

Liquefaction Assessment of Marine Soil in Western Yemen Region Based on Laboratory and Field Tests

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Abstract : Liquefaction is a major threat for sites consists of or on sandy soil. But this present study concentrates on the behavior of fine soil under cyclic loading. This paper presents the study of liquefaction susceptibility of marine silty clay to clayey silt for an offshore site near western Yemen. The submerged and loose sediment condition of marine soil of an offshore site can favour liquefaction during earthquakes. In this regard, the liquefaction susceptibility of the site was carried out based on both field test results and laboratory test results. From field test results of seismic cone penetration test (SCPT), liquefaction susceptibility was assessed considering normalized cone tip resistance, and normalized friction ratio and results give an idea regarding both cyclic mobility and flow liquefaction. Laboratory cyclic triaxial tests were also conducted on saturated undisturbed and remoulded sample to study the effect of cyclic loading on strength and strain characteristics. Liquefaction susceptibility of the marine soft soil was also carried out based on index properties like grain size distribution, natural moisture content and liquid limit of soil.

Keywords : index properties, liquefaction, marine soil, seismic cone penetration test (SCPT)

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