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# SUBSTATION AND OVERHEAD LINE EQUIPMENT AND SERVICES

## AFRITEK (PTY) LTD

Is a BWO company providing world class engineering services  
and specialised products to our customers.



Visit our website for more information:

[www.afriteksa.co.za](http://www.afriteksa.co.za)



# Overhead Glass, Composite & Porcelain Insulators

## Glass Disc Insulator

**Rating:** 70 & 120kN

**Material:** Glass

**Description:** Glass Disc Insulator (Ball & Socket)

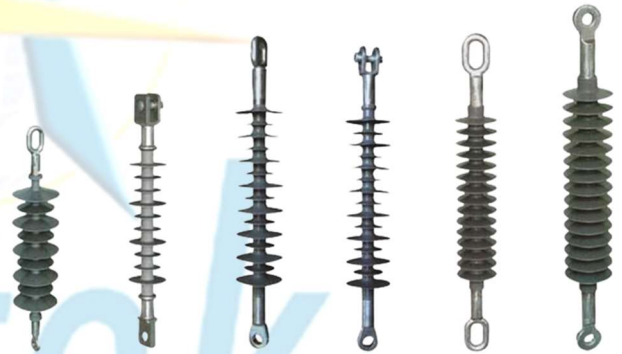


## Composite Silicone Insulator

**Rating:** 11,22,33 and 66kV / 70 and 120kN

**Material:** Silicone

**Description:** Ball & Socket Long Rod



(Please contact the branch on the various kind of insulators or you can visit the company's website: [www.afriteksa.co.za](http://www.afriteksa.co.za) for more information)

## Porcelain Stay Insulator

**Solid Core Station Post**

**Rating:** Up to 1200kV

**Creepage Distance:** 25mm/kV and 31mm/kV

**Material:** Porcelain

**Description:** Solid Core Post Insulator



### Pin Insulator

**Rating:** Up to 69kV

**Mechanical Strength:** 10kN

**Creepage Distance:** Up to 1080mm

**Material:** Porcelain

**Description:** Porcelain Pin Insulator



### Guy Strain Insulators/Stay Insulator

**Rating:** 6 and 11kV

**Tensile Strength:** Up to 90kN

**Material:** Porcelain

**Description:** Used in Stay Assemblies (LV/MV)



### Shackle Insulator

**Rating:** 11kV

**Material:** Porcelain

**Description:** S05 Shackle Insulator (Brown/Grey)



### Line Post Insulator

**Rating:** Up to 132kV/10

**Creepage Distance:** Up to 580mm

**Material:** Porcelain

**Description:** Capped/Uncapped Insulator



# Aerial Bundle Conductor and Airdac Accessories

**Rating:** 1000V

**Material:** Aluminium and Plastic

**Description:** Black Strain Clamp for ABC Insulated Conductor

(Also Available in Blue for Bare Neutral ABC Conductor)



**Rating:** 1000V

**Material:** Cast Aluminium and Thermoplastic

**Description:** Suspension Clamp Insulated Black 54.6-70mm

(Also Available in Bare Neutral 35-50mm<sup>2</sup>)



**Rating:** 257A

**Material:** Plastic/Tinned Copper and Carbon Steel

**Description:** 25-95mm Main/25-95 Tap Piercing Connector

(Also Available in Various sizes, please contact the branch or visit the website: [www.afriteksa.co.za](http://www.afriteksa.co.za) for more information)



**Rating:** 1000V

**Material:** Cast Aluminium

**Description:** CS14 Bracket used for ABC Suspension Assembly



**Rating:** 1000V

**Material:** Cast Aluminium

**Description:** CS10 Bracket used for Strain Assembly



**Rating:** LV

**Material:** Thermoplastic and Cast Aluminium

**Description:** Airdac Strain Clamp 4-10mm<sup>2</sup> (Also available in 10-16mm)



**Rating:** LV

**Material:** Thermoplastic

**Description:** Airdac Strain Clamp



**Rating:** LV

**Material:** Thermoplastic

**Description:** Insulated End Cap for ABC Conductor 35-70mm<sup>2</sup>



**Afritek**  
(PTY) LTD

# Overhead Line Equipment

**Rating:** 70kN

**Material:** Aluminium Alloy

**Description:** Thimble Clevis



**Rating:** 70kN

**Material:** Aluminium

**Description:** Cradle Suspension Clamp 8-18mm<sup>2</sup>



**Rating:** 70kN

**Material:** Aluminium

**Description:** Pistol Grip Strain Clamp (5-15mm)



**Rating:** 70kN

**Material:** Aluminium

**Description:** Parallel Groove Clamp (PG Clamp 5-15mm<sup>2</sup>)



**Rating:** LV

**Material:** Mild Steel

**Description:** D-Iron Bracket for SO5 Insulator



**Rating:** LV

**Material:** Galvanised Steel (HDG)

**Description:** Question Mark Bracket (L-Bracket)



**Rating:** LV

**Material:** Galvanised Steel (HDG)

**Description:** Pole Top Bracket



**Rating:** LV

**Material:** Galvanised Steel (HDG)

**Description:** LV Strut Pole Bracket



**Rating:** MV

**Material:** Galvanised Steel (HDG)

**Description:** Swivel Strut Pole Bracket



**Rating:** MV

**Material:** Galvanised Steel (HDG)

**Description:** 45 Deg Stay Bracket



**Rating:** 70kN

**Material:** Galvanised Steel (HDG)

**Description:** D-Shackle



**Rating:** 70kN

**Material:** Galvanised Steel (HDG)

**Description:** Eye Bolt M20x250mm<sup>2</sup>



**Rating:** 40/70kN

**Material:** Galvanised Steel (HDG)

**Description:** Eye Nut M16/M20



**Rating:** 10kN

**Material:** Galvanised Steel (HDG)

**Description:** Pigtail Bolt M10x280/M16x380mm<sup>2</sup>



**Material:** Galvanised Steel (HDG)

**Description:** Threaded Rod from M16 up to M20



**Material:** Galvanised Steel (HDG)

**Description:** Stay Thimble 16mm



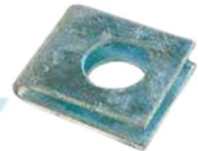
**Material:** Galvanised Steel (HDG)

**Description:** Coach Screw M12x75



**Material:** Galvanised Steel (HDG)

**Description:** Bonding Clip



**Material:** Galvanised Steel (HDG)

**Description:** Clout Nail



**Material:** Galvanised Steel (HDG)

**Description:** Staples (U-Nail)



**Rating:** 12.5Kg

**Material:** Steel

**Description:** Barbed Wire 135m Long





**Rating:** 61.5Kg

**Material:** Galvanised Steel (GDG)

**Description:** Transformer Platform 2.6m



**Rating:** 1.2Kg

**Material:** Galvanised Steel (GDG)

**Description:** Bracing Strap/Strap Tie 910x50x6mm



**Rating:** 34/96kN

**Material:** Galvanised Steel (GDG)

**Description:** Non-Adjustable Stay Rod

(Available in adjustable and various sizes)



**Rating:** 34/96kN

**Material:** Galvanised Steel (GDG)

**Description:** Non-Adjustable Base Plate

(Available in adjustable and various sizes)



**Material:** Stainless Steel

**Description:** 12mm Stainless Steel Buckle



**Material:** Stainless Steel

**Description:** 12.7x0.7mm Bandit Strapping 30m Rolls



## Enclosures

### Ground Mount Enclosures

#### Stubby:

One of the Original compact solutions to keep your electronics secure against the harsh elements of every day live. Makes use of a horizontal locking pin which secures the top in place by means of a padlock

**Sizes:** COCT and TEC 4R



#### Top Entry Cubicles (TEC)

One of the most robust solutions due to the double skin construction. It has a range of features that improve the overall usage of the product and aid the ease of installation on-site. Manufactured from Polyethylene our TEC range of products are lightweight and easy to handle for a single person. Double skin root with removable front and back. Improves the ease of installation of incoming, ongoing and consumer cables.

**Sizes:** TEC 4,6 and 9



## **Double and Single Door Kiosk**

The Double Door Kiosks are rotationally moulded from UV25 Linear low-density polyethylene (LLDPE). The curved surfaces prevent buckling and increase the rigidity of the kiosk. Supplied with a polyethylene backboard for mounting equipment. The hinges are moulded in to ensure a strong, long-lasting doors that can open to 130 degrees for an improved working environment and smoother installation.

**Sizes:** 2,4,6,9 and 12 Way – Double Door

2,4,6 and 12 Way – Single Door



## **Wall and Pole Mount Enclosures**

### **All Purpose Kiosk APK**

The All Purpose Kiosk (APK) was developed to provide a wall and pole-mounted enclosure which matched the large volume provided in standard kiosks.

**Sizes:** 2,4,6 and 12 Way



### **Split Meter Box (SMB) – IP54**

The Split Meter Box (SMB) – IP54 has been designed with a sliding door that can be kept in the open position to handle high wind conditions at a minimum of 130 degrees. This allows for easy installation and an improved working environment as the door is situated above eye level.

**Sizes:** SMB 2,3,4,6 and 9



### **Split Meter Box (SBM) – IP43**

The Split Meter Box (SMB) – IP43 has high impact resistance with the ability to excel in harsh conditions. The enclosure makes use of a sliding door that can be kept open at the 90 degree position and withstand high winds in a wall or pole mounted position.

**Sizes:** SMB 1,2,3,4,5,6,9,12S and 12L



(Please contact branch for more information on Enclosures)

## Emergency Portable Lighting

**Lamp:** Metal Halid

**Power Output:** 875 Watts

**Lumen:** 95000 Lumens

**Colour Temperature:** 4000 Kelvin

**Socket:** E39

**Electric Inflato:** 110V or 220V

**Fabric Tube:** Rip-Stop Nylon, Flame Retardant

**Weight:** 30Kg

**Structure:** Flame-retardant Fibre Glass

**Tube Length:** 4.2M



# Safety Tools & Equipment

**Material:** Polyamide Shock Absorber One Karabiner

**Description:** Safety Harness



**Rating:** 1000V (also available in higher voltage)

**Material:** Rubber/Latex

**Description:** Rubber/Latex Gloves



**Rating:** 160-180mm

**Material:** Leather Straps and Galvanised Steel Clamps

**Description:** Wooden Pole Climbing Shoes



**Rating:** 170Kg

**Material:** Fibre Glass

**Description:** Extension Ladder (ESKOM)



**Rating:** Up to 15M Length and 3kV-132kV

**Material:** Fibre Glass

**Description:** Telescopic Link Stick



**Rating:** 4x95mm

**Material:** Moulded Nylon

**Description:** Cable Core Separation Tool



**Rating:** 2000Kg

**Material:** Iron

**Description:** Come Along Wire Grip 4-22mm



**Rating:** 750Kg

**Material:** Aluminium Hand Wheel

**Description:** Lever Hoist Block (Ratchet)



**Rating:** 9/20 Piece Tool Case

**Material:** Insulated Tools (Screw Drivers, Pliers, Cable Cutters etc.)

**Description:** Insulated Tool Kits



**Rating:** Up to 2.5Kg

**Material:** Black Rubber Cushion grips and Shear type Blade Cut

**Description:** Conductor Cutters with Insulated Handless



**Rating:** Max Input 700 Bar

Output 41kN

**Material:** Guillotine Type Cutting. Lock pin type cutter head

**Description:** Hydraulic Cutter



**Rating:** Up to 50000V

**Material:** Pen-shaped of testing hardware that indicates the existence of electricity

**Description:** High-Frequency AC Voltage Detector

(Also available in LV AC, Pulsed DC and Continuous DC)



**Rating:** 11.5kV

**Material:** Neon-type Instrument for the use on earthed neutral Circuits

**Description:** 11kV Phasing Sticks with Indication



**Rating:** Up to 1000V AC/DC

**Material:** Arc Flash Screen with Headband, Screen to protect against Short-circuit electric arcs

**Description:** Arc Flash Screen



### Various Measuring Tools and Equipment





# LV & MV Cable Joints and Terminations

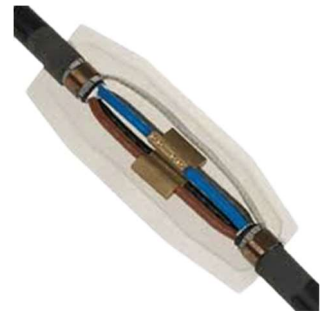
## **Description:** Heat Shrink

- Insulation and Colour Coding of Busbars, etc
- Cable and Component Identification
- Mechanical Strain Relief and Protection



## **Description:** Low Voltage Joints

- LV Terminations
- Heatshrink, Polyurethane resin and Epoxy Joints
- LV Breakout Boots
- LV Heatshrink, all colours



## **Description:** AQT3-24/630K Front Connector

AQT3-24/630K Rear Connector

- Cable End Caps (adhesive lined)
- Wrap Around Cable Repair Sleeves
- Hot Melt Tape
- Mastic Tape/Putty



## **Description:** Tools and Accessories

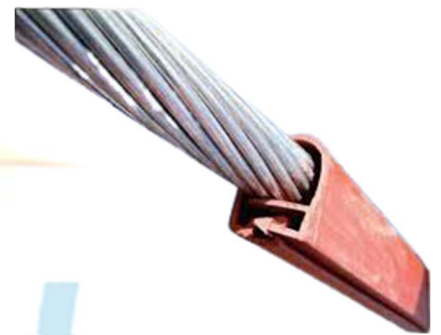
- Heat Gun and Burners
- Tool Cases, Kits and Tools





**Description:** Medium Voltage Heatshrink, Components and Accessories

- MV Joint & Termination Kits
- MV Components including Anti-Track and Busbar
- Busbar Insulation Tape
- Self-amalgamating Tape
- Screened Separable Connectors (11kV-36kV)
- Torque Shear Lugs and Connectors
- Overhead Line Insulation Sleeving
- Flexible Un-Screened Silicone Bushing Boots
- Un-Screened Separable Connectors for Type , 630A Bushings
- Un-Screened Anti-tracking Heat Shrinkable Right Angle/Straight Bushing Boots



# Conductors and Cables

**Description:** LV ABC

**Specification:** SANS 1418 Part 1 & 2

**Voltage Rating:** 600/1000V

**Core Identification:** Phase 1,2 and 3 Intended

**Packaging:** 500m Drums



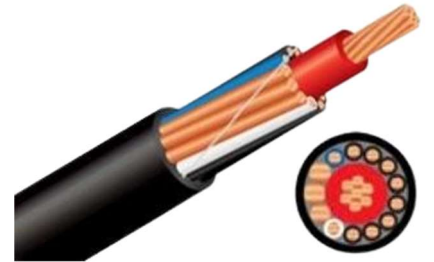
**Description:** Airdac SNE Connection Cable

**Specification:** SANS 1507/6

**Voltage Rating:** 600/1000V

**Core Identification:** Insulated neutral and bare earth conductors

**Packaging:** 500m Drums



**Description:** Ariel Connection Cable (CNE)

**Specification:** SANS 1507-6

**Voltage Rating:** 600/1000V

**Core Identification:** Stranded Hard drawn copper conductor, XLPE insulated and Polyethylene insulated neutral.

**Packaging:** 500m Drums

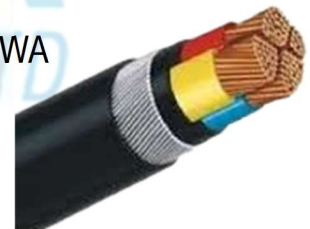


**Description:** Armoured Electrical Cable PVC Insulated PVC Bedded SWA

**Specification:** SANS 1507-3

**Voltage Rating:** 600/1000V

**Core Identification:** 2,3 and 4 Cores



**Description:** Low Halogen Armoured Cable Blue Stripe

**Specification:** SANS 1507-4

**Voltage Rating:** 600/1000V

**Core Identification:** 2,3,4 And 7 Cores



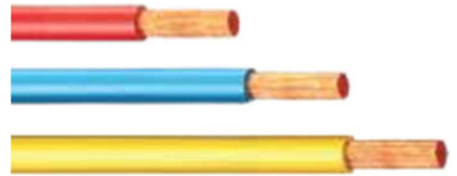
**Description:** GP Wire (House Wire)

**Specification:** SANS 1507-2

**Voltage Rating:** 600/1000V

**Core Identification:** Stranded Copper Conductor

**Packaging:** 100m Coils/Rolls



**Description:** Aluminium Flame Retardant (FR) Armoured Cable Stranded

**Specification:** SANS 1507

**Voltage Rating:** 600/1000V

**Core Identification:** 4 Cores (Also available in Solid)

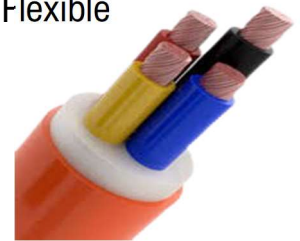


**Description:** Orange PVC Trailing Cable with Double Insulated PVC/PVC and Flexible

**Specification:** SANS 1574/2004

**Voltage Rating:** 600/1000V

**Core Identification:** 3 and 4 Cores



**Description:** H07 RN-F Trailing Rubber Cable

**Specification:** SANS 1574-3

**Voltage Rating:** 450/750V

**Core Identification:** 2,3,4,5 and 7 Cores



**Description:** Submersible Pump Cable Blue/Green

**Specification:** SANS 1411 Part 1

**Voltage Rating:** 600/1000V

**Core Identification:** 3 and 4 Cores

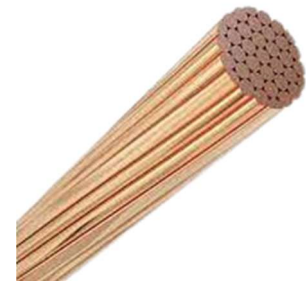


**Description:** Bare Copper Earth Wire

**Specification:** SANS 1411-1

**Voltage Rating:** 500/1000V

**Core Identification:** Stranded Copper Wire



(Please contact the branch for more information and various cables not listed)

# Transformers and Switchgear



## Step-up and Step-Down Transformers

Step-up and Step-Down Transformers are used mainly in an agricultural environment, and for distribution of distances from 100 meters to several kilometers. In general, the system starts with a step-up unit and could include several setp-down units.

### **The Product range includes:**

- 5kVA up to 500kVA
- 1000 – 3300V applications depending on distance and size requirements



## Distribution Transformers

Distribution transformers deliver the final voltage transformation in the electric power distribution system, stepping down the voltages used in the distribution lines to the level used by the customer.

### **Power Transformers available range:**

- From 10kVA up to 10mVA
- Up to 33kV



### **Pole Mount Transformers**

Pole Mount Transformers alter the medium “primary” voltage of the overhead distribution lines to the “secondary” voltage for distribution to houses, developments and buildings.

#### **Available Products in the range:**

- 16 – 500kVA



### **Dry Type Transformers**

The key difference between Dry Type and “traditional” Oil Filled Transformers is the fact that the magnetic circuit and the windings are not immersed in an insulating liquid such as oil.



### **Mini Substation**

A substation is a part of an electrical generation, transmission and distribution system. Substations transform voltage from high to low-or the reverse-or perform any several other important functions. Between the generating station and consumer, electric power may flow through several substation at different voltage levels. A substation may include transformers to change voltage levels between high transmission voltages and lower distribution voltages, or at the interconnection of two different transmission voltages.

#### **Range of Mini Substations include:**

- 160kVA – 1600kVA
- Up to and including 22kV Primary Voltages



### **Medium Voltage Switchgear**

MV Switchgears are designed, manufactured and tested for switching, protection and control purposes in alternating current systems from 1kV to 52kV According to IEC62271-200 standards and Tedas MYD.

## Surge Arrestors



- **Secondary Class** – It is commonly installed to protect equipment at the utilization voltage level and is available in ratings up to 650V.
- **Distribution Class** – This type is usually applied to protect distribution system equipment (e.g: Distribution Transformers, Capacitor Banks)
- **Intermediate Class** – It offers an improved protective characteristics and durability compared to distribution class. This type is typically used for the protection of medium class power equipment and smaller substations.
- **Station Class** – It gives the best protective level and is capable of diverting the most energy. Generally it is used for applications where premium protection is needed such as generators and large substations. It is also the most expensive class of arrester.



- High Voltage surge arrestors are installed on systems from 66kV – 132kV.
- Sub Transmission Surge Arrestors are installed on overhead lines from 66kV – 132kV to prevent tripping of equipment at the Sub Station.



# Circuit Breakers and Wiring Accessories

## **MCB RESIDENTIAL CIRCUIT BREAKERS AND SWITCH DISCONNECTORS**

- QA(13) – Hydraulic-magnetic MCB Residential Circuit Breakers and Switch Disconnectors

## **MCB COMMERCIAL/INDUSTRIAL CIRCUIT BREAKERS AND SWITCH DISCONNECTORS AND EARTH LEAKAGE PROTECTION DEVICES**

- QF(13) – Hydraulic-Magnetic MCBs and Switch Disconnectors
- QF(26) – Hydraulic-Magnetic Low Rating and High Rating
- QF18) DIN – Hydraulic-Magnetic, Thermal-Magnetic and Thermal switch disconnectors
- QF(27) DIN – Thermal-Magnetic
- QH(18) DIN – Thermal Magnetic
- QH(27) DIN – Thermal-Magnetic

## **RESIDENTIAL/COMMERCIAL/INDUSTRIAL CLIP-IN EARTH LEAKAGE PROTECTION DEVICES**

- QF DIN–Thermal-Magnetic earth Leakages, QH DIN-Thermal-Magnetic Earth Leakages, QF DIN – Hydraulic-Magnetic Earth Leakages
- QA, QF and SF – Hydraulic-Magnetic Earth Leakages

## **WIRING ACCESSORIES**

- **Plastic Range**  
Light Switches and Grid Plates  
Switched Socket, Unswitched Socket and Dedicated Switched Socket Outlets
- **Switch Inserts**  
Switch Inserts, Dimmer Switch and Dimmer Module  
Switch Insert Selection Guide

