

TABLE EXTRACTED FROM NBN C 34-100/Ed. 2 - 2001 STANDARD

CHARACTERISTICS OF COMPACT STRANDED CONDUCTORS IN ALUMINIUM ALLOY (AAAC compacted)

| Désignation - Number of - (8) | Theoretical cross-section (7) | Compositions | | | | | Outer diameter (6) | Metallical linear mass (1) | Linear mass of grease (2) | Electrical linear resistance at 20°C (3) | Nominal breaking load (5) | Modulus of elasticity (5) | Coefficient of linear expansion (5) |
|---|----------------------------------|-----------------|---------------------------------|------------------|-----------------|----------------------|-----------------------|-------------------------------|------------------------------|---|------------------------------|------------------------------|--|
| | | Round wires | | Z wires | | | | | | | | | |
| | | Number of wires | Nominal diameter of wires mm | Number of layers | Number of wires | Nominal height mm | | | | | | | |
| mm ² | mm ² | - | mm | - | - | mm | kg/km | kg/km | Ω/km | daN | N/mm ² | K ⁻¹ | |
| 177-1Z | 176,93 | 1 + 6 | 3,30 | 1 | 12 | 3,30 | 16,50 | 488 | 9 | 0,1895 | 5 698 | 56 000 | 23.10 ⁻⁶ |
| 242-2Z | 241,98 | 1 + 6 | 2,70 | 2 | 12 + 18 | 2,70 | 18,90 | 671 | 9 | 0,1391 | 7 793 | 56 000 | 23.10 ⁻⁶ |
| 261-2Z | 261,34 | 1 + 6 | 2,80 | 2 | 12 + 18 | 2,80 | 19,60 | 724 | 10 | 0,1288 | 8 417 | 56 000 | 23.10 ⁻⁶ |
| 301-2Z | 301,25 | 1 + 6 | 3,00 | 2 | 12 + 18 | 3,00 | 21,00 | 835 | 11 | 0,1117 | 9 702 | 56 000 | 23.10 ⁻⁶ |
| 346-2Z | 345,65 | 1 + 6 | 3,20 | 2 | 12 + 18 | 3,20 | 22,40 | 958 | 13 | 0,0974 | 11 132 | 56 000 | 23.10 ⁻⁶ |
| 366-2Z | 366,13 | 1 + 6 | 3,30 | 2 | 12 + 18 | 3,30 | 23,10 | 1 014 | 13 | 0,0919 | 11 617 | 56 000 | 23.10 ⁻⁶ |
| 455-2Z | 455,14 | 1 + 6 + 12 | 2,90 | 2 | 18 + 24 | 2,90 | 26,10 | 1 266 | 23 | 0,0742 | 14 658 | 54 000 | 23.10 ⁻⁶ |
| 504-2Z | 503,95 | 1 + 6 + 12 | 3,05 | 2 | 18 + 24 | 3,05 | 27,45 | 1 401 | 26 | 0,0670 | 16 230 | 54 000 | 23.10 ⁻⁶ |
| 538-2Z | 538,03 | 1 + 6 + 12 | 3,15 | 2 | 18 + 24 | 3,15 | 28,35 | 1 496 | 28 | 0,0628 | 17 327 | 54 000 | 23.10 ⁻⁶ |
| 635-1Z | 635,12 | 1+6+12+18 | 3,50 | 1 | 24 | 3,50 | 31,50 | 1 761 | 49 | 0,0530 | 20 152 | 54 000 | 23.10 ⁻⁶ |
| 648-2Z | 648,38 | 1 + 6 + 12 | 3,45 | 2 | 18 + 24 | 3,45 | 31,05 | 1 803 | 33 | 0,0521 | 20 573 | 54 000 | 23.10 ⁻⁶ |
| 666-2Z | 665,92 | 1 + 6 + 12 | 3,50 | 2 | 18 + 24 | 3,50 | 31,50 | 1 852 | 34 | 0,0507 | 21 130 | 54 000 | 23.10 ⁻⁶ |
| 705-2Z | 704,97 | 1 + 6 + 12 | 3,60 | 2 | 21 + 27 | 3,60 | 32,40 | 1 961 | 36 | 0,0479 | 22 369 | 54 000 | 23.10 ⁻⁶ |
| 707-2Z | 706,76 | 1 + 6 + 12 | 3,60 | 2 | 18 + 24 | 3,60 | 32,40 | 1 965 | 36 | 0,0478 | 22 425 | 54 000 | 23.10 ⁻⁶ |
| 928-3Z | 928,45 | 1 + 6 + 12 | 3,35 | 3 | 18 + 24 + 30 | 3,35 | 36,85 | 2 593 | 33 | 0,0365 | 29 460 | 54 000 | 23.10 ⁻⁶ |

(1) Based on a density of 2,7 kg/dm³ and appendix I.

(2) All the layers are greased excepted the last one..

(3) High Conductivity variants are possible, please take contact with us for further informations.

(5) These values are given as information and cannot be considered as test requirements.

(6) Tolerance : ± 2%

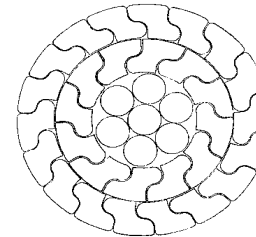
(7) The ratio between the cross-section of a conductor and the theoretical cross-section is between 1,00 and 1,04



CHARACTERISTICS OF COMPACT STRANDED CONDUCTORS IN ALUMINIUM ALLOY (AAAC compacted)

Nominal ampacities

| Désignation - Number of Z layers | Theoretical cross - section | Nominal ampacities | |
|---|-----------------------------------|-------------------------|-----------------------------|
| | | NBN C34-100 Standard | "High Conductivity" (HC) |
| mm ² | mm ² | (1) | (2) |
| 177-1Z | 176,93 | 494 | 517 |
| 242-2Z | 241,98 | 596 | 623 |
| 261-2Z | 261,34 | 625 | 653 |
| 301-2Z | 301,25 | 683 | 713 |
| 346-2Z | 345,65 | 743 | 776 |
| 366-2Z | 366,13 | 770 | 805 |
| 455-2Z | 455,14 | 883 | 923 |
| 504-2Z | 503,95 | 941 | 984 |
| 538-2Z | 538,03 | 980 | 1024 |
| 635-1Z | 635,12 | 1094 | 1144 |
| 648-2Z | 648,38 | 1100 | 1150 |
| 666-2Z | 665,92 | 1119 | 1170 |
| 705-2Z | 704,97 | 1159 | 1211 |
| 707-2Z | 706,76 | 1161 | 1214 |
| 928-3Z | 928,45 | 1371 | 1433 |



Computations bases :

Conductor temperature : 75 °C
 Air temperature : 25 °C
 Wind velocity : 55 cm/s
 Power of solar radiation : 100 mW/cm²
 Emissive capacity of cond. : 1
 Absorption coefficient of solar rad. : 1
 Temp. constant : 6 780 028 400



Resistivity of alu wires before stranding :
 (1) 32,8
 (2) 30,0

Ω.mm²/m at 20°C
 Ω.mm²/m at 20°C
 ! HC decreases nom. breaking load of conductor !
 Take contact with us for further informations