

# Effect of Bamboo Mat on Clayey Soil Stabilized with Bamboo Leaf

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**Abstract:** *The fast pace of industrialization and urbanization increasing the demand for constructing infrastructure. The land shortage is a primary hassle arising now and it is very important to utilize all of the available land at its maximum extent. Therefore, soil stabilization is a crucial technique to enhance the properties of soil to allow it to the construction. Due to the rising value of synthetic fibres and toxicity of petroleum-based products, the natural fibres have had significant function in soil development. Bamboo is a type of plant and natural resource that have high rate of growth and high yield strength. This paper presents the applicability of randomly distributed natural fibres by conducting an extensive series of experimental investigation carried out on cohesive soil with bamboo leaf and bamboo mat. Bamboo leaves were made to a powdered form and mixed with the soil. 6% addition of bamboo leaf powder is found as the optimum value after experimental investigation. Bamboo mat were used as a reinforcement along with this optimum percentage of bamboo leaf treated soil. Settlement analysis were conducted on natural soil sample, soil reinforced with bamboo mat and soil reinforced with bamboo mat along with powdered bamboo leaf. From comparative study, it is concluded that settlement is lower for bamboo mat reinforced soil treated with optimum percentage of bamboo leaf when compared to natural soil sample and soil reinforced only with bamboo mat.*

**Keywords:** Bamboo leaves, Bamboo mat, Clayey soil, Settlement analysis

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