

## IDENTIFICATION OF JOINT EFFICIENCIES IN 13 mm FINGER JOINTED TIMBER SPECIES USED IN SRI LANKA

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**Abstract:** While using timber in construction and furniture manufacturing industry, waste timber materials and short length sections of timbers which are dumped by sawmills is considered to be matter of concern. Finger joint is a recognized technique connecting two small pieces of waste timber together to ensure sustainable utilization of them. Currently the technique is used in Sri Lanka for making non-structural purposes such as making timber boards and furniture. However, issues related with the strength of the joints are still not fully investigated in Sri Lanka. This study was undertaken to determine the tensile strength performance of both unjointed (clear) and finger-jointed seven timber species with 13 mm finger lengths and 4 mm finger pitch. SWR adhesive (PVA) type was used as bonding material at normal exposure conditions. Well-seasoned Grandis, Jack, Kumbuk, Mahogany, Pine, Satin and Teak timber materials were used for the study.

BS 373: 1957 and BS EN 15497:2014 were used as standards for tests. The tests for tensile properties were performed using Universal Testing Machine (UTM 100 PC) with loading plate moving speed of 01mm/min. Maximum load was read on graph to calculate the ultimate tensile strength.

The highest ultimate average tensile strength values were recorded in control specimens and different joint efficiencies were recorded in different finger jointed species. The highest mean finger joint efficiency percentage was obtained from Mahogany timber species and the least mean finger joint efficiency percentage was recorded in Kumbuk timber species.

**Keywords:** Finger Joint; tensile strength; SWR glue type; joint efficiencies