

# BS6622/BS7835 Three core Armoured 22kV XLPE Stranded Copper Conductors

## CABLE CHARACTERISTICS



Bending radius  $r=12D$

## CABLE DESCRIPTION

### 1.CONDUCTOR

Compact circular stranded copper 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 a 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.SHEATH

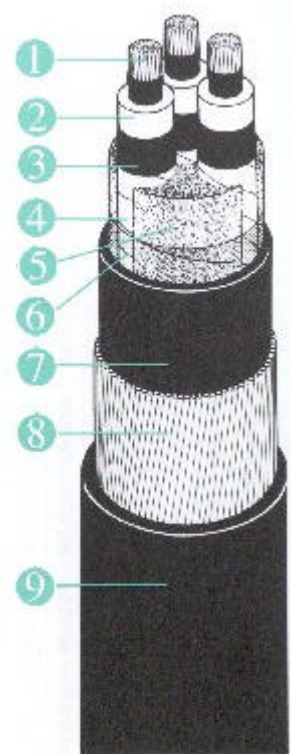
Extruded black polyvinyl chloride (PVC) or Low Smoke Zero Halogen (LSOH) compound is supplied as standard. Alternative materials may be provided if specified.

### 8.ARMOURING

Single layer of galvanised circular 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  
e.g medium density polyethylene (MDPE).



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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                                      | 5.5                                           | 23.4                                   | 1.6                                         | 66/2.5                                                  | 3.0                                            | 68.1                                    |
| 95                                      | 5.5                                           | 25.1                                   | 1.7                                         | 70/2.5                                                  | 3.2                                            | 72.3                                    |
| 120                                     | 5.5                                           | 26.6                                   | 1.7                                         | 59/3.15                                                 | 3.3                                            | 77.1                                    |
| 150                                     | 5.5                                           | 27.9                                   | 1.8                                         | 62/3.15                                                 | 3.4                                            | 80.3                                    |
| 185                                     | 5.5                                           | 29.7                                   | 1.9                                         | 65/3.15                                                 | 3.6                                            | 84.7                                    |
| 240                                     | 5.5                                           | 31.9                                   | 2.0                                         | 70/3.15                                                 | 3.7                                            | 89.9                                    |
| 300                                     | 5.5                                           | 34.2                                   | 2.0                                         | 74/3.15                                                 | 3.9                                            | 95.2                                    |
| 400                                     | 5.5                                           | 36.9                                   | 2.2                                         | 79/3.15                                                 | 4.1                                            | 101.9                                   |

## Installation Data

| 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                                      | 7.8                              | 500                      | 850                          | 125                                      |
| 95                                      | 9.1                              | 350                      | 900                          | 125                                      |
| 120                                     | 11.0                             | 350                      | 950                          | 125                                      |
| 150                                     | 12.1                             | 350                      | 1000                         | 125                                      |
| 185                                     | 13.8                             | 300                      | 1050                         | 125                                      |
| 240                                     | 16.1                             | 250                      | 1100                         | 125                                      |
| 300                                     | 18.4                             | 250                      | 1150                         | 150                                      |
| 400                                     | 21.7                             | 250                      | 1250                         | 150                                      |

## 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 50Hz<br>μOhms/m | Impedance at 50Hz<br>μOhms/m | Maximum capacitance<br>pF/m | Maximum charging current at normal voltage and frequency<br>mA/m |
|-----------------------------------------|-------------------------------------------------------|-------------------------------------------------------|------------------------------|------------------------------|-----------------------------|------------------------------------------------------------------|
| 70                                      | 268.0                                                 | 348                                                   | 121.0                        | 363                          | 207                         | 0.83                                                             |
| 95                                      | 193.0                                                 | 248                                                   | 114.0                        | 272                          | 229                         | 0.92                                                             |
| 120                                     | 153.0                                                 | 196                                                   | 110.0                        | 225                          | 249                         | 1.00                                                             |
| 150                                     | 124.0                                                 | 159                                                   | 107.0                        | 191                          | 266                         | 1.06                                                             |
| 185                                     | 99.1                                                  | 128                                                   | 103.0                        | 164                          | 289                         | 1.16                                                             |
| 240                                     | 75.4                                                  | 98                                                    | 99.5                         | 139                          | 318                         | 1.27                                                             |
| 300                                     | 60.1                                                  | 89                                                    | 94.4                         | 123                          | 348                         | 1.39                                                             |
| 400                                     | 47.0                                                  | 64                                                    | 91.2                         | 111                          | 383                         | 1.53                                                             |

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## Ratings Data

| Cross-sectional<br>area<br><br>mm <sup>2</sup> | Current Ratings       |                  |             | Short circuit ratings                                    |                                                                            |
|------------------------------------------------|-----------------------|------------------|-------------|----------------------------------------------------------|----------------------------------------------------------------------------|
|                                                | Laid direct in ground | Drawn into ducts | Laid in air | One second short<br>circuit<br>rating of conductor<br>kA | One second short circuit<br>rating of copper tape<br>screen per core<br>kA |
| 70                                             | 255                   | 225              | 275         | 9.8                                                      | -                                                                          |
| 95                                             | 295                   | 260              | 330         | 13.3                                                     | Typically                                                                  |
| 120                                            | 335                   | 300              | 380         | 17.2                                                     | Less                                                                       |
| 150                                            | 375                   | 335              | 430         | 21.2                                                     | Then                                                                       |
| 185                                            | 420                   | 380              | 490         | 26.6                                                     | 1kA                                                                        |
| 240                                            | 480                   | 430              | 570         | 34.9                                                     | -                                                                          |
| 300                                            | 530                   | 480              | 650         | 43.8                                                     | -                                                                          |
| 400                                            | 580                   | 530              | 720         | 57.3                                                     | -                                                                          |

### Current Ratings 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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