

# Three Core Al 12.7/22kV XLPE Insulated HD Cu Screened PVC SWA PVC

STANDARD: AS/NZS 1429.1

RATED VOLTAGE: 12.7/22 (24) kV

FAULT LEVEL: Up to 10kA for 1 sec or to customer requirements

IMPULSE VOLTAGE: 95kV

TEMPERATURE RANGE:

In continuous operations Max. conductor temp 90°C

Lowest cable temperature during installation: -10°C and below 0°C special precautions must be taken.

BENDING RADIUS:

During installation: 18 x D. When installed: 12 x D (PVC sheathed cables)

D = Overall diameter of cable

## DESIGN

CONDUCTOR:

Stranded, round and compacted aluminium complying with AS/NZS 1125

SEMI-CONDUCTIVE CONDUCTOR SCREEN:

Extruded cross-linked compound

INSULATION:

XLPE complying with AS/NZS 3808

SEMI-CONDUCTIVE INSULATION SCREEN:

Extruded hand strippable semi-conductive cross-linked compound

METALLIC SCREEN:

Circular copper wires

INNER SHEATH:

Black PVC

AMOUR:

Galvanised steel wires complying with AS/NZS 3863

OUTER SHEATH:

Black PVC as standard. HDPE, halogen free, flame retardant, termite protection in the form of nylon, double brass tape or chemical additive also available.





| Product Code | Conductor size<br>mm <sup>2</sup> | Nominal insulation thickness<br>mm | Diameter over insulation<br>mm | Number & diameter of screen wires<br>no./mm | Diameter over inner sheath (approx.)<br>mm | Diameter of steel wires<br>mm | Overall diameter (approx.) | Mass (approx.)<br>kg/km | Maximum pulling tension<br>kN | Minimum Bending Radius    |                 |
|--------------|-----------------------------------|------------------------------------|--------------------------------|---|--|-------------------------------|----------------------------|-------------------------|-------------------------------|---------------------------|-----------------|
|              |                                   |                                    |                                |   |  |                               |                            |                         |                               | During installation<br>mm | Installed<br>mm |
| 3MV050A22HS  | 50                                | 5.5                                | 20.3                           | 19/0.85                                     | 54.7                                       | 2.5                           | 65.9                       | 6000                    | 7.5                           | 1190                      | 790             |
| 3MV070A22HS  | 70                                | 5.5                                | 22.1                           | 27 /0.85                                    | 58.7                                       | 2.5                           | 70.2                       | 6800                    | 11                            | 1260                      | 840             |
| 3MV095A22HS  | 95                                | 5.5                                | 23.7                           | 36/0.85                                     | 62.3                                       | 2.5                           | 74.0                       | 7600                    | 14                            | 1330                      | 890             |
| 3MV120A22HS  | 120                               | 5.5                                | 25.2                           | 40/0.85                                     | 65.7                                       | 3.15                          | 79.0                       | 9200                    | 18                            | 1420                      | 950             |
| 3MV150A22HS  | 150                               | 5.5                                | 26.7                           | 40/0.85                                     | 69.0                                       | 3.15                          | 82.6                       | 9900                    | 23                            | 1490                      | 990             |
| 3MV185A22HS  | 185                               | 5.5                                | 28.5                           | 40/0.85                                     | 73.1                                       | 3.15                          | 86.9                       | 10800                   | 25                            | 1560                      | 1040            |
| 3MV240A22HS  | 240                               | 5.5                                | 30.7                           | 40/0.85                                     | 78.0                                       | 3.15                          | 92.2                       | 12000                   | 25                            | 1660                      | 1110            |
| 3MV300A22HS  | 300                               | 5.5                                | 32.8                           | 40/0.85                                     | 82.7                                       | 3.15                          | 97.2                       | 13200                   | 25                            | 1750                      | 1170            |

# Three Core Al 12.7/22kV XLPE Insulated HD Cu Screened PVC SWA PVC

## Electrical Data

| Product Code | Conductor size<br>mm <sup>2</sup> | Max. conductor DC resistance at 20°C<br>Ω/km | Conductor AC resistance at 50Hz and 90°C<br>Ω/km | Inductive reactance at 50Hz and 90°C<br>Ω/km | Insulation resistance at 20°C<br>MΩ.km | Charging current per phase<br>A/km | Dielectric loss per phase<br>W/km | Zero sequence resistance at 20°C<br>Ω/km | Zero sequence reactance at 50Hz<br>Ω/km |
|--------------|-----------------------------------|--|--|--|--|------------------------------------|-----------------------------------|--|---|
| 3MV050A22HS  | 50                                | 0.641  | 0.822  | 0.131  | 14000                                  | 0.710                              | 36.1                              | 1.38                                     | 0.0851                                  |
| 3MV070A22HS  | 70                                | 0.443  | 0.568  | 0.120  | 12000                                  | 0.805                              | 40.9                              | 1.04                                     | 0.0745                                  |
| 3MV095A22HS  | 95                                | 0.320  | 0.411  | 0.115  | 11000                                  | 0.888                              | 45.1                              | 0.823                                    | 0.0691                                  |
| 3MV120A22HS  | 120                               | 0.253  | 0.325  | 0.110  | 10000                                  | 0.966                              | 49.1                              | 0.669                                    | 0.0649                                  |
| 3MV150A22HS  | 150                               | 0.206  | 0.265  | 0.107  | 9200                                   | 1.04                               | 53.0                              | 0.613                                    | 0.0613                                  |
| 3MV185A22HS  | 185                               | 0.164  | 0.211  | 0.103  | 8500                                   | 1.14                               | 57.7                              | 0.560                                    | 0.0577                                  |
| 3MV240A22HS  | 240                               | 0.125  | 0.161  | 0.0991                                       | 7700                                   | 1.25                               | 63.5                              | 0.507                                    | 0.0541                                  |
| 3MV300A22HS  | 300                               | 0.100  | 0.130  | 0.0961                                       | 7100                                   | 1.36                               | 68.9                              | 0.472                                    | 0.0512                                  |

## Current Ratings

| Conductor Size<br>mm <sup>2</sup> | Current rating at core temp. 90°C in ground<br>A<br> | Current rating at core temp. 90°C in air<br>A<br> | Max. short-circuit current on the conductor during 1sec at initial temp. 90°C<br>kA | Short circuit current rating of the screen 1 sec.<br>kA |
|-----------------------------------|---|--|---|---|
| 50                                | 156   | 155  | 4.7   | 4.8   |
| 70                                | 191   | 192  | 6.6   | 6.8   |
| 95                                | 227   | 231  | 9.0   | 9.1   |
| 120                               | 257   | 265  | 11.3  | 10.1  |
| 150                               | 286   | 299  | 14.2  | 10.1  |
| 185                               | 322   | 340  | 17.5  | 10.1  |
| 240                               | 370   | 396  | 22.7  | 10.1  |
| 300                               | 413   | 448  | 28.4  | 10.1  |