

Since 1958

CHANGLAN

COMPANY PROFILE



Changlan Electrical Insulating Materials Co., Ltd.

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Why Changlan

About Us

01

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COMPANY OVERVIEW

About us

66 years

60+ countries

DC±535_{kV} AC 500_{kV}

1500+ employees

160 millions\$

112,900m² +74,000m²

255 R&D Engineers

Founded in 1958, specializing in the R&D, production, sales and installation service of cable accessories

Product: 1-500kV AC DC cable accessories

Leadership: 500kV AC DC, 110-220kV cable accessories



HISTORY

1958

Established

Owned by government

1996

First 110kV Cable accessories In China

Private owned

2004

First 220kV Cable accessories In China



2008

Supplied to Olympic Beijing

2014

500kV cable accessories type tested

2015

World First ± 320 kV DC cable Project Operated successfully

2017

Listed as Public company

2018

± 535 kV DC 500kV AC Scientific Technology Appraisal

2021

World First DC ± 400 kV Submarine cable Project Jiangsu Rudong Operated successfully

2022

- Supplied to Winter Olympics
- ± 525 kV operated Successfully in Zhangbei project

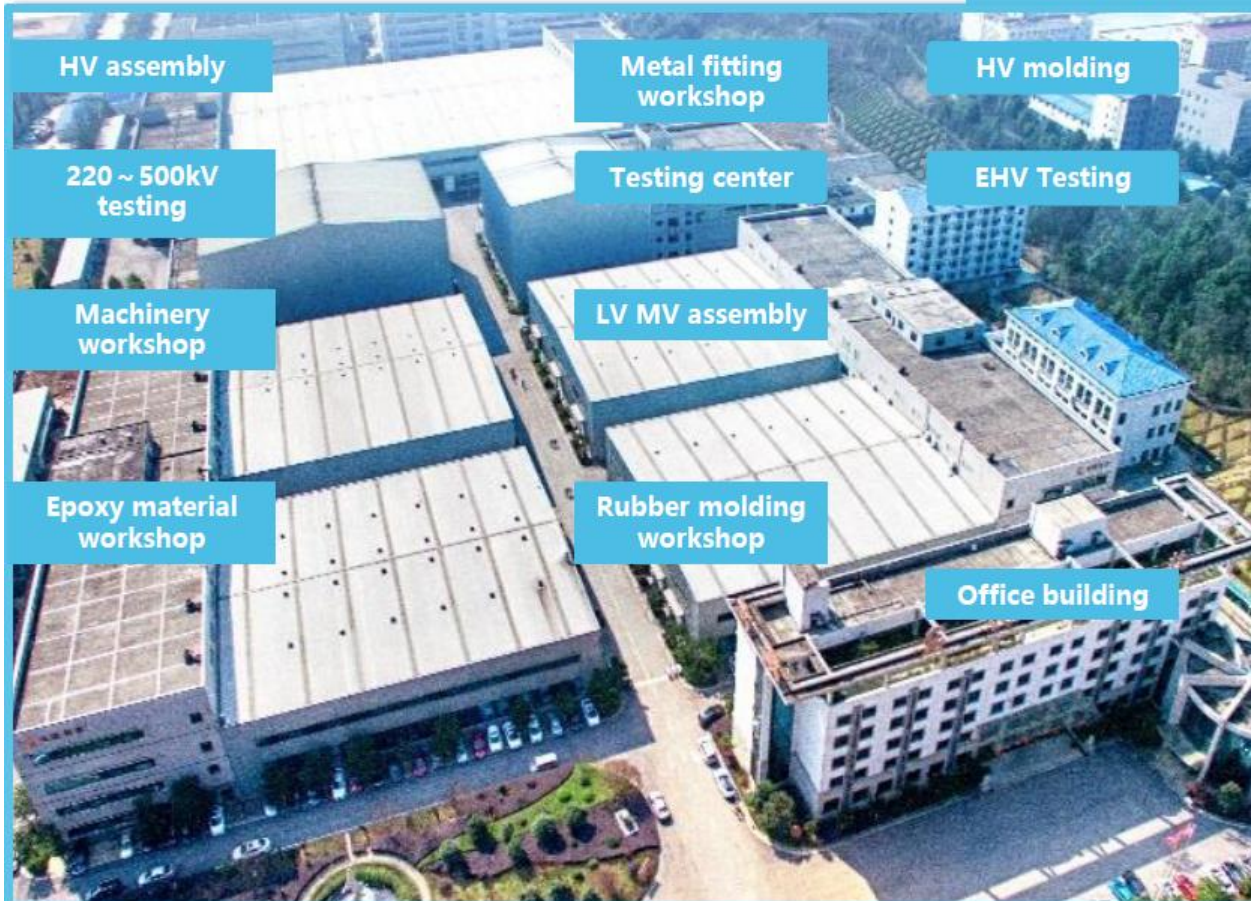


About us

Total 186,000 M²

Lugu Industrial Park

Changsha, China



Product: 1-500kV AC DC cable termination, cable joint, link box, laying tools, installation tools. R&D, testing.

Jinqiao Industrial Park

Changsha, China



Product: insulation material, waterproof explosive-resistant material, smart cable accessories, smart link box.

About us



Subsidiary Company:

Found in 2010, focusing on a full range of cable accessories materials.

Changsha Changlan Electrical Insulating Materials Co., Ltd, headquartered in Changsha, Hunan Province, China, is a division of Changlan Technology Group with a production base area of 74,000 square meters. Changlan is a leading manufacturer of bonding solutions and adhesive components for applications in the field of high polymer materials Industrial markets. Changlan has focused on research, manufacture, sales and service of electrical insulation materials in medium and high voltage cable accessories.

About us



Glories



We have been awarded a national high-tech enterprise.



Patents



The technical level of the company's products all reach the domestic or international advanced level. We have a number of invention patents, utility model patents and computer software copyright.

Manufacturing shops

At present, we have a number of production lines that have reached the advanced level of automation in China, with advanced mixing machine, auxiliary machine, open mixing machine, dust-free packaging and drying series equipment.

4



3



2



1



4 floor

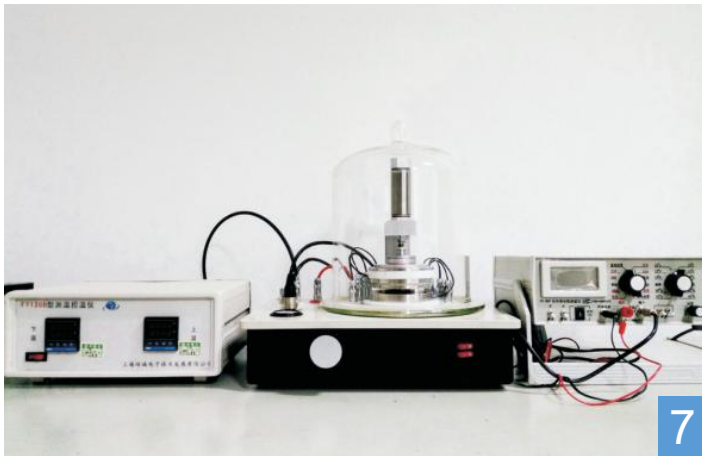
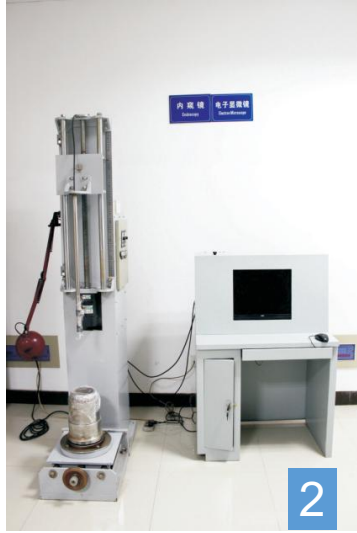
3 floor

2 floor

1 floor

- **Dust, Dust-free feeding**
dust-free, environmental, effecient
- **Accurate counting of oil and others**
accurate, effecient, timesaving
- **Drop small pieces of raw material, Program precise control**
process control, low error rate , human factors have little influence
- **Rolling, Cutting, Packaging**
flow line production, effecient

Testing Equipments



- 1、 Interfacial pressure tester
- 2、 Endoscope detector
- 3、 Mooney's viscosimeter
- 4、 Vulkameter
- 5、 LDW-10 Tensile tester
- 6、 JDL-2500N Microcomputer electronic tensile machine
- 7、 Insulation resistance test system
- 8、 Voltage breakdown tester

Testing Equipments



- 1、 High voltage capacitor bridge
- 2、 Electric leakage mark tester
- 3、 Arc resistance test stand
- 4、 Semi-conductive resistivity tester
- 5、 High and low temperate alternating temperate test chamber
- 6、 UV accelerated weather testing machine
- 7、 Horizontal and vertical combustion tester

Test Report



 中国认可
 国际互认
 检测
 TESTING
 CNAS L1007

报告编号
 Reference No. CT17-02349-2

检测报告 Test Report

样品名称
 Name of sample 自粘性橡胶绝缘带

样品型号
 Type of sample CLJ-30/0.6-25-3000(mm)

委托方
 Consignor 长缆电工科技股份有限公司

试验类型
 Kind of test 委托试验


 国家电线电缆质量监督检验中心
 CHINA NATIONAL CENTRE FOR QUALITY
 SUPERVISION AND TEST OF ELECTRIC WIRE AND CABLE

地址：上海市军工路1000号 电话：021-65494805 传真：021-65490171
 报告查询网址：www.ticw.com.cn 电子邮箱：ewec@ticw.com.cn 邮编：200093



 中国认可
 国际互认
 检测
 TESTING
 CNAS L1007

报告编号
 Reference No. CT17-02349-3

检测报告 Test Report

样品名称
 Name of sample 自粘性橡胶绝缘带


样品型号
 Type of sample CLJ-30/0.6-25-3000(mm)

委托方
 Consignor 长缆电工科技股份有限公司

试验类型
 Kind of test 委托试验


 国家电线电缆质量监督检验中心
 CHINA NATIONAL CENTRE FOR QUALITY
 SUPERVISION AND TEST OF ELECTRIC WIRE AND CABLE

地址：上海市军工路1000号 电话：021-65494605 传真：021-65490171
 报告查询网址：www.ticw.com.cn 电子邮箱：ewec@ticw.com.cn 邮编：200093



测试报告

编号：WV04100501190ML_CN
 日期：2016-05-20
 页码：2 of 2


测试项目	测试标准	结果
GB/T 2466.2-2009		CL %: 34.6
备注： 1. 参照测试标准进行		


测试标准：
 温度：23°C 相对湿度：65%

测试地点：
 国家电线电缆质量监督检验中心

测试项目	测试标准	测试结果	合格标准
拉伸强度, %	GB/T 2466.2-2009	≥34.6	≥34.6

备注：
 本试验数据仅与本试验条件下试验的行为有关，不能作任何其他的测试及其他条件下材料性能的依据。






测试报告

编号：WV04100501190ML_CN
 日期：2016-05-20
 页码：3 of 4

样品编号	% (N)	% (N)	% (N)	% (N)	是否有异常样品在物理性能或化学性能测试中表现出异常	是否有异常样品在物理性能或化学性能测试中表现出异常
1	1	2	0	2	否	否
2	0	2	0	2	否	否
3	2	2	0	2	否	否
4	2	2	0	2	否	否
5	1	2	0	2	否	否
6	8	11	15	17	否	否
1	2	3	0	3	否	否
2	2	3	0	3	否	否
3	2	3	0	3	否	否
4	0	3	0	3	否	否
5	1	3	0	3	否	否
6	7	14	15	21	否	否

备注：
 V-2

样品信息：
 样品名称：CLJ-30/0.6-25-3000
 实际样品尺寸：120mm × 12.0 ± 0.5mm, 厚度41mm
 备注：* 测试数据仅供参考。

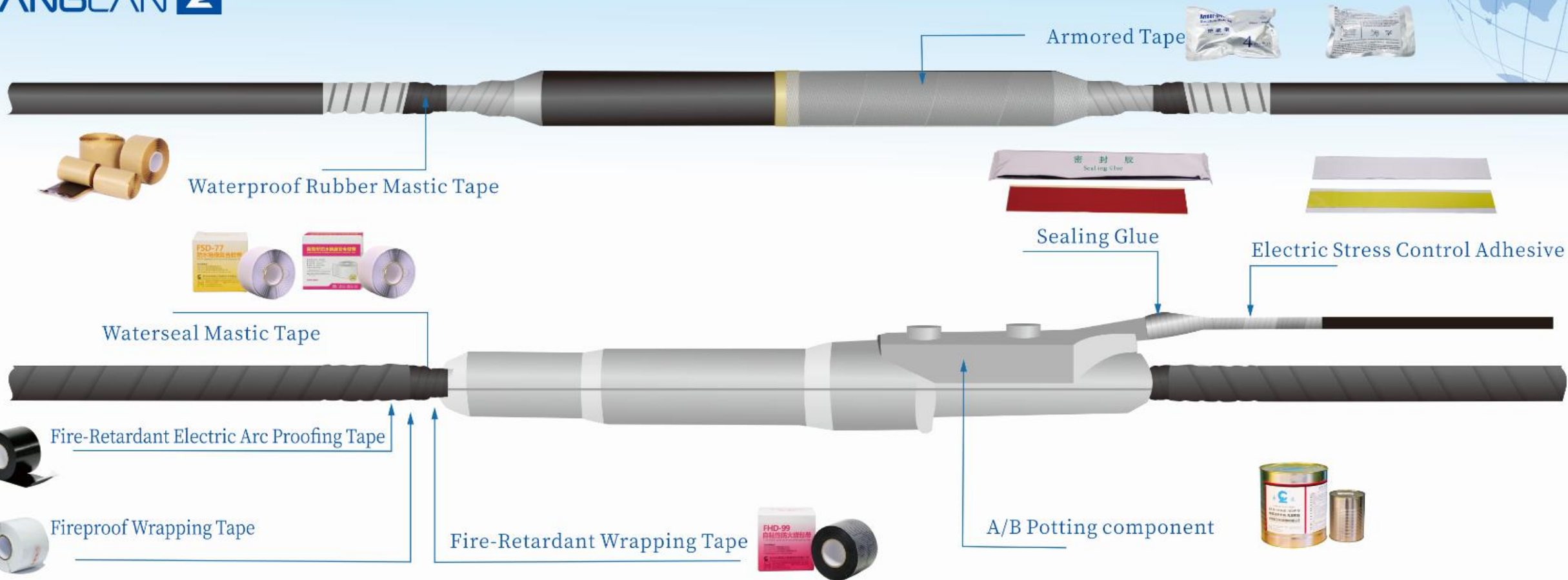




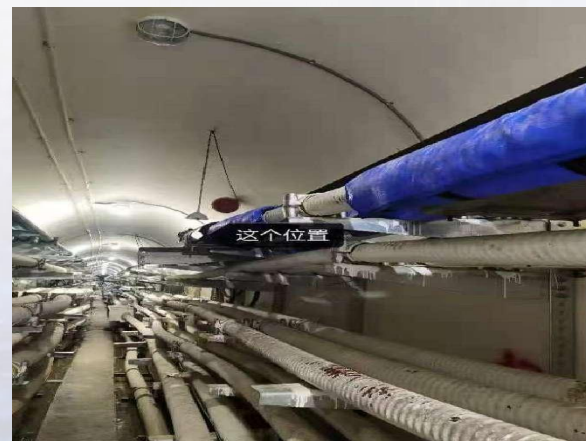
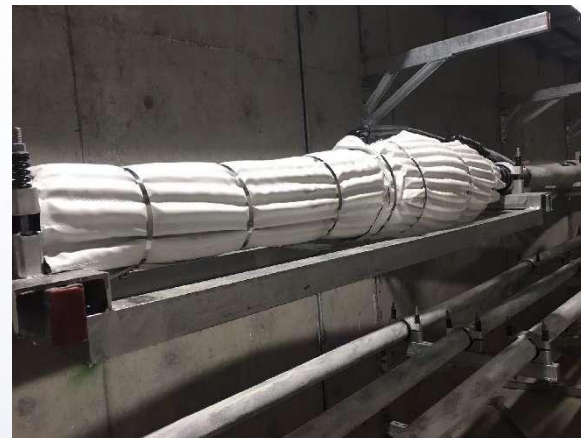
What We Do?

02

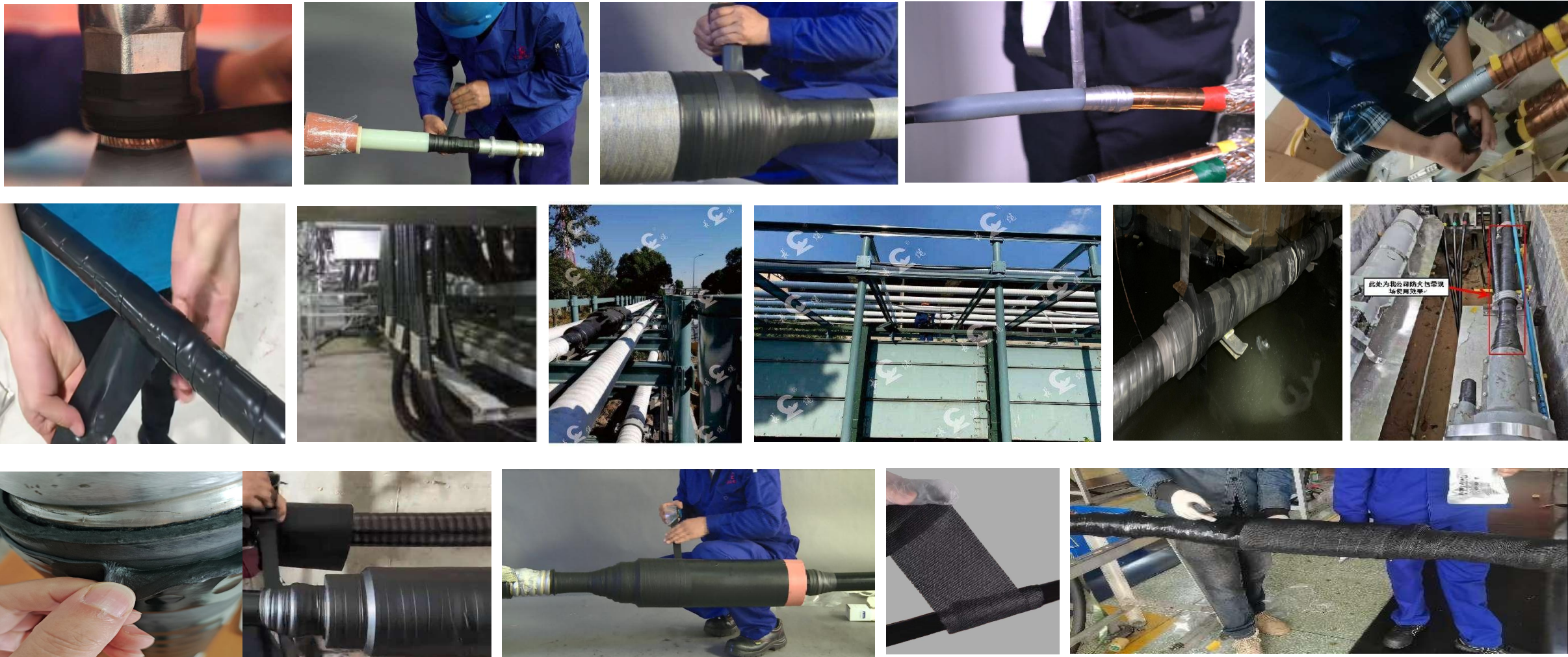
Cable accessories Materials



Actual Application



Actual Application



Actual Application



Models: 10kV three-core, 35kV three-core.

They are used for the installation of the injection-molded waterproof intermediate joints of cross-linked cables, including the sealing treatment of the injection-molded waterproof intermediate joints, the injection tools and the matching flame-retardant casting resins.

Usage



Application



Key products

03

1

Rubber tapes

2

Fireproof tapes

3

Waterproof tapes

EPR Self-fusing Tape

J-20 Self-fusing Insulation tape



applicable voltage class: 10kV and below.

CLJ-20 Self-fusing Insulation tape



applicable voltage class: 35kV and below.

CLJ-23 Self-fusing Insulation tape



applicable voltage class: 69kV and below.

CLJ-50 Self-fusing Insulation tape



applicable voltage class: 500kV and below.

使用说明Instructions:

将自粘带去掉隔离膜, 拉伸200%左右, 以半搭式绕包于需要绝缘或防水密封保护的部位上。(注: 在本带裸露于空气中时, 外层需要再绕一层PVC胶粘带作保护层。) 在阴凉干燥储存条件下, 保质期30个月。

Remove the isolation film from the self-adhesive tape, stretch about 200%, and wrap it in half lap type on the part that needs insulation or waterproof seal protection. (Note: When the tape is exposed to the air, the outer layer shall be wrapped with a layer of PVC adhesive tape as a protective layer.) Shelf life is 30 months under cool and dry storage conditions.

序号 Serial number	项目名称 Project name	技术指标 Technical index					试验方法 Test method
		CLJ-20	CLJ-23	CLJ-30	CLJ-50	J-20	
1	抗张强度 (MPa) Tensile strength (Mpa)	≥1.0	≥2.0	≥1.7	≥1.7	≥1.3	GB/T 528-2009
2	断裂伸长率 (%) Elongation at break (%)	≥500	≥500	≥500	≥500	≥500	GB/T 528-2009
3	击穿强度 (kV/mm) Breakdown strength (kV/mm)	≥20	≥28	≥28	≥31	≥20	GB/T 1695-2005
4	体积电阻率 (Ω·cm) Volume resistivity (Ω.cm)	≥1×10 ¹⁴	≥1×10 ¹⁴	≥1×10 ¹⁴	≥1×10 ¹⁴	≥1×10 ¹⁴	GB/T 1692-2008
5	介质损耗角正切 Dielectric loss tangent	≤0.05	≤0.05	≤0.05	≤0.05	≤0.05	GB/T 1693-2007
6	介电常数 Dielectric constant	≤5.0	≤5.0	≤5.0	≤5.0	≤5.0	GB/T 1693-2007
7	自粘性 (24h) Self-adhesive (24h)	无松脱 Unloose	无松脱 Unloose	无松脱 Unloose	无松脱 Unloose	无松脱 Unloose	JB/T 6464-2006
8	耐热应力开裂 (130°C) Heat resistant Stress cracking (130°C)	不开裂 Non-cracking	不开裂 Non-cracking	不开裂 Non-cracking	不开裂 Non-cracking	不开裂 Non-cracking	JB/T 6464-2006
9	耐热性 (°C) Heat resistance (°C)	100	130	130	130	100	JB/T 6464-2006

All detection indicators have standards (national standards and enterprise standards), detection methods and conditions.

Semi-conductive tape

使用说明 Instructions:

将自粘带去掉隔离膜, 拉伸200%左右, 以半搭式绕包于需要屏蔽的部位上。在阴凉干燥储存条件下, 保质期30个月。
Remove the isolation film from the self-adhesive tape, stretch it by about 200%, and wrap it around the part that needs to be shielded in a semi-lap type. Shelf life is 30 months in cool and dry storage condition.

CLBD-20 Semi-conductive tape

applicable voltage class:
35V and below electric field shielding.



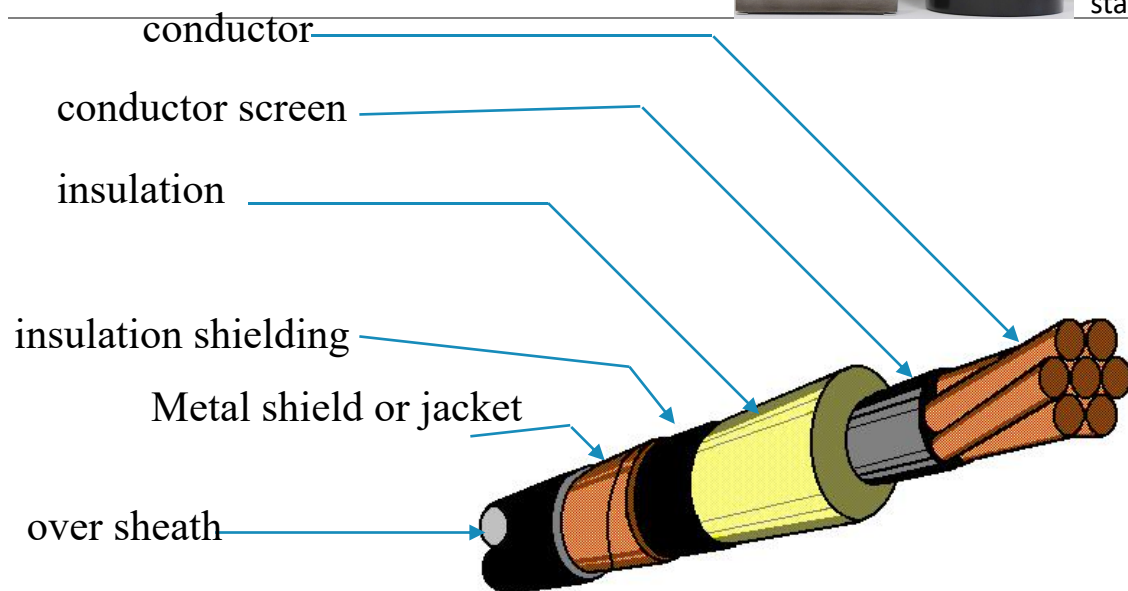
CLBD-50 Semi-conductive tape

applicable voltage class:
500kV and below electric field shielding.



序号 Serial number	项目名称 Project name	技术指标 Technical index		试验方法 Test method
		CLBD-20	CLBD-50	
1	抗张强度 (MPa) Tensile strength (Mpa)	≥1.3	≥1.3	GB/T 528-2009
2	断裂伸长率 (%) Elongation at break (%)	≥500	≥500	GB/T 528-2009
3	体积电阻率 (Ω·cm) Volume resistivity (Ω·cm)	≤1×10 ³	≤1×10 ³	GB/T 3048.3-2007
4	自粘性 (24h) Self-adhesive (24h)	无松脱 unloose	无松脱 unloose	JB/T 6464-2006
5	耐热应力开裂 (130°C) Heat resistant Stress cracking (130°C)	不开裂 non-cracking	不开裂 non-cracking	JB/T 6464-2006
6	耐热性 (°C) Heat resistance (°C)	130	130	JB/T 6464-2006

All detection indicators have standards (national standards and enterprise standards), detection methods and conditions.



- I Stress control
- II Insulation recovery
- III Conductor extraction
- IV Shield connection and extraction
- V Sealed waterproofing

Electrical stress control tape

CLYK-20 Composite Electrical Stress Control Tape

Helps equalize the flux lines to balance electrical stress in medium voltage joint and termination applications



Materials compatibility: For use with solid dielectric cable, rubber and synthetic splicing, and epoxy and polyurethane resins.

Application

Electric stress control of cable terminal and intermediate joint of 35kV and below.



使用说明Instructions:

- 被包裹表面需打磨、清洁。
- 将自粘带去掉隔离膜，拉伸200%左右，以半搭式绕包于需电应力控制的部位上。绕包完，用手挤压胶带，使其粘附紧密。
- 可用于户外环境，但不适合严重污秽条件下使用。
- The wrapped surface needs to be polished and cleaned.
- Remove the isolation film of the self-adhesive tape, stretch about 200%, and wrap it on the part of the electric stress control. After wrapping, squeeze the tape with your hands to make it adhere tightly.
- Can be used for outdoor environment, but not suitable for serious pollution conditions.

序号 Serial number	项目名称 Project name	技术指标 Technical index	试验方法 Test method
1	抗张强度 (MPa) Tensile strength (Mpa)	≥6.0	GB/T 528-2009
2	断裂伸长率 (%) Elongation at break (%)	≥200	GB/T 528-2009
3	体积电阻率 (Ω·cm) Volume resistivity (Ω·cm)	≥1×10 ¹⁰	GB/T 1692-2008
4	介电常数 Dielectric constant	8~20	GB/T 1693-2007
5	自粘性 (24h) Self-adhesive (24h)	无松脱 unloose	JB/T 6464-2006
6	耐热应力开裂 (130°C) HeatresistantStresscracking(130°C)	不开裂 non-cracking	JB/T 6464-2006

Electrical stress control tape

CLYK-30 Electrical stress control tape

Helps equalize the flux lines to balance electrical stress in medium voltage joint and termination applications



Materials compatibility: For use with solid dielectric cable, rubber and synthetic splicing, and epoxy and polyurethane resins.

Application

Electric stress control of cable terminal and intermediate joint of 35kV and below.



使用说明Instructions:

- 被包裹表面需打磨、清洁。
- 将自粘带去掉隔离膜，拉伸200%左右，以半搭式绕包于需电应力控制的部位上。绕包完，用手挤压胶带，使其粘附紧密。
- 可用于户外环境，但不适合严重污秽条件下使用。
- The wrapped surface needs to be polished and cleaned.
- Remove the isolation film of the self-adhesive tape, stretch about 200%, and wrap it on the part of the electric stress control. After wrapping, squeeze the tape with your hands to make it adhere tightly.
- Can be used for outdoor environment, but not suitable for serious pollution conditions.

序号 Serial number	项目名称 Project name	技术指标 Technical index	试验方法 Test method
1	抗张强度 (MPa) Tensile strength (Mpa)	≥1.3	GB/T 528-2009
2	断裂伸长率 (%) Elongation at break (%)	≥200	GB/T 528-2009
3	体积电阻率 (Ω·cm) Volume resistivity (Ω.cm)	≥1×10 ¹⁰	GB/T 1692-2008
4	介电常数 Dielectric constant	15~30	GB/T 1693-2007
5	自粘性 (24h) Self-adhesive (24h)	无松脱 unloose	JB/T 6464-2006
6	耐热应力开裂 (130°C) HeatresistantStresscracking(130°C)	不开裂 non-cracking	JB/T 6464-2006

Flame-retardant Self-fusing Silicone Rubber Tape

Excellent insulation performance

Insulation protection



Tensile rebound is good

Peel off the isolating material and stretch it by 10%~100%.



Self-fusing

The head and tail circle are completely overlapped and wound, and the last circle is not stretched. Press to accelerate self-fusion



Aging resistance, ozone resistance, UV resistance

Physical protection



multicolored

Red, green, yellow...color can be customized.



Antiflaming

Oxygen index \geq 34%

Technical Data

序号 Serial number	项目名称 Project name	技术指标 Technical index	试验方法 Test method
1	拉伸强度(MPa) Tensile strength (MPa)	≥ 3	GB/T 528-2009
2	断裂伸长率(%) Elongation at break (%)	≥ 500	GB/T 528-2009
3	热氧老化性能(100°C, 168h) Thermal oxygen aging performance (100°C, 168h)	抗张强度变化率 $\leq \pm 20\%$ /Tensile strength change rate $\leq \pm 20\%$ 断裂伸长率变化率 $\leq \pm 20\%$ /Elongation at break change rate $\leq \pm 20\%$	GB/T 2951-2008
4	击穿强度(kV/mm) Breakdown strength (kV/mm)	≥ 20	GB/T 1695-2005
5	体积电阻率($\Omega \cdot \text{cm}$) Volume resistivity ($\Omega \cdot \text{cm}$)	$\geq 1 \times 10^{14}$	GB/T 1692-2008
6	介质损耗角正切 Dielectric loss tangent	≤ 0.035	GB/T 1693-2007
7	介电常数 Dielectric constant	≤ 3.5	GB/T 1693-2007
8	耐水性 Water resistance	浸泡15d, 无起泡、起皱、分层、开裂等现象 Soaking for 15d, no bubbling, wrinkling, delamination, cracking and other phenomena	XF 478-2022
9	耐酸性、耐碱性、耐盐性 Acid resistance, alkali resistance, salt resistance	浸泡7d, 无起泡、起皱、分层、开裂等现象 Soaking for 7d, no bubbling, wrinkling, delamination, cracking and other phenomena	XF 478-2022
10	自粘性(24h) Self-adhesive (24h)	无松脱, 层间自融 No loosening, interlayer self-melting	JB/T 6464-2006
11	耐热性(100°C, 168h) UV aging resistance (168h)	不开裂、变形、下坠、无松脱、无可见起泡 No cracking, deformation, falling, no loose, no visible foaming	GB/T 7141-2008
12	耐UV老化(168h) UV aging resistance (168h)	抗张强度变化率 $\leq \pm 30\%$ /Tensile strength change rate $\leq \pm 30\%$ 断裂伸长率变化率 $\leq \pm 30\%$ /Elongation at break change rate $\leq \pm 30\%$	GB/T 16422.3-2022

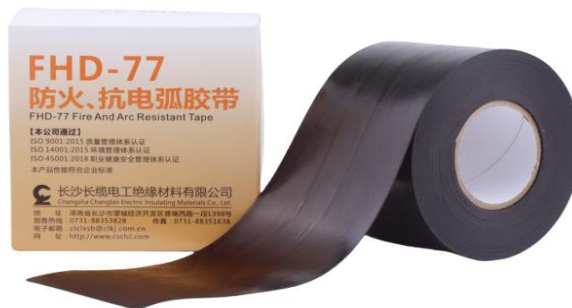
FHD-77 Flame-retardant Electric Arc Proofing Tape

Product Specification

0.75mm*60mm*5m

Fireproof principle

- ✔ It will not be burning and expanding fire.
- ✔ The resulting carbonized layer acts as a protective layer and fire protection.



Product Characteristics

- ✔ Arc resistance
- ✔ UV resistant
- ✔ UV degree: FV-0
- ✔ Good fire resistance
- ✔ Oxygen index: $\geq 32\%$
- ✔ Non-self-adhesive, removable, recyclable

FHD-88

FHD-88 Low Smoke Zero halogen Self-adhesive Fireproof Wrapping Tape

Product Specification

0.7mm*60mm*5m

Fireproof principle

Contact with the flame rapidly expands to form a carbonized layer preventing the fire from spreading.



Product Characteristics

- ✓ self-adhesion, good integration, self-fusion, easy installation.
- ✓ Excellent flame retardant property, flame retardant rating UL94 V-0 level.
- ✓ Uvioresistant, ozone resistance, resistant to water, oil, acid, alkali and salt
- ✓ Low halogen content, non-toxic, low smoke density, environmental

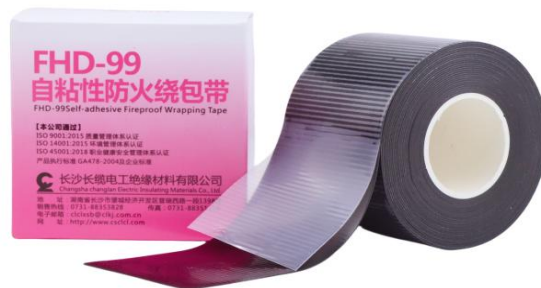
FHD-99 Anti-fire Wrapping Tape

Product Specification

0.7mm*60mm*5m

Fireproof principle

Contact with the flame rapidly expands to form a carbonized layer, preventing the firm from spreading.



Product Characteristics

- ✓ self-adhesion, good integration, self-fusion, easy installation.
- ✓ Non-toxic, tasteless and pollution-free in use;
- ✓ Good fire resistance
- ✓ Oxygen index: $\geq 45\%$
- ✓ The cable carrying capacity is not affected.

Application



Polyurethane waterproof flame retardant coating

Product Characteristics

- High solid content, good adhesion
- Acid, alkali, salt and other chemical corrosion resistance.
- Excellent waterproof and insulation properties
- Excellent flame retardant property.
- Good resistance to hot and cold shock.



Product Introduction

FT-200 polyurethane waterproof and flame retardant coatings are specially designed for electrical insulation protection of various metal substrates, providing continuous insulation protection for metal substrates under a variety of harsh corrosion conditions. It is divided into Bi-components: base material and curing agent. It has high reactivity and can realize room temperature curing. This reduces energy consumption and eliminates the need to invest in heating equipment. The FT-200 polyurethane waterproof and flame retardant coating has the advantages of brush coating and other flexible and efficient construction methods to provide long-term insulation protection for a variety of complex metal structures, and can meet different insulation requirements through different coating thickness.

EICR-6016 Anti-condensation Sealant

Product Characteristics

Waterproof and moisture-proof

Good liquidity

Anti-animal infestation



Good insulation performance

Fire retardant


Anti-corrosion


Product Introduction


EICR-6016 anti-condensation sealant is a self-leveling, self-curing two-component non-foaming anti-condensation sealing material. The anti-condensation plugging applied to the inlet line hole of the chassis of the equipment has the characteristics of insulation, flame retardant, waterproof, anti-corrosion and no volatile solvent. By isolating the moisture from the protected area, the electrical equipment cabinet can achieve the anti-condensation plugging goal, and prevent fire, rust, and small animals from entering the equipment.

Flexible organic plugging material

Product Characteristics

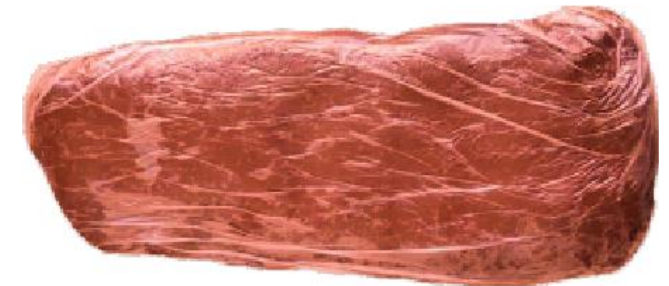
 Duration of fire resistance **3.00h**

 Shapeable solid with good flexibility

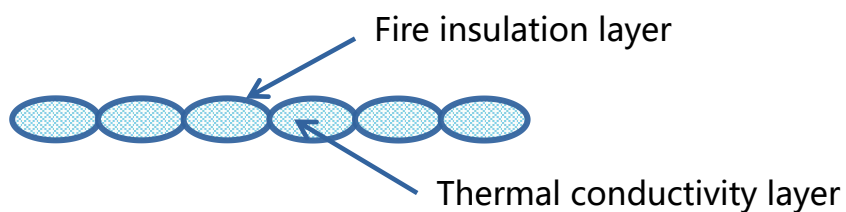
 Resistance to oil, water and corrosion.

Product Introduction

FHFD-55 Flexible organic plugging material is a kind of flexible flame retardant material.



Composite Fire Blanket



- 1** It is composed of organic ceramic silicone rubber composite cloth and porcelain inorganic material.
- 2** It has the effect of heat conduction at normal temperature and heat insulation at high temperature.
- 3** Flexible structure at room temperature, can adapt to various conditions of power cable and intermediate connector package, easy to install;
- 4** It can be "ceramic" at high temperature, forming a hard shell. Play a very good fire-resistant, fire prevention, temperature insulation effect.

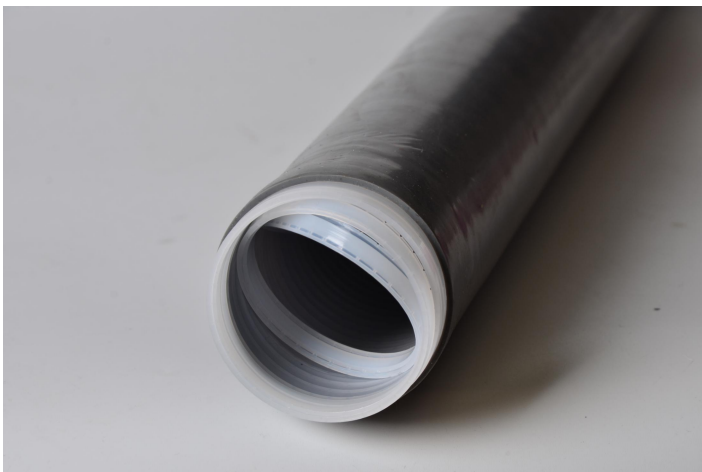
Cold shrink tube

Silicone rubber cold shrinkable tube for electric power

Pre-
expansion



After
expansion



Usage

- 1、 Route the bundle cable through the cold shrink tube.
- 2、 Hold the cable and cold-shrink tube material with one hand, and gently pull the white annular support strip with the other hand to quickly shrink and completely cover the protected area.



Cold shrink tube

Silicone/EPDM rubber cold shrinkable tube for communication



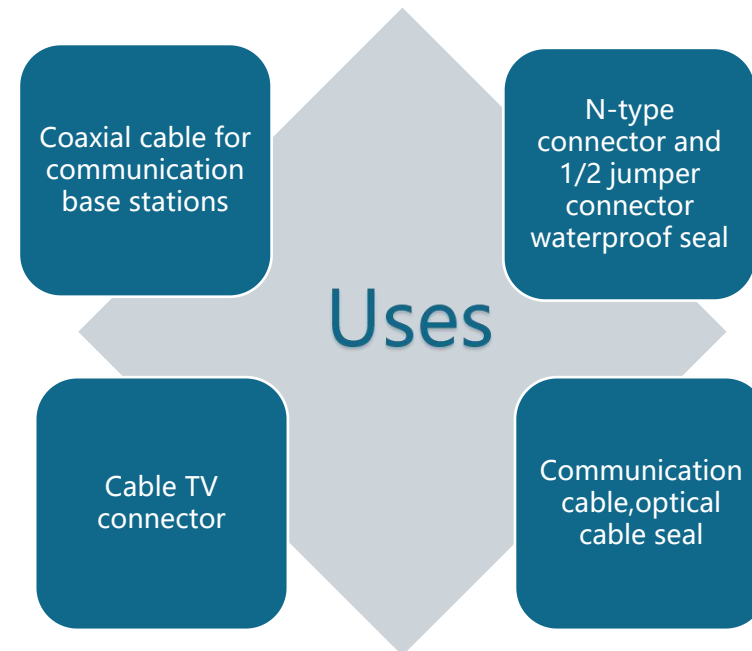
Ordinary
type



With
cement

Product Characteristics

- 1、 Easy installation
- 2、 Suitable for a wide range of different specifications of cable connection and sealing.
- 3、 Large shrinkage force.



FSD-77

FSD-77 Composite Waterseal Mastic Tape

Product Specification

1.65mm*50mm*3m

Product Characteristics

waterproof and moisture-proof,
 insulated enclosure;
 anti-high and low temperature (-40°C ~ 90°C) ;
 good fusion,easy to wrap;
 Acid,alkali,salt and other chemical corrosion resistance.



Product Usage

- | | | |
|--|---|---|
| 1 | 2 | 3 |
| Insulation restoration and waterproofing of power cables | Waterproof seal of terminal and intermediate joints | Overhead insulated wires are waterproof insulated with connection and branch wire clips |
| 4 | 5 | 6 |
| Waterproof insulation of submersible electrical cable joints | Railway tunnel and subway cable,optical cable, communication cable connection | City square fountain,street light cable connection |

Technical Data

序号 Serial number	项目名称 Project name	技术指标 Technical index	试验方法 Test method
1	抗张强度(MPa) Tensile strength (MPa)	≥ 1.0	GB/T528-2009
2	断裂伸长率(%) Elongation at break (%)	≥ 500	GB/T528-2009
3	粘性(与不锈钢板, N/cm) Sticky (with stainless steel plate, N/cm)	≥ 26	GB/T 2792-2014
4	粘性(与PE板, N/cm) Sticky (with PE plate, N/cm)	≥ 20	GB/T 2792-2014
5	吸水性(23°C, 24h, %) Water absorption (23°C, 24h, %)	≤ 0.15	GB/T 1034-2008
6	耐热应力开裂(130°C, 1h) Heat resistant Stress Cracking (130°C, 1h)	不开裂 non-cracking	JB/T 6464-2006
7	耐热性(°C) Heat resistance (°C)	100	JB/T 6464-2006
8	室温防水性 Room temperature waterproofing	无渗漏 No leakage	Q/CLCL001-2022
9	80°C防水性 80°C waterproof	无渗漏 No leakage	Q/CLCL001-2022

Waterproof Mastic Rubber Tape



Product Usage:

Waterproof and seal of all electrical equipment or cables.

Suitable for underwater or buried in the ground and other harsh environment.

WSJ-18**WSJ-18 Flame-retardant and Waterproof Self-curing Protective Sheet**

1. Moisture curing at room temperature
2. Strip sheet, easy to construct
3. VOC content is 0, non-toxic to the environment and human body
4. Heat resistance and aging resistance
5. flexibility、 adhesive adhesion
6. Flame retardant class: UL94 V-1
7. The origin state is soft,can be shaped arbitrarily.

“ Designed for insulation protection of bare electrical connection points in 10kv overhead bare wire and insulated line

Technical data

Product specification

1.8×90×600 (mm)
 1.8×80×1000 (mm)
 2.0×120×120 (mm)
 2.0×120×170 (mm)

Notes: Specifications and dimensions can be customized according to user requirements.

项目名称 Project name	技术指标 Technical index	固化物 Solidified substance	
		项目名称 Project name	技术指标 Technical index
颜色 color	灰黑色 gray-black	硬度(Shore A) Hardness (Shore A)	≥35
尺寸(mm)可定制 Size (mm) can be customized	1.8×90×600 1.8×80×1000 2.0×120×120 2.0×120×170	抗张强度(MPa) Tensile strength (MPa)	≥1.5
		粘结处抗张剪切强度(MPa) Tensile shear strength at the connection (MPa)	≥1.0
保质期 Shelf life	1年 1year	介电常数 Dielectric constant	≤3.6
固化期(20°C,50% RH) Curing period (20°C, 50%RH)		体积电阻率(Ω·cm) Volume resistivity (Ω.cm)	≥7×10 ¹⁴
可操作时间(min) Operational time (min)	30	介质损耗角正切 Dielectric loss tangent	≤0.01
表干时间(h) Surface drying time (h)	2	击穿电压(kV/1.8mm) Breakdown voltage (kV/1.8mm)	≥32
强度形成时间(h) Strength formation time (h)	4	阻燃等级 Flame retardant class	FV-1
完全固化时间(d) Full curing time (d)	7	密封防水等级 Sealed waterproofing class	IPX8
		冷热冲击(-40~85°C) Cold and hot shock (-40 ~ 85°C)	200次循环无明显变化 There was no significant change after 200 cycles

Instructions

Wear appropriate plastic protective gloves during instruct.

1. Cut aluminum foil vacuum bag from three sides.



2. Uncover the release film covering one side of the sheet



3. The surface of the release film is exposed to the coating (overhead line) and applied.



4. Gradually remove the release film on the other side, and roll the uncovered coating sheet onto the coated material (overhead line).



5. The coated material (overhead line) is rolled with the sheet.



6. Spread the coating sheet evenly across the film, and finally peel off the release film.



7. The gap joint between two coating sheet should be $\geq 5\text{mm}$.



The coating sheet is plastic and can be properly compacted by hand during construction.

Application



Casting Resin

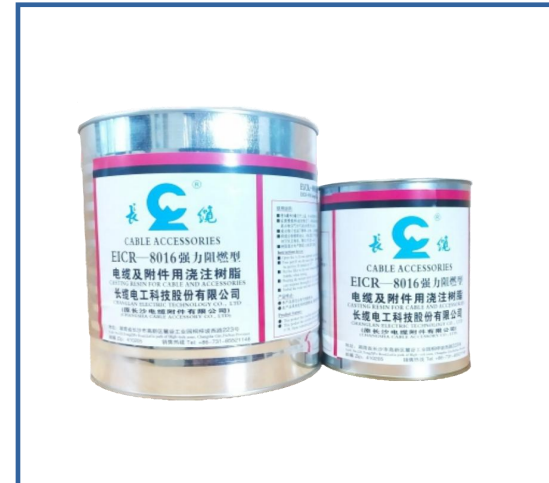
Polyurethane Casting Resin



EICR-8012 potting glue
for power cables and
accessories



EICR-8013 potting
adhesive



EICR-8016 Strong flame-
retardant casting resin for
power cables and accessories



ZR-A17
flame-retardant casting
resin

It is mainly used for pouring and filling in the terminals and joints of 500KV and below crosslinked polyethylene and oil-soaked paper insulated power cables, mining and communication cables.

It plays the role of insulation, waterproof, sealing and strong flame retardant.

Casting resin

EICR-8012 Potting Compound

Component A: milky white or light yellow

Component B: Curing agent、brown

After curing: light yellow



Product Characteristics

- Strong adhesion, good extensibility, high tensile strength
- Good electrical properties and insulation properties after curing
- Good weather resistance, reliable waterproof performance
- Good flame retardant property
- oxygen index: $\geq 28\%$
- Environmental protection, non-toxic

casting resin

EICR-8013 potting adhesive

Component A: milky white or light yellow

Component B: Curing agent、brown

After curing: light yellow



Product Characteristics

- Low volatility at room temperature, good castability, no harmful gas will be released during pouring.
- Liquid construction, curing at room temperature, easy to operate, short time limit.
- Strong adhesion, good extensibility, high tensile strength.
- High solid content, stable performance, good weather resistance, reliable waterproof performance.
- This product has good adhesion with cable material.
- This product has excellent electrical performance after curing, and be widely used in cables and accessories.
- This product has excellent flame retardant performance, flame retardant grade reaches V-0 level.

EICR-8013 Cold Patching Sealing Compound

Component A: milky white or light yellow

Component B: Curing agent、brown

After curing: light yellow



Product Characteristics

- Low volatility at room temperature, good castability, no harmful gas will be released during pouring.
- Liquid construction, curing at room temperature, easy to operate, short time limit.
- Strong adhesion, good extensibility, high tensile strength.
- High solid content, stable performance, good weather resistance, reliable waterproof performance.
- This product has good adhesion with cable material.
- This product has excellent electrical performance after curing, and be widely used in cables and accessories.
- This product has excellent flame retardant performance, flame retardant grade reaches V-0 level.

Casting resin

EICR-8016 Strong Flame-retardant Casting Resin for Power Cables and Accessories

Component A: milky white or light yellow

Component B: Curing agent、brown

After curing: light yellow



Product Characteristics

- Strong adhesion, good extensibility, high tensile strength
- Good electrical properties and insulation properties after curing
- Good weather resistance, reliable waterproof performance
- Good flame retardant property
- oxygen index: $\geq 32\%$
- Environmental protection, non-toxic

casting resin

ZR-A17 Flame-retardant Casting resin

Component A: milky white or light yellow

Component B: Curing agent、brown

After curing: light yellow



Product Characteristics

- Strong adhesion, good extensibility, high tensile strength
- Good electrical properties and insulation properties after curing
- Good weather resistance, reliable waterproof performance
- Good flame retardant property
- oxygen index: $\geq 35\%$
- Environmental protection, non-toxic

An aerial photograph of a city skyline at sunset. The sky is a mix of blue, orange, and pink. A prominent, tall, blue skyscraper with a pointed top is the central focus. Other buildings of various heights and styles are visible, some with lights on. The overall scene is a dense urban environment.

04

Why Changlan

Performance

Power grids projects



Pakistan



Power Grid
 Company of
 Bangladesh

Bangladesh



EVN

Vietnam
 Electricity

Vietnam



National Grid
 Corporation
 of the
 Philippines

Philippines



SES

Sabah
 Electricity

Malaysia



Provincial
 Electricity
 Authority

Thailand



Tanzania



Performance

North America

- USA
- Canada
- Mexico
- Cuba
- Curaçao
- Honduras
- Jamaica

Europe

- Netherlands
- Ukraine
- Albania
- Russia
- Armenia

Southeast Asia

- Thailand
- Vietnam
- Laos
- Myanmar
- Philippines
- Malaysia
- Nepal
- Brunei
- Cambodia
- Indonesia
- Singapore

South America

- Argentina
- Chile
- Brazil
- Peru
- Venezuela
- Ecuador

Africa

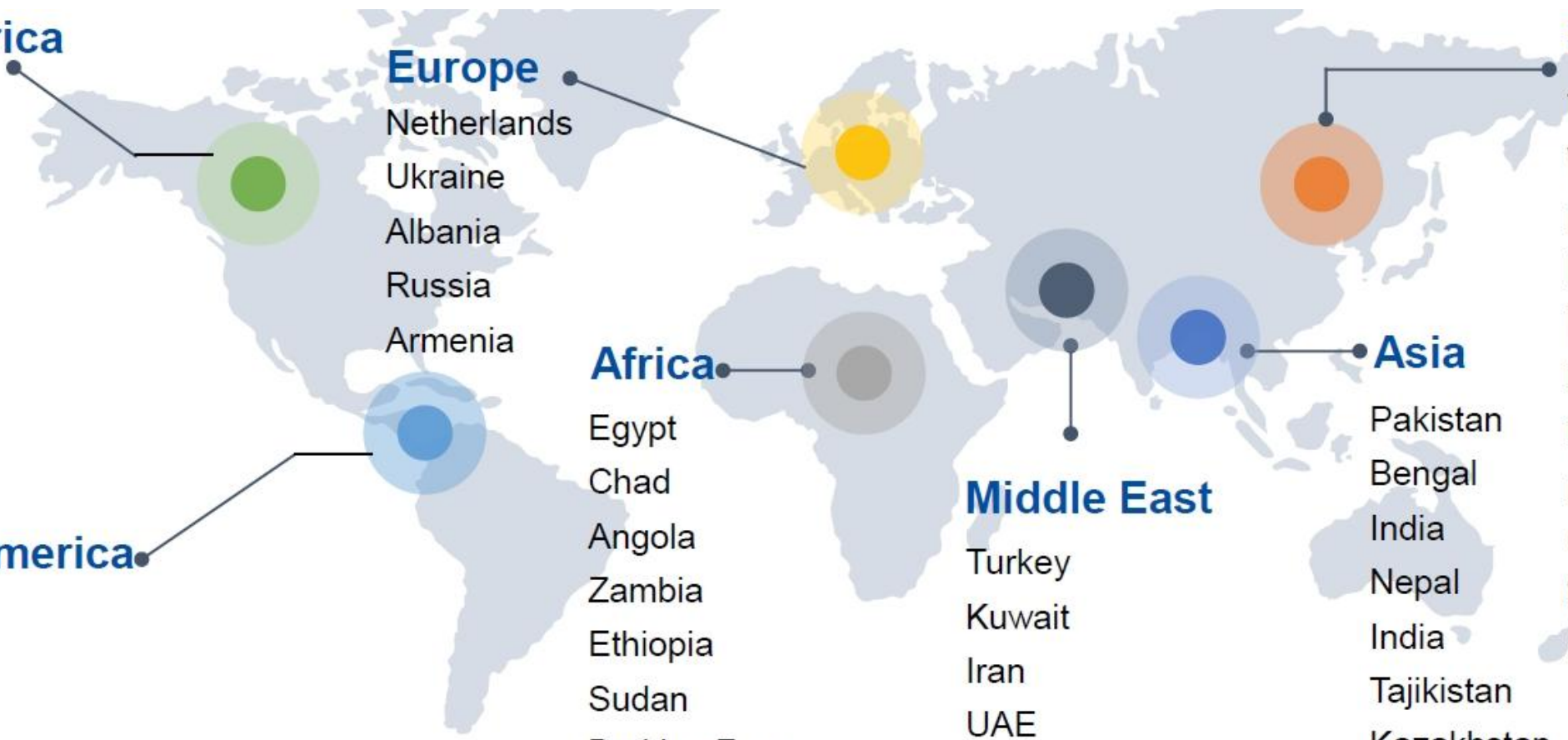
- Egypt
- Chad
- Angola
- Zambia
- Ethiopia
- Sudan
- Burkina Faso
- Senegal
- Gabon
- Kenya

Middle East

- Turkey
- Kuwait
- Iran
- UAE
- Saudi Arab
- Iraq
- Oman

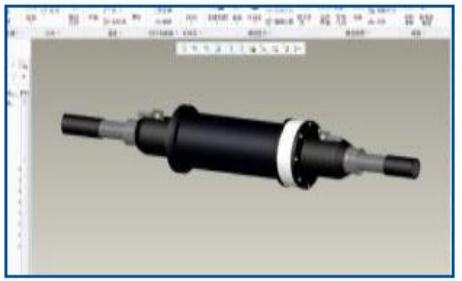
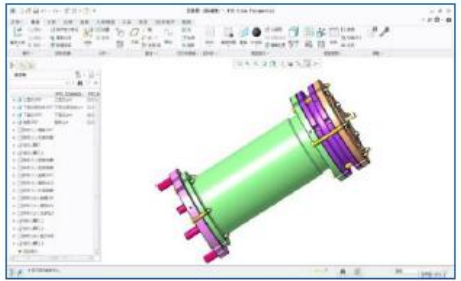
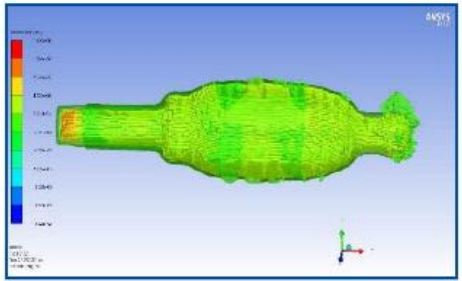
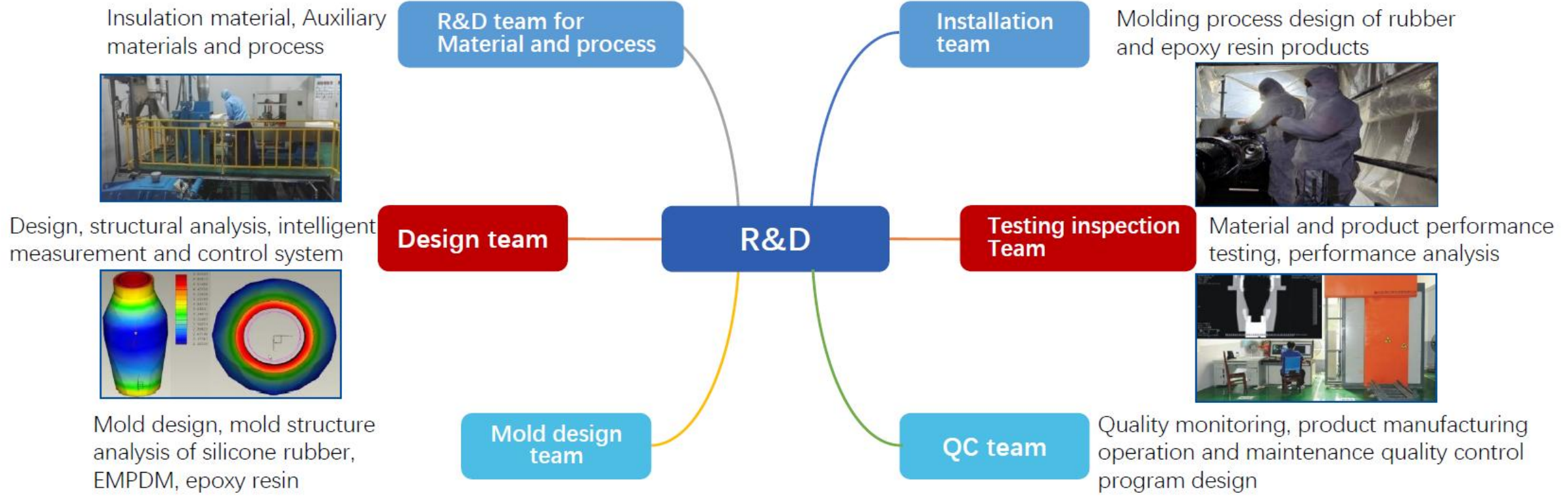
Asia

- Pakistan
- Bengal
- India
- Nepal
- India
- Tajikistan
- Kazakhstan
- Turkmenistan
- Afghanistan
- Israel



R&D Team

255 R&D Engineers



Quality Control

KEMA IN	KEMA IN	KEMA IN
Object	Object	Object
Client	Client	Client
Manufacturer	Manufacturer	Manufacturer
Inspected by	Inspected by	Inspected by
Test location	Test location	Test location
Date of tests	Date of tests	Date of tests
Test specification	Test specification	Test specification
Regarding	Regarding	Remarks
Summary and conclusion	Summary and conclusion	
This report applies to the same type references	This report applies to the same type references	This report applies to the same type references
This report consists of 105 pages	This report consists of 105 pages	This report consists of 105 pages
KEMA	KEMA	KEMA
Version: 1 Copyright: Only integral reproduction may be available and have the status 'for information'	Version: 1 Copyright: Only integral reproduction may be available and have the status 'for information'	Version: 1 Copyright: Only integral reproduction may be available and have the status 'for information'

KEMA

Report

70951901-TD

Type tests XLPE insulation

Manufacturer
Changsha
Changsha

Annhem, 24 June 2019

KEMA Labs

to whom it concerns

Our reference: 3189-15

Dear sir/madam,

We hereby confirm the test results and keep in our files.

The content of the report is available on our website.

Yours sincerely,

Robert Menger
KEMA B.V.
Robert Menger
Inspections Manager

KEMA Labs, A CESI brand
Arnhem, the Netherlands

This report applies to the same type references

This report consists of 105 pages

KEMA Laboratory

Version: 1
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KEMA INSPECT

Object Single-core
Type 12/20 (24)

Client Changlan Electric Technology Co., Ltd.
No.223, Tongshan Road, Anhui Province, China

Manufacturer Changlan Electric Technology Co., Ltd.
No.223, Tongshan Road, Anhui Province, China

Inspected by KEMA B.V., Utrechtseweg 150, 3820 LB Amstelveen, The Netherlands

Test location China Electric Power Research Institute
Wuhan, China

Date of tests 6 May 2019

Test specification The tests were performed according to IEC 60287

Regarding Type Tests

Summary and conclusion The object of the test is suitable for the intended use.

This report applies only to the object and same type references as that tested

This report consists of 105 pages

KEMA Laboratory

Version: 1
Copyright: Only integral reproduction of this report may be available and have the status 'for information'

Prequalification Test Report for 500 kV XLPE Power Cable System from Changlan Electric Technology Co., Ltd.

CEPRI-EETC08-2018-2001(E)

POWER INDUSTRY QUALITY INSPECTION AND TEST CENTER FOR ELECTRIC EQUIPMENT, P. R. OF CHINA

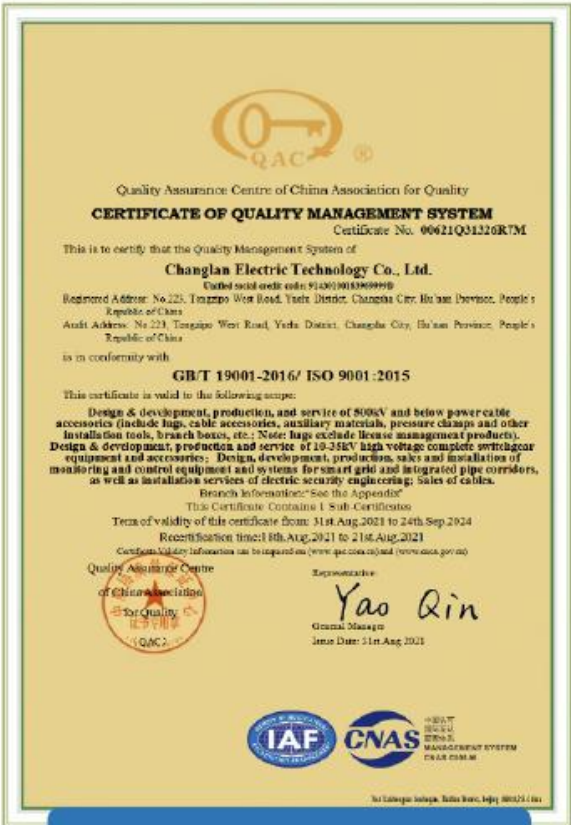
2018-06-19

Changlan Materials



Quality Control

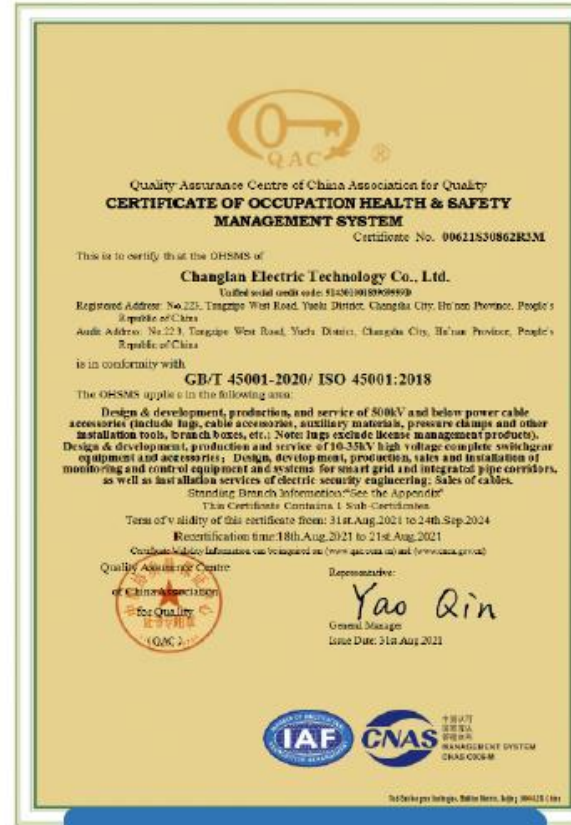
Management system: Changlan Technology's management system is the "three-in-one" management system (QEOMS) of quality, environment, and occupational health and safety;
 System documents: "Quality, Environment, Occupational Health and Safety Management Manual", "Procedure Documents", third-level management documents (including: various rules and regulations of the company and departments/workshops);
 Management system inspection and audit: internal audit, external audit, management review, third-party certification audit, and daily system management.



ISO9001



ISO14001



ISO45001



Intellectual property management system

Advanced Testing



1600kV series resonance equipment



4800kV impulse voltage generator



±2000kV DC complete set of experimental equipment



800kV series resonance equipment



±1200kV DC complete set of experimental equipment



230kV cable and accessories test circuit



500kV cable and accessories test circuit

Installation



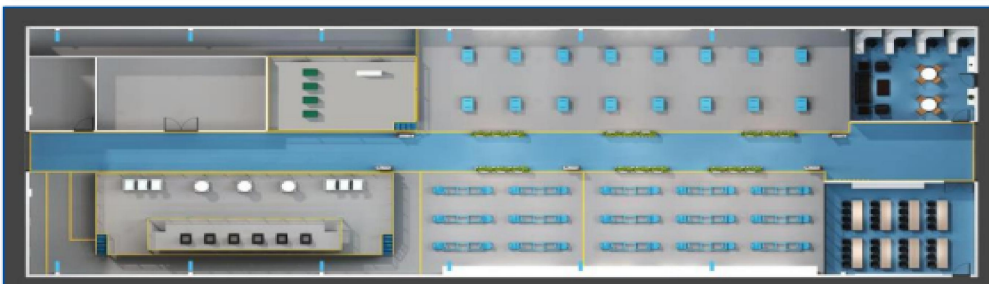
Changlan Electric Technology Co., Ltd. has an installation team of more than 380 people, equipped with 47 installation engineering vehicles, and has fast and efficient installation service guarantee capabilities. Install more than 9,000 sets of high-voltage cable accessories every year, and reach the service site within 24 hours in the province and 48 hours in China.

In addition, the company introduced the installation site management module to realize the strict review and recording of the whole installation process, especially the important links, through the mobile phone; the whole process of the installation site was videotaped, and the comprehensive on-site control means were improved to ensure the quality of on-site installation and after-sales service.

Installation



INSTALLATION TRAINING SERVICE



order number	Name of base unit	Program code	Base code
1	State Grid Chongqing Electric Power Company skill training center(medium voltage)		01
2	State Grid Jiangxi Electric Power Co.,LTD.Training Center (Medium Voltage)		02
3	State Grid Hunan Electric Power Co.,LTD.Technical skill training center(medium voltage)		03
4	Changlan Technology Group Co.,LTD.(medium voltage,high voltage)		04
5	Shenzhen Power Supply Bureau Co.,LTD.(medium voltage,high voltage)		05
6	Guangxi Power Grid Co.,LTD.Training and Evaluation Center(Medium Voltage)		06
7	Guangdong Power Grid Co.,LTD.Guangzhou Power Supply Bureau Training and Evaluation Center(Medium voltage,high voltage)	003	07
8	Guangdong Southern Electric Power Vocational Training College(Medium Voltage)		08
9	State Grid Gansu Electric Power Company Training Center(Medium Voltage)		09
10	State Grid Tianjin Electric Power Company Training Center(medium voltage,high voltage)		10
11	State Grid Shandong Electric Power Company Jining Power Supply Company(medium voltage,High voltage)		11
12	State Grid Zhejiang Electric Power Co.,LTD.Training Center(medium voltage,high voltage)		12
13	State Grid Jiangsu Electric Power Co.,LTD.Skills Training Center(Medium voltage,high voltage)		13
14	Xianhen International Technology Co.,LTD.(medium voltage)		14
15	State Grid Henan Electric Power Company skill Training center(medium voltage,high voltage)		15

THE ONLY CABLE ACCESSORIES SUPPLIER IN CHINA THAT HAS OBTAINED THE QUALIFICATION TO EVALUATE CABLE ACCESSORIES INSTALLATION PERSONNEL

Changlan Materials

Global Project

New energy



Anda Shengping photovoltaic power station project in Heilongjiang Province



Tianrun Yancheng Dafeng Wind Farm project



Yunnan Qiaojia County Xinchanggou Haiba wind farm project



Henan Nangong photovoltaic power station project



Yunnan 49.5MW Qiaojia Dalai Shishan Wind Farm project



Anhui Suzhou 48.3MW Xiangshan Wind Farm Project



Yunnan International Dajipo (Phase III) 144MW wind power plant project



Qujing City, Yunnan Province Huaneng Fuyuan Guangliangzi Wind Power (Phase II) project

Global Project

Railway



Harbin passenger special Changchun West Station cable project



Lianyungang Substation of Qinglian Railway



Beijing-Kowloon Railway Electrification transformation project



Beijing-kowloon Railway Taimei traction Station 27.5kV station inside line project



Guangzhou Metro Line 3 project



27.5kV Kunming Hub Project

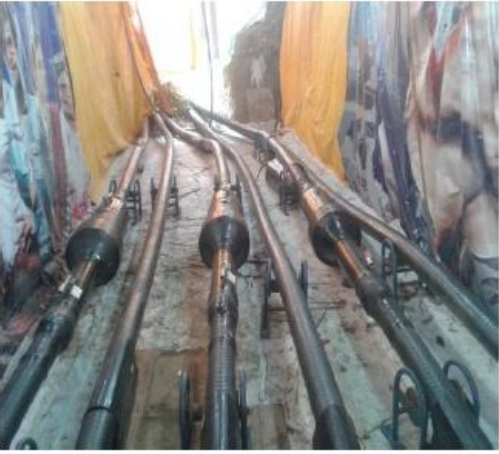


27.5kV Shanghai-kunming high-speed Railway



Guangzhou Wu-Guang Railway 220kV cable project

Global Project



**2010-2011-2012-2015
INDIA DTL PROJECT**



Global Project



**2017
CHILE PROJECT**

Global Project



JULY, 2008
IRAN TEHRAN METRO LINE 4/ PROJECT
66KV GIS TERMINATION 13PCS
JOINT 30PCS
OUTDOOR TERMINATION 13PCS



Global Project



2010

PAKISTAN 560MW CIRCLE SUBSTATION

220KV GIS TERMINATION 21PCS

OUTDOOR TERMINATION 15PCS

Global Project

MARCH, 2010

INDONESIA PROJECT

220KV PORCELAIN TERMINATION

6PCS



Global Project



DEC. 2009

ALBANIA PROJECT

110KV COMPOSITE TERMINATION 12PCS

Global Project



Nov,2014 ,
Bangladesh project



Jan, 2015
Iraq, Huasid Power Plant



July,2016
Angola project

Global Project



May,2011
Pakistan Project



Nov, 2012
North Korea project



May,2017
Ethiopia project

Global Project



2025 Malaysia
275KV Cable Project



2025 Bangladesh
275KV Cable Project



Global Project



Quanzhou Fuxia DK170-880 220kV Luo Xin One And Two Road Project



Inner Mongolia Baotou Aluminum Plant three series high-tech double line 220kV cable project



220kV cable project Huarun Thermal Power Plant in Nanjing, Jiangsu Province



Liaoning Fuxin wind power 220kV cable project



Nanjing Hualian thermal Power Plant 220kV cable



Tangshan Beijiao Power Plant 220kV project

Global Project



Chihu - Shilong 110kV cable project



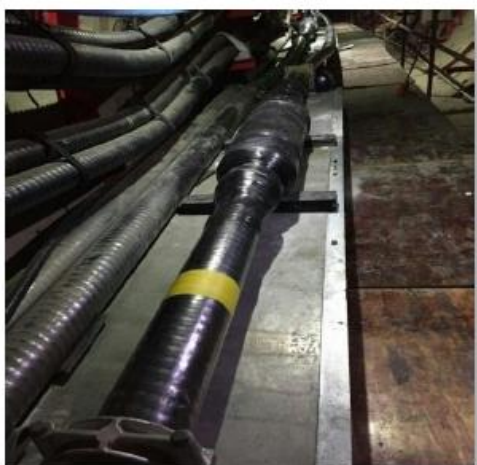
Linqi 110kV substation, Anyang, Henan



Hubei Wuhan Taojialing 220kV power transmission and transformation project



Hunan Xueshi - Tianding double section into Longwang line project



Guangzhou 220kV Yongfu Power transmission and transformation project



Zhuhai 220kV Fengji Line power transfer project



Zhaojialiu 220kV traction station power line project



Malutang Power Plant, Wenshan City, Yunnan Province Phase II 220kV cable project

**WARMLY WELCOME
YOU
TO VISIT OUR FACTORY
THANKS**

TO EXPLORE THE WORLD PROJECTS WITH YOU



**Sincerely waiting
for collaboration
with you!!!**