POSTER EXPOSITION

Swansea University
Prifysgol Abertawe

Poster 8

The effect of coating weight on the microstructure and performance of Zn-Al-Mg (ZAM) alloy coatings

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ABSTRACT:

Automotive grade galvanised steel must comply with stringent quality requirements and, for this reason, galvanisers are interested in extending the service life of the pot hardware, which is a bottleneck to production and quality of premium 'full-finish' product. The pot roll bearings are submerged in the galvanising bath and are subjected to deterioration due to the reaction of the bearing materials with liquid zinc. Ceramic materials are chemicall stable in molten metal applications and have the potential to outperform the bearing materials currently in use by the industry. In this research, selected ceramics were immersed in liquid zinc alloy for five weeks. The performance of the materials in molten zinc was assessed by characterising the samples after testing with SEM and EDX. The results showed that some of the tested ceramics remained inert in liquid zinc and, therefore, they are promising candidates for making optimised pot roll bearings.

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