

عنوان مقاله:

Improvement Uniformity of Coating Thickness for Hot-Dip Galvanized Steel Strips

محل انتشار:

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خلاصه مقاله:

In present research work, effects of some production parameters such as zinc bath temperature and air knife height on uniformity and structure of hot-dip galvanized coating produced in Mobarakeh Steel Company was studied. The thickness of intermetallic layers was determined by Optical Microscopy. In order to check the thickness of coating and alloying elements distribution through the coating thickness, X-Ray Mapping and GDOES analysis were employed. In order to investigate the uniformity of coating thickness, zinc coating firstly removed and its mass was measured, and then the coating thickness diagrams were plotted. Results showed that by increasing zinc bath temperature the fluidity of the molten zinc increased and the coating uniformity improved. Also, in lower speeds, by increasing the air knife height, when the strip passed through the air knife, coating temperature decreased and caused increasing in the coating liquid viscosity obviously. Thus the thickness of coating increased and reduction of coating uniformity happened. In higher speeds, by decreasing the air knife height, direct air collision to the surface of molten bath occurs resulting in coating uniformity decrease. Therefore in order to increase the coating uniformity, the height of air knife should be optimized.

کلمات کلیدی:

Air knife height; Coating uniformity; Hot dip galvanizing; Zinc bath temperature

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