Pengaruh Jumlah Perekat UF dan Tebal Venir Muka-belakang Terhadap Emisi Formaldehida dan Delaminasi, Pada Kayu Lapis Jati (*Tectona grandis* L.f) Inti Papan Sengon (*Paraserianthes falcataria* (L) Nielsen)

Oleh:
Didin Hartoyo[1], T.A. Prayitno [2]

INTISARI

Bahan baku kayu yang berkualitas jumlahnya semakin berkurang dan harganya juga mahal, sehingga juga perlu dicari altrnatif penggunaan bahan baku yang murah tetapi produk yang dihasilkan tetap berkualitas, yaitu dengan membuat kayu lapis jati inti papan sengon. Standar untuk produk kayu lapis selain mempersyaratkan keteguhan rekat (delaminasi) dan kadar air juga mempersyaratkan kadar emisi formaldehida, sehingga pada penelitian ini dilakukan pengujian emisi formaldehida, delaminasi, cacat tembus dan kadar air kayu lapis.

Bahan penelitian berupa kayu sengon asal Klaten, venir sayat kayu jati dari IPKJ Cepu, perekat urea formaldehida tipe UA-125 dari PAI Probolinggo, dan bahan kimia untuk uji emisi formaldehida yang diperoleh dari Yogyakarta. Penelitian ini menggunakan rancangan acak lengkap dengan percobaan faktorial yang terdiri dari dua faktor yaitu jumlah perekat (20 #/MSGL, 30 #/MSGL, 40 #/MSGL) dan tebal venir (0,3 mm dan 0,6 mm).

Hasil penelitian menunjukkan bahwa interaksi antara faktor jumlah perekat dan tebal venir tidak berpengaruh nyata terhadap semua parameter yang diamati. Faktor tunggal jumlah perekat berpengaruh nyata terhadap nilai emisi formaldehida, kadar air, berat jenis, dan cacat tembus akan tetapi tidak berpengaruh nyata terhadap nilai delaminasi. Nilai emisi formaldehida, kadar air, berat jenis, dan cacat tembus meningkat seiring dengan meningkatnya jumlah perekat yang digunakan. Nilai emisi formaldehida kayu lapis dengan jumlah perekat 20 #/MSGL; 30 #/MSGL; dan 40 #/MSGL berturut-turut adalah 0,185 µg/ml, 0,927 µg/ml, 2,312 µg/ml, nilai kadar air: 11,47 %; 12,04 %; dan 12,31 %, nilai berat jenis: 0,37; 0,36; dan 0,39, sedangkan nilai cacat tembusnya adalah: 0 %; 12,43%; dan 35,78%. Faktor tunggal tebal venir tidak berpengaruh nyata terhadap semua parameter yang diuji kecuali nilai cacat tembus. Makin tebal venir yang digunakan, maka tebal nilai cacat tembusnya makin rendah. Nilai cacat tembus dengan tebal venir 0,3 mm dan 0,6 mm berturut-turut adalah: 24,36 % dan 7,79 %.

Kata kunci : kayu lapis, venir, jumlah perekat, tebal venir, urea formaldehida, emisi formaldehida, delaminasi

[1]Mahasiswa jurusan Teknologi Hasil Hutan Fakultas Kehutanan UGM
[2]Staf pengajar jurusan Teknologi Hasil Hutan Fakultas Kehutanan UGM

The Influence of the Amount of UF Adhesive and the Thickness of the Back-Face of Veneer toward the Formaldehyde Emission and Delamination on Sengon Board Centered (*Paraserianthes falcataria* (L) Nielsen) Teak Plywood (*Tectona grandis* L.f)

By:
Didin Hartoyo[1], T.A. Prayitno[2]

ABSTRACT

Since high quality raw material woods are getting rare and expensive in price, another alternative material that is cheaper but still gives a qualified product is Sengon Board Centered Teak Plywood. A standard plywood product requires not only a high bonding strength (delamination) and a standard water level but also requires the formaldehyde emission level, thus this research employs formaldehyde emission test, delamination test, leakage and plywood water level test.

The research materials are Sengon wood from Klaten regency, teak slice veneer from IPKJ Cepu regency, UA-125 type urea formaldehyde adhesive from PAI Probolinggo regency, and chemical material from Yogyakarta province which is used to test the formaldehyde emission. This research is using the random structured method and fully equipped with factorial experiment consists of two factors, they are the amount of the adhesive (20 #/MSGL, 30 #/MSGL, 40 #/MSGL) and the thickness of the veneer (0.3 mm and 0.6 mm).

The findings show that the interaction between the amount of the adhesive factor and the thickness of the veneer factor is not affecting obviously toward all observed parameters. The single factor of the adhesive amount obviously influences the formaldehyde emission value, the water content, the specific gravity, and the leakage level but did not influence obviously to the value of the delamination. The value of the formaldehyde emission, the water content, the specific gravity, and the leakage is increasing in line with the increasing of the amount of the adhesive used. The values of the plywood formaldehyde emission on 20 #/MSGL; 30 #/MSGL; and 40 #/MSGL of adhesive amount, consecutively, are: 0.185 µg/ml; 0.927 µg/ml; 2.312 µg/ml, the values of the water content are: 11.47%; 12.04%; and 12.31%, the values of the specific gravity are: 0.37; 0.36; and 0.39, and the values of the leakage level are: 0%; 12.43%; and 35.78%. The single factor of the thickness of the veneer did not influence obviously to the observed parameters except to the leakage value of the plywood. The thicker the veneer used the lower the value of the plywood leakage produced. The values of the leakage level on 0.3 mm and 0.6 mm of veneer thickness are 24.36% and 7.79%.

Key words: *plywood, veneer, adhesive amount, veneer thickness, urea formaldehyde, formaldehyde emission, delamination.*

[1] A student at Technology of Forest Product Department. Faculty of Forestry, Gadjah Mada University
[2] A teacher at Technology of Forest Product Department. Faculty of Forestry, Gadjah Mada University