SUBSEA NEWS

PROTECTION AND PERFORMANCE

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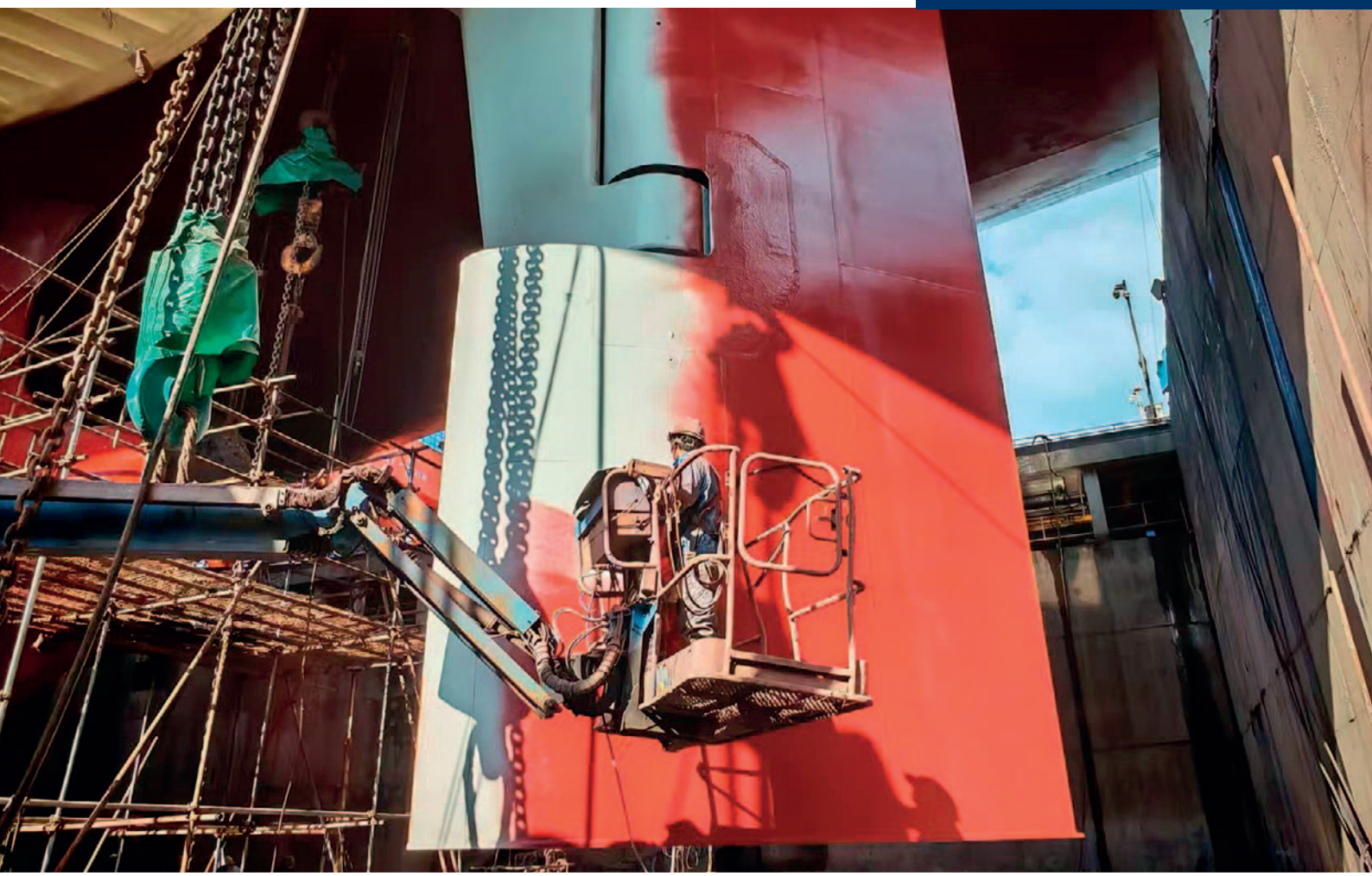
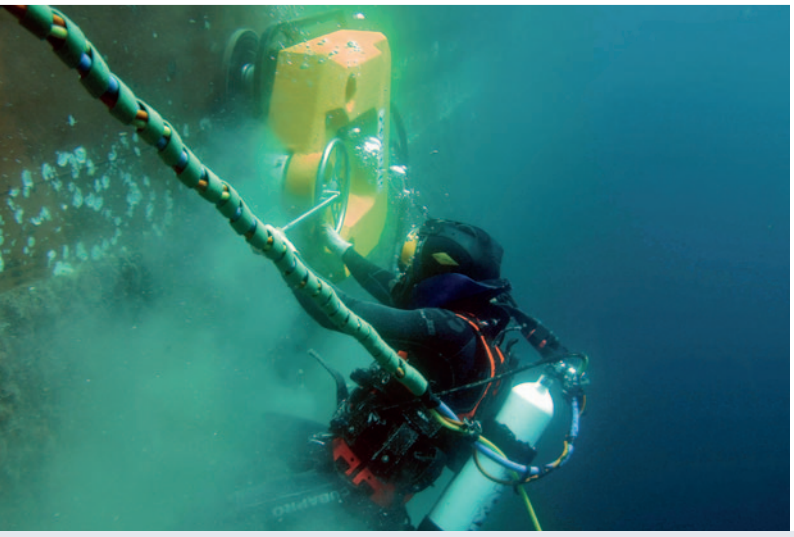
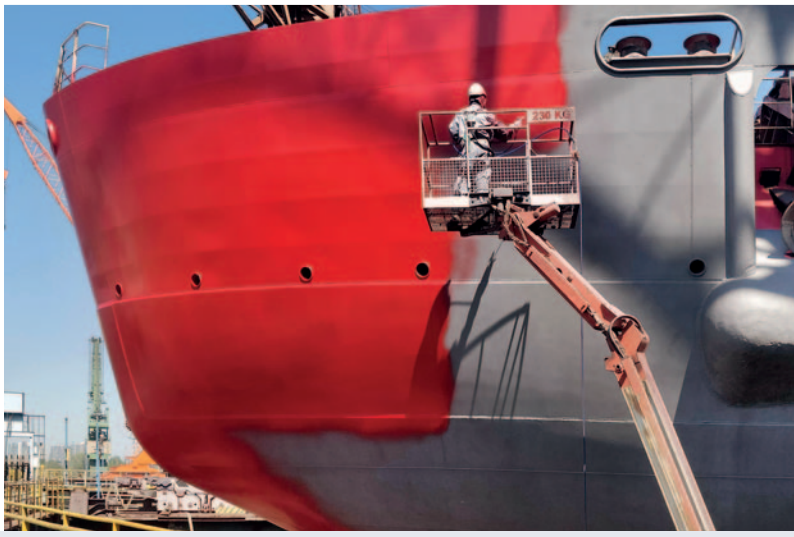
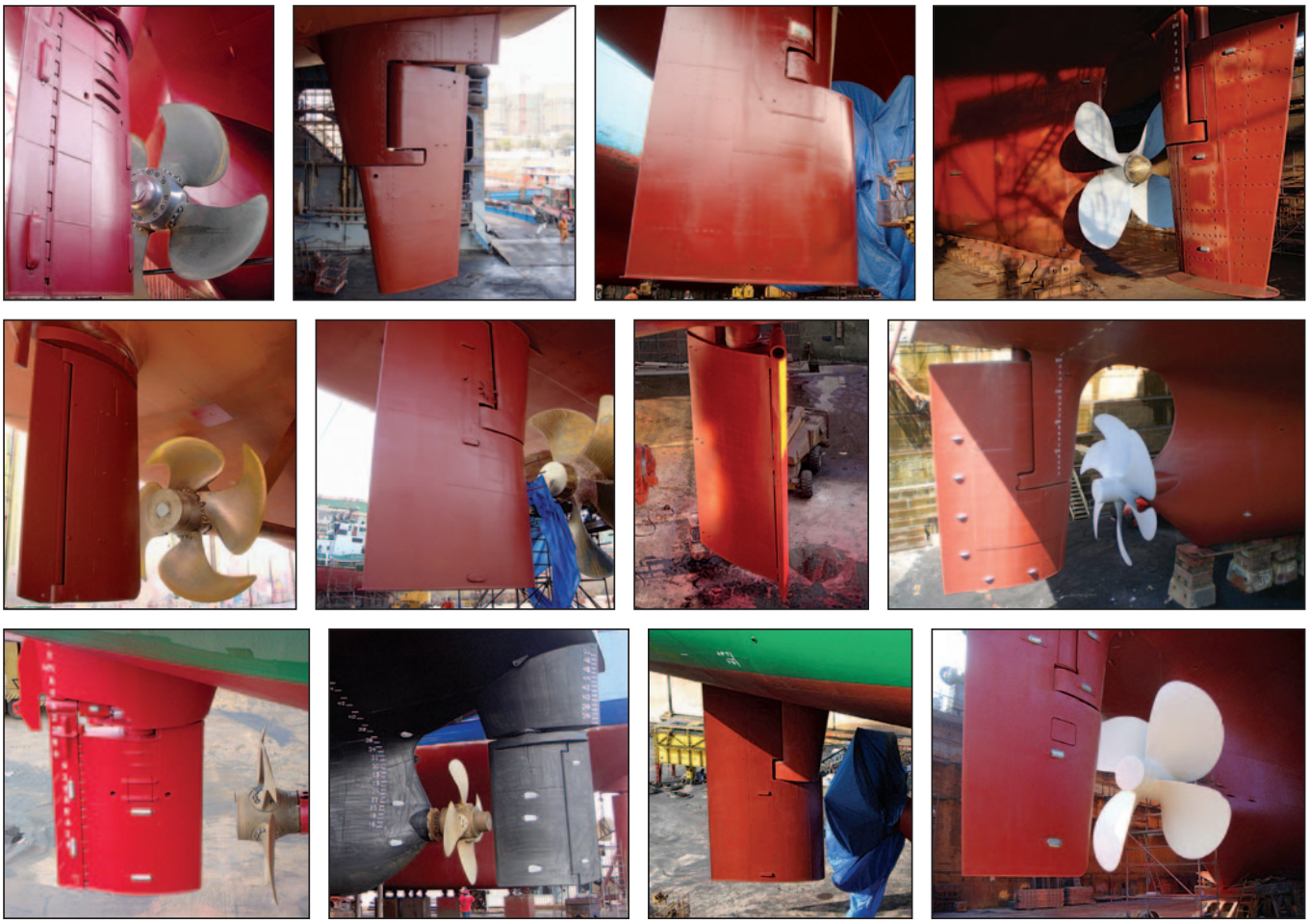






Why Subsea Industries' coatings are the best solution for protecting underwater parts of ships

SAY GOODBYE TO CAVITATION DAMAGE



Ecoshield gives a very thorough and lasting defense against cavitation and corrosion damage for a ship hull's entire service life.

The coating equally provides the rudder with an impenetrable protective layer while its flexibility enables absorption of the forces that are produced by cavitation. This prevents the damage normally caused by this phenomenon.

Without proper protection against cavitation and the resulting erosion and corrosion damage, the financial consequences can be severe.

By removing the existing paint layers and applying Ecoshield on the rudder we can break the never ending cycle of painting, suffering damage, having to perform extensive repairs in drydock followed by a full repainting, again and again.

With an Ecoshield application no full repaint will be needed during drydocking. Ecoshield is guaranteed for ten years. At the most, minor touch-ups will be required.

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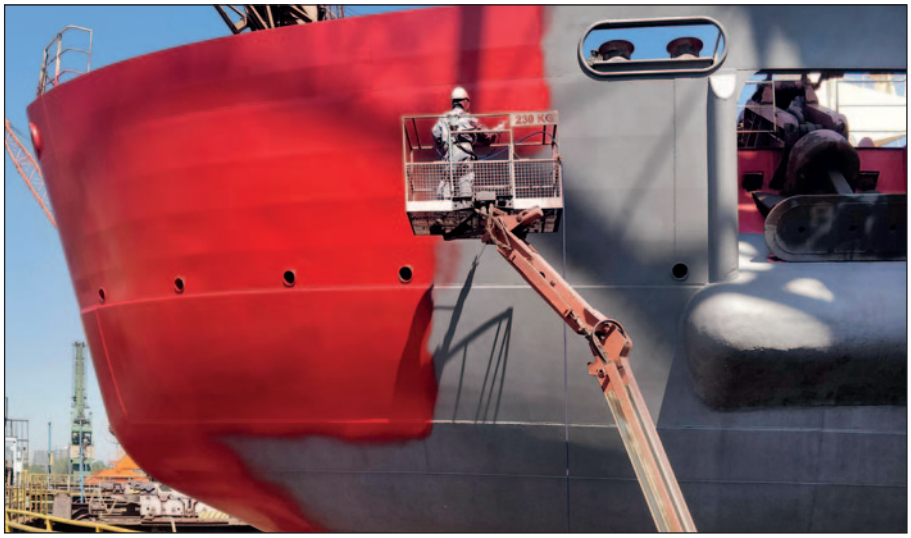
ECOSHIELD®
ULTIMATE PROTECTION

Why Subsea Industries' coatings are the best solution for protecting underwater parts of ships

In the demanding environment of marine operations, corrosion, erosion, cavitation, biofouling and other causes of damage relentlessly attack the underwater parts of ships. Traditional coatings often offer only temporary solutions, requiring frequent drydocking, reapplication and costly maintenance. Subsea Industries' marine coatings have redefined what it means to protect the underwater hull and running gear of vessels. They do this by delivering permanent, non-toxic, high-performance protection that maximizes lifespan, minimizes cost and improves overall vessel efficiency.

Below, we explore the reasons Subsea Industries' coating systems stand apart as the best choice for shipowners and managers seeking the ultimate underwater protection for their vessels.



Application of second layer of Ecospeed Ice.

1. Permanent protection for the life of the vessel

Unlike conventional marine paints that degrade over time and require reapplication every few years, Subsea Industries' coatings are designed to be applied once and provide lifetime protection. Products like Ecospeed and Ecoshield are not designed to be sacrificial; they are engineered to stay bonded to the substrate for the entire service life of the ship. This removes the need for repainting and significantly reduces drydock interventions.

Long-lasting protection means fewer interruptions in service and lower total lifecycle costs for operators. Vessels that have used Subsea Industries' coatings for over a decade still demonstrate excellent performance with only minor touch-ups required, far outperforming traditional coatings.

Watertaxi Rotterdam found a workable hull coating in Ecospeed.

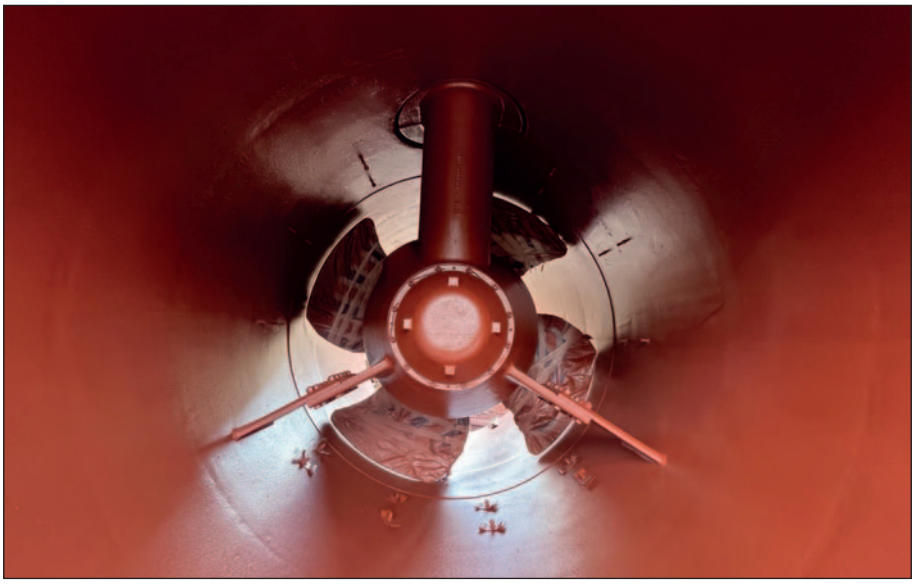
2. Tailored solutions for all critical underwater components

Subsea Industries offers a comprehensive range of coating products, each formulated to address specific underwater challenges:

Ecospeed application on scrubber outlet.

Ecospeed – A hard, non-toxic hull coating that provides long-lasting protection for the hull, reducing corrosion and enabling routine in-water cleaning without damaging the coating or having a harmful effect on the environment.

Ecospeed Ice – Tailored for ice-going vessels, offering Polar Code 1–7 ice-abrasion resistance so that ships operating in polar waters maintain protection even under the most abrasive conditions.

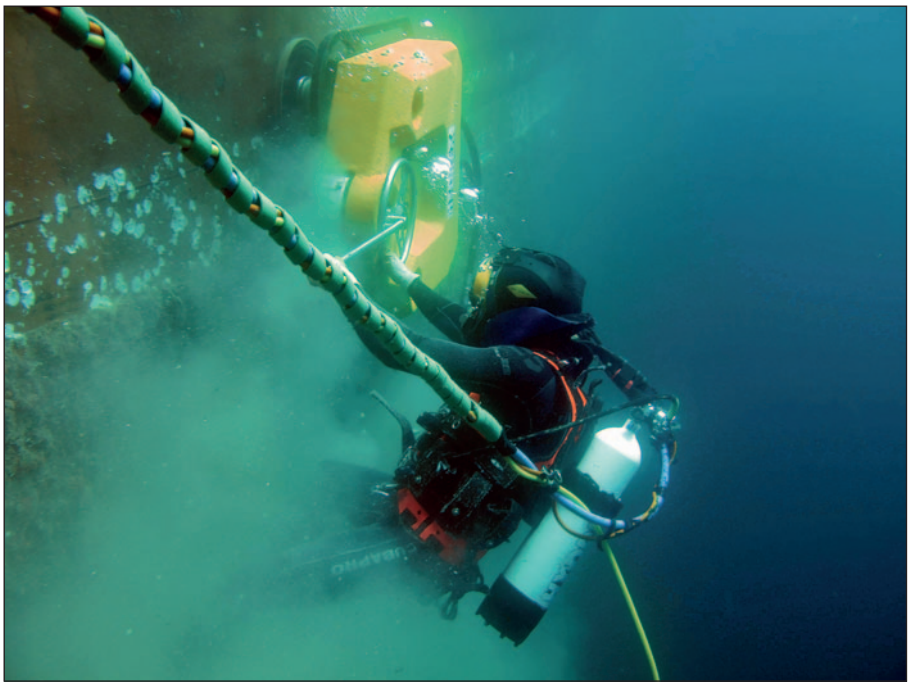

All running gear, such as thrusters and thruster tunnels, can be protected with Ecoshield.

Ecoshield – Specifically developed to protect rudders, thruster tunnels, nozzles and other running gear from cavitation erosion and corrosion, a challenge that traditional coatings cannot reliably solve.

Ecofix – A high-performance filler used in conjunction with all our coatings to repair pitted or corroded surfaces, restoring metal integrity before coating.

Ecolock – Designed for long-term offshore structures and vessels, providing underwater protection that can last 35 years or more without needing replacement.

This range of products ensures that every critical underwater component — from the hull to running gear and offshore units — is fully and effectively protected.



Underwater cleaning of Ecolock leaves it as good as new.

3. Unmatched resistance to cavitation and corrosion

Many coatings struggle to resist the aggressive forces produced by cavitation, which is the formation and collapse of vapor bubbles due to rapid pressure changes near propellers and running gear. Over time, cavitation damages surfaces through high-intensity pressure pulses, leading to deep pitting and accelerated corrosion.

Ecoshield addresses this challenge head-on. It consists of a high concentration of glass platelets embedded in a robust vinyl ester matrix that creates an impenetrable barrier. This stops corrosive elements and cavitation forces from reaching the underlying steel.

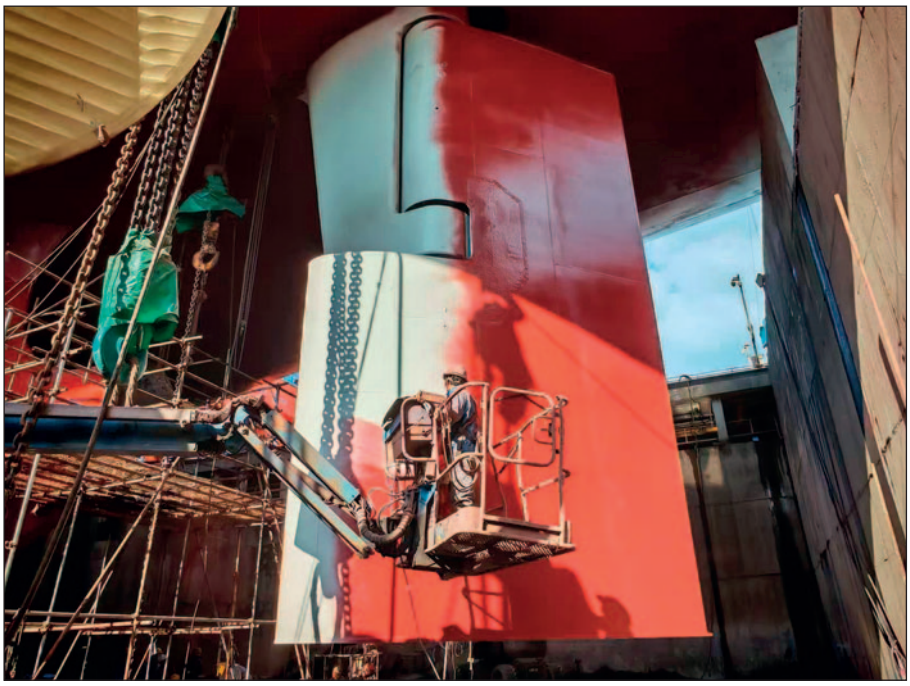
Case studies show that once Ecoshield is applied, erosion and cavitation damage essentially stop, dramatically reducing maintenance demands and extending service intervals. Shipowners who originally applied Ecoshield on one component have often expanded its use to other parts of the ship and across their fleets after seeing the results firsthand.

4. Environmentally responsible, non-toxic

A critical advantage of Subsea Industries' coatings is their non-toxic nature. Traditional antifouling paints commonly rely on biocides and release heavy metals such as copper and zinc into the water to deter biofouling. These toxic substances accumulate in sediments, harm marine ecosystems and raise regulatory concerns.

In contrast, the Ecospeed family avoids harmful biocides altogether, making the coatings environmentally safer and compliant with modern environmental standards. No pollutants leach into the water over time, which not only benefits marine life but also supports shipowners facing increasingly stringent environmental regulations.

FLNG coated with Ecolock.



Only two, identical layers are required to offer full and lasting protection.

Application can be done before or after installation of the running gear without any effect on the quality of the coating.

5. Superior fuel efficiency through surface smoothness

Coating longevity isn't the only performance factor: hydrodynamic efficiency is also vital. A smooth hull surface decreases drag, which directly reduces fuel consumption and greenhouse gas emissions. Because Subsea Industries' coatings retain their integrity and smooth profile over the long term, ships maintain optimal performance throughout their operational life.

Importantly, these coatings are also designed to be cleanable underwater without degrading their thickness or performance. Unlike biocidal antifouling, which often hinders in-water cleaning due to environmental regulations, non-toxic coating systems like Ecospeed support regular maintenance. They help keep hulls clean and fuel consumption low.

6. Cost savings and operational efficiency

The long service life, resistance to damage and need for only minor repairs translate into significant cost savings for shipowners. Traditional coatings often require regular drydocking for repainting and repair, which not only costs money but also takes ships out of service.

Subsea Industries' systems reduce these demands. Ecoshield's ability to stay on the vessel's components for decades means fewer drydockings, lower maintenance bills, and more time spent generating revenue.

Additionally, coatings like Ecolock can protect offshore units for decades without replacement, enhancing asset life and decreasing the frequency and expense of underwater maintenance.

7. Proven track record with major industry players

Subsea Industries' coatings have been selected by major shipowners and fleet operators globally, demonstrating trust and real-world effectiveness. From ice class vessels and high-performance hulls to heavily-stressed rudders and thrusters, these coatings have consistently delivered exceptional performance in diverse operating environments.

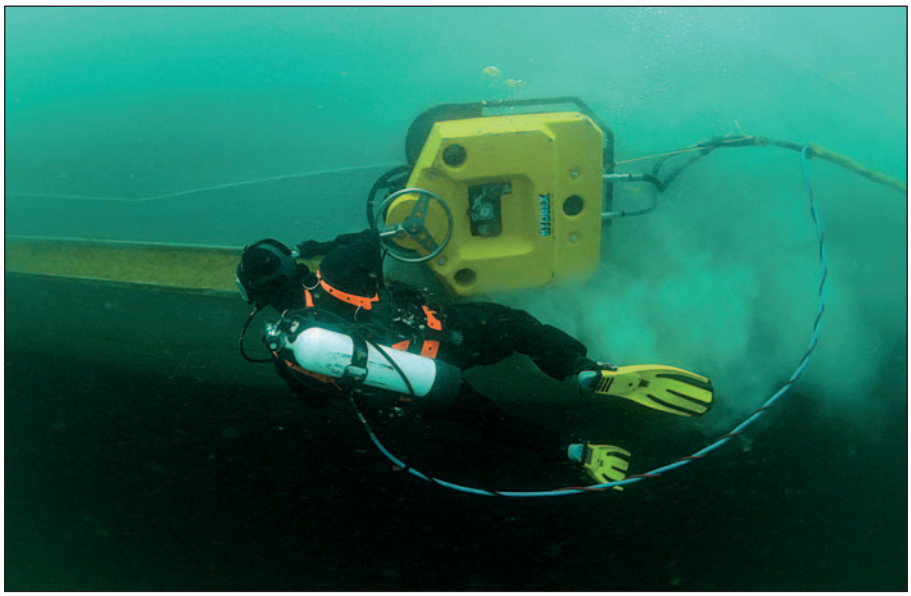
Ships protected with Ecoshield and Ecospeed report lower maintenance

needs and strong performance retention even after years of service. Independent coating inspectors have testified to their industry-leading performance compared to conventional alternatives.

You can find a wide range of case studies on Subsea Industries' website: https://subind.net/case-studies/.

Conclusion

In an industry where reliability, performance and environmental responsibility are vital, Subsea Industries' coating systems stand out as the best solution for protecting underwater parts of ships. With a comprehensive range of products that deliver lifelong protection, exceptional resistance to corrosion and cavitation, non-toxic formulations, improved fuel efficiency, and lower total cost of ownership, these coatings are a strategic investment for any vessel owner or operator looking to maximize asset value and operational uptime.



Underwater maintenance can be carried out whenever needed without causing harm to the environment.

If you're seeking advanced solutions that redefine underwater protection, Subsea Industries' coatings set the benchmark: protecting ships today and safeguarding them for decades to come. ■

Corrosion damage repair made very easy

Subsea Industries has a product for filling and building up a corroded and pitted steel surface to its original form prior to recoating with Ecoshield. Ecofix is as tough as the steel itself, machinable, and can be used to repair most pitting or corrosion damage on rudders, stabilizer fins, thrusters and other underwater gear.

Ecofix is used in combination with Ecoshield, the ultimate rudder protection coating. When a rudder or other piece of underwater ship gear has not been properly protected, the surface will become corroded.

Cavitation can cause severe pitting. The steel needs to be restored to its original shape with a smooth surface prior to recoating.

This is where Ecofix comes in. It is a superior, tested and proven filler. Because it uses the same basic resin as Ecoshield, the coating can be applied just one hour after the filler. The bonding and hardness are extraordinary. This is the effective alternative to very expensive fillers. And because it is part of the Ecospeed/Ecoshield family, it is fully compatible with our coatings.

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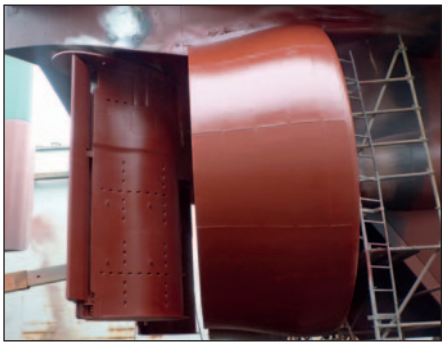

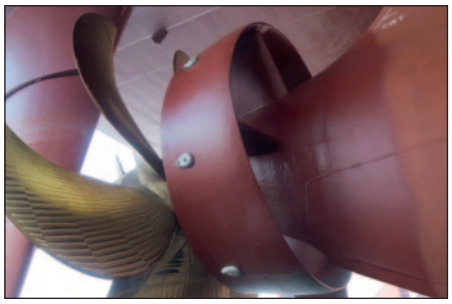

Subsea Industries NV, was founded in 1983 specifically to take care of the design, development and marketing of what has become an evolving line of underwater hull and propeller cleaning equipment as well as the line of hard hull coating systems.

All products produced by Subsea Industries have the same goal in mind: To keep the underwater part of your vessel in the best possible condition for its entire lifetime at the best possible performance.

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