

LOW VOLTAGE **CABLE** RANGE



60 YEARS OF INNOVATIVE
LEADERSHIP IN **CABLE** TECHNOLOGY



ABERDARE
CABLES

Driven by **Powertech** 



CABLE DESCRIPTION

High conductivity annealed stranded or solid copper conductors. Insulated with general purpose grade PVC in plain colours.

INSTALLATION INFORMATION

For the wiring of:

- Industrial Buildings
- Control Panels
- Light Fittings
- Housing
- Appliances
- Communication Panels

PROPERTIES

Specification : BS6004
 Temperature Range : -10°C to 70°C
 Voltage Rating : 450 / 750 V
 Core Identification : Blue, Black, Brown, Yellow/Green, Orange, Pink, Violet, Grey, White, Red
 Packaging : 100 m shrink-wrapped coils
 500m Lengths available on request

TECHNICAL DATA

BS6004: PVC Insulated, Non Sheathed 450 / 750 V Cable - Copper Conductors

| Cable Size | ELECTRICAL PROPERTIES | | | | PHYSICAL PROPERTIES | | | |
|--------------------|-----------------------|------------|-----------|----------------------------|---------------------|------|------|-------------|
| | Current Rating | Resistance | Volt Drop | 1 Sec Short Circuit Rating | Nominal Diameters | | | Approx Mass |
| | | | | | D1 | r | D2 | |
| (mm ²) | (A) | (Ohm/km) | (mV/Am) | (kA) | (mm) | (mm) | (mm) | (kg/100m) |
| 1 | 17 | 18,1 | 44,00 | 0,11 | 1,13 | 0,8 | 2,7 | 1,7 |
| 1,5 | 21 | 12,1 | 29,00 | 0,17 | 1,38 | 0,8 | 3,0 | 2,2 |
| 2,5 | 27 | 7,41 | 18,00 | 0,28 | 1,78 | 0,8 | 3,5 | 3,2 |
| 4 | 38 | 4,61 | 11,00 | 0,46 | 2,59 | 1,0 | 4,7 | 5,2 |
| 6 | 47 | 3,08 | 7,30 | 0,69 | 3,14 | 1,0 | 5,2 | 7 |
| 10 | 64 | 1,83 | 4,40 | 1,15 | 4,07 | 1,0 | 6,1 | 11,1 |
| 16 | 85 | 1,15 | 2,80 | 1,84 | 5,03 | 1,0 | 7,0 | 16,7 |
| 25 | 112 | 0,8743 | 1,749 | 2,88 | 5,95 | 1,2 | 8,4 | 28 |
| 35 | 133 | 0,6332 | 1,266 | 4,03 | 7,00 | 1,2 | 9,4 | 37 |
| 50 | 156 | 0,4709 | 0,942 | 5,75 | 8,15 | 1,4 | 11,0 | 50 |
| 70 | 190 | 0,3312 | 0,662 | 8,05 | 9,70 | 1,4 | 12,5 | 73 |
| 95 | 227 | 0,2451 | 0,490 | 10,93 | 11,35 | 1,6 | 14,6 | 98 |
| 120 | 257 | 0,2000 | 0,400 | 13,80 | 12,60 | 1,6 | 15,8 | 122 |
| 150 | 287 | 0,1689 | 0,338 | 17,25 | 14,25 | 1,8 | 17,9 | 153 |
| 185 | 323 | 0,1438 | 0,288 | 21,27 | 15,85 | 2,0 | 19,9 | 180 |
| 240 | 372 | 0,1202 | 0,240 | 27,60 | 18,30 | 2,2 | 22,7 | 244 |
| 300 | 416 | 0,0763 | 0,153 | 34,50 | 20,80 | 2,4 | 25,6 | 305 |
| 400 | 468 | 0,0960 | 0,192 | 46,00 | 23,80 | 2,6 | 29,0 | 404 |

Under short circuit conditions a maximum conductor temperature of 160°C is allowed for a maximum of 1 second.
 Volt drops given are a single phase system.

PVC CURRENT RATINGS ARE BASED ON THE FOLLOWING ENVIRONMENTAL PARAMETERS

| Maximum Sustained Conductor Temperature | Ground Temperature | Ambient Air Temperature (Free Air Shaded) | Ground Thermal Resistivity |
|---|--------------------|---|----------------------------|
| 70°C | 25°C | 30°C | 1,2K.m/W |

D1: Diameter over Conductor

r: Insulation Radial

D2: Diameter over Insulation



CABLE DESCRIPTION

Copper conductors, PVC insulated, laid up with a bare copper earth-continuity-conductor between them, PVC sheathed to BS6004.

INSTALLATION INFORMATION

- Surface wiring
- Under-plaster wiring
- Under-floor screed wiring
- Wiring in hollow walls
- Roof access wiring

PROPERTIES

- Specification : BS6004
- Temperature Range : -10°C to 70°C
- Voltage Rating : 300 / 500 V
- Sheath Identification : White & Black
- Core Identification : 2 Core - Red & Black
3 Core - Red, Yellow, Blue
- Packaging : 100 m shrink-wrapped coils
Available in 500 & 1000 metre wooden drums on request

TECHNICAL DATA

| Cable Size * | | Electrical Properties | | | | Physical Properties | | |
|--------------------|-------|-------------------------------------|-------|----------------------|------------------|----------------------------|-------------------------------|-------------------------|
| | | Conductor Resistance (dc @ 20°C) | | Current Rating ** | Volt Drop *** | 1 Sec Short Circuit Rating | Overall Diameter (Approx.) | Cable Mass (Approx.) |
| (mm ²) | | (Ω/km) | | (A) | (mV/A·m) | (kA) | (mm) | (kg/100m) |
| Phase | Earth | Phase | Earth | | | | | |
| 2 Core | | | | | | | | |
| 1,5 | 1 | 12,1 | 18,1 | 22 | 29 | 0,14 | 8,7 x 4,7 | 8,7 |
| 2,5 | 1,5 | 7,4 | 12,1 | 30 | 18 | 0,24 | 10,3 x 5,5 | 12,8 |
| 4 | 1,5 | 4,61 | 12,1 | 40 | 11 | 0,38 | 11,9 x 6,4 | 17,5 |
| 6 | 2,5 | 3,08 | 7,41 | 51 | 7,3 | 0,58 | 13,4 x 7,0 | 23,3 |
| 10 | 4 | 1,83 | 4,61 | 70 | 4,4 | 0,96 | 16,5 x 8,3 | 36,1 |
| 16 | 6 | 1,15 | 3,08 | 94 | 2,8 | 1,54 | 18,7 x 9,2 | 51,6 |
| 3 Core | | | | | | | | |
| 1 | 1 | 18,2 | 18,2 | 14,5 | 38 | 0,11 | 4,4 x 10,4 | 8,9 |
| 1,5 | 1 | 12,1 | 18,2 | 18,5 | 25 | 0,14 | 4,8 x 10,5 | 9,9 |
| 2,5 | 1,5 | 7,4 | 12,2 | 25 | 15 | 0,24 | 5,5 x 12,3 | 14,1 |

- * Conductors larger than 2,5mm² are usually stranded
- ** Maximum conductor temperature 70° C in air at ambient of 30° C
- *** 2 Core - Volt drop is phase to Neutral (ie. Single-phase).
3 and 4 Core - Volt drop is phase-to-phase. (ie. Three phase AC).



ELECTRICAL AND PHYSICAL PROPERTIES OF 3 AND 4 CORE XLPE INSULATED PVC BEDDED SWA PVC SHEATHED 600/1000 V COPPER CONDUCTORS AND MANUFACTURED TO BS5467

TECHNICAL DATA

COPPER CONDUCTORS

| Cable size (mm ²) | ELECTRICAL PROPERTIES | | | | | | PHYSICAL PROPERTIES | | | | | | | |
|----------------------------------|-----------------------|--------------|------------|--------------------------|--------------------------|---|---------------------|------------|------------|------|-------|-------|---------------|---------------|
| | Current ratings | | | Impe- dance (Ω/km) | Volt drop (mV/A/m) | 1 sec short circuit rating (kA) | Nominal Diameters | | | | | | Approx. Mass | |
| | Ground (A) | Ducts (A) | Air (A) | | | | D1 | | d | | D2 | | 3c (kg/km) | 4c (kg/km) |
| | | | | 3c (mm) | 4c (mm) | 3c (mm) | 4c (mm) | 3c (mm) | 4c (mm) | | | | | |
| 1,5 | 30 | 24 | 25 | 15,429 | 26,724 | 0,22 | 7,9 | 8,6 | 0,9 | 0,9 | 12,3 | 13 | 314 | 356 |
| 2,5 | 39 | 32 | 33 | 9,449 | 16,366 | 0,36 | 9,1 | 10 | 0,9 | 0,9 | 13,7 | 14,6 | 390 | 444 |
| 4 | 51 | 41 | 43 | 5,879 | 10,183 | 0,57 | 10,4 | 11,2 | 0,9 | 0,9 | 15,0 | 15,8 | 488 | 520 |
| 6 | 65 | 53 | 56 | 3,928 | 6,803 | 0,86 | 11,6 | 12,8 | 0,9 | 1,25 | 16,2 | 18,3 | 580 | 750 |
| 10 | 86 | 70 | 77 | 2,335 | 4,044 | 1,43 | 13,6 | 14,9 | 1,25 | 1,25 | 19,1 | 20,4 | 889 | 982 |
| 16 | 112 | 90 | 101 | 1,469 | 2,544 | 2,29 | 15,5 | 17,2 | 1,25 | 1,25 | 21,2 | 22,9 | 1069 | 1279 |
| 25 | 142 | 115 | 130 | 0,9313 | 1,613 | 3,6 | 17,5 | 18,54 | 1,60 | 1,60 | 24,10 | 25,14 | 1648 | 1957 |
| 35 | 170 | 138 | 159 | 0,6738 | 1,167 | 5,0 | 19,2 | 20,90 | 1,60 | 1,60 | 25,95 | 27,70 | 2013 | 2425 |
| 50 | 204 | 164 | 194 | 0,5009 | 0,868 | 7,2 | 21,1 | 23,66 | 1,60 | 1,60 | 27,96 | 30,66 | 2527 | 3130 |
| 70 | 249 | 202 | 242 | 0,3521 | 0,610 | 10,0 | 24,5 | 27,84 | 1,60 | 2,00 | 31,48 | 36,04 | 3266 | 4341 |
| 95 | 296 | 242 | 297 | 0,2598 | 0,450 | 13,6 | 28,0 | 31,37 | 2,00 | 2,00 | 36,21 | 39,77 | 4386 | 5466 |
| 120 | 337 | 275 | 344 | 0,2120 | 0,367 | 17,2 | 30,5 | 34,60 | 2,00 | 2,50 | 39,09 | 44,20 | 5265 | 7029 |
| 150 | 378 | 310 | 396 | 0,1775 | 0,307 | 21,5 | 34,5 | 38,92 | 2,50 | 2,50 | 44,12 | 48,72 | 6828 | 8558 |
| 185 | 426 | 351 | 454 | 0,1500 | 0,260 | 26,5 | 38,5 | 43,25 | 2,50 | 2,50 | 48,08 | 53,45 | 8074 | 10233 |
| 240 | 490 | 404 | 533 | 0,1252 | 0,217 | 34,5 | 42,5 | 49,02 | 2,50 | 2,50 | 53,02 | 59,42 | 9973 | 12732 |
| 300 | 549 | 453 | 606 | 0,1099 | 0,190 | 42,5 | 47,5 | 54,23 | 2,50 | 2,50 | 57,67 | 65,03 | 12003 | 15357 |
| 400 | 620 | 512 | 702 | 0,0987 | 0,171 | 57,5 | 53,0 | 60,59 | 3,15 | 3,15 | 63,65 | 73,29 | 15267 | 20443 |

Under short circuit conditions a maximum conductor temperature of 250°C is allowed for a maximum of 1 second.

PVC CURRENT RATINGS ARE BASED ON THE FOLLOWING ENVIRONMENT PARAMETERS

| Maximum Sustained Conductor Temperature | Ground Temperature | Ambient Air Temperature (Free Air Shaded) | Ground Thermal Resistivity | Ground Thermal Resistivity |
|---|--------------------|---|----------------------------|----------------------------|
| 90° | 25° | 30° | 1,2K.m/W | 500mm |

D1: Diameter over bedding sheath

d: Diameter of armour wire

D2: Diameter over outer sheath

