

SUBSEA

PROTECTION AND PERFORMANCE



Magazine

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Corrosion damage very repair made ✓ 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.

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



Editorial: How Ecospeed will save you money

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.

An Ecospeed application is simple, fast and 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 need for replacement or major repair. Only small touch-ups will be required. These can easily be done during a (short) routine drydock visit. Because no repaint is needed, days and up to a week can be saved in drydock times during each visit. There are two sides to this: the reduced drydock costs, and the gained on-hire time for the ship.

One of our customers said that he was able to get his ships out of drydock several days sooner with Ecospeed. Being a large cruise ship owner, this brought him substantial extra income every time.

Start saving money even before you leave dock

Besides the financial benefits from leaving drydock days earlier, Ecospeed can help you save money in other ways.

Our coating gives your underwater hull the best possible hydrodynamic characteristics. What is more, Ecospeed remains smooth and becomes even smoother over time. There is no



paint degradation as with other coatings. Therefore, the performance of the ship does not degrade either. Large fuel savings are the result. This greatly increases profitability over the lifetime of the ship.

One major cruise line has been quoted as saying that they are saving 40% on fuel costs with Ecospeed. Another cruise ship found that they gained 4 knots over sea trials speed when they replaced their hull coating with Ecospeed.

Just wash it

Every hull coating fouls and, as a result, cleaning is an unavoidable reality for shipowners. For most coatings this is a problem because they cannot be cleaned without damaging them, often very severely. In many parts of the world, in-water cleaning of hulls with toxic coatings is forbidden.

One of the many unique factors of Ecospeed, however, is that with repeated underwater hull cleaning, the coating's surface aspect does not degrade but gradually improves. This process 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.

Washing Ecospeed can also be done in drydock with high pressure tools. The standard procedure for shipyards 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 costly additional paint layers.

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.

A handwritten signature in black ink, appearing to read 'Boud Van Rompay'.

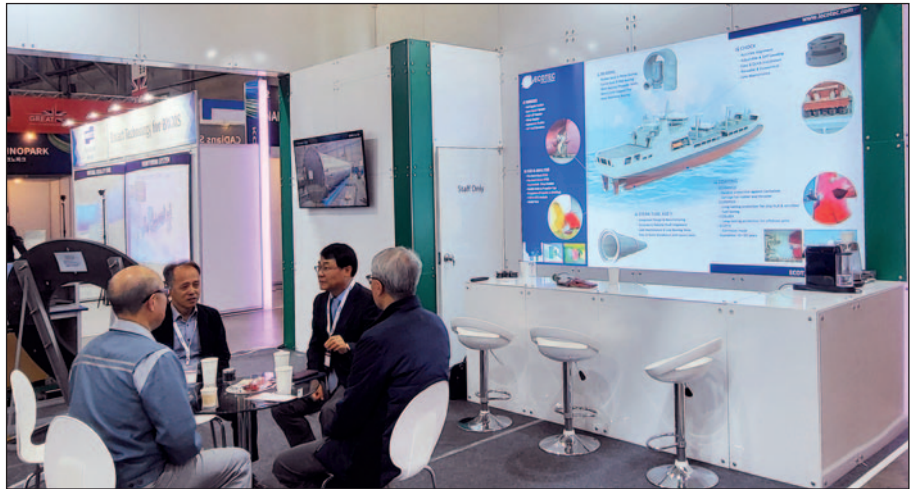
Subsea Industries NV
Boud Van Rompay
Founder

ECOTEC Marine Systems

Bringing Subsea Industries coating solutions to South Korea

ECOTEC Marine Systems in Busan, South Korea has represented Subsea Industries for 15 years in the region.

ECOTEC is a 10-person company, led by CEO Sang-Uk Lee, involved in the engineering, manufacturing and installation of marine maneuvering and propulsion systems. They specialize in customized solutions for complete maneuvering packages, such as ECO-Rudder systems (rudder, stock, carrier, trunk, streamline bodies, etc.) and propulsion systems as ECO-Tube (stern tube assembly) for oceangoing and naval ships including submarines (rudders and hydroplanes). ECOTEC has been involved in some of the most innovative and technically challenging semi-spade and full spade rudder design and propulsion systems around the world. Their rudder designs are considered state-of-the-art.



Sang-Uk Lee, CEO of ECOTEC (center right) and Dong-Iak San Executive Director over the Quality Control team (center left) meeting with clients from major South Korean shipyards at the ECOTEC booth at Kormarine 2023.

The individual at ECOTEC who has been most involved with Subsea Industries is the Director of the Design Team, Do-Hyun (Jack) Heo, who has been working at ECOTEC on rudder and propulsion system design for twenty years. Jack has a master's degree in ship resistance and propulsion. Before joining ECOTEC, he worked at the DSME shipyard in Korea.

“Wherever possible, products are integrated in a complete system with a tailor-made approach,” explains Jack. “Reliability, ease of maintenance, safety and a long life-span are key drivers throughout the design, manufacturing and installation processes. Customers and yards alike benefit from an easy to install and integrated solution, a unified overall design and one project coordinator for the maneuvering system. We are involved in all stages of project development, starting from the initial assessment of a ship owners needs,” Jack adds.

The propeller and rudder arrangements designed and provided by ECO-TEC’s highly qualified team of marine engineers, naval architects and control engineers are optimized for criteria such as fuel efficiency, effective maneuverability, minimizing cavitations and vibration, and low maintenance. ECOTEC’s sales, design, site management and commissioning team members are encouraged to be involved with customers for further development



Do-Hyub (Jack) Heo, Director of the Design Department team, Eun-Ji Park Deputy General Manager (left) and former employee (now client) Eun-Young Kim (right) in the ECOTEC booth at Kormarine 2023.

of rudder performance, safety, quality and operation culture. “Our involvement does not end with the delivery of the ship to owners,” says Jack. “Our team works with the customer during the vessel’s guarantee period, and its subsequent operating life, to ensure optimum safe operational efficiency.”

Subsea coatings – a perfect match

Subsea Industries coatings, particularly Ecoshield which is the ultimate protection for rudders and other running gear, are a natural fit with ECOTEC’s advanced maneuverability and propulsion system designs and installations.

ECOTEC is Subsea Industries’ sole representative in South Korea. They introduce and sell Subsea Industries’ coatings – Ecospeed, Ecoshield and Ecolock – to South Korean shipyards, and assist Subsea with sales and delivery in the country. “Since we are a company that designs and

supplies rudder systems, we sometimes purchase Subsea’s coating directly and apply it to a rudder for the customer,” says Jack.

Subsea Industries coatings, especially Ecoshield, have been included in some very interesting projects in South Korea. Two of these involved rudders and skegs for the UK Royal Navy and the Republic of Korea (ROK) Navy.

UK Royal Navy and ROK Navy rudders

ECOTEC designed rudders for four Royal Navy MARS (Military Afloat Reach and Sustainability) tankers which were installed at DSME shipyard in South Korea and coated with Ecoshield, along with the skegs of the same ships. The Royal Fleet Auxiliary MARS tanker is an IMO-compliant vessel designed by



Navy MARS (Military Afloat Reach and Sustainability) tanker sailing with rudders designed by ECOTEC and protected with Ecoshield coating.



Rudders of one of four UK Royal Navy MARS tankers designed by ECOTEC and coated with Ecoshield coating for permanent protection from cavitation erosion and corrosion.



Rudders of ROK Navy MARS tanker designed by ECOTEC and protected with Ecoshield.

BMT to the specifications of the UK Royal Navy. It offers logistical support to the Royal Navy by providing fuel and fresh water to naval vessels at sea.

The rudders were designed specifically to meet UK Royal Navy requirements. Ecoshield was chosen as the protective coating since it is highly resistant to cavitation and lasts the life of the ship without the need to repaint. With Ecoshield, anodes can also be dispensed with.

The same type of ship but this one for the ROK Navy several years later, also had rudders designed by ECOTEC specifically to meet ROK Navy requirements. They are different from the Royal Navy MARS

tanker rudders, as are the propellers. In this case Ecoshield was again chosen as the protective coating for the same reasons as with the UK Royal Navy.

The fact that Ecoshield is completely non-toxic is also of benefit to naval vessels that need to be as sensitive as possible to the marine environments in which they operate.

Future

“ECOTEC’s future is bright,” says Jack. “Since merchant ships are greatly influenced by the global economy, we plan to focus more on special ships such naval vessels,” he adds.

Jack is working closely with Subsea Industries to increase the use of Subsea coatings by Korean shipyards which are very conservative when it comes to changing from the paint they have always used to new paints. With persistence and good cooperation between Subsea Industries and the ECOTEC team, Jack believes that Korean shipyards will soon be applying Subsea Industry coatings much more extensively. ■

Subsea Industries is looking for representative agents



To support our continuous growth, we are expanding our worldwide network of Subsea Industries agents. This allows us to reach a much bigger public directly than would otherwise be possible.

Subsea Industries NV was founded in 1983 to take care of the design, development and marketing of an evolving line of underwater hull

and propeller cleaning equipment as well as a line of hard hull coating systems.

The purpose of the Ecospeed range of coatings and cleaning technology is to offer a long-lasting, non-toxic protection for all ships with a system that keeps a hull ultra-smooth and free of fouling for the service life of the vessel with minimal repair and no replacement. Instead of using

chemicals to kill and repel marine fouling organisms, Ecospeed uses a hard, impermeable, impenetrable coating along with manual removal of fouling at an early stage.

Contact us if you are interested in joining our network and help us build a strong relationship with our prospects and customers. We look forward to hearing from you.

**SUBSEA
INDUSTRIES**

+ 32 3 213 5318
agents@subind.net
www.subind.net

Reasons for switching to a washable coating

Washable hard coatings like Ecospeed are designed to withstand the rigors of ship use for the life of the vessel. They are completely inert and contain no biocidal or toxic material. Usually their strength and durability is created by the presence of glass flakes within the coating.

The “wash and go” strategy, with a washable coating, is the complete answer to the problems of NIS and biocidal contamination of the marine environment. It has many additional benefits for ship owners. The strategy becomes possible because hard hull coatings have extreme durability and are non-toxic.

Ecospeed is in fact designed to be cleaned as often as needed, and this cleaning allows the coating to always operate at peak efficiency – saving further money for operators and reducing GHG emissions. The benefits of a washable hard coating include:



Fouling on Ecospeed can be removed fast and easy.



Ecospeed underwater maintenance is carried out with specially designed equipment.



This dive support vessel was coated with Ecospeed 14 years ago. It can be cleaned effortlessly and legally in harbours, such as the Port of Rotterdam, which have banned the underwater hull cleaning of conventional coatings.

1. It is a non-toxic solution, offering safety for the marine environment instead of the inevitable damage caused by biocidal anti-fouling.
2. Ecospeed presents a clean and efficient surface to the water, saving the ship operator fuel. The coating does not need to be removed and replaced every five years.
3. It is the only real guarantee that NIS will not be spread via ship hull fouling. If ships leave their



When divers clean an Ecospeed hull, there is no paint loss and no toxic plumes are created.



The coating can be quickly washed in drydock with high pressure tools.

port of departure free of fouling organisms, they will arrive at their next destination with a clean hull and thus pose no threat of spreading NIS via hull fouling.

4. Ports also benefit from the absence of biocidal pollution and NIS.
5. Drydock intervals can be lengthened. In the case of a high quality, surface treated coating, no repainting is required. At first application the hull is blasted and prepared. The coating is applied

only once and lasts for the service life of the vessel. Only minor touch-ups to mechanical damage are required during scheduled drydocking. This obviates the need to drydock solely for painting, and shortens the time in drydock.

6. Reduced fuel consumption resulting from a smooth hull means lower fuel bills and atmospheric emissions. The absence of paint degradation over the life of the coating further reduces fuel costs.

Conclusion

Ecospeed is an entirely different, more cost-effective and environmentally-acceptable approach to hull protection and anti-fouling. There is no need to reblast and re-coat the hull; no corrosion, no impact on the environment and, if regular hull cleaning is carried out, tremendous fuel savings can be achieved. ■



An underwater ship hull coating needs to be easy to apply, it needs to stay on your ship for many years and it needs to save you money. ©New SIGHT Photography.

Lasting p

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



rotection

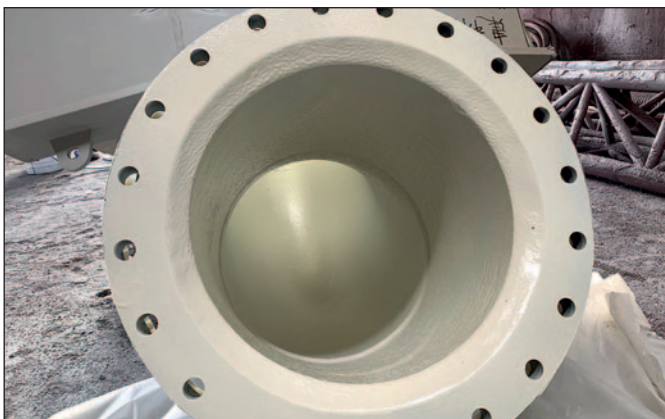
Scrubbers

Ecospeed 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



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info@subind.net
www.subind.net



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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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