

# BS6622/BS7835 Three Core Armoured 11kV XLPE Stranded Aluminium Conductor

## CABLE CHARACTERISTICS

Bending radius  $r=12D$ 

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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.LAYING UP

Three cores laid up with polypropylene string fillers to form a compact circular cable, and bound with tape.

### 6.TAPE BINDER

### 7.BEDDING SHEATH

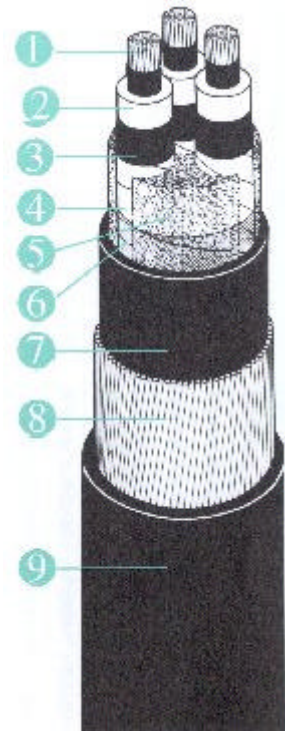
Extruded black polyvinyl chloride (PVC) or Low Smoke Zero Halogen (LSOH) compound is supplied as standard. Alternative materials may be provided if specified.

### 8.ARMOURING

Single layer of galvanised steel wires.

### 9.OVERSHEATH

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



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## Constructional Data

| Cross-sectional area<br>mm <sup>2</sup> | Minimum average thickness of insulation<br>mm | Nominal diameter over insulation<br>mm | Nominal thickness of PVC/LSOH bedding<br>mm | Nominal number and diameter of armoured wires<br>no./mm | Nominal thickness of PVC/LSOH oversheath<br>mm | Nominal overall diameter of cable<br>mm |
|-----------------------------------------|-----------------------------------------------|----------------------------------------|---------------------------------------------|---------------------------------------------------------|------------------------------------------------|-----------------------------------------|
| 70                                      | 3.4                                           | 18.8                                   | 1.4                                         | 54/2.5                                                  | 2.7                                            | 57.1                                    |
| 95                                      | 3.4                                           | 20.5                                   | 1.5                                         | 59/2.4                                                  | 2.8                                            | 61.2                                    |
| 120                                     | 3.4                                           | 22.0                                   | 1.6                                         | 62/2.4                                                  | 3.0                                            | 65.0                                    |
| 150                                     | 3.4                                           | 23.3                                   | 1.6                                         | 65/2.4                                                  | 3.1                                            | 68.0                                    |
| 185                                     | 3.4                                           | 25.1                                   | 1.7                                         | 70/2.4                                                  | 3.2                                            | 72.3                                    |
| 240                                     | 3.4                                           | 27.3                                   | 1.8                                         | 61/3.14                                                 | 3.4                                            | 79.0                                    |
| 300                                     | 3.4                                           | 29.6                                   | 1.9                                         | 65/3.14                                                 | 3.6                                            | 84.5                                    |
| 400                                     | 3.4                                           | 32.3                                   | 2.0                                         | 70/3.15                                                 | 3.8                                            | 90.9                                    |

## Installation

| Cross-sectional area<br>mm <sup>2</sup> | Approximate cable weight<br>kg/m | Nominal drum length<br>m | Minimum bending radius<br>mm | Nominal internal diameter of ducts<br>mm |
|-----------------------------------------|----------------------------------|--------------------------|------------------------------|------------------------------------------|
| 70                                      | 5.1                              | 500                      | 700                          | 100                                      |
| 95                                      | 5.7                              | 500                      | 750                          | 100                                      |
| 120                                     | 6.4                              | 500                      | 800                          | 100                                      |
| 150                                     | 6.9                              | 500                      | 850                          | 125                                      |
| 185                                     | 7.3                              | 500                      | 900                          | 125                                      |
| 240                                     | 9.7                              | 500                      | 950                          | 125                                      |
| 300                                     | 10.9                             | 450                      | 1050                         | 125                                      |
| 400                                     | 12.5                             | 400                      | 1100                         | 125                                      |

## Electrical data

| Cross-sectional area<br>mm <sup>2</sup> | Maximum DC resistance of conductor at 20°C<br>μohms/m | Maximum AC resistance of conductor at 90°C<br>μohms/m | Reactance at 50 Hz<br>μohms/m | Impedance at 50 Hz<br>μohms/m | Maximum capacitance<br>pF/m | Maximum charging current at normal voltage and frequency<br>mA/m |
|-----------------------------------------|-------------------------------------------------------|-------------------------------------------------------|-------------------------------|-------------------------------|-----------------------------|------------------------------------------------------------------|
| 70                                      | 443                                                   | 568                                                   | 108.0                         | 578                           | 298                         | 0.62                                                             |
| 95                                      | 320                                                   | 410                                                   | 102.0                         | 422                           | 334                         | 0.67                                                             |
| 120                                     | 253                                                   | 325                                                   | 98.8                          | 340                           | 365                         | 0.73                                                             |
| 150                                     | 206                                                   | 265                                                   | 96.2                          | 282                           | 392                         | 0.78                                                             |
| 185                                     | 164                                                   | 211                                                   | 93.1                          | 231                           | 430                         | 0.86                                                             |
| 240                                     | 125                                                   | 161                                                   | 90.0                          | 184                           | 476                         | 0.95                                                             |
| 300                                     | 100                                                   | 130                                                   | 87.4                          | 157                           | 524                         | 1.05                                                             |
| 400                                     | 77.8                                                  | 102                                                   | 84.9                          | 133                           | 580                         | 1.16                                                             |

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## Ratings data

| Cross-sectional area mm <sup>2</sup> | Current ratings:           |                       |                  | Short circuit ratings:                             |                                                                      |
|--------------------------------------|----------------------------|-----------------------|------------------|----------------------------------------------------|----------------------------------------------------------------------|
|                                      | Laid direct in ground<br>A | Drawn into ducts<br>A | Laid in air<br>A | One second short circuit rating of conductor<br>kA | One second short circuit rating of copper tape screen per core<br>kA |
| 70                                   | 195                        | 165                   | 210              | 6.3                                                | -                                                                    |
| 95                                   | 230                        | 200                   | 250              | 8.5                                                | Typically                                                            |
| 120                                  | 265                        | 225                   | 295              | 11.0                                               | Less                                                                 |
| 150                                  | 295                        | 255                   | 330              | 13.5                                               | Then                                                                 |
| 185                                  | 335                        | 290                   | 385              | 17.0                                               | 1kA                                                                  |
| 240                                  | 380                        | 335                   | 450              | 22.3                                               | -                                                                    |
| 300                                  | 435                        | 375                   | 510              | 28.0                                               | -                                                                    |
| 400                                  | 480                        | 420                   | 570              | 36.6                                               | -                                                                    |

### 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



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