The Effect of Adding Rice Husk Ash as a Filler on the Wear and Hardness Properties of Brake Pads Made from Teak Wood Powder Waste Composite

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ABSTRACT

Brake pads are the most important part in the motor vehicle braking system. Standard brake linings generally use asbestos as the main component. This asbestos material is not environmentally friendly and can pollute the surrounding air, which ultimately disrupts human respiratory health. After realizing the dangers posed by abestos materials, efforts emerged to create new brake linings made from composite materials. This research uses experimental methods by varying the composition. The hope is that the test results will reach a quality level that is almost the same as standard brake linings and to minimize excess friction during braking. In this study, the highest average wear rate for brake lining specimens was lining B at 3.95x10-7 gr/s.mm2, lining C at 3.74x10-7 gr/s.mm2, and lining A had the lowest wear value. with a value of 3.47x10-7 gr/s.mm2. Lining specimen A with a material percentage of 2.5 grams of teak wood powder, 7.5 grams of rice husk ash, 7.5 grams of polyurethane resin type A and 7.5 grams B, with an average hardness value of 70 HD which is closest to the hardness value standard canvas with a value of 85 HD. From this discussion it can be concluded that each ingredient used in the composition has a different role, and the addition and mixture percentage of each ingredient has a significant impact on the test results.

Keywords: *Brake lining, teak wood powder, husk ash, polyurethane resin, wear rate, shore durometer hardness test.*