

Assessment of physical and mechanical properties of cement panel influenced by treated and untreated coconut fiber addition

Abstract

This project was conducted to produce a cement panel the addition of treated and untreated coconut fiber in cement panel. Coconut fiber was added to replace coarse aggregate (sand) in this cement panel. In this project, the ratios used to design the mixture were 1:1:0, 1:0.97:0.03, 1:0.94:0.06, 1:0.91:0.09 (cement: sand: coconut fiber). The water cement ratio was constant at 0.55. The sizes of sample tested were, 160 mm × 40 mm × 40 mm for compression test, and 100 mm × 100 mm × 40 mm for density, moisture content and water absorption tests. After curing samples for 28 days, it was found that the addition of coconut fiber, further increase in compressive strength of cement panel with untreated coconut fiber. Moisture content of cement panel with treated coconut fiber increased with increasing content of coconut fiber whereas water absorption of cement panel with untreated coconut fiber increased with increasing content of coconut fiber. The density of cement panel decreased with the addition of untreated and treated coconut fiber.

Keywords — Cement panel, compressive strength, density, moisture content, treated coconut fiber, water absorption.