



Effects of Geogrid Layers on Improving Bearing Capacity of Vibrating Machines Foundation

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ABSTRACT

The main aim of this study is an investigating the effect of using geogrid layers in the reinforcement of soil under the foundation to estimate the reaction of industrial machines' foundations under periodic loading based on finite element method using ABAQUS software. Also, the effect of the number of geogrid layers, the effect of depth and width of geogrid, different loading frequencies along with the effect of using geogrid layers on the first to the third modes of frequency values of the soil were evaluated. The results showed that as the number of geogrid layers increases, bearing capacity of foundation rises and the optimum depth of geogrid layers for dynamic mode is equal to 0.6 times the width of the foundation strip. Furthermore, increasing frequency of dynamic load does not lead to a significant change in capacity.

Keywords: *Vibrating machine foundation, Improving, Geogrid, Periodic loading, Bearing capacity.*