



Numerical Investigation of Nailing Pattern Effect on Nailed Wall Performance

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ABSTRACT: In this paper, the performance of soil nailed walls with various nail patterns has been studied to find an optimum layout based on the deformation criterion. To this end, parametric analysis on soil nailed walls with various nailing patterns was performed. Nine patterns including one uniform and eight variable nails length were considered. For each pattern, parametric analysis on different parameters including wall height, surcharge, nails spacing was done to find an optimum pattern based on the deformation criterion. The simulation results indicate that using the variable layout with long nails at the top of the wall not only reduces the lateral deformation of soil nailed wall but also decreases the density of nails.

Keywords: Deformation, Finite Element, Optimum Pattern, Safety Factor, Soil Nailing.

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