Hardness and Friction Coefficient on Motorcycle Disc Brake Pads Made from Poliymer Matrix Composite

Preceptor (Dicky Adi Tyagita, S.T., M.T)

Dony Indra Maulana
Study program of Automotive Engineering
Majoring of Engineering

ABSTRACT

Non-asbestos brake pads have three complementary materials such as binders stuff using epoxy resin, fiber materials using Aluminum and coconut shell charcoal, and fillers from brake pads made from a polymer matrix composite using cocopeat to make them more environmentally friendly. In this study, A-lined specimens with a percentage of ingredients of 10% Al, 5% coconut shell charcoal, 15% cocopeat, and 70% epoxy resin, has the highest average hardness values were 61,6 HSD. On the canvas specimen C, after testing the wear rate for 5,10,15 minutes, has the highest of average a successive wear rate value of 1,64256 x 10^{-7} gr/s.mm^2, 1,73381 x 10^{-7} gr/s.mm^2, 1,46005 x 10^{-7} gr/s.mm^2 and coefficient from wear of canvas C in a row is 2,2384 x 10^{-10}, 1,2591 x 10^{-10}, and the closest to coefficient from wear of Manufacturer canvas in a row is 1,31179 x 10^{-10}, 8,74525 x 10^{-11}, 1,02028 x 10^{-10}. So it can be concluded that percentage of epoxy resin affects the hardness value and the percentage of fiber affect the wear rate value, volume of wear and the wear coefficient of a specimen.

Keyword : *Cocopeat, coconut shell charcoal, epoxy resin, wear rate, shore durometer.*