A.5.5.

Test methods for SiR-accessories used in high voltage cables up to 400 kV

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Accessories e.g. based on SiR-Material as a part of cost intensive power transmission and distribution systems are of big economic interest. After commissioning the utility are expecting no further costs regarding maintenance or reparation as well as invest for premature exchange. The exceptions of extraordinary reliability and availability as well as long lifetime can only are fulfilled, when the design and quality meets these requirements. The quality assurance after production becomes more and more important.

In the standards, which reflect the current state of the art of technology, this quality assurance regarding the prefabricated HV and EHV cable accessories is based mainly on partial discharge measurements during the high voltage routine tests. The aim of partial discharge measurements is proof the insulation regarding voids. However the expenditure of these tests is high and difficult.

The paper discusses therefore other quality control methods to identify contamination and voids within silicon bodies. The results of these tests are compared with classical electrical partial discharge measurements.

Systematic calculations of the electrical field distributions in the voids dependent on the positions in the silicon bodies show the connection between the electrical routine test and other test methods.