

Microstructure and mechanical properties of Fe-Cu-Sn hot pressed materials

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ABSTRACT

The objective of the present work was to study the effects of powder production route and composition on density, microstructure and mechanical properties of hot-pressed materials used as matrices in diamond impregnated tools. Two tailor-made, iron-base FeCuSn powders were used in the experiments. The powders were subjected to phase analysis by means of X-ray diffraction and consolidated by hot pressing in a graphite mould. In the as-consolidated condition, both materials were tested for density, hardness and bending strength. The microstructure of selected specimens was examined by means of light microscopy and X-ray diffraction.

KEYWORDS: Fe-base hot-pressed materials, metallic matrix, diamond impregnated tools, hot pressing