

SUBSEA

PROTECTION AND PERFORMANCE

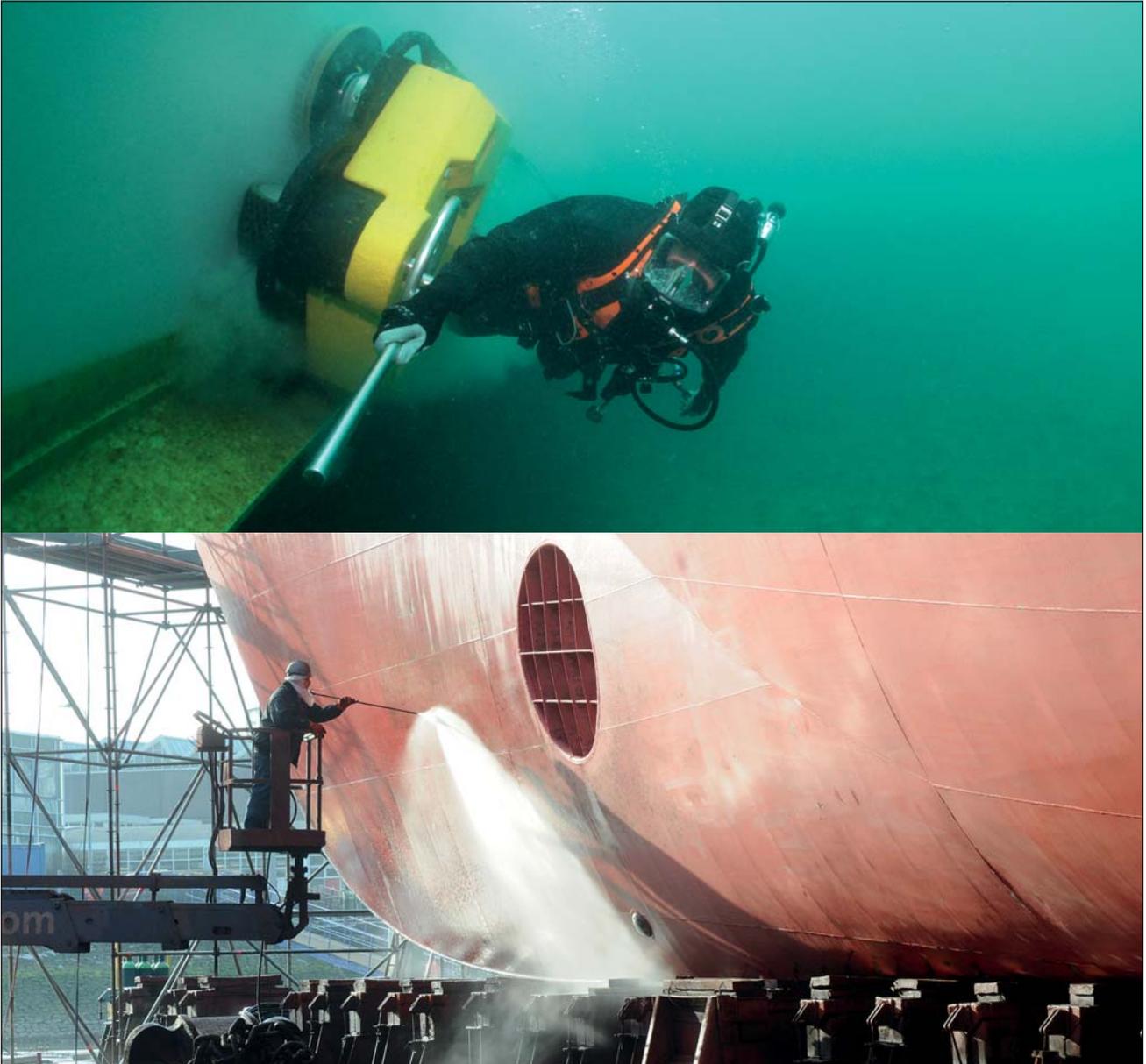
NEWS

LETTER



**One complete solution to protect
rudders and running gear**

The washable coating



Ship 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®
SHIP HULL PERFORMANCE TECHNOLOGY

One complete solution to protect rudders and running gear

Last month we gave a summary of the most important Ecospeed projects of 2018. This month we will be focusing on Ecoshield. In the past year numerous rudders, thruster tunnels and nozzles were coated with our protective coating system designed specifically to give lasting protection against cavitation and corrosion damage.

In 2018 applications were carried out in shipyards in Turkey, the Netherlands, Singapore, Hong Kong, China, Japan, Denmark, Estonia, Germany and the United States and



Ecoshield gives lasting protection against corrosion and cavitation damage.



Application of first of two identical Ecoshield layers.



No repaint will be needed for the rest of the vessel's lifetime.



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



Two layers, one application, no worries during future drydockings.



Rudders coated with Ecoshield will never have to be repainted.



No corrosion or pitting damage will appear on this rudder.



Cavitation and corrosion causes severe damage to running gear that is not properly protected.



Bow thruster units and tunnels are protected with our coating system.



Only three hours wait is required before the second layer.

this on a wide range of ships. These included vehicle carriers, ferries, tankers, yachts, research vessels and container ships. The rudders as well as the running gear of these ships will be protected against cavitation and corrosion damage for the rest of their service lives.

Well over thirty vessels belonging to fourteen different owners were treat-

ed. Some of them were new customers, some returning ones. They had experienced firsthand the devastating effect of cavitation when a traditional coating system is used. For this reason they decided to use Ecoshield to ensure lasting protection against corrosion and erosion damage for the rudders, nozzle rings and tunnel thrusters of their vessels.

Ecoshield has been designed to give a very thorough and lasting protection against cavitation and corrosion. If the cavitation cannot pierce the coating then no other damage can occur.

Tests conducted in a flow channel have confirmed that Ecoshield performs extremely well under severe cavitation. These tests were divided into six stages during which the coating was exposed to an increasing pressure drop, creating a growing cavitation force. Even after the last stage no erosion was present on the patch coated with Ecospeed.

Suited for newbuilds and existing vessels

As a consequence of cavitation and corrosion damage on their rudders many ships are given a condition of class. Such a condition of class can have a great impact on the vessel's sailing schedule if for instance it is not allowed to enter certain ports or needs to go to drydock before a certain period of time has passed.

Understandably the owner then



We can adapt the coating work to the schedule of the yard.



Only two layers are required before a rudder is fully protected.

wants to try to hold off going to drydock as long as possible and ideally until the five year interval has passed. Temporary repairs are carried out after which the class requires that a new inspection is performed every three months.

When such a vessel eventually comes into drydock, maintenance work on the vessel's stern area, especially cavitation damage repair, can take a long time. Most of these repairs cannot be performed concurrently. This is the result of the close proximity of the rudder, the propeller

and the stern area, along with the strict procedures concerning blasting, painting and welding work. Painting is therefore usually assigned to the end of the schedule and as a consequence may not get done at all or else prolongs the stay in drydock. Taking into account the tight drydock schedule of most vessels this is often very problematic.

With an Ecoshield application one can avoid these problems from day one because no repaint of the running gear will be needed during drydocking. Ecoshield will remain

intact for the lifetime of the vessel and is guaranteed for ten years. At the most, touch-ups amounting to less than 1% of the surface area will be required. Planning the maintenance of the vessel's stern area therefore becomes much easier.

The newbuild phase is the perfect time to apply Ecoshield. However, the coating can also be used to protect vessels that have been in service for some time and are already facing cavitation and corrosion damage.

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. This means that for smaller surfaces such as rudders or bow thrusters the two required coats can usually be applied in one single day.

Conclusion

If one takes into account the costs of the temporary underwater repairs and the regular inspections required by a condition of class or the costs for rudder repairs in drydock, it becomes clear that the investment in a coating system that offers extra protection is won back from day one. More and more owners have Ecoshield applied on the rudders and running gear of a large part of their fleet or have it included in the rudder specs of their newbuild vessels. These owners invest in the right coating system for the savings that will result.

You can give the rudders and running gear of your vessels the same lifelong protection. Contact one of our offices for more information. ■

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

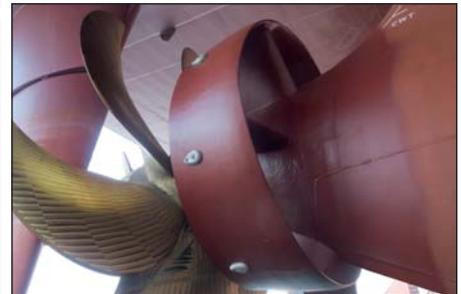
years without drydocking, repair or replacement. Ecolock can be cleaned underwater as often as needed to meet the UWILD and weight requirements of FPSOs, drill ships and other offshore vessels. Ecolock is the result of continual R&D on offshore hull coatings since the 1990s.

ECOLOCK®

LIFETIME CORROSION PROTECTION
FOR OFFSHORE UNITS

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SUBSEA INDUSTRIES



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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