

## Building Wires

### Wires to American standard UL 83

Copper Conductor cross section area:

- From 16 AWG to 8 AWG.
- PVC insulation QMTT2 approved material by UL.
- Nylon Poly Amid Jacketed Wire.
- Flame Retardant comply to VW-1 Vertical Flae Test.
- Oil and Gasoline Resistant Wire.

Specification BS 6004 IEC 60227

- Copper conductor class 1 solid, class2 strand or class 5 Flexible Conductor.
- PVC insulation ( TI-3 90 °C ).
- Flame retardant wire to IEC 60332-1.

### Control Cable

Specification IEC 60227

- Copper Conductor cross section area : from 1.5 mm<sup>2</sup> to 4.0 mm<sup>2</sup> ( multicore Cables 2 cores , 7 cores, 12 cores up to 48 cores ).
- Conductor Insulation Material: PVC or XLPE.
- Armoured with galvanized steel wire or galvanized steel tape ( or non armoured).
- PVC (Inner) / outer jacket.

### Low voltage power Cables 0.6/1.0 kV

Specification IEC 60502-1

- Aluminium or Copper conductors.
- Single core Cables up to 630 mm<sup>2</sup> and Multicore Cables up to 500 mm<sup>2</sup>.
- XLPE or PVC insulation.
- Armoured with galvanized steel wire or galvanized steel tape ( or non armoured)
- PVC (Inner) / outer jacket.
- Fully complying to IEC 60502 and SEC Specification (11-SDMS-01).

### Low smoke halogen free cable

- XLPE Insulated wire - Low Smoke Halogen free wire to BS 7211.
- XLPE Insulated - Low Smoke Halogen free Cables (ST-8) to IEC 60502-1.
- Flame Retardant to IEC 60332-2.24.
- Jacketing Acid gas emission test
  - HCl emission to IEC 60754-1 <0.50%
  - PH >4.3.
  - Conductivity < 10 Micro Siemens.
  - Fire resistant Cables and Wires according BS 6387 and IEC 60331.

### Copper conductors for earthing

Bare Copper Stranded conductor / uncoated or coated / comply to SEC specification Standard 10-SDMS-02 and to BS EN 60228 (IEC 60228), for earthing requirements.  
Specification BS 6004 IEC 60227.

## **LV Overhead line conductor type quadruplex**

Specification IEC 60502 & ASTM B549

- Quadruplex LV overhead conductor of
  - Hard Drawn Aluminum conductor / BLACK weather resistant XLPE insulation for the Phase Conductor.
  - Aluminium conductor steel reinforced ( ACSR/AW )/non insulated neutral phase conductor.
- Sizes:
  - 3(1x120) + 1x120mm<sup>2</sup>.
  - 3(1x50) + 1x50 mm<sup>2</sup>.
- Complying to IEC 60502 & SEC Specification 11-SDMS-02.

## **Overhead line conductors ACSR /AW type to ASTM B549**

- Aluminium-Clad Steel Core / Aluminium stranded conductor for overhead lines for 13.8 & 33KV application.
- Sizes codes examples: Quail, Merline & Condor .
- Other OHL of AAC, AAAC, ACSR, ACAR.
- Complying to ASTM B549 & SEC Specification 10-SDMS-01& EN50182.

## **Medium voltage Cables 8,7/15 (17,5) kv & 18/30 (36) kV**

- Specification IEC 60502-2 / BS 6622.
- Aluminum or copper conductors.
- Single core Cables up to 1000mm<sup>2</sup> and Multicore Cables up to 3x300/35 mm<sup>2</sup>.
- XLPE insulation/ CCV technology.
- Armoured with galvanized steel tape/galvanized steel wire (or non armoured).
- LDPE/HDPE/PVC inner/outer jacket.
- Fully complying to IEC 60502-2.

## **High voltage Cables 36/66 (72) kV**

- Specification IEC 60840/ BS 7912 / ICEA S94-S97-682.
- Aluminum or copper conductors.
- Single core Cables up to 1000mm<sup>2</sup>.
- XLPE insulation / CCV Technology.
- Led sheathed or aluminium laminated sheath.
- Specification IEC 60502-2 / BS 7912.LDPE/HDPE/PVC inner/outer jacket.
- complying to IEC 60840.

## Required Tests:

- *Conductor Resistance.*
- *Voltage test (Routine test).*
- *Partial discharge.*
- *Capacitance test.*
- *Heat Cycle test*
- *Impulse test.*
- *Step test.*
- *Power Frequency voltage test.*
- *Structure and Thickness.*

## Applicable test and equipments standards

- *IEC 60038 - IEC standard voltages.*
- *IEC 60060-1 - High voltage test techniques.*  
*Part1: General definitions and test requirements.*
- *IEC 60183 (Guide to the selection of high voltage Cables).*
- *IEC 60885-3 - Electrical test methods for electric Cables.*  
*Part3: Test methods for partial discharge measurements on lengths of extruded power Cables.*