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Investigation of Properties of Rubber Wood Related to Solid Wood Flooring

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Abstract

A large scale solid wood flooring factory is to be established in Sri Lanka. On the planning stage of this industry it was found that information on wood properties of local timbers such as *Hevea brasiliensis* for wood flooring are not available. Hence, the present study has been conducted to gather data on selected wood properties of Rubber wood and how the wood quality changes with growth rate of trees.

Hevea brasiliensis 35 year old trees were selected from three size classes: suppressed, co-dominant and dominant. Sample disks were removed at top (80%), middle (50%) and breast height of the log length. Radial variations were also studied at percentage distances from pith to bark.

Wood quality was assessed by ring specific gravity. Ring width remained more or less constant from pith towards bark with slight decrease towards the bark indicating the uniform growth rate. However no specific variation was observed in ring specific gravity. This radial variation of growth rate and specific gravity was similar in all three size classes.

Application of Rubber wood as solid wood elements for flooring was experimentally assessed by hardness to loads applied to the wood and specific gravity. The mean specific gravity of suppressed, co-dominant and dominant trees were 0.564, 0.629 and 0.631 respectively indicating that the specific gravity of Rubber wood lies within the required standard for flooring which is 0.5-0.75. In the hardness test, it was observed that all three size classes generally show a gradual increase in hardness from pith towards bark. The values of average hardness of suppressed, co dominant and dominant trees were 341 kgf, 405 kgf and 433 kgf, hence co dominant and dominant trees have hardness values above 400 kgf, the standard value for wood flooring. These results indicate that *Hevea brasiliensis* has wood properties which are within European standard and Indian standard for manufacture of wooden flooring.

Keywords: Rubber wood, Flooring, Specific gravity, Hardness