

A COMPARATIVE STUDY OF GROUND PENETRATION RADAR, REBARSCOPE AND PROPERTY SEISMIC ANALYZER FOR BRIDGE DECK ASSESSMENT

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Non-destructive techniques (NDT) are widely used to determine the condition of reinforced concrete. This paper presents a comparative study of three non-destructive techniques; Ground Penetration Radar(GPR), Rebarscope and Property Seismic Analyzer (PSPA) for bridge deck assessments. The comparative combination of the three methods provides relatively correlated results, which help on assessing the concrete condition in terms of the level of degradation. The accurate assessment of concrete quality is determined by the variations of reflected amplitude signal and dielectric permittivity of concrete. The initial results indicated the superiority of GPR above the other two methods. However, in areas of varying constructed defects or higher degradation, the Rebarscope and PSPA are supportive methods in estimating the concrete thickness and the depth to reinforcements; which assist on decreasing the GPR limitation and provide an effective data correlation.