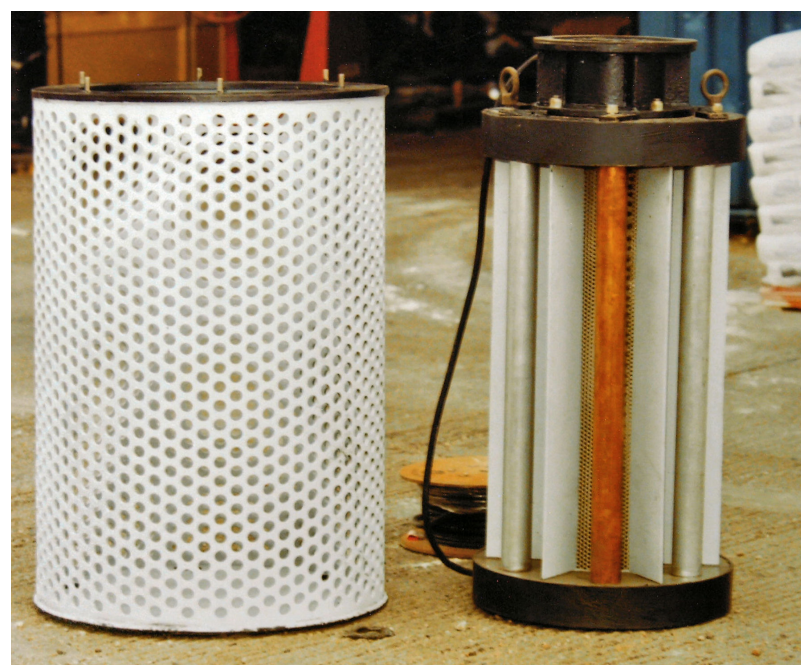
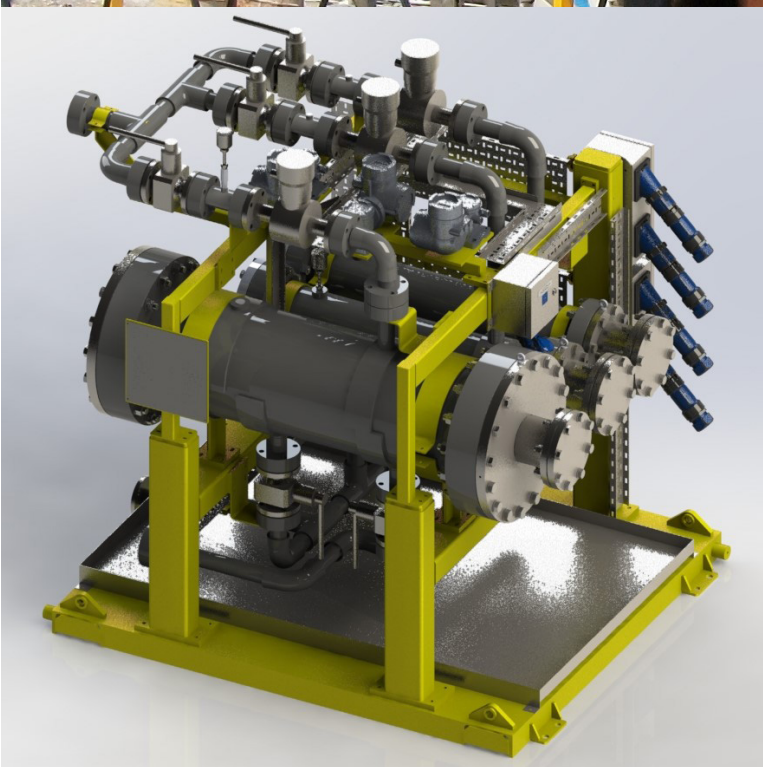


# CUPRION®



## Marine Anti-Fouling Systems



Protecting your  
investment for  
70+ years...

# Clearly the best protection...



**Cathodic Protection Co Ltd have been leaders in the industry for 50 years.**

**Providing marine anti-fouling systems on a global scale.**

## Core Values

- **Customer Focus**
- **Performance**
- **Teamwork**
- **Innovation**
- **Value**

Cathodic Protection Co Ltd (CPCL) has been designing and manufacturing Cuprion® marine growth anti fouling systems since the 1970s, with installations in 6 continents. Experience has shown that our customers expect quality, low environmental impact and cost effectiveness when choosing their anti fouling systems. We therefore utilise the highest quality sub-components and regularly undertake technology upgrades, meeting the needs of our increasingly diverse client base.

We work closely with our clients to achieve optimised solutions whilst remaining in accordance with specifications. Where clients are unsure as to selection of performance parameters and operational requirements, we are happy to utilise our in-depth knowledge to produce project specific documents for electrolytic anti fouling systems. Whilst we have a range of standard products, we can and do adapt to suit project and geographical needs.

Along with the traditional copper and aluminium anodes, our Cuprion® system can also be offered using copper and chlorine producing anodes for complete system solutions.



Approved Active Substances Supplier

EU Biocides Regulation 528/2012 (EU BPR)

Biocidal Copper Task Force (BCTF) Member

ACTIVE SUBSTANCES ANODES CAN ONLY BE PURCHASED FROM AN APPROVED SUBSTANCES SUPPLIER

## ...for your investment



# System Selection

Pump mounted or deck mounted? The following tables/charts are designed to help users identify which system suits their application. Whilst not definitive hopefully this will give users an understanding of what options are available.

	Pump Mounted System			Deck Mounted System		
Flow Rate m <sup>3</sup> /hr	Pump Application			Pump Application		
	Continuous	Duty/Standby	Fire Water	Continuous	Duty/Standby	Fire Water
0-250	1	1	1	1	1	1
250-500	1	1	1	1/2	1	1
500-1000	1/2	1	1	2	1/2	1
1000+	2	1/2	1	2	2	1/2
1	Copper + Aluminium					
2	Copper + Chlorine					

Copper-Aluminium Systems – low concentrations of copper and aluminium are added into the seawater to keep the system free of macro fouling. Low power consumption means the system is cheap to run and can be maintenance free for up to 5-years.

Copper-Chlorine Systems – low concentrations of copper and chlorine are added into the seawater and work in synergy to keep the system free of micro and macro fouling. These systems are generally suited to higher flow rates or multiple pump dosing skids.



All Cuprion® systems are suitable for safe or hazardous area locations.

The pump mounted systems can be supplied with IP66 Exd certified enclosures for the power supplies, whilst the deck mounted systems can be fully certified for ATEX zone 1 use.



# Our Services

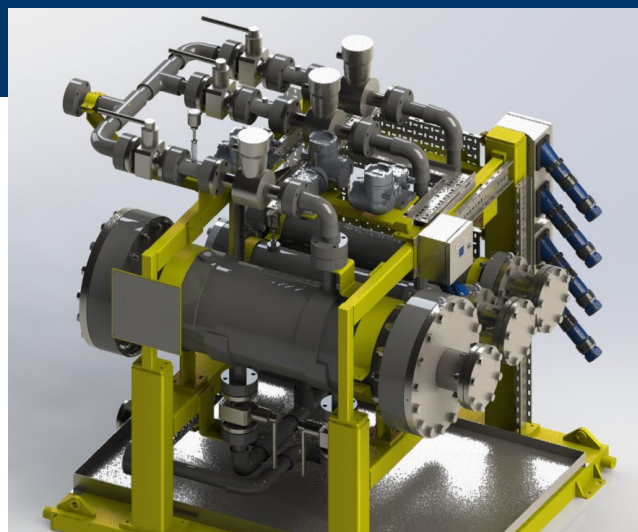


## Pump Mounted Systems

The Cuprion® electrode is mounted on the pump suction using a custom designed attachment unit. Water being drawn into the pump passes over the electrode unit and collects copper ions which are produced by the anode assembly. The treated water is then carried through downstream pipe work, preventing marine growth throughout the system.

The system automatically adjusts the output of copper ions to suit pump running conditions so that the pump is constantly protected, even in standby mode.

To assist with the distribution of the copper ions, the Cuprion® system also features aluminium anodes. A second electrical circuit is used to produce aluminium ions and these react with the sea water to form hydrated aluminium oxide. This in turn combines with the copper ions to produce a floc of aluminium hydroxide. The floc maintains the copper ions in suspension so that they are carried with the water as it is pumped through the system.

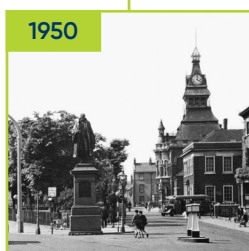


## Deck Mounted Systems

Where space or weight restrictions are design considerations, CPCL has developed the Cuprion® deck mounted system. This utilises a reaction chamber with required seawater supply connections.

The anodes are simply mounted in the chamber using standard flanges and energised to produce the anti-foulant solution, which is delivered to the intake area via suitably rated pipes or hoses.

The system requires a continuous feed of pressurised sea water. The anti-foulant solution is then piped down directly to the intake area. In this way several pumps can be protected against fouling from a single treatment source. Just like the pump mounted system, the system automatically adjusts the output of copper ions to suit pump running conditions so that the pump is constantly protected, even in standby mode.



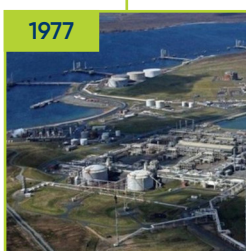
1950

Company Established



1972

BP Forties Field



1977

Sullom Voe Terminal



1983

ADMA-OPCO Zakum West & Umm Shaif



1997

Hong Kong Airport Fire Water Pumps





## Industrial Systems

Biofouling of seawater intakes in coastal locations can be a major problem, causing expensive equipment damage and pipe work blockages, leading to shut down of vital seawater supplies.

In the case of cooling water systems, plant integrity must be of primary concern. In addition, repairs to damaged pumps and pipe work are both costly and time consuming.

The Cuprion® marine antifouling system has been designed to protect submerged pumps, seawater intakes and associated downstream pipe work against marine growth.

The Cuprion® system has been successfully applied on all types of seawater intakes from individual submerged pumps to large seawater intake basins. The design of the electrode units can be adapted to suit all application requirements.



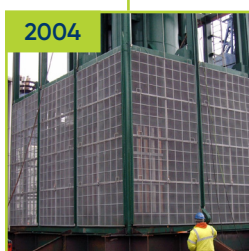
## Ship Systems

Biofouling of sea chests and downstream pipe work on ships and marine vessels can be a major problem, causing expensive equipment damage and pipework blockages, leading to shut down of vital seawater supplies.

In the case of fire water systems crew safety must be considered. In addition, repairs to damaged pumps, pipe work and cooling systems are costly and time consuming.

Chief Engineers would consider any remedial actions involving pipe section removal, repair, cleaning and reinstallation as major refurbishment work on any operating vessel.

The Cuprion® anodes can be mounted in the vessels sea chests or in-line filters depending on the pipe work layout.



2004  
Aldbrough Gas Storage



2008  
BHP Angostura Deck System



2010  
Amurang Power Station Cooling Water Pumps



2018  
Valhall Flank West



2021  
Tyra Development Dosing Skid



# Protecting your investment for 70 years

## Our Brands

Marine Growth Anti-Fouling Systems  
**Cuprion®**



**Refine<sup>+</sup>**  
Reference Electrodes



## Distributors for



## Agents representing us worldwide



**CATHODIC PROTECTION CO LTD**

Venture Way, Grantham  
Lincolnshire, NG31 7XS, UK

**Tel:** +44 (0)1476 590 666

**Email:** [sales@cathodic.co.uk](mailto:sales@cathodic.co.uk)