maximising cable drum lengths is mainly to reduce the number of joints. Increasing length can be achieved in reducing the cable outer diameter or improving the winding capacity of the drum. The paper presents some means to carry it out and the consequences on the design of an underground power link and its operating conditions.

**Keywords**: delivery length, drum.

1. **Design parameters of a drum**

   ![Diagram of a drum showing various parameters](image)

   - $D_B$: drum barrel diameter,
   - $D_F$: drum flange diameter,
   - $W'$: winding permissible width,
   - $C_e$: external clearance,
   - $R$: ramp,
   - $D$: cable outer diameter.

   A ramp, of equivalent width of the cable outer diameter, is sometimes arranged in order to take the cable end out for routine-test. Another space is kept, the external clearance, between the last layer of the cable corona and the overall diameter of the drum flanges.

   The hatched area corresponds to the available volume to wind the cable turns and layers.

2. **Approximate method of cable drum length calculation**

   The different turns and layers of the cable are identified with contiguous stacked tores. The whole cable length is equal to the sum of each tore length.

   ![Diagram showing cable drum layers](image)

   - $n$: number of turns in a cable layer,
   - $n_l$: number of layers.