

ABSTRACT

Ponco Yulistio. *Effect of phenol formaldehyde adhesive levels in the manufacturing of particleboard bamboo Sembilang on the physical and mechanical properties according to SNI 03-2105-2006* Thesis. Jakarta: Department of Civil Engineering, Faculty of Engineering, University of Jakarta. 2012.

The purpose of this study is to determine the differences in physical and mechanical properties of bamboo particleboard using adhesive levels with the percentage of 6%, 8%, 10% and 12%. This study is also to determine whether the value of testing bamboo particleboard included in the standard particleboard, based on standard testing SNI 03-2105-2006.

This research was conducted in the Laboratory of Research and Development Unit For Biomaterials LIPI Cibinong Bogor. The study was conducted in May and July 2012. Raw materials used in this study are bamboo Sembilang and Phenol Formaldehyde adhesive for manufacturing particleboard adhesive levels 6%, 8%, 10% and 12%. The Physical properties tests were moisture content, thickness swelling, water absorption and density ; while the mechanical properties test were bending (MOE and MOR), internal bond, screw withdrawal. Each test was used 4 samples and total of 144 samples for all test.

The conclusion of this study is the optimum value resulting from testing by SNI 03-2105-2006 namely: moisture content of 8.21% with 10% adhesive content, density of 0.67 g / cm³ with 12% adhesive content, water absorption of 7.23% with adhesive content of 10%, 9.00% Thickness swelling with adhesive content of 12% MOE 22641.93 kg / cm² with a adhesive content of 12%, MOR 145.683 kg / cm² with a adhesive content of 12%, Internal Bond 5.07 kg / cm² with 12% adhesive content, Screw withdrawal 38.22 kgf adhesive content 12%. The values of bamboo particleboard that is moisture content, density, water absorption, Thickness swelling, MOE, MOR, internal bond and screw withdrawal of particle Board fulfil SNI standards.