



Termination and Joint using Liquid Silicone Rubber
which is excellent insulation material

Dummy Plug and Coupling Plug using
Liquid Silicone Rubber

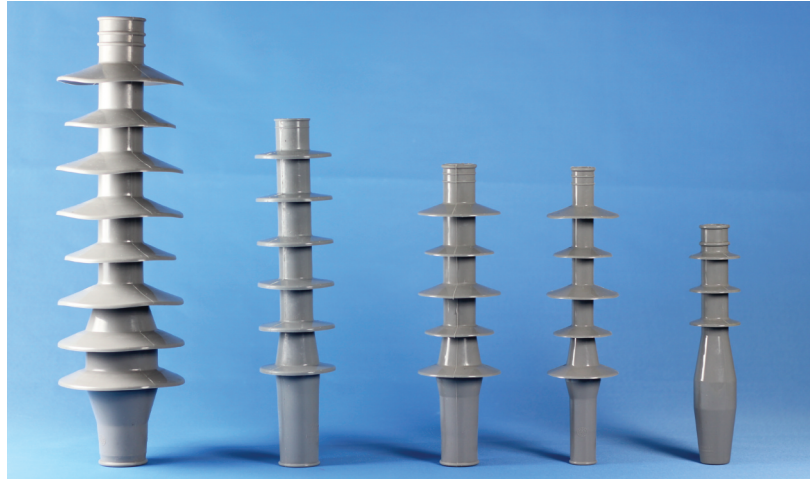
Elbow Connectors, Aluminum Lug and Sleeve using
EPDM Rubber

ROKSANPOLICO POWER SYSTEMS

6.6kV-35kV Cold Shrinkable Terminations

Features

- Reduce installation time and faulty construction using one piece termination
- Using Liquid Silicone Rubber
- High quality in ultraviolet ray and sea side area
- Used for various cables (PE, XLPE, EPR, etc)
- Prevent leakage current by increasing surface energy
- Best quality in insulation parts
- IEEE Std. 48 & CENELEC HD 629.1



Installation Features

- Reduce installation time and faulty construction using one piece of stress cone and isolation area
- Installation without special tools
- Check with bare eyes when installing cables



High Reliability

- No heat, No grease, No tape
- Erosion resistance
- The same voltage of cable conductor
- Easy to control for materials and inventory installing 4 types of terminations in 14 sizes of cables

8.7/15(18)kV Cold Shrinkable Outdoor Termination

| Core | Cable Cross Section(Sq.mm) | Outdoor Termination(Kit Code) | Insulation OD Range(mm) |
|--------|----------------------------|-------------------------------|-------------------------|
| 1 Core | 25-50 | RPCSO-15/1.1 | 16.4~18.6 |
| | 70-150 | RPCSO-15/1.2 | 20.3~24.9 |
| | 185-300 | RPCSO-15/1.3 | 26.4~31 |
| | 400-630 | RPCSO-15/1.4 | 33.9~41.2 |
| 3 Core | 25-50 | RPCSO-15/3.1 | 16.4~18.6 |
| | 70-150 | RPCSO-15/3.2 | 20.3~24.9 |
| | 185-300 | RPCSO-15/3.3 | 26.4~31 |
| | 400-630 | RPCSO-15/3.4 | 33.9~41.2 |

Features of Liquid Silicone Rubber

- Resistance to ultraviolet ray
- Resistance to tracking
- Hydrophobicity of the surface
- Permanent elasticity results in permanent interface pressure
- Good flow-ability and low viscosity, high elongation and low modulus



12/20(24)kV Cold Shrinkable Outdoor Termination

| Core | Cable Cross Section(Sq.mm) | Outdoor Termination(Kit Code) | Insulation OD Range(mm) |
|--------|----------------------------|-------------------------------|-------------------------|
| 1 Core | 35~70 | RPCSO-20/1.1 | 19~22.3 |
| | 95~185 | RPCSO-20/1.2 | 23.9~28.4 |
| | 240~400 | RPCSO-20/1.3 | 30.9~35.9 |
| | 500~630 | RPCSO-20/1.4 | 39~44 |
| 3 Core | 35~70 | RPCSO-20/3.1 | 19~22.3 |
| | 95~185 | RPCSO-20/3.2 | 23.9~28.4 |
| | 240~400 | RPCSO-20/3.3 | 30.9~35.9 |
| | 500~630 | RPCSO-20/3.4 | 39~44 |

20.2/35(42)kV Cold Shrinkable Outdoor Termination

| Core | Cable Cross Section(Sq.mm) | In/outdoor Termination | Insulation OD Range(mm) |
|--------|----------------------------|------------------------|-------------------------|
| 1 Core | 50~70 | RPCSO-35/1.1 | 27.3~29 |
| | 95~185 | RPCSO-35/1.2 | 30.6~35.1 |
| | 240~300 | RPCSO-35/1.3 | 37.6~39.7 |
| | 400~630 | RPCSO-35/1.4 | 42.6~49.4 |
| 3 Core | 50~70 | RPCSO-35/3.1 | 27.3~29 |
| | 95~185 | RPCSO-35/3.2 | 30.6~35.1 |
| | 240~300 | RPCSO-35/3.3 | 37.6~39.7 |
| | 400~630 | RPCSO-35/3.4 | 42.6~49.4 |

15kV-35kV Cold Shrinkable Splice Joint

Features

- Reduce installation time and faulty construction using one piece termination
- Using Liquid Silicone Rubber
- Used for various cables
- Directly use after installation
- Manufactured in full compliance with all applicable IEEE Std. 404 & CENELEC HD 629.1



Installation

- Easy to install
- Reduce installation time and faulty construction by checking with bare eyes when installing cable
- 100% waterproof
- Using various sizes of cables
- Long term reliability

8.7/15(18)kV Cold Shrinkable Joint

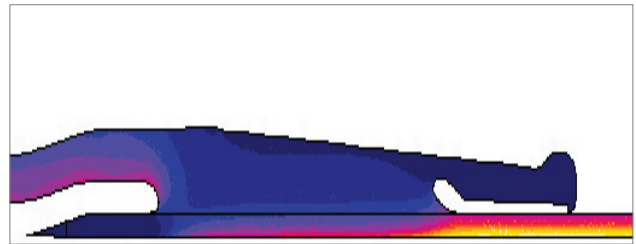
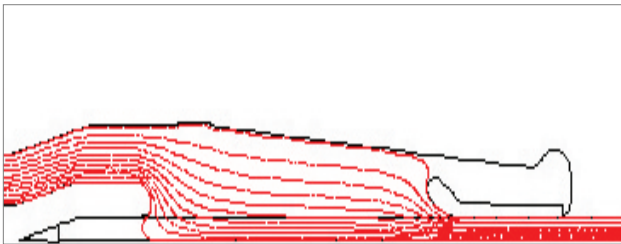
| Core | Cable Cross Section (Sq.mm) | Straight Through Joint (Kit Code) | Insulation OD Range (MM) |
|--------|-----------------------------|-----------------------------------|--------------------------|
| 1 Core | 25~50 | RPCJO-15/1.1 | 16.4~18.6 |
| | 70~150 | RPCJO-15/1.2 | 20.3~24.9 |
| | 185~300 | RPCJO-15/1.3 | 26.4~31 |
| | 400~630 | RPCJO-15/1.4 | 33.9~41.2 |
| 3 Core | 25~50 | RPCJO-15/3.1 | 16.4~18.6 |
| | 70~150 | RPCJO-15/3.2 | 20.3~24.9 |
| | 185~300 | RPCJO-15/3.3 | 26.4~31 |
| | 400~630 | RPCJO-15/3.4 | 33.9~41.2 |

12/20(24)kV Cold Shrinkable Joint

| Core | Cable Cross Section (Sq.mm) | Straight Through Joint (Kit Code) | Insulation OD Range (MM) |
|--------|-----------------------------|-----------------------------------|--------------------------|
| 1 Core | 35~70 | RPCJO-20/1.1 | 19~22.3 |
| | 95~185 | RPCJO-20/1.2 | 23.9~28.4 |
| | 240~400 | RPCJO-20/1.3 | 30.9~35.9 |
| | 500~630 | RPCJO-20/1.4 | 39~44 |
| 3 Core | 35~70 | RPCJO-20/3.1 | 19~22.3 |
| | 95~185 | RPCJO-20/3.2 | 23.9~28.4 |
| | 240~400 | RPCJO-20/3.3 | 30.9~35.9 |
| | 500~630 | RPCJO-20/3.4 | 39~44 |

Requirements for cable joint

- Good flow-ability and low viscosity
- High elongation and low modulus
- High dielectric strength
- Good tracking resistance
- Good arc resistance
- Protect cable and conductor against humidity, etc
- Smoothen electrical field on MV and HV cables
- Good adhesive interface between conductive shield and insulated LSR



20.2/35(42)kV Cold Shrinkable Joint

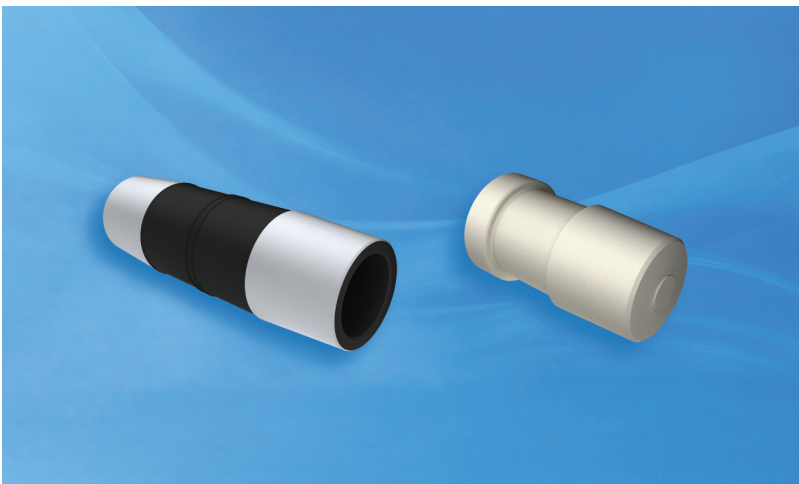
| Core | Cable Cross Section (Sq.mm) | Straight Through Joint (Kit Code) | Insulation OD Range (MM) |
|--------|-----------------------------|-----------------------------------|--------------------------|
| 1 Core | 50~70 | RPCSJ-35/1.1 | 27.3~29 |
| | 95~185 | RPCSJ-35/1.2 | 30.6~35.1 |
| | 240~300 | RPCSJ-35/1.3 | 37.6~39.7 |
| | 400~630 | RPCSJ-35/1.4 | 42.6~49.4 |
| 3 Core | 50~70 | RPCSJ-35/3.1 | 27.3~29 |
| | 95~185 | RPCSJ-35/3.2 | 30.6~35.1 |
| | 240~300 | RPCSJ-35/3.3 | 37.6~39.7 |
| | 400~630 | RPCSJ-35/3.4 | 42.6~49.4 |

35kV Liquid Silicone Rubber for Busbar & Plug



Busbar

Max. working voltage 36kV
Partial discharge ≤ 10 pC



Coupling Plug & Dummy Plug

Max. working voltage 36kV
Partial discharge ≤ 10 pC



Solid Insulation Busbar Connectors

Max. working voltage 36kV
Partial discharge ≤ 10 pC

15kV-35kV Deadbreak Connectors

Features

- Approved of KEPCO
- All Connectors meet the electrical and dimensional requirements of IEEE 386 CENELEC EN 50180 & 50181, CENELEC HD 629.1
- Semi conductive shields : IEEE 592
- 100% mill's inspection
- Peroxide-cured EPDM rubber
- Outer EPDM jacket of connectors is conductive shield and ensure the safety to users



36kV, TEE Connector

| Section (mm ²) | Conductor material | Component parts |
|----------------------------|--------------------|---|
| 50, 70, 95, 120, 185, 240 | Copper or Aluminum | Cable Adaptor, Conductor Contact, Clamping Screw, Basic Insulation Plug, Insulated Cap, Silicone Grease |

36kV, Elbow Connector

| Section (mm ²) | Conductor material | Component parts |
|----------------------------|--------------------|---|
| 50, 70, 120, 185, 240 | Copper or Aluminum | Cable Adaptor, Conductor Contact, Pin Contact, Bail Restraint |

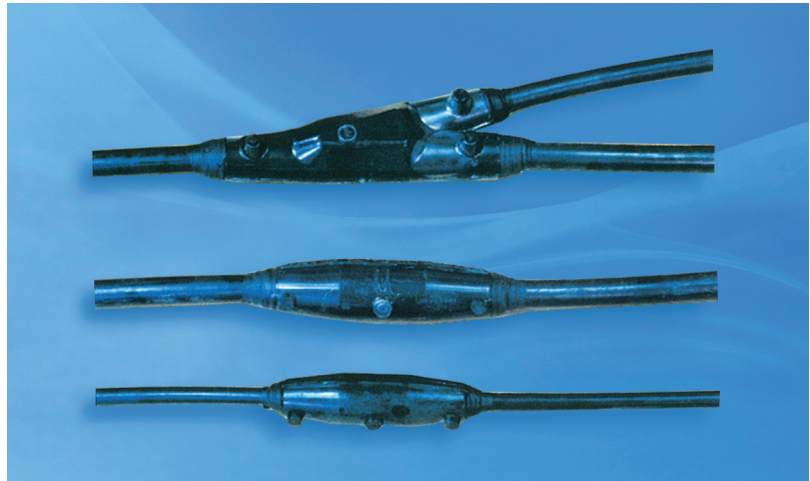
Ordering info.

| Separable Connector | Voltage (kV) | Current (A) | Conductor size(mm ²) | |
|---------------------|--------------|-------------|----------------------------------|-----|
| | | | min | max |
| 400 TE / 400 LR | 12 | 400 | 35 | 240 |
| K400 TE / K400 LR | 24 | 400 | 35 | 240 |
| M400 TE / M400 LR | 36 | 400 | 35 | 185 |

Nonflammable Resin Reinforced Filling Type Waterproof Connectors(600V)

Product Features

- Currently supply to KEPCO after approval
- Approved of KERI
- Excellence in body design, 100% waterproof
- Enabled to use various resins having excellent insulating property
- IEEE 60707 FV0 : Nonflammable class
- Complete connection with cable and connector
- Waterproof in below water 7M



Test Features

| Test List | Test Method |
|----------------------------|---|
| Submersion | 24Hr at 30cm Deep Water |
| Accelerate Submersion Test | Accelerate Submersion in water(0.7kgf/cm ²) pressure, 72hrs |
| Insulation Resistance Test | Over 2.5M Ω . inside water |
| AC Withstand Test | AC 2.2kV / 1min. inside water |
| Nonflammable Test | IEC60707 FV0 |
| Current Cycle Test | Insulation resistance needs to be above 2.5M Ω after 50 cycles |
| Impact Test | Drop metal ball (0.54kg) from 0.91m and AC test |
| Leakage Current Test | Inside water, AC600V and below 1mA leakage current must be given |

Ordering Info.

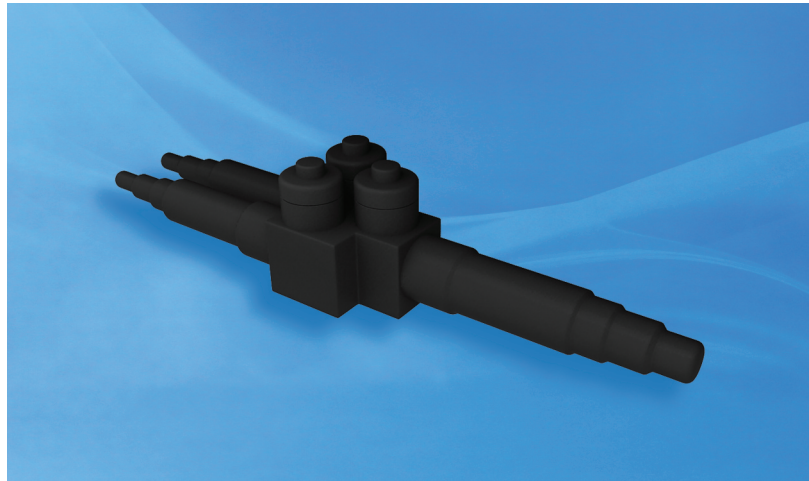
| Cat No. | Type | Main Line | Junction Line |
|---------|--------------|------------------------------------|----------------------------------|
| JS1 | Splice joint | 22(25) ~ 38(35)mm ² | |
| JS2 | | 60(70) ~ 100(120)mm ² | |
| JS3 | | 200(240) ~ 325(300)mm ² | |
| JB1 | Y Type Joint | 22(25) ~ 100(120)mm ² | 22(25) ~ 60(70)mm ² |
| JB2 | | 200(240) ~ 325(300)mm ² | 60(70) ~ 200(240)mm ² |

600V Cable Premolded Joints

These premolded joints are suitable to use both in/outdoor and pool type low voltage lines. It has waterproof property. In actual usage condition, it is designed to be used in both service lines and spreading lines.

Product Features

- Currently supplying to KEPCO after approval
- Nonflammable
- Complete connection with cable and connector
- Submersion and in/outdoor installation
- IEEE 60707 FV0 : Nonflammable class
- Waterproof in below water 7M
- Directly use after installation



Test Features

| Test List | Test Method |
|----------------------------|---|
| Submersion Test | 24Hrs at 30cm deep water |
| Insulation Resistance Test | Above 2.5m ohm inside water |
| AC Withstand Test | AC 2.2kV/1min. inside water |
| Flexibility Test | 90 degree bending and twist |
| Current Cycle Test | Insulation resistance needs to be above 2.5MΩ after 50 cycles |
| Leakage Current Test | Inside water, below 2.5mA |

Ordering Info.

| Item No. | Cat No. | Lines | Type | Applicable Cable | Remark |
|-----------|---------|-------|-----------------------|---|---|
| ES115-750 | 2HS | 3-way | 2 Phase Termination | - Small 22~100SQ - Large • Main Line : 100~325SQ • Junction Line : 22~100SQ | Individual purchase for sleeve is available |
| ES115-751 | 3HS | | 3 Phase Termination | | |
| ES115-754 | 4HS | | 4 Phase Termination | | |
| ES115-740 | 2TS | 4-way | 2 Phase Junction | | |
| ES115-741 | 3TS | | 3 Phase Junction | | |
| ES115-744 | 4TS | | 4 Phase Junction | | |
| ES115-745 | 4TS | 6-way | Single Phase Junction | | |
| ES115-766 | STS | | | | |
| ES115-767 | STL | | | | |
| ES115-768 | BTS | | | | |
| ES115-769 | BTL | | | | |

15kV-35kV GIS Plug-in Type Cable Connectors & Sockets



Features

- Easy to maintain MTr & GIS
- Easy to separate and replace in the accident area
- Multi characteristic materials having excellent insulating property is used
- Plugs and Sockets can be compatible with other company's products
- Long lasting quality
- Semi-permanent use

Test Features

| Test List | Test Method |
|------------------------|--|
| Impulse Voltage | 200kV (1.2*50um), 10 times |
| AC Withstand Test | 93.6kV / 5min |
| DC Withstand Test | 125kV / 15min |
| Partial Discharge Test | 36kV / below 10pC |
| Current Cycle Test | 52kV, 5 Cycles (Temp. conductor 95~100°C), Heating 5 hrs, cooling 3 hrs |
| Removable Test | 5 times |

Ordering Info.

| Item List | Cat No. | Remark |
|-----------|-------------|--------|
| Size 2 | PITC-Y2-P01 | 60SQ |
| | PITC-Y2-P02 | 325SQ |
| Size 3 | PITC-Y3-P01 | 60SQ |
| | PITC-Y3-P03 | 325SQ |
| | PITC-Y3-P04 | 600SQ |

Silicone Rubber(LSR & HCR)

Liquid Silicone Rubber for Cold Shrinkable (LSI)

LSI-601/XX Liquid silicone rubbers and their properties

| Application | Grade No. | Appearance | Specific Gravity | Mixing Viscosity | Hardness | Tensile Strength | Elongation | Tear Strength(B) | Volume Resistivity | Dielectric strength | Tracking Resistance | Arc Resistance | Flame Retardancy |
|-------------|-------------|-------------|------------------|-------------------------------------|------------------------|---------------------------------|----------------|----------------------|--------------------|---------------------|---------------------|------------------|------------------|
| | | | ASTM D 792 | Share Rate 10s ⁻¹ [Pa.s] | ASTM D 2240 ShoreA[HS] | ASTM D 412 [N/mm ²] | ASTM D 412 [%] | ASTM D 624(B) [N/mm] | ASTM D 257 [Ω·cm] | ASTM D 149 [KV/mm] | IEC 60587 [KV] | ASTM D 495 [sec] | IEC 60695 |
| CSType PMJ | LSI-601/40 | Translucent | 1.08 | 220 | 39 | 7 | 600 | 25 | 1×10 ⁶ | 25 | 4.5 | 420 | V-1 |
| | LSI-601/40G | Gray | 1.10 | 200 | 39 | 7 | 600 | 25 | 1×10 ⁶ | 25 | 4.5 | 420 | V-1 |
| | LSI-1530/01 | Black | 1.08 | 480 | 30 | 6 | 650 | 30 | 45 | - | - | - | - |
| Boot | LSI-601/40W | White | 1.09 | 95 | 39 | 7 | 450 | 20 | 1×10 ⁶ | 25 | 4.5 | 420 | V-1 |

High Consistency Silicone Rubber (HCR)

HVI-xx HCR and their properties

| Application | Grade No. | Appearance | Specific Gravity | Hardness | Tensile Strength | Elongation | Tear Strength(B) | Volume Resistivity | Dielectric strength | Tracking Resistance | Arc Resistance | Flame Retardancy |
|---------------------------------------|-----------|------------|------------------|------------------------|---------------------------------|----------------|----------------------|----------------------|---------------------|---------------------|------------------|------------------|
| | | | ASTM D 792 | ASTM D 2240 ShoreA[HS] | ASTM D 412 [N/mm ²] | ASTM D 412 [%] | ASTM D 624(B) [N/mm] | ASTM D 257 [Ω·cm] | ASTM D 149 [KV/mm] | IEC 60587 [KV] | ASTM D 495 [sec] | IEC 60695 |
| Insulator, Surge Arrestor, Terminator | HVI-65 | Gray | 1.52 | 65 | 50 | 250 | 15 | 2.5×10 ¹⁶ | 23 | 4.5 | >200 | V-0 |
| | HVI-70 | Gray | 1.54 | 70 | 50 | 230 | 13 | 2.5×10 ¹⁶ | 23 | 4.5 | >200 | V-0 |

Compare Cable Accessories

| | Compare item | heat shrink | cold shrink | premolded | |
|-----------------|-----------------------------------|---------------|-------------|-----------|---|
| Suitable scope | kinds of cable wrapped insulation | ☆ | ★ | ★ | |
| | voltage grade | up to 35kv | ◇ | ★ | ☆ |
| | | below to 10kv | ☆ | ★ | ★ |
| | cable accessory assort | terminaion | In door | ★ | ★ |
| | | | Out door | ☆ | ★ |
| straight joint | | ☆ | ★ | ☆ | |
| Structure trait | structure | ◇ | ★ | ★ | |
| | specification | ★ | ★ | △ | |
| | volume | ★ | ★ | ★ | |
| Install in site | operating technique | ☆ | ★ | ★ | |
| | man-hour | ☆ | ★ | ★ | |
| | installation tool | ☆ | ★ | ★ | |

| | |
|---|--|
| ★ | Suitable, simple structure, few specification, small volume low cost, less man-hours and few tools. |
| ☆ | Suitable, simple structure, a few specification, small, less cost, less man-hours, a few tools. |
| ◇ | Not very suitable, compicated structure, more specification, large volume, high cost, more man-hours and more tools. |
| △ | Not suitable, complicated structure, more specification, large volume, high cost, more man-hours and more tools. |
| X | Not suitable |

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