

The Performance of High Speed Steel Cutting Tools Prepared from Conventional Steel AISI M-2 and PM Steel AISI T-15

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The use of sintered high speed steels has continuously grown, due to its better performance compared with those produced by the conventional process. This paper presents experimental results related to the machining performance of cutting tools (bits), prepared from Conventional Steel AISI M-2 and PM Steel AISI T-15 produced by hot isostatic pressing (HIP). AISI 1045 steel was used to be machined by these bits. Both steels were heat treated at different quenching and tempering temperatures. Transverse rupture strength (TRS) results are considered and discussed as a function of the hardness measurements. The machining performance of these cutting tools has been evaluated taking into consideration the heat treatments that were carried out. Microstructures of the steels, obtained at each stage of the process are presented and discussed.