



Speaker 8

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



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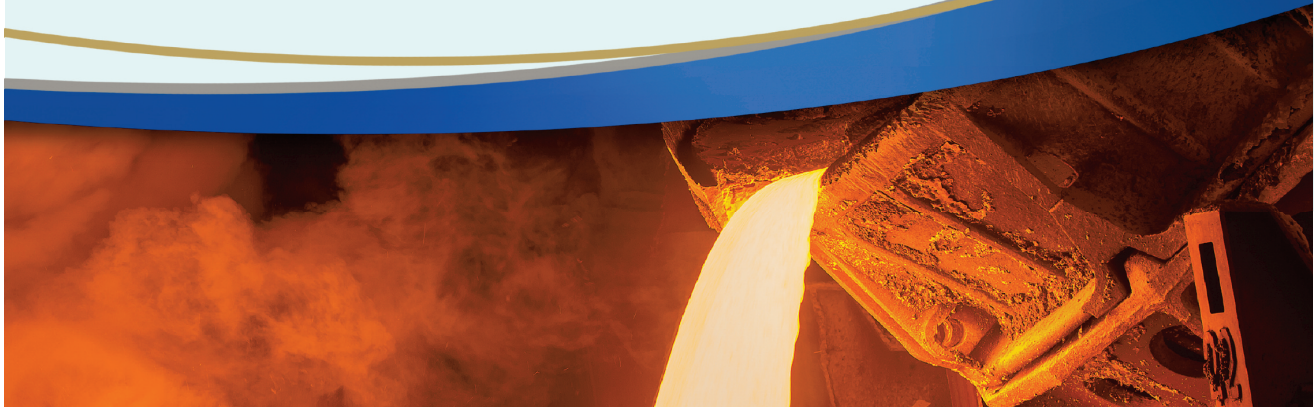
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**ABSTRACT:**

Zinc magnesium aluminium (ZAM) galvanised coatings have found increasing popularity over the past two decades due to their reported superior corrosion protection. However, ZAM coatings exhibit a complex microstructure, which is influenced by a range of processing parameters, making consistent coatings very difficult to produce. This work concentrates specifically on the effect of coating weight on microstructure and subsequent corrosion performance.

Use of the Scanning Vibrating Electrode Technique on three different coating weights showed a steady decrease in metal loss as the coating weight is increased. The use of sequential polishing found that the average volume fraction of zinc dendrites in the coating decreased as coating weight increased. This resulted in a higher volume fraction of the aluminium and magnesium eutectic phases present in the thicker coatings, leading to greater protection through the promotion of stable Al and Mg corrosion products.



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