

SUBSEA

PROTECTION AND PERFORMANCE

Magazine



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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 Eco-speed/Ecoshield family, it is fully compatible with the coating. ■

ECOFIX®

CORROSION REPAIR

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Editorial



So far 2017 has been very busy for Subsea Industries. We have attended key maritime events across the globe to showcase our products and technologies to the public.

We have been doing this for quite some time. These conferences and exhibitions offer us the perfect opportunity to catch up in person with existing customers while at the same time meet new people. Over the years a great number of lasting business relationships have started during these shows.

Most of the events we have attended this year were exceptionally fruitful with representatives from various shipowners and yards requesting details about all our hard coatings. Many of the visitors to our booths were interested in learning more about how we have managed to balance optimum energy performance with unprecedented environmental protection.

Do not hesitate to contact us if you want to know more about our coating systems' benefits.

Subsea Industries NV
Boud Van Rompay
Founder

Choosing the best hull coating for ice-going ships and icebreakers

In the event of any conflict or ambiguity between this period and the original electronic document, the electronic document shall prevail.

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

The product below is recognised as an abrasion resistant ice coating for ships intending to navigate in ice conditions.

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

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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. This status also means that use of these coatings permits a reduction in the otherwise required thickness of the ship's scantlings. This saves money in terms of requiring less steel to build the hull and reducing the overall weight of the ship.

Antifouling and foul-release coatings are not suitable for ice-going ships. They do not provide adequate protection for the hull and the impact and abrasion of the ice soon damages or removes them.

Ecospeed has been recognized by Lloyd's Register as an abrasion resistant ice coating for ships intending to navigate in ice conditions. Its correct use on the ice belt specifically permits a reduction of the ice belt's steel plating by up to 1mm.

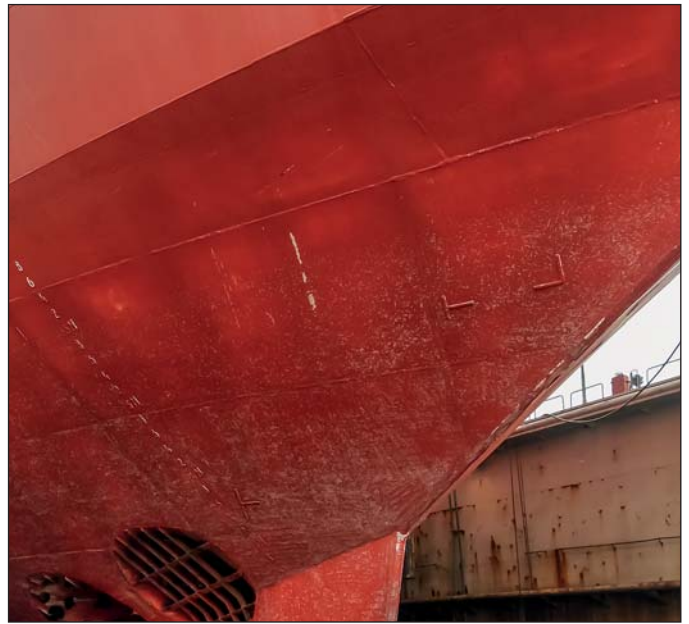
Experience has shown that Ecospeed stays on the hull longer and resists the ice far better than the most generally used specialized ice coatings. The glassflake reinforced coating uses a different resin than other specialized ice coatings which means that it remains bonded to the ship's plates even as they flex and bend under ice pressure and impact.

The coating is extremely tough and resilient. It stays on the ship much longer than other ice coatings and holds up much better, providing smooth protection for the hull for years.

Before Ecospeed



After Ecospeed



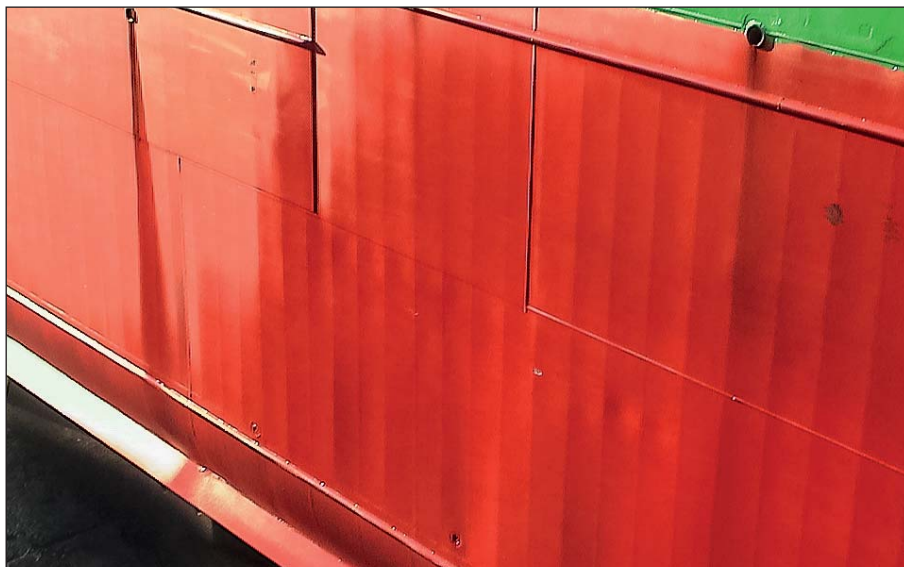
Photos on left show an icebreaker/Antarctic supply ship after a single season in the ice with a leading specialized ice paint. Photos on right show the same ship sailing in the same conditions four seasons after Ecospeed was applied, with no repainting during that time.

Before Ecospeed

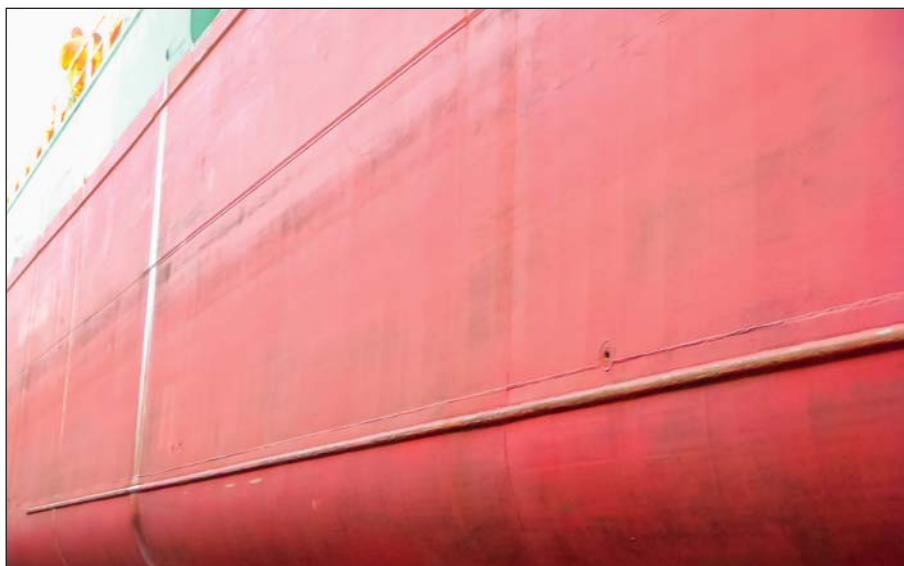


General cargo ship, before Ecospeed, one season trading in Baltic ice.

After Ecospeed



Same ship, same conditions, two years after Ecospeed applied, no repaint.



Same ship, same conditions, five years after Ecospeed applied, no repaint.

Longevity, asset protection

A ship with a well-protected hull over its service life will be worth more when the time comes to sell it than one which has a corroded, eroded hull. This comes down to how well it has been protected. This, in turn, depends on the coating system and maintenance methods used.

Ecospeed will last the life of the ship without the need for any major repair or full replacement of the coating.

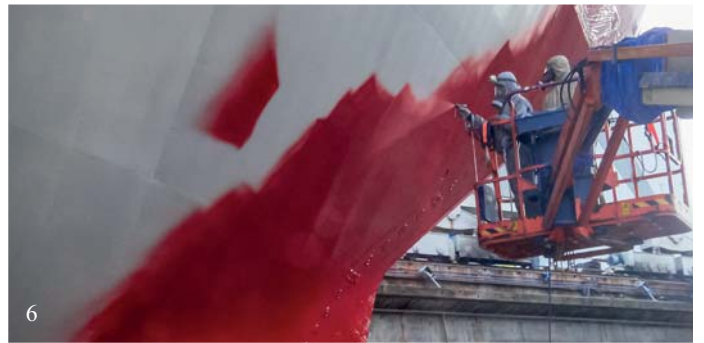
Low friction, fuel economy

An ice-going hull coating must have low friction characteristics in order to be fuel efficient. But it is not enough for the hull to be smooth and have low friction at launch. It must stay that way for the life of the vessel. Most hull coatings, including specialized ice coatings, become rougher and rougher over time due to damage, disbonding and spot repairs. This will reduce fuel efficiency more and more as time goes on.

Ecospeed will hold up and will not be damaged in the ice and so will remain smooth for the life of the vessel, thus saving fuel. Even if minor repairs are needed in drydock, they blend in perfectly, leaving the hull smooth and fuel efficient.

Ease of application

Some specialized ice-class paints are quite effective but are difficult to apply, with demanding environmental conditions, specialized application equipment and skills not necessarily available or possible at all shipyards. A true ice-class coating that can be applied as easily as a regular coating is rare. This can be an important point in deciding which coating to apply to a ship.



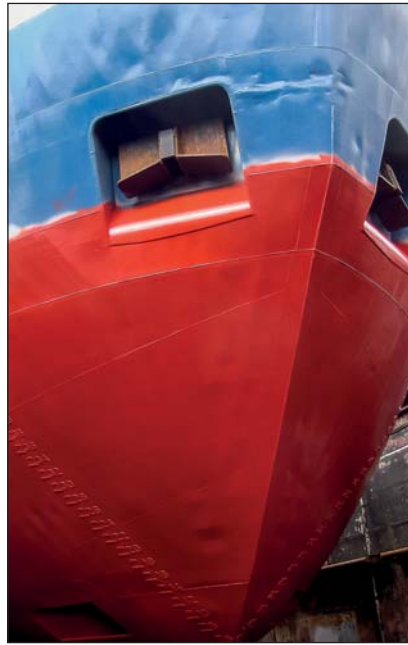
Ecospeed application to the British Antarctic Survey's James Clark Ross. 1-2-3: Hull with previous coating, grit blasting, spray equipment. 4-5-6: First coat Ecospeed, beginning of second coat Ecospeed. 7-8-9: Finalizing the Ecospeed coating. No special application requirements.

Before Ecospeed



Hull of ice-going general cargo ship after a season in ice, eight years after launch with annual coating repair or replacement.

After Ecospeed



Recoated with Ecospeed, the hull is smooth and produces low friction.

Five years after Ecospeed



Five years after Ecospeed applied, the same hull is still smooth and the coating intact, requiring only minimal touch-ups in drydock despite trading in icy waters and no coating repair since application.

Applying Ecospeed is a simple process which can be carried out using usual spray equipment without tenting and heating. Minimum overcoat time is only a few hours and there is no maximum, making it easy to fit into your drydock or new build schedule. Only two coats required, each of 500µm. Preparation requires grit blasting to 75µm profile and Sa 2.5. Application requirements consist of a normal, single-head spray gun, humidity not above 85%, temperature 0° - 60° C. Minimum overcoat time of 3 hours (at 20° C), no maximum. Immersion time 24 hours after.

Rudders and running gear, special protection

A specially formulated version of Ecospeed known as Ecoshield® is used for protecting rudders and other running gear from cavitation and corrosion damage. Ecoshield is equally effective in ice as in water.

Applied once, Ecoshield provides lifelong protection for the rudder, stabilizer fins, thruster tunnels and other parts of the underwater ship particularly prone to cavitation and corrosion. Ecoshield is fully compatible with Ecospeed. It can be applied at the same time in the same way. It can also be applied under or over Ecospeed. ■

Contact us for more information or an estimate for Ecospeed and/or Ecoshield for your ice-going ships.

On the road with Subsea Industries

The first six months of the year have been busy for Subsea Industries and Hydrex with both of the companies' coatings and hull care teams attending key maritime events across the globe as part of the strategy to optimise their market share in the marine sector.

Kick-starting the 2017 exhibition and conference schedule was January's EuroMaritime-EuroWaterways event at the Porte de Versailles, Paris, which attracted more than 250 exhibiting companies and 5000 visitors from 41 countries. A key highlight was the attendance of the Prime Minister Bernard Cazeneuve who was updated on the latest technological developments aimed at optimising energy and environmental efficiencies.

"For us, the event was an enormous success," said Subsea Industries, Production Executive Manuel Hof. "We have had some very positive enquiries from a number of potential buyers. I think a key part of this success was the 'Key Buyers' initiative, which resulted in a high volume of buyer-supplier meetings, organised by the Ile-de-France CCI and the EEN (Europe Enterprise Network) network."

The Paris event was followed in April with a visit to Istanbul to exhibit at the increasingly well-attended Europort Turkey event. The 14th edition of this biennial event, now based in the Tuzla maritime district, at the Viaport Marina, has grown exponentially over recent years with the addition of a new hall



Subsea Industries Production Executive Manuel Hof with Mr. Comuoglu, representative of Subsea Industries' agent Amat Engineering.

to accommodate over 2000 exhibitors and 4500 visitors.

During the opening ceremony, Naci Kaya, Deputy Director General of Ministry of Transport, Maritime Affairs & Communications, underlined the importance of cooperation to Turkey's historic maritime heritage. "We are very pleased to see that international cooperation is established and developed by this kind

of exhibition. Europort Turkey is of great importance for Tuzla, the heart of the maritime industry."

"We were also pleased to see an Iranian trade mission visiting Europort Turkey this year," said Hof. "To have meetings with potential business partners and our regional agent, Amat Engineering, from this important maritime hub, following the lifting of sanctions, is important



Subsea Industries was part of Amat Engineering's very busy booth at Europort Turkey.



Hydrex Sales Officer Mr. Steven De Keyzer preparing for another well filled day at Sea Asia.



At Sea Asia we were part of the Holland Pavilion.

to us. Iran is looking to renew its ageing tanker fleet and we obviously hope that Ecospeed will play a role in protecting these new hulls.”

Steven De Keyzer, who supports the agent network for Hydrex activities from the Antwerp office, added: “Our global network of diver/tech-

nicians could also prove cost-advantageous to the Iranian fleet, since we have the technology and capability to carry out a high proportion of hull repairs in water, reducing the costs associated with drydocking a vessel.”

Europort Turkey was followed in

quick succession with Sea Asia, Singapore's foremost maritime exhibition and conference, and, in May, Nor-Shipping.

“Despite the offshore sectors downturn, the Lion State continues to be an important, strategically-placed maritime hub so it is crucial that we



have a presence at this event,” said Hof.

“The 15.000 participants from 85 countries substantiates claims that Asia continues to play a significant role on the global maritime stage. Of course, the offshore market downturn will have an impact on these events, but for Subsea Industries the benefits always outweigh the costs. We were fortunate to have some significant meetings at our booth, with a number of potential customers making enquiries about the coatings range,” said Hof.



The day after Sea Asia Hydrex and Subsea Industries took part in a Technology Exchange Roadshow in Singapore organized by Netherlands Maritime Technology (NMT). During this day a select delegation visited a number of shipping related companies in Singapore. At each stop all participants of the event had the opportunity to briefly highlight how they could help the visited companies in making their business more efficient, green and successful. Both Mr. Hof and Mr. De Keyzer were very satisfied with this initiative and hoped it would be repeated at upcoming exhibitions.

After the summer months, Subsea Industries will continue the road show closer to home with the Europort Exhibition in Rotterdam. ■

A Technology Exchange Roadshow organized by NMT presented the perfect opportunity to highlight the technologies of Hydrex and Subsea Industries (above) and learn more about the other participants (below).

UV resistant corrosion protection



The 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.

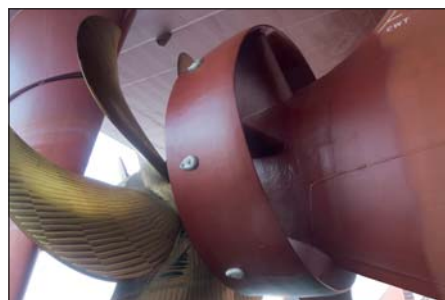
Like all other coatings systems in

the Subsea Industries family, 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 a yard.

ECOLAST®
LONG TERM UV RESISTANT

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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