

### 论文

热喷涂钢柱10年海水腐蚀行为

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摘要:

采用直流电弧喷涂和火焰喷涂技术,在碳钢管表面沉积了12种类的Zn、Al和Zn-13Al涂层在日本的千仓海岸进行海水腐蚀实验,结果表明,在5年暴露期内,所有的涂层均没有发生明显的腐蚀;经7年暴露后,未经封闭和经封闭处理的Zn涂层在浸泡区出现严重的锈蚀,电弧喷涂并经封孔处理的Al涂层,火焰喷涂并经封孔处理的Zn-Al涂层和火焰涂并经重涂装的Al涂层显示出优良的耐蚀性能,相比之下,未经封闭处理的火焰喷涂

关键词: 热喷涂钢柱 海水腐蚀 电弧喷涂

### CORROSION PERFORMANCE OF THERMAL SPRAYED STEEL PIPES EXPOSED TO MARINE ENVIRONMENT FOR 10 YEARS

Abstract:

Thermal spray amittees of Japan Association of Comion Conml (JACC) has been conducting a comion test of thermal sprayed Zn, Al and Zn-Al coatings in coastal area since 1985, this paper surranarizes experimental data of 10 year exposure. 12 kinds of Zn, Al and Zn-13Al coatings were deposited on steel pipes by DC arc-spraying and flame-spraying in varied thickness, and 7 lunds of them were subjected to various sealing and heavy painting post-treatment. The comion performance of the coated steel pipes were inspected annually by recording the apperance and coating thickness in sea air, splash and tidal zones. For 5 year exposure, no significant changes were observed for all the coatings, but Zn coatings with or without sealing suffered rust comion in the tidal zone after 7 year exposure. Arc-sprayed Al with sealing, flame sprayed Zn-Al with sealing and flame sprayed Al with heavy painting showed excellent rust resistance while flame sprayed Zn or Al without sealing all& the cormsion of steel pipes resulting in heavy rusting.

Keywords: themil spray steel marine comion

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