



Current load capacity

According to VDE 0100 Part 523

In addition to the ambient temperature, a number of other influencing factors are important when determining the load currents. Particular attention must be paid to the type of installation and the environment, the fuse protection (overvoltage protection) and the appropriate selection of insulation and sheath materials.

Table 1 contains an excerpt from VDE 0100 Part 523 on the current load of cables at an ambient temperature of 30 °C.

Table 2 shows the percentage of current carrying capacity at ambient temperatures up to 175 °C.

Conductors of insulated wires and cables must not be continuously loaded with more than the currents specified in the following tables, whereby the following groups must be distinguished:

Group 1: One or more single-core cables laid in conduit

Group 2: Multi-core cables, e.g. sheathed cables, stay cables, movable cables

Group 3: Single-core cables and cables laid freely in the air, with a gap between them at least equal to their diameter

Table 1 Current load capacity / Z of insulated cables not laid in the ground at an ambient temperature of 30 °C.			
Nominal Cross-Section mm²	Group 1 Cu conductor [A]	Group 2 conductor [A]	Group 3 conductor [A]
0,75	-----	12	15
1	11	15	19
1,5	15	18	24
2,5	20	26	32
4	25	34	42
6	33	44	54
10	45	61	73
16	61	82	98
25	83	108	129
35	103	135	158
50	132	168	198
70	165	207	245
95	197	250	292
120	235	292	344

Table 1
Current load capacity / Z of insulated cables not laid in the ground at an ambient temperature of 30 °C.

Nominal Cross-Section mm ²	Group 1 Cu conductor [A]	Group 2 conductor [A]	Group 3 conductor [A]
150	-----	335	391
185	-----	382	448
240	-----	453	528
300	-----	504	608
400	-----	-----	726
500	-----	-----	830
0,75	-----	12	15

Table 2
Current load capacity / Z of conductors with increased Temperature Resistance at an ambient Temperature up to 55 °C

Ambient Temperature in °C for Conductors with a designated Temperature of 100	Ambient Temperature in °C for Conductors with a designated Temperature of 180	Current Load /Z in % of the values according to Table 1
über 55 bis 65	über 55 bis 145	100
über 65 bis 70	über 145 bis 150	92
über 70 bis 75	über 150 bis 155	85
über 75 bis 80	über 155 bis 160	75
über 80 bis 85	über 160 bis 165	65
über 85 bis 90	über 165 bis 170	53
über 90 bis 95	über 170 bis 175	38
über 55 bis 65	über 55 bis 145	100
über 65 bis 70	über 145 bis 150	92
über 70 bis 75	über 150 bis 155	85