# 6181B Mains Cable - BS8573, XLPE, LSZH - 50mm² to 1000mm²



## Description

6181B is a low smoke halogen single core cable, double insulated with a voltage rating of 600/100V. General surface wire cable for fixed installation, domestic and light industrial use. Available in Blue and Brown core, with a black sheath. Comes in sizes 500mm$^2$ - 1000mm$^2$. As this cable is used internally, it is covered by current CPR regulations.

## Key Features

**Voltage Rating**
600/1000 Volts

**Minimum Bending Radius**
12 x Overall Diameter

**Flame Retardancy**
BS EN/IEC 60332-1

**Temperature Limits**
Temperature Range: 0°C to +90°C

## Core Colours

All sizes available in Brown and Blue

## Standards

- BS EN/IEC 60228
- BS EN/IEC 60332-1
- IEC/EN 60754-1/2
- IEC 61034-1
- BS8573 / IEC 60502-1

## Construction

- **Conductor**: Class 2 stranded copper conductor
- **Insulation**: Cross Linked polyethylene (XLPE)
- **Outer Sheath**: Low Smoke Zero Halogen (LSZH)
- **Sheath Colour**: Black

## Training & Testing Lab

AN ISO/IEC 17025 ACCREDITED FACILITY

**Cleveland Cable Test & Training Lab**
Our state-of-the-art cable testing facility ensures that every cable meets the highest standards of quality and compliance through continuous, rigorous testing.

ISO/IEC 17025 Accredited Testing Laboratory
UKAS TESTING 31196

**CPR**
Cleveland Cable Company is committed to compliance with the Construction Products Regulation (CPR). Where applicable, all cables manufactured after 1st July 2017 have been assessed in accordance with CPR requirements, with full supporting documentation available.

## Our Sustainability Commitment

We are committed to the journey to Net Zero as a business partner, an employer and a community member.

By thinking and acting sustainably, we deliver excellent customer service while reducing carbon emissions in collaboration with our customers and suppliers.

CLEVELAND CABLE COMPANY

**ecovadis**
Cleveland Cable Company has been independently assessed by EcoVadis, a globally recognised provider of business sustainability ratings. Our score places us among the top 35% of companies evaluated worldwide, reflecting our strong commitment to environmental, social, and ethical performance

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## 6181B Mains Cable - BS8573, XLPE, LSZH - 50mm² to 1000mm² - Dimensions

| Reference | Conductor Size (mm2) | No Of Cores | Stranding(mm) | Overall Diameter(mm) | Weight(Kg/Km) | Nylon Cleat Size | Gland Size |
|---|---|---|---|---|---|---|---|
| 6181B50 | 50 | 1 | 19/1.78 | 13 | 525 | 0.6 | 25 |
| 6181B70 | 70 | 1 | 19/2.14 | 15.5 | 730 | 0.7 | 25 |
| 6181B95 | 95 | 1 | 19/2.52 | 18 | 990 | 0.7 | 25 |
| 6181B120 | 120 | 1 | 37/2.03 | 19.5 | 1230 | 0.8 | 32 |
| 6181B150 | 150 | 1 | 37/2.25 | 21.5 | 1525 | 0.9 | 32 |
| 6181B185 | 185 | 1 | 37/2.52 | 24 | 1885 | 1 | 32 |
| 6181B240 | 240 | 1 | 61/2.25 | 27 | 2440 | 1.1 | 40 |
| 6181B300 | 300 | 1 | 61/2.52 | 29.5 | 3045 | 1.2 | 40 |
| 6181B400 | 400 | 1 | 61/2.85 | 33 | 3855 | 1.4 | 50S |
| 6181B500 | 500 | 1 | 61/3.20 | 37.5 | 4950 | 1.6 | 50S |
| 6181B630 | 630 | 1 | 127/2.52 | 42 | 6345 | 1.8 | 50 |
| 6181B800 | 800 | 1 | 127/2.85 | 47.5 | 8140 | 2 | 63S |
| 6181B1000 | 1000 | 1 | 127/2.85 | 53 | 9860 | TC9 | 63 |

**Single-core 90 °c thermosetting insulated cables, non-armoured, with or without sheath COPPER CONDUCTORS)**
**Reproduced from *BS7671:2018***

## *TABLE 4E1A*

**CURRENT-CARRYING CAPACITY (amperes)**

Ambient temperature: 30°C
Conductor operating temperature:90°C

| Conductor cross sectional area | Reference Method A (enclosed in conduit in thermally insulating wall etc.) | | Reference Method B (enclosed in conduit on a wall or in trunking etc.) | | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray etc horizontal or vertical etc) Touching | | | Reference Method G (in free air) Spaced by one cable diameter | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 cables single phase AC or DC | 3 or 4 cables, three-phase AC | 2 cables single phase AC or DC | 3 or 4 cables, three phase AC | 2 cables single phase AC or DC flat and touching | 3 or 4 cables, three phase AC flat and touching or trefoil | 2 cables single phase AC or DC flat | 3 cables, three phase AC flat | 3 cables, three phase AC trefoil | 2 cables, single-phase AC or DC or 3 cables three-phase AC flat | |
| | | | | | | | | | | Horizontal | Vertical |
| $mm^2$ | A | A | A | A | A | A | A | A | A | A | A |
| 1 | 14 | 13 | 17 | 15 | 19 | 17.5 | - | - | - | - | - |
| 1.5 | 19 | 17 | 23 | 20 | 25 | 23 | - | - | - | - | - |
| 4 | 35 | 31 | 42 | 37 | 46 | 41 | - | - | - | - | - |
| 6 | 45 | 40 | 54 | 48 | 59 | 54 | - | - | - | - | - |
| 10 | 61 | 54 | 75 | 66 | 81 | 74 | - | - | - | - | - |
| 16 | 81 | 73 | 100 | 88 | 109 | 99 | - | - | - | - | - |
| 25 | 106 | 95 | 133 | 117 | 143 | 130 | 161 | 141 | 135 | 182 | 161 |
| 35 | 131 | 117 | 164 | 144 | 176 | 161 | 200 | 176 | 169 | 226 | 201 |
| 50 | 158 | 141 | 198 | 175 | 228 | 209 | 242 | 216 | 207 | 275 | 246 |
| 70 | 200 | 179 | 253 | 222 | 293 | 268 | 310 | 279 | 268 | 353 | 318 |
| 95 | 241 | 216 | 306 | 269 | 355 | 326 | 377 | 342 | 328 | 430 | 389 |
| 120 | 278 | 249 | 354 | 312 | 413 | 379 | 437 | 400 | 383 | 500 | 454 |
| 150 | 318 | 285 | 393 | 342 | 476 | 436 | 504 | 464 | 444 | 577 | 527 |
| 185 | 362 | 324 | 449 | 384 | 545 | 500 | 575 | 533 | 510 | 661 | 605 |
| 240 | 424 | 380 | 528 | 450 | 644 | 590 | 679 | 634 | 607 | 781 | 719 |
| 300 | 486 | 435 | 603 | 514 | 743 | 681 | 783 | 736 | 703 | 902 | 833 |
| 400 | - | - | 683 | 584 | 868 | 793 | 940 | 868 | 823 | 1085 | 1008 |
| 500 | - | - | 783 | 666 | 990 | 904 | 1083 | 998 | 946 | 1253 | 1169 |
| 630 | - | - | 900 | 764 | 1130 | 1033 | 1254 | 1151 | I088 | 1454 | 1362 |
| 800 | - | - | - | - | 1288 | 1179 | 1358 | 1275 | 1214 | 1581 | 1485 |
| 1000 | - | - | - | - | 1443 | 1323 | 1520 | 1436 | 1349 | 1775 | 1671 |

*Where it is intended to connect the cables in this table to equipment or accessories designed to operate at a temperature lower than the maximum operating temperature of the cable, the cables should be rated at the maximum operating temperature of the equipment or accessory (see Regulation 512.1.5). Where it is intended to group a cable in this table with other cables, the cable should be rated at the lowest of the maximum operating temperatures of any of the cables in the group (see Regulation 12. I .5). For cables having flexible conductors see section 2.4 of this appendix for adjustment factors for current-carrying capacity and voltage drop.*

**Single-core 90 °c thermosetting insulated cables, non-armoured, with or without sheath (COPPER CONDUCTORS) Reproduced from *BS7671:2018 Wiring Regulations***

***TABLE 4E1B***

**VOLTAGE DROP (per ampere per metre)**

Conductor operating temperature:90°C

| Conductor cross sectional area | 2 cables, DC | 2 cables, single-phase AC | | | | | | | | | 3 or 4 cables, three-phase AC | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Reference Methods A & B (enclosed in conduit or trunking) | | | References Methods C, F & G (clipped direct, on tray or in free air) | | | | | | Reference Methods A & B (enclosed in conduit or trunking) | | | Reference Methods C, F & G (clipped direct, on tray or in free air) | | | | | | | | |
| | | | | | Cables touching | | | Cables spaced* | | | | | | Cables touching, Trefoil | | | Cables touching, Flat | | | Cables spaced* Flat | | |
| (mm2) | (mV/ Alm) | (mV/A/m) | | | (mV/A/m) | | | (mV/A/m) | | | (mV/A/m) | | | (mV/A/m) | | | (mV/A/m) | | | (mV/A/m) | | |
| 1 | 46 | 46 | | | 46 | | | 46 | | | 40 | | | 40 | | | 40 | | | 40 | | |
| 1.5 | 31 | 31 | | | 31 | | | 31 | | | 27 | | | 27 | | | 27 | | | 27 | | |
| 2.5 | 19 | 19 | | | 19 | | | 19 | | | 16 | | | 16 | | | 16 | | | 16 | | |
| 4 | 12 | 12 | | | 12 | | | 12 | | | 10 | | | 10 | | | 10 | | | 10 | | |
| 6 | 7.9 | 7.9 | | | 7.9 | | | 7.9 | | | 6.8 | | | 6.8 | | | 6.8 | | | 6.8 | | |
| 10 | 4.7 | 4.7 | | | 4.7 | | | 4.7 | | | 4.0 | | | 4.0 | | | 4.0 | | | 4.0 | | |
| 16 | 2.9 | 2.9 | | | 2.9 | | | 2.9 | | | 2.5 | | | 2.5 | | | 2.5 | | | 2.5 | | |
| | | R | X | Z | R | X | Z | R | X | Z | R | X | Z | R | X | Z | R | X | Z | R | X | Z |
| 25 | 1.850 | 1.850 | 0.310 | 1.900 | 1.850 | 0.190 | 1.850 | 1.850 | 0.280 | 1.850 | 1.600 | 0.270 | 1.650 | 1.600 | 0.165 | 1.600 | 1.600 | 0.190 | 1.600 | 1.600 | 0.270 | 1.650 |
| 35 | 1.350 | 1.350 | 0.290 | 1.350 | 1.350 | 0.180 | 1.350 | 1.350 | 0.270 | 1.350 | 1.150 | 0.250 | 1.150 | 1.150 | 0.155 | 1.150 | 1.150 | 0.180 | 1.150 | 1.150 | 0.260 | 1.200 |
| 50 | 0.990 | 1.000 | 0.290 | 1.050 | 0.990 | 0.180 | 1.000 | 0.990 | 0.270 | 1.000 | 0.870 | 0.250 | 0.900 | 0.860 | 0.155 | 0.870 | 0.860 | 0.180 | 0.870 | 0.860 | 0.260 | 0.890 |
| 70 | 0.680 | 0.700 | 0.280 | 0.750 | 0.680 | 0.175 | 0.710 | 0.680 | 0.260 | 0.730 | 0.600 | 0.240 | 0.650 | 0.590 | 0.150 | 0.610 | 0.590 | 0.175 | 0.620 | 0.590 | 0.250 | 0.650 |
| 95 | 0.490 | 0.510 | 0.270 | 0.580 | 0.490 | 0.170 | 0.520 | 0.490 | 0.260 | 0.560 | 0.440 | 0.230 | 0.500 | 0.430 | 0.145 | 0.450 | 0.430 | 0.170 | 0.460 | 0.430 | 0.250 | 0.490 |
| 120 | 0.390 | 0.410 | 0.260 | 0.480 | 0.390 | 0.165 | 0.430 | 0.390 | 0.250 | 0.470 | 0.350 | 0.230 | 0.420 | 0.340 | 0.140 | 0.370 | 0.340 | 0.165 | 0.380 | 0.340 | 0.240 | 0.420 |
| 150 | 0.320 | 0.330 | 0.260 | 0.430 | 0.320 | 0.165 | 0.360 | 0.320 | 0.250 | 0.410 | 0.290 | 0.230 | 0.370 | 0.280 | 0.140 | 0.310 | 0.280 | 0.165 | 0.320 | 0.280 | 0.240 | 0.370 |
| 185 | 0.250 | 0.270 | 0.260 | 0.370 | 0.260 | 0.165 | 0.300 | 0.250 | 0.250 | 0.360 | 0.230 | 0.230 | 0.320 | 0.220 | 0.140 | 0.260 | 0.220 | 0.165 | 0.280 | 0.220 | 0.240 | 0.330 |
| 240 | 0.190 | 0.210 | 0.260 | 0.330 | 0.200 | 0.160 | 0.250 | 0.195 | 0.250 | 0.310 | 0.185 | 0.220 | 0.290 | 0.170 | 0.140 | 0.220 | 0.170 | 0.165 | 0.240 | 0.170 | 0.240 | 0.290 |
| 300 | 0.155 | 0.175 | 0.250 | 0.310 | 0.160 | 0.160 | 0.220 | 0.155 | 0.250 | 0.290 | 0.150 | 0.220 | 0.270 | 0.140 | 0.140 | 0.195 | 0.135 | 0.160 | 0.210 | 0.135 | 0.240 | 0.270 |
| 400 | 0.120 | 0.140 | 0.250 | 0.290 | 0.130 | 0.155 | 0.200 | 0.125 | 0.240 | 0.270 | 0.125 | 0.220 | 0.250 | 0.110 | 0.135 | 0.175 | 0.110 | 0.160 | 0.195 | 0.110 | 0.240 | 0.260 |
| 500 | 0.093 | 0.120 | 0.250 | 0.280 | 0.105 | 0.155 | 0.185 | 0.098 | 0.240 | 0.260 | 0.100 | 0.220 | 0.240 | 0.090 | 0.135 | 0.160 | 0.088 | 0.160 | 0.180 | 0.085 | 0.240 | 0.250 |
| 630 | 0.072 | 0.100 | 0.250 | 0.270 | 0.086 | 0.155 | 0.175 | 0.078 | 0.240 | 0.250 | 0.088 | 0.210 | 0.230 | 0.074 | 0.135 | 0.150 | 0.071 | 0.160 | 0.170 | 0.068 | 0.230 | 0.240 |
| 800 | 0.056 | | - | | 0.072 | 0.150 | 0.170 | 0.064 | 0.240 | 0.250 | | - | | 0.062 | 0.130 | 0.145 | 0.059 | 0.155 | 0.165 | 0.055 | 0.230 | 0.240 |
| 1000 | 0.045 | | - | | 0.063 | 0.150 | 0.165 | 0.054 | 0.240 | 0.240 | | - | | 0.055 | 0.130 | 0.140 | 0.050 | 0.155 | 0.165 | 0.047 | 0.230 | 0.240 |

*NOTE: * Spacings larger than one cable diameter will result in a larger voltage drop.*

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