

1. Introduction

Power cables are used for transmission of electric power; as control cables are used to measure, control and regulate or monitor industrial plants.

Power cables are mainly used in distribution networks of power utilities, in industries, in mines etc.

To select the cable it is necessary to consider whether the specific system and installation conditions and requirements can be fulfilled.

The following criteria, therefore should have proper consideration to define the suitable cable type:

- occurrence of maximum voltage load
- allowable voltage drop
- power to be transmitted, current carrying capacity
- permissible or necessary short-circuit admittance
- electrical protection
- mechanical stress/influence
- thermal stress/influence
- chemical stress/influence
- standards or specifications to be followed



Feature to differentiate power cables is the voltage grade, which is indicated as quotient U_0/U , where

U_0 signifies the voltage between conductor and metallic coverage or earth

U signifies the voltage among phase conductors (insulated conductors)

In three-phase current systems $U_0 = U/\sqrt{3}$