

## عنوان مقاله:

Proposed model and software program for service life estimation of concrete structures in the South coasts of Iran

## محل انتشار:

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## خلاصه مقاله:

Reinforced Corrosion of concrete structures is a major problem in many countries particularly in hot and severe environments. It is well-documented that the major cause of deterioration of coastal reinforced concrete structures is the chloride-induced corrosion. Therefore, durability based design of concrete structures in marine areas has gained great significance in recent decades. In spite of comprehensive researches on the corrosion of reinforced concrete, there are still various controversial concepts. Effect of environmental conditions on durability of concrete structures is one of the most important issues. Hence, regional investigations are necessary for durability-based design and evaluation of the models proposed for service-life prediction. The Persian Gulf is one of the most aggressive regions of the world because of elevated temperature and humidity as well as high content of chloride ions in seawater. There are several mathematical models available for prediction of chloride ingress into concrete. In this work, two probabilistic service-life prediction models proposed by fib and an industry consortium and two other service-life models proposed by local research centers are compared using chloride profiles obtained from marine RC structures located in the Persian Gulf region. Finally a model and software program for service life estimation of reinforced concrete structures based on 25 year experiences and experimental works in the region are proposed.

## کلمات کلیدی:

Durability Design, Service Life Prediction Models, Chloride Diffusion, Corrosion, Persian Gulf, South coasts of Iran

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