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Power cables up to nominal voltage of 1 kV are suitable for installation indoors, outdoors, for direct burial in earth as well as in water or in concrete. The installation must be carried out carefully, avoiding any impact on the properties of the cable.

The following items have to be considered:

- protection against direct sun irradiation
- laying on solid, smooth and free of stones ground or bedding in sand or stone-free soil
- protection against mechanical damage
- protection against chemical and thermic influence

The maximum permitted pulling force during installation is  $P = \sigma \cdot A$ , where is  $\sigma = 50 \text{ N/mm}^2$  and  $A$  the sum of the cross-section of all copper conductors. All turns of the installation line shall be well shaped and equipped with rolls.

The bending radius of single core cables shall not be smaller than  $15 \times D_A$ , for multicore cables  $12 \times D_A$ .

The minimum installation temperature for the cables is  $-5 \text{ }^\circ\text{C}$ . This value refers to the cable temperature, not the environmental temperature.

The inner diameter of ducts and tubes should be not less than  $1.5 \times D_A$ , if more than one cable per tube is installed, they should not tight each other.

Underground cables should be buried at least 0.6 m under the surface, the depth of cables under roadways not less than 0.8 m.

**Fixing of cables:** If cables are installed horizontally on walls, ceilings or trays by clamps the distance between fixings must be  $20 \times D_A$ , but not more than 80 cm. For vertical installation the distance may be increased, but not more than 150 cm. Compression of the cable must be strictly avoided. One-core cables must be fixed with non-magnetic clamps only.

**Meter mark:** According to the standard cables with diameter  $> 10 \text{ mm}$  must carry a meter-mark. The marks may have a tolerance of 1 %, but they are not calibrated. Incomplete or missing marks (on short distances) may not be claimed. For defining the delivery length only calibrated measuring equipment has to be used.