

# 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.

## ECOLOCK®

LIFETIME CORROSION PROTECTION  
FOR OFFSHORE UNITS

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## Editorial



**T**hroughout the years I have seen firsthand the damage cavitation erosion causes to ships' rudders, running gear and the stern areas. It's a costly problem to repair. Unless, of course, you have coated these underwater components with a system capable of significantly reducing the phenomenon.

Our Ecoshield coating is one such solution and one that is proven to work. The coating was developed especially for areas that are subject to cavitation and gives permanent protection against cavitation damage for all running gear.

Existing rudders that have not been properly protected my have already experienced corrosion or cavitation damage. That is where sister coating Ecofix comes into play. The repair work needed on the underlying steel can now be done effectively and economically prior to an Ecoshield application.

The glassflake reinforced coating will then protect the rudder for the service life of the ship without need for recoating or major repair.

A handwritten signature in black ink, appearing to read 'BVR' followed by a stylized flourish.

Subsea Industries NV  
Boud Van Rompay  
Founder

# ECOFIX® + ECOSHIELD®

## The complete rudder protection package

**E**cofix is a filler product which is used in combination with our award-winning Ecoshield hard coat system. Ecofix is specifically developed to provide ship owners and Original Equipment Manufacturers with a cost-effective solution for the repair of corroded or pitted steel surfaces.

When a rudder or other piece of underwater ship gear has not been properly protected, the surface will become severely pitted and corroded. The steel needs to be restored to its original shape with a smooth surface prior to recoating.



*Without proper protection cavitation damage can have a devastating effect on a rudder.*



*Ecofix was used to repair the corroded areas of the rudder of the LPG tanker.*



*After an Ecofix treatment the rudder is ready for Ecoshield.*



*All existing paint layers are removed to start with a clean slate.*



*Ecoshield can be applied one hour after the Ecofix repair is carried out.*

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 metal facing or very expensive alternative fillers. Because it is part of the Subsea industries family, it is fully compatible and homoge-

neous with our other coating systems.

### **Rudder of LPG tanker restored to original condition**

The rudder of a LPG tanker was given the full treatment in China. First Ecofix was applied to restore the surface of the damaged rudder back to its original condition. Next it

was coated with Ecoshield. This will protect the rudder from ever suffering corrosion and cavitation damage again.

We are seeing an increasing interest from propulsion and steering equipment suppliers to apply Ecoshield to their equipment. They are looking for maximum protection against cavitation and abrasion damage,



*Only two Ecoshield layers are needed.*



*Overcoating time in between layers can be as short as three hours.*



*After the second layer no repaint will be needed ever again.*



*Rudder of LPG tanker after Ecofix and Ecoshield combination has been applied.*



*No further corrosion or pitting damage will appear on this rudder.*

both of which can lead to widespread corrosion if conventional coatings fail.

Ecoshield is the only coating known to fully protect rudders and thrusters from all cavitation damage for the remainder of a vessel's service life. It is as tough as the steel itself. With Ecofix, the repair work needed on the underlying steel can be done effectively and economically.

Ecoshield and Ecofix are also suitable for stabilizer fins, thrusters, nozzles and other underwater ship gear which needs special protection from corrosion. Now these items can also be repaired prior to recoating when other, less effective coatings have permitted corrosion and cavitation damage to occur.

Subsea Industries offers a full package; Ecofix restores the surface of the rudder or other underwater gear and Ecoshield will protect the area from ever suffering corrosion and cavitation damage again. ■

**Subsea Industries will be present at SMM in Hamburg, Germany from September 4 until September 7. We would like to welcome you at our booth 505 in hall B7, Holland pavilion.**

If you would like to learn more about how Subsea Industries can assist you, please visit our booth at SMM. Our team will be happy to give you the information you need. You can also contact one of our offices if you would like to make an appointment for the exhibition or if you need assistance. ■

**4 - 7 sept 2018**  
tue - thu 9.30am - 6pm  
fri 9.30am - 4pm

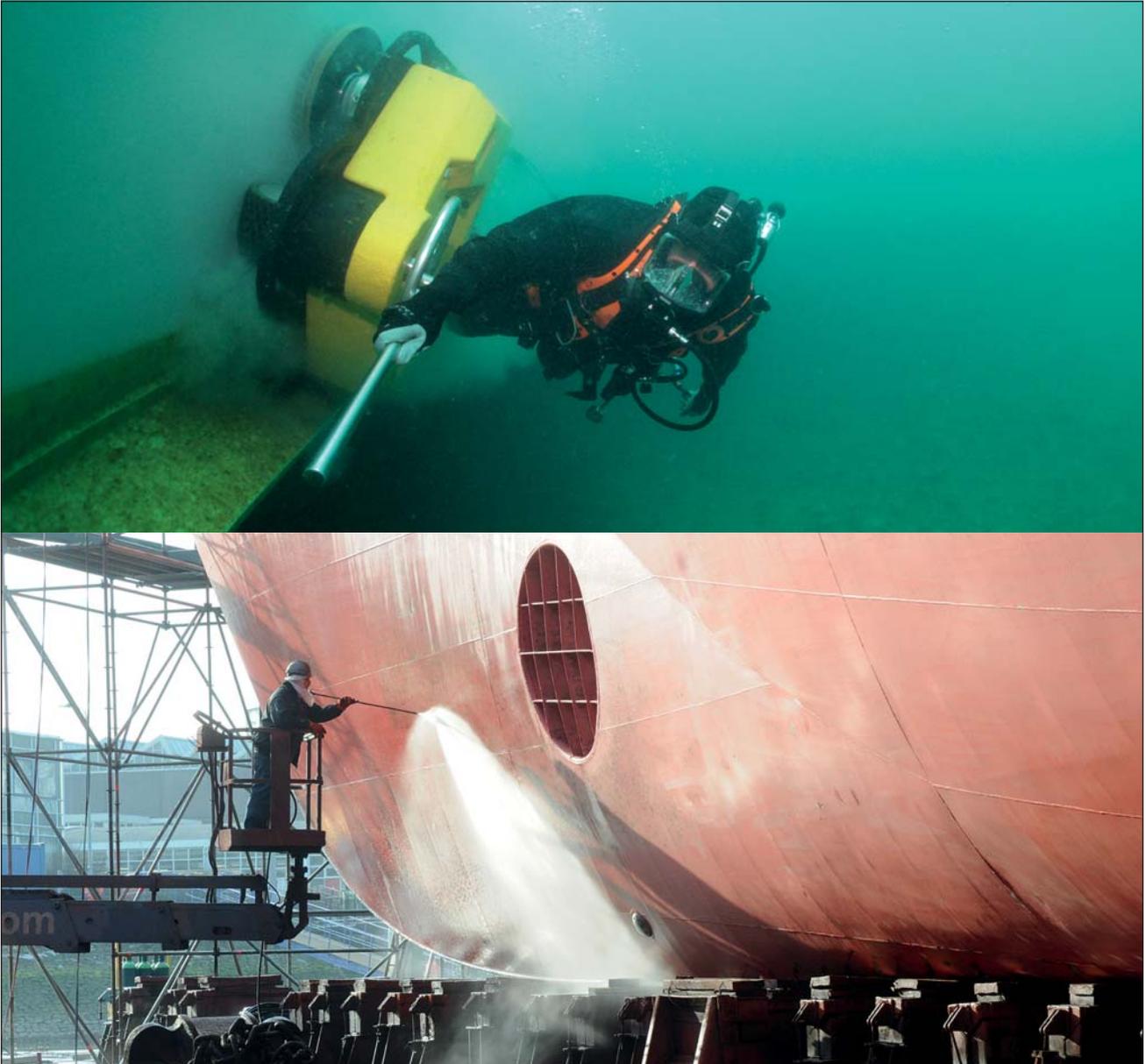
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**SMM**

# The washable coating



**S**hip hulls should be protected with a system that lends itself to fast, effective cleaning without risk of damage to the coating and without posing any kind of hazard to the environment. Ecospeed is this system.

There is currently no hull coating available which will not foul. The only way to remove this fouling is to clean it off. The Ecospeed coating has a glassy surface that was designed to be washed without being damaged. This enables

fast and efficient fouling control throughout a ship's entire service life, either by fast and easy underwater maintenance or high-pressure cleaning in drydock.

**ECOSPEED**<sup>®</sup>  
SHIP HULL PERFORMANCE TECHNOLOGY

# Ecospeed application on scrubber outlet area of newbuild vessels

**T**he outlet of the scrubbers of three newbuild container vessels were coated with Ecospeed in Zhoushan, China. A lasting, chemically resistant coating was needed that could withstand the hazardous pollutants of the exhausts and protect the areas surrounding the outlets.

Exhaust scrubbers are systems that filter out all harmful toxins from exhaust gasses of marine diesel engines. This scrubber removes nitrogen oxides, sulfur oxides, hydrocarbons, heavy metals, carbon monoxide, soot and ashes. No pollutants are discharged into air. This minimizes the environmental footprint and impact of navigation in ports and coastal areas.



*The area around the scrubber outlets after surface preparation.*

Several benefits make Ecospeed the perfect choice as coating for the exterior outlets as well as the interiors of the scrubber.

1. Ecospeed is highly chemically resistant. Taking into account the nature of the process taking place inside the scrubber, this was essential for the customer.
2. Ecospeed lasts the lifetime of a vessel. No repaints will need to be scheduled during future dockings of the ship. This saves on time and money.
3. Ecospeed has been given a B1 classification by DNV GL after testing the coating's suitability as a ballast tank coating. B1 is the superior grade in a six grade classification system.
4. Ecospeed is a TBT-free, copper-free and biocide-free solution. Independent research has proven that the coating is 100% toxin-free and that there is no negative effect on the water quality or the marine environment at any point of its application or use.



*Application of first of only two layers of Ecospeed.*



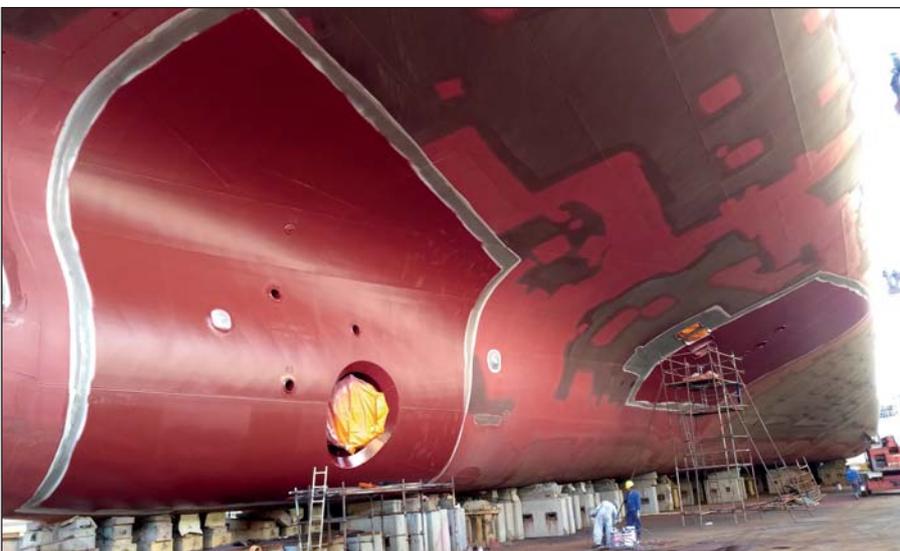
*Inspection of the scrubber outlet area after first layer.*



*The second layer can be applied as soon as 3 hours after the first.*



*Ecospeed will protect the area around the outlets for the ship's entire lifetime.*



*The outlets of both scrubbers of these container vessels were given the same lasting protection.*

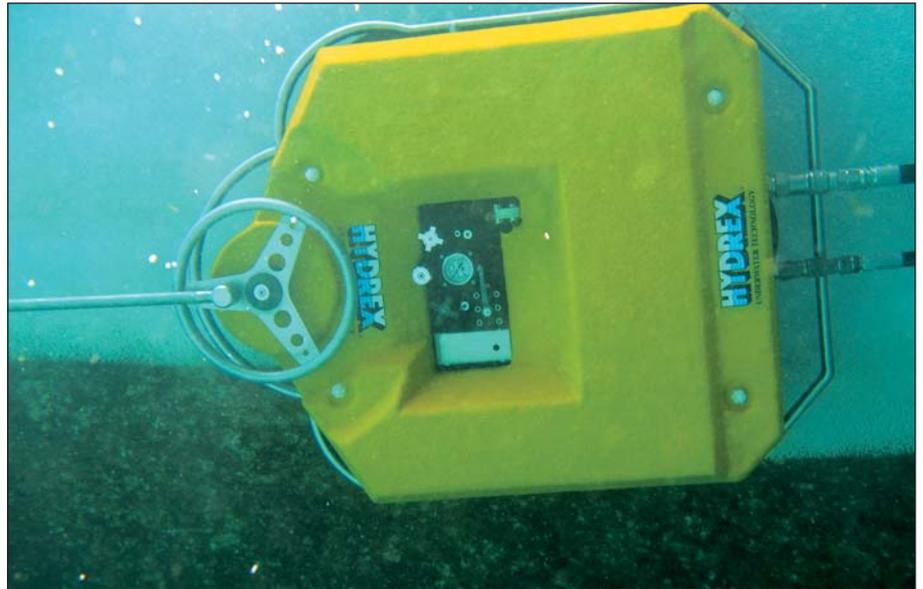
Because of the tight regulations on emissions in the shipping industry, the installation of an exhaust scrubber system becomes increasingly widespread. A durable coating to protect the inside of these scrubbers is needed. Ecospeed fits in seamlessly with the environmental idea behind the systems. ■

# Ecospeed, the coating for ultra long lay-ups

**A**s a consequence of the current economic climate, more and more ship owners are forced to lay one or more of their ships up for longer periods. This has, however, no adverse effect on an Ecospeed coating which can always be restored to its optimum condition, regardless of how much fouling has attached itself to the hull while the vessel has been laying idle.

Ecospeed is ideally suited for ships during lay-ups because of its impermeability. This gives the coating its excellent and durable anticorrosive properties and protects the underwater hull against damage caused by any type of marine fouling. Despite the aggressive nature of certain types of fouling, no rust or damage to the steel will be present on the underwater hull of the vessel after cleaning.

This is illustrated by a cruise ship that remained stationary in the Caribbean for seven months after it was coated with Ecospeed. After this period the coating's qualities al-



*Even after long stationary periods the underwater hull of a vessel coated with Ecospeed can easily be cleaned underwater.*

lowed a complete removal of all fouling from the underwater hull of the vessel during an underwater cleaning without causing *any* damage to the underlying paint layers.

The coating's properties totally prevent fouling penetration, making the cleaning process extremely easy. It can be performed underwater or with controlled high pressure tools in drydock and can be repeated whenever needed during the vessel's

lifespan without causing damage or deterioration in quality. The coating's surface characteristics even significantly improve with each underwater hull cleaning. This unique quality gives shipowners the opportunity to have their ship operational again and its hull restored to its optimum condition whenever needed without any additional financial setback.

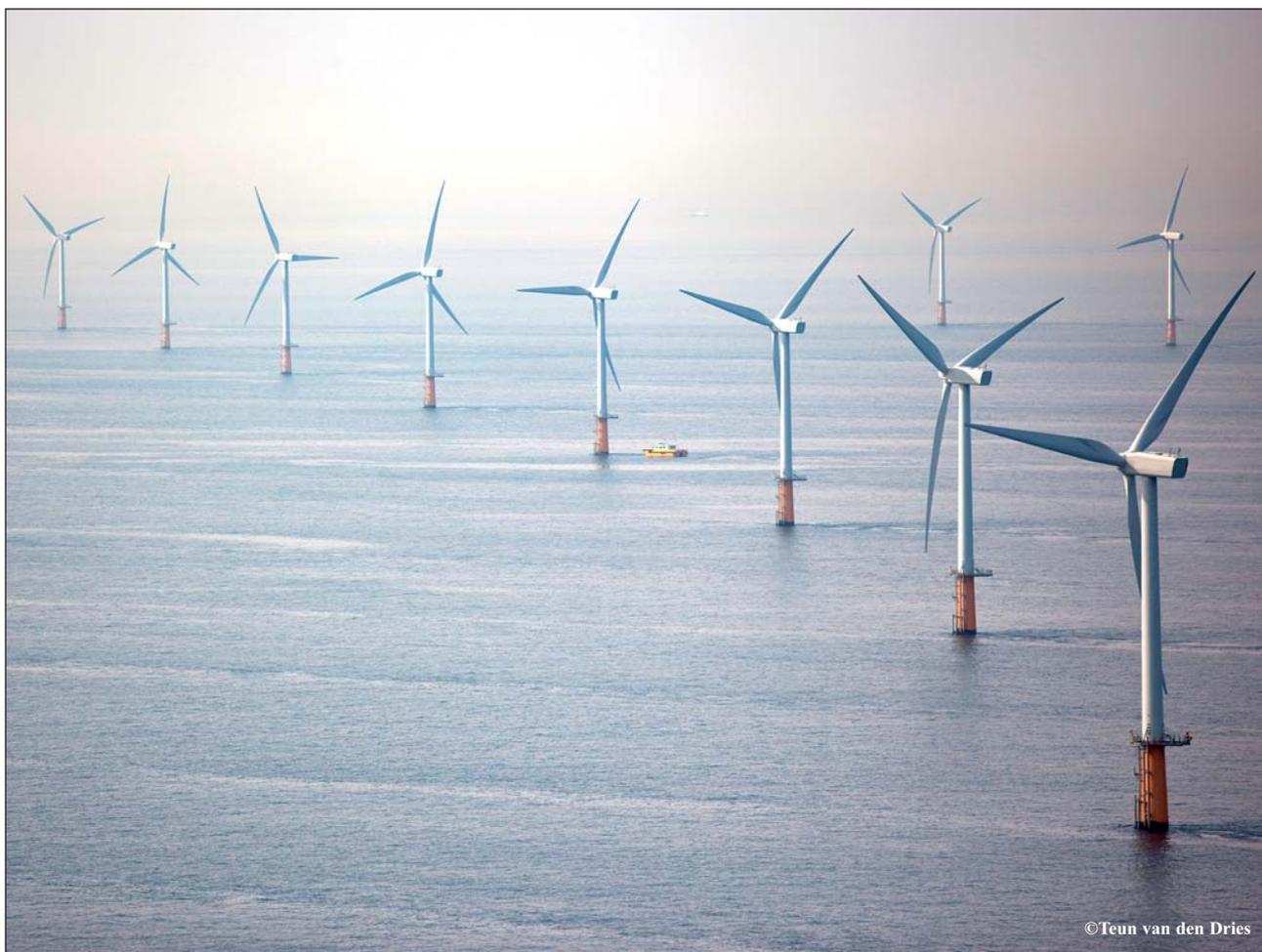


*Thick layer of fouling on cruise ship after laying idle in the Caribbean for seven months.*



*Fouling removal from cruise ship without damage to the Ecospeed coating.*

# UV resistant corrosion protection



**T**he latest member in our range of coating systems is ultraviolet (UV) resistant and preserves its color while at the same time offering the corrosion and abrasion protection our coatings are known for.

Regular coatings will quickly lose their original color when exposed to the ultraviolet radiation present in sunlight. This is

problematic when colorfastness is required, as is the case in for example offshore wind farms.

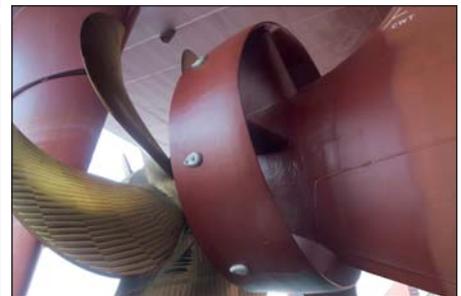
Ecolast is highly resistant against salt, ultraviolet radiation, waves or even ice. Mechanical damage to the coated surface is minimized. This is especially important for (semi-)submerged structures like wind turbines that are located in splash or tidal zones.

Ecolast is also unaffected by corrosion. As a result no repaint is required once the coating has been applied.

Application of Ecolast is done in two homogenous layers, with no need for primer or any other extra layer. This makes the application very fast and easy to adapt to the schedule of the builder.

**ECOLAST®**  
LONG TERM UV RESISTANT

# SUBSEA INDUSTRIES



**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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