

THE UTILIZATION OF “NAIL-LAM” WOODEN PORTAL FRAMES AS COMPONENTS FOR STRUCTURAL BUILDINGS

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ABSTRACT

The design and utilization of nail-laminated portal frames using *Terminalia superba*, 62.5mm, 75mm, 100mm nails, plywood gusset plates and purlins have proved that “nail-lam” structures are indeed of great significance. Three bays of six columns with rafters have been nail-laminated and the prefabrication with the inclusion of plywood gusset plates have been carried out in the wood workshop. A further advantage is gained by the use of portals and the various sizes of connectors in the design of nail-lam frames with wide spans, 15m and above, which would not require columns in-between. The purchase of materials, fabrication and erection on site was carried out in three days. Nail-lam structural materials are of good potentials, firm and laterally stable, fast and easy to produce in areas where there are no gluing facilities and are structurally adequate.

Keywords: Boom, glu-lam, knee, leg, nail-lam, portal, structural components