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Effect of Plastic Fines on Liquefaction Resistance of Sandy Soil Using Resonant Column Test

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Abstract : The aim of this study is to assess the influence of plastic fines content on sand-clay mixtures on maximum shear modulus and liquefaction resistance using a series of resonant column tests. A high plasticity clay called bentonite was added to 161 Firoozkooh sand at the percentages of 10, 15, 20, 25, 30 and 35 by dry weight. The resonant column tests were performed on the remolded specimens at constant confining pressure of 100 KPa and then the values of G_{max} and liquefaction resistance were investigated. The maximum shear modulus and cyclic resistance ratio (CRR) are examined in terms of fines content. Based on the results, the maximum shear modulus and liquefaction resistance tend to decrease within the increment of fine contents.

Keywords : Gmax, liquefaction, plastic fines, resonant column, sand-clay mixtures, bentonite
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