

Medium voltage power cables up to 30 kV Laying Instructions

Medium voltage power cables up to nominal voltage of 30 kV according to VDE 0276 part 620 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 thermal influence

The maximum permitted pulling force during installation is $P = \sigma \cdot A$, where $\sigma = 50 \text{ N/mm}^2$ 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 $15 \times D_A$.

The minimum installation temperature for the cables is -5°C for cables with PVC-sheath and -20°C for cables with PE-sheath. 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 touch 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.