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RTV LIFE EXPECTANCY

Considerations on life expectancy are reported, together with many other aspects concerning RTV, in TB 837 concluding that, at the present level of knowledge, it is not possible to predict the expected service life of an RTV coating (and consequently, to extend generic warranties and guarantees).

Ageing and life expectancy are closely linked to several factors including but not limited to the specific RTV material formulation and characteristics, insulator geometry and sizing, application quality and environmental stresses. Based on field experience, coating life may extend from a few years to more than 20 years. While additional research is necessary to ascertain the relevance and impact of each contributory factor in the ageing process, the role of specific creepage distance on longevity is discussed

RTV Coated ceramics, like all hydrophobicity transfer material (HTM) insulators, may require significantly lower USCD at withstand condition than uncoated ceramic insulators (almost up to 50%, in hydrophobicity class condition 1), however, with higher unified specific creepage distance (USCD) required following ageing and loss of hydrophobicity.

Pollution withstand is the design value for ceramic insulator under pollution conditions. For HTM insulators ageing can also occur at voltage values significantly below the withstand voltage in the presence of corona and leakage currents (also of low magnitudes). Therefore, different margin between the pollution withstand voltage and the service voltage may need to be considered for HTM (eg. USCD RTV) and non HTM (e. USCD CERAMIC) insulators. Consequently, pollution tests will not provide direct indication on the expected service performances.

Too low USCD RTV values (much lower than USCD CERAMIC required for the considered field conditions) may promote leakage currents, consequent loss of hydrophobicity and shortening of the expected RTV coating life. Quantitative data on the dependence of the life on USCD are not available and only qualitative trends can be given, as depicted in Figure 1 reporting the expected RTV coating life as a function of the USCD adopted (in per unit of the corresponding value applicable to uncoated ceramic insulators).

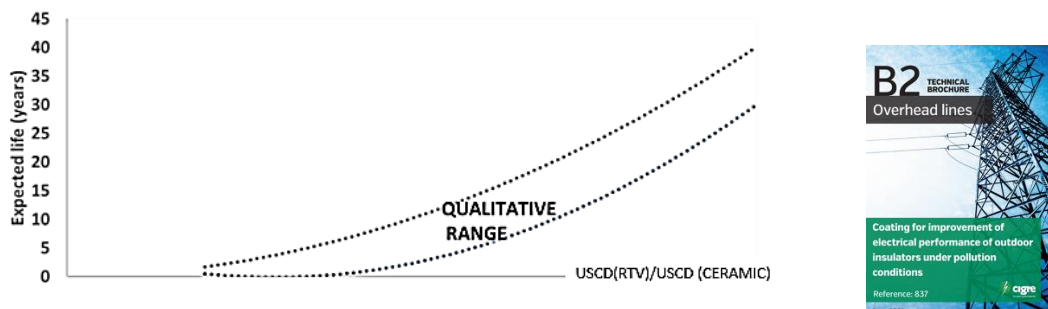


Figure 1 Dependence of expected life on Unified Specific Creepage Distance USCD in relation to the value required for ceramic insulators: qualitative range (from CIGRE TB 837)

Collection of field experience and additional experience in experimental field stations, by simulating different USCD conditions, may help to arrive at quantitative indications about the expected life

