

## Utilization of Cocowood for Affordable Engineered Wood Flooring in Sri Lanka

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Coconut wood or Cocowood has a long history of being utilized as a building material in Sri Lanka. Cocowood stem has three major parts from the inner core to outer skin such as; low-density wood, medium density wood and high-density wood based on the moisture content and the fibre bundle patterns. Cocowood is mainly used for roof construction and the utilizations are limited for certain lengths where timber logs less than 4'-0" in length are mostly abandoned in factory processes in Sri Lanka. The high-density stem fibre has properties similar to many hardwood timbers which are majorly used for luxury flooring products while the rest of the stems are under-utilized or used as firewood. Even though the utilization of Cocowood for flooring is practised in the international context, it has not been properly adopted in the local context. The objective of this research is to produce an affordable engineering flooring material that minimizes the material wastage of Cocowood by utilizing the medium density Cocowood stem and abandoned short length hard-density Cocowood logs. The research process identified the efficient use of Cocowood and the practical dimensions for an affordable Cocowood flooring material. Experiments resulted in 0'-6"x 0'-48" sized, ¾" thick, glue-lamed, aesthetically pleasing, engineered Cocowood tile that can be utilized as an alternative economic flooring material. The introduced tile is economical compared to the other timber flooring materials available in the current market.

**Keywords:** *cocowood, building construction, moisture content, density, efficient use, glue-lam, engineered wood, dimensional stability, affordability, colour variation, texture variation*