



**LEDBURN CABLES IS
AN INDEPENDENTLY
OWNED CABLE
DISTRIBUTOR.**

SINGLE CORE CABLE-2491B LSZH H07Z-K CABLE 450/750V

Suitable in high fire risk places containing a great number of people (offices, schools, hotels, supermarkets, undergrounds, hospitals and cinemas) where low emissions of smoke and acid gases is required.

Application: Suitable in high fire risk places containing a great number of people (offices, schools, hotels, supermarkets, undergrounds, hospitals and cinemas) where low emissions of smoke and acid gases is required.

Conductor: Plain annealed flexible copper, class 5

Sheath: LSZH (Low smoke zero halogen)

Operating temperature: Maximum 90°C, Minimum bending -15°C

Voltage: 450/750V

Standards: BS7211: Electric cables. Thermosetting insulated, unarmoured cables for voltages up to & including 450/750V, for electric power, lighting & internal wiring, and having low emission of smoke and corrosive gases when affected by fire
BSEN50267-1: Common test methods for cables under fire conditions. Tests on gases evolved during combustion of materials from cables.

BSEN50266-1: Common test methods for cables under fire conditions. Test for vertical flame spread of vertically-mounted bunched wires or cables

Specification

| | 1.5 | 2.5 | 4.0 | 6.0 | 10 | 16 | 25 | 35 | 50 | 70 | 95 | 120 | 150 | 185 | 240 |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| T on insulation mm | 0.7 | 0.8 | 0.8 | 0.8 | 1.0 | 1.0 | 1.2 | 1.2 | 1.4 | 1.4 | 1.6 | 1.6 | 1.8 | 2.0 | 2.2 |
| Overall dia mm | 3.0 | 3.6 | 4.2 | 4.8 | 5.9 | 6.9 | 9.19 | 10.1 | 12.2 | 14.1 | 15.8 | 17.7 | 19.7 | 21.9 | 25.1 |
| Weight kg/km | 22 | 32 | 48 | 69 | 116 | 175 | 252 | 338 | 481 | 670 | 888 | 1008 | 1391 | 1686 | 2212 |
| Red | 45069 | 45075 | 45081 | 45087 | 45252 | 45254 | - | - | - | - | - | - | - | - | - |
| Black | 45147 | 45076 | 45082 | 45088 | 45209 | 45210 | 45211 | 45393 | 45585 | 45584 | 45594 | - | - | - | - |
| Grn/Ylw | 45071 | 45077 | 45083 | 45089 | 45253 | 45255 | 45495 | 45485 | 45541 | 45542 | 45543 | 45544 | 45545 | - | 45730 |
| Blue | 45073 | 45079 | 45085 | 45091 | 45483 | 45492 | 45494 | 45486 | - | - | - | - | - | - | - |
| Yellow | 45074 | 45080 | 45086 | 45092 | - | - | - | - | - | - | - | - | - | - | - |
| Brown | 45072 | 45078 | 45084 | 45090 | 45554 | 45556 | 45616 | 45618 | - | - | - | - | - | - | - |
| Violet | 45239 | 45242 | 45247 | - | - | - | - | - | - | - | - | - | - | - | - |
| Pink | 45238 | 45243 | 45248 | - | - | - | - | - | - | - | - | - | - | - | - |
| White | 45240 | 45244 | 45249 | 45531 | - | - | - | - | - | - | - | - | - | - | - |
| Orange | 45171 | 45245 | 45250 | 45481 | - | - | - | - | - | - | - | - | - | - | - |
| Grey | 45115 | 45116 | 45117 | 45118 | 45555 | 45557 | 45617 | 45619 | - | - | - | - | - | - | - |
| Green | 45241 | 45246 | 45251 | - | - | - | - | - | - | - | - | - | - | - | - |

Harmonised Codes-Technical Information

Part 1 of the designation

Table 1a: Relationship to standards

| Symbol | Relationship of cable to standards |
|----------|---|
| H | Cable conforming with harmonised standards |
| A | Recognised National Type of cable listed in the relevant Supplement to harmonised standards |

Table 1b: Rated voltage

| Symbol | Value, U [?] /U* |
|--------|---------------------------|
| 01 | =100/100V; (<300/300V) |
| 03 | 300/300V |
| 05 | 300/500V |
| 07 | 450/750V |

The rated voltages not yet harmonised are given in brackets

Part 2 of the designation**Table 2a: Insulating and non-metallic sheathing materials**

Note: The descriptions given for the symbols are used in certain instances to cover a group of materials which have similar performance requirements for a given cable type will be found in the appropriate cable standard.

| Symbol | Material |
|--------|---|
| B | Ethylene-propylene rubber |
| G | Ethylene-vinyl-acetate |
| J | Glass-fibre braid |
| M | Mineral |
| N | Polychloroprene (or equivalent material) |
| N2 | Special polychloroprene compound for covering of welding cables according to HD 22.6 |
| N4 | Chlorosulfonated polyethylene or chlorinated polyethylene |
| N8 | Special water resistant polychloroprene compound |
| Q | Polyurethane |
| Q4 | Polyamide |
| R | Ordinary ethylene propylene rubber or equivalent synthetic elastomer for a continuous operating temperature of 60°C |
| S | Silicone rubber |
| T | Textile braid, impregnated or not, on assembled cores |
| T6 | Textile braid, impregnated or not, on individual cores of a multi-core cable |
| V | Ordinary PVC |
| V2 | PVC compound for a continuous operating temperature of 90°C |
| V3 | PVC compound for cables installed at low temperature |
| V4 | Cross-linked PVC |
| V5 | Special oil resistant PVC compound |
| Z | Polyolefin-based cross-linked |

compound having low level of emission of corrosive gases and which is suitable for use in cables which, when burned, have low emission of smoke

| | |
|-----------|--|
| Z1 | Polyolefin-based thermoplastic compound having low level of emission of corrosive gases and which is suitable for use in cables which, when burned, have low emission of smoke |
|-----------|--|

Table 2b Metallic coverings

| Symbol | Sheath, concentric conductors and screens |
|-----------|---|
| C | Concentric copper conductor |
| C4 | Copper screen as braid over the assembled cores |

Table 2c: Special constructional components of a cable

Note: These symbols, when required, are to follow the symbols selected from any of the previous tables 2a and 2b.

| Symbol | Constructional components |
|-----------|---|
| D3 | Strain-bearing element consisting of one or more textile components, placed at the centre of a round cable or distributed inside a flat cable. |
| D5 | Central heart (non strain-bearing for lift cables only) |
| D9 | Strain-bearing element consisting of one or more metallic components, placed at the centre of a round cable or distributed inside a flat cable. |

Table 2d: Special construction of cable

Note: These symbols, when required, are to follow the symbols selected from any of the previous tables 2a to 2c.

| Symbol | Special construction |
|------------------|--|
| No Symbol | Circular construction of cable |
| H | Flat construction of "divisible" cables and cores, either sheathed or non-sheathed |
| H2 | Flat construction of "non-divisible" cables and cores |
| H6 | Flat cable having three or more cores, according to DH 359 or EN 50214 |
| H7 | Cable having a double layer insulation applied by extrusion |
| H8 | Extensible lead |

Table 2e: Conductor material

Note: These symbols, when required are to follow after a dash, the symbols selected from any previous tables 2a to 2d.

| Symbol | Conductor material |
|------------------|--------------------|
| No Symbol | Copper |
| -A | Aluminium |

Table 2f: Conductor form

Note: These symbols are to follow after a dash (already included in the symbol –A, in the case of aluminium conductors) the symbols selected from any of the previous tables 2a to 2e. For cables containing two forms of conductors the symbol shall designate the form of the phase conductor only.

| Symbol | Conductor form |
|--------|--|
| -D | Flexible conductor for use in arc welding cables to HD 22 Part 6 (flexibility to different from class 5 of HD 383) |
| -E | Highly flexible conductor for use in arc welding cables to HD22 Part 6 (flexibility different from Class 6 of HD 383) |
| -F | Flexible conductor of a flexible cable or cord (flexibility according to Class 5 of HD 383) |
| -H | Highly flexible conductor of a flexible cable or cord (flexibility according to Class 6 of HD 383) |
| -K | Flexible conductor of a cable for fixed installations (unless otherwise specified, flexibility according to Class 5 of HD 383) |
| -R | Rigid, round conductor, stranded |
| -U | Rigid round conductor, solid |
| -Y | Tinsel conductor |

Part 3 of the designation

Table 3: Number(s) of cores and nominal cross-section(s) of conductors

| Symbol | Number and size of conductors |
|-----------|---|
| (number) | Number, n of cores |
| X | Times, where a green/yellow core is not included |
| G | Times, when a green/yellow core is included |
| (number)* | Nominal cross-section, s, of conductor in mm ² |
| Y | For a tinsel conductor where the cross-section is not specified |

Countries are free to assign the "N" (placed after the conductor cross-section) to indicate that the cores are identified by number.

General Examples

| | |
|----------------------------|--|
| nXs or nGs | n cores of s mm ² conductor cross-section |
| nXs+n-Xs- | n cores of s mm ² and n- cores of s- mm ² conductor cross-section |
| nXs/s- | n cores of s mm ² conductor cross-section and concentric conductor of s- mm ² cross-section |
| nXs + n-Xs-/s [®] | n cores of s mm ² + n- cores of s- mm ² conductor cross-section + concentric conductor of s [®] mm ² cross-section |

Particular Examples

| | |
|-------------|--|
| 4 G 50 | A cable with four cores having 50mm ² conductor cross-section, one of the cored being green/yellow |
| 4 X 50 | A4-core cable without green/yellow core, all the cores having 50mm ² conductor cross-section |
| 3X50 + 1G25 | A cable with four cores, three of which have 50mm ² conductor cross-section, while the green/yellow core has a reduced conductor cross-section of 25mm ² |
| 3X70/35 | A cable with three cores having 70mm ² conductor cross-section and a concentric conductor of 35mm ² cross-section |
| 2 X Y | A2-core cord with tinsel conductors |

Table 4: Survey of symbols and their sequence in cable designations(1)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|------------------|---------------|---------------------|-----------------------|-------------------------|--|--------------------|-----------------|--------------|--------|--------------------------------|
| Part 1 | 2 | 3 | 4 | 5 | Part 2 | 7 | 8 | 9 | Part 3 | 11 |
| Related Standard | Rated voltage | Insulating material | Metallic covering (s) | Non-metallic sheath (2) | Constructional components & special instructions | Conductor material | Conductor forms | No. of cores | Time | Conductor size mm ² |
| | | | | Symbols | | | | | | |

| | | | | accordin g to table (s) | | | | | | | |
|----|----|--------|----|----------------------------------|---------------|---------|----|---|-----|------|--|
| 1a | 1b | 2a | 2b | 2c and 2d | 2e | 2f | 3 | | | | |
| H | 01 | B | C | B | D3 | No | -D | 1 | X | Y | |
| | | | | | D5 | Symbol: | -E | 2 | | 0.5 | |
| A | 03 | G | C4 | G | D9 | Copper | -F | 3 | G | | |
| | | | | | ----- | -H | | 4 | | 0.75 | |
| | 05 | J | | J | No symbol: | -A | -K | 5 | | | |
| | | | | | Circular | | -R | | Etc | | |
| | 07 | M | | | Construction | | -U | | | | |
| | | | | | Of cable | | -Y | | | | |
| | | N, N4 | | N, N2, 4, 8 | | | | | | | |
| | | | | | H | | | | | 2.5 | |
| | | R | | Q, Q4 | H2 | | | | | | |
| | | | | | H6 | | | | | 4 | |
| | | S | | R | H7 | | | | | | |
| | | | | | H8 | | | | | R | |
| | | | | | S | | | | | | |
| | | V, V2 | | T, T6 | | | | | | | |
| | | V3, V4 | | | | | | | | 16 | |
| | | | | V, V1, V2 | | | | | | | |
| | | Z, Z1 | | V4, V5 | | | | | | 25 | |
| | | | | Z, Z1 | | | | | | etc | |

(1) If two or more symbols listed in the same column need to be used in a given designation, they shall follow each other in their radial sequence starting from the core axis to cable axis.

(2) The symbols might change their position in the designation with respect to the construction of the cable.

4E1A, 17th Edition-Technical Information

Current Ratings

TABLE 4E1A Single core 90°C thermosetting insulated cables, unarmoured, with or without sheath (Copper conductors)

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 (on a perforated cable tray horizontal or vertical or in free air) Touching | Reference Method G (in free air) Spaced by one cable diameter |
|--------------------------------|--|--|-------------------------------------|--|---|
| 2 cables | 3 or 4 cables | 2 cables | 3 or 4 cables | 2 cables | 3 cables |
| | | 3 or 4 cables | 2 cables single | 3 cables | 3 cables |
| | | | | | 2 cables single phase a.c. or d.c. or 3 |

| | single phase a.c or d.c. | three phase a.c. | single phase a.c or d.c | three phase a.c. | phase a.c. or d.c. flat and touching | three phase a.c. flat and touching or trefoil | single phase a.c. or d.c. flat | three phase a.c. flat | three phase a.c. trefoil | cables three phase a.c. flat | |
|--------------------|--------------------------|------------------|-------------------------|------------------|--------------------------------------|---|--------------------------------|-----------------------|--------------------------|------------------------------|------|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| (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 | 19 | 25 | 23 | - | - | - | - | - |
| 2.5 | 26 | 23 | 31 | 26 | 34 | 31 | - | - | - | - | - |
| 4 | 35 | 31 | 42 | 35 | 46 | 41 | - | - | - | - | - |
| 6 | 45 | 40 | 54 | 45 | 59 | 54 | - | - | - | - | - |
| 10 | 61 | 54 | 75 | 63 | 81 | 74 | - | - | - | - | - |
| 16 | 81 | 73 | 100 | 85 | 109 | 99 | - | - | - | - | - |
| 25 | 106 | 95 | 133 | 111 | 143 | 130 | 161 | 141 | 135 | 182 | 161 |
| 35 | 131 | 117 | 164 | 138 | 176 | 161 | 200 | 176 | 169 | 226 | 201 |
| 50 | 158 | 141 | 198 | 168 | 228 | 209 | 242 | 216 | 207 | 275 | 246 |
| 70 | 200 | 179 | 253 | 214 | 293 | 268 | 310 | 279 | 268 | 353 | 318 |
| 95 | 241 | 216 | 306 | 259 | 355 | 326 | 377 | 342 | 328 | 430 | 389 |
| 120 | 278 | 249 | 354 | 299 | 413 | 379 | 437 | 400 | 383 | 500 | 454 |
| 150 | 318 | 285 | 393 | 328 | 476 | 436 | 504 | 464 | 444 | 577 | 527 |
| 185 | 362 | 324 | 449 | 370 | 545 | 500 | 575 | 533 | 510 | 661 | 605 |
| 240 | 424 | 380 | 500 | 433 | 644 | 590 | 679 | 634 | 607 | 781 | 719 |
| 300 | 486 | 435 | 573 | 493 | 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 | 1088 | 1454 | 1362 |
| 800 | - | - | - | - | 1288 | 1179 | 1358 | 1275 | 1214 | 1581 | 1485 |
| 1000 | - | - | - | - | 1443 | 1323 | 1520 | 1436 | 1349 | 1775 | 1671 |

Notes:

1 Where a conductor operates at a temperature exceeding 70°C it must be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature (see Regulation 512.1.2)

2 Where cables in this table are connected to equipment or accessories designed to operate at a temperature not exceeding 70°C, the current ratings given in the equivalent table for 70°C thermoplastic insulated cables (Table 4D1A) must be used (see Reg 523.1)

TABLE 4E1B

VOLTAGE DROP (per ampere per metre)

Conductor operating temperature: 90°C

| Conductor Cross-sectional area | 2 cables | 2 cables, single phase a.c. | | | 3 or 4 cables, three-phase a.c. | | | |
|--------------------------------|----------|---|---|----------------|---|---|-----------------------|---------------------|
| | | Reference Methods A & B (enclosed in conduit or trunking) | Reference 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 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| (mm ²) | (mV/A/m) | (mV/A/m) | (mV/A/m) | (mV/A/m) | (mV/A/m) | (mV/A/m) | (mV/A/m) | (mV/A/m) |
| 1 | 46 | 4 | 46 | 4 | 4 | 40 | 40 | 4 |

| | | | | | | | | | | | | | | | | | | | | | | |
|-------------|------|----|----|----|----|----|-------|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | | 6 | | | 6 | | | 0 | | | 0 | | | | | | | | | | | |
| 1.5 | 31 | 3 | | 31 | 3 | 2 | 27 | 27 | 2 | | | | | | | | | | | | | |
| | | 1 | | | 1 | 7 | | | 7 | | | | | | | | | | | | | |
| 2.5 | 19 | 1 | | 19 | 1 | 1 | 16 | 16 | 1 | | | | | | | | | | | | | |
| | | 9 | | | 9 | 6 | | | 6 | | | | | | | | | | | | | |
| 4 | 12 | 1 | | 12 | 1 | 1 | 10 | 10 | 1 | | | | | | | | | | | | | |
| | | 2 | | | 2 | 0 | | | 0 | | | | | | | | | | | | | |
| 6 | 7.9 | 7. | | 7. | 7. | 6. | 6. | 6. | 6. | | | | | | | | | | | | | |
| | | 9 | | 9 | 9 | 8 | 8 | 8 | 8 | | | | | | | | | | | | | |
| 10 | 4.7 | 4. | | 4. | 4. | 4. | 4. | 4. | 4. | | | | | | | | | | | | | |
| | | 7 | | 7 | 7 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | |
| 16 | 2.9 | 2. | | 2. | 2. | 2. | 2. | 2. | 2. | | | | | | | | | | | | | |
| | | 9 | | 9 | 9 | 5 | 5 | 5 | 5 | | | | | | | | | | | | | |
| | | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z |
| 25 | 1.85 | 1. | 0. | 1. | 1. | 0. | 1. | 1. | 0. | 1. | 1. | 0. | 1. | 1. | 0. | 1. | 1. | 0. | 1. | 1. | 0. | 1. |
| | | 85 | 3 | 9 | 85 | 19 | 8 | 85 | 2 | 8 | 60 | 2 | 6 | 60 | 16 | 60 | 60 | 19 | 60 | 60 | 2 | 6 |
| | | 1 | 0 | | | 0 | 5 | | 8 | 5 | | 7 | 5 | | 5 | | | 0 | | | 7 | 5 |
| 35 | 1.35 | 1. | 0. | 1. | 1. | 0. | 1. | 1. | 0. | 1. | 1. | 0. | 1. | 1. | 0. | 1. | 1. | 0. | 1. | 1. | 0. | 1. |
| | | 35 | 2 | 3 | 35 | 18 | 3 | 35 | 2 | 3 | 15 | 2 | 1 | 15 | 15 | 15 | 15 | 18 | 15 | 15 | 2 | 2 |
| | | 9 | 5 | | | 0 | 5 | | 7 | 5 | | 5 | 5 | | 5 | | | 0 | | | 6 | 0 |
| 50 | 0.99 | 1. | 0. | 1. | 0. | 0. | 1. | 0. | 0. | 1. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| | | 00 | 2 | 0 | 99 | 18 | 0 | 99 | 2 | 0 | 87 | 2 | 9 | 86 | 15 | 87 | 86 | 18 | 87 | 86 | 2 | 8 |
| | | 9 | 5 | | | 0 | 0 | | 7 | 0 | | 5 | 0 | | 5 | | | 0 | | | 6 | 9 |
| 70 | 0.68 | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| | | 70 | 2 | 7 | 68 | 17 | 7 | 68 | 2 | 7 | 60 | 2 | 6 | 59 | 15 | 61 | 59 | 17 | 62 | 59 | 2 | 6 |
| | | 8 | 5 | | | 5 | 1 | | 6 | 3 | | 4 | 5 | | 0 | | | 5 | | | 5 | 5 |
| 95 | 0.49 | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| | | 51 | 2 | 5 | 49 | 17 | 5 | 49 | 2 | 5 | 44 | 2 | 5 | 43 | 14 | 45 | 43 | 17 | 46 | 43 | 2 | 4 |
| | | 7 | 8 | | | 0 | 2 | | 6 | 6 | | 3 | 0 | | 5 | | | 0 | | | 5 | 9 |
| 120 | 0.39 | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| | | 41 | 2 | 4 | 39 | 16 | 4 | 39 | 2 | 4 | 35 | 2 | 4 | 34 | 14 | 37 | 34 | 16 | 38 | 34 | 2 | 4 |
| | | 6 | 8 | | | 5 | 3 | | 5 | 7 | | 3 | 2 | | 0 | | | 5 | | | 4 | 2 |
| 150 | 0.32 | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| | | 33 | 2 | 4 | 32 | 16 | 3 | 32 | 2 | 4 | 29 | 2 | 3 | 28 | 14 | 31 | 28 | 16 | 32 | 28 | 2 | 3 |
| | | 6 | 3 | | | 5 | 6 | | 5 | 1 | | 3 | 7 | | 0 | | | 5 | | | 4 | 7 |
| 185 | 0.25 | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| | | 27 | 2 | 3 | 26 | 16 | 3 | 25 | 2 | 3 | 23 | 2 | 3 | 22 | 14 | 26 | 22 | 16 | 28 | 22 | 2 | 3 |
| | | 6 | 7 | | | 5 | 0 | | 5 | 6 | | 3 | 2 | | 0 | | | 5 | | | 4 | 3 |
| 240 | 0.19 | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| | | 0 | 21 | 2 | 3 | 20 | 16 | 2 | 19 | 2 | 3 | 18 | 2 | 2 | 17 | 14 | 22 | 17 | 16 | 24 | 17 | 2 |
| | | 6 | 3 | | | 0 | 5 | 5 | 5 | 1 | 5 | 2 | 9 | 0 | 0 | | | 0 | 5 | | 0 | 4 |
| 300 | 0.15 | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| | | 5 | 17 | 2 | 3 | 16 | 16 | 2 | 15 | 2 | 2 | 15 | 2 | 2 | 14 | 14 | 19 | 13 | 16 | 21 | 13 | 2 |
| | | 5 | 5 | 1 | 0 | 0 | 2 | 5 | 5 | 9 | 0 | 2 | 7 | 0 | 0 | 5 | 5 | 0 | | 5 | 4 | 7 |
| 400 | 0.12 | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| | | 0 | 14 | 2 | 2 | 13 | 15 | 2 | 12 | 2 | 2 | 12 | 2 | 2 | 11 | 13 | 17 | 11 | 16 | 19 | 11 | 2 |
| | | 0 | 5 | 9 | 0 | 5 | 0 | 5 | 4 | 7 | 5 | 2 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 4 | 6 |
| 500 | 0.09 | 0. | 0. | 0. | 0. | 0. | 0.185 | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| | | 3 | 12 | 2 | 2 | 10 | 15 | 0.098 | 2 | 2 | 10 | 2 | 2 | 09 | 13 | 16 | 08 | 16 | 18 | 08 | 2 | 2 |
| | | 0 | 5 | 8 | 5 | 5 | | | 4 | 6 | 0 | 2 | 4 | 0 | 5 | 0 | 8 | 0 | 0 | 5 | 4 | 5 |
| 630 | 0.07 | 0. | 0. | 0. | 0. | 0. | 0.175 | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| | | 2 | 10 | 2 | 2 | 08 | 15 | 0.078 | 2 | 2 | 08 | 2 | 2 | 07 | 13 | 15 | 17 | 16 | 17 | 06 | 2 | 2 |
| | | 0 | 5 | 7 | 6 | 5 | | | 4 | 5 | 8 | 1 | 3 | 4 | 5 | 0 | 1 | 0 | 0 | 8 | 3 | 4 |
| 800 | 0.05 | | | | 0. | 0. | 0.170 | 0. | 0. | | | | | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| | | 6 | | | 07 | 15 | 0.064 | 2 | 2 | | | | | 06 | 13 | 14 | 05 | 15 | 16 | 05 | 2 | 2 |
| | | | | | 2 | 0 | | 4 | 5 | | | | | 2 | 0 | 5 | 9 | 5 | 5 | 5 | 3 | 4 |
| 1000 | 0.04 | | | | 0. | 0. | 0.165 | 0. | 0. | | | | | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. | 0. |
| | | 5 | | | 06 | 15 | 0.054 | 2 | 2 | | | | | 05 | 13 | 14 | 05 | 15 | 16 | 04 | 2 | 2 |

3 0 4 4 5 0 0 0 5 5 7 3 4

Notes:

spacings larger than one cable diameter will result in a larger voltage drop.

4E1A,S5467, BS7211-Technical Information

Current Ratings

TABLE 4E1A Single core cables having thermosetting insulation, non armoured, with or without sheath(Copper conductors). BS5467, BS7211

CURRENT-CARRYING CAPACITY (amperes):

Ambient temperature : 30°C

Conductor operating temperature:90°C

| Conductor cross-sectional area 1 | Reference Method 4 (enclosed in conduit in thermally insulating wall etc.) | | Reference Method 3 (enclosed in conduit on a wall or in trunking etc.) | | Reference Method 1 (clipped direct) | | Reference Method 11(on a perforated cable tray horizontal or vertical) | | Reference Method 12 (free air) | | | |
|-------------------------------------|--|--------------------------------|--|--------------------------------|--|---|--|---|--|--|--------------------------------|----------------|
| | Horizontal flat spaced | Vertical flat spaced | Trefoil spaced | Horizontal flat spaced | Vertical flat spaced | Trefoil spaced | Horizontal flat spaced | Vertical flat spaced | Trefoil spaced | Horizontal flat spaced | Vertical flat spaced | Trefoil spaced |
| | 2 cables single phase a.c or d.c. | 3 or 4 cables three phase a.c. | 2 cables single phase a.c or d.c | 3 or 4 cables three phase a.c. | 2 cables single phase a.c. or d.c. flat and touching 6 | 3 or 4 cables three phase a.c. flat and touching or trefoil 7 | 2 cables single phase a.c. or d.c. flat and touching 8 | 3 or 4 cables three phase a.c. flat and touching or trefoil 9 | 2 cables single phase a.c. or d.c. or 3 cables phase a.c. 10 | 2 cables single phase a.c. or d.c. or 3 cables phase a.c. 11 | 3 cables trefoil phase a.c. 12 | |
| (mm ²) | (A) | (A) | (A) | (A) | (A) | (A) | (A) | (A) | (A) | (A) | (A) | (A) |
| 1 | 14 | 13 | 17 | 15 | 19 | 17.5 | - | - | - | - | - | - |
| 1.5 | 18 | 17 | 22 | 19 | 25 | 23 | - | - | - | - | - | - |
| 2.5 | 24 | 23 | 30 | 26 | 34 | 31 | - | - | - | - | - | - |
| 4 | 33 | 30 | 40 | 35 | 46 | 41 | - | - | - | - | - | - |
| 6 | 43 | 39 | 51 | 45 | 59 | 54 | - | - | - | - | - | - |
| 10 | 58 | 53 | 71 | 63 | 81 | 74 | - | - | - | - | - | - |
| 16 | 76 | 70 | 95 | 85 | 109 | 99 | - | - | - | - | - | - |
| 25 | 100 | 91 | 126 | 111 | 143 | 130 | 158 | 140 | 183 | 163 | 138 | |
| 35 | 124 | 111 | 156 | 138 | 176 | 161 | 195 | 176 | 226 | 203 | 171 | |
| 50 | 149 | 135 | 189 | 168 | 228 | 209 | 293 | 215 | 274 | 246 | 209 | |

| | | | | | | | | | | | |
|------|-----|-----|-----|-----|------|------|------|------|------|------|------|
| 70 | 189 | 170 | 240 | 214 | 293 | 268 | 308 | 279 | 351 | 318 | 270 |
| 95 | 228 | 205 | 290 | 259 | 355 | 326 | 375 | 341 | 426 | 389 | 330 |
| 120 | 263 | 235 | 336 | 299 | 413 | 379 | 436 | 398 | 495 | 453 | 385 |
| 150 | 300 | 270 | 375 | 328 | 476 | 436 | 505 | 461 | 570 | 524 | 445 |
| 185 | 341 | 306 | 426 | 370 | 545 | 500 | 579 | 530 | 651 | 600 | 511 |
| 240 | 400 | 358 | 500 | 433 | 644 | 590 | 686 | 630 | 769 | 711 | 606 |
| 300 | 459 | 410 | 573 | 493 | 743 | 681 | 794 | 730 | 886 | 824 | 701 |
| 400 | - | - | 683 | 584 | 868 | 793 | 915 | 849 | 1065 | 994 | 820 |
| 500 | - | - | 783 | 666 | 990 | 904 | 1044 | 973 | 1228 | 1150 | 936 |
| 630 | - | - | 900 | 764 | 1130 | 1033 | 1191 | 1115 | 1423 | 1338 | 1069 |
| 800 | - | - | - | - | 1288 | 1179 | 1358 | 1275 | 1581 | 1485 | 1214 |
| 1000 | - | - | - | - | 1443 | 1323 | 1520 | 1436 | 1775 | 1671 | 1349 |

Notes:

1. Where the conductor is to be protected by a semi-enclosed fuse to BS3036, see item 6.2 of the preface to this appendix within the 16th edition regs.
2. The current-carrying capacities in columns 2 to 5 are also applicable to flexible cables BS7211 table 3(b) where the cables are used in fixed installations.
3. For cable in rigid pvc conduit the values stated in table 4D1 are applicable (see Regulation 512-02).
4. Where a conductor operates at a temperature exceeding 70°C it shall be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature (see Regulation 512-02)
5. Where cables in this table are connected to equipment or accessories designed to operate at a temperature not exceeding 70°C, the current ratings given in the equivalent table for 70°C pvc insulated cables BS6004, BS6346 shall be used (see Reg 523-01-01)

TABLE 4E1B**VOLTAGE DROP (per ampere per metre)**

Conductor operating temperature: 90°C

| Conductor Cross Sectional area (mm ²) | 2 cables, single phase a.c. | | | 3 or 4 cables, three-phase a.c. | | | | | | | | |
|---|---|---|-------------------------------|---|---|--|------------------------------------|---|---|---|---|---|
| | Reference Methods 3&4 (enclosed in conduit etc, in or on a wall). | Reference Methods 1 & 11 (clipped direct or on trays, touching) | Reference Method 12 (spaced*) | Reference Methods 3&4 (enclosed in conduit etc, in or on a wall). | Reference Methods 1, 11 & 12 (in trefoil) | Reference Methods 1 & 11 (flat and touching) | Reference Method 12 (flat spaced*) | Reference Methods 1, 11 & 12 (in trefoil) | Reference Methods 1, 11 & 12 (in trefoil) | Reference Methods 1, 11 & 12 (in trefoil) | Reference Methods 1, 11 & 12 (in trefoil) | Reference Methods 1, 11 & 12 (in trefoil) |
| 1 | 46 | 46 | 46 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| 1.5 | 31 | 31 | 31 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 |
| 2.5 | 19 | 19 | 19 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| 4 | 12 | 12 | 12 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 6 | 7.9 | 7.9 | 7.9 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 |
| 10 | 4.7 | 4.7 | 4.7 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| 16 | 2.9 | 2.9 | 2.9 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| 25 | 1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 |
| 35 | 1.35 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 | 1.0.1.85 |

| | | | | | | | | | | | | | | | | | | | | | | | |
|-------------|------|------|-----|-----|------|------|------|------|-----|-----|------|-----|-----|------|------|------|------|------|------|------|-----|-----|---|
| | | 35 | 2 | 3 | 35 | 18 | 35 | 35 | 2 | 3 | 15 | 2 | 1 | 15 | 15 | 15 | 15 | 18 | 15 | 15 | 2 | 2 | |
| | | 9 | 5 | | 0 | | | | 7 | 5 | | 5 | 5 | 5 | 5 | 5 | 5 | 0 | | | 6 | 0 | |
| 50 | 0.99 | 1.00 | 0.2 | 1.0 | 0.99 | 0.18 | 0.00 | 0.99 | 0.2 | 0.0 | 0.87 | 0.2 | 0.9 | 0.86 | 0.15 | 0.87 | 0.86 | 0.18 | 0.87 | 0.86 | 0.2 | 0.8 | |
| | | 9 | 5 | | 0 | | | | 7 | 0 | | 5 | 0 | | 5 | | | 0 | | | 6 | 9 | |
| 70 | 0.68 | 0.70 | 0.2 | 0.7 | 0.68 | 0.17 | 0.71 | 0.68 | 0.2 | 0.7 | 0.60 | 0.2 | 0.6 | 0.59 | 0.15 | 0.61 | 0.59 | 0.17 | 0.62 | 0.59 | 0.2 | 0.6 | |
| | | 8 | 5 | | 5 | | | | 6 | 3 | | 4 | 5 | | 0 | | | 5 | | | 5 | 5 | |
| 95 | 0.49 | 0.51 | 0.2 | 0.5 | 0.49 | 0.17 | 0.52 | 0.49 | 0.2 | 0.5 | 0.44 | 0.2 | 0.5 | 0.43 | 0.14 | 0.45 | 0.43 | 0.17 | 0.46 | 0.43 | 0.2 | 0.4 | |
| | | 7 | 8 | | 0 | | | | 6 | 6 | | 3 | 0 | | 5 | | | 0 | | | 5 | 9 | |
| 120 | 0.39 | 0.41 | 0.2 | 0.4 | 0.39 | 0.16 | 0.43 | 0.39 | 0.2 | 0.4 | 0.35 | 0.2 | 0.4 | 0.34 | 0.14 | 0.37 | 0.34 | 0.16 | 0.38 | 0.34 | 0.2 | 0.4 | |
| | | 6 | 8 | | 5 | | | | 5 | 7 | | 3 | 2 | | 0 | | | 5 | | | 4 | 2 | |
| 150 | 0.32 | 0.33 | 0.2 | 0.4 | 0.32 | 0.16 | 0.36 | 0.32 | 0.2 | 0.4 | 0.29 | 0.2 | 0.3 | 0.28 | 0.14 | 0.31 | 0.28 | 0.16 | 0.32 | 0.28 | 0.2 | 0.3 | |
| | | 6 | 3 | | 5 | | | | 5 | 1 | | 3 | 7 | | 0 | | | 5 | | | 4 | 7 | |
| 185 | 0.25 | 0.27 | 0.2 | 0.3 | 0.26 | 0.16 | 0.30 | 0.25 | 0.2 | 0.3 | 0.23 | 0.2 | 0.3 | 0.22 | 0.14 | 0.26 | 0.22 | 0.16 | 0.28 | 0.22 | 0.2 | 0.3 | |
| | | 6 | 7 | | 5 | | | | 5 | 6 | | 3 | 2 | | 0 | | | 5 | | | 4 | 3 | |
| 240 | 0.19 | 0.21 | 0.2 | 0.3 | 0.20 | 0.16 | 0.25 | 0.19 | 0.2 | 0.3 | 0.18 | 0.2 | 0.2 | 0.17 | 0.14 | 0.22 | 0.17 | 0.16 | 0.24 | 0.17 | 0.2 | 0.2 | |
| | | 6 | 3 | | 0 | | 5 | 5 | 1 | 5 | 2 | 9 | 0 | 0 | 0 | 0 | 5 | | 0 | 4 | 9 | | |
| 300 | 0.15 | 0.17 | 0.2 | 0.3 | 0.16 | 0.16 | 0.22 | 0.15 | 0.2 | 0.2 | 0.15 | 0.2 | 0.2 | 0.14 | 0.14 | 0.19 | 0.13 | 0.16 | 0.21 | 0.13 | 0.2 | 0.2 | |
| | | 5 | 5 | 1 | 0 | 0 | 5 | 5 | 9 | 0 | 2 | 7 | 0 | 0 | 5 | 5 | 0 | | 5 | 4 | 7 | | |
| 400 | 0.12 | 0.14 | 0.2 | 0.2 | 0.13 | 0.15 | 0.20 | 0.12 | 0.2 | 0.2 | 0.12 | 0.2 | 0.2 | 0.11 | 0.13 | 0.17 | 0.11 | 0.16 | 0.19 | 0.11 | 0.2 | 0.2 | |
| | | 0 | 5 | 9 | 0 | 5 | 5 | 4 | 7 | 5 | 2 | 5 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 5 | 0 | 4 | 6 |
| 500 | 0.09 | 0.12 | 0.2 | 0.2 | 0.10 | 0.15 | 0.18 | 0.09 | 0.2 | 0.2 | 0.10 | 0.2 | 0.2 | 0.09 | 0.13 | 0.16 | 0.08 | 0.16 | 0.18 | 0.08 | 0.2 | 0.2 | |
| | | 0 | 5 | 8 | 5 | 5 | 5 | 8 | 4 | 6 | 0 | 2 | 4 | 0 | 5 | 0 | 8 | 0 | 0 | 5 | 4 | 5 | |
| 630 | 0.07 | 0.10 | 0.2 | 0.2 | 0.08 | 0.15 | 0.17 | 0.07 | 0.2 | 0.2 | 0.08 | 0.2 | 0.2 | 0.07 | 0.13 | 0.15 | 0.17 | 0.16 | 0.17 | 0.06 | 0.2 | 0.2 | |
| 800 | 0.05 | 0.05 | 0.2 | 0.5 | 0.07 | 0.15 | 0.17 | 0.06 | 0.2 | 0.2 | 0.06 | 0.2 | 0.2 | 0.06 | 0.13 | 0.14 | 0.05 | 0.15 | 0.16 | 0.05 | 0.2 | 0.2 | |
| | | 6 | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | | | 07 | 15 | 17 | 06 | 2 | 2 | | | | | 06 | 13 | 14 | 05 | 15 | 16 | 05 | 2 | 2 |
| | | | | | 2 | 0 | 0 | 4 | 4 | 5 | | | | | 2 | 0 | 5 | 9 | 5 | 5 | 5 | 3 | 4 |
| 1000 | 0.04 | | | | 0.06 | 0.15 | 0.16 | 0.05 | 0.2 | 0.2 | | | | 0.05 | 0.13 | 0.14 | 0.05 | 0.15 | 0.16 | 0.04 | 0.2 | 0.2 | |
| | 5 | | | | 3 | 0 | 5 | 4 | 4 | 4 | | | | 5 | 0 | 0 | 0 | 5 | 5 | 7 | 3 | 4 | |

Note:

Spacings larger than those specified in Method 12 (see table 4A 16th edition regs) will result in larger volt drop.

Tables 4E1A & 4E1B are extracted from IEE Regs, 16th Edition

Parts options

| Part No. | Core | Size | Colour/Reference |
|----------|------|-------------------|------------------|
| 45147 | 1 | 1.5sqmm (Class 5) | Black |
| 45071 | 1 | 1.5sqmm (Class 5) | Green/yellow |
| 45073 | 1 | 1.5sqmm (Class 5) | Blue |
| 45074 | 1 | 1.5sqmm (Class 5) | Yellow |
| 45072 | 1 | 1.5sqmm (Class 5) | Brown |
| 45239 | 1 | 1.5sqmm (Class 5) | Violet |
| 45238 | 1 | 1.5sqmm (Class 5) | Pink |
| 45240 | 1 | 1.5sqmm (Class 5) | White |
| 45171 | 1 | 1.5sqmm (Class 5) | Orange |
| 45115 | 1 | 1.5sqmm (Class 5) | Grey |
| 45241 | 1 | 1.5sqmm (Class 5) | Green |
| 45075 | 1 | 2.5sqmm (Class 5) | Red |
| 45076 | 1 | 2.5sqmm (Class 5) | Black |
| 45077 | 1 | 2.5sqmm (Class 5) | Green/yellow |
| 45079 | 1 | 2.5sqmm (Class 5) | Blue |
| 45080 | 1 | 2.5sqmm (Class 5) | Yellow |
| 45078 | 1 | 2.5sqmm (Class 5) | Brown |
| 45242 | 1 | 2.5sqmm (Class 5) | Violet |
| 45243 | 1 | 2.5sqmm (Class 5) | Pink |
| 45244 | 1 | 2.5sqmm (Class 5) | White |
| 45245 | 1 | 2.5sqmm (Class 5) | Orange |
| 45116 | 1 | 2.5sqmm (Class 5) | Grey |
| 45246 | 1 | 2.5sqmm (Class 5) | Green |
| 45081 | 1 | 4.0sqmm (Class 5) | Red |
| 45082 | 1 | 4.0sqmm (Class 5) | Black |
| 45083 | 1 | 4.0sqmm (Class 5) | Green/yellow |
| 45085 | 1 | 4.0sqmm (Class 5) | Blue |
| 45086 | 1 | 4.0sqmm (Class 5) | Yellow |
| 45084 | 1 | 4.0sqmm (Class 5) | Brown |
| 45247 | 1 | 4.0sqmm (Class 5) | Violet |
| 45248 | 1 | 4.0sqmm (Class 5) | Pink |
| 45249 | 1 | 4.0sqmm (Class 5) | White |
| 45250 | 1 | 4.0sqmm (Class 5) | Orange |
| 45117 | 1 | 4.0sqmm (Class 5) | Grey |
| 45251 | 1 | 4.0sqmm (Class 5) | Green |
| 45087 | 1 | 6.0sqmm (Class 5) | Red |
| 45088 | 1 | 6.0sqmm (Class 5) | Black |
| 45089 | 1 | 6.0sqmm (Class 5) | Green/yellow |
| 45091 | 1 | 6.0sqmm (Class 5) | Blue |
| 45092 | 1 | 6.0sqmm (Class 5) | Yellow |
| 45090 | 1 | 6.0sqmm (Class 5) | Brown |
| 45481 | 1 | 6.0sqmm (Class 5) | Orange |
| 45118 | 1 | 6.0sqmm (Class 5) | Grey |
| 45531 | 1 | 6.0sqmm (Class 5) | White |
| 45252 | 1 | 10sqmm (Class 5) | Red |
| 45209 | 1 | 10sqmm (Class 5) | Black |
| 45253 | 1 | 10sqmm (Class 5) | Green/yellow |
| 45555 | 1 | 10sqmm (Class 5) | Grey |
| 45554 | 1 | 10sqmm (Class 5) | Brown |
| 45483 | 1 | 10sqmm (Class 5) | Blue |

| | | | |
|--------------|---|------------------|----------------|
| 45254 | 1 | 16sqmm (Class 5) | Red |
| 45210 | 1 | 16sqmm (Class 5) | Black |
| 45255 | 1 | 16sqmm (Class 5) | Green/yellow |
| 45492 | 1 | 16sqmm (Class 5) | Blue |
| 45556 | 1 | 16sqmm (Class 5) | Brown |
| 45557 | 1 | 16sqmm (Class 5) | Grey |
| 45495 | 1 | 25sqmm | Green/yellow |
| 45211 | 1 | 25sqmm (Class 5) | Black |
| 45494 | 1 | 25sqmm (Class 5) | Blue |
| 45485 | 1 | 35sqmm | Green/yellow |
| 45393 | 1 | 35sqmm (Class 5) | Black |
| 45486 | 1 | 35sqmm (Class 5) | Blue |
| 45541 | 1 | 50sqmm | Green/yellow |
| 45585 | 1 | 50sqmm (Class 5) | Black |
| 45542 | 1 | 70sqmm | Green/yellow |
| 45584 | 1 | 70sqmm (Class 5) | Black |
| 45543 | 1 | 95sqmm | Green/yellow |
| 45544 | 1 | 120sqmm | Green/yellow |
| 45545 | 1 | 150sqmm | Green/yellow |
| 45730 | 1 | 240sqmm | Green / Yellow |