

Noise and Temperature Silencers Made from Coconut Fiber and Hemp Fiber in the Muffler of Motor Matic Variations

by

Afitra Deika Hendri Widiyanto

*Study Program of Automotive Engineering, Majoring of Engineering
The State Polytechnic of Jember*

ABSTRACT

This research was conducted to determine the process of making silencers made from coconut fiber and hemp fiber which are applied to the exhaust of automatic motorbike variations, to determine the noise level and temperature of the exhaust using glasswool fiber and standard glasswool. In this study using experimental methods. The results of the noise level (dB) test at rpm 1500 max were found in coconut fibers, which were 71.8 dB. The percentage reduction in noise level was achieved in glasswool coconut fiber fiber at 3000 rpm, which was 6.76% with a noise level of 78.6 dB. This value is below the noise threshold set by PERMEN LHK No. 56 of 2019. At a good temperature (°C) max is found in glasswool coconut fiber fiber, namely 47.2°C at the initial temperature of the exhaust silencer and 30.8°C of the final temperature of the silencer exhaust. The lowest average increase in exhaust temperature was -8.9 (°C/minute) at 1500 rpm engine speed on coconut fiber glasswool. The biggest temperature percentage decrease at 2000 rpm is 76.4%, with an average temperature increase of -14.7 (°C/minute). So it can be concluded that the use of coconut fiber glasswool is more for optimal sound and temperature absorption, compared to the use of standard glasswool which produces high sound noise and temperature. This value exceeds the threshold set by PERMEN LHK No 56 of 2019.

Keywords: *Noise, Temperature, Glasswool Coconut fiber and hemp, variation exhaust*