

WICHIN KAEWPUNYA : SOIL PARAMETER FOR PILE CAPACITY AND SETTLEMENT PREDICTION IN TERMS OF SPT(N) VALUE OF SECOND SAND LAYER IN BANGKOK SUBSOIL. THESIS ADVISOR : ASSI. PROF.SURACHAT SAM-BHANDHARAKSA, Ph.D. 319 pp.

Most of the pile foundation design problems are caused by the determinations of suitable soil parameter. Piling method affects the soil properties, causes complicated stress system that can not be simulate in the field or laboratory testing. To compensate these problems back analysis of pile load testdata is made for obtaining parameters for the design. This study concentrates on developing the correlations between the soil parameters ( $N_q$  and  $E_s$ ) for the design of bored pile in the second sand layer and SPT or the working load.

From the study, the relations of the end bearing factor  $N_q$  obtained from 14 bored pile data in second sand layer and the SPT value are shown in equation 1 and 2 for the uncorrected and corrected SPT condition respectively.

$$N_q = 5.14 \exp(0.00563 N) \quad (r^2 = 0.533) \quad (1)$$

$$N_q = 5.25 \exp(0.013 N) \quad (r^2 = 0.395) \quad (2)$$

Relations of the pile soil modulus  $E_s$  and the working load  $P$  are estimated from 42 pile load test data as follows.

$$(i) E_s = 1157 \exp(0.0147P), r^2=0.812 \text{ (driven pile in 1}^{st} \text{ sand)}$$

$$(ii) E_s = 2753 \exp(0.00223P), r^2=0.480 \text{ (bored pile in 1}^{st} \text{ sand)}$$

$$(iii) E_s = 3124 \exp(0.00112P), r^2=0.260 \text{ (bored pile in 2}^{nd} \text{ sand)}$$