

6181B Surface Wiring Cable - BS7211,LSZH - 1.5mm² to 120mm²



Description

6181B is a Low Smoke Zero Halogen single core cable, double insulated with a voltage rating of 450/750V. General surface wire cable for fixed installation, domestic and light industrial use. Available in Blue and Brown cores, sizes from 1.5mm² – 35mm². As this cable is used internally, it is covered by current CPR regulations. This cable is BASEC Approved to 35mm².

Key Features



Voltage Rating
450/750 Volts



Minimum Bending Radius
Up to 25mm²: 8 x overall diameter
35mm²: 12x overall diameter



Flame Retardancy
BS EN/IEC 60332-1



Temperature Limits
Maximum operating temperature of conductor: +90°C
Maximum short-circuit temperature up to 5 sec: +250°C



CPR Compliant
Yes

Standards

- BS 7211
- IEC/EN 60754-1/2
- BS EN/IEC 60332-1
- BS EN/IEC 60228
- BS EN/IEC 61034

Construction

- **Conductor:** Up to 25mm² Class 1 solid copper circular or sector shaped conductor 35mm² and above Class 2 Stranded copper sector shaped
- **Insulation:** Cross Linked polyethylene (XLPE)
- **Sheath:** Low Smoke Zero Halogen (LSZH)
- **Sheath Colour:** Grey or White

QA Lab

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. Where applicable, cables are independently tested and certified by BASEC to ensure full compliance.



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.



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

ecovadis

6181B Surface Wiring Cable - BS7211,LSZH - 1.5mm² to 120mm² - Dimensions

| Reference | Conductor Size (mm2) | No Of Cores | Stranding(mm) | Overall Diameter(mm) | Weight(Kg/Km) | Nylon Size | Gland Ref |
|------------|----------------------|-------------|---------------|----------------------|---------------|------------|-----------|
| 6181B1/5B | 1.5 | 1 | 1/1.38 | 5.1 | 34 | NONE | 20/16 |
| 6181B2/5B | 2.5 | 1 | 1/1.78 | 6 | 49 | NONE | 20/16 |
| 6181B4B | 4 | 1 | 7/0.85 | 6.8 | 75 | NONE | 20/16 |
| 6181B6B | 6 | 1 | 7/1.04 | 7.4 | 99 | NONE | 20/16 |
| 6181B10B | 10 | 1 | 7/1.35 | 8.8 | 155 | NONE | 20S |
| 6181B16B | 16 | 1 | 7/1.04 | 10.5 | 225 | NONE | 20S |
| 6181B25B | 25 | 1 | 7/2.14 | 12.5 | 340 | 0.5 | 20 |
| 6181B35BR | 35 | 1 | 7/2.52 | 13.5 | 440 | 0.5 | 25 |
| 6181B35BU | 35 | 1 | 7/2.52 | 13.5 | 440 | 0.6 | 25 |
| 6181B50B | 50 | 1 | 19/1.78 | 14.0 | 525 | 0.6 | 25 |
| 6181B70B | 70 | 1 | 19/2.14 | 15.5 | 730 | 0.7 | 25 |
| 6181B95B | 95 | 1 | 19/2.52 | 18.0 | 990 | 0.7 | 25 |
| 6181B120BU | 120 | 1 | 37/2.30 | 19.5 | 1230 | 0.8 | 32 |

TABLE 4D1A

CURRENT-CARRYING CAPACITY (amperes):

Ambient temperature: 30 °C
Conductor operating temperature:
70 °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 horizontal or vertical) | | | | |
|--------------------------------|--|------|---|------|---|------|--|-------------------------------|----------------------------------|---|----------|
| | 2 cables, single-phase AC or DC | | 2 cables, single-phase AC or DC | | 2 cables, single-phase AC or DC flat and touching | | Touching | | | Spaced by one diameter | |
| | | | | | | | 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 | |
| I | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Horizontal | Vertical |
| (mm ²) | (A) | (A) | (A) | (A) | (A) | (A) | (A) | (A) | (A) | (A) | (A) |
| 1 | 11 | 10.5 | 13.5 | 12 | 15.5 | 14 | - | - | - | - | - |
| 1.5 | 14.5 | 13.5 | 17.5 | 15.5 | 20 | 18 | - | - | - | - | - |
| 2.5 | 20 | 18 | 24 | 21 | 27 | 25 | | | | | |
| 4 | 26 | 24 | 32 | 28 | 37 | 33 | | | | | |
| 6 | 34 | 31 | 41 | 36 | 47 | 43 | | | | | |
| 10 | 46 | 42 | 57 | 50 | 65 | 59 | | | | | |
| 16 | 61 | 56 | 76 | 68 | 87 | 79 | | | | | |
| 25 | 80 | 73 | 101 | 89 | 114 | 104 | 131 | 114 | 110 | 146 | 130 |
| 35 | 99 | 89 | 125 | 110 | 141 | 129 | 162 | 143 | 137 | 181 | 162 |
| 50 | 119 | 108 | 151 | 134 | 182 | 167 | 196 | 174 | 167 | 219 | 197 |
| 70 | 151 | 136 | 192 | 171 | 234 | 214 | 251 | 225 | 216 | 281 | 254 |
| 95 | 182 | 164 | 232 | 207 | 284 | 261 | 304 | 275 | 264 | 341 | 311 |
| 120 | 210 | 188 | 269 | 239 | 330 | 303 | 352 | 321 | 308 | 396 | 362 |
| 150 | 240 | 216 | 300 | 262 | 381 | 349 | 406 | 372 | 356 | 456 | 419 |
| 185 | 273 | 245 | 341 | 296 | 436 | 400 | 463 | 427 | 409 | 521 | 480 |
| 240 | 321 | 286 | 400 | 346 | 515 | 472 | 546 | 507 | 485 | 615 | 569 |
| 300 | 367 | 328 | 458 | 394 | 594 | 545 | 629 | 587 | 561 | 709 | 659 |
| 400 | - | - | 546 | 467 | 694 | 634 | 754 | 689 | 656 | 852 | 795 |
| 500 | - | - | 626 | 533 | 792 | 723 | 868 | 789 | 749 | 982 | 920 |
| 630 | - | - | 720 | 611 | 904 | 826 | 1005 | 905 | 855 | 1138 | 1070 |
| 800 | - | - | - | - | 1030 | 943 | 1086 | 1020 | 971 | 1265 | 1188 |
| 1000 | - | - | - | - | 1154 | 1058 | 1216 | 1149 | 1079 | 1420 | 1337 |

TABLE 4D1B

VOLTAGE DROP (per ampere per metre): Conductor operating temperature: 70 °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) | Reference Methods C & F (clipped direct, on tray or in free air) | | | | | | Reference Methods A & B (enclosed in conduit or trunking) | Reference Methods C & F (clipped direct, on tray or in free air) | | | | | | | | | | | | |
| | | | Cables touching | | | Cables spaced* | | | | Cables touching, Trefoil | | | Cables touching, Flat | | | Cables spaced*, Flat | | | | | | |
| 1 | 2 | 3 | | | 4 | | | 5 | | | 6 | | | 7 | | | 8 | | | 9 | | |
| mm ² | (mV/Nm) | (mV/Afm) | | | (mV/Afm) | | | (mV/Afm) | | | (mV/Afm) | | | (mV/Afm) | | | (mV/Afm) | | | (mV/Afm) | | |
| 1 | 44 | 44 | | | 44 | | | 44 | | | 38 | | | 38 | | | 38 | | | 38 | | |
| 1.5 | 29 | 29 | | | 29 | | | 29 | | | 25 | | | 25 | | | 25 | | | 25 | | |
| 2.5 | 18 | 18 | | | 18 | | | 18 | | | 15 | | | 15 | | | 15 | | | 15 | | |
| 4 | 11 | 11 | | | 11 | | | 11 | | | 9.5 | | | 9.5 | | | 9.5 | | | 9.5 | | |
| 6 | 7.3 | 7.3 | | | 7.3 | | | 7.3 | | | 6.4 | | | 6.4 | | | 6.4 | | | 6.4 | | |
| 10 | 4.4 | 4.4 | | | 4.4 | | | 4.4 | | | 3.8 | | | 3.8 | | | 3.8 | | | 3.8 | | |
| 16 | 2.8 | 2.8 | | | 2.8 | | | 2.8 | | | 2.4 | | | 2.4 | | | 2.4 | | | 2.4 | | |
| | | r | X | Z | r | X | Z | r | X | Z | r | X | Z | r | X | Z | r | X | Z | r | X | Z |
| 25 | 1.75 | 1.80 | 0.33 | 1.80 | 1.75 | 0.20 | 1.75 | 1.75 | 0.29 | 1.80 | 1.50 | 0.29 | 1.55 | 1.50 | 0.175 | 1.50 | 1.50 | 0.25 | 1.55 | 1.50 | 0.32 | 1.55 |
| 35 | 1.25 | 1.30 | 0.31 | 1.30 | 1.25 | 0.195 | 1.25 | 1.25 | 0.28 | 1.30 | 1.10 | 0.27 | 1.10 | 1.10 | 0.170 | 1.10 | 1.10 | 0.24 | 1.10 | 1.10 | 0.32 | 1.15 |
| 50 | 0.93 | 0.95 | 0.30 | 1.00 | 0.93 | 0.190 | 0.95 | 0.93 | 0.28 | 0.97 | 0.81 | 0.26 | 0.85 | 0.80 | 0.165 | 0.82 | 0.80 | 0.24 | 0.84 | 0.80 | 0.32 | 0.86 |
| 70 | 0.63 | 0.65 | 0.29 | 0.72 | 0.63 | 0.185 | 0.66 | 0.63 | 0.27 | 0.69 | 0.56 | 0.25 | 0.61 | 0.55 | 0.160 | 0.57 | 0.55 | 0.24 | 0.60 | 0.55 | 0.31 | 0.63 |
| 95 | 0.46 | 0.49 | 0.28 | 0.56 | 0.47 | 0.180 | 0.50 | 0.47 | 0.27 | 0.54 | 0.42 | 0.24 | 0.48 | 0.41 | 0.155 | 0.43 | 0.41 | 0.23 | 0.47 | 0.40 | 0.31 | 0.51 |
| 120 | 0.36 | 0.39 | 0.27 | 0.47 | 0.37 | 0.175 | 0.41 | 0.37 | 0.26 | 0.45 | 0.33 | 0.23 | 0.41 | 0.32 | 0.150 | 0.36 | 0.32 | 0.23 | 0.40 | 0.32 | 0.30 | 0.44 |
| 150 | 0.29 | 0.31 | 0.27 | 0.41 | 0.30 | 0.175 | 0.34 | 0.29 | 0.26 | 0.39 | 0.27 | 0.23 | 0.36 | 0.26 | 0.150 | 0.30 | 0.26 | 0.23 | 0.34 | 0.26 | 0.30 | 0.40 |
| 185 | 0.23 | 0.25 | 0.27 | 0.37 | 0.24 | 0.170 | 0.29 | 0.24 | 0.26 | 0.35 | 0.22 | 0.23 | 0.32 | 0.21 | 0.145 | 0.26 | 0.21 | 0.22 | 0.31 | 0.21 | 0.30 | 0.36 |
| 240 | 0.180 | 0.195 | 0.26 | 0.33 | 0.185 | 0.165 | 0.25 | 0.185 | 0.25 | 0.31 | 0.17 | 0.23 | 0.29 | 0.160 | 0.145 | 0.22 | 0.160 | 0.22 | 0.27 | 0.160 | 0.29 | 0.34 |
| 300 | 0.145 | 0.160 | 0.26 | 0.31 | 0.150 | 0.165 | 0.22 | 0.150 | 0.25 | 0.29 | 0.14 | 0.23 | 0.27 | 0.130 | 0.140 | 0.190 | 0.130 | 0.22 | 0.25 | 0.130 | 0.29 | 0.32 |
| 400 | 0.105 | 0.130 | 0.26 | 0.29 | 0.120 | 0.160 | 0.20 | 0.115 | 0.25 | 0.27 | 0.12 | 0.22 | 0.25 | 0.105 | 0.140 | 0.175 | 0.105 | 0.21 | 0.24 | 0.100 | 0.29 | 0.31 |
| 500 | 0.086 | 0.110 | 0.26 | 0.28 | 0.098 | 0.155 | 0.185 | 0.093 | 0.24 | 0.26 | 0.10 | 0.22 | 0.25 | 0.086 | 0.135 | 0.160 | 0.086 | 0.21 | 0.23 | 0.081 | 0.29 | 0.30 |
| 630 | 0.068 | 0.094 | 0.25 | 0.27 | 0.081 | 0.155 | 0.175 | 0.076 | 0.24 | 0.25 | 0.08 | 0.22 | 0.24 | 0.072 | 0.135 | 0.150 | 0.072 | 0.21 | 0.22 | 0.066 | 0.28 | 0.29 |
| 800 | 0.053 | - | - | - | 0.068 | 0.150 | 0.165 | 0.061 | 0.24 | 0.25 | - | - | - | 0.060 | 0.130 | 0.145 | 0.060 | 0.21 | 0.22 | 0.053 | 0.28 | 0.29 |
| 1000 | -0.042 | - | - | - | 0.059 | 0.150 | 0.160 | 0.050 | 0.24 | 0.24 | - | - | - | 0.052 | 0.130 | 0.140 | 0.052 | 0.20 | 0.21 | 0.044 | 0.28 | 0.28 |

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