

# SUBSEA

PROTECTION AND PERFORMANCE



Magazine

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# ECOLOCK® ultra long-lasting protection for offshore hulls



**E**colock 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.

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# Editorial

**An underwater ship hull coating needs to be simple to apply, it needs to stay on your ship for many years with easy maintenance and it needs to save you money. Ecospeed ticks all these boxes. Choosing Ecospeed will be the last decision you ever have to make concerning your underwater hull coating.**

Applying Ecospeed is very easy and can be done very fast. The coating only requires two layers. No top-coats, no primers or any other additional layers are needed. Ecospeed also has very flexible overcoating times. The second layer can already be applied three hours after the first and there is no maximum overcoat time. As a result the application can be scheduled around other work taking place in the yard or dock.

Future dockings are also far easier to plan. Ecospeed comes with a ten-year guarantee. The coating will last the full service life of the ship without needing replacement or major repair. Only small touch-ups will be required. These can easily be done during a (short) routine drydock visit. They blend in perfectly with the existing coating. Because no repaint is needed, days and up to a week can be saved in drydock times during each visit.

Every hull coating fouls and as a result cleaning between drydocking is an unavoidable reality for ship-owners. For most coatings this is a problem because they cannot be cleaned in the water without damaging them, often very severely, as well as harming the marine environment. Ecospeed, however, was designed to be maintained regularly



while keeping the coating intact for 20 years or longer.

This procedure is made easy by the coating's technical properties. Cleaning can be carried out whenever needed, at any point in its lifespan, without causing damage to the coating or to the environment.

Washing Ecospeed can also be done in drydock with high pressure tools. The standard procedure for ship-yards when a ship enters drydock is general cleaning of the ship hull to clear away any fouling and residues. With Ecospeed the coating is always in an as new and excellent condition after the high pressure washing. The surface texture is very smooth. It reveals without exception that Ecospeed does not need any additional paint layers.

Our coating gives your underwater hull the best possible hydrodynamic characteristics. What is more, Ecospeed lasts. Therefore, the performance of the ship does not degrade

either. Large fuel savings are the result. This brings you huge financial profits over the lifetime of the ship.

If you drop us a line, we can tell you how Ecospeed can benefit you. We will look at your specific situation and give you all the data you need. This will allow you to make an informed decision on the next underwater hull coating for your ship. You will not have to worry about this ever again if you choose Ecospeed.

Subsea Industries NV  
Boud Van Rompay  
Founder



# Ecoshield's lasting protection makes repainting of running gear unnecessary

**O**ver the last half year, the rudders and running gear of well over 50 ships were given an Ecoshield protective coating at yards in Germany, Spain, Turkey, Belgium, Malta, U.A.E., Singapore, the U.S.A. and China. These vessels include container vessels, patrol ships, chemical tankers, tugs and a dredger.

The ships belonged to a number of different owners. Some of them were new customers, others returning ones. The returning customers had seen firsthand that Ecoshield solved the cavitation erosion problem on their other rudders and wanted the same protection for the rest of their fleet. The new ones saw the excellent result obtained by other owners and chose Ecoshield to prevent corrosion and cavitation damage from reoccurring.

## Groundbreaking protection

In the last couple of years, sister company Hydrex has noted a substantial increase in the number of enquiries for underwater rudder repairs. This clearly shows the need for a cost-saving and lasting solution. A great deal of effort goes into the design and manufacture of rudders because they are such an important part of a vessel. If a rudder is not given the proper protection against cavitation and the resulting erosion and corrosion damage, there can be major financial consequences for the owner.



*Severe pitting in rudder as a result of cavitation. Ecoshield can prevent this from happening again.*

Ecoshield puts an end to this. By blasting the rudder or other running gear back to bare steel and applying our coating, 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. Ecoshield provides a very thorough and lasting protection for a ship's

entire service life. No repaint will be required during future drydockings. At most minor touch-ups will be needed.

## The Ecofix and Ecoshield combination

If a rudder has already suffered corrosion damage, Ecoshield can pre-





*One of our paint inspectors going over the next step with the applicator.*

vent any further damage from occurring. In such case the coating can be used in combination with another product in the Subsea Industries family: Ecofix.

Ecofix is a superior, tested and proven filler that restores the steel to its original shape with a smooth surface prior to recoating. Because it uses the same basic resin, Ecoshield can be applied just one hour after the filler.

Slot welds can also be filled with Ecofix on a newbuild rudder prior to Ecoshield application. Ecofix can replace much more costly and time-consuming hot work in most cases.

### **Easy and flexible application**

With time at a premium in drydock, the speed of application of Ecoshield is a further advantage. Ecoshield's flexibility makes it easy to adapt the application schedule to the rest of the activities at the shipyard or drydock in a way which does not interfere with them. Overcoating time

can be as short as three hours. With the right planning, grit blasting, filling with Ecofix if needed, and application of the two required layers of Ecoshield can be performed in just one day.

### **Suitable for all running gear**

Besides offering rudder protection, Ecoshield is also suitable for thrusters, azimuth thrusters, azipods,

thruster nozzles, thruster tunnels and other underwater ship gear which needs special protection from corrosion. The extra strength coating protects these areas for the service life of the ship. There is no need for recoating or major repair. For this reason several of the vessels treated recently had their thrusters, thruster tunnels, propeller nozzles and stator fins coated with Ecoshield in addition to the rudders.

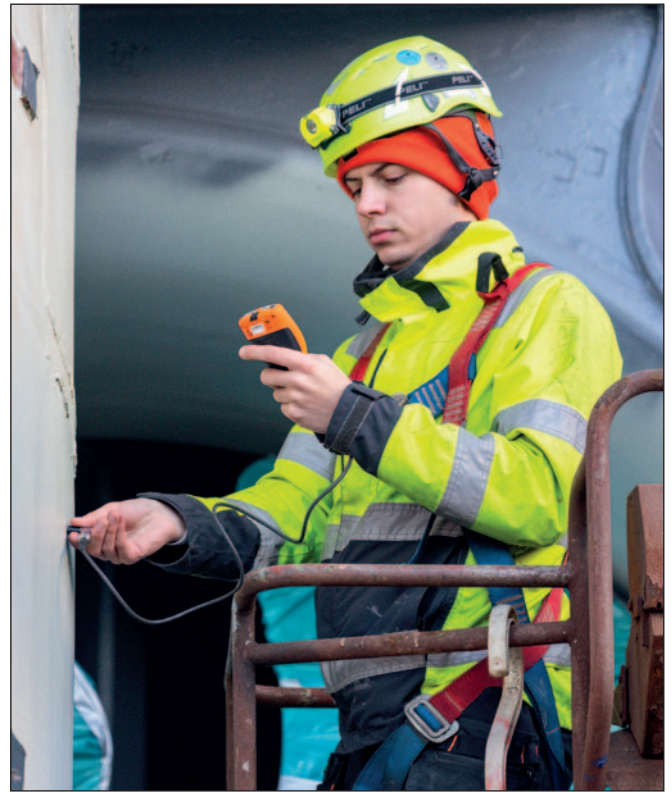


*Application of first Ecoshield layer during the block phase.*





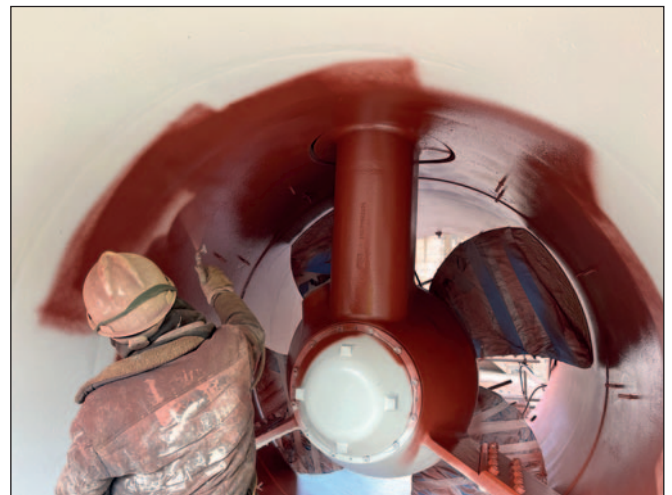
*Only two, identical layers of Ecoshield are required to offer full and lasting protection.*



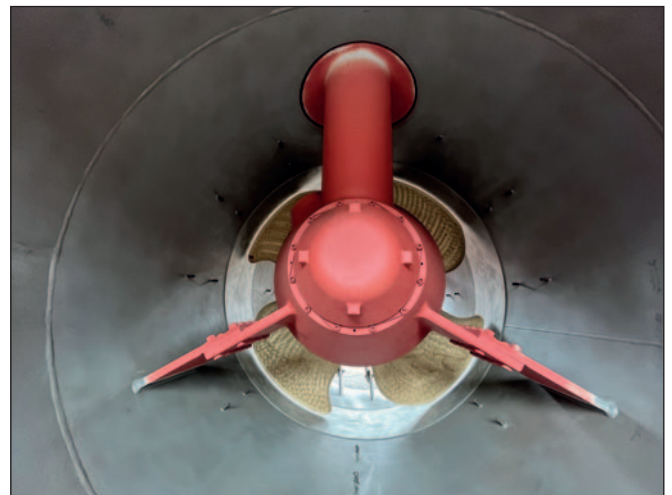
*Paint inspector measuring the dry film thickness of the first coat.*



*Application of first layer on propeller nozzle.*



*All running gear, like thruster (tunnels), can be protected with Ecoshield.*

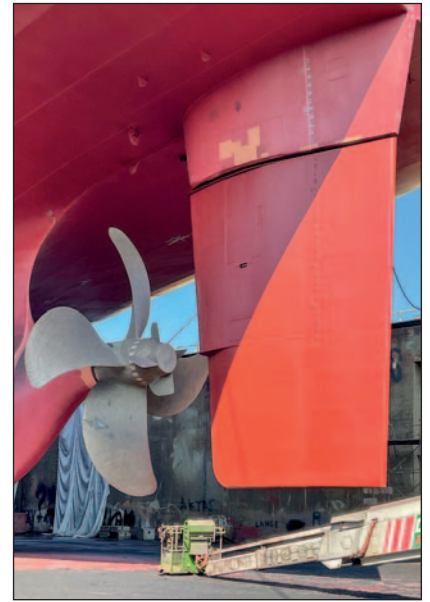


*Thruster after application.*





*Application is simple if the correct procedure is followed.*



*No repaint will be needed during future dockings.*



*Stator fin after application.*



*Double rudders on dredger, both have been coated with Ecoshield.*

## **Results speak for themselves**

Evidence of the success of the coating is the number of companies that began by coating one rudder experimentally and have ordered Ecoshield for the running gear on other ships after seeing the results in service. Most have plans to convert their entire fleet. Shipowners who have previously applied Ecoshield to rudders on ships in service are specifying the coating for the rudders and other underwater gear on their newbuilds.

Ecoshield comes with a ten-year guarantee. It is the only coating known to fully protect a rudder from all cavitation damage. ■

**You can give the rudders and running gear of your vessels the same lifelong protection. Contact us today.**

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# Subsea Industries agents in Norway and China

**A**s mentioned in the recent Overview of our agent network, in upcoming issues of the magazine and newsletter we will introduce you to many of our agents around the world. We are starting with Norway and China.

## GearConsult, Oslo, Norway

GearConsult AS in Oslo, Norway, is a relatively recent agency for Subsea Industries. The relationship began in 2019 after meeting at the Nor-Shipping trade show.

GearConsult began promoting drive train components and solutions to



*On the Brisen, recently coated with Ecospeed, in Oslo during Nor-Shipping 2023, L-R Ludvig Nyquist, CEO GearConsult; Espen Larsen-Hakkebo CEO in Brim Tech & Co-founder, Brim Explorer; Agnes Árnadóttir, CEO & Co-founder, Brim Explorer; Andi Hermans, Production Manager, Subsea Industries; Carl Anders Langberg, Sales at GearConsult.*



*Ludvig Nyquist, CEO of GearConsult (left) and Andi Hermans, Production Manager Subsea Industries at the GearConsult stand at Nor-Shipping 2023 in Oslo.*

the Norwegian maritime industry for RENK many years ago. Eleven years ago, Ludvig Nyquist, the current owner and CEO, took over the company from his father. He has since expanded its range of representations, focusing on green, maritime technologies. Subsea Industries with its non-toxic corrosion protection and hull performance coatings was a natural fit, as was Hydrex for underwater maintenance and repair.

“Ecospeed sounded too good to be true,” says Ludvig. “But after hearing about it I traveled to the company headquarters in Antwerp. Seeing Ecospeed on the Hydrex workboats and watching it being washed with steel brushes was pretty compelling and convincing. The whole philosophy behind it being non-polluting and long-lasting was really in line with what I believe in and with our



wanting to focus on green products.”

## Brim Explorer

GearConsult introduced Subsea Industries and Ecospeed to Brim Explorer, a Norwegian tourism and ship-owning company operating hybrid-electric and electric ships. The company offers silent, sustainable and innovative experiences at sea in Northern Norway and, more recently, also in Oslo. Their third ship, *MS Brisen* operating in Oslo, is completely electric. Their ships are designed for the best experience for the guests while creating minimal impact on the environment.

In 2018 I got to know the owners of Brim Explorer at a shipping event,” recalls Ludvig. “When I met Subsea Industries at Nor-Shipping in 2019 and learned about Ecospeed, I thought that it would be a perfect product for Brim Explorer. They were also at Nor-Shipping so I introduced the two companies. When it came time to build *Brisen* in 2022 they were very clear that they would use Ecospeed on this vessel.” The application was very successful and Brim Explorer will also use Ecospeed on their next two new-buildings.

“With Ecospeed we eliminate all chemical emissions to the sea, preventing harmful chemicals from disturbing the fragile ecosystems in the areas in which we operate,” says Espen Larsen-Hakkebo, CEO and Co-founder of Brim Explorer. “Our business is creating unforgettable experiences: it only makes sense to do this causing as little impact to the environment as possible. Ecospeed is therefore our preferred choice over any antifouling system.”

Nick DeLashmutt, project manager at Brødrene Aa, the shipyard that



*Lisa Shen, long term Office Manager for Carich Marine Engineering (HK) Co., Ltd. at the company's main office in Dalian, China*

built the *Brisen*, was very satisfied with how the project was handled. “We appreciate the good cooperation and support from GearConsult and Subsea Industries throughout the various project phases which helped contribute to the successful application of Ecospeed,” says Nick.

(You can read the full story in Subsea Magazine 244 available here: [www.subind.net/magazines/](http://www.subind.net/magazines/))

“What I like the most about representing Subsea Industries is the whole philosophy and the background of developing this coating to reduce the environmental impact of the vessel on the oceans and the fact that the company is really devoted to that,” says Ludvig. “If Hydrex gets a request to clean a vessel they won’t do it if it’s got antifouling on the hull because of the pollution. The companies are not just thinking of profit. It’s the whole philosophy behind it.”

Subsea Industries and Hydrex recently joined GearConsult in their booth at Nor-Shipping 2023 and were able to introduce many new prospects to Subsea Industries’ innovative coating solutions. We see a great future in our collaboration with Ludvig and GearConsult.

## Carich, Dalian, China

Carich Marine Engineering (HK) Co., Ltd. is a Sino-European company, active in shipbuilding since 2000 and formally established in Dalian, China in 2004. In addition to its headquarters in Dalian in the north of China, Carich has had a branch office in Shanghai in south China since 2013 so as to build a sales network all over China.

Lisa Shen has been the Office Manager for over 12 years and is our main point of contact at Carich in Dalian.





*Raul Yu inspecting the final coating on the EXMAR LNG newbuild at Wison shipyard as part of Carich's work with Subsea Industries to deliver Ecolock.*

“From the very beginning, Carich focused on cooperating with some specialized suppliers with high quality standards in Europe,” explains Lisa. “In 2004, we were honored to be appointed by Subsea Industries as authorized agent in China. Since then we have enjoyed a very pleasant and successful cooperation.”

"Carich has been building an excellent cooperation between shipyards on the one hand and our principals on the other. So far the most important references of Subsea products are in the areas of Shanghai, Guangzhou, Dalian, Liaoning Province, Shandong Province and Jiangsu Province, among others," continues Lisa.

“As the agent, we maintain close contact with all existing and potential customers, frequently visiting design offices, shipyards, ship owners and domestic dredging companies. We also often attend marine

exhibitions, China International Petroleum & Petrochemical, Technology and Equipment Exhibition, and others, with Subsea Industries representatives when possible.”

Carich has also always provided invaluable assistance with imports, delivery, dealing with shipyards, and generally with doing business in China. Manuel Hof, Sales and Production Exec for Subsea Industries says, “It would be very difficult for us to function in China without the assistance of our agents, Carich Marine Engineering. They facilitate the entire process from sale through to final delivery and inspection and collections where needed.”

A good example was two newbuild projects for EXMAR which were built at the Wison shipyard in China, both of which had Ecolock applied to their hulls. Carich not only was instrumental in selling the coating to the shipyard, but also with the deliv-

ery, including providing a highly qualified paint inspector for the jobs.

“For this project, we spent almost two years winning the order, including following up on phones, by emails, paying visits to the yard, technical explanation in the marine exhibition, and so on,” Lisa recalls. “In addition to the outstanding technical advantage, I think our working attitude was also an important factor for Wison to choose us finally. We paid attention to each request from the customer, and we tried our best to find the best solution for them. We are energetic, professional and reliable.” (The full story is available on our website here: [www.subind.net/case-study/exmar/.](http://www.subind.net/case-study/exmar/))

“As a result of Subsea products’ high performance levels, our company’s reputation and influence have increased in China, which also help us win more business,” says Lisa. “Based on that, we can work extensively with a number of shipyards all over the country and even in other countries in Asia. All the customers are very satisfied with our products and service.”

“Since 2004 Carich as well as myself personally have benefited greatly from the collaboration with Subsea, working in coordination with mutual respect. I look forward to many more years of the collaboration. The Carich team will continue with our efforts for Subsea Industries in Dalian, Shanghai and all over China so that Subsea can boom in China,” says Lisa.

We are fortunate to have such enterprising, hardworking and pleasant agents in China. They make a big difference in how Subsea Industries operates in that country. ■



# Corrosion damage very repair made ✓ easy



**S**ubsea 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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**S**ubsea 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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