

D-04: Particle board production using Sri Lankan timber species

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The possibility of using waste material such as off cuts and planer shavings from saw mills, in manufacturing particle board (Chipboard), was studied.

Planer shavings of 3 species collected from saw mills were used to manufacture particle boards: Jak (*Artocarpus heterophyllus*), Cashew (*Anacardium occidentale*) and Lunumidella (*Melia dubia*). For each species, 2 particle sizes (larger than 5 mm and between 2 - 5 mm) and boards of 2 densities (750 kg/m³ and 550 kg/m³) were manufactured. Water absorption, thickness, swelling, density and biodeterioration of the boards were measured.

Particle boards were manufactured using a formula consisting of urea formaldehyde, resin, hardener (GLX), water and chips. This formula was developed by initial trials with various combinations of constituents. Boards for initial experiments were manufactured using 2 hot plates as a press. After development of the formula, other boards were manufactured using a laboratory scale hot press.

The best properties (low water absorption, low thickness, swelling, high density and low biodeterioration) were observed in the boards of Jak and these properties were low in Cashew and Lunumidella.