

**SIFAT PAPAN BLOK SENGON DENGAN VENIR SILANG
KAYU TUSAM**

(The properties of sengon blockboard with cross core layer from tusam wood)

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ABSTRACT

Experimental blockboards (5-ply) were made of sengon wood (*Paraserianthes falcataria*) and tusam wood (*Pinus merkusii*) glued with urea formaldehyde. The core and outer layers made of sengon wood while the cross core layer made of tusam wood. Thickness of veneers were 2 mm for face and back layers (outer layer) and 3 mm for cross core layer. The dimension of strip (core layer) divided into two different thickness (1 cm and 1,5 cm) and three different width (0.7 cm; 2.5 cm and 7.6 cm). The blokboard properties were tested according to the Indonesian Standard (SNI) included moisture content, density, bonding strength and delamination. The bending strength of blockboard was tested according to the Germany Standard (DIN) while the dimension expansion of blockboard was tested according to the American Standard (ASTM). The objective of this study was to determine the effect of the strip dimension on the properties of sengon blockboard with cross core layer from tusam wood.

The results revealed that the average moisture content of blockboard was 12% while the average density of blockboard was 0.42 g/cm³. The width of strip affected the thickness swelling and width expansion of blockboard. Thickness of strip affected the width expansion of blockboard however did not affected the thickness swelling and length expansion of blockboard. The moisture resistant bonding strength of blockboard based on tensile shear strength and delamination tests met the SNI requirement. The bending strength of sengon blockboard increased by 6.2% (parallel to grain) and 18.6% (perpendicular to grain) respectively when using tusam wood as the cross core layer of sengon blockboard. The bending strength parallel to grain of sengon blockboard with cross core layer of tusam wood met the DIN standard requirement.

Keywords: Sengon, tusam, cross core layer, blockboard

ABSTRAK

Papan blok (5 lapis) sekala laboratorium dibuat dari kayu sengon (*Paraserianthes falcataria*) dan kayu tusam (*Pinus merkusii*) yang direkat dengan perekat urea formaldehida. Venir luar dan bilah inti papan blok terbuat dari kayu sengon sedangkan venir silang terbuat dari kayu tusam. Tebal venir luar 2 mm sedangkan tebal venir silang 3 mm. Ukuran bilah inti terdiri dari dua macam ketebalan (1 cm dan 1,5 cm) dan 3 macam lebar (0,7 mc, 2,5 cm dan 7,6 cm). Sifat papan blok diuji menurut Standar Indonesia (SNI) meliputi kadar air, kerapatan, keteguhan rekat dan delaminasi. Pengujian keteguhan lentur papan blok dilakukan menurut Standar Jerman (DIN) sedangkan pengujian pengembangan dimensi papan blok dilakukan menurut Standar Amerika (ASTM). Tujuan penelitian ini adalah untuk mengetahui pengaruh ukuran bilah inti terhadap sifat papan blok sengon dengan venir silang kayu tusam. Hasil penelitian

menunjukkan bahwa kadar air rata-rata papan blok adalah 12% sedangkan kerapatan rata-rata papan blok adalah 0,42 g/cm³. Lebar bilah inti berpengaruh terhadap pengembangan tebal dan pengembangan lebar papan blok. Tebal bilah inti berpengaruh terhadap pengembangan lebar papan blok tetapi tidak berpengaruh terhadap pengembangan tebal dan pengembangan panjang papan blok. Keteguhan rekat papan blok yang diuji berdasarkan uji geser tarik dan uji delaminasi memenuhi persyaratan Standar Indonesia (SNI). Penggunaan venir silang kayu tusam dalam pembuatan papan blok sengon meningkatkan keteguhan lentur sebesar 6,2% pada arah sejajar serat dan 18,6% pada arah tegak lurus serat. Keteguhan lentur sejajar serat papan blok sengon yang dibuat dengan menggunakan venir silang kayu tusam semuanya memenuhi persyaratan Standar Jerman (DIN).

Kata kunci : Sengon, tusam, venir silang, papan blok