

# A Study on the Influence of Oil Palm Trunk Fiber on Ultrasonic Pulse Velocity (UPV) and Shrinkage of Foamcrete

## **Abstract**

Presently there is increasing attention in utilization foamcrete as a lightweight non-structural and semi-structural element in buildings to take advantage of its excellent insulation properties. Though, foamcrete has been noticed to have some disadvantages: considerable brittleness; results in low compressive and flexural strength, poor fracture toughness, poor resistance to crack propagation and low impact strength. Hence this study is intended to look into the potential of oil palm trunk (OPT) fiber in enhancing the engineering properties of foamcrete. There are 2 engineering properties will be focused in this study which are ultrasonic pulse velocity and drying shrinkage. Two densities of foamcrete of 600 kg/m<sup>3</sup>, 1200 kg/m<sup>3</sup> were cast and tested. The ratio of cement, sand and water used in this study was 1:1.5:0.45. OPT fibers were used as additives at 0.15%, 0.30%, 0.45% and 0.60% by volume of the total mix. Test results indicated that the engineering properties of foamcrete reinforced with OPT fiber had amplified thoroughly.

## **Keywords**

Biomass waste; Oil palm fiber; Pundit; Shrinkage; Ultrasonic pulse velocity