

论文

明度差法研究电镀锌铬酸盐钝化膜的耐蚀性

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摘要:

用明度差法研究了电镀锌未钝化及涂覆型钝化试片在湿热实验中的初期腐蚀行为.通过考察明度差 ΔL 随时间及温度的变化关系,发现未钝化镀锌层的初期腐蚀规律符合对数方程,而钝化后的符合Wagner方程,即钝化膜的存在改变了腐蚀的历程,使钝化膜内锌离子的外扩散或膜外氧的内扩散成为腐蚀的控制步骤,有效地提高了镀锌层的耐蚀性.采用明度差法可以反映电镀钢板腐蚀的程度.

关键词: 明度差 钝化膜 腐蚀

ANTICORROSION PROPERTIES OF CHROMATED GALVANIZING COATINGS USING LIGHTNESS DIFFERENCE METHOD

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Abstract:

The initial corrosion behaviors of unchromated and chromated galvanizing coatings have been studied in humidity cabinet tests (H.C.T.)by lightness difference method.The changes of lightness difference (ΔL) with time and temperature show that the initial corrosion behavior of coatings conforms to logarithm equation while that of chromated coatings conforms to Wagner equation.This means chromating film improved anticorrosion properties of galvanizing coatings through changing corrosion course,that is, making the outward diffusion of zinc ion in chromating film and the inward diffusion of oxygen rate determination step(R.D.S.).At the same time, the simple method was found to be available in indication corrosion degree of galvanized steel.The relationship between changes of surface lightness difference ΔL and test time of chromated galvanized steel sheets and unchromated one,has been examined in this paper, using the method of humidity cabinet test (H.C.T.).It has been sure that chromated film changes the rate determination step (R.D.S.) of corrosion reaction,and establishes kinetic equation of corrosion.

Keywords: galvanized chromate film corrosion degree lightness difference

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