

Behaviour of a new material that improves ufer grounding practice

ABSTRACT

In sites with high soil resistivity such as deserts and mountainous terrains, designing and installing an effective grounding system is a challenging task. Therefore introduction of Bentonite into concrete mix of Ufer grounding at various proportions was done in a previous study and its steady state ground resistance performance was investigated. In that study, it was found that 30% Bentonite-concrete mix is the optimum compound which yields the lowest average ground resistance with the least fluctuation as well. Subsequent study at site with high soil resistivity found that its performance is among the best compared with several conventional setups. In current work, such mix and the standard concrete mix were installed in five sites with varying soil resistivity to determine the correlation between ground resistance and localized soil resistivity. These correlations serve as a guide for future applications by engineers in designing grounding system using the best mix.