

# ANTI-FOULING COATINGS, A TRICK TO PROTECT YOUR BOAT

A daily sailing, or even staying in salt water, puts your boat at risk of accumulating microscopic marine organisms like algae and barnacles. A ship not adequately treated with anti-fouling coatings, may slow down, consume more fuel, emit more pollutants, and produce more underwater noise.

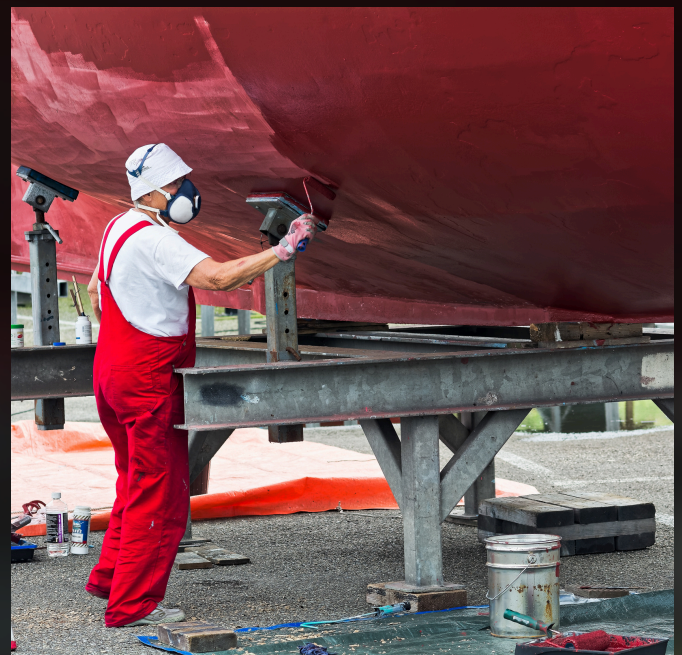
Historically, chemicals like lime, arsenic, and metallic compounds were used, but these seep into the water, harming sea life and disrupting ecosystems. For example, tributyltin (TBT), which was once widely employed, caused serious damage to marine life, leading to global bans under the 2001 International Convention on the Control of Harmful Anti-fouling Systems on Ships.

The first true anti-fouling paint was developed in 1840, when British scientist Thomas H. Church patented a copper-based paint used on ships to prevent fouling. By the early 20th century, numerous formulations containing different metals and chemicals had been created to assure optimal vessel protection.



## How Does Biofouling Affect the Marine Environment?

When marine organisms accumulate on underwater structures known as the "biofouling process" on the hulls, propellers, intakes, and other components of ships, marine species can 'hitch a ride' from their home ecosystem to a new one. They are therefore considered invasive species because they disrupt the new ecosystem's balance, endangering the survival of native species in the area.



## Biofouling Influence on Boat Performance

The adhesion of the species to ships roughens the hulls, creating friction and drag through the water. This resistance causes ships to use more fuel and emit more air pollutants and greenhouse gases. Biofouling can increase a ship's resistance in water by 20% to 60%, slowing it down and leading to an increase of 40% in fuel consumption.

While frequent hull cleaning can help to reduce the accumulation of organisms on underwater structures, it is costly, time-consuming, and risky for spreading invasive species. Therefore, antifouling coatings provide a more effective option.

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