

Paris Session 2022



Aluminium Metallic Sheath and Corrosion

SC B1 Insulated Cables – PS1 – Q5

Roy Zuiderduin, the Netherlands

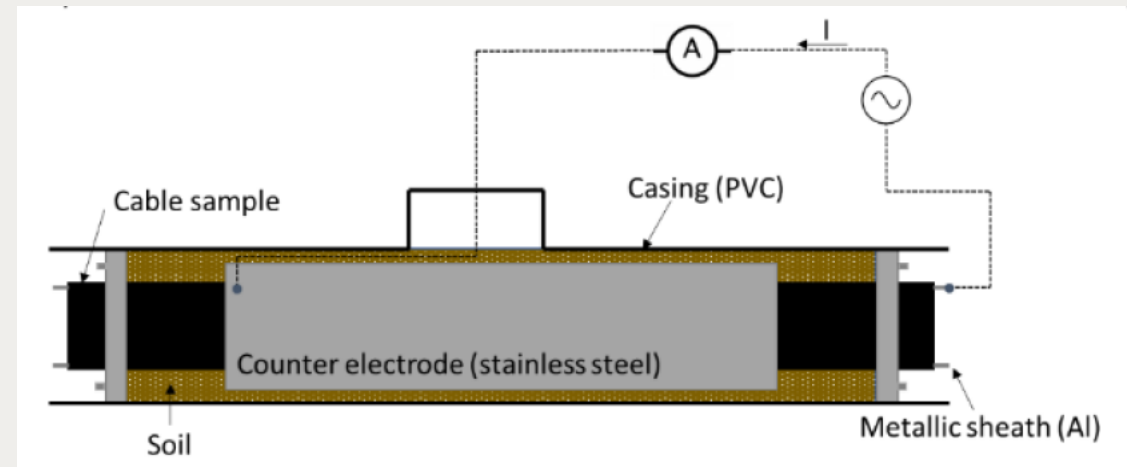
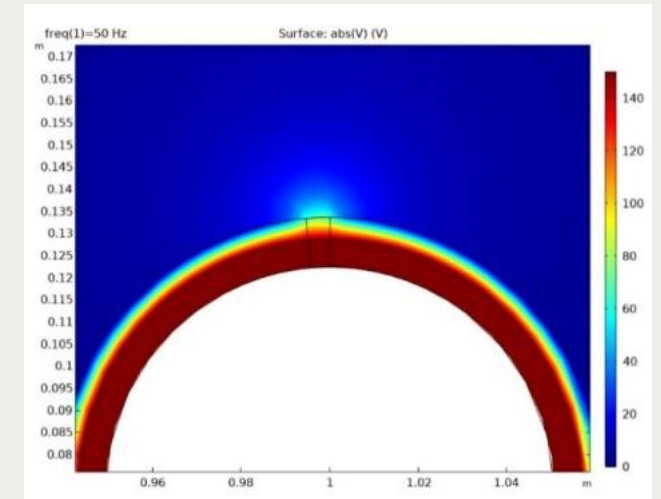


Paper ID – 10544: study towards corrosion behaviour of aluminium sheaths in HVAC, subdivided into:

1. Literature study
2. Modelling
3. Laboratory experiments
4. In-field long term experiment.

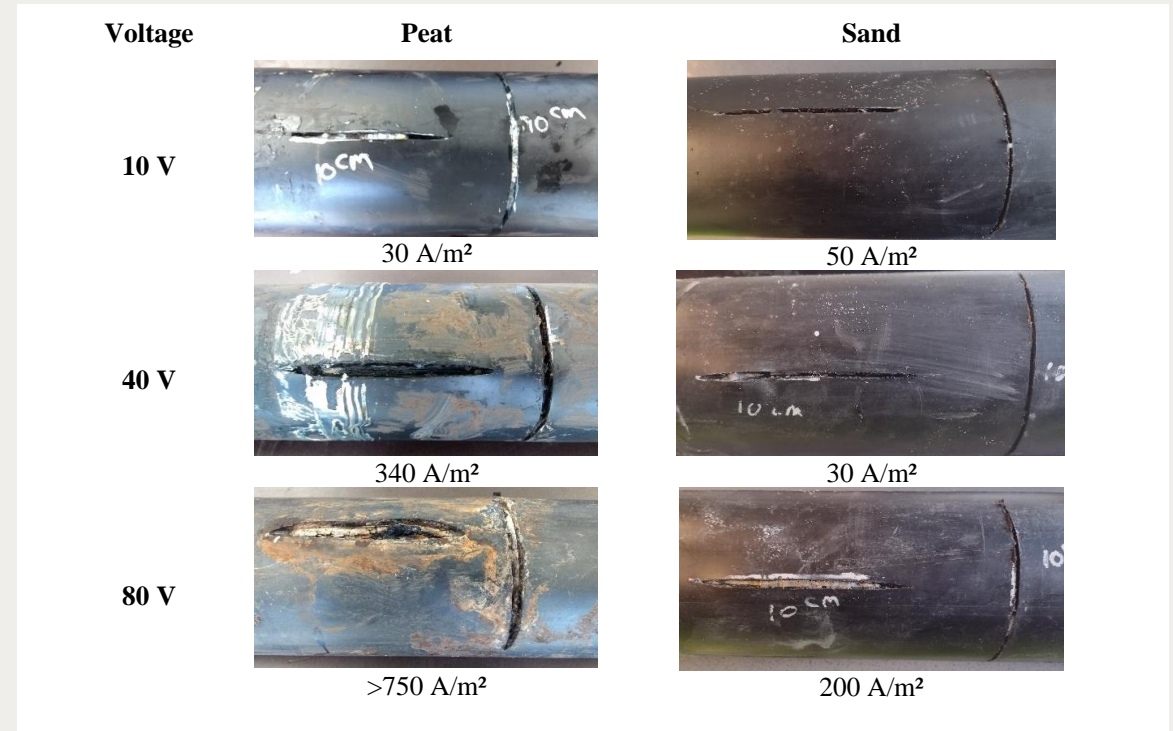


Group Discussion Meeting



Long term experiment ongoing, conclusions so far:

1. Risk of degradation of Al sheath is unlikely if covering is not compromised,
2. Good inert aluminium property impedes possible corrosion,
3. In case of covering rupture: corrosion rate strongly depends on leakage current.



Q5 → 'To what extent have long term performance criteria of HVDC cable systems been evaluated with respect to operational impacts such as corrosion, including corrosion of the metallic sheath metal'

HVDC not part of the study, but found in literature:

- AC leakage current impact on Al is ~50% compared to DC leakage current.

Further:

- DC sheath voltage per length differs from AC and must be adequately calculated
- Obtaining experience from possible future failure cases is advised