

# ***ANALYSIS OF WEAR RATE AND WORKING TEMPERATURE OF BRAKE PADS MADE FROM SENGON WOOD POWDER COMPOSITE WITH VARIATIONS OF FORMATION PRESSURE***

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## ***ABSTRACT***

*Brakes are an important part of a vehicle to stop or slow down the vehicle. The basic material for brake linings in general is asbestos. Asbestos can affect health if the fibers are inhaled, so materials are selected that replace the use of dangerous materials such as asbestos and replace more natural materials. This research is to analyze the effect of variations in forming pressure and material composition on the coefficient of friction, wear rate and working temperature. The composition of the composite material used is polyurethane glue: wood powder: aluminum powder: carbon powder, namely 40gr:10gr:40gr:10gr; 40gr:15gr:30gr:15gr ; 40gr:20gr:20gr:20gr. The variations in forming pressure used are 200 kg and 400 kg. The highest friction coefficient test results were for composition 3 with a forming pressure of 200 kg with values (0.438 and 0.484 for left and right). The lowest wear value was in composition 3 with a forming pressure of 400 kg with a value of  $1.79 \times 10^{-6}$  gram/mm<sup>2</sup>·sec for the left side and  $1.62 \times 10^{-6}$  gram/mm<sup>2</sup>·sec for the right side. From the testing, the highest working temperature was on the comparison lining with a value of 123.4°C for the left lining and 124.1°C for the right lining. Meanwhile, the lowest working temperature value was composition 3 with a forming pressure of 400 kg with a value of 58.6°C for the left lining and 61°C for the right lining.*

**Keywords:** *Brake lining, composite, friction coefficient, wear, temperature*