

Carbide Size and Bend Strength of M3:2 High Speed Tool Steels

Araujo Filho, O. O.¹, Ribeiro, O. C. S.¹, Nogueira, R. A.¹, Liberati, J. F.¹, Muniz, L. F.¹, Ambrozio Filho, F.¹.

¹IPEN/CNEN-SP – Instituto de Pesquisas Energéticas e Nucleares – Av. Prof. Lineu Prestes No. 2242 – Butantã – USP – Cidade Universitária – São Paulo – SP- CEP: 05508-000.

email contact: oscaroaf@ipen.br

The final heat treatment of high speed steel tools consists of austenitizing, quenching and tempering. The size of austenite grains formed during the hardening treatment is generally regarded as an important factor in the microstructural characterization of high speed steels. Other relevant factor to be considered is the carbide size which results as a function of the heat treatment of hardening. Both, grain size and carbide size must to be taken in account when we consider their influence on the bend strength of high speed steels (HSS) submitted to hardening. In this work two PM HSS and other produced by conventional casting were submitted to the same heat treatment procedure of hardening. All heat treatment were performed in salt bath. The grain size and carbide size which result as a function of the heat treatment and their influence on the bending strength were evaluated and presented in this work.

Keywords: High speed steels, grain size, carbide size, bend strength.