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# Numerical Investigation of Geotextile Application in Clay Reinforcement in ABAQUS Software

**Authors :** Seyed Abolhasan Naeini, Eisa Aliagahei

**Abstract :** Today, the use of geosynthetic materials in geotechnical activities is increasing significantly. One of the main uses of these materials is to increase the compressive strength of clay reinforced by geotextile layers. In the present study, the effect of clay reinforcement by geotextile layers in increasing the compressive strength of clay has been investigated using modeling in ABAQUS 6.11.3 software. For this purpose, the modified Drager Prager model has been chosen to simulate the stress-strain behavior of soil layers and the linear elastic model for the geotextile layer. Unreinforced samples and reinforced samples are modeled by geotextile layers (1, 2 and 3 geotextile layers) by software. In order to validate the results, an article in the same field was used and the numerical modeling results were calibrated with the laboratory results. Based on the obtained results, the software has a suitable capability for modeling and the results of the numerical model overlap with the laboratory results to a very acceptable extent, by increasing the number of geotextile layers, the error between the results of the laboratory sample and the software model increases. The highest amount of error is related to the sample reinforced with three layers of geotextile and is 7.3%.

**Keywords :** Abaqus, cap model, clay, geotextile layer, reinforced soil
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