

## **Marine Coating Testing Five Years in a Tidal Stream**

**Final Report 2017**  
Coppercoat

**Reference:** PMA 139

**Client:** Coppercoat

**Date:** March 2018

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Specialties

Biofouling, Ballast Water, Ballast Water Treatment Systems, Marine Surveys, Marine Environment Assessment, Remote Sensing, Earth Observation, Harmful Algal Blooms.

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## I Background and Executive Summary

- The aim of this work is to quantify marine coating performance during a five year *in-situ* exposure test in a tidal stream.
- At the time of writing, we understand this to be the longest coating trial of its kind. It provides unique insight into coating performance on a time scale similar to the predicted service intervals of marine energy devices.
- As part of the Energy Technology Institute's (ETI) ReDAPT project, two benthic pods were deployed in the Fall of Warness in Orkney, Scotland, at a depth of 40m, close to the Alstom turbine test site, on May 28<sup>th</sup> 2012.
- Both of the 3.5 tonne pods were fitted a range of antifouling and protective coating panels. These panels remained *in-situ* for 24 months until the end of the ReDAPT project. After 24 months, the south pod was recovered and sampled to meet the requirements of the ReDAPT project.
- In May 2014, it was agreed to extend the test by three years by maintaining the remaining pod to reach a total of 5 years continuous *in-situ* testing.
- The pod has been visually sampled each year during 2015 and 2016 using a Remotely Operated Vehicle (ROV) to confirm the pod was still in position and to provide a coarse measure of antifouling performance.
- In 2017, after five years in position in the tidal stream, the remaining pod was recovered and sampled. This report provides a summary of annual inspections and the end point analysis.
- All coatings showed signs of either damage, fouling or both after 5 years.
- Much of the fouling was caused by one species of barnacle, *Chirona hameri*, and a good predictor of success was a coating's ability to deter this species.
- Based on our section of ranking criteria Coppercoat scored 2 (out of 10) in terms of preventing fouling and damage at 24 months.
- After 60 months of testing Coppercoat was the best performing coating.