Accepted Manuscript

A micromechanical constitutive modeling of WC hardmetals using finite-element and uniform field models

Dmitry Tkalich, Georges Cailletaud, Vladislav A. Yastrebov, Alexandre Kane

PII: S0167-6636(16)30504-X
DOI: 10.1016/j.mechmat.2016.11.007
Reference: MECMAT 2671

To appear in: *Mechanics of Materials*

Received date: 26 April 2016
Revised date: 24 October 2016
Accepted date: 23 November 2016

Please cite this article as: Dmitry Tkalich, Georges Cailletaud, Vladislav A. Yastrebov, Alexandre Kane, A micromechanical constitutive modeling of WC hardmetals using finite-element and uniform field models, *Mechanics of Materials* (2016), doi: 10.1016/j.mechmat.2016.11.007

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Highlights

- Uniform and full field two-dimensional elasto-plastic models of cemented tungsten carbide (WC-hardmetal) are used to study thermo-mechanical behavior of this composite.
- Different finite-element models were constructed from SEM images of different grades of WC-hardmetal.
- In-plane yield surface is constructed for the 2D model, and the post-sintered state is investigated in term of thermal residual stresses.
- The effective yield surface in von Mises-pressure stress space is constructed for different binder content using a 3D uniform field model.

ACCEPTED MANUSCRIPT

Download English Version:

https://daneshyari.com/en/article/5018547

Download Persian Version:

https://daneshyari.com/article/5018547

Daneshyari.com