

Influence of Nano Copper Slag in Strength Behavior of Lime Stabilized Soil

Authors : V. K. Stalin, M. Kirithika, K. Shanmugam, K. Tharini

Abstract : Nanotechnology has been widely used in many applications such as medical, electronics, robotics and also in geotechnical engineering area through stabilization of bore holes, grouting etc. In this paper, an attempt is made for understanding the influence of nano copper slag (1%, 2% & 3%) on the index, compaction and UCC strength properties of natural soil (CH type) with and without lime stabilization for immediate and 7 days curing period. Results indicated that upto 1% of Nano copper slag, there is an increment in UC strength of virgin soil and lime stabilised soil. Beyond 1% nano copper slag, there is a steep reduction in UC strength and increase of plasticity both in lime stabilised soil and virgin soil. The effect of lime is found to show more influence on large surface area of nano copper slag in natural soil. For both immediate and curing effect, with 1% of Nano copper slag, the maximum unconfined compressive strength was 38% and 106% higher than that of the virgin soil strength.

Keywords : lime, nano copper slag, SEM, XRD, stabilisation

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