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COMPOSITE INSULATORS IN HARSH ENVIRONMENT

Composite insulators are a viable and reliable solution for overhead lines and substations. More than 20 million overhead AC line insulators are installed in the world with generally satisfactory performance when used in areas with “normal environmental conditions” as specified in IEC 62217, considering application for pollution class not exceeding heavy. However, some unsatisfactory performances were reported in very harsh environment (See examples in Fig. 1)





Italy Sardinia	
Saudi Arabia. Red Sea Coast	
Peru- Close to the Sea Lima region	
Spain Fuerte Ventura	

Figure 1 AC line insulators. Examples of degradations found in harsh environment [1].

Composite station insulators, typically housings, are in principle prone to lower degradation due to their large diameter resulting in a lower current density as when compared to line composite insulators. However, the AC (and especially DC) service experience is much more limited (less components installed and generally for shorter time periods than for line insulators).

It would be interesting to have additional information about composite station insulators in environments as those in Figure 1.

[1] A.Pigini, “Optimal insulator type and dimensioning in harsh service environment,” in *INMR world congress*, Tucson-USA, 2019.

