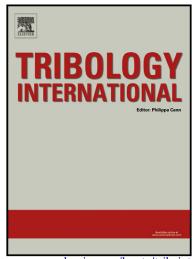
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Z.B. Zheng, Y.G. Zheng, W.H. Sun, J.Q. Wang



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Effect of heat treatment on the structure, cavitation erosion and

erosion-corrosion behavior of Fe-based amorphous coatings

Z.B. Zheng^a, Y.G. Zheng^{a,*}, W.H. Sun^b, J.Q. Wang^b

^a Key Laboratory of Nuclear Materials and Safety Assessment, Institute of Metal Research,

Chinese Academy of Sciences, 62 Wencui Road, Shenyang 110016, P.R. China

^b Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese

Academy of Sciences, 72 Wenhua Road, Shenyang 110016, P.R. China

* Corresponding author. Tel.: +86 24 23928381, fax: +86 24 23894149

E-mail: ygzheng@imr.ac.cn (Y.G. Zheng).

Abstract

In this study, high-velocity oxygen-fuel sprayed amorphous coatings have been heat treated at

various temperatures to form microstructures with crystalline phases. The structure,

micro-hardness, cavitation erosion resistance and erosion-corrosion resistance of these

coatings are compared. Crystalline phases are discovered in the coatings after heat treatments

at 650 °C and 750 °C. The coating heat treated at 750 °C exhibits the poorest cavitation

erosion resistance in 3.5 wt.% NaCl solution among all coatings due to the degraded

corrosion resistance. However, the hardness of the crystallized coating can reach 1000 Hv

and the erosion-corrosion resistance of the heat treated coating is better than the untreated

one.

Key words: Coating; Slurry erosion; Cavitation; Thermally-sprayed.

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