



Your first choice for Quality Australian  
cables and Excellent service.

Australia Pacific Electric Cables Pty Ltd  
(ABN 23 066 447 763)

## Cables Technical Specification - SDI Single Core Flexible Power Cables XLPE ( X90 ) Insulated/PVC sheathed AS/NZS 5000.1

### \* Cable drawing



### Cable Configuration:

Cu Class 5/X90/PVC 0.6/1kV

### Cable Construction:

**Conductor:** Plain Annealed Copper Class 5 to AS/NZS 1125  
**Binder Tape:** Mylar/Non-woven/Polyester/Mica Tape (where required)  
**Insulation:** X90  
**Sheath:** Weatherability PVC 5V-90 to AS/NZS 3808

### Technical data

| Items                                                         |                          | Unit                | Average Values     |                                                     |          |          |          |          |          |          |          |          |          |          |          |          |          |        |
|---------------------------------------------------------------|--------------------------|---------------------|--------------------|-----------------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--------|
| Product code                                                  | For <b>black</b> sheath  | -                   | FXV010             | FXV016                                              | FXV025   | FXV035   | FXV050   | FXV070   | FXV095   | FXV120   | FXV150   | FXV185   | FXV240   | FXV300   | FXV400   | FXV500   | FXV630   |        |
|                                                               | For <b>orange</b> sheath | -                   | FXV010WO           | FXV016WO                                            | FXV025WO | FXV035WO | FXV050WO | FXV070WO | FXV095WO | FXV120WO | FXV150WO | FXV185WO | FXV240WO | FXV300WO | FXV400WO | FXV500WO | FXV630WO |        |
| Number of Cores                                               |                          |                     | Single Core ( 1C ) |                                                     |          |          |          |          |          |          |          |          |          |          |          |          |          |        |
| Conductor Cross section Area ( CSA )                          |                          |                     | mm²                | 10                                                  | 16       | 25       | 35       | 50       | 70       | 95       | 120      | 150      | 185      | 240      | 300      | 400      | 500      | 630    |
| Maximum total number of wires                                 |                          |                     | mm                 | 73                                                  | 116      | 181      | 256      | 365      | 333      | 437      | 563      | 702      | 851      | 1133     | 1406     | 1861     | 2318     | 3111   |
| Maximum diameter of wires in conductor                        |                          |                     | mm                 | 0.41                                                | 0.41     | 0.41     | 0.41     | 0.41     | 0.51     | 0.51     | 0.51     | 0.51     | 0.51     | 0.51     | 0.51     | 0.51     | 0.51     | 0.51   |
| Conductor diameter                                            |                          |                     | mm                 | 3.94                                                | 5.39     | 6.68     | 8.51     | 10.12    | 11.55    | 13.08    | 14.96    | 16.60    | 18.30    | 21.30    | 23.60    | 27.40    | 30.70    | 35.50  |
| Binder Tape ( overlapping ≥25% )                              |                          |                     | mm                 | Mylar/Non-woven/Polyester/Mica Tape ( if required ) |          |          |          |          |          |          |          |          |          |          |          |          |          |        |
| *Average Insulation Thickness                                 |                          |                     | mm                 | 0.7                                                 | 0.7      | 0.9      | 0.9      | 1.0      | 1.1      | 1.1      | 1.2      | 1.4      | 1.6      | 1.7      | 1.8      | 2.0      | 2.2      | 2.4    |
| Overall Insulation Diameter                                   |                          |                     | mm                 | 5.9                                                 | 7.4      | 9.1      | 10.9     | 12.7     | 14.4     | 15.9     | 18.0     | 20.0     | 22.1     | 25.3     | 27.8     | 32.0     | 35.7     | 40.9   |
| *Average Sheath Thickness                                     |                          |                     | mm                 | 1.4                                                 | 1.4      | 1.4      | 1.4      | 1.4      | 1.4      | 1.5      | 1.5      | 1.6      | 1.6      | 1.7      | 1.8      | 1.9      | 2.0      | 2.2    |
| Overall Sheath Diameter (±10%)                                |                          |                     | mm                 | 8.7                                                 | 10.2     | 11.9     | 13.7     | 15.5     | 17.2     | 18.9     | 21.0     | 23.2     | 25.5     | 28.9     | 31.6     | 36.0     | 39.9     | 45.5   |
| Cable Gross Mass ( ±10% )                                     |                          |                     | kg/km              | 149                                                 | 221      | 335      | 445      | 579      | 790      | 1039     | 1298     | 1610     | 1956     | 2495     | 3081     | 4010     | 5120     | 6350   |
| Maximum Conductor DC Resistance @ 20°C                        |                          |                     | Ω/km               | 1.91                                                | 1.21     | 0.78     | 0.554    | 0.386    | 0.272    | 0.206    | 0.161    | 0.129    | 0.106    | 0.0801   | 0.0641   | 0.0486   | 0.0384   | 0.0287 |
| Minimum Bending Radius                                        |                          | During installation | mm                 | 52                                                  | 61       | 71       | 82       | 93       | 103      | 113      | 126      | 139      | 153      | 173      | 190      | 216      | 239      | 273    |
|                                                               |                          | Fixed               | mm                 | 35                                                  | 41       | 48       | 55       | 62       | 69       | 76       | 84       | 93       | 102      | 116      | 126      | 144      | 160      | 182    |
| Maximum Safe Pulling Tension ( Subject to a maximum of 22kN ) |                          |                     | kN                 | 0.7                                                 | 1.12     | 1.75     | 2.45     | 3.5      | 4.9      | 6.65     | 8.4      | 10.5     | 12.95    | 16.8     | 21.0     | 22.0     | 22.0     | 22.0   |

Remark: O- Orange sheath

### Colour Identification:

**Insulation:** White  
**Sheath:** Orange / Black

### Electrical Characteristics:

**Voltage Rating:** 0.6/1kV  
**HV Test for 5 mins:** 3.5kV  
**Maximum continuous conductor operating temperature:** 90°C  
**Minimum Insulation Resistance constant @20°C:** 3000GΩ.m  
**Minimum Insulation Resistance constant @90°C:** 3GΩ.m

### Operating Temperature:

**Conductor:** -25°C to 90°C  
**Short Circuit (5 secs):** 250°C  
The minimum ambient temperature is 0°C after insulation and only when cables in a fixed position

### Mechanical Characteristics:

**Minimum Bending Radius:** During installation-60D, Fixed-40D  
**Maximum Safe Pulling Tension:** 0.07 x Total Conductor CSA

### Cable Markings:

APEC YEAR X90 ELECTRIC CABLE 0.6/1 KV SIZE SQMM CU AS/NZS 5000.1

### Standard Compliance:

**AS/NZS 5000.1** Part 1: For working voltages up to and including 0.6/1 (1.2kV)  
**AS/NZS 3808** Insulating and sheathing materials for electric cables  
**AS/NZS 3008** Electrical installations—Selection of cables-Part 1.1: Cables for alternating voltages up to and including 0.6/1 kV—Typical Australian installation conditions  
**AS/NZS 1660** Test methods for electric cables, cords and conductors  
**AS/NZS 1574** Copper and Copper alloys - wire for electrical purposes  
**AS/NZS 1125** Conductors in insulated electric cables and flexible cords

**BRISBANE**  
P 07 3802 3688  
F 07 3803 1955  
89 Platinum St  
Crestmead QLD

**BRISBANE SALES**  
P 07 3802 3651

**MELBOURNE**  
P 03 9465 1188  
F 03 9465 9333  
188 Holt Pde  
Thomastown VIC

**PERTH**  
P 08 9350 1300  
F 08 9350 1333  
638 Casella Pl  
Kewdale WA

