

# Paris Session 2022



## Sustainability through CO<sub>2</sub> emission reduction on HV/E-HV cable accessories

SC B1 Insulated Cables – PS3-Q3  
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Group

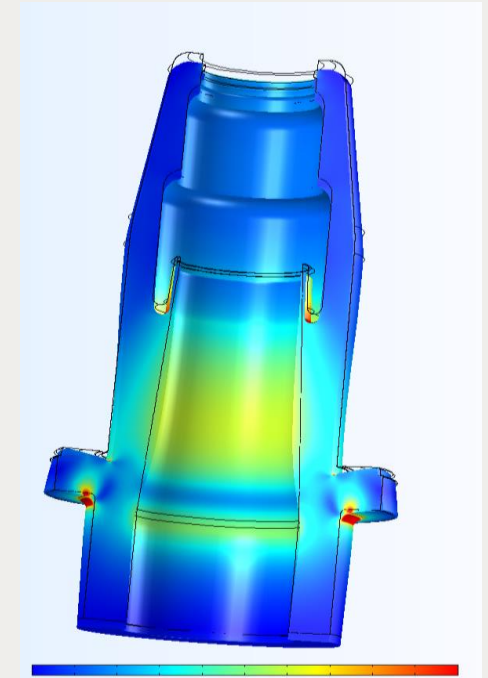
## SF6 consumption in HV/E-HV Accessories

- For many years SF6 has been the preferred dielectric medium in electrical power applications, particularly in high voltage gas-insulated equipment. However, with the recognition that SF6 has very high global warming potential, strong efforts are in place in the industry to reduce its consumption.
- In the cable industry, high focus on the accessories because of their extensive use of SF6 gas: as part of the equipment to carry out routine tests of cable drums and associated accessories, and through their interface to the gas-insulated electrical equipment. SF6 is also still used as insulating medium of Outdoor Terminations.



## Main Challenges – Alternative gases

- Alternative gases to SF<sub>6</sub>, with much lower environmental impact, have been developing in the last years, based on natural dried air or gas mixtures containing fluorinated compounds. Being the required operating pressure higher, a mechanical assessment of the insulators is needed to maintain the same long-term performance.
- Potential compatibility issues between the alternative gases and the cable termination itself shall be assessed and mitigated.
- SC B3 (TB 802) and SC D1 (TB 849) have already established guidelines on applications and electric performance of alternative gases.
- SC B1 has recently activated a task force focused on the SF<sub>6</sub> replacement within cable accessories.



## Main Challenges – Dry-Type solutions

- Development of prefabricated asymmetric joints with wide cable and voltage range is key to shut down the SF6 consumption in the cable plants.
- An important R&D workstream deals with the progressive introduction and extension at higher voltage level of Dry-Type Outdoor Terminations, aimed to provide a solution to abandon the SF6 where still used.
- SC B1 shall provide guidelines on the assessment of full Dry-Type ODSE whereas not yet covered by any domestic or international standard (e.g., internal arc test,..).

