SUBSEA

PROTECTION AND PERFORMANCE

Magazine

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Certificate No: MNDE/2016/7392
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Recognised Abrasion Resistant Ice Coating

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If the coating is applied in way of the ice belt of ships intending to navigate in first-year ice conditions and is maintained in good condition during service, the thickness of steel plating in way of the ice belt may be reduced by up to 1 mm in accordance with relevant Rules and Regulations.

The recognition is subject to Lloyd's Register being informed of any changes in and modifications to the product's formulation or specification and the product being used in accordance with the manufacturer's instruction and with the relevant requirements of Lloyd's Register's Rules and Regulations.

Manufacturer:	Subsea Industries NV, Haven 29, Noorderlaan 9, 2030 Antwerp, Belgium
Product name:	ECOSPEED
Product colours:	Unspecified
Film thickness:	1000µm
Surface cleanliness:	Minimum Sa 2½ (ISO 8501-1)
Surface profile:	Minimum 75 µm
Date of expiry:	1 September 2021
Date of issue:	29 June 2016

Stuart Downie
Lead Specialist to Lloyd's Register EMEA
A member of the Lloyd's Register group

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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Editorial

Welcome to the new issue of Subsea Magazine. In it we once again cover different aspects of the range of products Subsea Industries has to offer.

We start off this magazine with a case study on the application of Ecospeed on a number of vessels owned by Interscan Schiffahrt. Some of these have been sailing with our coating for over ten years without needing a repaint, something the owner could never have imagined when he first learned of Ecospeed in 2005.

In June Lloyd's Register renewed the certificate that recognizes Ecospeed as an abrasion resistant ice coating, as you can read in the second article. This confirms the trust given to our coating systems by independent organizations.

In the last article in this magazine you will find examples of recent applications with Ecoshield. This award winning coating system was designed to offer lasting protection against cavitation and corrosion damage for all running gear.

Subsea Industries NV
Boud Van Rompay
Founder

Ecospeed pays dividends for Interscan

Interscan's Michael Tensing explains why ice-traders need a hard coating. Mike Garside[1] reports.

Ecospeed can be easily cleaned in drydock or underwater without damaging the coating.

Trading in ice is the toughest challenge for a hull coating. Regular anti-fouling paints or regular epoxy coatings are usually scraped off by the constant abrasion of the ice, and extra drydockings are needed to repaint, often after just one season.

This was a major issue for Hamburg-based shipowner Interscan Schiffahrt, which controls a fleet of 23 vessels, many of them operating in the Baltic Sea and seas in the far north. However, like other vessels operating in ice conditions, they required frequent repairs to their underwater coating, with time out of service every one or two years costing the owner dearly. The company no longer has this problem.

In 2005, Interscan's superintendent engineer Alexander Fedorcov heard about Ecospeed and suggested Subsea Industries' hard coating to the company's Head of Chartering, Michael Tensing. He decided to apply it to the 3000dwt general cargo ship *Patriot* during the vessel's upcoming scheduled drydocking.

The underwater hull was blasted to bare steel and was coated with two 500µm coats of Ecospeed.

"*Patriot* was coated ten years ago and has traded in ice every year since then; but the coating has lasted perfectly well. Before Ecospeed we

[1] *Mike Garside is a freelance trade journalist and Deputy Editor of the specialist shipping publication Drydock.*

The hull of the ice-going MV Patriot: left – usual condition at drydock before Ecospeed application, and right – on return to drydock after 5 years trading in the ice with its Ecospeed coating.

used normal epoxy coatings which would last for, perhaps, one to two winters. Now we need to pay no attention to the coating and there is no need for extra drydockings," said Tensing.

He explained that during an Ecospeed vessel's scheduled drydocking the hull is simply pressure washed. Where there is mechanical damage, the coating is easily repaired by just painting over the damage with a brush – a major advantage over other types of coatings.

"Cleaning has not been needed for the northern routes we use. For our ships that sail in warmer waters, the Ecospeed hull does need underwater cleaning from time to time, but we know that after an underwater clean the fuel consumption goes down to what it was when the paint was new."

Referring to Interscan's 6288dwt general cargo ship *Karin*, which had Ecospeed applied following the success of the *Patriot* coating, Tensing said: "*Karin* sails in warm waters and in those conditions it might need an underwater cleaning every six months but it is an easy procedure because the coating is very tough. Cleaning takes only 6 to 8 hours."

Subsea Industries' hard coatings can also be used on rudders and other appendages, preventing cavitation damage. Since rudders have to be blasted to SA2.5 before a traditional coating this can be negated by applying Ecoshield at the newbuild stage.

"It is worth the cost because no welding work will be needed," said Tensing. "Because Subsea Industries hard coatings are not harmful to the environment, the coatings are accepted in ports, such as Australia, where underwater cleaning is restricted."

He added: "In 2015, after 10 years of trading on the same routes, the Patriot's Ecospeed coating is still going strong. We are very impressed

MV Widor being painted and after launch.

MV Karin several years after initial application.

with it and now have the coating on seven vessels; six coasters and one MPP. It's performed very well for us."

According to Tensing, Interscan calculated that full amortization of the cost of coating is 3.8 years.

"Since the coating lasts for more than 10 years it makes sense. Ecospeed more than pays for itself." ■

Renewal of abrasion resistant coating certificate

In June the Lloyd's Register certificate that recognizes Ecospeed as an abrasion resistant ice coating was renewed. This renewal once again confirms the durability and strength of the coating and shows the lasting trust in Ecospeed given by the classification societies.

The number one consideration in a hull coating for ice-going vessels and icebreakers is the ability of the coating to protect the hull in the harshest marine environment there is. Only a few types of coatings are capable of providing this protection. Typically they are certified for their ice-abrasion resistance qualities by the classification societies.

The abrasion resistant coating certificate allows owners of vessels intending to navigate in ice conditions to reduce the thickness of the plating of the ice belt if this area is coated with Ecospeed. The ice belt is the area on the bow just above the waterline that is most prone to mechanical damage from sailing through ice, This saves money in terms of requiring less steel to build the hull and reducing the overall weight of the ship. ■

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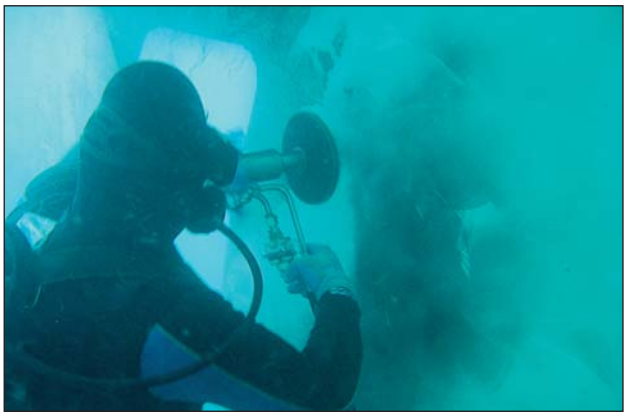
RECOGNISED

Ecospeed has proven on many occasions that it can withstand even the harshest winter conditions.

Underwater Cleaning Equipment

MC111

The MC111 is our smallest model specially designed for cleaning and polishing ship hulls, propellers and thrusters. The MC111 is very handy and can be easily taken into difficult corners and niches while still obtaining the desired results.



MC131

The MC131 is a compact unit designed for cleaning all kinds of marine fouling from yachts and smaller ships to offshore oil & gas platforms. The brush rotation speed is adjustable by the diver so as to achieve an optimum hourly cleaning rate.

MC212

The MC212 is designed for cleaning light, medium and heavy marine fouling from ship hulls, offshore oil & gas platforms (concrete or steel), jetties, piles, intakes and internal pipelines. The equipment has a self-balancing feature, which allows the operator to use the tool safely and effortlessly for long periods.

MC313

The downward pressure of the brushes can be adjusted throughout an operation and the heads are self-adjusting to the contours of the hull. Different types of fouling can be treated with the appropriate pressure. The unit is designed for ship hulls or other large surfaces.

SUBSEA INDUSTRIES

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Groundbreaking protection for rudders and running gear

Over the last few months a number of vessels have had their rudders and thruster tunnels coated with Ecoshield at shipyards in China, Romania, Turkey, the U.S.A. and France. These include several container vessels, vehicle carriers, a passenger vessel and an oceanographic research vessel. The applications will protect the rudders against cavitation and corrosion damage for the remainder of the vessels' service lives.

Some of the owners are returning customers, some are new ones, but all of them experienced the same problem: severe cavitation damage on the rudders of their vessels coated with conventional coatings. The returning customers had seen first-hand that Ecoshield solved the 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.

Cavitation tests in a flow channel, carried out in France, have confirmed that Ecoshield performs extremely well even under severe cavitation. The coating will prevent corrosion damage from reoccurring on an existing ship or can protect the rudder(s) of a newbuild vessel against cavitation and corrosion damage for the life of the vessel. Ecoshield is guaranteed for ten years. As a result of the application no repainting is needed during future dockings.

The effect of cavitation damage can be devastating if a rudder is not protected properly.

Surface preparation prior to Ecoshield application.

Ecoshield is applied in two identical layers.

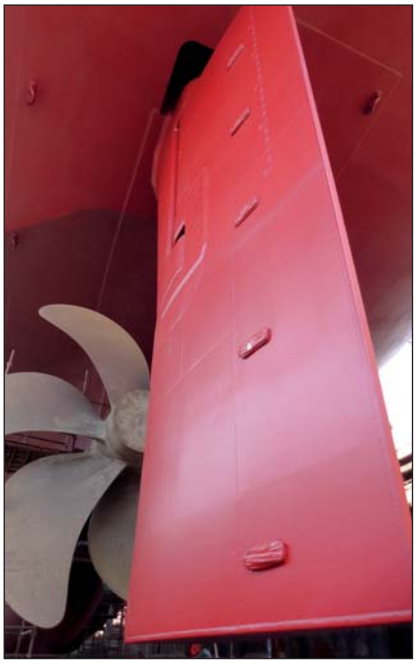
Overcoat time between layers can be as short as three hours.

The application is adapted to a yard's schedule.

Thruster tunnels and other running gear is given a lifelong protection with Ecoshield.

Both rudders of this passenger vessel were coated with Ecoshield in France.

No repaint will be needed during future drydockings.



No cavitation damage will occur on rudders coated with Ecoshield.

Protection from day one

With an Ecoshield application the underwater gear will not need to be repainted during future drydockings. For this reason protection of the running gear is best begun at the newbuild phase. Ecoshield is guaranteed for ten years and will remain intact for the lifetime of the vessel.

At the most, quick and easy touch-ups amounting to less than 1% of the surface area will be required.

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

The only coating that offers lasting protection for running gear

Ecoshield is not only suited for rudders. The coating also offers full and lasting protection for thrusters, azimuth thrusters, azipods, thruster nozzles, kort nozzles, thruster tunnels and other underwater ship gear which needs the best possible protection against corrosion.

More and more owners have Ecoshield applied on the rudders and other 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 protection because they know the savings it will bring them.

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

ECOSHIELD®
THE DIAMOND STANDARD IN STEEL PROTECTION

Corrosion damage repair made easy

Test plate showing the benefit of an Ecofix and Ecoshield combination.

Subsea Industries has launched a new 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 damage 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 metal facing or very expensive alternative fillers. And because it is part of the Ecospeed/Ecoshield family, it is fully compatible with the coating. ■

ECOFIX®
CORROSION REPAIR

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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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