

Performance study of tip tools made from special electrodes for lathe tools at various machining parameter variations

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ABSTRACT

This study aims to determine the performance of engineered lathe tools made from special electrodes. This engineering tool is in the form of a patch (tip tool) between a standard ISO tool holder measuring 16mm x 16mm and a special electrode as a paste tool. This engineered chisel will be known how much its wear resistance is and will also be known if the chisel is used to cut mild steel.

The research method using experiments, instruments that will be used in the research tool wear gauge, surface roughness gauge, digital dial indicator and electric welding generator. The experimental material used uses a special electrode made by BOHLER which is FOX WA 12 and FOX SS Mo 2. The workpiece material used to determine wear and product quality is mild steel.

The results showed that FoxSS chisels were more wear resistant than HSS chisels in all existing feeding variations. In addition, FoxSS chisels have better wear resistance than HSS, however, at a thin depth of cut, HSS has better wear resistance, so it is suggested that FoxSS is suitable for roughing work (with a thick depth of cut). FoxSS chisels can achieve the best roughness compared to FoxWA and HSS chisels in both feeding and depth of cut variations.

Kata Kunci: *surface roughness, tooltip, wear resistance, cutting tool with special material*