

TABLE 4D3A Single core 70°C armoured thermoplastic insulated cables (non-magnetic armour) (Copper Conductors)

CURRENT-CARRYING CAPACITY (amperes):

Ambient temperature : 30°C
Conductor operating temperature: 70°C

| Conductor cross-sectional area | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray horizontal or vertical) | | | | | | | | |
|--------------------------------|---|-------------------------------------|---|--------------------------------|--------------------------------|------------------------------|----------|----------------------------|----------|---------------------------------|----------|
| | Touching | | Touching | | | Spaced by one cable diameter | | | | | |
| | 2 cables single phase a.c. or d.c. flat | 3 or 4 cables three phase a.c. flat | 2 cables single phase a.c. or d.c. flat | 3 cables three phase a.c. flat | 3 cables three phase a.c. flat | 2 cables d.c. | | 2 cables single-phase a.c. | | 3 or 4 cables, three-phase a.c. | |
| | | | | | | Horizontal | Vertical | Horizontal | Vertical | Horizontal | Vertical |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| (mm ²) | (A) | (A) | (A) | (A) | (A) | (A) | (A) | (A) | (A) | (A) | (A) |
| 50 | 193 | 179 | 205 | 189 | 181 | 229 | 216 | 229 | 217 | 230 | 212 |
| 70 | 245 | 225 | 259 | 238 | 231 | 294 | 279 | 287 | 272 | 286 | 263 |
| 95 | 296 | 269 | 313 | 285 | 280 | 357 | 340 | 349 | 332 | 338 | 313 |
| 120 | 342 | 309 | 360 | 327 | 324 | 415 | 396 | 401 | 383 | 385 | 357 |
| 150 | 393 | 352 | 413 | 373 | 373 | 479 | 458 | 449 | 429 | 436 | 405 |
| 185 | 447 | 399 | 469 | 422 | 425 | 548 | 525 | 511 | 489 | 490 | 456 |
| 240 | 525 | 465 | 550 | 492 | 501 | 648 | 622 | 593 | 568 | 566 | 528 |
| 300 | 594 | 515 | 624 | 547 | 567 | 748 | 719 | 668 | 640 | 616 | 578 |
| 400 | 687 | 575 | 723 | 618 | 657 | 885 | 851 | 737 | 707 | 674 | 632 |
| 500 | 763 | 622 | 805 | 673 | 731 | 1035 | 997 | 810 | 777 | 721 | 676 |
| 630 | 843 | 669 | 891 | 728 | 809 | 1218 | 1174 | 893 | 856 | 771 | 723 |
| 800 | 919 | 710 | 976 | 777 | 886 | 1441 | 1390 | 943 | 905 | 824 | 772 |
| 1000 | 975 | 737 | 1041 | 808 | 945 | 1685 | 1627 | 1008 | 967 | 872 | 816 |

VOLTAGE DROP (per ampere per metre)

TABLE 4D3B

Conductor operating temperature: 70°C

| Conductor cross-sectional area | 2 cables d.c. | Reference Methods C & F (clipped direct, on tray or free air) | | | | | | | | | | | | | | |
|--------------------------------|---------------|---|-------|-------|---------|-------|------|---------------------------------|-------|------|-----------------|-------|------|----------------|-------|------|
| | | 2 cables, single-phase a.c. | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | |
| | | cables touching | | | spaced* | | | trefoil & touching | | | flat & touching | | | flat & spaced* | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| sqmm | mV/A/m | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z |
| 50 | 0.93 | 0.93 | 0.22 | 0.95 | 0.93 | 0.30 | 0.97 | 0.80 | 0.190 | 0.82 | 0.79 | 0.26 | 0.84 | 0.79 | 0.34 | 0.86 |
| 70 | 0.63 | 0.64 | 0.21 | 0.68 | 0.66 | 0.29 | 0.72 | 0.56 | 0.180 | 0.58 | 0.57 | 0.25 | 0.62 | 0.59 | 0.32 | 0.68 |
| 95 | 0.46 | 0.48 | 0.20 | 0.52 | 0.51 | 0.28 | 0.58 | 0.42 | 0.175 | 0.45 | 0.44 | 0.25 | 0.50 | 0.47 | 0.31 | 0.57 |
| 120 | 0.36 | 0.39 | 0.195 | 0.43 | 0.42 | 0.28 | 0.50 | 0.33 | 0.170 | 0.45 | 0.36 | 0.24 | 0.43 | 0.40 | 0.30 | 0.50 |
| 150 | 0.29 | 0.31 | 0.190 | 0.37 | 0.34 | 0.27 | 0.44 | 0.27 | 0.165 | 0.39 | 0.30 | 0.24 | 0.38 | 0.34 | 0.30 | 0.45 |
| 185 | 0.23 | 0.26 | 0.190 | 0.32 | 0.29 | 0.27 | 0.39 | 0.22 | 0.160 | 0.35 | 0.25 | 0.23 | 0.34 | 0.29 | 0.29 | 0.41 |
| 240 | 0.180 | 0.20 | 0.180 | 0.27 | 0.23 | 0.26 | 0.35 | 0.175 | 0.160 | 0.31 | 0.20 | 0.23 | 0.30 | 0.24 | 0.28 | 0.37 |
| 300 | 0.145 | 0.160 | 0.180 | 0.24 | 0.190 | 0.26 | 0.32 | 0.140 | 0.155 | 0.29 | 0.165 | 0.22 | 0.28 | 0.24 | 0.28 | 0.34 |
| 400 | 0.105 | 0.140 | 0.175 | 0.22 | 0.180 | 0.24 | 0.30 | 0.120 | 0.130 | 0.27 | 0.160 | 0.21 | 0.26 | 0.21 | 0.25 | 0.32 |
| 500 | 0.086 | 0.120 | 0.170 | 0.21 | 0.165 | 0.23 | 0.29 | 0.105 | 0.145 | 0.26 | 0.145 | 0.20 | 0.25 | 0.190 | 0.24 | 0.30 |
| 630 | 0.068 | 0.105 | 0.165 | 0.195 | 0.150 | 0.22 | 0.27 | 0.091 | 0.145 | 0.25 | 0.135 | 0.195 | 0.23 | 0.175 | 0.22 | 0.28 |
| 800 | 0.053 | 0.095 | 0.160 | 0.185 | 0.145 | 0.21 | 0.25 | 0.082 | 0.140 | 0.25 | 0.125 | 0.180 | 0.22 | 0.170 | 0.195 | 0.26 |
| 1000 | 0.042 | 0.091 | 0.155 | 0.180 | 0.140 | 0.190 | 0.24 | 0.079 | 0.135 | 0.24 | 0.125 | 0.165 | 0.21 | 0.165 | 0.170 | 0.24 |

NOTE: * Spacings larger than one diameter will result in larger volt drop.

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