17th Symposium on Earthquake Engineering
November 14-17, 2022
IIT Roorkee, India
Paper No. 24

Evaluation Of Dynamic Properties Of MICP Treated Ennore Sand through Bender Element Test

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Abstract

Bio-geotechnical method for mitigation of liquefaction of saturated cohesionless soils is one of the emerging methods owing to its lesser carbon-intensive, economic and environmental friendly propositions. Among the various bio-geotechnical methods, *Microbially Induced Calcite Precipitation* (MICP) technique is one of the popular choice of ground improvement for its easy implementation. In this study, poorly graded standard Ennore sand is treated with MICP technique through the urease producing bacteria for improving its behaviour against liquefaction. The morphological and chemical composition of the bio-cemented sand are investigated through *Scanning Electron Microscope* (SEM) and *X-Ray Diffraction* (XRD) tests respectively. Bender element testing has been carried out to investigate the improvement in low-strain stiffness indicated by shear wave velocity of bio-cemented sand. Results indicate significant enhancement in the stiffness of the bio-cemented sand. Therefore, the study may be helpful for the practicing re-searchers and engineers in understanding the efficacy of MICP treatment for dynamic/cyclic behaviour of Ennore sand.

Keywords: Standard Ennore sand, MICP treatment, Bender element test