BEHAVIOUR OF LATERALLY LOADED PILES IN SAND OVERLYING SAND EXPERIMENTAL INVESTIGATION

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ABSTRACT

Piles are structural members that are made of steel, concrete or timber. They are used to build deep foundations and which cost more than shallow foundations. Despite the cost, the use of pile often is necessary to ensure structural safety. Some time piles are subjected to lateral load, for example piles used in quay and harbor structure. The sources of lateral load on harbor structure are impact of ship and wave action and off shore structures are also subjected to wind and wave. High rise building, tower are subjected to lateral load due to wind and earth quake forces. So, it is important to know the lateral load resistance capacity of pile foundation. Model tests were conducted to determine the lateral load capacity and bending moment of vertical piles. The tests were conducted in cohesion less sand in layers. Three test series were conducted on the basis of three different sand layer conditions. Diameter of pile 12.7mm kept constant throughout the study. Length changed according to L/D ratio 15, 20, 25 30, 35 of piles in single and group piles. Three piles in a group were taken. Results were compared for displacements and bending moments with in constant L/D ratio, variation of L/D ratio and H/D ratio in similar manner.