

**“ANALYSIS OF THE EFFECT OF FRACTION VOLUME OF POWDER
BAGASSE AND SENGON WOOD ON POLYESTER BINDING PARTICLE
COMPOSITES IN APPLICATION”**

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ABSTRACT

Composites made from wood and natural fibers have various advantages, namely being more environmentally friendly, good technical performance, and good renewable properties compared to synthetic fibers that are commonly used. The combination of bagasse powder and sengon wood is an effort to meet SNI 03-2105-2006 standards as particle board. The composite used was made from bagasse powder and sengon wood with alkalization treatment using NaOH solution with a concentration of 5%, then a mixture of sengon wood powder and bagasse and polyester, printed using the compression molding method. This study will examine the mechanical properties in the form of bending testing, tensile strength testing perpendicular to the surface, and SEM, with variations of sugarcane powder and sengon wood with a composition of 60%: 0%, 40%: 20%, 30%: 30%, 20%: 40% and 0% : 60%. The average value of the modulus of elasticity (MOE), the first variation the average value of 27.30 kgf/cm². The second variation of the average value is 119.14 kgf/cm². The third variation of the average value is 117.61 kgf/cm². The fourth variable has an average value of 171.61 kgf/cm². The fifth variation has an average value of 256.73 kgf/cm², with an SNI standard value of 20,400 kgf/cm². The average value of the modulus of rupture (MOR) for the first variation has an average value of 13.93 kgf/cm². The variation of the two values is 47.28 kgf/cm². In the third variable, the value is 22.79 kgf/cm². The fourth variation obtained an average value of 44.71 kgf/cm². The fifth variation has an average value of 69.95 kgf/cm², with an SNI standard value of 82 kgf/cm². The average value of the internal bond (IB), the first variation of the yield is 8.38 kgf/cm². the second variation of the average yield of 9.25 kgf/cm². the third variation of the average value of 6.81 kgf/cm². the fourth variable has an average value of 7.65 kgf/cm². In the fifth variable the average value is 9.52 kgf/cm², with the SNI standard value of 3.1 kgf/cm².

Keywords : Composite, Sugarcane Bagasse, Sengon Wood, Particle Board.