

A Review on Side Shear Set-Up

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ABSTRACT

Bearing capacity of driven pile often increases with time after its installation. This phenomenon is called side shear set-up (SSS) effects. Although the phenomenon is common and has been reported by researchers, it is usually not being considered during pile design. Pile testing like maintained load test (MLT) or dynamic pile testing (DPT) is used to justify pile capacity and normally conducted after a certain time frame from installation. Purpose of time allocation before testing is to allow the displaced soil to re-gain its strength. Usually, the time frame depends on the soil type and experiences inherited by the engineer. No detailed study on strength development after the pile testing is currently available. Gaps exist between how the pile gained strength with time and how engineers can incorporate soil/pile set-up effects in pile design. This study aims to summarise some of the work that has been done by researchers in this particular area and further explain the mechanisms of SSS. Some mathematical examples about soil/pile set-up are also presented in this paper. This study can provide comprehensive information on SSS and perhaps can be the platform for future research as well as to enhance current design practice.

Keywords: *driven pile, side shear set-up, mechanism of set-up, set-up factor*