

*ZINC COMPOSITE ELECTROPLATING FROM BATH WITH OXIDIZING AGENT

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Abstract

When electroplating is provided on steel sheets using an acid zinc plating bath including metallic ions such as Al and Cr and oxidizing agent (NO_3^-) ion, a galvanizing coating in which the hydroxide and oxide of such metallic ions are compounded in-situ is formed.

The composite coating is formed in the following manner: nitrate ion is decomposed on the surface of the cathode by electrolysis and then $\text{Al}(\text{OH})_3$ and $\text{Cr}(\text{OH})_3$ produced by OH^- which is generated at that time are taken into the coating to form a composite coating. By providing a composite coating containing 0.5 to 1.5% of aluminum and 0.3 to 2% of chromium on a steel sheet, its corrosion resistance (red rust performance by SST) is increased by 5 to 10 times as compared to ordinary electrogalvanized steel sheet, and adhesion and formability are also improved.

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