

Impregnation and drying process of bamboo strips treated with low molecular weight phenol formaldehyde (LMwPF) resin

ABSTRACT

Impregnation and drying process of phenolic treated bamboo strips with low molecular weight phenol formaldehyde (LMwPF) resin. A study was under taken to determine an impregnation process and suitable drying duration for phenolic treated bamboo strip at basal and middle portions of *Gigantochloa scortechinii*. The strips were impregnated using vacuum process. After treated with low molecular weight phenol formaldehyde resin (LMwPF) using different duration of soaking, the weight percent gain (WPG) of bamboo strips was measured. The weight percent gain (WPG) of the impregnated *G. scortechinii* (basal and middle portions) increases when longer soaking time. After 150 minutes of soaking, the WPG were 14% and 15% for basal and middle portions, respectively. The specimens were then dried in an oven for 3 to 12 hours at 60°C. The reduction of moisture content (Mc) was plotted in a graph and analyzed. The suitable drying duration for bamboo strips were found to be between 6 to 9 hours. A significant difference ($p < 0.05$) WPG was observed at middle portion but not within the basal portion. Moisture content of bamboo strips reduced with drying duration from average of 20% to 5%. However, the optimum drying duration should not exceed 9 hours after which the samples start to cupping.

Keyword: Bamboo strips; Drying; Impregnation; Low molecular weight phenol formaldehyde