

## Effect of Bored Pile Diameter in Sand on Friction Resistance

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**Abstract :** The bored pile friction resistance may be affected by many factors such as the method of construction, pile length and diameter, the soil properties, as well as the depth below ground level. These factors can be represented analytically to study the influence of diameter on the unit skin friction. In this research, the Egyptian Code of soil mechanics is used to assess the skin friction capacity for either the ordinary pile diameter as well as for the large pile diameter. The later is presented in the code and through the work of some researchers based on the results of investigations adopted for a sufficient number of field tests. The comparative results of these researchers with respect to the Egyptian Code are used to check the adequacy of both methods. Based on the results of this study, the traditional static formula adopted for piles of diameter less than 60 cm may be continually used for larger piles by correlating the analyzed formulae. Accordingly, the corresponding modified angle of internal friction is concluded demonstrating a reduction of shear strength due to soil disturbance along the pile shaft. Based on this research the difference between driven piles and bored piles constructed in same soil can be assessed and a better understanding can be evaluated for the effect of different factors on pile skin friction capacity.

**Keywords :** large piles, static formula, friction piles, sandy soils

**Conference Title :** ICSMGE 2015 : International Conference on Soil Mechanics and Geotechnical Engineering

**Conference Location :** New York, United States

**Conference Dates :** June 04-05, 2015