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SEMINAR NASIONAL SAINS DAN TEKNOLOGI III

"Peran Strategis Sains dan Teknologi
Dalam Mencapai Kemandirian Bangsa"

Universitas Lampung, 18 -19 Oktober 2010



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SOME PROPERTIES OF ORIENTED STRAND BOARD MADE FROM TROPICAL FAST GROWING TREE SPECIES

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ABSTRACT

Three layers oriented strand boards (OSB) bonded with methylene diphenyl isocyanate resin were produced with the core layer orientation perpendicular to the face and back layers. Nine strand combinations from *Maesopsis eminii* (M), *Paraserianthes falcataria* (S), and *Acacia mangium* (A) were manufactured, namely MMM, MSM, MAM, SSS, SMS, SAS, AAA, AMA, and ASA. The results indicated that strand combination affected some properties of the board. OSB manufactured from wood with lower density had low dimensional stability, mixing with strands from higher density woods significantly improved dimensional stability of the board. On the other hand, OSB manufactured from higher density had low modulus of elasticity and modulus of rupture values due to low compression ratio, the values increased by mixing strands with lower density woods. Physical and mechanical properties of OSB made from mixed fast growing tree species met the requirement of CSA 5908 (2003) standard. The results showed the feasibility of using wood strands of mixed fast growing tree species from planted forests for OSB manufacturing, which is important to qualify appropriate raw material supply for the board industry.

Keyword : *OSB; Fast Growing Tree Species; Strand Combination.*

I. Introduction

The ability of forest to supply high quality of wood has kept decreasing in line with the decrease of forest area. In 2000-2005, the world suffered a net loss of some 37 million ha of forest (FAO 2006). On the other hand, demand on wood as structural components has kept increasing. Globally, wood consumption in 1990 was 0.32 m³ per person per year (Rice 1995), and it has increased by 2001 to 0.55 m³ per person per year (FAO 2001). In Indonesia, the total wood supply was around 31.49 million m³ in the year 2007, consisting of log from natural forest at 6.44 million m³, timber utilization concession at 3.06 million m³, industrial plantation forest at 20.61 million m³, state-owned enterprise at 48.03

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