KEKUATAN DAN KEKAKUAN BALOK LAMINA DARI DUA JENIS KAYU KURANG DIKENAL

The Strength and Stiffness of Glulam made from Two Lesser Known Wood Species

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ABSTRACT

Investigation was undertaken on 3-plies-glulam and 5-plies-glulam measuring 5 x 5 x 120 cm made from Kaya (Khaya senegalensis (Desr.) A. Juss) and Bipa (Pterygota alata (Roxb.) R. Br.) using phenol resorcinol formaldehyde (PRF) adhesive. Stiffness of each laminate was determined prior to assembling. The glulam was then constructed with the stiffer laminates were positioned at the surface of the board. Results revealed that density of the 3-plies-glulam was higher than density of solid wood and the 5-plies-glulam. The averages of MOE, MOR, and MCS of 5-plies-glulam were higher than those of the 3-plies-glulam. MOE, MOR, and MCS of Kaya were higher than those of Bipa. Strength quality of the 3 and 5-plies-glulam were comparable with the classified strength of class III – II.

Keywords : Strength, stiffness, glulam.

ABSTRAK

Balok lamina 3 dan 5 lapis berukuran 5cm x 5cm x 120 cm yang dibuat dari kayu Kaya (Khaya senegalensis (Desr.) A. Juss) dan kayu Bipa (Pterygota alata (Roxb.) R.Br.) dengan perekat phenol formadehida (PF) telah diuji sifat fisik dan mekaniknya di Pusat Penelitian dan Pengembangan Teknologi Hasil Hutan Bogor. Susunan pelaminasinya didasarkan pada nilai kekakuan (E) dari bilah penyusunnya. 2 Hasil Penelitian menunjukkan bahwa kerapatan balok lamina 3 lapis lebih besar dari balok lamina 5 lapis maupun kayu solidnya. Rata-rata MOE, MOR dan MCS kayu Kaya lebih besar dari kayu Bipa. Balok lamina 3 lapis maupun 5 lapis setara dengan kelas kuat III – II.

Kata kunci : Kekuatan, kekakuan, balok lamina.