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

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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 Downie
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.

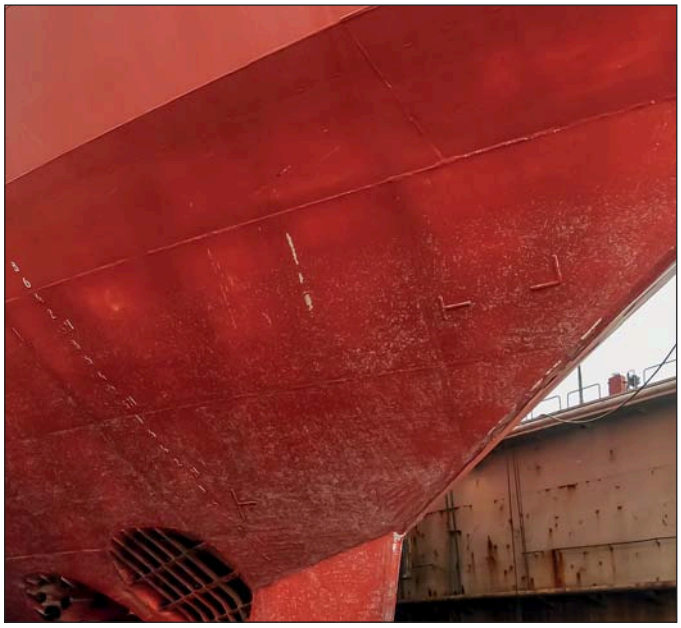
Ecospeed has been recognized by Lloyd's Register as an abrasion resistant ice coating for ships intending to navigate in ice conditions. Its correct use on the ice belt specifically permits a reduction of the ice belt's steel plating by up to 1mm.

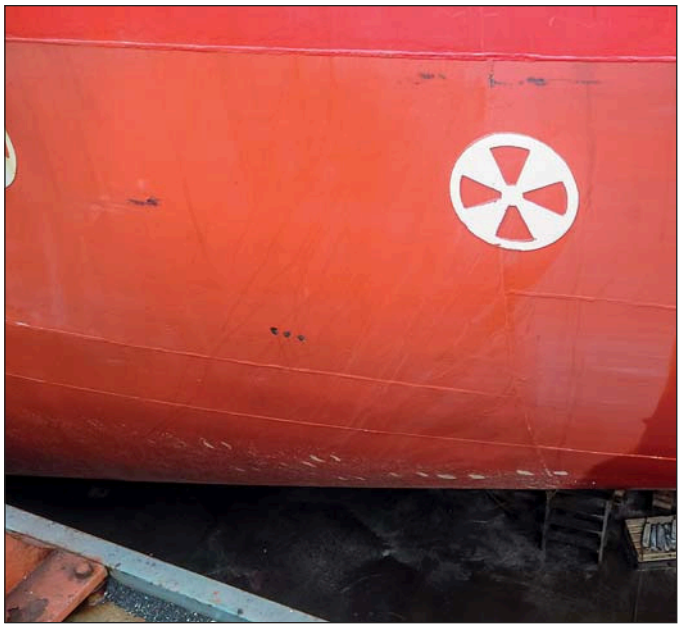
Experience has shown that Ecospeed stays on the hull longer and resists the ice far better than the most generally used specialized ice coatings. The glassflake reinforced coating uses a different resin than other specialized ice coatings which means that it remains bonded to the ship's plates even as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



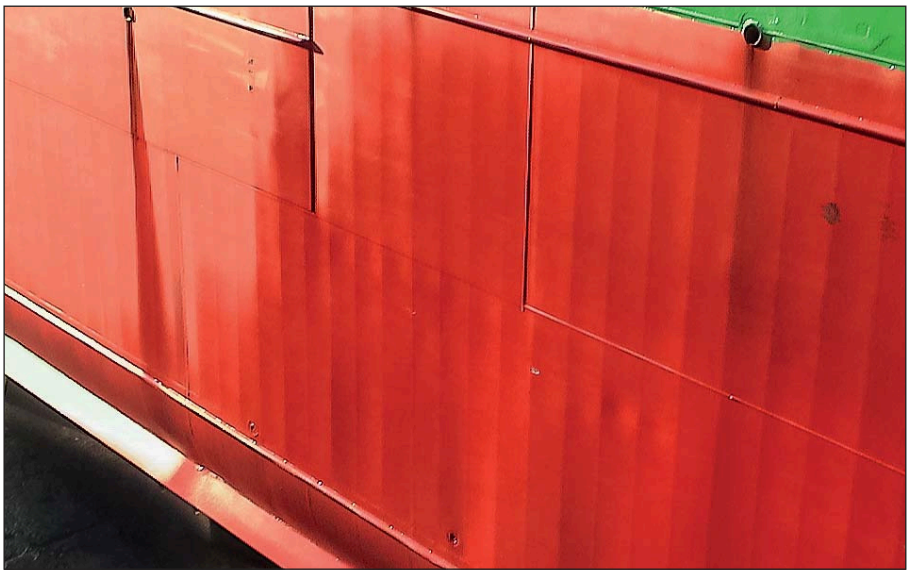


Photos on left show an icebreaker/Antarctic supply ship after a single season in the ice with a leading specialized ice paint. Photos on right show the same ship sailing in the same conditions four seasons after Ecospeed was applied, with no repainting during that time.

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.

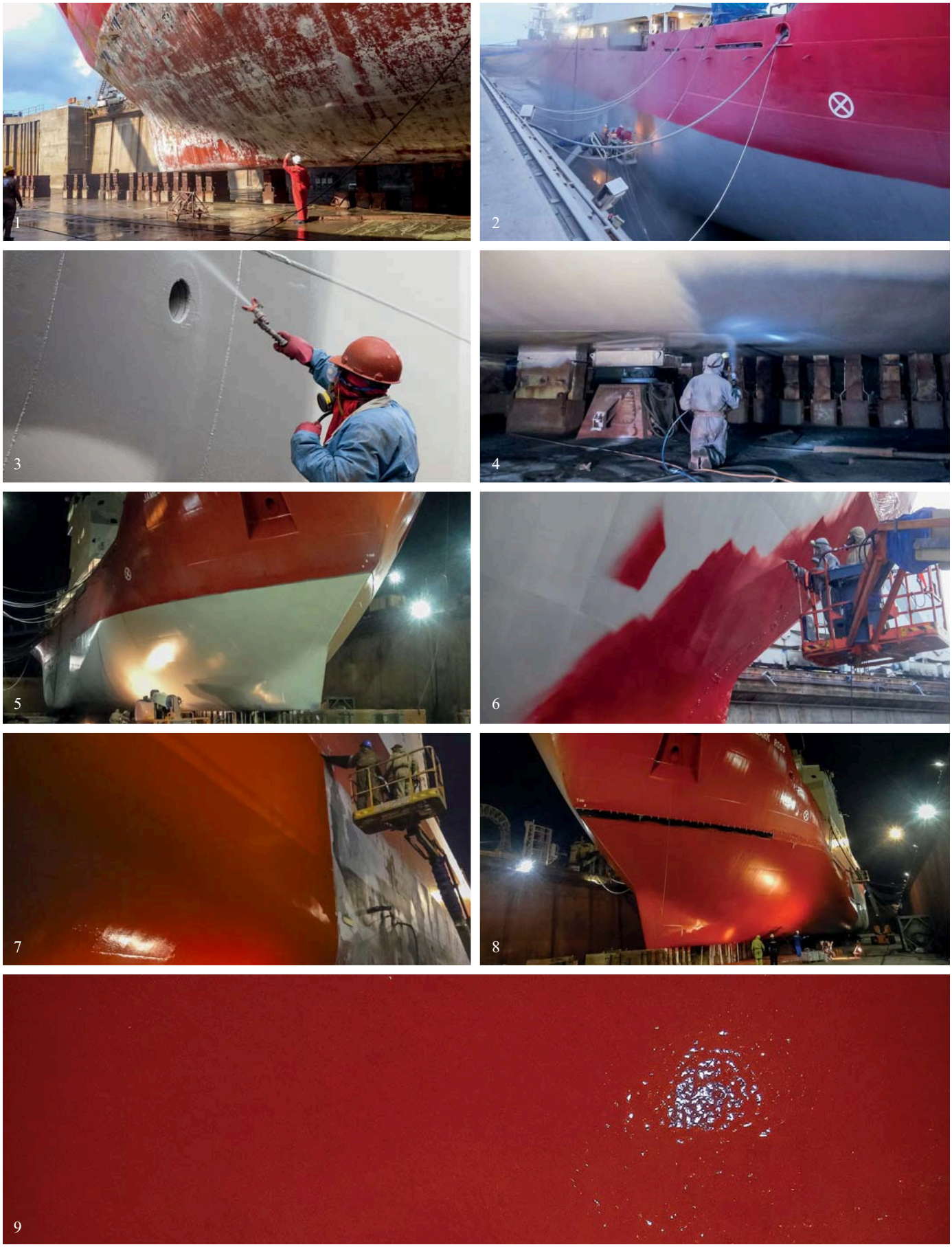
Low friction, fuel economy

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.*

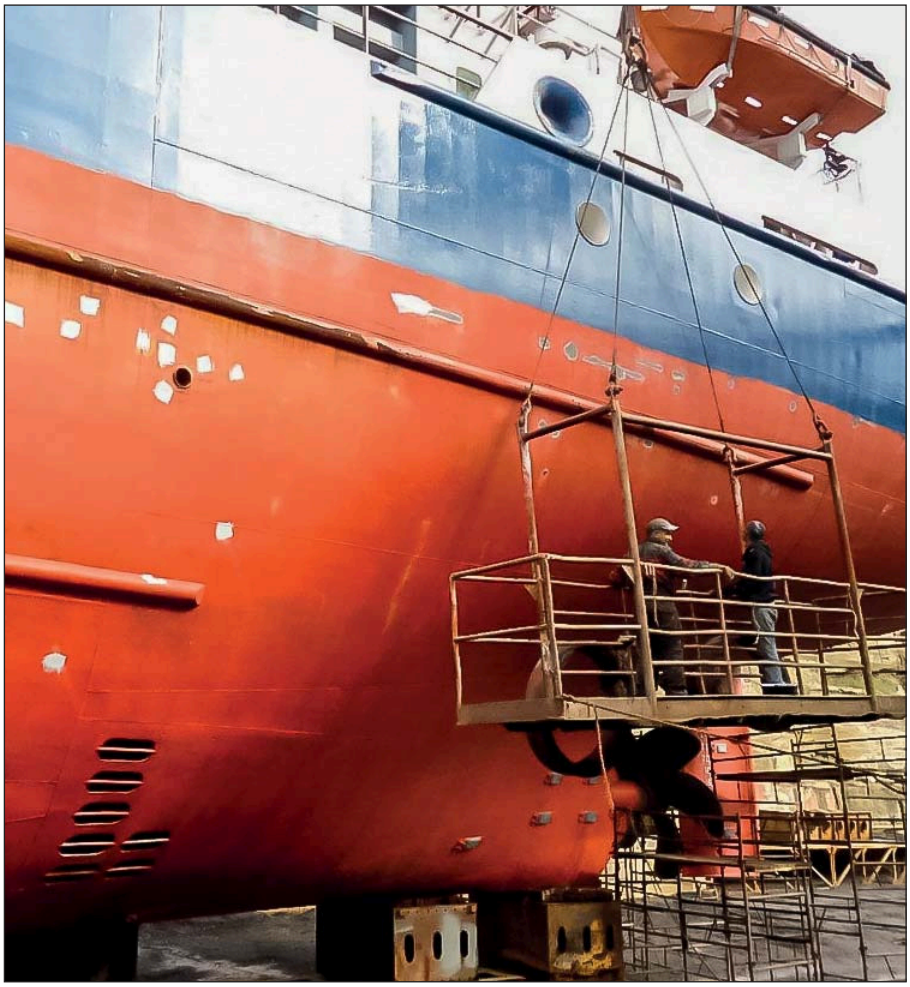
Before Ecospeed

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.