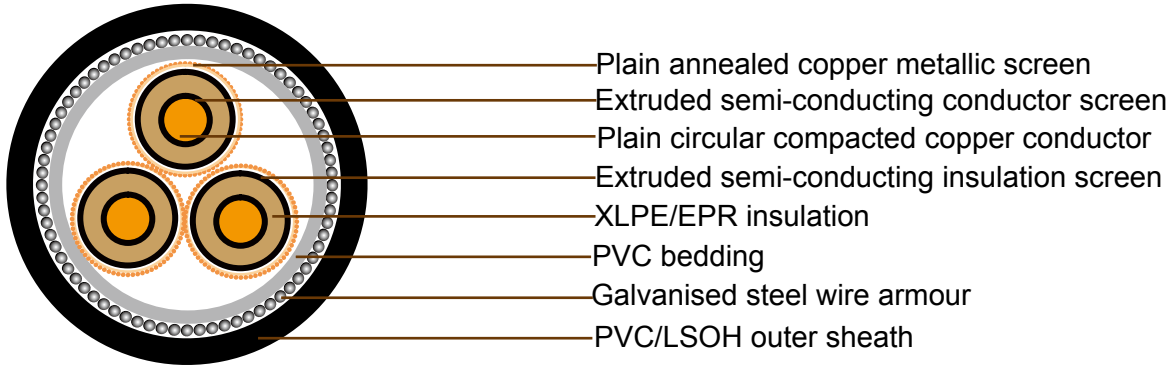
# 19/33kV Three Core Individual Screened & PVC/SWA/PVC Sheathed (Cu Conductor)

## Application

These cables are designed to be used for the supply of electrical energy in fixed applications up to the rated voltages at a nominal power frequency between 49Hz and 61Hz., they are suitable for use in distribution installation, electrical power station , they are applied for installation, outdoors, underground where subject to mechanical damage.




## Standard

AS/NZS 1429.1

## Cable Construction

**CONDUCTOR:** Plain circular compacted copper to AS/NZS1125
Maximum Continuous Operating Temperature: 90°C

**CONDUCTOR SCREEN:** Extruded semi-conducting compound, bonded to the insulation and applied in the same operation as the insulation

**INSULATION:** Cross Linked Polyethylene (XLPE) – standard
Ethylene Propylene Rubber (EPR) – alternative

**INSULATION SCREEN:** Extruded semi-conducting compound

**METALLIC SCREEN:** Plain annealed copper wire: 10kA for nominal 1 second(HEAVY DUTY)

**BEDDING: PVC**

**ARMOURING:** Galvanised steel wires

**SHEATH:** Black 5V-90 polyvinyl chloride (PVC) – standard

Orange 5V-90 PVC inner plus black high density polyethylene (HDPE) outer – alternative

Low smoke zero halogen (LSOH) – alternative

## Technical Characteristics

| Nominal conductor area | Maximum Conductor DC resistance at 20°C | Cond. AC resistance at 50Hz and 90°C | Inductive reactance at 50Hz | Insulation resistance at 20°C | Conductor to screen capacitance | Charging current per phase | Dielectric loss per phrase | Maximum diaelectric stress | Screen DC resistance at 20°C | Armour DC resistance at 20°C | Zero sequence resistance at 20°C | Zero seq. react. at 50Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | Ohm/km | Ohm/km | Ohm/km | MegOhm. km | µF x km | A x km | W x km | kV x mm | Ohm/km | Ohm/km | Ohm/km | Ohm/km |
| 50 | 0.387 | 0.494 | 0.147 | 18000 | 0.133 | 0.796 | 60.5 | 4.05 | 0.366 | 0.302 | 0.884 | 0.0988 |
| 70 | 0.268 | 0.342 | 0.139 | 16000 | 0.148 | 0.883 | 67.1 | 3.82 | 0.265 | 0.288 | 0.682 | 0.0909 |
| 95 | 0.193 | 0.247 | 0.128 | 15000 | 0.165 | 0.984 | 74.8 | 3.61 | 0.265 | 0.272 | 0.596 | 0.0807 |
| 120 | 0.153 | 0.196 | 0.123 | 14000 | 0.179 | 1.07 | 81.1 | 3.48 | 0.265 | 0.261 | 0.548 | 0.0757 |
| 150 | 0.124 | 0.159 | 0.12 | 13000 | 0.191 | 1.14 | 86.8 | 3.38 | 0.266 | 0.247 | 0.509 | 0.0722 |
| 185 | 0.0991 | 0.128 | 0.116 | 12000 | 0.205 | 1.23 | 93.2 | 3.29 | 0.266 | 0.238 | 0.476 | 0.0685 |
| 240 | 0.0754 | 0.0978 | 0.111 | 11000 | 0.227 | 1.35 | 103 | 3.17 | 0.265 | 0.224 | 0.441 | 0.0637 |
| 300 | 0.0601 | 0.0788 | 0.107 | 9800 | 0.247 | 1.48 | 112 | 3.09 | 0.266 | 0.211 | 0.415 | 0.0605 |
| 400 | 0.047 | 0.0628 | 0.102 | 8900 | 0.272 | 1.62 | 123 | 3 | 0.266 | 0.198 | 0.389 | 0.0557 |
| 500 | 0.0373 | 0.0513 | 0.099 | 8100 | 0.297 | 1.77 | 135 | 2.93 | 0.265 | 0.215 | 0.395 | 0.0524 |

## Cable Parameter

| Sectional Area of Conductor | Nom. Conductor Diameter | Nom. Insulation Thickness | Nom. Diamete Over insulation | Screen Area on cores | No. and Diamter of Screened Wires | Nom. Diamete Over Screened Wires | Nom. Diamete Over Bedding | Nom. Diamete of Armour | Nom. Diamete Over Armour | Nom. Overall Diameter | Approx. mass |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $mm^2$ | mm | mm | mm | $mm^2$ | no x mm | mm | mm | mm | mm | mm | kg/100m |
| 50 | 8 | 8 | 25.5 | 49.4 | 29 x 0.85 | 28.8 | 66.5 | 3.15 | 72.8 | 80.1 | 950 |
| 70 | 9.6 | 8 | 27.1 | 68.1 | 40 x 0.85 | 30.4 | 70.2 | 3.15 | 76.5 | 83.9 | 1080 |
| 95 | 11.5 | 8 | 29 | 68.1 | 40 x 0.85 | 32.3 | 74.2 | 3.15 | 80.5 | 88.2 | 1220 |
| 120 | 13.1 | 8 | 30.6 | 68.1 | 40 x 0.85 | 33.9 | 78 | 3.15 | 84.3 | 92.1 | 1340 |
| 150 | 14.5 | 8 | 32 | 68.1 | 40 x 0.85 | 35.5 | 81.7 | 3.15 | 88 | 96 | 1490 |
| 185 | 16.1 | 8 | 33.6 | 68.1 | 40 x 0.85 | 37.1 | 85.2 | 3.15 | 91.5 | 99.9 | 1630 |
| 240 | 18.5 | 8 | 36 | 68.1 | 40 x 0.85 | 39.5 | 90.6 | 3.15 | 96.9 | 105.6 | 1880 |
| 300 | 20.7 | 8 | 38.4 | 68.1 | 40 x 0.85 | 41.9 | 95.9 | 3.15 | 102.2 | 111.3 | 2140 |
| 400 | 23.6 | 8 | 41.3 | 68.1 | 40 x 0.85 | 44.8 | 102.4 | 3.15 | 108.7 | 118.1 | 2510 |
| 500 | 26.5 | 8 | 44.2 | 68.1 | 40 x 0.85 | 47.7 | 109 | 3.15 | 115.3 | 125.2 | 2900 |