



Before Ecospeed



7 years after Ecospeed application

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ECOLOCK® ultra long-lasting protection for offshore hulls



Ecolock is designed to protect offshore vessels for decades without the need for drydocking. Increasingly, offshore units such as FPSOs, FSOs, FLRSUs and others used for offshore oil and gas exploration, drilling, storage and transport need to stay out of drydock for 15, 25 even 40 years.

The challenge has been to protect the underwater hull from corrosion and to provide a cleanable surface so that the biofouling that accumulates can be removed successfully and safely for UWILD and to reduce weight. Ecolock is the answer to that challenge.

Ecolock is an extremely tough and durable coating designed to remain

in excellent condition for 15 - 25 years without drydocking, repair or replacement. Ecolock can be cleaned underwater as often as needed to meet the UWILD and weight requirements of FPSOs, drill ships and other offshore vessels. Ecolock is the result of continual R&D on offshore hull coatings since the 1990s.

Subsea Industries NV
+ 32 3 213 5318
info@subind.net
www.subind.net

ECOLOCK® 
LIFETIME CORROSION PROTECTION

Editorial

For decades, coating selection was often treated as a technical detail. It was something to be discussed during construction, reviewed during drydock planning, and revisited when problems appeared. Today, that mindset is changing.

Across the maritime industry, ship-owners are under increasing pressure to improve efficiency, reduce operating costs, extend asset life, and meet growing environmental expectations. In this environment, the role of protective coatings has evolved from a maintenance consideration into a strategic business decision.

The reason is simple. Corrosion, erosion, and mechanical wear are not isolated technical problems. They directly affect vessel availability, maintenance budgets, drydock schedules, and ultimately profitability. Every hour spent repairing preventable damage is an hour that could have been spent generating revenue.

The industry's most successful operators increasingly recognize that long-term protection begins with long-term thinking. Instead of focusing solely on the initial cost of a coating system, they evaluate its performance over the entire service life of the asset.

Whether protecting hulls, ballast tanks, cargo holds, rudders, thruster tunnels, offshore structures, or other critical assets, the objective remains the same. Owners want systems that provide reliable performance year after year, reducing the need for repeated repairs and minimizing operational disruption.



This approach also supports sustainability objectives. Extending the life of steel structures reduces the need for replacement materials, repair activities, and associated resource consumption. In many cases, the most sustainable asset is simply the one that lasts longer.

As technology continues to advance, coatings are becoming more specialized, more durable, and more capable of addressing the specific challenges faced by different vessel types and operating environments. Solutions such as Ecospeed, Eco-shield and Ecolock, developed for harsh marine environments demonstrate how protective coatings have evolved beyond corrosion control to become tools for improving efficiency, reducing maintenance, and extending asset life.

The maritime industry will always face challenges from harsh operating conditions. Saltwater, abrasion, cavitation, and corrosion are reali-

ties that cannot be eliminated. But their consequences can be controlled.

The question is no longer whether protection is necessary. The question is how early, and how effectively, it is implemented.

Subsea Industries NV
Boud Van Rompay
Founder

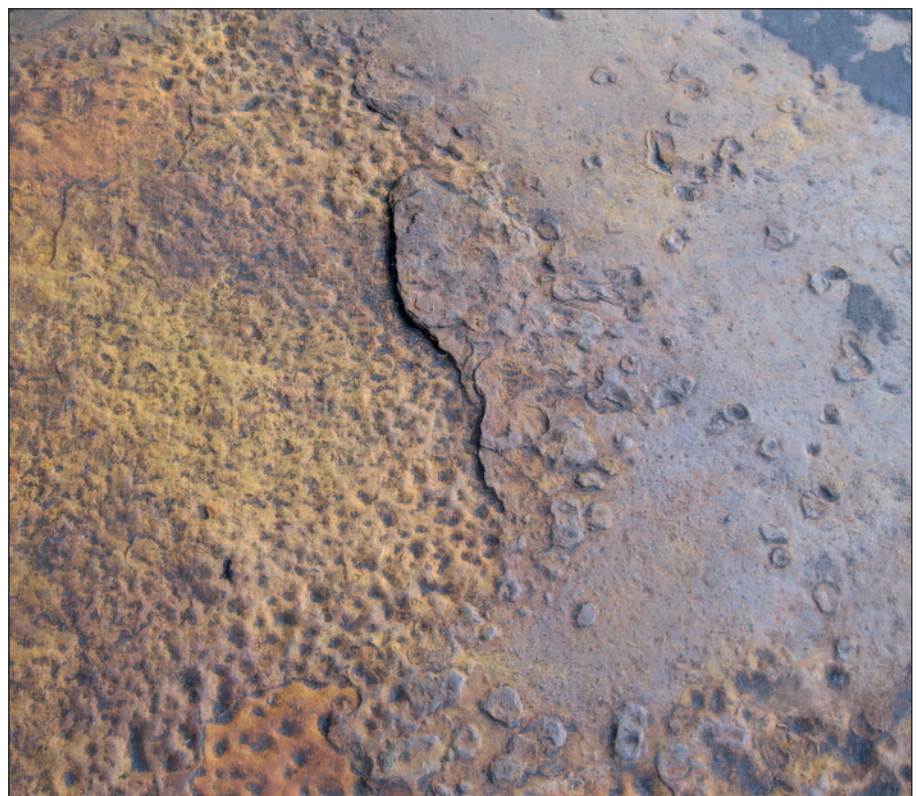
After seven years in Baltic conditions, *Finbo Cargo's* Ecospeed-coated cargo deck remains in excellent condition



Ro-ro passenger ferry Finbo Cargo operates from Vuosaari in Helsinki to Muuga in Tallinn.

Seven years after Ecospeed was applied to the open cargo deck of Eckerö Line's ro-ro passenger ferry *Finbo Cargo*, the coating remains in excellent condition despite continuous exposure to heavy cargo traffic and harsh Baltic weather conditions. The long-term performance of the coating confirms the positive results already observed during the first year of service and demonstrates its ability to provide lasting protection in one of the most demanding operating environments aboard a vessel.

The story began in 2019 when Eckerö Line selected Ecospeed to protect the open cargo deck of *Finbo Cargo* against the constant wear and tear caused by vehicles, trailers



The deck before application, showing the results of continuous exposure to heavy cargo traffic without Ecospeed protection.



Application of Ecospeed was done in 2019 to prevent further damage from occurring.



The deck after Ecospeed application.



The coating on the deck is still in excellent condition seven years after application and no repaint is required.

and cargo. After the first year of operation, the results were already impressive.

Eckerö Line, part of the Finnish-owned Eckerö Group, operates passenger and cargo services across the Baltic Sea between Helsinki and Tallinn. The company plays an important role in connecting Finland with European markets, providing regular freight services as well as passenger transport between the two capitals.

"We coated the weather deck with good result," said Mr. Olsén, Technical Manager with Eckerö Group, at the time. "After one year in traffic and many thousands of cargo tons there are no failures to the coating at all."

The excellent performance prompted Eckerö to expand the use of Ecospeed in 2020, applying the coating to the vessel's ice belt and large sections of the hull. The decision was driven not only by the cargo deck results but also by the company's desire to reduce future maintenance requirements.

"We decided to choose a system that initially costs a bit more but in the



M/S Finbo Cargo was upgraded to an Ice Class in 2020.



The bulbous bow and other areas prone to ice impact needed extra protection.

end saves us a lot in maintenance cost," explained Mr. Olsén. "That is an important factor for us since our dockings are mainly done during winter in bad weather conditions when the quality of repair work to the paint system cannot be guaranteed."

Seven years later, the condition of the cargo deck demonstrates the value of that decision. Open cargo decks are subjected to constant abrasion, impacts and exposure to the elements, often requiring regular repairs and recoating. Yet the Ecospeed application aboard *Finbo Cargo* continues to perform excep-

tionally well under the demanding conditions of the Helsinki–Tallinn route.

The vessel also underwent an Ice Class upgrade in 2020, leading Eckerö to seek a coating capable of withstanding the severe ice conditions encountered in the Baltic Sea.



Application of Ecospeed can easily be geared to the schedule of the yard.



The durability of Ecospeed makes the planning of future dockings far easier.



The Ecospeed coating on the deck remains in excellent condition despite continuous exposure to heavy cargo traffic and harsh Baltic weather conditions.

At the time, Mr. Olsén noted: "We decided quite fast that we needed a coating that we knew could handle the ice conditions in the Baltic Sea." The proven resistance of Ecospeed to ice abrasion and mechanical impact made it a natural choice.

While no recent inspection information is currently available for the ice belt and hull sections coated in 2020, the condition of the original cargo deck after seven years of intensive service provides compelling evidence of Ecospeed's durability and long-term protective capabilities.

The experience aboard *Finbo Cargo* demonstrates that Ecospeed is not only suited to underwater hull protection but can also deliver outstanding results in areas exposed to severe mechanical wear. Seven years after application, the cargo deck remains a testament to the coating's durability and to Eckerö's decision to invest in a long-term solution rather than a conventional coating system requiring frequent maintenance. ■

Lasting protection

Running gear

Ecoshield offers long-lasting protection for underwater ship gear susceptible to corrosion and cavitation erosion. The coating protects these areas for the service life of the ship. There is no need for recoating or major repair.

Rudders



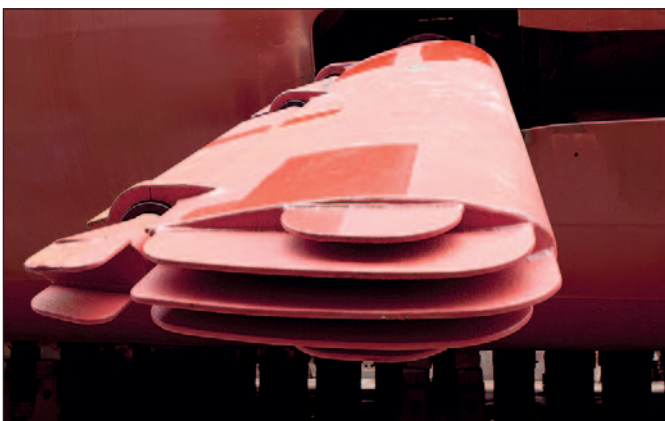
Thrusters



Nozzles



Stabilizer fins



Thruster tunnels



n with Ecoshield

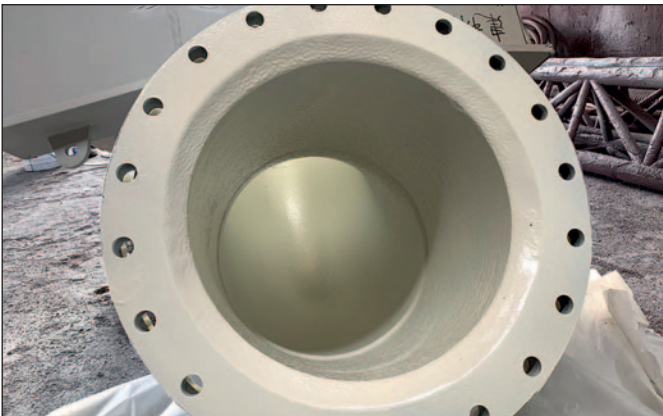
Scrubbers

Ecoshield is highly chemically resistant. Using the coating to protect the exterior outlets as well as the interiors of scrubbers will prevent corrosion damage and its consequences.

Outlets



Overboard pipes



The actual scrubber



Recycle tanks



Subsea Industries NV
+ 32 3 213 5318
info@subind.net
www.subind.net



Repairs have no impact on the longevity and smoothness of our coatings

Ecospeed is a very unusual ship hull coating: in addition to its proven durability and toughness, any mechanical damage can be repaired without any consequences to the integrity, durability, longevity or smoothness of the coating. Other hull coatings in general use, such as antifouling and foul release coatings, cannot be successfully repaired when damaged. Attempts to repair them leave a rougher hull with a resulting increased fuel penalty.

Why would you need to repair Eco-speed? Not because the coating is degrading: it does not degrade over time. There are two main circumstances where repair might be needed.

Firstly, if hot work is carried out on the ship. This will destroy the coating in the area of the welding. But when the surface is prepared and the coating reapplied, perfect adhesion to the existing coating is achieved. This is for instance the case at newbuild. Often the ship is painted at the block state before being assembled in drydock. The erection joints are then coated and the new layers blend in perfectly with the existing ones.

Secondly, coatings are weaker than the underlying substrate, so you are going to have damage on the coating from time to time, caused by impact. These damages can be repaired without reducing the longevity of the first application, or the smooth-



It is impossible to repair an antifouling coating that has degraded over time and restore the hull to a smooth finish.



Hull of a ship where the antifouling coating has been "repaired" in drydock. This ship is about to undock.



Ecospeed coated hull where hot work inside the ship has damaged the coating.



The damaged Ecospeed coated hull repaired, leaving the hull as smooth as when first painted.

ness of the hull. And the repair is as tough and long-lasting as the original.

A key reason for Ecospeed's repairability is that it consists of a single, homogeneous coating of vinyl ester and glass, applied directly to the steel or other substrate without primer, mid-coats, tie-coats, top-coats or anything else. Most other coating schemes consist of a series

of different coatings made up of several layers of non-homogeneous substances such as zinc-rich epoxy primer, epoxy mid-coats, tie-coats and finally topcoats of antifouling or foul-release paint. Trying to repair such a coating scheme and leave it as good as the original is impossible. (This subject is covered in depth in a White Paper we published: Hull Coating Degradation – the Hidden Cost. You can contact

us to receive a copy of this White Paper.)

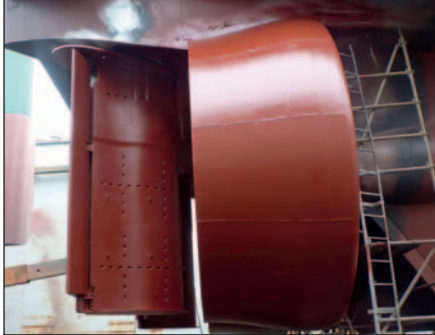
Another major reason is that the Ecospeed family of coatings has a 3-hour minimum overcoat time *but no maximum*. This means the second and, if required, third coat can be applied after three hours, three days or three weeks or more and will bond perfectly to the previous coat. This is not the case with most other coatings. Epoxy coatings, for example, have a very finite time for overcoating and one layer must still be "tacky" when the next layer is applied. That is a problem. So many conditions occur during coating application. Is it exactly 24 hours? 26? 22? How can you be sure? It is always a more or less situation. Getting the "tackiness" factor right determines whether the coating is applied correctly or not. It's a fine point requiring judgement and there is a very short window for application. It also means that when applying new paint over old, it will not adhere properly.

The repairability of Ecospeed is a key factor in the longevity that the coating can achieve. Ecospeed correctly applied can survive 30, 40, 50 years, and the repairs can survive just as long. The repairability of the coating is an important factor which enables us to offer a warranty of 10, 20 and even 35 years for our coatings.

When designing or maintaining ships and looking at their sustainability, the ease of maintenance and the effect of repairs on the durability and smoothness are very important. This is the only way to be able to coat a ship for 50 years without repainting and without the coating becoming very rough over time. ■

SUBSEA

PROTECTION AND PERFORMANCE



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.

www.subind.net

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+ 32 3 213 5318
info@subind.net