

Ships & Marine Vessels

Biofouling of water intake pumps and pipework on offshore platforms 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 and structure integrity must be considered. In addition, repairs to damaged pumps and pipe work are both costly and time consuming.

Chief Engineers would consider any remedial actions involving pipe section removal, repair, cleaning and re-installation as major refurbishment work on any operating marine craft or vessel.

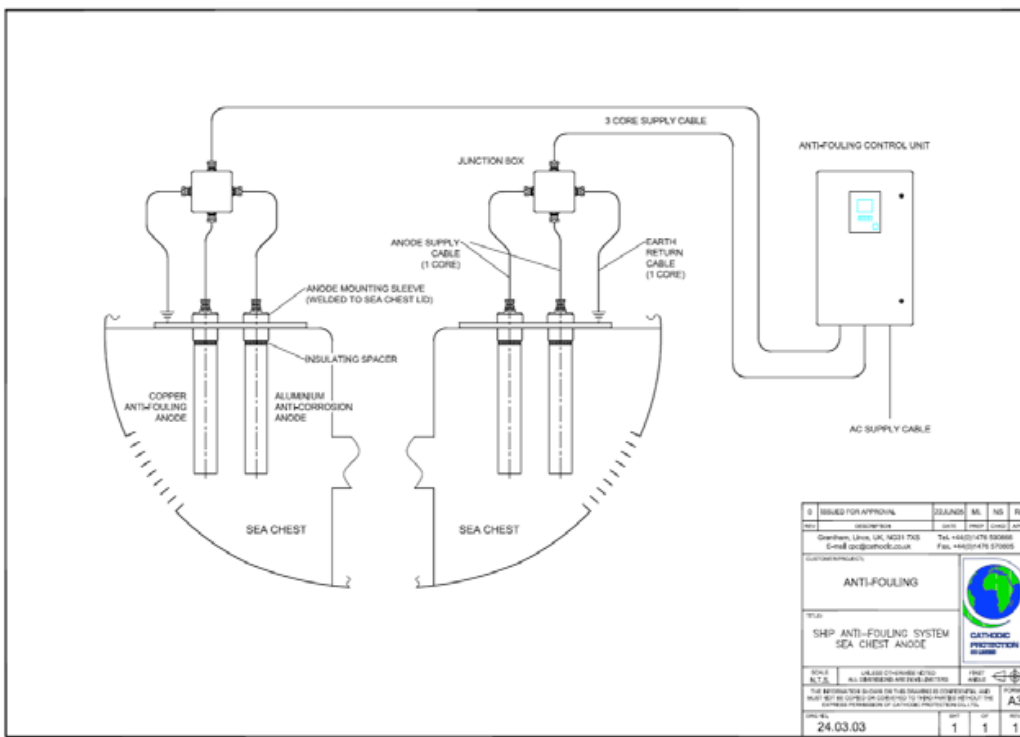


CUPRION® - THE SOLUTION

Cathodic Protection Co. Limited (CPCL) has developed a range of CUPRION® anti-fouling systems to protect submerged pumps, seawater intakes and associated pipework against marine growth. Originally the CUPRION® system was developed and utilised for North Sea applications during the early 1970's.

The CUPRION® system is listed on Article 95 of the EU Biocides Regulation (528/2012) which came into effect on 1st September 2015, ensuring CPCL is legally entitled to place the CUPRION® system on to the European market.

Developing the system for use on ships and marine vessels involved changes to hardware and installation methods. Design requirements remained unchanged as CUPRION® operates on proven electrolytic principles



Marine growth prevention is achieved by employing a small d.c. current flow (generally less than 0.5 kW). This current flow energises copper and aluminium anodes to produce a fully effective, anti-foulant dosing solution. Selected dosing levels vary slightly to suit location and application, however maximum dosing limits utilised for design purposes are 24 µg/l and 4 µg/l for copper and aluminium respectively.

Copper is a natural biocide and provides complete protection from marine growth with no adverse environmental impact.

Aluminium anodes produce aluminium hydroxide, which combines with the copper ions holding them in solution, keeping pipe work blockage free. Aluminium hydroxide also helps arrest corrosion on internal pipe surfaces.

Where space or weight restrictions are design considerations, CPCL has developed systems that can be mounted above or below deck. These systems utilise an electrolysis tank and dosing spool.

The CUPRION® anodes are simply mounted in the electrolysis tank or CAnDU dosing spool and energised to produce anti-foulant solution, which is delivered via suitably rated pipes or hoses. Several seawater intake systems can be protected against marine growth from a single source.

Electrolysis tanks are generally mounted on a steel plinth along with the d.c. power unit, making the complete system integral, ideal for maintenance operations.

The CAnDU dosing unit can be mounted vertically or horizontally in any accessible, convenient location. Electrodes take around 30 minutes to replace whilst at sea or in a dry dock on these easy to maintain and flexible anti-fouling systems.

CUPRION® systems have been installed on all types of ships & marine vessels. See chart below.



Cuprion—In the Marine Industry

Vessel Details	Country	Client	Details
MPI Adventure & Discovery WTIV	UK	MPI Offshore	CUPRION® Deck system for cooling water
FPSO Support Vessels	UAE	Lamnalco	Engine cooling and fire fighting systems
60 m AHTS	Thailand	Mermaid Maritime	Central cooling system
40 m Ferry Boat	Croatia	Divcom d.o.o.	Forward & aft sea chests