

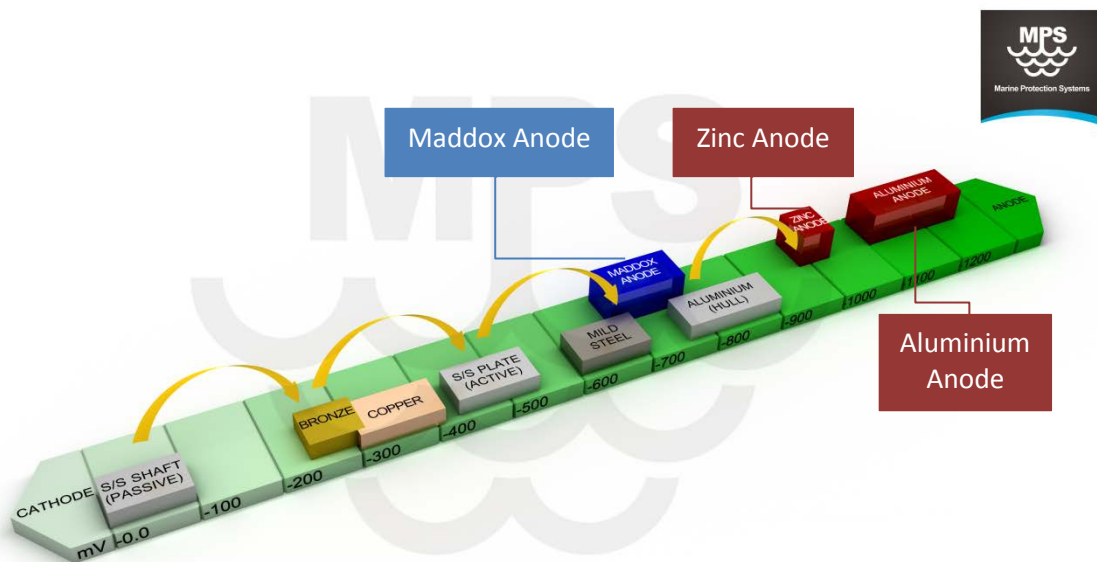
# CATHODIC PROTECTION EXPLAINED

Galvanic corrosion can occur when there are 2 or more dissimilar metals in water. The water provides the means for metal ions to move from the anode to the cathode.

Common metals used in marine applications generate voltage in water as detailed in The Galvanic Series of Metals. Where there are different metals there will be metals that are:

1. More anodic or generating a more negative voltage; and
2. More cathodic or generating a less negative voltage.

Cathodic Protection is used to control galvanic corrosion of a metal by making it the cathode whilst utilizing an anode to sacrifice ions. Sacrificial anodes are used as a form of cathodic protection where the anode corrodes due to having a more negative electronegative potential (or negative voltage) than the metal being protected (the cathode).



This image remains the exclusive property of Marine Protection Systems Pty Ltd, and must not be reproduced, replicated, copied or used without the expressed consent of Marine Protection Systems Pty Ltd. © 2011

The Galvanic Series of Metals can be used to determine the tendency of a galvanic reaction and subsequent galvanic corrosion. American Boat and Yacht Council (ABYC) E-2 Cathodic Protection notes:

- The sacrificial anode used in a cathodic protection system should be capable of inducing and maintaining a minimum 200mV differential relative to the most negative metal being protected
- There is a decrease in the effectiveness of antifouling with higher negative voltages

This material remains the exclusive property of Marine Protection Systems Pty Ltd and must not be reproduced, replicated, copied or used without the expressed consent of Marine Protection Systems Pty Ltd © 2011