

## **D-05: Production of cement bonded-particle boards**

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This study was aimed at finding the feasibility of producing cement bonded particle boards using saw mill residues of 3 timber species: Jak (*Artocarpus heterophyllus*), Ginisapu (*Michelia champaca*) and *Eucalyptus grandis*. Wood

chips (planer shavings), Portland cement and water were mixed and pressed using a cold hydraulic press. From each species 4 boards were prepared using 2 particle sizes, particles with and without water soluble extractives, and with or without cement cure accelerator. All boards were tested for density, percentage thickness swelling after 1 h and 24 h immersion in cold water and for nail holding ability.

*E. grandis* was found to be the most suitable species for the production of cement bonded particle boards among the species tested. Density of boards using *M. champaca* was relatively low but the appearance and bonding of particles were good. However, boards prepared from *A. heterophyllus* were unsatisfactory due to the adherence of particles being hindered, most probably due to the presence of high amount of extractives in the wood chips. Field studies showed that cement bonded particle boards prepared in this study was the cheapest among comparable materials, indicating future potential to introduce this material to the Sri Lankan market.