

# Design of Foundation for 220 kV Electrical Substation on Black Cotton Soil

Prof. Chetan Chavan<sup>1</sup>, Tejas Yelwande<sup>2</sup>, Abhijit Wandhekar<sup>3</sup>, Rahul Patil<sup>4</sup>, Kshitij Kale<sup>5</sup>

Professor, Department of Civil Engineering <sup>1</sup>

Student, Department of Civil Engineering <sup>2,3,4,5</sup>

Dr. D. Y. Patil Institute of Technology, Pune, Maharashtra, India

**Abstract:** *The design on black cotton soil has always been a difficult task for the engineers because the structure resting on black cotton soil cracks with none warning. Black cotton soil is found in M.P., Karnataka, Maharashtra and Andhra Pradesh in our country. Soil proportion changes depending upon their constituents, i.e. water content, density, bulk density, angle of friction, shear strength etc. With the rapid development in Soil improvement, construction technique and social need various constructions of structure are happening. the likelihood of excellent construction sites to create structures on Black Cotton Soils is difficult because of their poor strength and deformation characteristics. The failures of structure are mostly because of the failure of foundations. Foundation is that the most vital a part of the structure. The strength and sturdiness of any structure depends upon the strength of its foundation. The most objective of this study is to style an appropriate and feasible foundation for the black cotton soil for 220KN electrical substation structure using software analysis. This study discussed during which sort of foundation is suitable for 220KN electrical substation in black cotton soil.*

**Keywords:** Pile Foundation, Reinforcement, Combined Footing, Strength, Design, High Compressible Clay, STAAD Pro.

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