

Performance of helical anchors in sand

Abstract:

Helical anchor consist of some steel shafts with a series of helical steel plates welded on a pitch. During installation, helical anchor was screwed into the ground by using a standard truck or trailer mounted augering equipment. The equipment will apply a rotating moment to the steel shafts to screw the anchors into ground. The torque resistance of the anchor will be monitoring along the installation. When the torque resistance achieved its designed values, it verified that capacity of anchor achieved. Behavior of helical anchor under uplift load in cohesionless soil has been studied using previous researches. Based on a few number of laboratory model results many investigators reported the uplift loading of helical anchor embedded in cohesionless soil, a review of related last works shows that not much research has been done to define the uplift capacity in cohesionless soil, a problem that is often encountered in field. The paper observed that the ultimate uplift capacity is dependent on the relative undrained/drained shear strength of cohesionless soil, the depth ratio of embedment and soil thickness ratio.