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Abstract Book



MEDIUM DENSITY FIBER BOARD FROM RENEWABLE WATER HYACINTH FIBER

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Abstract

Natural fiber of water hyacinth was renewable as reinforcing fiber for preparing a medium density fiber board (MDF). Water hyacinth was washed, ground then treated in NaOH and dried. Urea formaldehyde resin and isocyanate resin were used as binders in MDF. The contents of the binders were varied from 10 wt% to 18 wt%. MDF from water hyacinth and the binder were prepared in 1 mm-thick and 3 mm-thick by hot press machine with a pressure set of 20 bar. The composites sheet properties were characterized by density measurement, moisture contents, swelling and mechanical testing. Density and moisture increased with increasing the binders contents regarding with the thickness. The maximum values of modulus of rupture and modulus of elasticity were found at the binders content of 12 wt%. Overall properties were investigated according to TISI standard No. 966-2547. From the results, MDF from water hyacinth passed through TISI standard. It can be noted that this MDF is possible for preparing as an environmental friendly material for further applying in industries.

Keywords: binder, fiber board, swelling, thickness