

**B3.3****AC field ageing of power cables**

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The work presented here aims at answering the question of the useful life of XLPE VHV cables. For that purpose, four different XLPE cables have been aged under given conditions of maximum electric field and temperature. For instance :

- 27kV/mm during more than 8760 h with thermal cycles up to 95°C
- 14kV/mm during more than 25000 h with thermal cycles up to 105°C

After those ageing tests, cable pieces have been taken out from the portion of the ageing loops where the thermomechanical stress was maximum.

This paper will report about the alterations between the aged and the unaged cables.

- material evolution
 - IR spectrum,
 - DSC,
 - space charges...
- cable performance evolution
 - impulse behaviour.

The results of these characterisations will be compared to the theories of space charge ageing, mechanical ageing, electrochemical ageing.