

**PENGARUH KADAR EKSTENDER DAN WAKTU KEMPA TERHADAP SIFAT FISIS
MEKANIS VBL DENGAN PEREKAT PHENOL FORMAL DEHIDA
(The Effect of Extender Content and Pressing Duration on the Physical and Mechanical
Properties of the LBV assembled using Phenol Formaldehyde Adhesive)**

Oleh/By :

Adi Santoso , Yusuf Sudo Hadi & Raudhah Juliati

Pusat Litbang Keteknikan dan Pengolahan Hasil Hutan, Jl. Gunung Batu No.5 Bogor

Departemen Hasil Hutan, Fahutan IPB, Bogor. Jl. Darmaga, Bogor

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ABSTRACT

The application of bamboo for composite-panel products is still limited. The use of bamboo for laminated bamboo-veneer (LBV) is not yet widely known. As an attempt to diversify bamboo products, research has been implemented about "The Effect of Extender Content and Pressing Duration on the Physical and Mechanical Properties of the resulting LBV assembled using Phenol Formaldehyde (PF) Adhesive. This research aimed to obtain LBV products with qualities that could satisfy or correspond to those of currently-popular composite panel-products..

This research employed rope-type bamboo species as raw material for veneer with size measuring 40 cm x 2 cm x 0,1 cm, further assembled into LBV using PF adhesive. The treatment factors as implemented comprised addition of extender, being wheat flour in 4 levels (contents) i.e. 0%, 2,5%, 5%, and 10% and hot-pressing duration in two levels i.e. 10 and 20 minutes. The resulting assemblies were 15 layered-LBV in all measuring 40 cm x 40 cm x 1,5 cm. The testing on products covered the qualities of PF adhesive and the LBV it self (moisture content and density as physical test, and internal bonding, MOE, MOR and delamination as mechanical test), which referred to the particular standard criteria.

Results revealed that qualities of PF adhesive as synthesized could comply with the standard specification for the corresponding adhesive in the assembling of plywood. Meanwhile, the LBV products assembled from the combined treatment of extender content at 5% and pressing duration for 10 minute could mostly satisfy the standard specification. The qualities of those LBV products, equal to those of plywood panels categorized of the special 80E qualities.

Keywords: Laminated bamboo-veneer (LBV), phenol formaldehyde adhesive, pressing duration, extender content.

ABSTRAK

Aplikasi bambu sebagai panel komposit masih terbatas. Pemanfaatan bambu untuk Laminated Bamboo-Veneer (LBV) belum ditemukan. Dalam rangka diversifikasi produk bambu maka dilakukan penelitian mengenai pengaruh kadar ekstender dan waktu kempa terhadap sifat fisis mekanis venir bambu lamina dengan perekat phenol formaldehida. Penelitian ini bertujuan untuk mendapatkan produk LBV yang kualitasnya memenuhi ataupun setara dengan produk panel komposit yang selama ini telah dikenal.

Penelitian ini menggunakan bambu tali sebagai bahan baku venir berukuran 40 cm x 2 cm x 0,1 cm dengan perekat phenol formaldehida. Faktor perlakuan yang dikenakan yakni penambahan ekstender berupa tepung terigu dengan kadar 0%, 2,5%, 5%, 10% , dan waktu pengempaan panas 10 dan 20 menit. Produk yang dihasilkan berupa LVB 15 lapis berukuran 40 cm x 40 cm x 1,5 cm. Pengujian produk meliputi kualitas perekat dan LVB, masing-masing mengacu pada standar. Hasil penelitian menunjukkan bahwa kualitas perekat PF yang dibuat, memenuhi persyaratan standar perekat PF untuk penggunaan kayu lapis. Produk LVB dengan kombinasi perlakuan kadar ekstender 5% dengan waktu kempa 10 menit sebahagian besar memenuhi persyaratan standar. Kualitas produk LVB tersebut setara dengan panil kayu lapis yang tergolong ke dalam klasifikasi mutu khusus 80E.

Kata kunci: Venir bambu lamina, Phenol Formaldehida, waktu kempa, kadar ekstender.