

透地雷達電磁波之反射電壓檢測腐蝕鋼筋之研究

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摘要

Ground penetrating radar (GPR) has been widely used in the measurement of the structural steel within concrete at the time being. However, deep enough studies about its application in measurement of degree of corrosion of structural steel within concrete are still less popular. In general, degree of corrosion of steel (rebars) within concrete is measured by electro-chemical method. However, this study aims at developing a Non-Destructive Testing method for measurement of degree of corrosion of rebars within concrete using GPR measuring technology and is carried out by increasing speed of corrosion of rebars within concrete protective layers in different thickness. Scanning image with GPR is transformed into digital code value. This Non-Destructive Testing method is developed by examination of the difference between code values obtained from different degrees of corrosion of rebars within concrete protective layers in different thickness and the physical reflection behavior of propagation of electromagnetic wave in different electronic parameters.

關鍵字 : Ground penetrating radar, Electromagnetic Wave, Corrosion Rebar, Reflection Coefficient, Reflection Voltage