

**Recent developments on design and quality control of
galvanized steel members in
Greater Bay Area**

大湾区镀锌钢构件在设计和质量控制上最新发展

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Abstract

An industry-led research and development project on atmospheric corrosivity of exposed structural steelwork was undertaken by the authors from Jan 2017 to May 2018. The project was funded by the *Innovation and Technology Fund* of the Innovation and Technology Commission of the Government of Hong Kong SAR under the administration of the Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch). One of the key objectives of the project is to develop an effective quality control scheme for exposed steel members so that their design service lives will be readily achieved in practice. This paper presents some of the key findings of the project on the quality control of the coating thickness measurements of galvanized steel members, based on two systematic surveys on about 12,000 coating thickness measurements obtained from a reputed galvanizer in Hong Kong. These data provide justifications to a rational design model of the corrosion protection for galvanized steel members based on a characteristic coating thickness under a corresponding characteristic corrosion attack according to ISO9223/24. The proposed design model is readily applicable to structural steel members of building and civil engineering structures in Hong Kong, Macau and the Pearl River Delta Region which are subject to similar environmental conditions in the Region.

Keywords: *Corrosion engineering; design model; coating thicknesses; characteristic values; hot-dip galvanization.*