

CCTM

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On Sintering of a AISI M3:2 High Speed Steel

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Liquid phase sintering high speed steel seems to be a cheaper processing route in the manufacturing of tool steels if compared to the well-known and expansive hot isostatic pressing high speed steels. A molybdenum AISI M3:2 tool steel manufactured from irregular water atomized powders was uniaxially compacted and then sintered in a resistive furnace under vacuum in four different temperatures of sintering. The same procedure was then repeated by adding carbon (0,2% in weight) to prevent porosity. The sintered samples from all these experimental procedures were submitted to three point bending test in order to determine the transverse rupture strength (TRS). Hardness tests were performed and the microstructure was evaluated using optical-electronic techniques in order to investigate the best range of sintering temperature. At least three parallel samples were tested to each condition of sintering.