



## 12.7/22kV Single Core Screened & PVC Sheathed (Al Conductor)

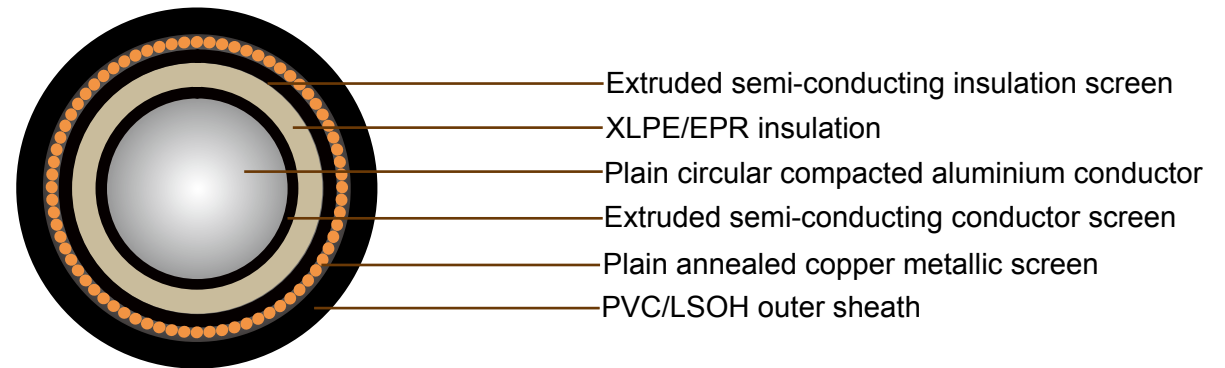
### Application

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 aluminium 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: 3kA for nominal 1 second(LIGHT DUTY)  
Plain annealed copper wire: 10kA for nominal 1 second(HEAVY DUTY)

**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

### LIGHT DUTY

| Nominal conductor area | Maximum Conductor DC resistance at 20°C | Cond. AC resistance at 50Hz and 90°C |             | Inductive reactance at 50Hz and 90°C |               |             | Insulation resistance at 20°C | Conductor to screen capacitance | Maximum dielectric stress | Current Rating    |               |                     |
|------------------------|---|--------------------------------------|-------------|--------------------------------------|---------------|-------------|-------------------------------|---------------------------------|---------------------------|-------------------|---------------|---------------------|
|                        |   | Trefoil or Flat touching             | flat spaced | Trefoil touching                     | flat touching | flat spaced |                               |                                 |                           | Unenclosed In Air | Buried Direct | Buried In Ducts (c) |
| mm <sup>2</sup>        | Ohm/km                                  | Ohm/km                               | Ohm/km      | Ohm/km                               | Ohm/km        | Ohm/km      | MegOhm. km                    | µF x km                         | kV x mm                   | A                 | A             | A                   |
| 35                     | 0.868                                   | 1.11                                 | 1.11        | 0.156                                | 0.171         | 0.217       | 15000                         | 0.157                           | 3.62                      | 157               | 142           | 121                 |
| 50                     | 0.641                                   | 0.821                                | 0.821       | 0.151                                | 0.166         | 0.212       | 14000                         | 0.172                           | 3.47                      | 187               | 167           | 142                 |
| 70                     | 0.443                                   | 0.568                                | 0.568       | 0.14                                 | 0.155         | 0.201       | 13000                         | 0.192                           | 3.3                       | 233               | 204           | 176                 |
| 95                     | 0.32                                    | 0.41                                 | 0.41        | 0.133                                | 0.148         | 0.194       | 11000                         | 0.214                           | 3.17                      | 283               | 244           | 210                 |
| 120                    | 0.253                                   | 0.325                                | 0.325       | 0.128                                | 0.143         | 0.189       | 10000                         | 0.232                           | 3.08                      | 326               | 277           | 239                 |
| 150                    | 0.206                                   | 0.264                                | 0.264       | 0.124                                | 0.139         | 0.185       | 9700                          | 0.25                            | 3.01                      | 370               | 309           | 267                 |
| 185                    | 0.164                                   | 0.211                                | 0.211       | 0.121                                | 0.136         | 0.181       | 9000                          | 0.269                           | 2.95                      | 426               | 350           | 301                 |
| 240                    | 0.125                                   | 0.161                                | 0.161       | 0.116                                | 0.131         | 0.177       | 8100                          | 0.298                           | 2.87                      | 504               | 405           | 356                 |
| 300                    | 0.1                                     | 0.129                                | 0.129       | 0.113                                | 0.128         | 0.173       | 7400                          | 0.327                           | 2.81                      | 577               | 455           | 401                 |
| 400                    | 0.0778                                  | 0.102                                | 0.101       | 0.108                                | 0.123         | 0.169       | 6700                          | 0.363                           | 2.75                      | 673               | 520           | 458                 |
| 500                    | 0.0605                                  | 0.08                                 | 0.079       | 0.104                                | 0.119         | 0.165       | 5900                          | 0.407                           | 2.69                      | 783               | 592           | 520                 |
| 630                    | 0.0469                                  | 0.0632                               | 0.0619      | 0.101                                | 0.116         | 0.162       | 5300                          | 0.453                           | 2.64                      | 912               | 672           | 615                 |
| 800                    | 0.0367                                  | 0.0511                               | 0.0493      | 0.0976                               | 0.113         | 0.159       | 4800                          | 0.507                           | 2.59                      | 1054              | 756           | 691                 |
| 1000                   | 0.0298                                  | 0.0391                               | 0.0387      | 0.0945                               | 0.11          | 0.155       | 4000                          | 0.597                           | 2.54                      | 1194              | 836           | 764                 |



## Cable Parameter

### LIGHT DUTY

| Sectional Area of Conductor | Nom. Conductor Diameter | Nom. Insulation Thickness | Nom. Diameter Over insulation | Screen Area on Each core | No. and Diameter of Screened Wires | Nom. Diameter Over Screened Wires | Nom. Overall Diameter | Approx. mass |
|-----------------------------|-------------------------|---------------------------|-------------------------------|--------------------------|------------------------------------|-----------------------------------|-----------------------|--------------|
| mm <sup>2</sup>             | mm                      | mm                        | mm                            | mm <sup>2</sup>          | no x mm                            | mm                                | mm                    | kg/100m      |
| 35                          | 6.9                     | 5.5                       | 19.2                          | 20                       | 36 x 0.85                          | 20.1                              | 26.3                  | 75           |
| 50                          | 8.1                     | 5.5                       | 20.3                          | 20                       | 36 x 0.85                          | 21.3                              | 27.5                  | 82           |
| 70                          | 9.6                     | 5.5                       | 21.9                          | 20                       | 36 x 0.85                          | 22.8                              | 29.0                  | 92           |
| 95                          | 11.4                    | 5.5                       | 23.6                          | 20                       | 36 x 0.85                          | 24.5                              | 30.7                  | 104          |
| 120                         | 12.8                    | 5.5                       | 25                            | 20                       | 36 x 0.85                          | 25.9                              | 32.1                  | 115          |
| 150                         | 14.2                    | 5.5                       | 26.4                          | 20                       | 36 x 0.85                          | 27.3                              | 33.5                  | 127          |
| 185                         | 15.7                    | 5.5                       | 27.9                          | 20                       | 36 x 0.85                          | 29.0                              | 35.4                  | 143          |
| 240                         | 18                      | 5.5                       | 30.3                          | 20                       | 36 x 0.85                          | 31.4                              | 37.8                  | 166          |
| 300                         | 20.1                    | 5.5                       | 32.6                          | 20                       | 36 x 0.85                          | 33.4                              | 40.0                  | 190          |
| 400                         | 23                      | 5.5                       | 35.4                          | 20                       | 36 x 0.85                          | 36.5                              | 43.3                  | 226          |
| 500                         | 26.5                    | 5.5                       | 39                            | 20                       | 36 x 0.85                          | 39.6                              | 46.6                  | 265          |
| 630                         | 29.9                    | 5.5                       | 42.7                          | 20                       | 36 x 0.85                          | 43.2                              | 50.5                  | 317          |
| 800                         | 34.2                    | 5.5                       | 47.1                          | 20                       | 36 x 0.85                          | 47.8                              | 55.3                  | 383          |
| 1000                        | 40.2                    | 5.5                       | 54.3                          | 20                       | 36 x 0.85                          | 51.9                              | 59.4                  | 454          |



## Technical Characteristics

### HEAVY DUTY

| Nominal conductor area | Maximum Conductor DC resistance at 20°C | Cond. AC resistance at 50Hz and 90°C |             | Inductive reactance at 50Hz and 90°C |               |             | Insulation resistance at 20°C | Conductor to screen capacitance | Maximum dielectric stress | Current Rating    |               |                     |
|------------------------|---|--------------------------------------|-------------|--------------------------------------|---------------|-------------|-------------------------------|---------------------------------|---------------------------|-------------------|---------------|---------------------|
|                        |   | Trefoil or Flat touching             | flat spaced | Trefoil touching                     | flat touching | flat spaced |                               |                                 |                           | Unenclosed In Air | Buried Direct | Buried In Ducts (c) |
| mm                     | Ohm/km                                  | Ohm/km                               | Ohm/km      | Ohm/km                               | Ohm/km        | Ohm/km      | MegOhm.km                     | µF x km                         | kV x mm                   | A                 | A             | A                   |
| 35                     | 0.868                                   | 1.11                                 | 1.11        | 0.156                                | 0.171         | 0.217       | 15000                         | 0.157                           | 3.62                      | 157               | 142           | 121                 |
| 50                     | 0.641                                   | 0.821                                | 0.821       | 0.151                                | 0.166         | 0.212       | 14000                         | 0.172                           | 3.47                      | 188               | 168           | 142                 |
| 70                     | 0.443                                   | 0.568                                | 0.568       | 0.14                                 | 0.155         | 0.201       | 13000                         | 0.192                           | 3.3                       | 235               | 204           | 177                 |
| 95                     | 0.32                                    | 0.41                                 | 0.41        | 0.133                                | 0.148         | 0.194       | 11000                         | 0.214                           | 3.17                      | 286               | 243           | 210                 |
| 120                    | 0.253                                   | 0.325                                | 0.325       | 0.128                                | 0.143         | 0.189       | 10000                         | 0.232                           | 3.08                      | 327               | 275           | 237                 |
| 150                    | 0.206                                   | 0.264                                | 0.264       | 0.124                                | 0.139         | 0.185       | 9700                          | 0.25                            | 3.01                      | 370               | 307           | 265                 |
| 185                    | 0.164                                   | 0.211                                | 0.211       | 0.121                                | 0.136         | 0.181       | 9000                          | 0.269                           | 2.95                      | 425               | 346           | 305                 |
| 240                    | 0.125                                   | 0.161                                | 0.161       | 0.116                                | 0.131         | 0.177       | 8100                          | 0.298                           | 2.87                      | 501               | 399           | 351                 |
| 300                    | 0.1                                     | 0.129                                | 0.129       | 0.113                                | 0.128         | 0.173       | 7400                          | 0.327                           | 2.81                      | 571               | 447           | 394                 |
| 400                    | 0.0778                                  | 0.102                                | 0.101       | 0.108                                | 0.123         | 0.169       | 6700                          | 0.363                           | 2.75                      | 663               | 508           | 447                 |
| 500                    | 0.0605                                  | 0.08                                 | 0.079       | 0.104                                | 0.119         | 0.165       | 5900                          | 0.407                           | 2.69                      | 768               | 574           | 505                 |
| 630                    | 0.0469                                  | 0.0632                               | 0.0619      | 0.101                                | 0.116         | 0.162       | 5300                          | 0.453                           | 2.64                      | 886               | 647           | 592                 |
| 800                    | 0.0367                                  | 0.0511                               | 0.0493      | 0.0976                               | 0.113         | 0.159       | 4800                          | 0.507                           | 2.59                      | 1019              | 722           | 660                 |
| 1000                   | 0.0298                                  | 0.0391                               | 0.0387      | 0.0945                               | 0.11          | 0.155       | 4000                          | 0.597                           | 2.54                      | 1146              | 793           | 724                 |
| 1200                   | 0.0247                                  | 0.0328                               | 0.0323      | 0.093                                | 0.108         | 0.154       | 3700                          | 0.646                           | 2.51                      |                   |               |                     |



## Cable Parameter

### HEAVY DUTY

| Sectional Area of Conductor | Nom. Conductor Diameter | Nom. Insulation Thickness | Nom. Diameter Over insulation | Screen Area on Each core | No. and Diameter of Screened Wires | Nom. Diameter Over Screened Wires | Nom. Overall Diameter | Approx. mass |
|-----------------------------|-------------------------|---------------------------|-------------------------------|--------------------------|------------------------------------|-----------------------------------|-----------------------|--------------|
| mm <sup>2</sup>             | mm                      | mm                        | mm                            | mm <sup>2</sup>          | no x mm                            | mm                                | mm                    | kg/100m      |
| 35                          | 6.9                     | 5.5                       | 19.2                          | 22.7                     | 40 x 0.85                          | 22.5                              | 26.6                  | 81           |
| 50                          | 8.1                     | 5.5                       | 20.3                          | 32.9                     | 23 x 1.35                          | 24.6                              | 28.7                  | 98           |
| 70                          | 9.6                     | 5.5                       | 21.9                          | 45.8                     | 32 x 1.35                          | 26.2                              | 30.5                  | 120          |
| 95                          | 11.4                    | 5.5                       | 23.6                          | 61.5                     | 43 x 1.35                          | 27.9                              | 32.2                  | 150          |
| 120                         | 12.8                    | 5.5                       | 25                            | 68.7                     | 48 x 1.35                          | 29.3                              | 33.8                  | 170          |
| 150                         | 14.2                    | 5.5                       | 26.4                          | 68.7                     | 48 x 1.35                          | 30.7                              | 35.2                  | 180          |
| 185                         | 15.7                    | 5.5                       | 27.9                          | 68.7                     | 48 x 1.35                          | 32.2                              | 36.9                  | 195          |
| 240                         | 18                      | 5.5                       | 30.3                          | 68.7                     | 48 x 1.35                          | 34.6                              | 39.5                  | 220          |
| 300                         | 20.1                    | 5.5                       | 32.6                          | 68.7                     | 48 x 1.35                          | 37.1                              | 42                    | 245          |
| 400                         | 23                      | 5.5                       | 35.4                          | 68.7                     | 48 x 1.35                          | 39.9                              | 45.2                  | 280          |
| 500                         | 26.5                    | 5.5                       | 39                            | 68.7                     | 48 x 1.35                          | 43.5                              | 49                    | 325          |
| 630                         | 29.9                    | 5.5                       | 42.7                          | 68.7                     | 48 x 1.35                          | 47.2                              | 53.1                  | 380          |
| 800                         | 34.2                    | 5.5                       | 47.1                          | 68.7                     | 48 x 1.35                          | 51.6                              | 57.7                  | 445          |
| 1000                        | 40.2                    | 5.5                       | 54.3                          | 68.7                     | 48 x 1.35                          | 58.8                              | 65.1                  | 540          |
| 1200                        | 43.8                    | 5.5                       | 58.3                          | 68.7                     | 48 x 1.35                          | 62.8                              | 69.3                  | 620          |