Manufacture of hardmetal cutting plates using barothermal self-propagating high-temperature synthesis

Powder Metallurgy and Metal Ceramics

July 2013, Volume 52, Issue 3, pp 132–136

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Article

First Online: 18 August 2013

DOI (Digital Object Identifier): 10.1007/s11106-013-9505-y

Cite this article as:

Vaitsekhovich, S.M., Mikhalevich, V.M. & Kraevskii, V.A. Powder Metall Met Ceram (2013) 52: 132. doi:10.1007/s11106-013-9505-y

A process for producing hardmetal cutting plates (synthetic cutting tool material) has been developed and implemented. It is established that the most rational and economically sound option is to introduce several die toolings with relevant service features in the manufacture of products by self-propagating high-temperature synthesis. Advantages of the factor characterizing stress stiffness have been revealed. They involve one-to-one correspondence between the values of this factor and possible cases of plane

stress. Coordinates for analytical representation and geometrical interpretation of the limit state criteria are proposed.

Keywords

self-propagating high-temperature synthesis powder billet die tooling stress state criterion limit state criterion

Translated from Poroshkovaya Metallurgiya, Vol. 52, Vol. 52, No. 3–4 (490), pp. 20–26, 2013.

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Print ISSN
1068-1302

Online ISSN
1573-9066

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