

## **SIFAT *BLOCKBOARD* MAHONI (*Swietenia mahogani*) DENGAN VARIASI KADAR *HARDENER* DAN PERLAKUAN SAMBUNGAN**

Oleh :

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### **INTISARI**

Limbah kayu Mahoni dari sisa pengolahan kayu cukup melimpah dan menjadi limbah tak terolah yang hanya dibakar. Oleh sebab itu diperlukan alternatif pemanfaatan limbah pengolahan kayu dijadikan produk yang dapat memiliki nilai guna dan jual, salah satunya dengan pembuatan *blockboard*. Perekat Phenol formaldehyde (PF) merupakan perekat eksterior yang cukup kuat untuk *blockboard*. Penelitian ini terbagi menjadi 2 sub penelitian, yang pertama bertujuan untuk menganalisis sifat *blockboard* Mahoni dengan variasi *hardener* PF (4%, 8%, dan 12%) diulang tiga kali. Sub penelitian kedua untuk membandingkan sifat *blockboard* Mahoni antara inti dengan sambungan dan utuh diulang tiga kali. Ukuran *blockboard* yang dibuat yaitu 20cm×40cm×2cm. Pengujian sifat fisis dan mekanis *blockboard* mengikuti standar ASTM D 143-94. Rancangan penelitian dengan rancangan acak lengkap pada sub penelitian pertama dan uji perbandingan pada sub penelitian kedua. Pada sub penelitian pertama hasil menunjukkan tidak berbeda nyata. Nilai rata-rata kadar air, delaminasi, MoE, MoR dan keteguhan rekat secara berurutan adalah 12,2%, 0,44 Gpa, 513,36 Kgf/cm<sup>2</sup>, dan 18,2 Mpa. Hasil sub penelitian kedua menunjukkan uji perbandingan antara inti sambungan dan utuh tidak berbeda nyata. Nilai rata-rata kadar air, delaminasi, MoE, MoR dan keteguhan rekat dari *blockboard* utuh secara berurutan adalah 11,8%, 8,7%, 0,47 Gpa, 526,9 Kgf/cm<sup>2</sup> dan 17,2 Mpa. Nilai rata-rata kadar air, delaminasi, MoE, MoR dan keteguhan rekat dari *blockboard* sambungan secara berurutan adalah 12,2%, 11,5%, 0,46 Gpa, 526,9 Kgf/cm<sup>2</sup> dan 335,7 Mpa. Hasil penelitian menunjukkan bahwa *blockboard* Mahoni memenuhi standar yang ditentukan.

Kata Kunci: Papan blok, *Blockboard*, Mahoni, Perekatan Mahoni, Phenol formaldehyde, *Hardener*

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## PROPERTIES OF MAHOGANY BLOCKBOARD (*Swietenia mahogani*) WITH HARDENER LEVELS VARIATION AND JOINT TREATMENT

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### ABSTRACT

Mahogany wood waste from the rest of the wood processing is quite abundant and becomes untreated waste that is only burned. Therefore, its necessary to use alternative wood waste to used as a product that can have use and sale value, such as by making blockboard. Phenol formaldehyde (PF) is an exterior adhesive that is strong enough for blockboard. This research is divided into 2 sub-researches, the first is to analyze the Mahogany blockboard properties with PF hardener variations (4%, 8%, and 12%) repeated three times. The second sub-research is to compare of Mahogany blockboard properties between core with joints treatment and intact core was repeated three times. The blockboard size made is 20cm × 40cm × 2cm. Testing of physical and mechanical properties of the blockboard follows ASTM D 143-94 standards. The design of the research with completely randomized design (CRD) in the first sub-research and comparison test in the second sub-research. The first sub-research the results show no significant difference. The average values of moisture content, delamination, MoE, MoR and internal bonding in sequence were 12.2%, 0.44 Gpa, 513.36 Kgf/cm<sup>2</sup>, and 18.2 Mpa. The results of the second sub-research showed that the comparison test between the joints core and the intact core was not significantly different. The average values of moisture content, delamination, MoE, MoR and internal bonding of the intact core blockboard in sequence were 11.8%, 8.7%, 0.47 Gpa, 526.9 Kgf/cm<sup>2</sup> and 17.2 Mpa. The average values of moisture content, delamination, MoE, MoR and internal bonding of joints core blockboard in sequence were 12.2%, 11.5%, 0.46 Gpa, 526.9 Kgf/cm<sup>2</sup> and 335.7 Mpa. The results showed that the Mahogany blockboard met the specified standards.

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Keywords: Blockboard, Mahogany, Mahogany addition, Phenol formaldehyde, Hardener

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