

Eco-Friendly Preservative Treated Bamboo Culm: Compressive Strength Analysis

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Abstract : Bamboo is extensively used in construction industry. Low durability of bamboo due to fungus infestation and termites attack under storage puts certain constraints for its usage as modern structural material. Looking at many chemical formulations for bamboo treatment leading to severe harmful environment effects, research on eco-friendly preservatives for bamboo treatment has been initiated world-over. In the present studies, eco-friendly preservative for bamboo treatment has been developed. To validate its application for structural purposes, investigation of effect of treatment on compressive strength has been investigated. Neem oil(25%) integrated with copper naphthenate (0.3%) on dilution with kerosene oil impregnated into bamboo culm at 2 bar pressure, has shown weight loss of only 3.15% in soil block analysis method. The results of compressive strength analysis using The results from compressive strength analysis using HEICO Automatic Compression Testing Machine, reveal that preservative treatment has not altered the structural properties of bamboo culms. Compressive strength of control (11.72 N/mm²) and above treated samples (11.71 N/mm²) was found to be comparable.

Keywords : D. strictus, bamboo, neem oil, pressure treatment, compressive strength

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