

## The difference between the effect of abiotic corrosion and Microbially Influenced Corrosion on the corrosion rate of zamac and mild steel.

The Paardenmarkt is a sandbank in front of the coast of Knokke-Heist, where around 32.000 tons of WW I ammunition is buried, of which approximately a third has a toxic content. The possibility of leakage due to corrosion of the grenade is a real problem: the release of these toxic contents would cause a true ecological disaster. The AMACORT research group, part of the Antwerp Maritime Academy, was instructed to estimate the physical state of the hull of these grenades. This thesis fall under the AMACORT research: the central research question examines the difference between the effect of microbially induced corrosion (MIC) and of abiotic corrosion on zamac and mild steel after being submersed for 6 or 24 months. The corrosion speed is calculated using the weight loss method, where the weight of a coupon is measured before and after being submersed in the corresponding water. The result of the experiment proves that there is a certain MIC effect on the corrosion speeds of zamac and mild steel. The MIC effect on mild steel slows down the corrosion speed, while the MIC effect on zamac causes concretion.