

***SAMPLE DESIGN OF EBONITE PROTOTYPE MADE FROM NATURAL RUBBER WITH STRAW REINFORCEMENT FOR AUTOMOTIVE COMPONENTS OF MOTORCYCLE EXHAUST COVER***

*by*

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***ABSTRACT***

This study aims to modify the compound formula with the utilization of natural rubber as a matrix with Reinforce Rice Straw Carbon (RRSC) of automotive products, with variations of a mixture of RRSC 0 phr, 20 phr, 40 phr and ebonite industry, therefore will be applied to the manufacture of motorcycle exhaust cover. In addition of RRSC will increase the strength, ductility and toughness of the exhaust cover sample product as well as can be a further development to find out other characteristics. The results of the study showed that the average tensile test value for breaking stress was 8,64 N/mm<sup>2</sup> in 0 phr carbon variation, 7,67 N/mm<sup>2</sup> in 20 phr carbon variation, 6,17 N/mm<sup>2</sup> in 40 phr carbon variation and ebonite industry have a strength 45,48 N/mm<sup>2</sup>. However, the value of break extension characteristic was 1,33% in 0 carbon variation, 1,16% in 20 phr carbon variation, 0,79% in 40 phr carbon variation and the ebonite industry have an extension of 0,01%. The impact test have an average value of 0,024J/mm<sup>2</sup> in 0 phr carbon variation, 0,028J/mm<sup>2</sup> in 20 phr carbon variation, 0,035 J/mm<sup>2</sup> in 40 phr carbon variation and the ebonite industrial have an impact 0,022 J/mm<sup>2</sup>. The conclusion of this research was from all of the tests that carried out, the results of the exhaust cover sample with a mixture of RRSC 0 phr, 20 phr and 40 phr, more flexible than ebonite industry in the all variant.

***Keywords:*** *Natural Rubber, exhaust cover sample, Compound Rubber*