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Decision tree for the selection of appropriate ground improvement technique in the Arabian Gulf Region

Bashar Tarawneh
The University of Jordan, Jordan

Ground improvement techniques have been used on many construction sites to improve soil properties, increase bearing capacity, and reduce potential settlements of problematic soils. Problematic soils are usually identified during the geotechnical exploration and treated prior to construction to avoid any future damage to structures. Dynamic compaction, dynamic replacement, rapid impact compaction, vibro compaction, and stone columns are considered the most popular ground improvement techniques in the Arabian Gulf region. A decision tree for the selection of appropriate ground improvement technique is developed. Percent of fine content, depth of required improvement, distance to existing nearby structures, and water table level were used in the decision tree.

Biography

Bashar Tarawneh holds a PhD degree and is a Licensed Professional Engineer (PE), who has more than 15 years of experience in Civil Engineering. He has experience in the fields of soil investigation, geotechnical engineering management, shallow and deep foundations, ground improvement, earth retaining structures, liquefaction evaluation and mitigation, project management and business development. Currently, he is Chair in the Civil Engineering Department and Associate Professor of Civil Engineering at the University of Jordan in Amman, Jordan. He has been teaching courses and conducting research in the area of Civil and Geotechnical Engineering. His research interests include analytical aspects of soil-pipe interactions, inspection and risk assessment of structures, field performance and geotechnical analysis of shallow and deep foundations, settlements of shallow foundation on cohesionless soils, correlation of Standard Penetration Test (SPT) and Cone Penetration Tests (CPT), design and performance of Mechanically Stabilized Earth (MSE) Wall, application of artificial neural networks in civil engineering, resilient modulus prediction from FWD results, and ground improvement using dynamic compaction.

btarawneh@ju.edu.jo

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