

Sintering of AISI M3:2 High Speed Steel – Part II

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Liquid phase sintering of high speed steels seems to be a cheaper processing route in the manufacturing of tool steels if compared to the well-known and expensive hot isostatic pressing high speed steels. In a previous work a M3:2 high speed steel was vacuum sintered from irregular water atomized powder and had its sintering temperature determined. In this work the same powder was uniaxially cold compacted and vacuum sintered by adding some small quantity of carbon (0.3% in weight) to prevent porosity and loss of carbon which result from the sintering cycle. The sintered samples from all these experimental procedures had their density evaluated. The microstructure was evaluated using optical-electronic techniques in order to investigate the best range of sintering temperature. At least five parallel samples were tested to each condition of sintering.

Keywords: High speed steels, sintering, water atomized powder.