

## عنوان مقاله:

THE EFFECT OF EXPOSURE CONDITIONS AND CONSTRUCTION METHODS ON THE CHLORIDE DIFFUSION INTO CONCRETE IN THE PERSIAN GULF REGION

## محل انتشار:

سیزدهمین همایش بین المللی سواحل، بنادر و سازه های دریایی (سال: 1397)

تعداد صفحات اصل مقاله: 2

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## خلاصه مقاله:

The reinforced concrete structures present in marine environment are susceptible to reinforcement corrosion due to the presence of chlorides. The chlorides disposed in marine environment come mainly from seawater. Its contact with concrete structures can happen directly by seawater or through the marine aerosol. After contact, the chlorides are deposited on the surface of concrete and can penetrate on it through different mechanisms, depending on the characteristics of materials, construction methods and the exposure conditions in which it operates [1,3]. Due to different characteristics of attack, resulting mainly from different accesses of oxygen and humidity, the marine environment is divided in different zones of aggressiveness. These zones are segmented having the sea level as reference, and are defined as follows [2]: Atmospheric zone: Concrete suffers the action from marine aerosol, however the structure is not affected directly by water splashes. The winds can carry the salts in the form of solid particles or as droplets of saline solution. The quantity of salt present decreases as a function of the distance from the sea, suffering influence of speed and prevailing wind directions. Splash zone: Zone immediately above the maximum level of intertidal variation and concrete is directly affected by water splash. The height of the splash zone is a function of the wave height and speed/direction of wind. The most significant damage is produced by reinforcement corrosion by chlorides. The splash zone is subjected to cycles of wetting and drying and this fact becomes more significant as water evaporates and the salt remains into the concrete. Tidal zone: It is the concrete zone between the min/max levels of tide. This region is also subjected to the wetting and drying cycles action. Degradation occurs due to the action of aggressive salts (chemical attack), reinforcement corrosion, waves abrasive action and other substances in suspension, and attack of microorganisms. Ghods et al. [4] consider that exposure zones play an important role in the service life design of concrete structures that should be concerned as a main input parameter in models. This means that in many cases, a model that is related to only one type of exposure zone relative to the chloride attack, should not be generally used. Thus, the expected life of a structure in a marine environment needs to be considerably different depending on the 4 exposure zones previously mentioned. The aim of this study is assessment of the basic ... parameters in long term chloride penetration in the Persian Gulf region. So

## کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

