

Abstract

This work aims to demonstrate the interest of collecting experimental data in the context of Accelerated Low Water Corrosion (ALWC) and Fatigue Corrosion, to improve maintenance of port infrastructures, by the simulation of industrial corrosion risks in a pilot installation.

The first part is a theoretical description of corrosion, with an emphasis on ALWC and Fatigue Corrosion.

Then, experiments are designed in a specifically build a lab, to measure the effect of ALWC and fatigue-corrosion on protective coatings and certain type of construction materials. The results allow to evaluate the impact on their life expectancy.

In the last part, chosen port structures are subjected to different risk analysis, in a way to determine the possible consequences caused by inappropriate maintenance and understand how data collected during experiments can improve it.