

## **Design of Soil Replacement under Axial Centric Load Isolated Footing by Limit State Method**

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**Abstract :** Compacted granular fill under shallow foundation is one of the oldest, cheapest, and easiest techniques to improve the soil characteristics to increase the bearing capacity and decrease settlement under footing. There are three main factors affecting the design of soil replacement to gain these advantages. These factors are the type of replaced soil, characteristics, and thickness. The first two factors can be easily determined by laboratory and field control. This paper emphasizes on how to determine the thickness accurately for footing under centric axial load by limit state design method. The advantages of the method are the way of determining the thickness (independent of experience) and it takes into account the replaced and original or underneath soil characteristics and reaches the goals of replaced soils economically.

**Keywords :** design of soil replacement, LSD method, soil replacement, soil improvement

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