Abstract

parallel strand lumber is a new product of the wood engineering products family named several wooden structures. In this research, it was surveyed the mechanical and physical properties of the parallel strand lumber product made of the chips of median axis of palm leaf. Variable factors which have been used in making the product, include press temperature with 160, 170, 200 degrees centigrade and press time about 10, 12, 14 minutes and also proportion of formaldehyde Urea glue to formaldehyde melamine include ratios of 90-10, 80-20, 70-30. It can be considered fixed the Factors like press pressure (70kg square cm), product density (0/9 gram square cm) and usage amount of glue (%10 of the dry weight of fatty materials); so there were 27 treatments and it was made 3 repeats from each treatment. It was surveyed the thickness swelling properties (TS), water absorption (WA), modulus of rupture (MOR), modulus of elasticity (MOE), internal bond (IB), pressure parallel to fibers (PU), sheer strength (TU), screw-holding capacity (SH) of the board. The statistical analysis represented that the independent and interactions between temperature, time and the glue proportion on each other in 0/99 level is significant. It was demonstrated that all surveying physical and mechanical properties of the boards was increased by increasing melamine glue proportion. It wasn't observed a significant difference in water absorption and thickness swelling by increasing press temperature and time. The best function of parallel strand lumber product in thickness swelling resistances, water absorption, modulus of rupture, modulus of elasticity, internal bond, pressure parallel to fibers, sheer strength and screw-holding capacity has been the glue proportion of 70 to 30 formaldehyde Urea to formaldehyde melamine, 160 degree centigrade press temperature and press time of 14 minutes.

Keywords: parallel strand lumber, median axis of palm leaf, several wooden structures

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