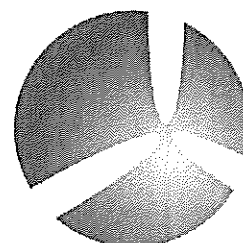


# EUROCORR 2013

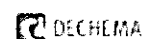
for a blue sky



## EUROPEAN CORROSION CONGRESS

The annual event of the European Federation of Corrosion

1 - 5 September | Estoril | PORTUGAL



# BOOK OF ABSTRACTS

## AA 5083 Aluminium alloy Corrosion in Estuarine Environment

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Aluminium has proven itself as lightweight, durable and affordable material that allows naval ships to go faster speeds, carry bigger payloads and travel longer ranges. The catamarans, are an example of high speed craft category entirely built in aluminium, more precisely, aluminium alloy, whose activity may be perform in both marine and estuarine environment, as in the case of passenger transport.

The aluminium - magnesium (Al - Mg) alloy, particularly the AA 5083, is one of the aluminium alloy commonly used in shipbuilding where density materials, good mechanical properties and better resistance to low corrosion are desired.

The present study, which is part of a Joint Industry Project (PROTEJO) on corrosion protection for ships built in aluminium, will present the results of two years of natural exposure of AA 5083 aluminium alloy to estuarine environment. The aimed of this long-term exposure test was the characterization of the corrosion behaviour of the AA5083 alloy in splash and immersion zones, and also the assessment of the biochemical effect on the process.

In the end of the exposure, the aluminium samples fouled with algae and other organisms were mechanically cleaned and dehydrated, before surface and cross-section observation/analysis using scanning electron microscopy with energy dispersive spectroscopy (SEM/EDS). This characterization shown a microbiologically influenced corrosion inhibition (MICI) of the AA 5083 aluminium alloy samples exposed in the immersion zone comparatively to the samples in the splash zone, without presence of fouling.

**Keywords:** AA5083 aluminium alloy, corrosion, fouling, microbiologically influenced corrosion inhibition (MICI), estuarine environment.

Poster presentation