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GROWTH OF INTERMETALLIC PHASES DURING INTERDIFFUSION BETWEEN STEEL AND ALUMINUM

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Abstract : The morphology and microstructure of an intermetallic layer formed on the surface of Fe-0.4%C by hot-dip aluminization treatment have been examined in detail. The intermetallic layer growing toward the steel substrate possessed a tongue-like morphology which delimited by a strong concentration of pearlite.The phases present in the coating are identified by X-rays diffraction and electron microscopy. After aluminization, three layers were formed, external Aluminum layer, intermetallic layer and a steel substrate. The results reveals that the intermetallic layer is composed of mainly Fe 2Al5 phase according to the EDS and DRX analysis and a thin layer of Fe3Al phase which is adjacent to the steel

Keywords : Aluminized steel, intermetallic Compounds, X-rays Diffraction, Scanning Electron Microscopy