Abstract

In this study, the effect of carton powder (microcellulose) as extender on properties medium density fiberboard (MDF) made from MDF waste and bagasse fibers were studied. Ratio of urea formaldehyde resin powder to cartons powder at five levels (100:0, 5/5: 1/98, 97:3, 5/5: 4/95, and 94:6) and Ratio of bagasse fibers to waste MDF at five level (100:0, 98:2, 96:4, 94:6 and 92:8) were used as variables in this study. Temperature of 150 ° C and the pressing time 6 min for all treatments were constant factors. Physical (thickness swelling (TS) and water absorption (WA) after 2 and 24 h immersion in water) and mechanical (internal bonding (IB), modulus of rupture (MOE), modulus of elasticity (MOR)) board According to standard 622-5 EN tested and statistical analysis was performed using SPSS 20 software. The results showed that the cartons powder and MDF waste have a significant effect on the bending strength and modulus of elasticity. With increasing carton powder, internal bonding significantly improved however decreased by MDF waste. Physical properties had proportional trend with MDF waste ratios and higher the MDF waste ratios the lower the water absorption and thickness swelling. Carton powder had not a significant effect on the physical properties of boards and slightly increased the water absorption and thickness swelling.

Keyword: MDF, Bagasse, Carton powder, Waste MDF, Physical and mechanical properties.

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Effect of waste carton powder as extender to urea-formaldehyde resin on properties of MDF made from mixture of bagasse and waste MDF

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