

عنوان مقاله:

Simplified Corrosion Models for the Management of Structural Durability

محل انتشار:

چهارمین کنفرانس بین المللی سواحل و بنادر و سازه های دریایی (سال: 1379)

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خلاصه مقاله:

Depending on the aggressiveness of the environment, corrosion of the reinforcement induced by chemical actions is a major problem for concrete structures. This paper shows how the stochastic characteristic of the corrosion process can be taken into account in a simple model, which is applicable for both, design purposes and the safety assessment of existing damaged or undamaged structures. To this end, the corrosion effects are to be integrated, together with the mechanical actions, into the procedures for structural analysis. This integration, within the traditional Limit States format, is emphasised for structural design. Its contribution to an optimum design in terms of minimum life cycle cost is also shown. In the case of existing structures, an extension of the service period can often be justified by means of a rational inspection and maintenance strategy as a part of the safety system. Applying reliability methods in combination with the proposed simple corrosion models, a procedure is presented for the establishment of optimum inspection and maintenance strategies with respect to minimum expected cost.

کلمات کلیدی:

Environmental actions, reinforcement corrosion, durability, limit states design, life cycle cost, inspection strategy, reliability, assessment, probabilistic analysis, extension of service period

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