

Durability of Lime Treated Soil Reinforced by Natural Fibre under Bending Force

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Abstract : Earth structures constructed of marine clay soils have tendency to crack. In order to improve the flexural strength and brittleness, a technique of mixing short fibers is introduced to the soil lime mixture. Coir fiber was used in this study as reinforcing elements. An experimental investigation consisting primarily of flexural tensile tests was conducted to examine the influence of coir fibers on the flexural behaviour of the reinforced soils. The test results demonstrated that the coir fibers were effective in improving the flexural strength and young's modulus of all soils were examined and ductility after peak strength for reinforced marine clay soil was treated by lime. 5% lime treated soil and 1% coir fiber reinforced soil specimen's demonstrated good strength and durability when submerged in water and retained 45% of their air-cured strengths.

Keywords : flexural strength, durability, lime, coir fibers, bending force, ductility

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