

Adhesion and bonding properties of low molecular weight phenol formaldehyde-treated plybamboo

Abstract

This study investigated the adhesion of bamboo (*Gigantochloa scortechinii*) strips after impregnation with phenolic resin and the effect of curing time on bonding properties of low molecular weight phenol formaldehyde (LMwPF)-treated plybamboo. The optimum pressing time to produce LMwPF-treated plybamboo was also determined. Properties studied included wettability, buffering capacity, shear strength and wood failure. The study showed that phenolic-treated strips had higher contact angle and, thus, were more difficult to be penetrated by liquid compared with untreated strips. Buffering capacity showed that bamboo strip was stable towards acid. Shear bond strength of the plybamboo met the requirement of BS EN 314-1. The study concluded that the optimum pressing times were 22 and 33 min for three- and five-ply plybamboo respectively to produce good glue joints.