ABSTRAK

Penelitian ini bertujuan untuk mengetahui sifat fisik dan sifat mekanik papan komposit (kerapatan, kadar air, pengembangan tebal, modulus elastisitas dan modulus patah) dari bahan serabut kelapa dan limbah plastik PET *polyethylene etilen terephalate* dengan mengacu pada standar SNI 03-2105-2006 dengan empat perbandingan komposisi serabut kelapa : plastik PET : resin yukalac 157 (0:0:100; 5:5:90; 10:10:80; dan 20:20:60) %. Penelitian ini dilakukan dengan memvariasikan komposisi antara serabut kelapa, plastik PET dan resin yukalac 157, Selanjutnya dilakukan pengujian terhadap sifat fisik dan sifat mekanik papan komposit, parameter pengujian yaitu kerapatan, kadar air, pengembangan tebal, modulus of elasticity (MOE) dan modulus of repture (MOR). Dari hasil pengujian diperoleh nilai kerapatan berkisar antara 1,1026 samapai 1,1419 gr/cm³, kadar air berkisar antara 0,7379 sampai 2,3597 %, pengembangan tebal berkisar antara 0,326 sampai 0,602 %, modulus elastisitas berkisar antara 5.566,71 sampai 34.317,48 kgf/cm², dan modulus patah berkisar antara 153,34 kgf/cm² sampai 447,02 kgf/cm². Kesimpulan dari hasil pengujian yang dilakukan bahwa semakin banyak penambahan serat serabut kelapa dan plastik PET maka sifat fisik dan sifat mekaniknya semakin baik, secara umum papan komposit yang dihasilkan telah memenuhi standar SNI 03-2105-2006 kecuali pada kerapatan.

Kata kunci : Papan Komposit, Kelapa, Plastik PET, Resin, MOE dan MOR.

ABSTRACT

This study aims to determine the physical and mechanical properties of composite board (density, moisture content, thickness swelling, elastic modulus and fracture modulus) of coconut fiber and PET polyethylene ethylene terephalate plastic waste by referring to the standard SNI 03-2105-2006 with four Comparison of coconut fiber composition: PET plastic: 157 yukalac resin (0: 0: 100; 5: 5: 90; 10:10:80; and 20:20:60)%. This research was conducted by varying the composition of coconut fiber, PET plastic and yukalac 157 resin. Furthermore, testing the physical and mechanical properties of the composite board, the test parameters were density, moisture content, thickness swelling, modulus of elasticity (MOE) and modulus of repture. (MOR). From the test results, it was found that the density value ranged from 1.1026 to 1.1419 g / cm^3, the moisture content ranged from 0.7379 to 2.3597%, thickness development ranged from 0.326 to 0.602%, the modulus of elasticity ranged from 5,566.71 to 34,317 , 48 kgf / cm^2, and the fracture modulus ranged from 153.34 kgf / cm^2 to 447.02 kgf / cm^2. The conclusion from the results of the tests conducted is that the more coconut fiber and PET plastic are added, the better the physical and mechanical properties are, in general the resulting composite board meets SNI 03-2105-2006 standards except for density.

Keywords : Composite Board, Coconut, PET Plastic, Resin, MOE and MOR.