

SUBSEA
PROTECTION AND PERFORMANCE



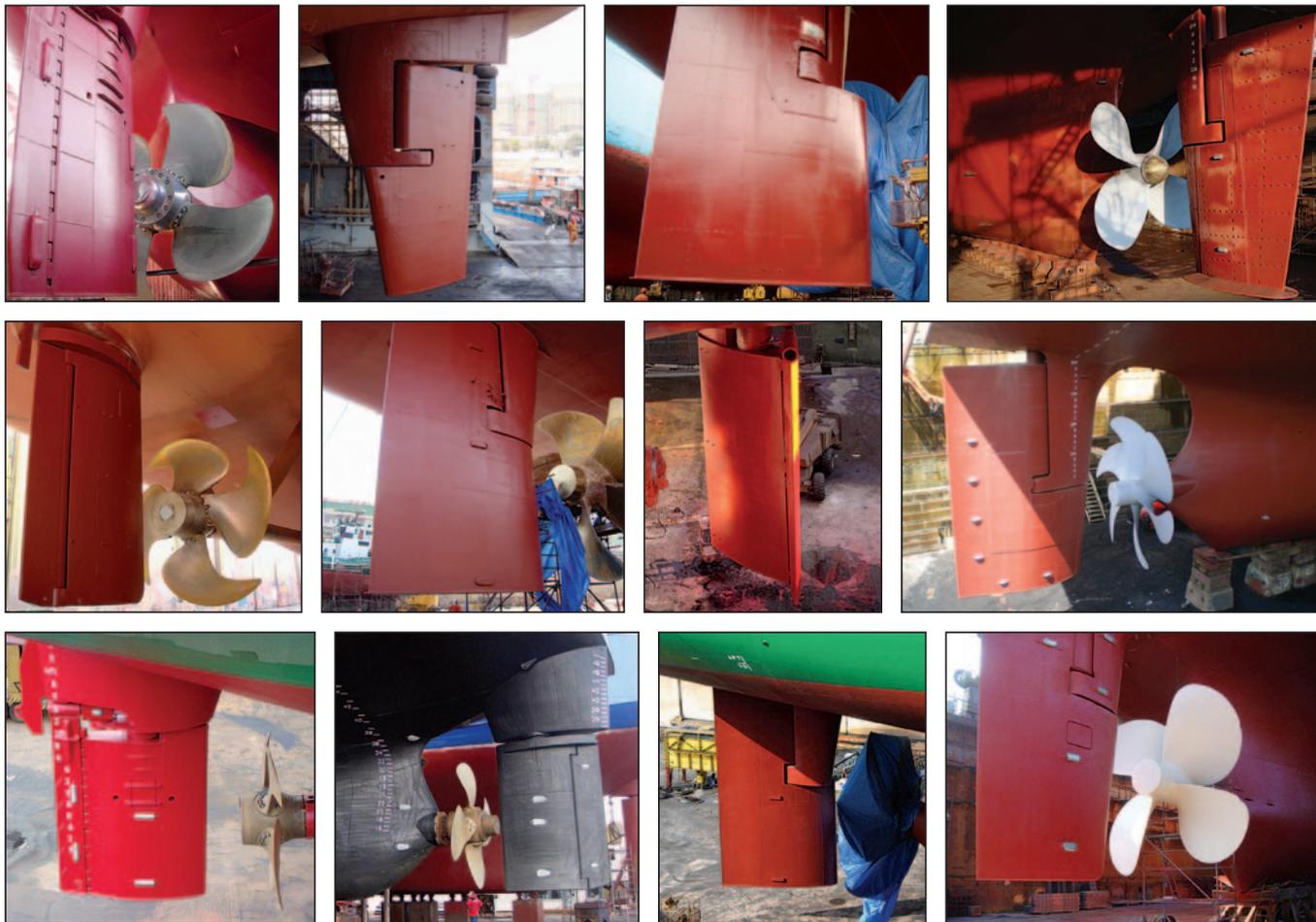
NEWS

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Ice-class coating in a class of its own

LASTING PROTECTION



Ecoshield gives a very thorough and lasting defense against cavitation and corrosion damage for a ship hull's entire service life.

The coating equally provides the rudder with an impenetrable protective layer while its flexibility enables absorption of the forces that are produced by cavitation. This prevents the damage normally caused

by this phenomenon.

Without proper protection against cavitation and the resulting erosion and corrosion damage, the financial consequences can be severe.

By removing the existing paint layers and applying Ecoshield on the rudder we can break the never ending cycle of painting, suffering damage, having

to perform extensive repairs in drydock followed by a full repainting, again and again.

With an Ecoshield application no full repaint will be needed during drydocking. Ecoshield is guaranteed for ten years. At the most, minor touch-ups will be required.

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ECOSHIELD®
ULTIMATE PROTECTION 

Ice-class coating in a class of its own

For many years, Ecospeed has been a leading ice-class coating, certified by class as ice-abrasion resistant and qualifying ships using it for reduced scantlings.

The original Ecospeed coating was not intended as an ice-class coating. This was discovered by accident. Incredible results with Ecospeed were reported by ice-going ships, tugs, ice-breakers, polar supply and research ships, the world's most powerful ice-breaking cargo ship and many other ships that sail in ice and are conscious of protecting the environment.

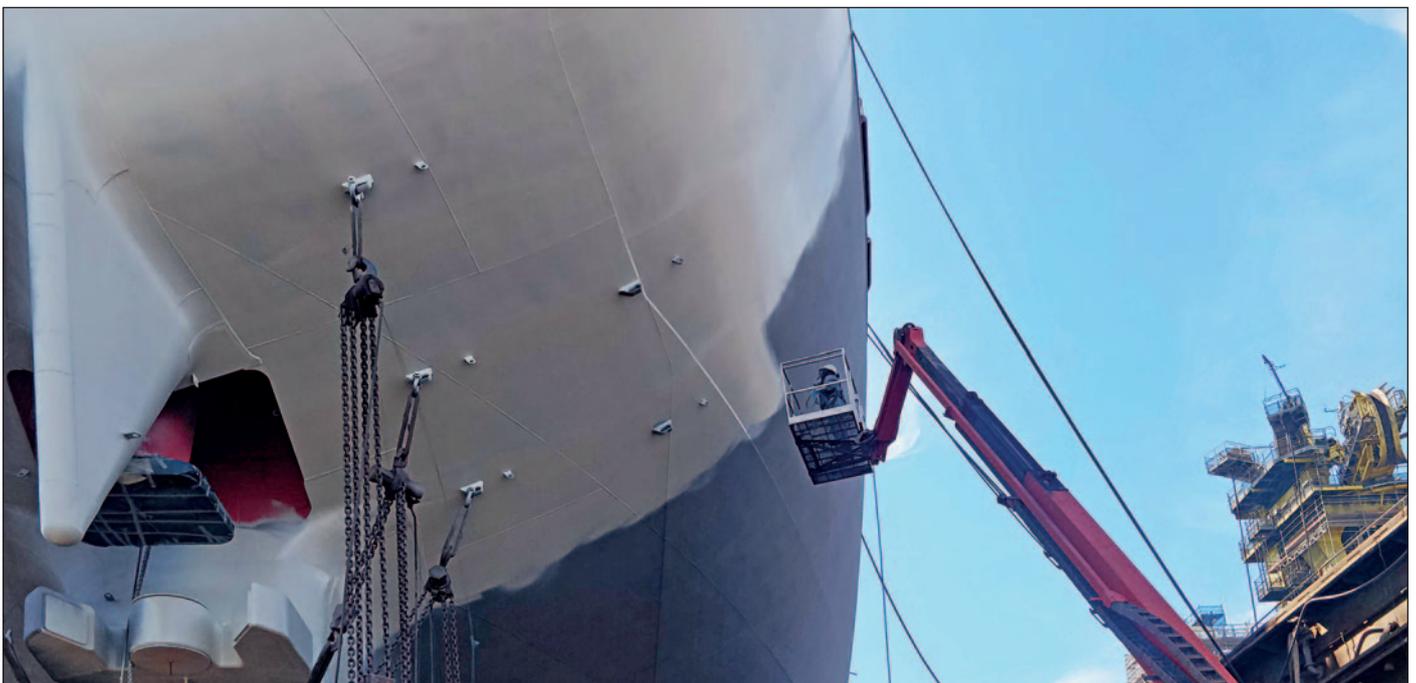
We therefore refined the original coating and focused on its ice-going capabilities and created Ecospeed Ice which is designed to be a specialist ice-going coating superior to any other available. We would like to tell you why.



The British Antarctic Survey Royal Research Ship Sir David Attenborough on its maiden voyage to Antarctica. (Jamie Anderson – British Antarctic Survey).

Why Ecospeed Ice?

- Class certified ice abrasion-resistant coating.
- Low friction. The hull remains smooth and retains its low friction properties for the life of the ship, saving fuel and reducing emissions.
- Due to superior protection, new-builds are able to take advantage of reduced scantlings, less steel and a lighter ship, saving construction costs.
- A base consisting of a resin which cures fully without becoming brittle or inflexible and has superior adhe-



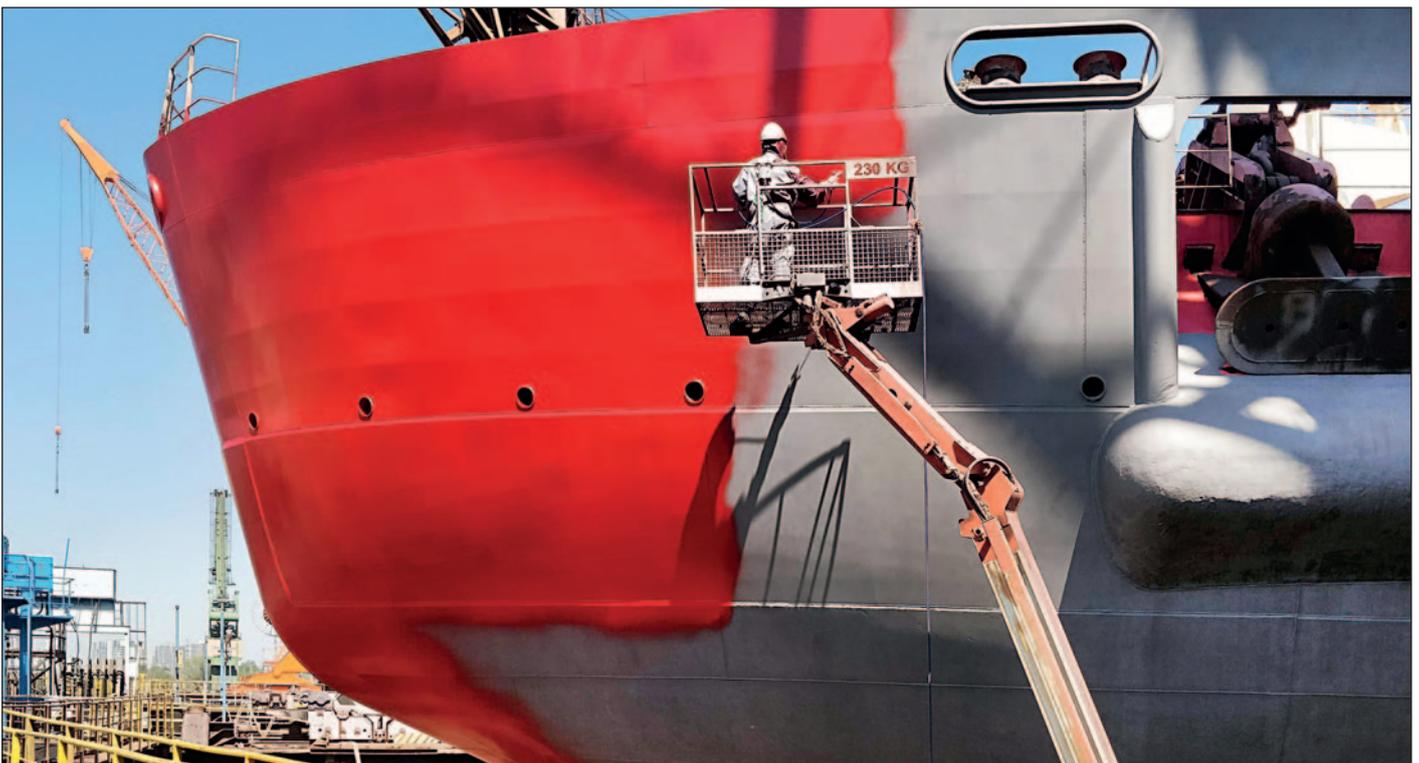
Application of first Ecospeed Ice layer.



Many case studies have shown that our coatings can withstand the impact of ice for many years on end.



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



Like all our coatings Ecospeed Ice is applied in two layers, forming one homogenous protection.

sion properties, reinforced with a high content of large aspect ratio glass platelets.

- Extraordinarily tough bonding powers. Ecospeed Ice contains a number of ingredients to improve bonding and strength. Even in the event of mechanical damage, there will be no undercreep.

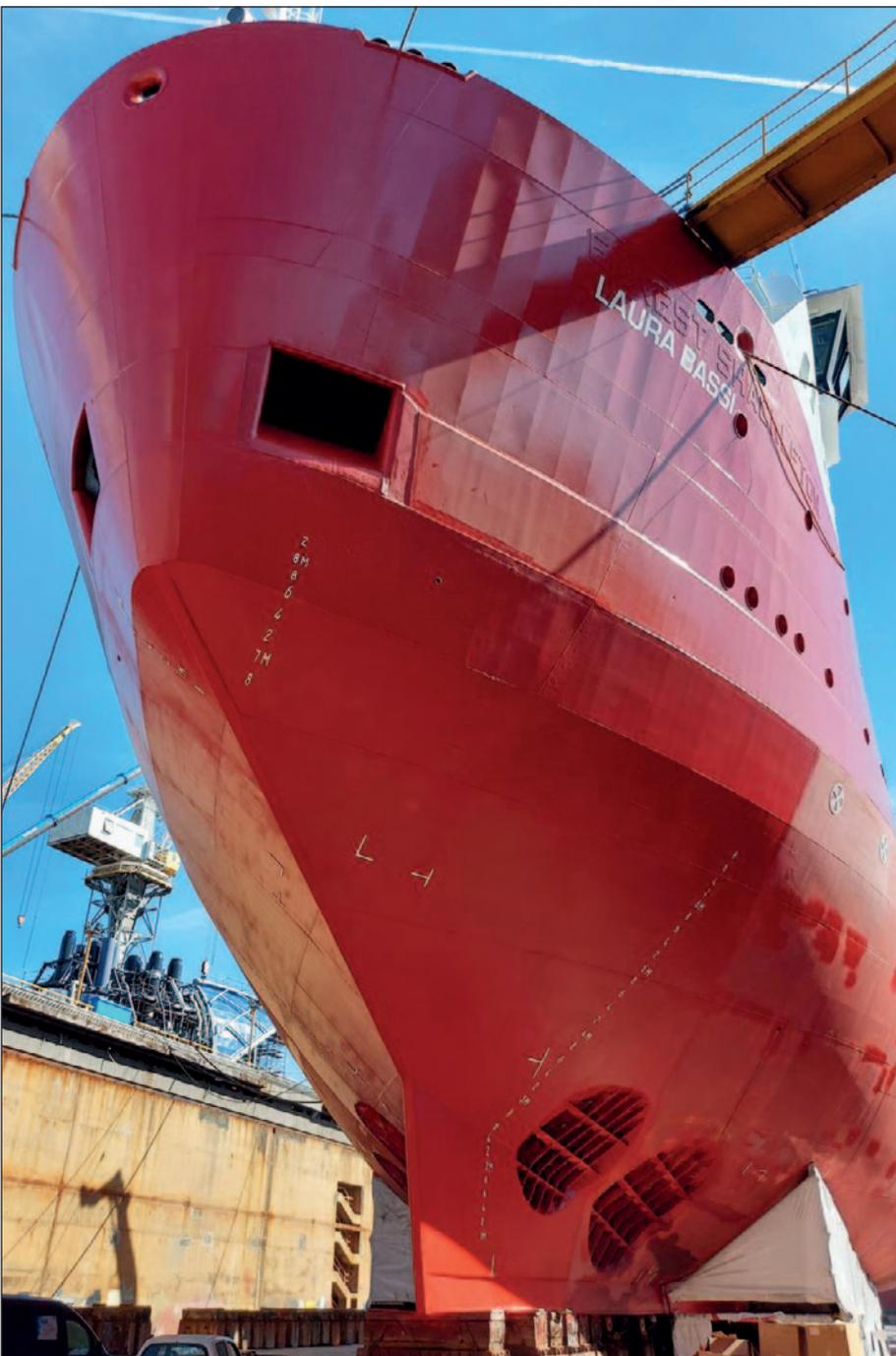
- Completely non-toxic. Vital for pristine polar regions and other sensitive environments. Will not leave biocides or heavy metals in the ice.

- Preparation includes grit blasting to create a profile of at least 75 μm and a cleanliness of SA 2.5 or better.

- Easily applied without specialized equipment such as hot twin-feed guns, or restrictive environmental conditions such as temperature or humidity. No primer. Just 2 coats each 500 μm DFT. Rapid overcoat time of about 3 hours minimum, no maximum. Ready to launch in 24 hours.



RV *Laura Bassi* returning from her first Arctic campaign during which the ship encountered quite a few icy areas.



Application of touch-ups is simple and fast.

- The coating remains intact and smooth for many years in the harsh-est of icy waters and will not need to be replaced. Only minor spot repairs for mechanical damage are required during routine drydocking. Any repairs blend in, leaving the hull as smooth as on initial application of the coating.

- Easy to clean in-water or in dry-dock to remove biofouling whenever this builds up (not frequent with ice-going vessels). Cleaning does no harm to the hull coating – in fact, in-water cleaning improves it.

No recoating after almost 15 years

Well over a hundred ice-going ships have been coated with our products with excellent and conclusive results.

When icebreaking research vessel *RV Laura Bassi* docked in Italy last year, only touch-ups were applied to the underwater hull coating. Even though the hull was originally coated with Ecospeed Ice thirteen years ago, there has been no need for a full repaint since then.

Back in 2009 when the coating was first applied, the ship was still called *RRS Ernest Shackleton*. In ten seasons operating *RRS Ernest Shackleton* with Ecospeed Ice, the British Antarctic Survey (BAS) had to touch-up the coating only in areas of mechanical damage and carry out minor repairs around the bow, the most susceptible area to ice impact.

This is just one of the many case studies. Because of the excellent results our Ecospeed coating was selected to protect many ice-going ships among which the new-build research vessel *RRS Sir David Attenborough* and the world's most powerful ice-class bulker, *Umiak I*.

Ultimate protection for ice-going hulls

Ecospeed Ice is the proven, ultimate hull protection for icebreakers and ice-going vessels. It is designed and formulated to last the life of the vessel with no need for replacement, requiring only minor touch-ups during routine drydocking. Remarkably easy to apply and backed by an unheard-of 10-year warranty, Ecospeed Ice simply stays on the hull no matter the conditions of sea and ice. ■

Visit our website www.subind.net for more information and additional case studies or contact us at

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On its regular run down the Labrador coast, Umiak I contends with some of the world's most rugged ice conditions, including icebergs.



Umiak I after application.

Corrosion damage very repair made ✓ easy



Subsea Industries has a 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 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 very expensive fillers. And because it is part of the Ecospeed/Ecoshield family, it is fully compatible with our coatings.

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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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