

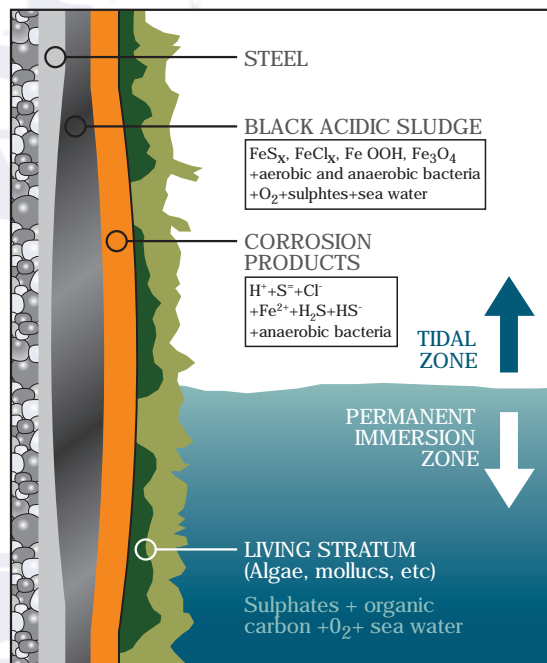
Z GUARD ZINC ANODES

Anodes for Mooring Chains

For those yachtsmen who own their own moorings, the maintenance bill may well begin to rise as a new and quiet destructive force is making its presence felt in UK waters.

Accelerated Low Water Corrosion (ALWC) is the perpetrator and is caused through microbiological activity. ALWC has been seen to occur just below the water level or at low water level in tidal areas, although it has been reported down to the seabed. On some steel piles it has been reported that up to 4mm per side, per year, have been lost due to the phenomenon and in some cases mooring chains require replacement after only one year. ALWC combined with erosion by the constant mechanical movement and interaction

of chain links can be devastating because failure in service can result in loss or damage of the vessel as well as the cost and time to replace the moorings.



ALWC is formed by the presence of colonies of Sulphur Reducing Bacteria and are recognised by a soft orange coloured deposit, under which is a layer of black slime (Iron Sulphide) The reaction is characterised by a 'rotten eggs' smell with the formation of hydrogen sulphide gas.

Though nothing can take the place of a regular maintenance routine following guide lines laid down in the European Standard EN 13174:2001. Cathodic Protection for harbour

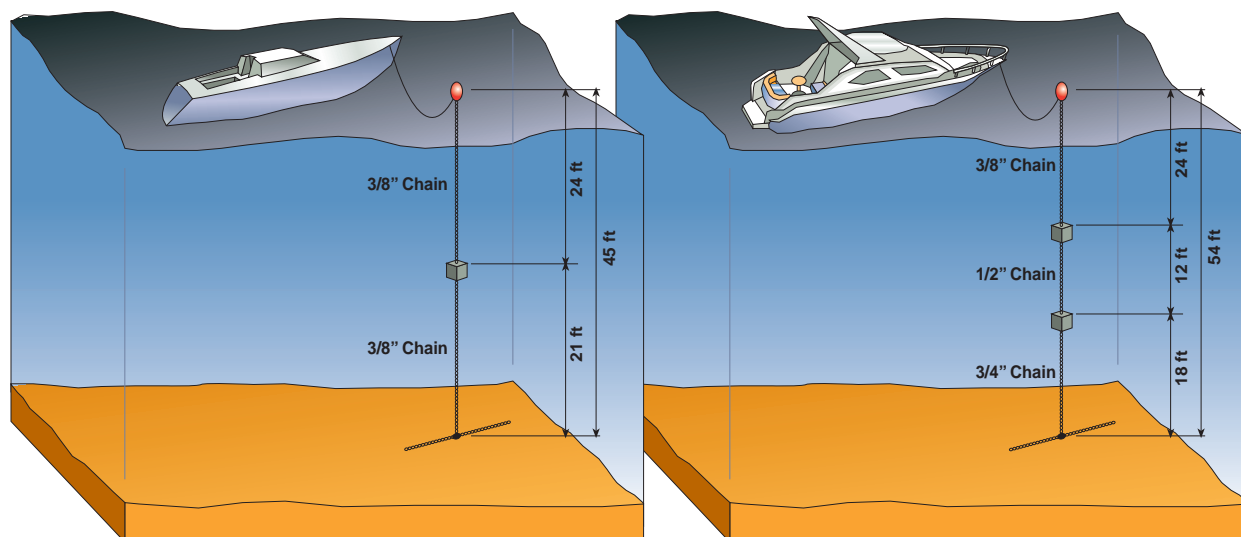
installations will reduce the corrosion rates of the new phenomenon that is ALWC. With corrosion rates in the marine environment on the increase its effect can be virtually prevented with sacrificial anodes.

Z-Guard Zinc Anodes produce two sizes in mooring anodes; one for 1/4inch and one for 1/2inch chains and they are available in both Zinc for seawater and Aluminium for estuarine environments. The chain anodes are cast around links tested chains conforming to BS590 and BS6405. Each anode has a free link at each end to allow it to be easily shackled into the riser.

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Also to reduce corrosion good quality chain, shackles and swivels of the same material and grade should be fit. Stainless Steel or Non Ferrous components should not be combined with mild steel and steel or galvanised steel wire used to mouse shackles.



Fitting the Chain Anode:

- The Chain Anodes should be positioned below the lowest point of the tidal zone on the chain.
- One 15kg Zinc anode (seawater) or 5Kg Aluminium Anode (brackish water) can effectively protect up to 6m of chain against corrosion and ALWC for up to 4-5 seasons. When more than one anode is required ensure that they are evenly spread along the vertical length.
- Fit the anode with the same chain size as the chain beneath it, especially when the chain size alters in a single riser.
- Where possible fit swivels and shackles close to the anode.
- When the anode is installed it is recommended that the chain is broken and the anode is shackled directly in-line. It is very important that the tension on the chain is maintained as this tension ensures the electrical contact between the anode and all the chain links along the length of the chain, without this the anode will not protect effectively.

