

## عنوان مقاله:

Behavior of prestressed geogrid-reinforced sand bed

## محل انتشار:

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## خلاصه مقاله:

This paper presents numerical investigations on an innovative construction method for reinforced soil structures by geosynthetics called prestressed reinforced soil. Therefore, finite-element analyses are conducted to study the behavior of prestressed geogrid reinforced sand bed supporting a square footing. Model simulation is done in ABAQUS software with dimensions of 12\*12\*6 m to construct 3D media. The parameters investigated are prestressing forces and type of granular soils. Influence of all these parameters on bearing capacity improvement of square footing and its settlement is studied by comparing with model of unreinforced sand. Applying of prestress to the geogrid reinforcement, results in significant improvement to the settlement response and the load-bearing capacity of the foundation. The beneficial effects of prestressed geogrid configuration were evident, in comparison with unreinforced sand bed and reinforced with geogrid (without prestress) counterparts. Based on the finite-element analysis, optimum values of prestressing force for two types of granular soil are discussed and suggested.

## کلمات کلیدی:

finite-element, prestressed reinforced soil, bearing capacity

## لینک ثابت مقاله در پایگاه سیویلیکا:

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