</sup> Copper Lug
4	WADT615C04C3	WADT2615B04C3	Ø 16.5	Ø20-23	70 mm <sup>2</sup> Copper Lug
5	WADT615C06C3	WADT2615B06C3	Ø 16.5	Ø20-23	95 mm <sup>2</sup> Copper Lug
6	WADT615D07C3	WADT2615D07C3	Ø 19.5	Ø23-26	120 mm <sup>2</sup> Copper Lug
7	WADT615D08C3	WADT2615D08C3	Ø 19.5	Ø23-26	150 mm <sup>2</sup> Copper Lug
8	WADT615E10C3	WADT2615E10C3	Ø 22.5	Ø26-30	185 mm <sup>2</sup> Copper Lug
9	WADT615E11C3	WADT2615E11C3	Ø 22.5	Ø26-30	240 mm <sup>2</sup> Copper Lug
10	WADT615F12C3	WADT2615F12C3	Ø 24.5	Ø30-33	300 mm <sup>2</sup> Copper Lug
11	WADT615G13C3	WADT2615G13C3	Ø 27.5	Ø33-36	400 mm <sup>2</sup> Copper Lug



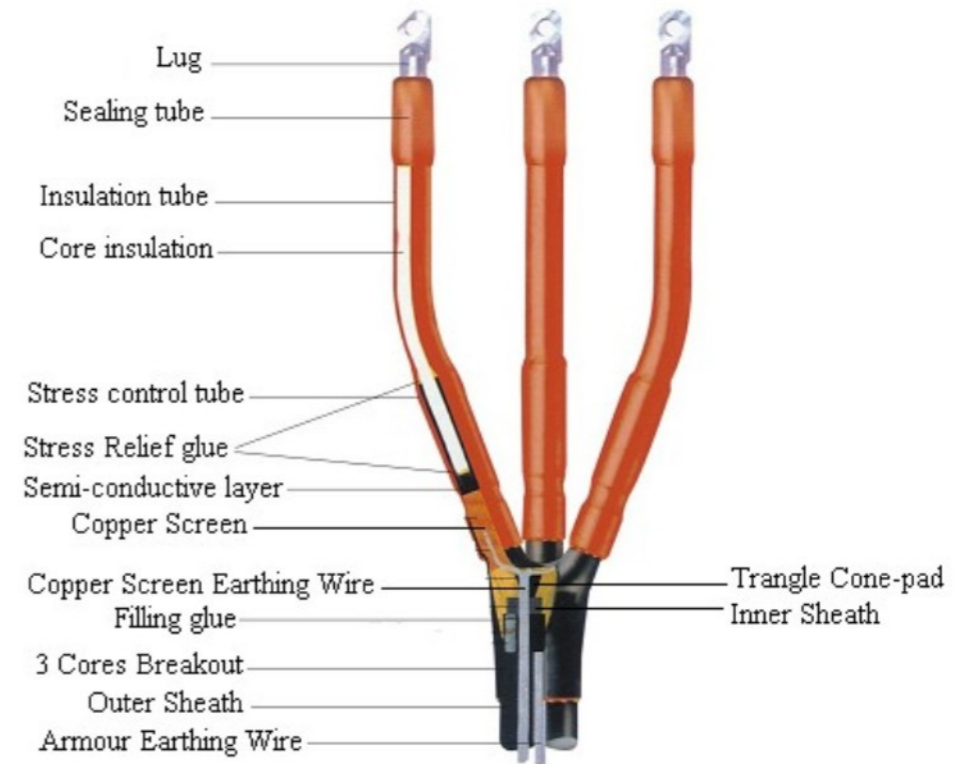
## WOER Heat Shrink Terminations Kits 1-36kV



**Application :**  
Heat shrink terminations are designed to cover 1/3 cores plastic insulated. cables(with XLPE, PVC , PE, EPR outer sheath) with steel wire or tape. armour, copper wire or tape screen. They are suitable for dealing with the end place of cable disconnection.

**Features:**

- With Double earthing wires, repairing is easier.
- With triangle cone-pad,insulation is more convenient.
- Wide cross section range.

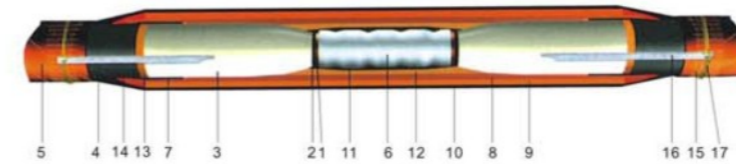


10kV/20kV Heat Shrinkable 3 Cores Termination



VOLTAGE	CORES	DESCRIPTION	CABLE SIZE	PRODUCT NUMBER
18/30kV (36)	3/1	Indoor	25-50mm <sup>2</sup> 70-120mm <sup>2</sup> 150-240mm <sup>2</sup> 300-400mm <sup>2</sup> 500-630mm <sup>2</sup>	18/30kVRSNY-3/1(1/1) 18/30kVRSNY-3/2(1/2) 18/30kVRSNY-3/3(1/3) 18/30kVRSNY-3/4(1/4) 18/30kVRSNY-3/5(1/5)
	3/1	Outdoor	25-50mm <sup>2</sup> 70-120mm <sup>2</sup> 150-240mm <sup>2</sup> 300-400mm <sup>2</sup> 500-630mm <sup>2</sup>	18/30kVRSWY-3/1(1/1) 18/30kVRSWY-3/2(1/2) 18/30kVRSWY-3/3(1/3) 18/30kVRSWY-3/4(1/4) 18/30kVRSWY-3/5(1/5)
12/20kV (24)	3/1	Indoor	25-50mm <sup>2</sup> 70-120mm <sup>2</sup> 150-240mm <sup>2</sup> 300-400mm <sup>2</sup> 500-630mm <sup>2</sup>	12/20kVRSNY-3/1(1/1) 12/20kVRSNY-3/2(1/2) 12/20kVRSNY-3/3(1/3) 12/20kVRSNY-3/4(1/4) 12/20kVRSNY-3/5(1/5)
	3/1	Outdoor	25-50mm <sup>2</sup> 70-120mm <sup>2</sup> 150-240mm <sup>2</sup> 300-400mm <sup>2</sup> 500-630mm <sup>2</sup>	12/20kVRSWY-3/1(1/1) 12/20kVRSWY-3/2(1/2) 12/20kVRSWY-3/3(1/3) 12/20kVRSWY-3/4(1/4) 12/20kVRSWY-3/5(1/5)
8.7/15kV(17.5)	3/1	Indoor	25-50mm <sup>2</sup> 70-120mm <sup>2</sup> 150-240mm <sup>2</sup> 300-400mm <sup>2</sup> 500-630mm <sup>2</sup>	8.7/15kVRSNY-3/1(1/1) 8.7/15kVRSNY-3/2(1/2) 8.7/15kVRSNY-3/3(1/3) 8.7/15kVRSNY-3/4(1/4) 8.7/15kVRSNY-3/5(1/5)
	3/1	Outdoor	25-50mm <sup>2</sup> 70-120mm <sup>2</sup> 150-240mm <sup>2</sup> 300-400mm <sup>2</sup> 500-630mm <sup>2</sup>	8.7/15kVRSWY-3/1(1/1) 8.7/15kVRSWY-3/2(1/2) 8.7/15kVRSWY-3/3(1/3) 8.7/15kVRSWY-3/4(1/4) 8.7/15kVRSWY-3/5(1/5)
6/10kV(12)	3/1	Indoor	25-50mm <sup>2</sup> 70-120mm <sup>2</sup> 150-240mm <sup>2</sup> 300-400mm <sup>2</sup> 500-630mm <sup>2</sup>	6/10kVRSNY-3/1(1/1) 6/10kVRSNY-3/2(1/2) 6/10kVRSNY-3/3(1/3) 6/10kVRSNY-3/4(1/4) 6/10kVRSNY-3/5(1/5)
	3/1	Outdoor	25-50mm <sup>2</sup> 70-120mm <sup>2</sup> 150-240mm <sup>2</sup> 300-400mm <sup>2</sup> 500-630mm <sup>2</sup>	6/10kVRSWY-3/1(1/1) 6/10kVRSWY-3/2(1/2) 6/10kVRSWY-3/3(1/3) 6/10kVRSWY-3/4(1/4) 6/10kVRSNY-3/5(1/5)
0.6/1kV(1.2)	4or5or3or2or1	Indoor/Outdoor	4-6mm <sup>2</sup> 10-16mm <sup>2</sup> 25-50mm <sup>2</sup> 70-120mm <sup>2</sup> 150-240mm <sup>2</sup> 300-400mm <sup>2</sup>	0.6/1kVRST-4(5,3,2,1)/(-1) 0.6/1kVRST-4(5,3,2,1)/0 0.6/1kVRST-4(5,3,2,1)/1 0.6/1kVRST-4(5,3,2,1)/2 0.6/1kVRST-4(5,3,2,1)/3 0.6/1kVRST-4(5,3,2,1)/4

## WOER Heat Shrink Cable Joints 1-36 kV



1. Conductor
2. Inner semi-conductive layer
3. XLPE insulation
4. Outer semi-conductive layer
5. Copper screen tape
6. Connecting pipe
7. Stress control tube
8. Inner insulation tube
9. Outer insulation tube
10. Semi-conductive tube
11. Semi-conductive tape
12. Filling glue
13. Stress-relief glue
14. Sealing glue
15. Copper screen net
16. Earthing wire
17. Binding wire

Heat shrink terminations and joints 1-36kV are mainly applied to deal with disconnection place of cable below 36kV system voltage. The products are classified single or three cores.

The 1-36kV indoor/ outdoor heat shrink terminations are suit for dealing with the end place of cable disconnection

Features:

- With 3-layer sealing technology, more safe and reliable.
- With long insulation tube, resolved the problem creepage.

VOLTAGE	CORES	CABLE SIZE	PRODUCT NUMBER
18/30kV (36)	3/1	25-50mm <sup>2</sup>	18/30kVRSJY-3/1(1/1)
		70-120mm <sup>2</sup>	18/30kVRSJY-3/2(1/2)
12/20kV (24)	3/1	150-240mm <sup>2</sup>	18/30kVRSJY-3/3(1/3)
		300-400mm <sup>2</sup>	18/30kVRSJY-3/4(1/4)
8.7/15kV(17.5)	3/1	500-630mm <sup>2</sup>	18/30kVRSJY-3/5(1/5)
		25-50mm <sup>2</sup>	12/20kVRSJY-3/1(1/1)
6/10kV(12)	3/1	70-120mm <sup>2</sup>	12/20kVRSJY-3/2(1/2)
		150-240mm <sup>2</sup>	12/20kVRSJY-3/3(1/3)
0.6/1kV(1.2)	4or5or3or2or1	300-400mm <sup>2</sup>	12/20kVRSJY-3/4(1/4)
		500-630mm <sup>2</sup>	12/20kVRSJY-3/5(1/5)
8.7/15kV(17.5)	3/1	25-50mm <sup>2</sup>	8.7/15kVRSJY-3/1(1/1)
		70-120mm <sup>2</sup>	8.7/15kVRSJY-3/2(1/2)
6/10kV(12)	3/1	150-240mm <sup>2</sup>	8.7/15kVRSJY-3/3(1/3)
		300-400mm <sup>2</sup>	8.7/15kVRSJY-3/4(1/4)
0.6/1kV(1.2)	4or5or3or2or1	500-630mm <sup>2</sup>	8.7/15kVRSJY-3/5(1/5)
		25-50mm <sup>2</sup>	6/10kVRSJY-3/1(1/1)
12/20kV (24)	3/1	70-120mm <sup>2</sup>	6/10kVRSJY-3/2(1/2)
		150-240mm <sup>2</sup>	6/10kVRSJY-3/3(1/3)
18/30kV (36)	3/1	300-400mm <sup>2</sup>	6/10kVRSJY-3/4(1/4)
		500-630mm <sup>2</sup>	6/10kVRSJY-3/5(1/5)
0.6/1kV(1.2)	4or5or3or2or1	4-6mm <sup>2</sup>	0.6/1kVRSJ-4(5,3,2,1)/(-1)
		10-16mm <sup>2</sup>	0.6/1kVRSJ-4(5,3,2,1)/0
6/10kV(12)	3/1	25-50mm <sup>2</sup>	0.6/1kVRSJ-4(5,3,2,1)/1
		70-120mm <sup>2</sup>	0.6/1kVRSJ-4(5,3,2,1)/2
12/20kV (24)	3/1	150-240mm <sup>2</sup>	0.6/1kVRSJ-4(5,3,2,1)/3
		300-400mm <sup>2</sup>	0.6/1kVRSJ-4(5,3,2,1)/4



## WRSJG

### Heat Shrinkable Anti-tracking Insulation Tube

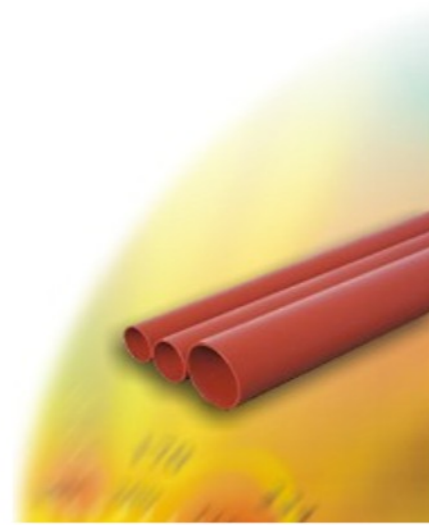
Heat Shrink Anti-tracking Tubes are Used In Medium

Voltage Cable terminations up to 36 KV.

The tubes are produced from high quality non tracking cross linked polyolefin material that offers exceptional insulation and long term service reliability.

#### Features

- Material: polyolefin, inner coated with adhesive on the end.
- Operating temperature: -45°C ~ 105°C
- Shrink temperature: Start at 100°C, and shrink totally at 130°C
- Standard Color: red



#### Dimensions

Part No.	Diameter		recovered wall thickness Nom.(mm)	standard length(mm)
	As supplied Min. (mm)	After recovery Max.(mm)		
WRSJG-30/12	30	12	2.2	600-1200
WRSJG-35/14	35	14	2.3	600-1200
WRSJG-35/13	35	13	3.0	600-1200
WRSJG-40/17	40	17	2.3	600-1200
WRSJG-40/15	40	15	3.0	600-1200
WRSJG-50/22	50	22	2.4	600-1200
WRSJG-50/20	50	20	3.0	600-1200
WRSJG-55/24	55	24	3.2	600-1200
WRSJG-60/26	60	26	3.2	600-1200
WRSJG-70/29	70	29	3.2	600-1200
WRSJG-75/35	75	35	3.2	600-1200
WRSJG-80/36	80	36	3.2	600-1200
WRSJG-90/41	90	41	3.5	600-1200
WRSJG-100/45	100	45	3.5	600-1200

## Technical Data :

Property	Test Method	Standard Value
Operating temperature	IEC 216	45°C to +105°C
Tensile strength	ASTM-D 2671	≥10MPa
Elongation at break	ASTM-D 2671	≥400%
Tensile strength after aging	ASTM-D-2671/130°C,168hrs	≥8MPa
Elongation at break after aging	ASTM-D-2671/130°C,168hrs	≥320%
Dielectric strength	IEC 243	≥20kV/mm
Tracking resistant	ASTM-D-2303	3.75Kv, 1hr, pass
Volume resistance	ASTM-D-2303	≥1×10 <sup>14</sup> Ω·cm
Dielectric constant	IEC 250	3.0
Longitudinal shrinkage	-	≤10%
Eccentricity	ASTM-D-2671	≤30%
Water absorption	ISO 62	≤0.1%
Flammability (Oxygen index)	IEC 93	≥28
Copper corrosion	ASTM-D-2671	120°C,168hr, no corrosion
Cold bend	ASTM-D-2671	-40°C, 4hrs, no cracking



## WDWT

### Heat Shrink Semi-conductive/Insulation Double Wall Tube

It is made by heat shrinkable insulating material and heat shrinkable semi-conductive material, via special processing, with good insulation in its inner layer and good semi-conduction in its outer layer, and provides reliable shield protection.

It can be applied to power cable straight joint for insulation and outer-shielding layer up to 35kV, and other places where require insulation and shield.



### Features

- Material: cross-linked polymeric
- Operating temperature: -40°C ~ 100°C
- Shrink temperature: Start at 100°C, and shrink totally at 130°C
- Standard Color: black

### Technical Data :

#### Inner Insulation Layer

Property	Test Method	Standard Value
Operating temperature	IEC 216	-40°C to +100°C
Tensile strength	ASTM-D-638	≥12MPa
Elongation at break	ASTM-D-638	≥400%
Tensile strength after aging	ASTM-D-2671/130°C, 168hrs	≥10MPa
Elongation at break after aging	ASTM-D-2671/130°C, 168hrs	≥320%
Volume resistance	IEC 93	≥1×10 <sup>15</sup> Ω·cm
Dielectric constant	IEC 250	≥25
Longitudinal shrinkage	--	≤10%
Eccentricity	ASTM-D-2671	≤30%
Water absorption	ISO 62	≤0.1%

### Dimensions

Part No.	Inner Diameter		recovered wall thickness Nom.(mm)	standard length(mm)
	As supplied Min. (mm)	After recovery Max. (mm)		
WRSFG-30/12	30	12	6.0±0.3	300-1200
WRSFG-35/13	35	13	6.0±0.3	300-1200
WRSFG-45/17	45	17	6.0±0.3	300-1200
WRSFG-55/21	55	21	6.0±0.3	300-1200
WRSFG-65/26	65	26	6.0±0.3	300-1200
WRSFG-85/30	85	30	7.5±0.3	300-1200
WRSFG-100/38	100	38	7.5±0.3	300-1200
WRSFG-120/45	120	45	7.5±0.3	300-1200

### Outer Semi-Conductive Layer

Property	Test Method	Standard Value
Operating temperature	IEC 216	-40°C to +100°C
Tensile strength	ASTM-D-638	≥12MPa
Elongation at break	ASTM-D-638	≥300%
Tensile strength after aging	ASTM-D-2671/130°C, 168hrs	≥10MPa
Elongation at break after aging	ASTM-D-2671/130°C, 168hrs	≥240%
Volume resistance	IEC 93	10 <sup>2</sup> ~10 <sup>3</sup> Ω·cm
Longitudinal shrinkage	-	≤15%
Eccentricity	ASTM-D-2671	≤30%
Water absorption	ISO 62	≤0.1%



## WRSHJG

### Heat Shrinkable Underground Insulation Tube

The product has excellent electrical insulation properties, is widely used in the recovery of the main insulation layer of 36kV and below power cable joints, and other places where require insulation.



#### Features

- Material: polyolefin, cross-linked polymericinner .
- Operating temperature: -45°C~105°C
- Shrink temperature: Start at 100°C, and shrink totally at 130°C
- Standard Color: red

#### Dimensions

Part No.	Diameter		recovered wall thickness Nom.(mm)	standard length(mm)
	As supplied Min. (mm)	After recovery Max.(mm)		
WRSHJG-30/12	30	12	3.7	500-850
WRSHJG-35/14	35	14	4.0	500-850
WRSHJG-40/17	40	17	4.0	500-850
WRSHJG-45/18	45	18	4.0	500-850
WRSHJG-50/22	50	22	4.0	500-850
WRSHJG-55/25	55	25	4.0	500-850
WRSHJG-55/22	55	22	5.5	500-850
WRSHJG-60/25	60	25	6.0	500-850
WRSHJG-65/26	65	26	6.0	500-850
WRSHJG-70/29	70	29	6.0	500-850
WRSHJG-80/35	80	35	6.0	500-850
WRSHJG-85/36	85	36	6.0	500-850
WRSHJG-90/38	90	38	6.0	500-850
WRSHJG-100/42	100	42	6.0	500-850

#### Technical Data :

Property	Test Method	Standard Value
Operating temperature	IEC 216	-45°Cto+105°C
Tensile strength	ASTM-D 2671	≥12MPa
Elongation at break	ASTM-D 2671	≥300%
Tensile strength after aging	ASTM-D-2671/130°C,168hrs	≥10MPa
Elongation at break after aging	ASTM-D-2671/130°C,168hrs	≥250%
Dielectric strength	IEC 243	≥25kV/mm
Volume resistance	ASTM-D-2303	≥1×10 <sup>15</sup> Ω·cm
Dielectric constant	IEC 250	3.0
Longitudinal shrinkage	-	≤10%
Eccentricity	ASTM-D-2671	≤30%
Water absorption	ISO 62	≤0.1%
Copper corrosion	ASTM-D-2671	120°C,168hr, no corrosion
Cold bend	ASTM-D-2671	-40°C, 4hrs, no cracking



## WRSYL

### Heat Shrink Stress Control Tube

provide effective stress control for termination kits and straight joints for XLPE Cable and PILC Cable up to 36kV.

### Features

- Material: cross-linked polymeric
- Operating temperature: -40°C~100°C
- Shrink temperature: Start at 100°C, and shrink totally at 130°C
- Standard Color: black



### Dimensions

Part No.	Inner Diameter		recovered wall thickness Nom.(mm)	standard length(mm)
	As supplied Min. (mm)	After recovery Max. (mm)		
WRSYL-30/11	30	11	2.1±0.1	100-1200
WRSYL-35/14	35	14	2.1±0.1	100-1200
WRSYL-40/17	40	17	2.1±0.1	100-1200
WRSYL-45/20	45	20	2.1±0.1	100-1200
WRSYL-55/25	55	24	2.4±0.1	100-1200
WRSYL-70/28	70	29	3.3±0.1	100-1200
WRSYL-85/40	85	40	3.6±0.1	100-1200

### Technical Data :

Property	Test Method	Standard Value
Operating temperature	IEC 216	-40°Cto+100°C
Tensile strength	ASTM-D-638	≥10MPa
Elongation at break	ASTM-D-638	≥300%
Tensile strength after aging	ASTM-D-2671/130°C,168hrs	≥8MPa
Elongation at break after aging	ASTM-D-2671/130°C,168hrs	≥220%
Volume resistance	IEC 93	1×10 <sup>8-10</sup> Ω·cm
Dielectric constant	IEC 250	≥20
Longitudinal shrinkage	--	≤10%
Eccentricity	ASTM-D-2671	≤30%
Water absorption	ISO 62	≤0.1

## WRSBG

### Heat Shrinkable Semi-conductive Tube

Heat Shrink Semi-conductive Tubes are use in Cable Joints up to 36 kV to provide insulation screen on the build-up insulation over connectors. The Semi Conductive Tubing are made from thermally stabilised cross linked Semi-conductive Polymeric material.



### Features

- Material: cross-linked polymeric
- Operating temperature: -40°C~100°C
- Shrink temperature: Start at 110°C, and shrink totally at 130°C
- Standard Color: black

### Dimensions

Part No.	Inner Diameter		recovered wall thickness Nom.(mm)	standard length(mm)
	As supplied Min.(mm)	After recovery Max.(mm)		
WRSBG-45/18	45	18	2.4±0.1	400-1200
WRSBG-50/20	50	20	2.4±0.1	400-1200
WRSBG-55/23	55	23	2.4±0.1	400-1200
WRSBG-60/24	60	24	2.4±0.1	400-1200
WRSBG-65/25	65	25	2.4±0.1	400-1200
WRSBG-75/29	75	29	2.9±0.1	400-1200
WRSBG-90/30	90	30	2.9±0.1	400-1200
WRSBG-100/36	100	36	2.9±0.1	400-1200
WRSBG-120/37	120	37	2.9±0.1	400-1200

### Technical Data :

Property	Test Method	Standard Value
Operating temperature	IEC 216	-40°Cto+100°C
Tensile strength	ASTM-D-638	≥14MPa
Elongation at break	ASTM-D-638	≥300%
Tensile strength after aging	ASTM-D-2671/130°C,168hrs	≥12MPa
Elongation at break after aging	ASTM-D-2671/130°C,168hrs	≥240%
Volume resistance	ASTM-D-2303	10 <sup>2</sup> ~10 <sup>3</sup> Ω·cm
Longitudinal shrinkage	-	≤15%
Eccentricity	ASTM-D-2671	≤30%
Water absorption	ISO 62	≤0.1%



## WRSHG

### Heat Shrinkable Protective Tube

Excellent insulation and rapid shrink.

Mainly used for the outer protection of cable straight joints.

#### Features

- Material: cross-linked polyolefin
- Operating temperature: -45°C~105°C
- Shrink temperature: Start at 100°C, and shrink totally at 130°C
- Color: black



#### Dimensions

Part No.	Inner Diameter		recovered wall thickness Nom.(mm)	standard length(mm)
	As supplied Min.(mm)	After recovery Max.(mm)		
WRSHG-10/5	10	5	1.2	275-1000
WRSHG-15/7	15	7	1.3	275-1000
WRSHG-20/9	20	9	1.7	275-1000
WRSHG-30/11	30	11	1.8	275-1000
WRSHG-35/13	35	13	2.0	275-1000
WRSHG-40/17	45	17	2.2	275-1000
WRSHG-50/22	50	22	2.5	800-1200
WRSHG-60/23	60	23	2.5	800-1200
WRSHG-80/29	80	29	2.9	850-1200
WRSHG-85/30	85	30	2.9	850-1200
WRSHG-100/39	100	39	3.0	850-1200
WRSHG-120/45	120	45	3.0	850-1200
WRSHG-140/56	140	56	3.5	850-1200
WRSHG-160/57	160	57	3.5	850-1200
WRSHG-180/61	180	61	4.0	850-1200
WRSHG-200/70	200	70	4.5	850-1200
WRSHG-230/72	230	72	4.5	850-1200
WRSHG-240/83	240	83	4.5	850-1200
WRSHG-300/93	300	98	5.0	850-1200

#### Technical Data :

Property	Test Method	Standard Value
Tensile strength	ASTM-D-638	≥13MPa
Elongation at break	ASTM -D- 638	≥300%
Tensile strength after aging	ASTM-D-2671/120°C,168hrs	≥11MPa
Elongation at break after aging	ASTM-D-2671/120°C,168hrs	≥230%
Volume resistance	ASTM-D-2303	≥1×10 <sup>14</sup> Ω·cm
Dielectric strength	IEC 243	≥20kV/mm
Longitudinal shrinkage	-	≤ 10%
Eccentricity	ASTM-D-2671	≤30%
Water absorption	ISO 62	≤0.1%



## WMPG Heat shrinkable Tube for Busbar

### Performance Standard:DL/T1059-2007

Heat shrinkable tube on bus bar can be used in HV/LV circuitbreaker-cabinet in power plant & Substation for bus bar protective/insulation material-against short-circuit due to small animal Creeping to the energized bus bar.Protective for human being touching the energized parts, Anti-pollution & condensate caused flash-over. At the same time it can reduce the distance Between phases and phases to ground and prolong the age of usage.



### Features

- Material: cross-linked polyolefin
- Operating temperature:  $-45^{\circ}\text{C} \sim 105^{\circ}\text{C}$
- Shrink temperature: Start at  $100^{\circ}\text{C}$ , and shrink totally at  $130^{\circ}\text{C}$
- Color: Red, Green, Yellow, Blue, Black

### Product Dimensions (10kV Heat shrinkable tube on bus bar)

Order ref. Number	As supplied		After recovery		Suitable for rectangular Bus bar(mm)	Suitable for Circular Bus bar(mm)
	ID	Wall Thickness	ID	Wall Thickness		
Φ20	≥20	1.2	≤8	2.5±0.1	20	15
Φ25	≥25	1.2	≤11	2.5±0.1	25	15
Φ30	≥30	1.2	≤13	2.5±0.1	30	20
Φ40	≥40	1.2	≤16	2.5±0.1	40	25
Φ50	≥50	1.3	≤18	2.8±0.1	50	30
Φ60	≥60	1.3	≤25	2.8±0.1	60	40
Φ70	≥70	1.3	≤29	2.8±0.1	70	50
Φ80	≥80	1.3	≤34	2.8±0.1	80	55
Φ100	≥100	1.3	≤41	2.8±0.1	100	75
Φ120	≥120	1.3	≤48	2.8±0.1	120	85
Φ150	≥150	1.3	≤62	2.8±0.1	150	105
Φ180	≥180	1.3	≤73	2.8±0.1	180	120
Φ210	≥210	1.3	≤84	2.8±0.1	210	130
Φ230	≥230	1.2	≤85	2.8±0.1	230	135
Φ250	≥250	1.5	≤102	3.9±0.2	240	140
Φ275	≥275	1.4	≤102	3.9±0.2	250	145
Φ300	≥300	1.6	≤110	3.9±0.2	300	160

### Product Dimensions(35kV Heat shrinkable tube on bus bar)

Order ref. Number	As supplied		After recovery		Suitable for rectangular Bus bar(mm)	Suitable for Circular Bus bar(mm)
	ID	Wall Thickness	ID	Wall Thickness		
Φ20	≥20	2.0	≤8	4.8±0.2	20	15
Φ25	≥25	2.0	≤10	4.8±0.2	25	15
Φ30	≥30	2.0	≤15	4.8±0.2	30	20
Φ40	≥40	2.0	≤16	4.8±0.2	40	25
Φ50	≥50	2.0	≤20	5.0±0.2	50	25
Φ60	≥60	2.0	≤25	5.2±0.2	60	30
Φ70	≥70	2.0	≤30	5.2±0.2	70	35
Φ80	≥80	2.0	≤32	5.2±0.2	80	40
Φ100	≥100	2.0	≤40	5.2±0.2	100	75
Φ120	≥120	2.0	≤50	5.2±0.2	120	85
Φ150	≥150	2.0	≤60	5.2±0.2	150	105
Φ180	≥180	2.2	≤70	5.6±0.2	180	120
Φ210	≥210	2.1	≤80	5.6±0.2	210	130

### Technical Data:

(Property)	(Test Method)	(Standard Value)
Operating temperature	IEC 216	$-45^{\circ}\text{C}$ to $+105^{\circ}\text{C}$
Tensile strength	ASTM-D 2671	≥13MPa
Elongation at break	ASTM-D 2671	≥300
Tensile strength after aging	ASTM-D-2671/120°C,168hrs	≥11MPa
Elongation at break after aging	ASTM-D-671/120°C,168hrs	≥220%
Dielectric strength	IEC 243	≥25kV/mm
Tracking resistant	ASTM-D-2303	3.75Kv, 1hr, pass
Volume resistance	ASTM-D-2303	≥ $1 \times 10^{14} \Omega \cdot \text{cm}$
Dielectric constant	IEC 250	3.0
Longitudinal shrinkage	-	≤10%
Eccentricity	ASTM-D-267	≤30%
Water absorption	ISO 62	≤0.1%
Flammability (Oxygen index)	IEC 93	≥28
Copper corrosion	ASTM-D-2671	120°C,168hr, no corrosion
Cold bend	ASTM-D-2671	-40°C, 4hrs, no cracking
Minimum shrink temperature	-	100°C
Minimum fully recovered temperature	-	130°C



## WRSZT

### Cross-linked Polyolefin Cable Breakout

The product is mainly used for cable insulation and sealing over the crutch of multi-core cable, there are two core, three core, four core, five-finger of the points. Conductive breakout provide effective conductive screen and sealing protection to the cable termination.

#### Features

- Shrink ratio accommodates a wide range of cables
- Boots for 2, 3, 4 and 5 way cable
- Strain relief and mechanical protection
- Thermoplastic adhesive liner
- Continuous operating temperature:  $-45^{\circ}\text{C} \sim 105^{\circ}\text{C}$ .
- Shrink temperature:  $135^{\circ}\text{C}$



#### Dimensions

Order ref. Number		Breakout main diameter		Finger diameter		Full length (mm)	Finger length (mm)
		As supplied (mm)	After recovery (mm)	As supplied (mm)	After recovery (mm)		
2 cores breakout	WRSZT2-27/12	≥27	≤12	≥12	≤6	135±5	55±5
	WRSZT2-40/14	≥40	≤13	≥20	≤8	145±5	60±5
	WRSZT2-50/15	≥50	≤15	≥25	≤10	145±5	65±5
	WRSZT2-65/25	≥65	≤25	≥35	≤12	140±5	55±5
	WRSZT2-72/25	≥72	≤25	≥40	≤12	140±5	55±5
3 cores breakout	WRSZT3-27/17	≥27	≤17	≥11	≤6	130±5	50±5
	WRSZT3-50/22	≥50	≤22	≥18	≤7	165±5	60±5
	WRSZT3-60/28	≥60	≤28	≥25	≤9	170±5	65±5
	WRSZT3-70/39	≥70	≤39	≥30	≤14	215±5	80±5
	WRSZT3-85/45	≥85	≤45	≥40	≤16	220±5	90±5
	WRSZT3-105/53	≥105	≤53	≥42	≤19	225±5	90±5
	WRSZT3-125/63	≥125	≤63	≥58	≤25	220±5	85±5
	WRSZT3-140/63	≥140	≤63	≥65	≤25	220±5	85±5
4 cores breakout	WRSZT4-40/18	≥40	≤18	≥10	≤6	130±5	55±5
	WRSZT4-50/24	≥50	≤24	≥16	≤7	150±5	55±5
	WRSZT4-70/32	≥70	≤32	≥25	≤10	175±5	75±5
	WRSZT4-80/44	≥80	≤44	≥30	≤13	215±5	60±5
	WRSZT4-90/44	≥90	≤44	≥35	≤13	215±5	60±5
	WRSZT4-110/51	≥110	≤51	≥40	≤17	225±5	55±5
5 cores breakout	WRSZT5-45/21	≥45	≤21	≥12	≤5	150±5	55±5
	WRSZT5-55/29	≥55	≤29	≥16	≤8	170±5	65±5
	WRSZT5-70/38	≥70	≤38	≥25	≤10	175±5	65±5
	WRSZT5-90/49	≥90	≤49	≥30	≤13	185±5	80±5
	WRSZT5-120/49	≥120	≤49	≥39	≤14	190±5	80±5

## Technical Data

Property	Test Method	Standard Value		
		Insulated breakout	Oil resistant breakout	Conductive breakout
Operating temperature	IEC 216	$-55^{\circ}\text{C} \sim 100^{\circ}\text{C}$	$-20^{\circ}\text{C} \sim 100^{\circ}\text{C}$	$-55^{\circ}\text{C} \sim 100^{\circ}\text{C}$
Tensile strength	ASTM-D-2671	≥13MPa	≥12MPa	≥12MPa
Elongation	ASTM-D-2671	≥300%	≥300%	≥300%
Tensile strength after thermal aging	ASTM-D-2671 130°C/168hrs	≥11MPa	≥10MPa	≥10MPa
Elongation at break after thermal aging	ASTM-D-2671 130°C/168hrs	≥230%	≥230%	≥230%
Water absorption	ISO 62	≤0.1%	≤0.1%	≤0.1%
Volume resistance	IEC 93	≥ $1 \times 10^{14} \Omega \cdot \text{cm}$	≥ $1 \times 10^{14} \Omega \cdot \text{cm}$	$10^2 \sim 10^3 \Omega \cdot \text{cm}$
Oil resistance (Tensile strength after dipping)	ASTM-D-2671 70# cable oil /168hrs	—	≥10MPa	—
Oil resistance (Elongation at break after dipping)	ASTM-D-2671 70# cable oil /168hrs	—	≥230%	—
Dielectric strength	IEC243	≥20kV/mm	≥20kV/mm	—

**Remark: Conductive breakout general is three cores breakout.**

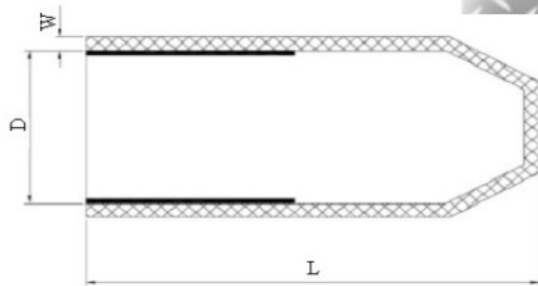
## WRSFM

### Heat Shrinkable Cable End Caps

Heat shrinkable cable end cap has a good waterproof seal, Widely used in power cables and communication cables storage at the end of treatment, Also be used for street lamps and low voltage operation of the cable end of the deal.

#### Features

- 3:1 shrink ratio
- Superior resistance to weathering,
- Resistant to common fluids and
- Standard adhesive liner provides
- Coated hot melt adhesive resists
- Continuous operating temperature:  $-45^{\circ}\text{C} \sim 105^{\circ}\text{C}$
- Shrink temperature:  $130^{\circ}\text{C}$



#### Dimensions

Part No.	D Main diameter		L Full length (mm)	Wall thickness	
	As supplied (mm)	After recovery (mm)		As supplied (mm)	After recovery (mm)
WRSFM-11/6	$\geq 11$	$\leq 6$	$\geq 30$	$0.7 \pm 0.1$	$\geq 1.1$
WRSFM -16/8	$\geq 16$	$\leq 8$	$\geq 70$	$1.2 \pm 0.1$	$\geq 2.2$
WRSFM -20/8	$\geq 20$	$\leq 8$	$\geq 70$	$1.2 \pm 0.1$	$\geq 2.2$
WRSFM -25/11	$\geq 25$	$\leq 11$	$\geq 80$	$1.2 \pm 0.1$	$\geq 2.3$
WRSFM -30/16	$\geq 30$	$\leq 16$	$\geq 90$	$1.5 \pm 0.1$	$\geq 2.5$
WRSFM -35/17	$\geq 35$	$\leq 17$	$\geq 90$	$1.5 \pm 0.1$	$\geq 2.5$
WRSFM -40/15	$\geq 40$	$\leq 15$	$\geq 90$	$1.5 \pm 0.1$	$\geq 2.5$
WRSFM -50/26	$\geq 50$	$\leq 26$	$\geq 115$	$1.5 \pm 0.1$	$\geq 2.8$
WRSFM -70/30	$\geq 70$	$\leq 30$	$\geq 125$	$1.8 \pm 0.1$	$\geq 3.2$
WRSFM -100/46	$\geq 100$	$\leq 46$	$\geq 140$	$1.8 \pm 0.1$	$\geq 3.5$
WRSFM -120/57	$\geq 120$	$\leq 57$	$\geq 155$	$1.8 \pm 0.1$	$\geq 3.5$
WRSFM -140/60	$\geq 140$	$\leq 60$	$\geq 180$	$2.0 \pm 0.1$	$\geq 4.0$
WRSFM -250/90	$\geq 250$	$\leq 90$	$\geq 270$	$2.0 \pm 0.1$	$\geq 4.0$

## Technical Data

Property	Test Method	Standard Value
Tensile strength	ASTM-D-2671	$\geq 13\text{MPa}$
Elongation	ASTM-D-2671	$\geq 300\%$
Tensile strength after thermal aging	ASTM-D-2671 (120°C/168hrs)	$\geq 11\text{MPa}$
Elongation at break after thermal aging	ASTM-D-2671 (120°C/168hrs)	$\geq 230\%$
Longitudinal shrinkage	UL 224	$\leq 10\%$
Eccentricity	ASTM-D-2671	$< 30\%$
Water absorption	ISO 62	$\leq 0.1\%$
Volume resistance	IEC 93	$\geq 1 \times 10^{14} \Omega \cdot \text{cm}$
Dielectric strength	IEC243	$\geq 20\text{kV/mm}$
Resistance to stress cracking	ASTM-D-1693 (50°C)	No cracking
Resistance to fungus and decay	ISO 846	Pass



## WRSXP

### Heat Shrink Cable Repair Sleeve

A superior wraparound insulation product that easily installs in repair and splice applications providing excellent insulation and protection for cable jackets .

#### Features

- 3:1 shrink ratio
- High shrink ratio covers even irregular shapes
- Better split resistance than competitive products
- Thermoplastic adhesive liner provides complete environmental protection and insulation
- Continuous operating temperature: -45°C to 105°C
- Shrink temperature: start at 100°C, full recovery at 130°C



#### Dimensions

Part No.	Inner Diameter		recovered wall thickness Nom.(mm)	standard length(mm)
	As supplied Min.(mm)	After recovery Max.(mm)		
WRSXP-30/12	30	13	1.8±0.2	500-1000
WRSXP-40/18	40	18	2.5±0.2	500-1000
WRSXP-50/18	50	18	2.5±0.2	500-1000
WRSXP-60/22	60	22	2.5±0.2	500-1000
WRSXP-85/30	85	30	2.9±0.2	500-1000
WRSXP-100/35	100	35	3.0±0.2	500-1000
WRSXP-120/40	120	40	3.0±0.2	500-1000
WRSXP-150/50	150	50	3.5±0.2	500-1000
WRSXP-160/50	160	50	3.5±0.2	500-1000

#### Technical Data :

Property	Test Method	Standard Value
Tensile strength	ASTM-D-638	≥13MPa
Elongation at break	ASTM -D- 638	≥300%
Tensile strength after aging	ASTM-D-2671/120°C,168hrs	≥11MPa
Elongation at break after aging	ASTM-D-2671/120°C,168hrs	≥230%
Volume resistance	ASTM-D-2303	≥1×10 <sup>14</sup> Ω·cm
Dielectric strength	IEC 243	≥20kV/mm
Longitudinal shrinkage	-	≤ 10%
Eccentricity	ASTM-D-267	≤30%
Water absorption	ISO 62	≤0.1%

## AC

### Heat Shrinkable Anode Cap

Anode Cap seals and protects the critical connection between lead wire and anode.

#### Features

- The tight fitting, heat-shrinkable anode cap provides stress relief, moisture proofs and electrically insulated the end of the anode at the lead time exit point, it is the ideal . solution to the problem of premature system failure due to loss of the wire to anode termination.
- Operating temperature: -45°C~105°C.
- Shrink temperature: Start at 100°C, and shrink totally at 130°C



#### Product Dimensions

Order ref. Number	B.D(mm)		C.D(mm)		B.L(mm)	C.L(mm)	B.W(mm)
	Supplied	Recovered	Supplied	Recovered			
AC-2	≥58	≤48	≥12.5	≤6.5	76±2	78±2	2.4±0.1
AC-3B	≥83	≤60	≥12.5	≤6.5	102±2	78±2	2.4±0.1
AC-4B	≥120	≤87	≥13.5	≤6.5	102±2	78±2	2.3±0.1
AC-Φ86	≥86	≤40	≥16.8	≤5.6	150±2	78±2	2.5±0.1
AC-Φ112	≥112	≤55	≥16.8	≤5.6	150±2	78±2	2.5±0.1

#### Technical Data

Property	Test Method	Standard Value
Tensile strength	ASTM-D-2671	≥13MPa
Elongation at break	ASTM-D-2671	≥300%
Tensile strength after thermal aging	ASTM-D-2671(120°C/168hrs)	≥11MPa
Elongation at break after thermal aging	ASTM-D-2671(120°C/168hrs)	≥230%
Longitudinal shrinkage	UL 224	≤10%
Eccentricity	ASTM-D-2671	< 30%
Water absorption	ISO 62	≤0.1%
Volume resistance	IEC 93	≥1×10 <sup>14</sup> Ω·cm
Dielectric strength	IEC243	≥20kV/mm
Resistance to stress cracking	ASTM-D-1693 (50°C)	No cracking
Resistance to fungus and decay	ISO 846	Pass



## WRSSQ

### Heat Shrinkable Anti-Tracking Rain Sheds

Made from high creep resistance, anti-tracking polyolefin compound and coated with anti-track, weather resistant mastic. The high creep resistance and anti-tracking properties of the products provide maximum operation reliability. Used to provide insulation protection for cable termination.

#### Features

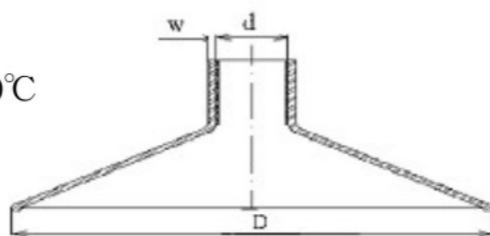
- Material: polyolefin, inner coated with adhesive on the end.
- Operating temperature:  $-55^{\circ}\text{C} \sim 100^{\circ}\text{C}$
- Shrink temperature: Start at  $100^{\circ}\text{C}$ , and shrink totally at  $130^{\circ}\text{C}$
- Standard Color: red

#### Product Dimensions

Order ref. Number	As supplied d(mm)	After recovery d(mm)	D(mm)	W(mm)
WRS-35/16	35	16	105	2.8
WRS-40/22	40	22	105	2.6
WRS-50/22	50	22	105	2.6
WRS-60/30	60	30	140	4.0
WRS-70/30	70	30	140	4.0

#### Technical Data

Property	Test Method	Standard Value
Operating temperature	IEC 216	$-55^{\circ}\text{C} \sim 100^{\circ}\text{C}$
Tensile strength	ASTM-D-2671	$\geq 12\text{MPa}$
Elongation at break	ASTM-D-2671	$\geq 300\%$
Tensile strength after thermal aging	ASTM-D-2671 120°C/168hrs	$\geq 8.5\text{MPa}$
Elongation at break after thermal aging	ASTM-D-2671 120°C/168hrs	$\geq 230\%$
Tracking resistance	ASTM-D-2303	3.75kV, 1hr, pass
Electric constant	IEC 250	3.0
Cold bend	ASTM-D-2671	$-40^{\circ}\text{C}$ , 4hrs, no cracking
Water absorption	ISO 62	$\leq 0.1\%$
Volume resistance	IEC 93	$\geq 1 \times 10^{14} \Omega \cdot \text{cm}$
Dielectric strength	IEC 243	$\geq 20\text{kV/mm}$
Minimum shrink temperature	—	$100^{\circ}\text{C}$
Minimum fully recovered temperature	—	$130^{\circ}\text{C}$



## WRSJX

### Right Angle/Straight Cable Boot

The products are used in the ring network switchgear inlet and outlet connections at the terminal and cable insulation. Also applies to a variety of cable distribution boxes and box-type terminal connections at the substation equipment insulation. The product has excellent electrically insulation, flame resistance, thermal stability, heat resistance, flexibility, crack resistance and anti-tracking of the other excellent properties. Both shrink fast, simple, safe and reliable.

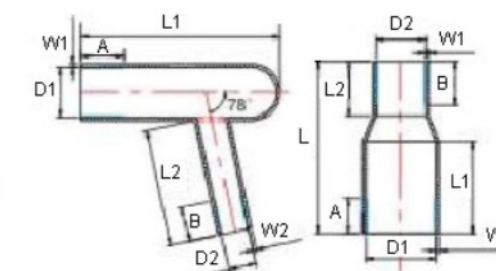


#### Features

- Material: polyolefin, inner coated with adhesive on the end.
- Operating temperature:  $-45^{\circ}\text{C} \sim 105^{\circ}\text{C}$
- Shrink temperature: Start at  $100^{\circ}\text{C}$ , and shrink totally at  $130^{\circ}\text{C}$
- Standard Color: red

#### Product Dimension

Size(mm)	As supplied (mm)	After recovered (mm)								
		D1 (Min.)	D2 (Min.)	D1 (Max.)	D2 (Max.)	L1 (Nom.)	L2 ( $\pm 10\%$ )	L ( $\pm 10\%$ )	W1 ( $\pm 10\%$ )	W2 ( $\pm 10\%$ )
Right Angle	WRSJY110 (80/36-35/18)	80	35	36	18	170	125	--	4.2	3.5
	WRSJY120 (80/36-50/18)	80	50	36	18	170	125	--	3.8	3.5
	WRSJY130 (80/36-50/27)	80	50	36	27	160	140	--	3.8	3.5
	WRSJY140 (95/38-70/28)	95	70	38	28	160	140	--	4.2	4.8
	WRSJY150 (145/72-68/34)	145	68	72	34	215	140	--	4.2	4.2
	Straight	WRSJY160 (80/32-34/19)	80	34	32	19	145	75	220	3.2
WRSJY110 (80/32-58/19)		80	58	32	19	145	75	220	3.2	3.2
WRSJY110 (140/65-90/33)		140	90	65	33	145	75	220	4.0	4.0



Anti-track red mastic A=50mm B=25mm



**Technical Data :**

(Property)	(Test Method)	(Standard Value)
Operating temperature	IEC 216	-45°Cto+105°C
Tensile strength	ASTM-D 2671	≥12MPa
Elongation at break	ASTM-D 2671	≥300%
Tensile strength after aging	ASTM-D-2671/120°C,168hrs	≥9.6MPa
Elongation at break after aging	ASTM-D-671/120°C,168hrs	≥240%
Dielectric strength	IEC 243	≥15kV/mm
Tracking resistant	ASTM-D-2303	3.75Kv, 1hr, pass
Volume resistance	ASTM-D-2303	≥1×10 <sup>14</sup> Ω·cm
Dielectric constant	IEC 250	3.0
Longitudinal shrinkage	-	≤10%
Eccentricity	ASTM-D-267	≤30%
Water absorption	ISO 62	≤0.1%
Flammability (Oxygen index)	IEC 93	≥25
Copper corrosion	ASTM-D-2671	120°C,168hr, no corrosion
Cold bend	ASTM-D-2671	-40°C, 4hrs, no cracking

**WRSJB Protective Cover for Busbar**

Application: mainly applied to provide protection for various electrical connecting.  
 · Material: Polyolefin  
 · Voltage class: 1kv, 10kv, 35kv  
 · Available Color: red, yellow, green, black



**Product Dimensions**

Unit (mm)

Size (A×B)	I type			T type			L type		
	L	W	H	L	W	H	L	W	H
30×8	95	35	50	105	35	60	70	35	60
40×8	125	45	50	140	45	60	75	45	55
50×8	135	55	55	155	55	65	90	55	65
60×8	165	65	75	165	65	75	100	65	75
80×10	185	85	75	195	85	75	130	85	75
100×10	220	105	75	215	105	75	140	105	75
120×10	235	125	75	245	125	75	165	125	75
150×10	260	155	75	285	155	75	195	155	75

Remark: L =The length of Covering ;W=The Width of Covering;H=The Height of Covering ;  
 A= The Width of Busbar; B=The Thickness of Busbar.  
 Special specifications Covering according to customer requirements by drawing special production.

**Silicone Rubber Protective Cover**

Material: Silicone Rubber  
 Application: mainly applied to provide protection for various electrical connecting.



## WRKG Overhead Line Covers

The overhead line covers is a cold-applied wrap around cover that provides retrofit insulation for overhead conductors to help prevent electrical outages caused by incidental contact from tree branches or wildlife. The overhead line covers may be applied selectively on problem spans to avoid costly conductor replacement. Installation is possible on energized lines utilizing the Split insulation tube tool which attaches directly to the overhead conductor and remains stationary in a single location.



- Material: Polyolefin
- Voltage class: 15kV, 25kV
- Standard Color: red

### Product Dimensions

Number	Product size	Conductor cross section
1	Φ 14	≤70mm <sup>2</sup>
2	Φ 18	70mm <sup>2</sup> ~ 185mm <sup>2</sup>
3	Φ 31	185mm <sup>2</sup> ~ 400mm <sup>2</sup>
4	Φ 38	400mm <sup>2</sup> ~ 800mm <sup>2</sup>

### Technical Data

(Property)	(Test Method)	(Standard Value)
Operating temperature	IEC 216	-45°C to +105°C
Tensile strength	ASTM-D 2671	≥13MPa
Elongation at break	ASTM-D 2671	≥300%
Tensile strength after aging	ASTM-D-2671/120°C, 168hrs	≥11MPa
Elongation at break after aging	ASTM-D-671/120°C, 168hrs	≥250%
Dielectric strength	IEC 243	≥25kV/mm
Volume resistance	ASTM-D-2303	≥1×10 <sup>14</sup> Ω·cm
Flammability (Oxygen index)	IEC 93	≥28

## WSKG Silicon Rubber Overhead Line Covers

The innovative product design, ease of installation. Use silicon rubber material, anti-aging, corrosion resistance, with good resistance to corona resistance, high temperature performance, especially suitable for the protection of the bare wire.

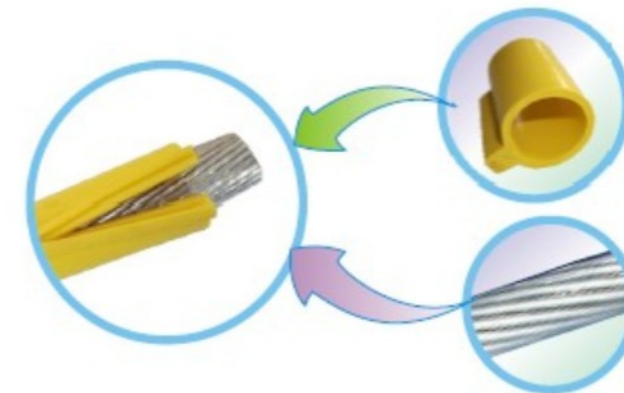
Widely used in substation protection works and railway catenary system, a significant effect in the cross-lines.



### Product Dimensions

Product size(mm)	Φ12	Φ15.6	Φ18	Φ20	Φ24.2	Φ30	Φ32	Φ35	Φ39.8
Unit weight (kg/m)	0.24	0.31	0.36	0.42	0.48	0.65	0.71	0.84	1.05
Conductor diameter(mm)	Φ7~Φ11	Φ11~Φ14	Φ14~Φ16	Φ16~Φ18	Φ18~Φ23	Φ23~Φ28	Φ28~Φ30	Φ30~Φ33	Φ33~Φ37

Voltage(kV)	≤10kV	≤35kV	≤110kV	≤220kV
Thickness(mm)	2.3mm	2.3-3.0mm	4.0-6.0mm	6.0-8.0mm





## WRSLT Heat Shrinkable Boot Adapters

Heat shrinkable boot adapters provide a water-tight and fumetight seal where cables enter connector box, bulkheads, or other enclosures. It consists of a three-part assembly—a rigid plastic nut, O-ring, and heat-shrinkable boot adapter.



## WRSFT Heat Shrinkable Cable Turnover Cover

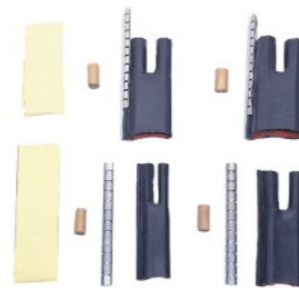
For the cable out of the protection of distribution equipment entrance seal to prevent small animals to climb into the cause of short-circuit fault.



## WRSKT 2 -core Clip-on Breakout

Main Material: polyolefin, stainless steel

Application: mostly used to provide sealing and protection for bifurcated cable, especially for the branch cable lapping on the main cable.



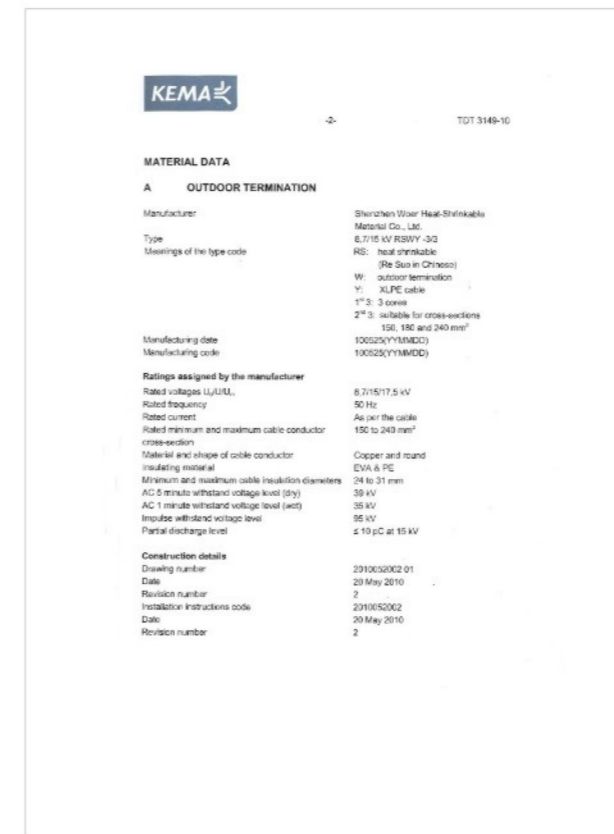
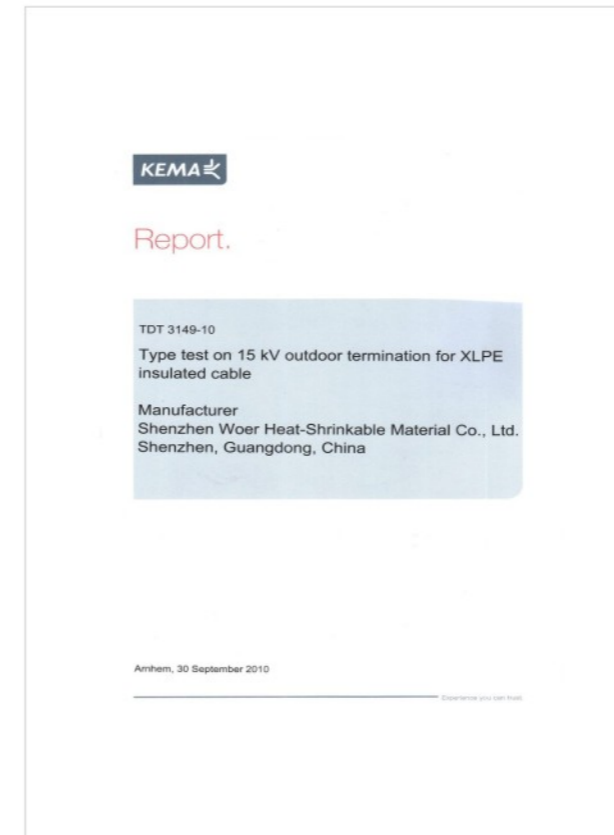
## WRSFY Oil-resistant Tubing



## Y-type Heat Shrink Tubing



## Test report for 8.7/15kV Outdoor Heat Shrinkable Termination



Test report for 8.7/15kV Heat Shrinkable Joint

**KEMA**

Report

TDT 3140-10

Type test on 15 kV straight joint for XLPE insulated cable

Manufacturer  
Shenzhen Woer Heat-Shrinkable Material Co., Ltd.  
Shenzhen, Guangdong, China

Amhem, 30 September 2010

**KEMA**

TDT 3140-10

**INSPECTION REPORT**

Report number: TDT 3140-10  
Client: Shenzhen Woer Heat-Shrinkable Material Co., Ltd.  
Address: Woer Mansion, North Lanying Road, Great Industrial Area, Shenzhen, Guangdong, China

Reference: Agreement 70048112-TDT 10-75004A

Concerning: Type test  
Date: 22 June 2010 until 21 July 2010  
Location of tests: Inspection and Test Center of State Grid Electric Power Research Institute (SGEPRI), Wuzhen, China

Object: 15 kV straight joint for XLPE insulated cable  
Manufacturer: Shenzhen Woer Heat-Shrinkable Material Co., Ltd., Shenzhen, Guangdong, China

**REQUIREMENTS**  
The requirements as mentioned in the standard IEC 60502-4 (2005).

**TEST PROGRAMME**  
The programme was specified by the client. For the programme reference is made to page 6.

**SUMMARY AND CONCLUSION**  
The test results obtained relate only to the work ordered and to the material tested. For the test programme listed in page 6, the tests were passed successfully.

Author Gu Bin  
This report consists of 37 pages incl. 11 annexes (21 pages)

KEMA Nederland B.V.  
P.O. Box 8005  
KEMA T&D Testing Services  
Managing Director  
Amhem, 30 September 2010

**KEMA**

TDT 3140-10

**MATERIAL DATA**

**A STRAIGHT JOINT**

Manufacturer: Shenzhen Woer Heat-Shrinkable Material Co., Ltd.  
Type: 8.7/15 kV RSLV-33  
RS: heat shrinkable (Re Suo in Chinese)  
J: joint  
Y: XLPE cable  
1" 3: 3 cores  
2" 3: suitable for cross-sections 150, 180 and 240 mm<sup>2</sup>  
Manufacturing date: 100525(YMMDC)  
Manufacturing code: 100525(YMMDC)

**Ratings assigned by the manufacturer**

Rated voltages U<sub>0</sub>/U<sub>m</sub>: 8.7/15/17.5 kV  
Rated frequency: 50 Hz  
Rated current: As per the cable  
Rated minimum and maximum cable conductor cross section: 150 to 240 mm<sup>2</sup>  
Material and shape of cable conductor: Copper and round  
Insulating material: EVA & PE  
Minimum and maximum cable insulation diameters: 24 to 31 mm  
AC 5 minute withstand voltage level (dry): 39 kV  
Impulse withstand voltage level: 90 kV  
Partial discharge level: < 10 pC at 15 kV

**Construction details**

Drawing number: 2010052001 01  
Date: 20 May 2010  
Revision number: 2  
Installation instructions code: 2010052001  
Date: 20 May 2010  
Revision number: 2

Test report for 8.7/15kV Indoor Cold Shrinkable Termination

**KEMA**

Type test Certificate of Complete Type Test

**Shenzhen Woer Heat-Shrinkable Material Co., Ltd**  
Shenzhen, China

has successfully passed the type test sequence on a **cold shrinkable indoor termination**  
Type: 15 kV cold shrink indoor 3 core  
Rating: 8.7/15 (17.5) kV

The test object passed the specification of test duties of **IEC 60502-4**  
The test results are recorded in Certificate No. **07-1015**

This Certificate is issued on 6 November 2007  
KEMA Nederland B.V.

P.G.A. Bus  
KEMA T&D Testing Services  
Managing Director

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Please note that this document has been issued for information purposes only, and that the original bound and sealed paper copy of the Certificate including the results of the tests of the apparatus will prevail. This document does not imply that KEMA has certified or approved any apparatus other than the specimen listed.

Amhem, 6 November 2007

**KEMA**

07-1015

**TYPE TEST CERTIFICATE OF COMPLETE TYPE TEST**

OBJECT: cold shrinkable indoor termination  
TYPE: 15kV cold shrink 3-core indoor termination  
Rated voltage: 8.7/15 (17.5) kV  
Conductor cross-section cable: 3x185 mm<sup>2</sup>

MANUFACTURER: Shenzhen Woer Heat-Shrinkable Material Co., Ltd.  
CLIENT: Shenzhen Woer Heat-Shrinkable Material Co., Ltd.  
TESTED BY: KEMA HIGH-VOLTAGE LABORATORY, Amhem, the Netherlands  
DATES OF TESTS: 2 November 2008 up to and including 19 April 2007

The apparatus, constructed in accordance with the description, drawings and photographs incorporated in this Certificate, has been subjected to the series of proving tests in accordance with **IEC 60502-4**

This Type Test Certificate has been issued by KEMA following exclusively the STL Guides. The results are shown in the record of Proving Tests and the oscillograms attached hereto. The values obtained and the general performance are considered to comply with the above Standard and to justify the ratings assigned by the manufacturer as listed on page 3.

The Certificate applies only to the object tested. The responsibility for conformity of any object having the same designations with that tested rests with the Manufacturer.

This Certificate consists of 55 sheets in total.

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The printed and bound version of this Certificate is the only valid version.

KEMA Nederland B.V.  
P.G.A. Bus  
KEMA T&D Testing Services  
Managing Director  
Amhem, 6 November 2007



**KEMA**

## TEST REPORT

Report no. 70470269-HVL 06-1213  
 Client Shenzhen Woer Heat-Shrinkable Material Co., Ltd.  
 Shenzhen, China

Reference -

Concerning test  
 Date 3 May 2005 up to and including 12 September 2005  
 Place High-Voltage Laboratory of KEMA Nederland B.V.,  
 Arnhem, the Netherlands

Object three-core straight joint  
 Type 10 kV WLJ-3/3 150-240 mm  
 Manufacturer same as client

**REQUIREMENTS**

The requirements as specified in the standard IEC 60502-4 (2005).

**TEST PROGRAMME**

For the test programme we refer to page 5.

**SUMMARY AND CONCLUSION**

The results obtained relate only to the work ordered and to the material tested.  
 The tests were passed.

Author M.G.J. Grooten

KEMA Nederland B.V.

*(Signature)*  
 P.G.A. Bus  
 KEMA T&D Testing Services  
 Managing Director

Arnhem, 28 March 2007

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 Utrechtseweg 310, 6812 AR Arnhem. Telephone +31 26 3 56 31 85. Telefax +31 26 4 43 38 43

**KEMA**

KEMA HIGH-VOLTAGE LABORATORY Order no.: 70470270.000

**SUMMARY**

**CLIENT**  
 Shenzhen Woer Heat-Shrinkable Material Co., Ltd.  
 Woer Mansion, Xinyi Industrial Park, Xili 518052, Shenzhen  
 China

**SUMMARY OF TEST REPORT NO.**  
 70470270.000-HVL 05-1352

**MATERIAL TESTED**  
 19/33 kV, 3 core indoor cold-shrink termination, 3x120mm<sup>2</sup> copper, 33kV WLJN-33

**TEST PROGRAMME**  
 Complete type test in accordance with IEC 60502-4 (2005) table 4.

**Sequence 1**  
 AC Voltage test  
 Partial discharge test  
 Lightning impulse test at 0k  
 Heating cycle test in air  
 Partial discharge test at 0k  
 Partial discharge test at ambient  
 Lightning impulse test  
 Voltage test for 15 min  
 Examination

**Sequence 3**  
 AC Voltage test  
 Thermal short circuit screen  
 Dynamic short circuit  
 Lightning impulse test  
 Voltage test for 15 min  
 Examination

**Sequence 4**  
 Humidity test  
 Examination

**KEMA**

Order no.: 70470270.000

**DATE AND PLACE OF THE TEST**  
 The tests were started in April 2005.  
 KEMA HIGH-VOLTAGE LABORATORY, Arnhem - the Netherlands

**PERSONS ATTENDING THE TESTS**  
 Neither the manufacturer nor the purchaser were present during test.

**THE TESTS WERE CARRIED OUT BY**  
 KEMA Nederland B.V.  
 M.C.H.E. Bevelink  
 M.G.J. Grooten  
 M.G.J.A. Jansen

**SUMMARY AND CONCLUSION**  
 The results obtained relate only to the work ordered and to the material tested.  
 The humidity test (test sequence 4) is not yet carried out. The test sequences 1 and 3 are finished and passed.

*(Signature)*  
 KEMA Nederland B.V.  
 T & D Testing Services  
 www.kema.com

Arnhem, 1 November 2005

# Test report for 19/33kV Outdoor Cold Shrinkable Termination

Order no.: 70470270.000

**KEMA**  
KEMA HIGH-VOLTAGE LABORATORY

**SUMMARY**

**CLIENT**  
Shenzhen Woer Heat-Shrinkable Material Co., Ltd.  
Woer Mansion, XinWei Industrial Park, Xili 518052, Shenzhen  
China

**SUMMARY OF TEST REPORT NO.**  
70470270.000-HVL 05-1333

**MATERIAL TESTED**  
19/33 kV, 3 core outdoor cold-shrink termination, 3x20mm<sup>2</sup> copper, 33kV WLV-33

**TEST PROGRAMME**  
Complete type test in accordance with IEC 60502-4 (2005) table 4.

**Sequence 1**  
AC Voltage test  
AC Voltage test wet  
Partial discharge test  
Lightning impulse test at 6  
Heating cycle test in air  
Partial discharge test at 6;  
Lightning impulse test;  
Insulation test 15 min  
Examination

**Sequence 3**  
AC Voltage test  
Therma short circuit screen  
Therma short circuit conductor  
Dynamic short circuit  
Therma short circuit  
Voltage test for 15 min  
Examination

**Sequence 5**  
Salt fog test  
Examination

# Test report for 19/33kV Cold Shrinkable Joint

Order no.: 70470270.000

**KEMA**  
Report.

70470270-HVL 06-1214 2007-03-28  
Tests on 33 kV joint

Order no.: 70470270.000

**KEMA**

**DATE AND PLACE OF THE TEST**  
The tests were started in April 2005,  
KEMA HIGH-VOLTAGE LABORATORY, Arnhem - the Netherlands

**PERSONS ATTENDING THE TESTS**  
Neither the manufacturer nor the purchaser were present during test.

**THE TESTS WERE CARRIED OUT BY**  
KEMA Nederland B.V.  
KEMA Nederland B.V.  
KEMA Nederland B.V.  
Mr C.H.B. Bovenwik  
Mr M.G.J. Grooten  
Mr G.J.A. Jensen

**SUMMARY AND CONCLUSION**  
The results obtained relate only to the work ordered and the material tested.  
This salt fog test (test sequence 5) is not yet carried out. The test sequences 1 and 3 are finished and passed.

Arnhem, 1 November 2005

KEMA Nederland B.V.  
S.A.M. Verhoeven  
KEMA High-Voltage Laboratory  
T & D Testing Services  
www.kema.com

Order no.: 70470270.000

**KEMA**

**TEST REPORT**

**Report no.** 70470270-HVL 05-1214  
**Client** Shenzhen Woer Heat-Shrinkable Material Co., Ltd  
Shenzhen, China

**Reference** test  
**Concerning** 21 April 2005 up to and including 12 September 2005  
**Date** 21 April 2005  
**Place** Arnhem, the Netherlands  
**Object** Three-core straight joint  
**Manufacturer** Same as client  
33-33kV mm

**REQUIREMENTS**  
The requirements as specified in the standard IEC 60502-4 (2005).

**TEST PROGRAMME**  
For the test programme we refer to page 5.

**SUMMARY AND CONCLUSION**  
The tests were passed only to the work ordered and to the material tested.  
The tests were passed

**Author** M.G.J. Grooten  
KEMA Nederland B.V.  
P.O. Box 200  
Managing Director  
Arnhem, 28 March 2007

This report consists of:  
30 pages  
2 appendices

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China National Accreditation Service for Conformity Assessment

**LABORATORY ACCREDITATION CERTIFICATE**

(Registration No. CNAS L4929 )

Test Center of

**Shenzhen Woer Heat-Shrinkable Material Co., Ltd.**

Woer Mansion, Lanjing North Road, Pingshan New District,

Shenzhen, Guangdong, China

*is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence of testing.*

*The scope of accreditation is detailed in the attached appendices bearing the same registration number as above. The appendices form an integral part of this certificate.*

Date of Issue: 2011-02-10

Date of Expiry: 2014-02-09

Date of Initial Accreditation: 2011-02-10

Date of Update: 2011-02-10

Signed on behalf of China National Accreditation Service  
for Conformity Assessment

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