

# BS6622/BS7835 Single Core Armoured 6.6kV XLPE Stranded Aluminium Conductor

## CABLE CHARACTERISTICS

Bending radius  $r=15D$ 

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## CABLE DESCRIPTION

### 1.CONDUCTOR

Compacted circular stranded Aluminium conductor complying with BS6360 class 2.

### CONDUCTOR SCREEN

Extruded semi-conducting compound bonded to the insulation and applied in the same operation as the insulation.

### 2.INSULATION

Extruded cross-linked polyethylene (XLPE) suitable for operation at a conductor temperature of 90°C.

### 3.INSULATION SCREEN

Extruded semi-conducting compound applied in the same operation as the insulation. Cold strippable screens are supplied as standard but fully bonded screens may be provided if specified.

### 4.METALLIC SCREEN

Copper tapes applied overlapped to provide an earth fault current path.

### 5.BEDDING

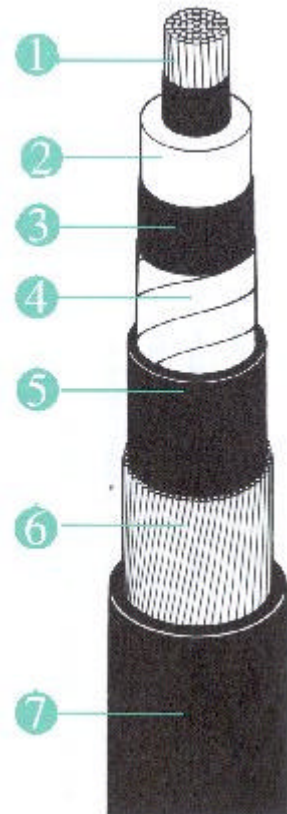
Extruded black polyvinyl chloride (PVC) or Low Smoke Zero Halogen (LSOH) compound is supplied as standard. Alternative materials may be provided if specified.

### 6.ARMOURING

Single layer of circular aluminium wires.

### 7.OVERSHEATH

Extruded black polyvinyl chloride (PVC) or Low Smoke Zero Halogen (LSOH) compound is supplied as standard. Alternative materials may be provided if specified e.g. medium density polyethylene (MDPE).



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## Constructional Data

| Cross-sectional area mm <sup>2</sup> | Minimum average thickness of insulation mm | Nominal area of copper tape screen mm <sup>2</sup> | Nominal thickness of PVC/LSOH bedding mm | Nominal number and diameter of armour wires no/mm | Nominal thickness of PVC/LSOH oversheath mm | Nominal overall diameter of cable mm |
|--------------------------------------|--------------------------------------------|----------------------------------------------------|------------------------------------------|---------------------------------------------------|---------------------------------------------|--------------------------------------|
| 70                                   | 2.5                                        | 16.8                                               | 1.2                                      | 38/1.6                                            | 1.8                                         | 27.5                                 |
| 95                                   | 2.5                                        | 18.5                                               | 1.2                                      | 41/1.6                                            | 1.9                                         | 29.4                                 |
| 120                                  | 2.5                                        | 20                                                 | 1.2                                      | 44/1.6                                            | 1.9                                         | 30.9                                 |
| 150                                  | 2.5                                        | 21.3                                               | 1.2                                      | 46/1.6                                            | 2.0                                         | 32.4                                 |
| 185                                  | 2.5                                        | 23.1                                               | 1.2                                      | 40/2.0                                            | 2.0                                         | 35.0                                 |
| 240                                  | 2.6                                        | 25.5                                               | 1.2                                      | 43/2.0                                            | 2.1                                         | 37.6                                 |
| 300                                  | 2.8                                        | 28.3                                               | 1.2                                      | 47/2.0                                            | 2.2                                         | 40.8                                 |
| 400                                  | 3                                          | 31.4                                               | 1.2                                      | 51/2.0                                            | 2.3                                         | 44.1                                 |
| 500                                  | 3.2                                        | 34.7                                               | 1.3                                      | 46/2.5                                            | 2.5                                         | 49.0                                 |
| 630                                  | 3.2                                        | 38.6                                               | 1.4                                      | 50/2.5                                            | 2.6                                         | 53.3                                 |

## Installation

| Cross-sectional area mm <sup>2</sup> | Approximate cable weight kg/m | Nominal drum length m | Minimum bending radius mm | Nominal internal diameter of ducts mm |
|--------------------------------------|-------------------------------|-----------------------|---------------------------|---------------------------------------|
| 70                                   | 1.0                           | 1000                  | 450                       | 100                                   |
| 95                                   | 1.2                           | 1000                  | 450                       | 100                                   |
| 120                                  | 1.3                           | 1000                  | 500                       | 100                                   |
| 150                                  | 1.5                           | 500                   | 500                       | 100                                   |
| 185                                  | 1.7                           | 500                   | 550                       | 100                                   |
| 240                                  | 2.0                           | 500                   | 600                       | 100                                   |
| 300                                  | 2.4                           | 500                   | 650                       | 100                                   |
| 400                                  | 2.8                           | 500                   | 700                       | 100                                   |
| 500                                  | 3.4                           | 300                   | 750                       | 100                                   |
| 630                                  | 4.1                           | 300                   | 800                       | 100                                   |

## Electrical Data

| Cross-sectional area mm <sup>2</sup> | Maximum DC resistance of conductor at 20°C µOhms/m | Maximum AC resistance of conductor at 90°C µOhms/m | Reactance at 50Hz µOhms/m | Impedance at 50Hz µOhms/m | Maximum Capacitance pF/m | Maximum charging current at normal voltage and frequency mA/m |
|--------------------------------------|----------------------------------------------------|----------------------------------------------------|---------------------------|---------------------------|--------------------------|---------------------------------------------------------------|
| 70                                   | 443                                                | 568                                                | 125                       | 582                       | 371                      | 0.45                                                          |
| 95                                   | 320                                                | 410                                                | 119                       | 427                       | 417                      | 0.50                                                          |
| 120                                  | 253                                                | 325                                                | 114                       | 344                       | 459                      | 0.55                                                          |
| 150                                  | 206                                                | 265                                                | 111                       | 288                       | 494                      | 0.59                                                          |
| 185                                  | 164                                                | 211                                                | 109                       | 238                       | 543                      | 0.65                                                          |
| 240                                  | 125                                                | 161                                                | 105                       | 193                       | 583                      | 0.7                                                           |
| 300                                  | 100                                                | 130                                                | 103                       | 167                       | 602                      | 0.72                                                          |
| 400                                  | 77.8                                               | 102                                                | 99.9                      | 143                       | 627                      | 0.75                                                          |
| 500                                  | 60.5                                               | 81.0                                               | 99.2                      | 129                       | 654                      | 0.79                                                          |
| 630                                  | 46.9                                               | 64.0                                               | 95.5                      | 116                       | 737                      | 0.87                                                          |

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## Ratings Data

| Cross-sectional area<br>mm <sup>2</sup> | Current Ratings        |                          |                     | Short Circuit Ratings                                    |                                                                   |
|-----------------------------------------|------------------------|--------------------------|---------------------|----------------------------------------------------------|-------------------------------------------------------------------|
|                                         | Laid in ground<br>Amps | Drawn into ducts<br>Amps | Laid in air<br>Amps | One second short<br>circuit rating of<br>conductor<br>kA | One second short<br>circuit rating of<br>copper tape screen<br>kA |
| 70                                      | 210                    | 210                      | 240                 | 6.3                                                      | -                                                                 |
| 95                                      | 250                    | 245                      | 295                 | 8.5                                                      | Typically                                                         |
| 120                                     | 280                    | 275                      | 335                 | 11.0                                                     | Less                                                              |
| 150                                     | 315                    | 300                      | 380                 | 13.5                                                     | Then                                                              |
| 185                                     | 355                    | 335                      | 435                 | 17.0                                                     | 1kA                                                               |
| 240                                     | 405                    | 380                      | 510                 | 22.3                                                     | -                                                                 |
| 300                                     | 455                    | 420                      | 580                 | 28.0                                                     | -                                                                 |
| 400                                     | 510                    | 455                      | 670                 | 36.6                                                     | -                                                                 |
| 500                                     | 570                    | 500                      | 770                 | 46.2                                                     | -                                                                 |
| 630                                     | 640                    | 550                      | 880                 | 58.3                                                     | -                                                                 |

### Current Rating Conditions:

|                            |           |
|----------------------------|-----------|
| Ground Temperature         | 15°C      |
| Ambient temperature (air)  | 25°C      |
| Depth of burial            | 0.8m      |
| Thermal resistance of soil | 1.2°C m/W |

Single core cables in trefoil, bonded and earthed at both ends.



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Formerly Pirelli Cables