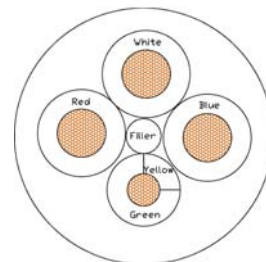


# VIPERCON ELECTRIC CABLE

## PVC Sheathed, Unarmoured Power Cables - 0.6/1kV

### ● Applications

WW VIPERCON 0.6/1kV PVC sheathed power cables are mostly used for buildings, industrial plants, gantry wiring, and road transport depots where not subject to mechanical damage. The cables are suitable for installation indoor/outdoor, enclosed in conduit, in underground duct



### ● Configuration

|             |  |
|-------------|--|
| Conductor:  | plain annealed copper or plain aluminium of the type specified in AS/NZS 1125.   |
| Insulation: | 1.5mm <sup>2</sup> ~ 70mm <sup>2</sup> , polyvinylchloride compound PVC V90.<br>95mm <sup>2</sup> and above, cross-linked polyethylene compound XLPE                                 |
| Laying-up:  | cores are laid up together with a right-hand direction of lay, with non-hygroscopic filler where necessary to form a substantially compact and circular cross-section core assembly. |
| Sheath:     | The laid-up core is sheathed with a continuous flame retardant polyvinylchloride compound PVC V90  |

### Core identification

|                |  |                            |                                 |
|----------------|--|----------------------------|---------------------------------|
| 2C+E cable:    | Phase core colour: Red,  | Neutral core colour: Black | Earth core colour: Green/Yellow |
| 3C+E cable:    | Phase core colour: Red, White, and Blue                                  |                            | Earth core colour: Green/Yellow |
| 4C+E cable:    | Phase core colour: Red, White, and Blue                                  | Neutral core colour: Black | Earth core colour: Green/Yellow |
| Sheath colour: | Standard - Orange<br>Optional - Black (Ultraviolet radiation stabilised) |                            |                                 |

### ● Technical data

|                            |   |                                    |  |
|----------------------------|---|------------------------------------|--|
| Rated voltage:             | 0.6 / 1 kV  |                                    |  |
| Conductor operating range: | PVC insulated, -25°C ~ 75°C, MAX 90°C, short circuit temperature 160°C for 5 sec<br>XLPE insulated, -40°C ~ 90°C, short circuit temperature 250°C for 5 sec |                                    |  |
| Temperature at surface:    | In operation, -25°C ~ 90°C  |                                    |  |
| Minimum ambient temp:      | 0°C, after installation and only when cable is in a fixed position  |                                    |  |
| Minimum bending radius:    | Stranded conductors   | 9 x cable O.D during installation  |  |
|                            |   | 6 x cable O.D after installation   |  |
|                            | Compacted conductors  | 12 x cable O.D during installation |  |
|                            |   | 8 x cable O.D after installation   |  |

--The maximum conductor temperatures specified are based on the properties of the insulation material but in practice may need to be derated to take account of joints and terminations and environmental conditions.

--When installed in tunnels, they should be fixed on brackets and cannot bear large pulling tension or pressure.

--Thermoplastic PVC V90 insulation is subject to deformation at temperatures above 75°C.

### ● Standards:

|                        |  |
|------------------------|--|
| International          | - IEC 60502, IEC 60228, IEC 60332                      |
| Australian/New Zealand | - AS/NZS 5000.1, AS/NZS 3808, AS/NZS 1125, AS/NZS 1660 |



# VIPERCON ELECTRIC CABLE

## ● PVC Sheathed, Unarmoured Power Cables - 0.6/1kV

| Type | Phase Cond.<br>Area<br>mm <sup>2</sup> | Phase Cond.<br>Type | Core Dia.<br>mm | Earth Cond.<br>Area<br>mm <sup>2</sup> | Core Dia.<br>mm | Avg.<br>Cable Dia.<br>mm | Copper conductor |                        | Aluminium conductor |                        |
|------|--|---------------------|-----------------|--|-----------------|--------------------------|------------------|------------------------|---------------------|------------------------|
|      |  |                     |                 |  |                 |                          | Product Code     | Approx Weight<br>kg/km | Product Code        | Approx Weight<br>kg/km |
| 2C+E | 1.5                                    | Strand              | 3.2             | 1.5                                    | 3.2             | 9.7                      | 1301UA           | 119                    | -                   | -                      |
| 2C+E | 2.5                                    | Strand              | 3.7             | 2.5                                    | 3.7             | 10.8                     | 1302UA           | 159                    | -                   | -                      |
| 2C+E | 4                                      | Strand              | 4.6             | 2.5                                    | 3.5             | 11.8                     | 1304UA           | 213                    | -                   | -                      |
| 2C+E | 6                                      | Strand              | 5.2             | 2.5                                    | 3.5             | 12.7                     | 1306UA           | 263                    | -                   | -                      |
| 2C+E | 10                                     | Strand              | 6.2             | 4                                      | 4.6             | 15.1                     | 1310UA           | 390                    | -                   | -                      |
| 2C+E | 16                                     | Strand              | 7.3             | 6                                      | 5.2             | 17.2                     | 1316UA           | 554                    | -                   | -                      |
| 2C+E | 25                                     | Strand              | 9.1             | 6                                      | 5.2             | 20.0                     | 1325UA           | 779                    | -                   | -                      |
| 2C+E | 35                                     | Strand              | 10.3            | 10                                     | 6.2             | 22.6                     | 1335UA           | 1049                   | -                   | -                      |
| 2C+E | 50                                     | Strand              | 12.2            | 16                                     | 7.3             | 26.4                     | 1305UA           | 1478                   | -                   | -                      |
| 2C+E | 70                                     | Compact             | 14.0            | 25                                     | 9.1             | 30.5                     | 1307UA           | 2029                   | -                   | -                      |
| 2C+E | 95                                     | Compact             | 15.2            | 25                                     | 8.5             | 31.9                     | 1309UA           | 2406                   | -                   | -                      |
| 2C+E | 120                                    | Compact             | 17.1            | 35                                     | 9.7             | 35.7                     | 1312UA           | 3047                   | 1312AUA             | 1364                   |
| 2C+E | 150                                    | Compact             | 19.2            | 50                                     | 11.4            | 40.4                     | 1350UA           | 3870                   | 1350AUA             | 1705                   |
| 2C+E | 185                                    | Compact             | 21.4            | 70                                     | 13.4            | 45.2                     | 1318UA           | 4854                   | 1318AUA             | 2132                   |
| 2C+E | 240                                    | Compact             | 24.1            | 95                                     | 15.2            | 50.9                     | 1324UA           | 6268                   | 1324AUA             | 2711                   |
| 2C+E | 300                                    | Compact             | 26.8            | 120                                    | 17.1            | 56.4                     | 1330UA           | 7791                   | 1330AUA             | 3336                   |
| 3C+E | 1.5                                    | Strand              | 3.2             | 1.5                                    | 3.2             | 10.6                     | 1015UA           | 148                    | -                   | -                      |
| 3C+E | 2.5                                    | Strand              | 3.7             | 2.5                                    | 3.7             | 11.8                     | 1025UA           | 200                    | -                   | -                      |
| 3C+E | 4                                      | Strand              | 4.6             | 2.5                                    | 3.5             | 13.3                     | 1004UA           | 278                    | -                   | -                      |
| 3C+E | 6                                      | Strand              | 5.2             | 2.5                                    | 3.5             | 14.4                     | 1006UA           | 351                    | -                   | -                      |
| 3C+E | 10                                     | Strand              | 6.2             | 4                                      | 4.6             | 17.0                     | 1010UA           | 523                    | -                   | -                      |
| 3C+E | 16                                     | Strand              | 7.3             | 6                                      | 5.2             | 19.5                     | 1016UA           | 752                    | -                   | -                      |
| 3C+E | 25                                     | Strand              | 9.1             | 6                                      | 5.2             | 23.0                     | 1125UA           | 1084                   | -                   | -                      |
| 3C+E | 35                                     | Strand              | 10.3            | 10                                     | 6.2             | 26.0                     | 1035UA           | 1459                   | -                   | -                      |
| 3C+E | 50                                     | Strand              | 12.2            | 16                                     | 7.3             | 30.5                     | 1050UA           | 2057                   | -                   | -                      |
| 3C+E | 70                                     | Compact             | 14.0            | 25                                     | 9.1             | 35.0                     | 1070UA           | 2813                   | -                   | -                      |
| 3C+E | 95                                     | Compact             | 15.2            | 25                                     | 8.5             | 37.0                     | 1095UA           | 3392                   | -                   | -                      |
| 3C+E | 120                                    | Compact             | 17.1            | 35                                     | 9.7             | 41.4                     | 1120UA           | 4287                   | 1120AUA             | 1843                   |
| 3C+E | 150                                    | Compact             | 19.2            | 50                                     | 11.4            | 46.6                     | 1150UA           | 5420                   | 1150AUA             | 2327                   |
| 3C+E | 185                                    | Compact             | 21.4            | 70                                     | 13.4            | 52.2                     | 1185UA           | 6765                   | 1185AUA             | 2898                   |
| 3C+E | 240                                    | Compact             | 24.1            | 95                                     | 15.2            | 58.7                     | 1124UA           | 8730                   | 1124AUA             | 3688                   |
| 3C+E | 300                                    | Compact             | 26.8            | 120                                    | 17.1            | 65.1                     | 1130UA           | 10852                  | 1130AUA             | 4542                   |
| 4C+E | 1.5                                    | Strand              | 3.2             | 1.5                                    | 3.2             | 11.5                     | 1505UA           | 178                    | -                   | -                      |
| 4C+E | 2.5                                    | Strand              | 3.7             | 2.5                                    | 3.7             | 12.9                     | 1502UA           | 243                    | -                   | -                      |
| 4C+E | 4                                      | Strand              | 4.6             | 2.5                                    | 3.5             | 14.7                     | 1504UA           | 346                    | -                   | -                      |
| 4C+E | 6                                      | Strand              | 5.2             | 2.5                                    | 3.5             | 16.1                     | 1506UA           | 444                    | -                   | -                      |
| 4C+E | 10                                     | Strand              | 6.2             | 4                                      | 4.6             | 18.9                     | 1510UA           | 661                    | -                   | -                      |
| 4C+E | 16                                     | Strand              | 7.3             | 6                                      | 5.2             | 21.8                     | 1516UA           | 956                    | -                   | -                      |
| 4C+E | 25                                     | Strand              | 9.1             | 6                                      | 5.2             | 26.0                     | 1525UA           | 1398                   | -                   | -                      |
| 4C+E | 35                                     | Strand              | 10.3            | 10                                     | 6.2             | 29.3                     | 1535UA           | 1881                   | -                   | -                      |
| 4C+E | 50                                     | Strand              | 12.2            | 16                                     | 7.3             | 34.5                     | 1550UA           | 2653                   | -                   | -                      |
| 4C+E | 70                                     | Compact             | 14.0            | 25                                     | 9.1             | 39.5                     | 1570UA           | 3619                   | -                   | -                      |
| 4C+E | 95                                     | Compact             | 15.2            | 25                                     | 8.5             | 42.0                     | 1595UA           | 4403                   | -                   | -                      |
| 4C+E | 120                                    | Compact             | 17.1            | 35                                     | 9.7             | 47.0                     | 1520UA           | 5559                   | 1520AUA             | 2373                   |
| 4C+E | 150                                    | Compact             | 19.2            | 50                                     | 11.4            | 52.9                     | 1515UA           | 7013                   | 1515AUA             | 2991                   |
| 4C+E | 185                                    | Compact             | 21.4            | 70                                     | 13.4            | 59.2                     | 1585UA           | 8731                   | 1585AUA             | 3719                   |
| 4C+E | 240                                    | Compact             | 24.1            | 95                                     | 15.2            | 66.6                     | 1524UA           | 11262                  | 1524AUA             | 4735                   |
| 4C+E | 300                                    | Compact             | 26.8            | 120                                    | 17.1            | 73.8                     | 1530UA           | 13999                  | 1530AUA             | 5832                   |

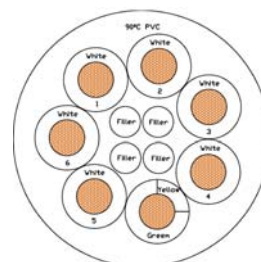
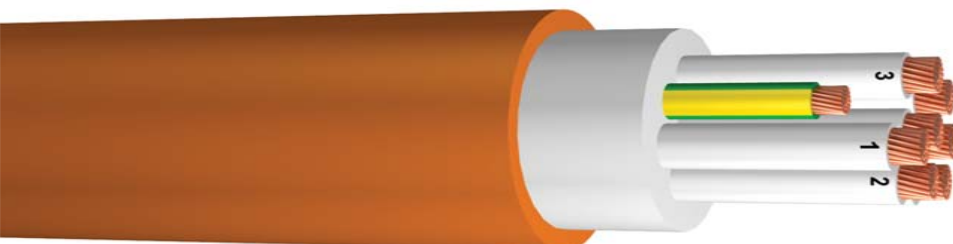


# VIPERCON ELECTRIC CABLE

## PVC Sheathed, Unarmoured Control Cables - 0.6/1kV

### ● Applications

WW VIPERCON 0.6/1kV PVC sheathed multi-core control cables are mostly used for control circuit in buildings, industrial plants, gantry wiring, and road transport depots where not subject to mechanical damage. The cables are suitable for installation indoor/outdoor, enclosed in conduit, in underground duct,



### ● Configuration

Conductor: plain annealed copper (class 2 strands) of the type specified in AS/NZS 1125.  
Insulation: polyvinylchloride compound PVC V90.  
Laying-up: cores are laid up together with a right-hand direction of lay, with non-hygroscopic filler where necessary to form a substantially compact and circular cross-section core assembly.  
Sheath: the laid-up core is sheathed with a continuous flame retardant polyvinylchloride compound PVC V90

### Core identification

Core: Active core: White core with black numbering  
Earth core: Green/Yellow  
Sheath colour: Standard - Orange  
Optional - Black (Ultraviolet radiation stabilised)

### ● Technical data

Rated voltage: 0.6 / 1 kV  
Conductor operating range: -25°C ~ 75°C, MAX 90°C, short circuit temperature 160°C for 5 sec  
Temperature at surface: In operation, -25°C ~ 90°C  
Minimum ambient temp: 0°C after installation and only when cable is in a fixed position  
Minimum bending radius: 9 x cable O.D during installation  
6 x cable O.D after installation

--The maximum conductor temperatures specified are based on the properties of the insulation material but in practice may need to be derated to take account of joints and terminations and environmental conditions.

--When installed in tunnels, they should be fixed on brackets and cannot bear large pulling tension or pressure.

--Thermoplastic PVC V90 insulation is subject to deformation at temperatures above 75°C.

### ● Standards:

International - IEC 60502, IEC 60228, IEC 60332  
Australian/New Zealand - AS/NZS 5000.1, AS/NZS 3808, AS/NZS 1125, AS/NZS 1660

| Type  | Product Code | Conductor Area mm <sup>2</sup> | Core Dia. mm | Avg. Cable Dia. mm | Approx Weight kg/km | Product Code | Conductor Area mm <sup>2</sup> | Core Dia. mm | Avg. Cable Dia. mm | Approx Weight kg/km |
|-------|--------------|--------------------------------|--------------|--------------------|---------------------|--------------|--------------------------------|--------------|--------------------|---------------------|
| 2C+E  | 1031UA       | 1.5                            | 3.2          | 9.7                | 119                 | 1032UA       | 2.5                            | 3.7          | 10.8               | 159                 |
| 3C+E  | 1041UA       | 1.5                            | 3.2          | 10.6               | 148                 | 1042UA       | 2.5                            | 3.7          | 11.8               | 200                 |
| 4C+E  | 1051UA       | 1.5                            | 3.2          | 11.5               | 178                 | 1052UA       | 2.5                            | 3.7          | 12.9               | 243                 |
| 6C+E  | 1701UA       | 1.5                            | 3.2          | 12.6               | 231                 | 1702UA       | 2.5                            | 3.7          | 14.1               | 319                 |
| 8C+E  | 1901UA       | 1.5                            | 3.2          | 15.4               | 300                 | 1902UA       | 2.5                            | 3.7          | 17.3               | 414                 |
| 10C+E | 1111UA       | 1.5                            | 3.2          | 16.0               | 351                 | 1112UA       | 2.5                            | 3.7          | 18.1               | 488                 |
| 12C+E | 1131UA       | 1.5                            | 3.2          | 17.5               | 409                 | 1132UA       | 2.5                            | 3.7          | 19.7               | 570                 |
| 15C+E | 1161UA       | 1.5                            | 3.2          | 18.5               | 486                 | 1162UA       | 2.5                            | 3.7          | 20.8               | 681                 |
| 20C+E | 1211UA       | 1.5                            | 3.2          | 20.6               | 621                 | 1212UA       | 2.5                            | 3.7          | 23.3               | 874                 |
| 25C+E | 1261UA       | 1.5                            | 3.2          | 23.0               | 758                 | 1262UA       | 2.5                            | 3.7          | 26.0               | 1071                |
| 30C+E | 1311UA       | 1.5                            | 3.2          | 25.4               | 898                 | 1312UA       | 2.5                            | 3.7          | 28.8               | 1272                |
| 40C+E | 1411UA       | 1.5                            | 3.2          | 28.7               | 1164                | 1412UA       | 2.5                            | 3.7          | 32.6               | 1655                |
| 50C+E | 1511UA       | 1.5                            | 3.2          | 30.4               | 1410                | 1512UA       | 2.5                            | 3.7          | 34.5               | 2012                |

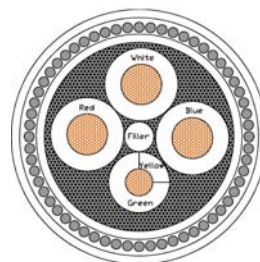


# VIPERCON ELECTRIC CABLE

## PVC Sheathed, Steel Wire Armoured Power Cables - 0.6/1kV

### ● Applications

WW VIPERCON 0.6/1kV armoured power cables are mostly used for buildings, industrial plants, mining and petroleum industry where extra mechanical protection is required. The cables are suitable for installation indoor/outdoor, enclosed in conduit, in underground duct, and buried directly in earth.



### ● Configuration

|             |  |
|-------------|--|
| Conductor:  | plain annealed copper or plain aluminium (class 2 strands) of the type specified in AS/NZS 1125.   |
| Insulation: | 1.5mm <sup>2</sup> ~ 70mm <sup>2</sup> , polyvinylchloride compound PVC V90.<br>95mm <sup>2</sup> and above, cross-linked polyethylene compound XLPE                                 |
| Laying-up:  | cores are laid up together with a right-hand direction of lay, with non-hygroscopic filler where necessary to form a substantially compact and circular cross-section core assembly. |
| Bedding:    | flame retardant polyvinylchloride compound PVC V90   |
| Armour:     | single layer galvanized (Mild) steel wires helically applied over bedding.   |
| Sheath:     | The laid-up core is sheathed with a continuous flame retardant polyvinylchloride compound PVC V90 to AS/NZS 3808.  |

#### Core identification

|             |   |                            |                                 |
|-------------|---|----------------------------|---------------------------------|
| 2C+E cable: | Phase core colour: Red,                 | Neutral core colour: Black | Earth core colour: Green/Yellow |
| 3C+E cable: | Phase core colour: Red, White, and Blue |                            | Earth core colour: Green/Yellow |
| 4C+E cable: | Phase core colour: Red, White, and Blue | Neutral core colour: Black | Earth core colour: Green/Yellow |

|                |  |
|----------------|--|
| Sheath colour: | Standard - Orange<br>Optional - Black (Ultraviolet radiation stabilised) |
|----------------|--|

### ● Technical data

|                            |   |
|----------------------------|---|
| Rated voltage:             | 0.6 / 1 kV  |
| Conductor operating range: | PVC insulated, -25°C ~ 75°C, MAX 90°C<br>XLPE insulated, -40°C ~ 90°C   |
| Temperature at surface:    | In operation, -25°C ~ 90°C  |
| Minimum ambient temp:      | 0°C after installation and only when cable is in a fixed position       |
| Minimum bending radius:    | 18 x cable O.D during installation<br>12 x cable O.D after installation |

--The maximum conductor temperatures specified are based on the properties of the insulation material but in practice may need to be derated to take account of joints and terminations and environmental conditions.

--When installed in tunnels, they should be fixed on brackets and cannot bear large pulling tension or pressure.

--Thermoplastic PVC V90 insulation is subject to deformation at temperature above 75°C.

### ● Standards:

|                        |   |
|------------------------|---|
| International          | - IEC 60502, IEC 60228, IEC 60332                                   |
| Australian/New Zealand | - AS/NZS 5000.1, AS/NZS 3808, AS/NZS 1125, AS/NZS 1660, AS/NZS 3863 |

# VIPERCON ELECTRIC CABLE

## ● PVC Sheathed, Steel Wire Armoured Power Cables - 0.6/1kV

| Type | Phase Cond.<br>Area<br>mm <sup>2</sup> | Phase<br>Cond.<br>Type | Core<br>Dia.<br>mm | Earth Cond.<br>Area<br>mm <sup>2</sup> | Core<br>Dia<br>mm | Over<br>Bedding Dia.<br>mm | Avg.<br>Cable Dia.<br>mm | Copper conductor |                        | Aluminium conductor |                        |
|------|--|------------------------|--------------------|--|-------------------|----------------------------|--------------------------|------------------|------------------------|---------------------|------------------------|
|      |  |                        |                    |  |                   |                            |                          | Product<br>Code  | Approx Weight<br>kg/km | Product<br>Code     | Approx Weight<br>kg/km |
| 2C+E | 1.5                                    | Strand                 | 3.2                | 1.5                                    | 3.2               | 8.4                        | 13.1                     | 1301             | 313                    | -                   | -                      |
| 2C+E | 2.5                                    | Strand                 | 3.7                | 2.5                                    | 3.7               | 9.5                        | 14.3                     | 1302             | 379                    | -                   | -                      |
| 2C+E | 4                                      | Strand                 | 4.6                | 2.5                                    | 3.5               | 11.35                      | 17.2                     | 1304             | 586                    | -                   | -                      |
| 2C+E | 6                                      | Strand                 | 5.2                | 2.5                                    | 3.5               | 12.24                      | 18.2                     | 1306             | 663                    | -                   | -                      |
| 2C+E | 10                                     | Strand                 | 6.2                | 4                                      | 4.6               | 14.51                      | 20.6                     | 1310             | 861                    | -                   | -                      |
| 2C+E | 16                                     | Strand                 | 7.3                | 6                                      | 5.2               | 16.60                      | 22.9                     | 1316             | 1091                   | -                   | -                      |
| 2C+E | 25                                     | Strand                 | 9.1                | 6                                      | 5.2               | 19.29                      | 26.5                     | 1325             | 1548                   | -                   | -                      |
| 2C+E | 35                                     | Strand                 | 10.3               | 10                                     | 6.2               | 21.82                      | 29.2                     | 1335             | 1918                   | -                   | -                      |
| 2C+E | 50                                     | Strand                 | 12.2               | 16                                     | 7.3               | 25.56                      | 33.2                     | 1305             | 2494                   | -                   | -                      |
| 2C+E | 70                                     | Compact                | 14.0               | 25                                     | 9.1               | 29.49                      | 37.4                     | 1307             | 3204                   | -                   | -                      |
| 2C+E | 95                                     | Compact                | 15.2               | 25                                     | 8.5               | 30.89                      | 39.8                     | 1309             | 3914                   | -                   | -                      |
| 2C+E | 120                                    | Compact                | 17.1               | 35                                     | 9.7               | 34.59                      | 43.7                     | 1312             | 4739                   | 1312A               | 3038                   |
| 2C+E | 150                                    | Compact                | 19.2               | 50                                     | 11.4              | 39.08                      | 49.6                     | 1350             | 6205                   | 1350A               | 4040                   |
| 2C+E | 185                                    | Compact                | 21.4               | 70                                     | 13.4              | 43.84                      | 54.7                     | 1318             | 7480                   | 1318A               | 4758                   |
| 2C+E | 240                                    | Compact                | 24.1               | 95                                     | 15.2              | 49.34                      | 60.6                     | 1324             | 9237                   | 1324A               | 5680                   |
| 2C+E | 300                                    | Compact                | 26.8               | 120                                    | 17.1              | 54.70                      | 66.3                     | 1330             | 11099                  | 1330A               | 6644                   |
| 3C+E | 1.5                                    | Strand                 | 3.2                | 1.5                                    | 3.2               | 9.3                        | 14.1                     | 1015             | 360                    | -                   | -                      |
| 3C+E | 2.5                                    | Strand                 | 3.7                | 2.5                                    | 3.7               | 10.5                       | 15.3                     | 1025             | 442                    | -                   | -                      |
| 3C+E | 4                                      | Strand                 | 4.6                | 2.5                                    | 3.5               | 12.74                      | 18.7                     | 1004             | 681                    | -                   | -                      |
| 3C+E | 6                                      | Strand                 | 5.2                | 2.5                                    | 3.5               | 13.86                      | 19.9                     | 1006             | 789                    | -                   | -                      |
| 3C+E | 10                                     | Strand                 | 6.2                | 4                                      | 4.6               | 16.36                      | 23.4                     | 1010             | 1156                   | -                   | -                      |
| 3C+E | 16                                     | Strand                 | 7.3                | 6                                      | 5.2               | 18.81                      | 26.0                     | 1016             | 1481                   | -                   | -                      |
| 3C+E | 25                                     | Strand                 | 9.1                | 6                                      | 5.2               | 22.20                      | 29.6                     | 1125             | 1947                   | -                   | -                      |
| 3C+E | 35                                     | Strand                 | 10.3               | 10                                     | 6.2               | 25.10                      | 32.7                     | 1035             | 2439                   | -                   | -                      |
| 3C+E | 50                                     | Strand                 | 12.2               | 16                                     | 7.3               | 29.45                      | 38.2                     | 1050             | 3401                   | -                   | -                      |
| 3C+E | 70                                     | Compact                | 14.0               | 25                                     | 9.1               | 33.84                      | 42.9                     | 1070             | 4425                   | -                   | -                      |
| 3C+E | 95                                     | Compact                | 15.2               | 25                                     | 8.5               | 35.81                      | 45.0                     | 1095             | 5118                   | -                   | -                      |
| 3C+E | 120                                    | Compact                | 17.1               | 35                                     | 9.7               | 40.08                      | 50.7                     | 1120             | 6634                   | 1120A               | 4190                   |
| 3C+E | 150                                    | Compact                | 19.2               | 50                                     | 11.4              | 45.20                      | 56.1                     | 1150             | 8087                   | 1150A               | 4993                   |
| 3C+E | 185                                    | Compact                | 21.4               | 70                                     | 13.4              | 50.58                      | 61.9                     | 1185             | 9774                   | 1185A               | 5907                   |
| 3C+E | 240                                    | Compact                | 24.1               | 95                                     | 15.2              | 56.94                      | 68.7                     | 1124             | 12151                  | 1124A               | 7109                   |
| 3C+E | 300                                    | Compact                | 26.8               | 120                                    | 17.1              | 63.11                      | 76.7                     | 1130             | 15495                  | 1130A               | 9185                   |
| 4C+E | 1.5                                    | Strand                 | 3.2                | 1.5                                    | 3.2               | 10.2                       | 15.1                     | 1505             | 413                    | -                   | -                      |
| 4C+E | 2.5                                    | Strand                 | 3.7                | 2.5                                    | 3.7               | 11.5                       | 16.5                     | 1502             | 512                    | -                   | -                      |
| 4C+E | 4                                      | Strand                 | 4.6                | 2.5                                    | 3.5               | 14.17                      | 20.3                     | 1504             | 745                    | -                   | -                      |
| 4C+E | 6                                      | Strand                 | 5.2                | 2.5                                    | 3.5               | 15.50                      | 21.7                     | 1506             | 874                    | -                   | -                      |
| 4C+E | 10                                     | Strand                 | 6.2                | 4                                      | 4.6               | 18.26                      | 25.4                     | 1510             | 1176                   | -                   | -                      |
| 4C+E | 16                                     | Strand                 | 7.3                | 6                                      | 5.2               | 21.07                      | 28.4                     | 1516             | 1547                   | -                   | -                      |
| 4C+E | 25                                     | Strand                 | 9.1                | 6                                      | 5.2               | 25.10                      | 32.7                     | 1525             | 2230                   | -                   | -                      |
| 4C+E | 35                                     | Strand                 | 10.3               | 10                                     | 6.2               | 28.37                      | 37.1                     | 1535             | 2836                   | -                   | -                      |
| 4C+E | 50                                     | Strand                 | 12.2               | 16                                     | 7.3               | 33.35                      | 42.4                     | 1550             | 3778                   | -                   | -                      |
| 4C+E | 70                                     | Compact                | 14.0               | 25                                     | 9.1               | 38.24                      | 47.6                     | 1570             | 4924                   | -                   | -                      |
| 4C+E | 95                                     | Compact                | 15.2               | 25                                     | 8.5               | 40.69                      | 51.3                     | 1595             | 6075                   | -                   | -                      |
| 4C+E | 120                                    | Compact                | 17.1               | 35                                     | 9.7               | 45.54                      | 56.5                     | 1520             | 7444                   | 1520A               | 4257                   |
| 4C+E | 150                                    | Compact                | 19.2               | 50                                     | 11.4              | 51.31                      | 62.7                     | 1515             | 9557                   | 1515A               | 5536                   |
| 4C+E | 185                                    | Compact                | 21.4               | 70                                     | 13.4              | 57.35                      | 69.1                     | 1585             | 11605                  | 1585A               | 6593                   |
| 4C+E | 240                                    | Compact                | 24.1               | 95                                     | 15.2              | 64.58                      | 78.3                     | 1524             | 14569                  | 1524A               | 8042                   |
| 4C+E | 300                                    | Compact                | 26.8               | 120                                    | 17.1              | 71.57                      | 85.8                     | 1530             | 17703                  | 1530A               | 9536                   |

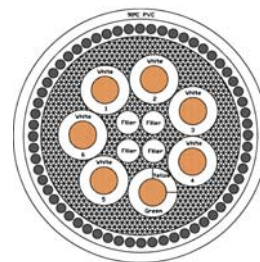
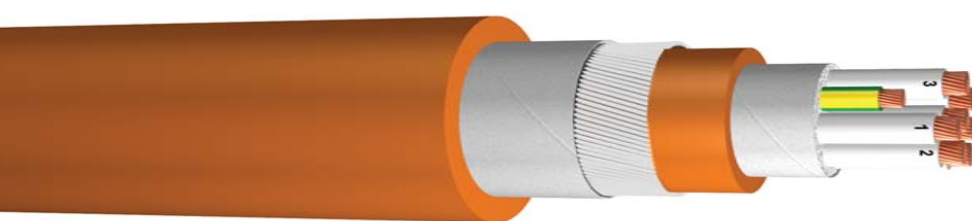


# VIPERCON ELECTRIC CABLE

## PVC Sheathed, Steel Wire Armoured Multi-Core Control Cables - 0.6/1kV

### ● Applications

WW VIPERCON 0.6/1kV armoured multi-core control cables are mostly used for control circuit in buildings, industrial plants, mining and petroleum industry where extra mechanical protection is required. The cables are suitable for installation indoor/outdoor, enclosed in conduit, in underground duct, and buried directly in earth.



### ● Configuration

Conductor: plain annealed copper (class 2 strands) of the type specified in AS/NZS 1125.  
 Insulation: polyvinylchloride compound PVC V90.  
 Laying-up: cores are laid up together with a right-hand direction of lay, with non-hygroscopic filler where necessary to form a substantially compact and circular cross-section core assembly.  
 Bedding: flame retardant polyvinylchloride compound PVC V90  
 Armour: single layer galvanized (Mild) steel wires helically applied over bedding.  
 Sheath: the laid-up core is sheathed with a continuous flame retardant polyvinylchloride compound PVC V90 to AS/NZS 3808.

### Core identification

Core: Active core: White core with black numbering,  
 Earth: Green/Yellow  
 Sheath colour: Standard - Orange  
 Optional - Black (Ultraviolet radiation stabilised)

### ● Technical data

Rated voltage: 0.6 / 1 kV  
 Conductor operating range: -25°C ~ 75°C, MAX 90°C, short circuit temperature 160°C for 5 sec  
 Temperature at surface: In operation, -25°C ~ 90°C  
 Minimum ambient temp: 0°C after installation and only when cable is in a fixed position  
 Minimum bending radius: 18 x cable O.D during installation  
 12 x cable O.D after installation

--The maximum conductor temperatures specified are based on the properties of the insulation material but in practice may need to be derated to take account of joints and terminations and environmental conditions.

--When installed in tunnels, they should be fixed on brackets and cannot bear large pulling tension or pressure.

--Thermoplastic PVC V90 insulation is subject to deformation at temperature above 75°C.

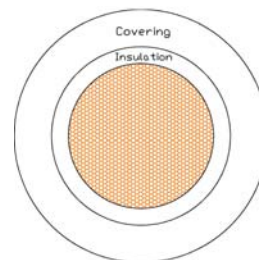
### ● Standards:

International - IEC 60502, IEC 60228, IEC 60332  
 Australian/New Zealand - AS/NZS 5000.1, AS/NZS 3808, AS/NZS 1125, AS/NZS 1660, AS/NZS 3863

| Type  | Product Code | Conductor Area mm <sup>2</sup> | Core Dia. mm | Over Bedding Dia. mm | Avg. Cable Dia. mm | Approx Weight kg/km | Product Code | Conductor Area mm <sup>2</sup> | Core Dia. mm | Over Bedding Dia. mm | Avg. Cable Dia. mm | Approx Weight kg/km |
|-------|--------------|--------------------------------|--------------|----------------------|--------------------|---------------------|--------------|--------------------------------|--------------|----------------------|--------------------|---------------------|
| 2C+E  | 1031         | 1.5                            | 3.2          | 8.4                  | 13.1               | 313                 | 1032         | 2.5                            | 3.7          | 9.5                  | 14.3               | 379                 |
| 3C+E  | 1041         | 1.5                            | 3.2          | 9.3                  | 14.1               | 360                 | 1042         | 2.5                            | 3.7          | 10.5                 | 15.3               | 442                 |
| 4C+E  | 1051         | 1.5                            | 3.2          | 10.2                 | 15.1               | 413                 | 1052         | 2.5                            | 3.7          | 11.5                 | 16.5               | 512                 |
| 6C+E  | 1701         | 1.5                            | 3.2          | 11.2                 | 16.6               | 528                 | 1702         | 2.5                            | 3.7          | 12.7                 | 18.7               | 705                 |
| 8C+E  | 1901         | 1.5                            | 3.2          | 13.9                 | 20.0               | 771                 | 1902         | 2.5                            | 3.7          | 15.8                 | 22.0               | 940                 |
| 10C+E | 1111         | 1.5                            | 3.2          | 14.6                 | 20.7               | 835                 | 1112         | 2.5                            | 3.7          | 16.5                 | 22.8               | 1028                |
| 12C+E | 1131         | 1.5                            | 3.2          | 15.9                 | 22.2               | 949                 | 1132         | 2.5                            | 3.7          | 18.1                 | 25.2               | 1294                |
| 15C+E | 1161         | 1.5                            | 3.2          | 16.9                 | 23.2               | 1049                | 1162         | 2.5                            | 3.7          | 19.2                 | 26.4               | 1439                |
| 20C+E | 1211         | 1.5                            | 3.2          | 19.0                 | 26.2               | 1392                | 1212         | 2.5                            | 3.7          | 21.6                 | 29.0               | 1737                |
| 25C+E | 1261         | 1.5                            | 3.2          | 21.3                 | 28.6               | 1640                | 1262         | 2.5                            | 3.7          | 24.2                 | 31.7               | 2038                |
| 30C+E | 1311         | 1.5                            | 3.2          | 23.6                 | 31.1               | 1910                | 1312         | 2.5                            | 3.7          | 26.9                 | 34.6               | 2425                |
| 40C+E | 1411         | 1.5                            | 3.2          | 26.8                 | 34.6               | 2340                | 1412         | 2.5                            | 3.7          | 30.6                 | 39.4               | 3228                |
| 50C+E | 1511         | 1.5                            | 3.2          | 28.4                 | 37.1               | 2837                | 1512         | 2.5                            | 3.7          | 32.4                 | 41.4               | 3629                |

# VIPERCON ELECTRIC CABLE

## SDI Power Cable



### ● Configuration

Conductor: plain annealed copper or plain aluminium (class 2 strands) of the type specified in AS/NZS 1125.  
Inner Insulation: cross-linked polyethylene (XLPE).  
Outer insulation: flame retardant polyvinyl chloride PVC V90.  
Outer Insulation colour: Standard - Orange  
Optional - Black (Ultraviolet radiation stabilised)

### ● Technical data

Rated voltage: 0.6 / 1 kV  
Conductor operating temp: - 40°C ~ 90°C, short circuit: 250°C for 5 sec  
Minimum bending radius: Stranded conductors 9 x cable O.D during installation  
6 x cable O.D after installation

--The maximum conductor temperatures specified are based on the properties of the insulation material but in practice may need to be derated to take account of joints and terminations and environmental conditions.

--The cables should not be flexed when either the ambient or cable temperature is below 0°C

### ● Standards:

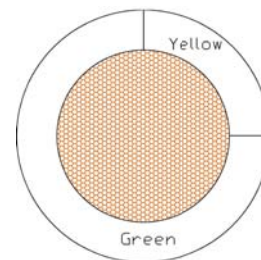
International: - IEC 60228, IEC 60332-1  
Australian/New Zealand - AS/NZS 5000.1, AS 1955, AS/NZS 3808, AS/NZS 1125, AS/NZS 1660

| Nominal<br>CSA<br>mm <sup>2</sup> | Cable<br>Dia.<br>mm | Copper conductor |                 | Aluminium conductor |                 |
|-----------------------------------|---------------------|------------------|-----------------|---------------------|-----------------|
|                                   |                     | Product<br>Code  | Weight<br>kg/km | Product<br>Code     | Weight<br>kg/km |
| 6                                 | 7.7                 | 7806XV           | 98.2            | -                   | -               |
| 10                                | 9.1                 | 7810XV           | 148.8           | -                   | -               |
| 16                                | 10.3                | 7816XV           | 213.6           | -                   | -               |
| 25                                | 12.2                | 7825XV           | 316.2           | -                   | -               |
| 35                                | 13.5                | 7835XV           | 419.4           | SMAL35              | 180             |
| 50                                | 15.6                | 7850XV           | 582.0           | SMAL50              | 241             |
| 70                                | 17.4                | 7870XV           | 782.9           | SMAL70              | 320             |
| 95                                | 19.8                | 7895XV           | 1044.1          | SMAL95              | 410             |
| 120                               | 21.6                | 7812XV           | 1290.7          | SMAL120             | 505             |
| 150                               | 23.9                | 7815XV           | 1600.4          | SMAL150             | 624             |
| 185                               | 26.2                | 7818XV           | 1959.6          | SMAL185             | 762             |
| 240                               | 29.4                | 7824XV           | 2514.1          | SMAL240             | 961             |
| 300                               | 32.4                | 7830XV           | 3117.2          | SMAL300             | 1176            |



# VIPERCON ELECTRIC CABLE

## Earth Wire



### ● Configuration

Conductor: plain annealed copper or plain aluminium (class 2 strands) of the type specified in AS/NZS 1125.  
Insulation: polyvinylchloride compound PVC V90.  
Insulation colour: Green/Yellow

### ● Technical data

Rated voltage: 0.6 / 1 kV  
Conductor operating temp: - 25°C ~ 90°C, short circuit: 160°C for 5 sec  
Minimum bending radius: 12 x cable O.D

--The maximum conductor temperatures specified are based on the properties of the insulation material but in practice may need to be derated to take account of joints and terminations and environmental conditions.  
--The cables should not be flexed when either the ambient or cable temperature is below 0°C  
--Thermoplastic 90°C PVC insulation is subject to deformation at temperature above 75°C.

### ● Standards:

International - IEC 60502, IEC 60228, IEC 60332  
Australian/New Zealand - AS/NZS 5000.1, AS/NZS 3808, AS/NZS 1125, AS/NZS 1660

| Nominal<br>Conductor Area<br>(mm <sup>2</sup> ) | Insulation<br>Thickness<br>(mm) | Cable<br>Dia.<br>(mm) | Copper<br>Product<br>Code | Approximate<br>Weight<br>(kg/km) | Aluminium<br>Product<br>Code | Approximate<br>Weight<br>(kg/km) |
|---|---------------------------------|-----------------------|---------------------------|----------------------------------|------------------------------|----------------------------------|
| 4   | 1.0                             | 4.6                   | E2V4                      | 52                               | -                            | -                                |
| 6   | 1.0                             | 5.2                   | E2V6                      | 73                               | -                            | -                                |
| 10  | 1.0                             | 6.2                   | E2V10                     | 113                              | -                            | -                                |
| 16  | 1.0                             | 7.3                   | E2V16                     | 171                              | -                            | -                                |
| 25  | 1.2                             | 9.1                   | E2V25                     | 266                              | E2V25A                       | 111                              |
| 35  | 1.2                             | 10.3                  | E2V35                     | 361                              | E2V35A                       | 145                              |
| 50  | 1.4                             | 12.2                  | E2V50                     | 514                              | E2V50A                       | 205                              |
| 70  | 1.4                             | 14.0                  | E2V70                     | 703                              | E2V70A                       | 270                              |
| 95  | 1.6                             | 16.2                  | E2V95                     | 952                              | E2V95A                       | 364                              |
| 120   | 1.6                             | 17.9                  | E2V120                    | 1186                             | E2V120A                      | 444                              |
| 150   | 1.8                             | 20.0                  | E2V150                    | 1484                             | E2V150A                      | 556                              |
| 185   | 2.0                             | 22.2                  | E2V185                    | 1830                             | E2V185A                      | 686                              |
| 240   | 2.2                             | 25.1                  | E2V240                    | 2366                             | E2V240A                      | 881                              |
| 300   | 2.4                             | 28.0                  | E2V300                    | 2949                             | E2V300A                      | 1093                             |





# VIPERCON ELECTRIC CABLE

## Supplementary Technical Information

### A. Rated voltage designation

Voltage rating for low voltage power cable is expressed in the form  $U_0/U$  ( $U_m$ ), the voltage designation takes into consideration the fact that the system voltage may vary up to 9.1% from the designated voltage.

0.6/1kV (1.2kV):  $U_0 = 0.6\text{kV}$ ,  $U = 1\text{kV}$ ,  $U_m = 1.2\text{kV}$

$U_0$  is the R.M.S power frequency voltage between phase conductor and earth conductor of the supply system.

$U$  is the R.M.S power frequency voltage between phases conductor of the supply system.

$U_m$  is the maximum R.M.S power frequency voltage between any two phases conductor for which cables are designed. It is the highest voltage that can be sustained under normal operating conditions at any time and at any point in a system. It excludes transient voltage variation due to fault condition and sudden disconnection of large load.

The rated voltage of the cable for a given application shall be suitable for the operating condition in the system.

### B. Conductor materials characteristics:

| Conductor Material Type | Conductivity % | Resistivity at 20°C $n \Omega \cdot m$ | Density $g/cm^3$ | Temperature Constant °C |
|-------------------------|----------------|--|------------------|-------------------------|
| Copper:                 | 100            | 17.07~17.24                            | 8.92             | 234.5                   |
| Aluminium               | 61             | 28.264                                 | 2.73             | 228.1                   |

### C. Conductor maximum d.c resistance at 20°C and a.c resistance at 90°C (Multi-core):

| Nominal Area $mm^2$ | Max. d.c resistance of conductor at 20°C |                | a.c resistance of conductor at 90°C |                |
|---------------------|--|----------------|-------------------------------------|----------------|
|                     | Copper / km                              | Aluminium / km | Copper / km                         | Aluminium / km |
| 1.5                 | 13.6                                     | -              | 17.3                                | -              |
| 2.5                 | 7.41                                     | -              | 9.45                                | -              |
| 4                   | 4.61                                     | -              | 5.88                                | -              |
| 6                   | 3.08                                     | -              | 3.93                                | -              |
| 10                  | 1.83                                     | -              | 2.33                                | -              |
| 16                  | 1.15                                     | -              | 1.47                                | -              |
| 25                  | 0.7270                                   | 1.20           | 0.927                               | -              |
| 35                  | 0.5238                                   | 0.8670         | 0.669                               | 1.11           |
| 50                  | 0.3661                                   | 0.6061         | 0.494                               | 0.822          |
| 70                  | 0.2604                                   | 0.4310         | 0.343                               | 0.569          |
| 95                  | 0.1931                                   | 0.3196         | 0.248                               | 0.411          |
| 120                 | 0.1528                                   | 0.2529         | 0.197                               | 0.325          |
| 150                 | 0.1222                                   | 0.2023         | 0.160                               | 0.265          |
| 185                 | 0.0991                                   | 0.1641         | 0.129                               | 0.212          |
| 240                 | 0.0761                                   | 0.1260         | 0.0998                              | 0.162          |
| 300                 | 0.0611                                   | 0.1012         | 0.0812                              | 0.131          |

\*Further conductor types and stranding configuration on request. Conductor compacted index is not less than 0.9.

### D. Conversion factor for conductor temperatures:

| Temperature Rating °C | Conversion Factor |           |
|-----------------------|-------------------|-----------|
|                       | Copper            | Aluminium |
| 20                    | 1.000             | 1.000     |
| 90                    | 1.275             | 1.282     |
| 105                   | 1.334             | 1.343     |
| 130                   | 1.432             | 1.443     |
| 250                   | 1.904             | 1.927     |

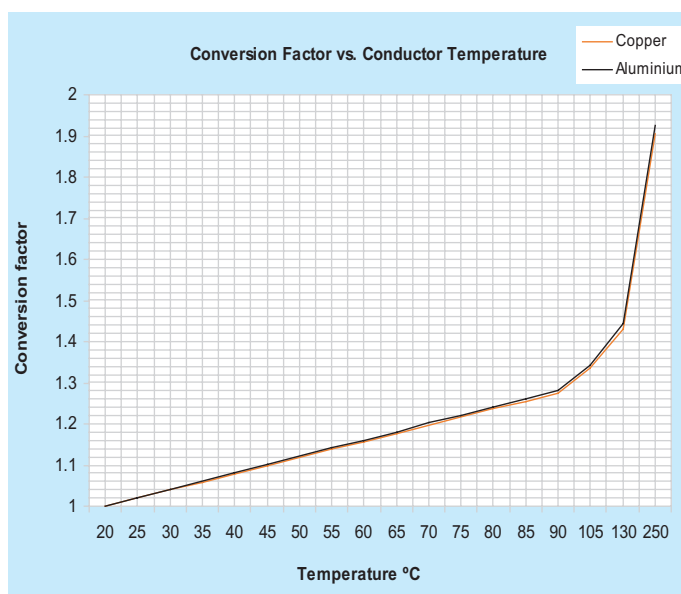
Conversion Example

50mm<sup>2</sup> Cable (Copper)

Max d.c resistance at 20°C = 0.3661  $\Omega$  / km.

Conversion factor for 50mm<sup>2</sup> at 90°C = 1.275

Max d.c resistance at 90°C = 0.3661  $\Omega$  / km \* 1.275 = 0.4668  $\Omega$  / km



# VIPERCON ELECTRIC CABLE

E. Conductor three phase voltage drop\* at 50Hz. 90°C (mV/A.m)

| Nominal Area<br>mm <sup>2</sup> | Copper |                  | Aluminium |                  |
|---------------------------------|--------|------------------|-----------|------------------|
|                                 | Max    | 0.8 power factor | Max       | 0.8 power factor |
| 1.5                             | 30.0   | -                | -         | -                |
| 2.5                             | 16.4   | -                | -         | -                |
| 4                               | 10.2   | -                | -         | -                |
| 6                               | 6.8    | -                | -         | -                |
| 10                              | 4.05   | -                | -         | -                |
| 16                              | 2.55   | -                | -         | -                |
| 25                              | 1.61   | -                | -         | -                |
| 35                              | 1.17   | -                | 1.93      | -                |
| 50                              | 0.87   | -                | 1.43      | -                |
| 70                              | 0.61   | -                | 0.993     | -                |
| 95                              | 0.45   | -                | 0.723     | -                |
| 120                             | 0.37   | -                | 0.577     | -                |
| 150                             | 0.31   | -                | 0.476     | -                |
| 185                             | 0.26   | -                | 0.388     | -                |
| 240                             | 0.22   | 0.22             | 0.307     | -                |
| 300                             | 0.19   | 0.19             | 0.258     | -                |

\*Single phase voltage drop is multiplying the three phase values by 1.155.

F. Cable reactance at 50Hz (  $\Omega$  /km)

| Nominal Area<br>mm <sup>2</sup> | PVC insulated<br>Max | XLPE insulated<br>Max |
|---------------------------------|----------------------|-----------------------|
| 1.5                             | 0.111                | -                     |
| 2.5                             | 0.102                | -                     |
| 4                               | 0.102                | -                     |
| 6                               | 0.0967               | -                     |
| 10                              | 0.0906               | -                     |
| 16                              | 0.0861               | -                     |
| 25                              | 0.0853               | -                     |
| 35                              | 0.0826               | -                     |
| 50                              | 0.0797               | -                     |
| 70                              | 0.0770               | -                     |
| 95                              | -                    | 0.0725                |
| 120                             | -                    | 0.0713                |
| 150                             | -                    | 0.0718                |
| 185                             | -                    | 0.0720                |
| 240                             | -                    | 0.0709                |
| 300                             | -                    | 0.0704                |



# VIPERCON ELECTRIC CABLE

## G. Current carrying capacity

The current rating given in this catalogue has been calculated using the method described in IEC 60287 - Calculation of the current rating (All parts), and based on typical Australia installation condition:

Lay in air: Ambient air temperature 40°C  
 Lay in ground: Ambient soil temperature 25°C,  
 Specific thermal resistivity 1.2 K.m/W, Buried depth 0.75 ~ 0.8m  
 Lay in conduits: The current carrying capacity will be reduced by approximate 15 ~ 25%.  
 Other conditions: Balance load, Unexposed to the direct sunlight.

## Multi - Core cables current rating

| Nominal<br>Phase<br>CSA<br>mm <sup>2</sup> | Insulated<br><br>Material | 3G(2C+E) - 2 loaded    |         |                  |         |                      |         | 4G(3C+E) or 5G(3C+N+E) - 3 loaded |         |                  |         |                      |         | Fault Current<br>Rating |          |
|--|---------------------------|------------------------|---------|------------------|---------|----------------------|---------|-----------------------------------|---------|------------------|---------|----------------------|---------|-------------------------|----------|
|  |                           | Unenclosed<br>Touching |         | Buried<br>direct |         | Buried<br>in conduit |         | Unenclosed<br>touching            |         | Buried<br>direct |         | Buried<br>in conduit |         |                         |          |
|  |                           | Cu<br>A                | Al<br>A | Cu<br>A          | Al<br>A | Cu<br>A              | Al<br>A | Cu<br>A                           | Al<br>A | Cu<br>A          | Al<br>A | Cu<br>A              | Al<br>A | Cu<br>kA                | Al<br>kA |
| 1.5  | PVC                       | 18                     | -       | 28               | -       | 22                   | -       | 15                                | -       | 24               | -       | 19                   | -       | 0.21                    | -        |
| 2.5  | PVC                       | 26                     | -       | 40               | -       | 31                   | -       | 22                                | -       | 34               | -       | 26                   | -       | 0.36                    | -        |
| 4  | PVC                       | 34                     | -       | 52               | -       | 40                   | -       | 29                                | -       | 44               | -       | 34                   | -       | 0.57                    | -        |
| 6  | PVC                       | 44                     | -       | 65               | -       | 51                   | -       | 37                                | -       | 55               | -       | 43                   | -       | 0.86                    | -        |
| 10   | PVC                       | 60                     | -       | 87               | -       | 68                   | -       | 51                                | -       | 74               | -       | 57                   | -       | 1.43                    | -        |
| 16   | PVC                       | 80                     | -       | 115              | -       | 88                   | -       | 68                                | -       | 96               | -       | 74                   | -       | 2.29                    | -        |
| 25   | PVC                       | 105                    | -       | 145              | -       | 115                  | -       | 91                                | -       | 125              | -       | 96                   | -       | 3.58                    | -        |
| 35   | PVC                       | 130                    | 100     | 180              | 140     | 140                  | 110     | 110                               | 87      | 150              | 115     | 115                  | 91      | 5.01                    | 3.31     |
| 50   | PVC                       | 160                    | 125     | 210              | 165     | 165                  | 130     | 135                               | 105     | 180              | 140     | 140                  | 110     | 7.15                    | 4.73     |
| 70   | PVC                       | 200                    | 155     | 260              | 200     | 205                  | 160     | 170                               | 135     | 220              | 170     | 175                  | 135     | 10.02                   | 6.62     |
| 95   | XLPE                      | 310                    | 240     | 360              | 280     | 285                  | 220     | 265                               | 205     | 300              | 235     | 240                  | 185     | 13.59                   | 8.98     |
| 120  | XLPE                      | 360                    | 280     | 410              | 320     | 325                  | 255     | 305                               | 240     | 345              | 265     | 275                  | 215     | 17.17                   | 11.35    |
| 150  | XLPE                      | 410                    | 320     | 460              | 355     | 375                  | 290     | 350                               | 270     | 385              | 300     | 310                  | 240     | 21.46                   | 14.18    |
| 185  | XLPE                      | 475                    | 370     | 520              | 405     | 425                  | 330     | 405                               | 315     | 435              | 340     | 355                  | 280     | 26.47                   | 17.49    |
| 240  | XLPE                      | 560                    | 440     | 600              | 470     | 500                  | 390     | 480                               | 375     | 500              | 395     | 420                  | 330     | 34.34                   | 22.69    |
| 300  | XLPE                      | 640                    | 510     | 680              | 530     | 570                  | 450     | 550                               | 430     | 570              | 445     | 475                  | 375     | 42.93                   | 28.37    |

## Single - Core & SDI cables current rating

Copper conductor

| Nominal Area      mm <sup>2</sup> |                            |   | 6  | 10 | 16 | 25  | 35  | 50  | 70  | 95  | 120 | 150 | 185 | 240 | 300 |
|-----------------------------------|----------------------------|---|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 90°C PVC                          | Touching (laid flat)       | A | 40 | 54 | 72 | 97  | 120 | 145 | 185 | 230 | 265 | 310 | 355 | 425 | 490 |
|                                   | Enclosed in duct (trefoil) | A | 34 | 47 | 62 | 87  | 100 | 125 | 155 | 185 | 220 | 250 | 285 | 340 | 390 |
| XLPE                              | Touching (laid flat)       | A | 47 | 65 | 86 | 115 | 145 | 175 | 225 | 280 | 325 | 375 | 435 | 520 | 600 |
|                                   | Enclosed in duct (trefoil) | A | 42 | 58 | 78 | 110 | 125 | 155 | 190 | 230 | 270 | 310 | 355 | 420 | 485 |

Aluminium conductor

| Nominal Area mm <sup>2</sup> |                            | 6 | 10 | 16 | 25 | 35  | 50  | 70  | 95  | 120 | 150 | 185 | 240 | 300 |
|------------------------------|----------------------------|---|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| XLPE                         | Touching (laid flat)       | A | -  | -  | -  | 110 | 135 | 175 | 215 | 255 | 290 | 340 | 405 | 470 |
|                              | Enclosed in duct (trefoil) | A | -  | -  | -  | 105 | 125 | 160 | 195 | 230 | 260 | 300 | 360 | 415 |

# VIPERCON ELECTRIC CABLE

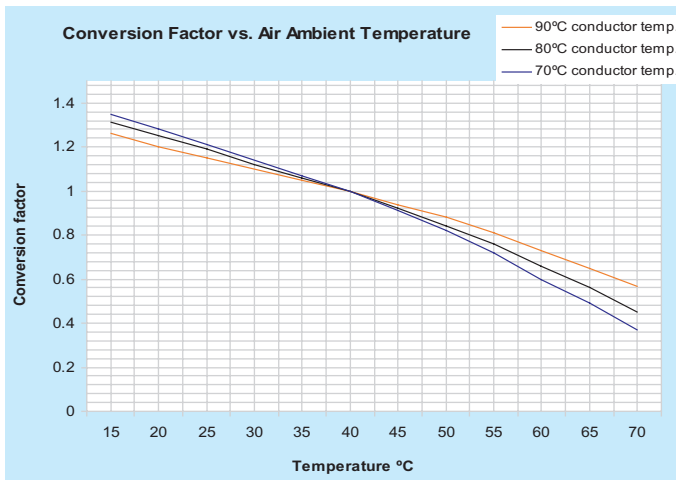
## H. Current rating factor.

### 1. Depth of laying rating factor

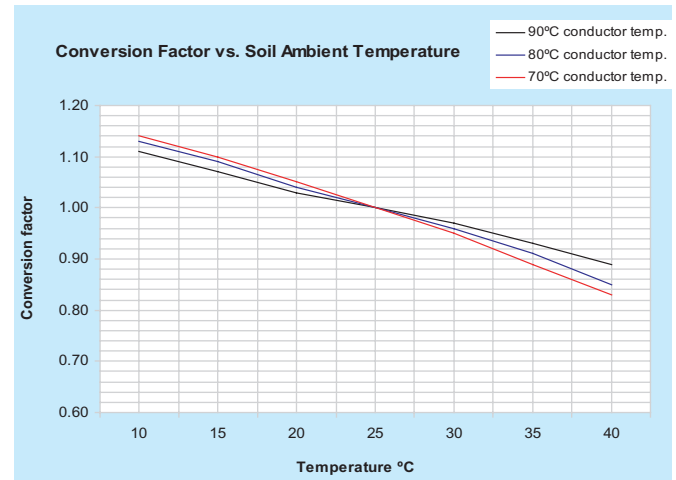
| Nominal Area        | Conductor area vs. Depth (Laid direct in ground) |      |       |      |       |      |      |      |
|---------------------|--|------|-------|------|-------|------|------|------|
|                     | 0.8m   | 1m   | 1.25m | 1.5m | 1.75m | 2m   | 2.5m | +3m  |
| 300 mm <sup>2</sup> | 1  | 0.98 | 0.96  | 0.95 | 0.94  | 0.92 | 0.91 | 0.90 |

### 2. The current carrying capacity of a cable will vary dependent on the installation condition and the cable surrounding condition.

(I) ambient air temperature conversion factor



(II) ambient soil temperature conversion factor



Note: the current rating and the derating factor is referenced from AS/NZS 3008.1, please refer to AS/NZS 3008.1 or AS/NZS 3000 for current rating on other installation condition.

## I. Cable testing criterias

The following test will be conducted at manufacturer's work, and testing method is in accordance with AS/NZS 1660

- Cable construction test, sample test
- Conductor resistance test, routine test
- Insulation spark test (6kV a.c)
- Cable A.C withstand voltage test (3.5kV a.c /5 min.)
- Cable mechanical test, sample test on tensile strength, bending radius.

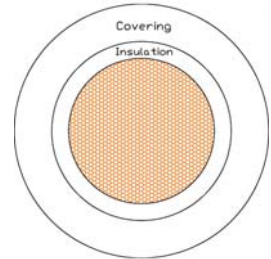


# CONFLEX ELECTRIC CABLE

## Flexible SDI Power/Welding Cables

### ● Applications

WW Cables' SDI Power / Welding Cables are for use in switchboard wiring, load banks, welding, battery leads, battery chargers, jumper leads, etc



### ● Configuration

Conductor: plain annealed copper (class 5 strands) of the type specified in AS/NZS 1125. (Available in tinned copper on request)  
 Inner Insulation: cross-linked polyethylene (XLPE). or flame retardant polyvinyl chloride PVC V90.  
 Outer insulation: thermoplastic elastomer (TPE)  
 Outer Insulation colour: Standard - Orange  
 Optional - Black (Ultraviolet radiation stabilised)

### ● Technical Data

Voltage Ranges: 0.6 / 1 kV  
 Conductor operating temp: XLPE insulated: - 40°C ~ 90°C, short circuit: 250°C for 5 sec  
 V90 insulated: - 25°C ~ 75°C, Max 90°C, short circuit: 140°C for 5 sec  
 Minimum bending radius: 7.5xcable O.D  
 Maximum pulling tension: 20N/mm<sup>2</sup> x total cross-sectional area of phase conductor

-The maximum conductor temperatures specified are based on the properties of the insulation material but in practice may need to be derated to take account of joints and terminations and environmental conditions.

-The cables should not be flexed when either the ambient or cable temperature is below 0°C

-Thermoplastic PVC V90 insulation is subject to deformation at temperature above 75°C.

### ● Standards:

International: - IEC 60228, IEC 60332-1  
 Australian/New Zealand - AS/NZS 5000.1, AS 1995, AS/NZS 3808, AS/NZS 1125, AS/NZS 1660

| Nominal<br>CSA<br>mm <sup>2</sup> | Insulation<br>Thickness<br>mm | Cable<br>Dia.<br>mm | V90             |                 | XLPE            |                 | 3-phase<br>voltage drop<br>(trefoil)<br>mV/A.m | Max conductor<br>Resist.<br>At 20°C<br>/km | Current rating of welding<br>cables for 30sec period duty cycle |          |          |          |
|-----------------------------------|-------------------------------|---------------------|-----------------|-----------------|-----------------|-----------------|--|--|---|----------|----------|----------|
|                                   |                               |                     | Product<br>Code | Weight<br>kg/km | Product<br>Code | Weight<br>kg/km |  |  | 100%<br>A   | 60%<br>A | 30%<br>A | 25%<br>A |
| 16                                | 1.5                           | 10.3                | 7816            | 216.8           | 7816XT          | 201.6           | 2.68   | 1.21                                       | 125   | 160      | 225      | 245      |
| 25                                | 1.8                           | 12.2                | 7825            | 328.5           | 7825XT          | 305.9           | 1.63   | 0.780                                      | 165   | 210      | 300      | 330      |
| 35                                | 1.8                           | 13.5                | 7835            | 431.2           | 7835XT          | 405.4           | 1.23   | 0.554                                      | 205   | 265      | 375      | 410      |
| 50                                | 1.8                           | 15.6                | 7850            | 582.0           | 7850XT          | 552.0           | 0.906  | 0.386                                      | 260   | 335      | 475      | 520      |
| 70                                | 2.0                           | 17.4                | 7870            | 794.0           | 7870XT          | 754.9           | 0.612  | 0.272                                      | 325   | 415      | 590      | 645      |
| 95                                | 2.0                           | 19.8                | 7895            | 1044.2          | 7895XT          | 999.7           | 0.490  | 0.206                                      | 390   | 505      | 715      | 780      |
| 120                               | 2.0                           | 21.6                | 7812            | 1286.5          | 7812XT          | 1237.3          | 0.392  | 0.161                                      | 455   | 585      | 830      | 910      |
| 150                               | 2.2                           | 23.9                | 7815            | 1594.3          | 7815XT          | 1533.9          | 0.323  | 0.129                                      | 535   | 690      | 975      | 1070     |
| 185                               | 2.2                           | 26.2                | 7818            | 1929.6          | 7818XT          | 1863.2          | 0.282  | 0.106                                      | 600   | 775      | 1095     | 1200     |
| 240                               | 2.2                           | 29.4                | 7824            | 2452.2          | 7824XT          | 2377.5          | 0.239  | 0.0801                                     | 715   | 920      | 1305     | 1430     |
| 300                               | 2.2                           | 32.4                | 7830            | 3018.0          | 7830XT          | 2935.4          | 0.211  | 0.0641                                     | -   | -        | -        | -        |
| 400                               | 2.8                           | 36.7                | 7840            | 4597.3          | 7840XT          | 4329.5          | 0.186  | 0.0486                                     | -   | -        | -        | -        |
| 500                               | 3.0                           | 40.5                | 7850            | 5696.7          | 7850XT          | 5374.0          | 0.175  | 0.0384                                     | -   | -        | -        | -        |
| 630                               | 3.0                           | 44.5                | 7863            | 7069.0          | 7863XT          | 6684.6          | 0.168  | 0.0287                                     | -   | -        | -        | -        |

### ● Current rating for fix installation

|      |                            | Nominal Area | mm <sup>2</sup> | 16  | 25  | 35  | 50  | 70  | 95  | 120 | 150 | 185 | 240 | 300 | 400 | 500 | 630 |
|------|----------------------------|--------------|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| V90  | Touching (laid flat)       | A            | 72              | 97  | 120 | 145 | 185 | 230 | 265 | 310 | 355 | 425 | 490 | 570 | 660 | 760 |     |
|      | Enclosed in duct (trefoil) | A            | 62              | 87  | 100 | 125 | 155 | 185 | 220 | 250 | 285 | 340 | 390 | 455 | 530 | 620 |     |
| XLPE | Touching (laid flat)       | A            | 86              | 115 | 145 | 175 | 225 | 280 | 325 | 375 | 435 | 520 | 600 | 700 | 810 | 940 |     |
|      | Enclosed in duct (trefoil) | A            | 78              | 110 | 125 | 155 | 190 | 230 | 270 | 310 | 355 | 420 | 485 | 560 | 650 | 760 |     |



# CONFLEX ELECTRIC CABLE

## 300/500V Flexible Control Cables

### ● Applications

WW Cables' CONFLEX PVC Flexible Control Cables are manufactured for use as control and connecting cables in machine tools, machinery production lines, conveyer belts, air-conditioning, and in all general production lines. The cables can be installed in dry, moist and wet indoor area and handling apparatus for low mechanical stress (ensuring the free-movement without tensile stress or forced movements).

The copper braiding screened EMC control cable is suitable for installation in the internal electric circuits and the environment where the protection from electromagnetic interferences is required.

### ● Standard references

|             |  |
|-------------|--|
| IEC 60228   | - Conductors of insulated cables   |
| VDE 0245    | - Flexible PVC-insulated control cable   |
| VDE 0295    | - Conductors of cables, wires and flexible cords for power installation        |
| VDE0293     | - Core identification for cables and flexible cords used in power installation |
| AS/NZS 1125 | - Conductor in insulated electric cables and flexible cords                    |
| AS/NZS 3808 | - Insulating and sheathing materials for electric cables                       |

### ● Configurations

|                       | Unscreened Control Cable                           | EMC Control Cable                                  |
|-----------------------|--|--|
| Conductor:            | plain annealed copper, class 5 fine wires stranded | plain annealed copper, class 5 fine wires stranded |
| Insulation:           | flame retardant polyvinyl chloride PVC V75         | flame retardant polyvinyl chloride PVC V75         |
| Filler:               | non-hygroscopic material                           | non-hygroscopic material                           |
| Bedding:              | flame retardant polyvinyl chloride PVC V75         | flame retardant polyvinyl chloride PVC V75         |
| Screen:               | -  | tinned annealed copper braid ( 82%)                |
| Sheath:               | flame retardant polyvinyl chloride PVC V75         | flame retardant polyvinyl chloride PVC V75         |
| Sheath identification | Grey   | Transparent  |

- Also available with PUR or Low Smoke & Halogen Free sheath.

Core identification: Phase core: Black core with white numbering, Earth: Green/Yellow

### ● Technical data:

|                           |   |
|---------------------------|---|
| Rated voltage:            | 300 / 500V  |
| Test voltage:             | 1500V rms between conductors, between conductors and screen<br>4000V rms spark test |
| Conductor operating temp: | Static: -25°C ~ 75°C<br>Flexing: -5°C ~ 70°C<br>During installation: -5°C ~ 70°C    |
| Short circuit temp:       | 140°C for 5 sec   |
| Minimum bending radius:   | Flexing - 7.5xcable O.D<br>Static - 5xcable O.D                                     |

| Nominal Area<br>mm <sup>2</sup> | Max. wires Dia.<br>Fine-wire strand<br>mm | Conductor Diameter<br>mm | Core Diameter<br>mm | Conductor d.c.<br>resistance at 20°C<br>Ω / km | Specific insulation<br>Resistance<br>G Ω .cm | Current carrying<br>Capacity<br>A |
|---------------------------------|---|--------------------------|---------------------|--|--|-----------------------------------|
| 0.5                             | 0.20                                      | 0.85                     | 1.8                 | 39.0   | >20  | 8                                 |
| 0.75                            | 0.20                                      | 1.16                     | 1.9                 | 26.0   | >20  | 11                                |
| 1                               | 0.20                                      | 1.34                     | 2.3                 | 19.5   | >20  | 13                                |
| 1.5                             | 0.25                                      | 1.64                     | 2.6                 | 13.3   | >20  | 16                                |
| 2.5                             | 0.25                                      | 2.12                     | 3.1                 | 7.98   | >20  | 23                                |

-- Further conductor types and stranding configuration on request.

-- Current rating is calculated based on ambient air temperature at 25°C.

-- The maximum conductor temperatures specified are based on the properties of the insulation material but in practice may need to be derated to take account of joints and terminations and environmental conditions.

-- The cables should not be flexed when either the ambient or cable temperature is below 0°C.

-- Thermoplastic PVC V75 insulation is subject to deformation at temperature above 70°C.



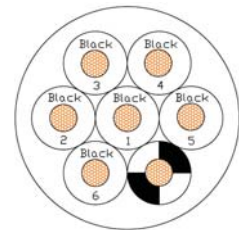
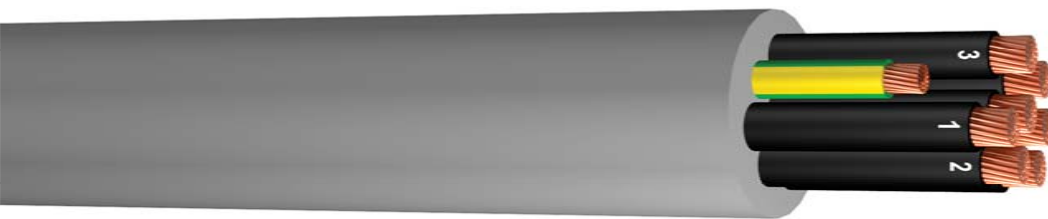
# CONFLEX ELECTRIC CABLE

## 300/500V Flexible Control Cables

### ● Unscreened PVC flexible control cable

| Product Code | No. of Core | Nominal Area mm <sup>2</sup> | Cable Diameter mm | Cable Weight kg/km |
|--------------|-------------|------------------------------|-------------------|--------------------|
| 7303         | 3C          | 0.5                          | 5.2               | 40.5               |
| 7308         | 4C          | 0.5                          | 5.6               | 48.0               |
| 9550         | 4C+E        | 0.5                          | 6.1               | 56.9               |
| 2605         | 5C+E        | 0.5                          | 6.8               | 69.5               |
| 9750         | 6C+E        | 0.5                          | 6.8               | 76.5               |
| 2805         | 7C+E        | 0.5                          | 8.3               | 94.1               |
| 2905         | 8C+E        | 0.5                          | 8.3               | 101.1              |
| 1005         | 9C+E        | 0.5                          | 8.7               | 112.2              |
| 1250         | 11C+E       | 0.5                          | 9.6               | 135.3              |
| 1405         | 13C+E       | 0.5                          | 9.6               | 149.4              |
| 1605         | 15C+E       | 0.5                          | 10.2              | 170.4              |
| 1850         | 17C+E       | 0.5                          | 11.6              | 201.0              |
| 2005         | 19C+E       | 0.5                          | 11.6              | 215.0              |
| 2105         | 20C+E       | 0.5                          | 11.6              | 222.1              |
| 2550         | 24C+E       | 0.5                          | 13.1              | 270.1              |
| 3005         | 29C+E       | 0.5                          | 13.1              | 305.2              |
| 3205         | 31C+E       | 0.5                          | 14.6              | 342.6              |
| 3405         | 33C+E       | 0.5                          | 14.6              | 356.6              |
| 3605         | 35C+E       | 0.5                          | 16.7              | 405.1              |
| 4005         | 39C+E       | 0.5                          | 16.7              | 433.2              |
| 2275         | 2C          | 0.75                         | 5.6               | 36.9               |
| 7301         | 2C          | 0.75                         | 5.6               | 36.9               |
| 2375         | 2C+E        | 0.75                         | 5.6               | 46.8               |
| 7304         | 3C          | 0.75                         | 5.6               | 46.8               |
| 7309         | 4C          | 0.75                         | 6.2               | 61.1               |
| 9575         | 4C+E        | 0.75                         | 7.0               | 76.3               |
| 2607         | 5C+E        | 0.75                         | 7.7               | 92.5               |
| 9775         | 6C+E        | 0.75                         | 7.7               | 102.3              |
| 2807         | 7C+E        | 0.75                         | 9.8               | 132.2              |
| 2907         | 8C+E        | 0.75                         | 9.8               | 142.1              |
| 1007         | 9C+E        | 0.75                         | 10.3              | 157.8              |
| 1275         | 11C+E       | 0.75                         | 11.4              | 190.2              |
| 1475         | 13C+E       | 0.75                         | 11.4              | 210.0              |
| 1675         | 15C+E       | 0.75                         | 12.1              | 239.5              |
| 1875         | 17C+E       | 0.75                         | 13.8              | 282.5              |
| 2075         | 19C+E       | 0.75                         | 13.8              | 302.3              |
| 2175         | 20C+E       | 0.75                         | 13.8              | 312.2              |
| 2575         | 24C+E       | 0.75                         | 15.5              | 379.7              |
| 3075         | 29C+E       | 0.75                         | 15.5              | 429.1              |
| 3275         | 31C+E       | 0.75                         | 17.3              | 481.6              |
| 3475         | 33C+E       | 0.75                         | 17.3              | 501.4              |
| 3675         | 35C+E       | 0.75                         | 19.2              | 542.1              |
| 2310         | 2C+E        | 1.0                          | 6.1               | 57.9               |
| 7305         | 3C          | 1.0                          | 6.1               | 57.9               |
| 7310         | 4C          | 1.0                          | 6.8               | 75.7               |
| 9510         | 4C+E        | 1.0                          | 7.6               | 94.4               |
| 7312         | 7C          | 1.0                          | 8.5               | 126.9              |
| 9710         | 6C+E        | 1.0                          | 8.5               | 126.9              |
| 1210         | 11C+E       | 1.0                          | 12.4              | 235.2              |
| 1810         | 17C+E       | 1.0                          | 15.0              | 349.5              |

| Product Code | No. of Core | Nominal Area mm <sup>2</sup> | Cable Diameter mm | Cable Weight kg/km |
|--------------|-------------|------------------------------|-------------------|--------------------|
| 2510         | 24C+E       | 1.0                          | 16.9              | 448.5              |
| 3610         | 35C+E       | 1.0                          | 21.6              | 694.1              |
| 2315         | 2C+E        | 1.5                          | 7.3               | 79.3               |
| 7306         | 3C          | 1.5                          | 7.3               | 79.3               |
| 2415         | 3C+E        | 1.5                          | 7.9               | 103.6              |
| 7311         | 4C          | 1.5                          | 7.9               | 103.6              |
| 9515         | 4C+E        | 1.5                          | 8.6               | 129.4              |
| 2615         | 5C+E        | 1.5                          | 9.5               | 156.7              |
| 9715         | 6C+E        | 1.5                          | 9.5               | 174.2              |
| 2815         | 7C+E        | 1.5                          | 11.9              | 222.8              |
| 2915         | 8C+E        | 1.5                          | 11.9              | 240.4              |
| 1014         | 9C+E        | 1.5                          | 12.4              | 266.9              |
| 1215         | 11C+E       | 1.5                          | 13.5              | 321.6              |
| 1415         | 13C+E       | 1.5                          | 13.5              | 356.7              |
| 1615         | 15C+E       | 1.5                          | 14.3              | 406.9              |
| 1815         | 17C+E       | 1.5                          | 15.2              | 478.1              |
| 1915         | 19C+E       | 1.5                          | 15.9              | 513.2              |
| 2115         | 20C+E       | 1.5                          | 15.9              | 530.7              |
| 2515         | 24C+E       | 1.5                          | 17.6              | 644.3              |
| 3014         | 29C+E       | 1.5                          | 17.6              | 732.0              |
| 3215         | 31C+E       | 1.5                          | 19.5              | 817.9              |
| 3415         | 33C+E       | 1.5                          | 19.5              | 853.0              |
| 3615         | 35C+E       | 1.5                          | 22.0              | 967.7              |
| 3915         | 39C+E       | 1.5                          | 22.0              | 1037.9             |
| 4916         | 49C+E       | 1.5                          | 23.2              | 1256.7             |
| 7302         | 2C          | 2.5                          | 8.9               | 101.6              |
| 2325         | 2C+E        | 2.5                          | 8.9               | 130.6              |
| 7307         | 3C          | 2.5                          | 8.9               | 130.6              |
| 2452         | 3C+E        | 2.5                          | 9.7               | 170.7              |
| 9525         | 4C+E        | 2.5                          | 11.0              | 213.1              |
| 2625         | 5C+E        | 2.5                          | 12.0              | 258.0              |
| 2726         | 6C+E        | 2.5                          | 12.0              | 287.0              |
| 2825         | 7C+E        | 2.5                          | 14.7              | 366.8              |
| 2925         | 8C+E        | 2.5                          | 14.7              | 395.8              |
| 1024         | 9C+E        | 2.5                          | 15.3              | 439.4              |
| 1224         | 11C+E       | 2.5                          | 16.7              | 529.6              |
| 1425         | 13C+E       | 2.5                          | 16.7              | 587.5              |
| 1625         | 15C+E       | 2.5                          | 17.7              | 670.2              |
| 1824         | 17C+E       | 2.5                          | 19.8              | 787.2              |
| 1925         | 19C+E       | 2.5                          | 19.8              | 845.2              |
| 2125         | 20C+E       | 2.5                          | 19.8              | 874.2              |
| 2526         | 24C+E       | 2.5                          | 22.0              | 1061.1             |
| 2925         | 29C+E       | 2.5                          | 22.0              | 1206.0             |
| 3225         | 31C+E       | 2.5                          | 24.3              | 1347.0             |
| 3425         | 33C+E       | 2.5                          | 24.3              | 1405.0             |
| 3625         | 35C+E       | 2.5                          | 27.6              | 1593.2             |
| 3925         | 39C+E       | 2.5                          | 27.6              | 1709.2             |
| 4125         | 40C+E       | 2.5                          | 27.6              | 1738.2             |
| 4925         | 49C+E       | 2.5                          | 29.2              | 2070.0             |



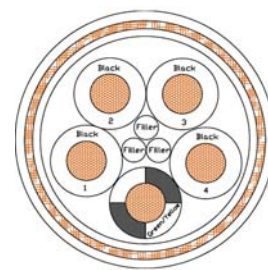


# CONFLEX ELECTRIC CABLE

## 300/500V Flexible control cables

### ● Screened PVC flexible EMC control cable

| Product Code | No. of Core | Nominal Area mm <sup>2</sup> | Over bedding Diameter mm | Cable Diameter mm | Cable Weight kg/km |
|--------------|-------------|------------------------------|--------------------------|-------------------|--------------------|
| 8200         | 2C+E        | 0.5                          | 4.8                      | 7.6               | 89.5               |
| 8201         | 3C+E        | 0.5                          | 5.2                      | 8.1               | 105.8              |
| 8202         | 4C+E        | 0.5                          | 5.7                      | 8.6               | 119.7              |
| 8203         | 6C+E        | 0.5                          | 6.2                      | 9.1               | 147.9              |
| 8204         | 11C+E       | 0.5                          | 8.5                      | 11.6              | 228.9              |
| 8205         | 24C+E       | 0.5                          | 11.1                     | 14.4              | 383.6              |
| 8206         | 3C+E        | 0.75                         | 5.9                      | 8.5               | 121.2              |
| 8207         | 6C+E        | 0.75                         | 7.1                      | 9.7               | 163.0              |
| 8208         | 11C+E       | 0.75                         | 9.8                      | 13.0              | 292.6              |
| 8209         | 17C+E       | 0.75                         | 11.6                     | 15.0              | 393.2              |
| 8210         | 2C+E        | 1.0                          | 5.8                      | 8.0               | 125.9              |
| 8211         | 3C+E        | 1.0                          | 6.4                      | 8.6               | 146.4              |
| 8212         | 6+E         | 1.0                          | 7.6                      | 10.0              | 201.2              |
| 8213         | 11C+E       | 1.0                          | 10.6                     | 13.4              | 343.4              |
| 8214         | 17C+E       | 1.0                          | 12.6                     | 15.4              | 479.5              |
| 8215         | 24C+E       | 1.0                          | 14.2                     | 17.7              | 604.8              |
| 8223         | 2C+E        | 1.5                          | 6.5                      | 9.1               | 153.3              |
| 8216         | 3C+E        | 1.5                          | 7.1                      | 9.7               | 180.9              |
| 8217         | 4C+E        | 1.5                          | 7.8                      | 10.4              | 211.1              |
| 8218         | 6C+E        | 1.5                          | 8.5                      | 11.1              | 262.6              |
| 8219         | 11C+E       | 1.5                          | 11.9                     | 15.3              | 480.9              |
| 8220         | 24C+E       | 1.5                          | 16.0                     | 19.6              | 837.6              |
| 8221         | 2C+E        | 2.5                          | 7.9                      | 10.7              | 206.4              |
| 8222         | 3C+E        | 2.5                          | 8.7                      | 11.9              | 262.1              |
| 8224         | 4C+E        | 2.5                          | 9.6                      | 13.0              | 313.2              |
| 8225         | 5C+E        | 2.5                          | 10.5                     | 14.0              | 364.9              |
| 8226         | 6C+E        | 2.5                          | 10.5                     | 14.0              | 383.5              |
| 8227         | 7C+E        | 2.5                          | 13.2                     | 16.8              | 511.2              |
| 8228         | 8C+E        | 2.5                          | 13.2                     | 16.8              | 529.9              |
| 8229         | 9C+E        | 2.5                          | 13.9                     | 17.5              | 576.9              |
| 8230         | 11C+E       | 2.5                          | 15.3                     | 19.1              | 704.7              |
| 8231         | 13C+E       | 2.5                          | 15.3                     | 19.1              | 742.0              |
| 8232         | 15C+E       | 2.5                          | 16.2                     | 20.0              | 827.4              |
| 8233         | 17C+E       | 2.5                          | 18.6                     | 22.5              | 977.7              |
| 8234         | 19C+E       | 2.5                          | 18.6                     | 22.5              | 1015.0             |



# CONFLEX ELECTRIC CABLE

## 0.6/1kV Flexible Heavy Duty PVC Cable

### ● Application

WW CABLES' Heavy Duty PVC flexible cables are manufacture based on AS 3191 with Electrical approval No. V99412. The cables are mainly for use as extension leads or light appliance leads.

### ● Standard references

|              |   |
|--------------|---|
| AS/NZS 3191: | Electric flexible cords                                   |
| AS/NZS 1125: | Conductor in insulated electric cables and flexible cords |
| AS/NZS 3808: | Insulating and sheathing materials for electric cables    |
| IEC 60228:   | Conductors of insulated cables                            |

### ● Configuration

|            |   |
|------------|---|
| Conductor  | - Fine wire stranded (Class 5) plain annealed copper to AS1125, IEC 60228   |
| Insulation | - The conductor is insulated with a continuous self-extinguish and flame retardant heavy duty PVC type V75 sheath to AS 3808. |
| Sheath     | - Continuous self-extinguish and flame retardant heavy duty PVC type V75 sheath to AS 3808.                                   |

Cable marking Imprint on cable

### ● Technical data

|                           |              |
|---------------------------|--------------|
| Temperature at conductor: | -25°C ~ 75°C |
| Short circuit temperature | 160°C        |
| Temperature at surface:   | +5°C ~ 75°C  |

|                           |  |
|---------------------------|--|
| Rated voltage:            | 0.6 / 1kV  |
| Minimum bending radius:   | 4 x Cable O.D for fixed used<br>6 x Cable O.D for flexible used (not under tension)                                |
| Pulling tension strength: | The safety pulling tension should be limited to 20N/mm <sup>2</sup> of the total cross-sectional area of conductor |

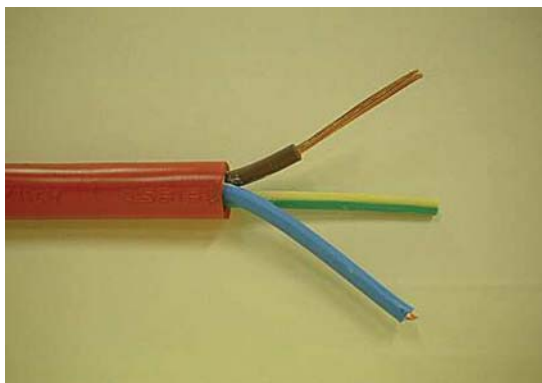
Core colour code: Brown, Blue, Green/Yellow

| Part No | Nominal CSA mm <sup>2</sup> | Conductor Strands mm | Core Dia. mm | Cable Dia. mm | Cable Weight kg/100m | Max. d.c Resistance Ω /km | Current rating A |
|---------|-----------------------------|----------------------|--------------|---------------|----------------------|---------------------------|------------------|
| 1315    | 1.5                         | 30/0.25              | 3.01         | 10.05         | 14.50                | 13.3                      | 16               |

Cable Sheath Colour:

22 - Red, 24 - Yellow, 26 - Violet, 28 - Grey, 30 - Orange, 32 - Pink, 34 - Dark Blue.

Note: Thermoplastic PVC V75 insulation is subject to deformation at temperature above 75°C.



# CONFLEX ELECTRIC CABLE

## Flexible Automotive Cables

### ● Application

WW Cables' Automotive Cables are manufactured for general purpose automotive applications. They are suitable for Low Voltage, High Current use.

Temperature at conductor: -25°C ~ 75°C

Temperature at surface: +5°C ~ 75°C

### ● FIGURE 8 AUTOMOTIVE CABLE

#### Configuration

Flexible stranded plain or tinned annealed copper conductor covered with PVC V75 sheath.  
Core identifications - Red/Red with trace or Red/Black (other by request)

| Product Code | Industry Standard Size mm | Cond. Strands No./mm | Insulation Thickness mm | Cable Avg Dia. mm | Approx Weight kg/km | Max. d.c. Resistance / km | Current Rating A |
|--------------|---------------------------|----------------------|-------------------------|-------------------|---------------------|---------------------------|------------------|
| 2163         | 3                         | 16 / 0.30            | 0.6                     | 2.8 x 6.0         | 32.5                | 15.76                     | 10               |
| 2263         | 4                         | 25 / 0.30            | 0.6                     | 3.2 x 6.6         | 49.1                | 9.70                      | 15               |



### ● TWIN SHEATHED AUTOMOTIVE / MARINE CABLE

#### Configuration

Flexible stranded plain or tinned annealed copper conductor covered with PVC V75 sheath  
Core identifications - Red/Black.

| Product Code | Industry Standard Size mm | Cond. Strands No./mm | Insulation Thickness mm | Cable Avg Dia. mm | Approx Weight kg/km | Max. d.c. Resistance / km | Current Rating A |
|--------------|---------------------------|----------------------|-------------------------|-------------------|---------------------|---------------------------|------------------|
| 3163         | 3                         | 16 / 0.30            | 0.4                     | 6.6 x 3.2         | 40.3                | 15.76                     | 10               |
| 3263         | 4                         | 26 / 0.30            | 0.4                     | 7.3 x 3.5         | 60.5                | 9.70                      | 15               |
| 3413         | 5                         | 41 / 0.30            | 0.6                     | 8.6 x 4.2         | 86.5                | 6.15                      | 27               |
| 3653         | 6                         | 65 / 0.30            | 0.6                     | 9.8 x 4.7         | 138.5               | 3.88                      | 31               |



### ● TRAILER CABLE

#### Configuration

Flexible stranded plain or tinned annealed copper conductor covered with PVC V75 sheath.

| Product Code | Number Of Core | Cond. Strands No./mm | Insulation Thickness mm | Sheath Thickness Mm | Cable Avg Dia. mm | Approx Weight kg/km | Max. d.c. Resistance / km | Current Rating A |
|--------------|----------------|----------------------|-------------------------|---------------------|-------------------|---------------------|---------------------------|------------------|
| 3593         | 5              | 9 / 0.30             | 0.4                     | 0.6                 | 6.2               | 63.3                | 28.02                     | 5                |
| 5163         | 5              | 16 / 0.30            | 0.4                     | 0.6                 | 7.2               | 90.2                | 15.76                     | 10               |
| 3793         | 7              | 9 / 0.30             | 0.4                     | 0.6                 | 7.0               | 81.2                | 28.02                     | 5                |
| 7163         | 7              | 16 / 0.30            | 0.4                     | 0.6                 | 8.2               | 119.7               | 15.76                     | 10               |



Core Identifications: 5 Core - White, Yellow, Brown, Red, Green,  
7 Core - White, Yellow, Brown, Red, Green, Black, Blue

Note: WW Cables' Automotive Cables are not to be regarded as power cables or for the direct connection of equipment to main power supplies or low impedance source.

# CONFLEX ELECTRIC CABLE

## Flexible Single Core Cables

### ● Application

WW Cables' single core flexible cables are mainly used for the wiring of communication electronic and allied equipment, as well as the internal wiring of switchboards.

### ● Configuration

Conductor: plain annealed copper or tinned annealed (class 5 strands) of the type specified in AS/NZS 1125.

Insulation: polyvinylchloride compound PVC V90.

-- Full range of sheath colours and striping available on request

### ● Technical data

Rated voltage: 0.5mm<sup>2</sup> ~ 1mm<sup>2</sup>: 240 V

1.5mm<sup>2</sup> ~ 10mm<sup>2</sup>: 0.6 / 1 kV

Conductor operating temp: - 25°C ~ 90°C, short circuit: 160°C for 5 sec

Minimum bending radius: 5 x cable O.D

--The maximum conductor temperatures specified are based on the properties of the insulation material but in practice may need to be derated to take account of joints and terminations and environmental conditions.

--The cables should not be flexed when either the ambient or cable temperature is below 0°C

--Thermoplastic PVC V90 insulation is subject to deformation at temperature above 75°C.

### ● Standards:

International - IEC 60502, IEC 60228, IEC 60332

Australian/New Zealand - AS/NZS 5000.1, AS/NZS 3808, AS/NZS 1125, AS/NZS 1660

| Product Code | Nominal Conductor Area mm <sup>2</sup> | Conductor Strands No. / mm | Cable Dia. mm | Approx. Weight kg/km | Current Rating A | Conductor d.c. resistance at 20°C / km | Cable Packing               |
|--------------|--|----------------------------|---------------|----------------------|------------------|--|-----------------------------|
| 7005         | 0.50                                   | 16 / 0.20                  | 2.1           | 10                   | 3                | 40.1                                   | 100m / spool or 500m / drum |
| 7075         | 0.75                                   | 24 / 0.20                  | 2.4           | 13                   | 7                | 26.7                                   | 100m / spool or 500m / drum |
| 7100         | 1.00                                   | 32 / 0.20                  | 2.5           | 15                   | 9                | 20.0                                   | 100m / spool or 500m / drum |
| 7150         | 1.50                                   | 30 / 0.25                  | 3.0           | 22                   | 12               | 13.7                                   | 100m / spool or 500m / drum |
| 7250         | 2.50                                   | 50 / 0.25                  | 3.7           | 33                   | 20               | 8.21                                   | 100m / spool or 500m / drum |
| 7400         | 4.00                                   | 56 / 0.30                  | 4.6           | 53                   | 25               | 5.09                                   | 100m / spool or 500m / drum |
| 7600         | 6.00                                   | 84 / 0.30                  | 5.2           | 73                   | 40               | 3.39                                   | 100m / spool or 500m / drum |
| 7700         | 10.00                                  | 77 / 0.40                  | 6.2           | 113                  | 65               | 1.95                                   | 100m / spool or 500m / drum |

#### Cable Sheath Colour:

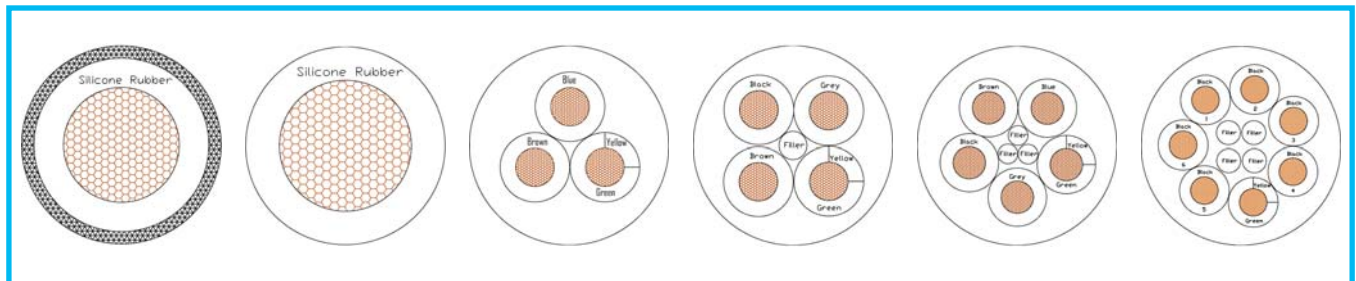
|                   |             |                |                 |
|-------------------|-------------|----------------|-----------------|
| 20 – Green/Yellow | 24 – Yellow | 28 – Grey      | 32 – Pink       |
| 21 – Black        | 25 – Green  | 29 – White     | 33 – Light Pink |
| 22 – Red          | 26 – Violet | 30 – Orange    | 34 – Dark Blue  |
| 23 – Blue         | 27 – Brown  | 31 – Dark Blue |                 |



# VIPERHITEMP HALOGEN-FREE CABLE

## VIPERHITEMP

### Flexible halogen-free Cable (Silicone Rubber insulated)



Single Core (Glass Braid)

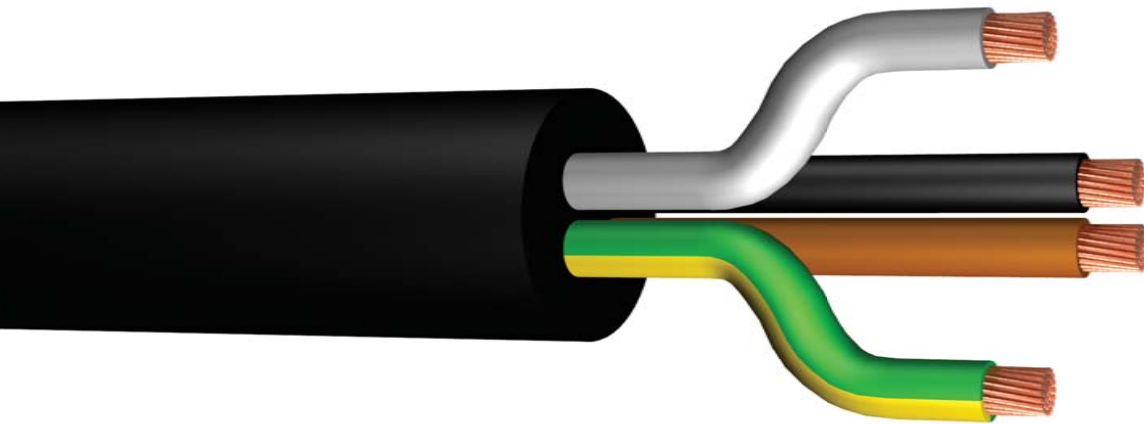
Single Core

2-Core and Earth

3-Core and Earth

4-Core and Earth

Multi-Core and Earth



#### ● Standard references

- IEC 60228 - Conductors of insulated cables
- VDE 0295 - Conductors of cables, wires and flexible cords for power installation
- AS/NZS 1125 - Conductor in insulated electric cables and flexible cords
- AS/NZS 3808 - Insulating and sheathing materials for electric cables



# VIPERHITEMP HALOGEN-FREE CABLE

## 300 / 500V Silicone Flexible Halogen Free Cables: Single-Core (180°C)

### ● Applications

WW Cables' VIPERHITEMP Silicone Flexible Cables are manufactured for use as wiring of domestic electrical heating application, lighting or industrial wiring for hot environments. Silicone flexible cables with coated synthetic reinforcing braid have excellent mechanical strength.

### ● Configuration

|                       | Cables without braid reinforcement                 | Cable with braid reinforcement                     |
|-----------------------|--|--|
| Conductor:            | plain annealed copper, class 5 fine wires stranded | plain annealed copper, class 5 fine wires stranded |
| Insulation:           | Silicone rubber                                    | Silicone rubber                                    |
| Sheath:               |  | Coated fibre glass reinforcing braid               |
| Sheath identification | All colour   | All colour   |

### ● Technical data\*:

Voltage Ranges: 300V / 500V

Test voltage: 1500V

Conductor operating temp: -60°C ~ +180°C

Short circuit temp: +200°C

Minimum bending radius: 5 x cable O.D

\*Further conductor types and stranding configuration on request.

\*The maximum conductor temperatures specified are based on the properties of the insulation material but in practice may need to be derated to take account of joints and terminations and environmental conditions

| Product Code | Nominal Area mm <sup>2</sup> | Max. wires Dia. Fine-wire strand mm | Conductor Diameter mm | Insulation Thickness mm | Cable Overall Diameter mm | Cable Approx. Weight kg/km | Conductor d.c. resistance at 20°C Ω / km | Reinforcing braid |
|--------------|------------------------------|-------------------------------------|-----------------------|-------------------------|---------------------------|----------------------------|--|-------------------|
| 8805         | 0.5                          | 0.20                                | 0.85                  | 0.6                     | 2.4                       | 8.6                        | 39.0                                     | ●                 |
| 8810         | 1                            | 0.20                                | 1.34                  | 0.6                     | 2.8                       | 14.0                       | 19.5                                     | ●                 |
| 8815         | 1.5                          | 0.25                                | 1.64                  | 0.7                     | 3.3                       | 20.3                       | 13.3                                     | ●                 |
| 8825         | 2.5                          | 0.25                                | 2.12                  | 0.8                     | 3.9                       | 31.9                       | 7.98                                     | ●                 |
| 8805NB       | 0.5                          | 0.20                                | 0.85                  | 0.6                     | 2.0                       | 8.1                        | 39.0                                     | -                 |
| 8810NB       | 1                            | 0.20                                | 1.34                  | 0.6                     | 2.8                       | 15.6                       | 19.5                                     | -                 |
| 8815NB       | 1.5                          | 0.25                                | 1.64                  | 0.7                     | 3.1                       | 21.0                       | 13.3                                     | -                 |
| 8825NB       | 2.5                          | 0.25                                | 2.12                  | 0.8                     | 3.5                       | 31.4                       | 7.98                                     | -                 |



Cable Sheath Colour:

|                   |             |                |                 |
|-------------------|-------------|----------------|-----------------|
| 20 – Green/Yellow | 24 – Yellow | 28 – Grey      | 32 – Pink       |
| 21 – Black        | 25 – Green  | 29 – White     | 33 – Light Pink |
| 22 – Red          | 26 – Violet | 30 – Orange    | 34 – Dark Blue  |
| 23 – Blue         | 27 – Brown  | 31 – Dark Blue |                 |

# VIPERHITEMP HALOGEN-FREE CABLE

## 300 / 500V Nickel-plated Core Flexible Cables: Single-Core (500°C)

### ● Applications

WW Cables' VIPERHITEMP Flexible Nickel-plated Cables are manufactured for use as wiring of heating elements, cartridges, bands and hot plates or heavy industry: foundries, steelwork and glassworks, etc.

### ● Configurations

|                       | Cable with braid reinforcement                               |
|-----------------------|--|
| Conductor:            | Class 5 strands Nickel -plated copper                        |
| Insulation:           | Several mineral-impregnated glass lapping tapes              |
| Sheath:               | Silicone -coated mineral fibre braid                         |
| Sheath identification | Standard colour: White<br>Any colour is available on request |

| Product Code | Nominal Area mm <sup>2</sup> | Max. wires Dia. Fine -wire strand mm | Conductor Diameter mm | Cable Overall Diameter mm | Cable Approx. Weight kg/km | Conductor d.c. resistance at 20°C Ω / km |
|--------------|------------------------------|--------------------------------------|-----------------------|---------------------------|----------------------------|--|
| 8810N5       | 1                            | 0.20                                 | 1.34                  | 3.98                      | 17.9                       | 20.0                                     |
| 8815N5       | 1.5                          | 0.25                                 | 1.64                  | 4.17                      | 25.9                       | 13.9                                     |
| 8825N5       | 2.5                          | 0.25                                 | 2.12                  | 4.77                      | 37.8                       | 8.21                                     |
| 8804N5       | 4                            | 0.30                                 | 2.66                  | 5.32                      | 57.7                       | 5.09                                     |
| 8806N5       | 6                            | 0.30                                 | 3.39                  | 5.81                      | 83.2                       | 3.40                                     |

### ● Technical data:

Rated voltage: 300 / 500V

Test voltage: 2000V

Conductor operating temp: -60°C ~ +450°C, Peaks at: 500°C

-- Further conductor types and stranding configuration on request.

-- The maximum conductor temperatures specified are based on the properties of the insulation material but in practice may need to be derated to take account of joints and terminations and environmental conditions





# VIPERHITEMP HALOGEN-FREE CABLE

## Silicone Flexible Halogen Free Cables (Cords): Multi-Core

### ● Applications

WW Cables' VIPERHITEMP Silicone Flexible Cables are manufactured for use as wiring in metal industry, glassworks, lighting, and in hot environment up to 180°C.

### ● Configuration

|                       |   |
|-----------------------|---|
| Conductor:            | Tinned annealed copper, class 5 fine wires stranded |
| Insulation:           | Silicone rubber                                     |
| Sheath:               | Silicone rubber                                     |
| Sheath identification | Black   |

### ● Core identification:

2 core and earth, 3 Core and earth, 4 core and earth:

Cords (0.75mm<sup>2</sup> ~ 2.5mm<sup>2</sup>) to AS/NZS 3191:

Active cores: Brown, White, Black      Neutral core: Blue      Earth core: Green/Yellow

Cables (4.0 mm<sup>2</sup> and above) to VDE0293:

Active cores: Brown, Grey, Black      Neutral core: Blue      Earth core: Green/Yellow

6 cores and above:

Active cores: Black core with white numbering      Earth core: Green/Yellow

### ● Technical data\*:

Voltage Ranges:      Cords: 450V / 750V, Cables: 600V / 1000V

Test voltage:      2000V

Conductor operating temp:      -60°C ~ +180°C

Short circuit temp:      +200°C

Minimum bending radius:      5 x cable O.D

\*The maximum conductor temperatures specified are based on the properties of the insulation material but in practice may need to be derated to take account of joints and terminations and environmental conditions

| Product Code | Nominal Area mm <sup>2</sup> | Number of cores | Max. wires Diameter mm | Conductor Diameter mm | Core Diameter mm | Cable Overall Diameter mm | Cable Approx. Weight kg/km | Conductor d.c. Resistance at 20°C Ω / km |
|--------------|------------------------------|-----------------|------------------------|-----------------------|------------------|---------------------------|----------------------------|--|
| CORDS        |                              |                 |                        |                       |                  |                           |                            |  |
| 6875         | 0.75                         | 2C              | 0.20                   | 1.16                  | 2.4              | 6.3                       | 53.9                       | 26.7                                     |
| 6975         | 0.75                         | 2C+E            | 0.20                   | 1.16                  | 2.4              | 6.7                       | 64.4                       | 26.7                                     |
| 6675         | 0.75                         | 3C+E            | 0.20                   | 1.16                  | 2.4              | 7.3                       | 78.9                       | 26.7                                     |
| 6810         | 1                            | 2C              | 0.20                   | 1.34                  | 2.5              | 6.7                       | 62.6                       | 20.0                                     |
| 6910         | 1                            | 2C+E            | 0.20                   | 1.34                  | 2.5              | 7.1                       | 75.6                       | 20.0                                     |
| 6710         | 1                            | 3C+E            | 0.20                   | 1.34                  | 2.5              | 7.9                       | 96.6                       | 20.0                                     |
| 6610         | 1                            | 4C+E            | 0.20                   | 1.34                  | 2.5              | 8.6                       | 116.4                      | 20.0                                     |
| 6615         | 1.5                          | 2C              | 0.20                   | 1.64                  | 3.0              | 7.7                       | 84.1                       | 13.7                                     |
| 6815         | 1.5                          | 2C+E            | 0.20                   | 1.64                  | 3.0              | 8.2                       | 103.7                      | 13.7                                     |
| 6915         | 1.5                          | 3C+E            | 0.20                   | 1.64                  | 3.0              | 9.4                       | 136.8                      | 13.7                                     |
| 6715         | 1.5                          | 4C+E            | 0.20                   | 1.64                  | 3.0              | 10.4                      | 169.9                      | 13.7                                     |
| 6515         | 1.5                          | 6C+E            | 0.20                   | 1.64                  | 3.0              | 12.7                      | 247.4                      | 13.7                                     |
| 6215         | 1.5                          | 11C+E           | 0.20                   | 1.64                  | 3.0              | 17.4                      | 451.8                      | 13.7                                     |
| 6219         | 1.5                          | 18C+E           | 0.20                   | 1.64                  | 3.0              | 17.4                      | 533.4                      | 13.7                                     |
| 6825         | 2.5                          | 2C+E            | 0.20                   | 2.12                  | 3.7              | 10.2                      | 169.9                      | 8.21                                     |
| 6925         | 2.5                          | 3C+E            | 0.20                   | 2.12                  | 3.7              | 11.2                      | 211.4                      | 8.21                                     |
| 6625         | 2.5                          | 4C+E            | 0.20                   | 2.12                  | 3.7              | 12.4                      | 262.0                      | 8.21                                     |
| 6725         | 2.5                          | 6C+E            | 0.20                   | 2.12                  | 3.7              | 15.2                      | 383.2                      | 8.21                                     |
| 6225         | 2.5                          | 11C+E           | 0.20                   | 2.12                  | 3.7              | 21.0                      | 703.1                      | 8.21                                     |
| 6226         | 2.5                          | 18C+E           | 0.20                   | 2.12                  | 3.7              | 21.0                      | 837.8                      | 8.21                                     |
| CABLES       |                              |                 |                        |                       |                  |                           |                            |  |
| 6840         | 4                            | 2C+E            | 0.30                   | 2.68                  | 4.7              | 12.8                      | 268.3                      | 5.09                                     |
| 6640         | 4                            | 3C+E            | 0.30                   | 2.68                  | 4.7              | 14.1                      | 336.6                      | 5.09                                     |
| 6540         | 4                            | 4C+E            | 0.30                   | 2.68                  | 4.7              | 15.5                      | 411.9                      | 5.09                                     |
| 6659         | 6                            | 2C+E            | 0.30                   | 3.28                  | 5.3              | 14.2                      | 354.9                      | 3.39                                     |
| 6660         | 6                            | 3C+E            | 0.30                   | 3.28                  | 5.3              | 15.7                      | 448.1                      | 3.39                                     |
| 6661         | 6                            | 4C+E            | 0.30                   | 3.28                  | 5.3              | 17.3                      | 550.1                      | 3.39                                     |

