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Condition assessment of composite insulators in service

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PS2, Q. 2.07: What gaps still exist in standards which need to be addressed to improve ultimately in-service performance?

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What gaps still exist in standards which need to be addressed to improve ultimately in-service performance?

- Tests to ensure a good adhesion between housing and core.
 - Root cause of failures in service.
 - IEC steep-front test intended to verify the integrity of interfaces of composite insulators could not reveal 1 insulators with bad adhesion.
 - Some investigations have been done already, some are ongoing.
- Tests to evaluate the quality of the sealing method at the triple point between air, housing, and metal end fitting of composite line insulators.
 - Possible consequences: air bubbles in the sealing or low adhesion between the sealing and other insulator components.
 - Can result in moisture penetration followed by corrosion which could even be accelerated by possible discharge activity.

What gaps still exist in standards which need to be addressed to improve ultimately in-service performance?

- Tracking and erosion test for insulators intended to use for DC.
 - Modified test method is needed for DC insulators.
 - High dispersion of results using this test method for DC insulators is a problem.
 - Investigations to this topic are ongoing.
- Methods for more advanced pollution monitoring systems.
 - Only standard ESDD/NSDD and standard DDDG measurements are recommended in IEC standards.
 - More advanced measurement methods for more reliable results.
- Pollution maps, especially for DC. In general, more experiences with DC pollution monitoring including hydrophobicity loss, transfer and recovery is missing.