

## Design and Optimization of Soil Nailing Construction

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**Abstract :** The soil nailing is an effective method to stabilize slopes and retaining structures. Consequently, the lateral and vertical displacement of retaining walls are important criteria to evaluate the safety risks of adjacent structures. This paper is devoted to the optimization problems of retaining walls based on ABAQOUS Software. The various parameters such as nail length, orientation, arrangement, horizontal spacing, and bond skin friction, on lateral and vertical displacement of retaining walls are investigated. In order to ensure accuracy, the mobilized shear stress acting around the perimeter of the nail-soil interface is also modeled in ABAQOUS software. The observed trend of results is compared to the previous researches.

**Keywords :** retaining walls, soil nailing, ABAQOUS software, lateral displacement, vertical displacement

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