

**PENGARUH UKURAN *MESH* PASIR SILIKA PADA PROSES
SANDBLASTING TERHADAP KEKERASAN DAN STRUKTUR MIKRO
BAJA HSS**

Princes Eomevia Rozierlyn
Program Study of Automotive Engineering
Department of Engineering

ABSTRACT

This study aims to analyze the effect of silica sand mesh size variations in the sandblasting process on the hardness and microstructure of High Speed Steel (HSS). The experimental method was used with mesh sizes of 50, 80, and 100, applying a pressure of 7 bar, a spraying time of 20 seconds, and a spraying angle of 90°. The results showed that sandblasting increased the hardness from 717.4 HVN to a maximum of 859.9 HVN at 50 mesh, while the lowest value was 799.5 HVN at 100 mesh. Larger abrasive particles produced higher impact energy, leading to greater plastic deformation. Microstructural observations indicated grain refinement, plastic deformation, and increased carbide density on the surface layer, with the most significant changes at 50 mesh. It can be concluded that mesh size variation significantly affects the hardness and microstructure of HSS, where coarser mesh provides a greater effect.

Keyword: *Sandblasting, Hss steel, Mesh size, Vickers hardness, Microstructure.*