

The effectiveness of cathodic protection under shielding conditions

- Factory applied coatings

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The effect of shielding is often discussed in the context of cathodic protection. In certain countries the concern with respect to shielding has led to the mandatory use of so called non-shielding coatings based on Fusion Bonded Epoxy (FBE). In contrast, the use of three layer Polyethylene (3LPE) coatings in large parts of the world has not led to relevant damages due to shielding, despite of the excellent dielectric properties. Nevertheless, there are certain instances where significant corrosion was observed due to shielding in specific cases. The evaluation of different national normative situations, the more recent investigations on shielding as well as the current understanding of the underlying processes associated with cathodic protection allow for identifying the particular conditions that are critical from an integrity point of view. These data are compared with model calculations.