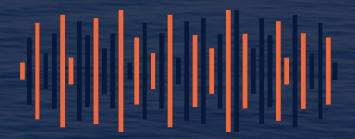


# USAF





# Maximize performance with Ultra sonic technology

Our Ultra sonic Anti-Fouling (UAF) marine growth prevention systems use high-frequency sound waves to prevent marine organisms from growing on a vessel's hull and underwater surfaces.

It's an environmentally friendly and effective solution without toxic chemicals.



# System benefits in numbers up to:

95% saved on capital and MRO costs

30% reduction in fuel consumption



## Application areas:

#### Externally

Vessels & Hulls
Propeller shafts & propellers
Wide array of surfaces

#### **Internally**

Heat Exchangers
Box-coolers
Cooling Systems & Fire fighting systems
Sea Water Lift Pumps
Pipe works

Complete water blockage for critical cooling systems



## The Hazards of Not Having Marine Growth Prevention in Your Box Cooler

Without a marine growth prevention system in the box cooler, marine fouling can build up on the heat exchange surfaces and reduce the cooler's efficiency. This can lead to higher temperatures and reduced cooling capacity, potentially resulting in equipment damage and increased fuel consumption. In addition, the accumulation of marine growth can create safety hazards, such as reduced maneuverability and stability. The costs of maintenance and repairs can also increase significantly without a prevention system in place. It's crucial to prioritize marine growth prevention in the box cooler to avoid these hazards and maintain optimal performance and safety.



## Revolutionizing Marine Growth

# Prevention: The **Game-Changing**Benefits of Ultrasonic Technology



#### 95% REDUCED CAPITAL & MRO COSTS

Compared to impressed current anti fouling systems, there is no expensive copper anodes to exchange.

There is no drilling, welding or downtime involved.



#### **30% SAVINGS ON RUNNING COSTS**

Steering gear, propulsion or a hull that is subject to fouling can increase fuel consumption by up to 30%.



#### **0% IMPACT ON THE ENVIRONMENT**

No more biocides leaching out into the environment or microplastics from coatings that are harmfull to marine mammals.

# How Ultrasonic Marine Growth Prevention Works: Using Sound Waves to Prevent Marine Fouling



Ultrasonic marine growth prevention is a cutting-edge technology that uses sound waves to prevent the accumulation of marine growth on ships. The system emits high-frequency sound waves that disrupt the growth process of marine organisms, preventing them from attaching to the hull and equipment of the ship.

#### **Creating a Non-Stick Surface**

The ultrasonic system works by creating a pattern of high-frequency sound waves that create a non-stick surface on the hull and equipment of the ship. This non-stick surface makes it difficult for marine organisms to attach and grow, preventing the accumulation of marine growth.

#### **Easy Installation and Sustainable Benefits**

The ultrasonic system is easy to install and requires minimal maintenance. It operates continuously, providing round-the-clock protection against marine fouling. By preventing the accumulation of marine growth, the ultrasonic system can help improve equipment efficiency, reduce maintenance needs, and lower costs. It's a sustainable and eco-friendly solution that offers a safe and effective alternative to traditional methods of marine growth prevention.



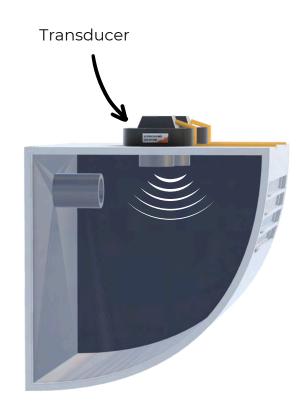
# 100% effect0% compromise

Corrosion Group creates custom control cabinets and cables that are flexible and built to meet our clients' needs and industry standards.

Our experienced engineers provide a complete design and installation service, managing everything from transducer installation to cable management and system commissioning.

Our maintenance-free systems come with an 18month warranty on all parts.

Contact us today to learn how we can help with your Marine Growth Control Prevention.



## Easy installation, Plug N' Play

- No drydocking
- No hull fittings
- No anode changes
- No expensive downtime



### USAF VS ICAF - COST COMPARISON

## Comparison on a 4 box cooler setup

Costs	ICAF	Corrosion Group USAF
System Cost	\$16 920	\$12,000
Installation Cost	\$4,480	\$560
Commissioning Cost	\$6,540	\$560
MRO	\$96,600	\$4,000
Total	\$244,020	\$17,120

Switching to Corrosion Groups ultrasonic protection is a nobrainer for commercial vessels with a operational lifespan of 15 years. Not only does it come with lower capital costs, but it also eliminates the need for costly ICAF sacrificial copper anode replacements. By making the switch, you could save up to \$226,900 on just 4 box coolers, with additional savings from reduced drydock and downtime expenses.





# Got Copper? 2026 Biocide resubmission is approaching

Ultrasound has already demonstrated its antifouling abilities in the food, brewing and aquaculture sectors. However, by 2026, any marine antifouling system that employs a biocide will have to undergo a lengthy and costly approval process.

As a result, industry experts predict that many of the current biocide systems will be phased out before 2026, as demand for biocide-free Marine Growth Prevention Systems (MGPS) increases.