

SUBSEA
PROTECTION AND PERFORMANCE



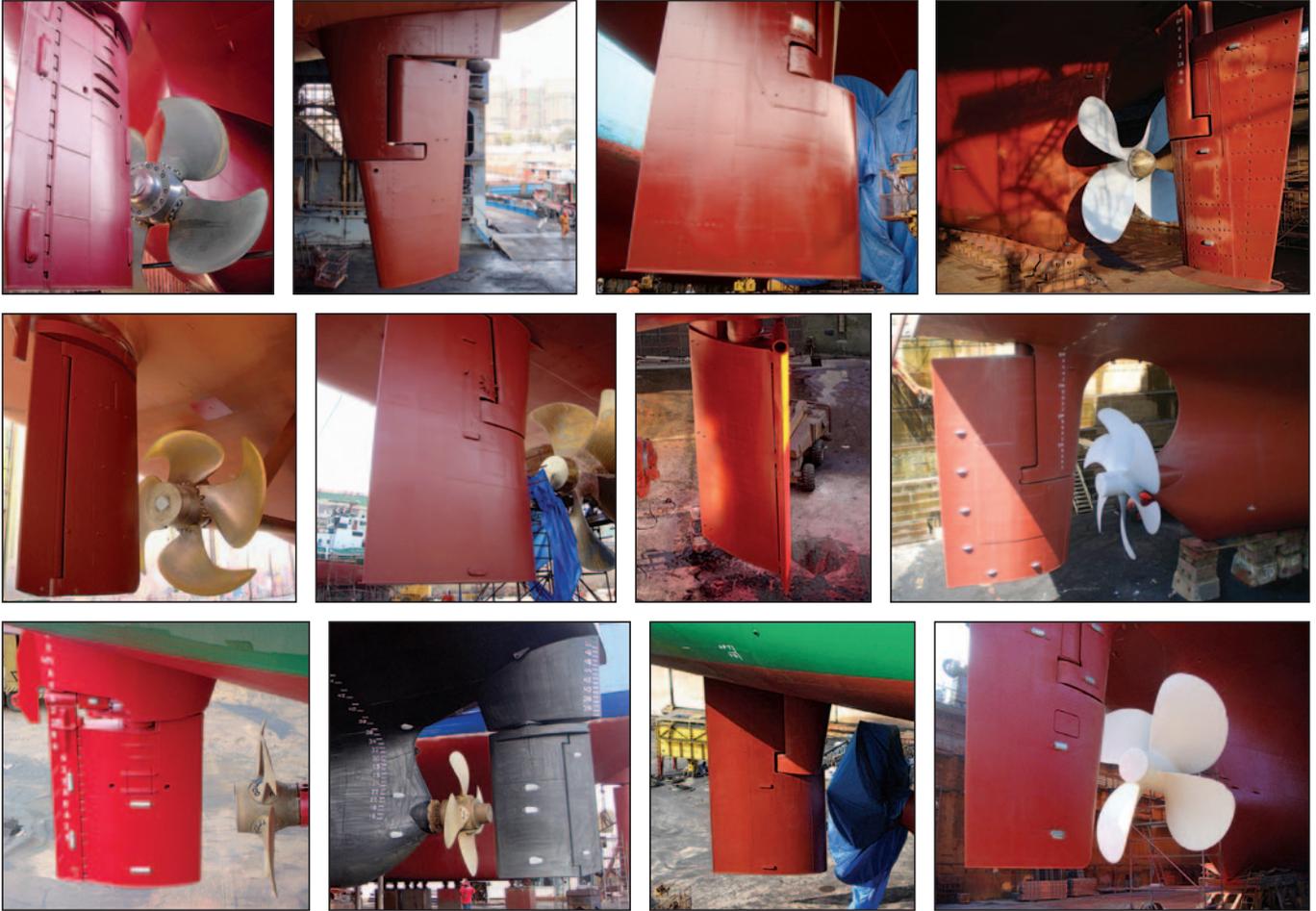
NEWS

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Ice class bulker protected with Ecospeed

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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Ice class bulker protected with Ecospeed

In April 2021 the icebreaking bulk carrier *Umiak I* was coated with Ecospeed. Application was carried out at the leading European ship repair and conversion yard Remontowa Shiprepair Yard in Gdansk, Poland. The ship is owned by Fednav and managed by Canship Ugland Ltd.

“Taking to the water for the first time over 75 years ago, Fednav has been innovating ever since. Known primarily for successful navigation of the Canadian Arctic, the company forged complex routes through unknown waters, always staying true to their purpose of doing things the right way for their clients. They have grown to become Canada’s largest oceangoing bulk shipping company, mastering a multitude of complex routes on both the Great Lakes and the Arctic with an arsenal of close to 65 owned vessels.”¹

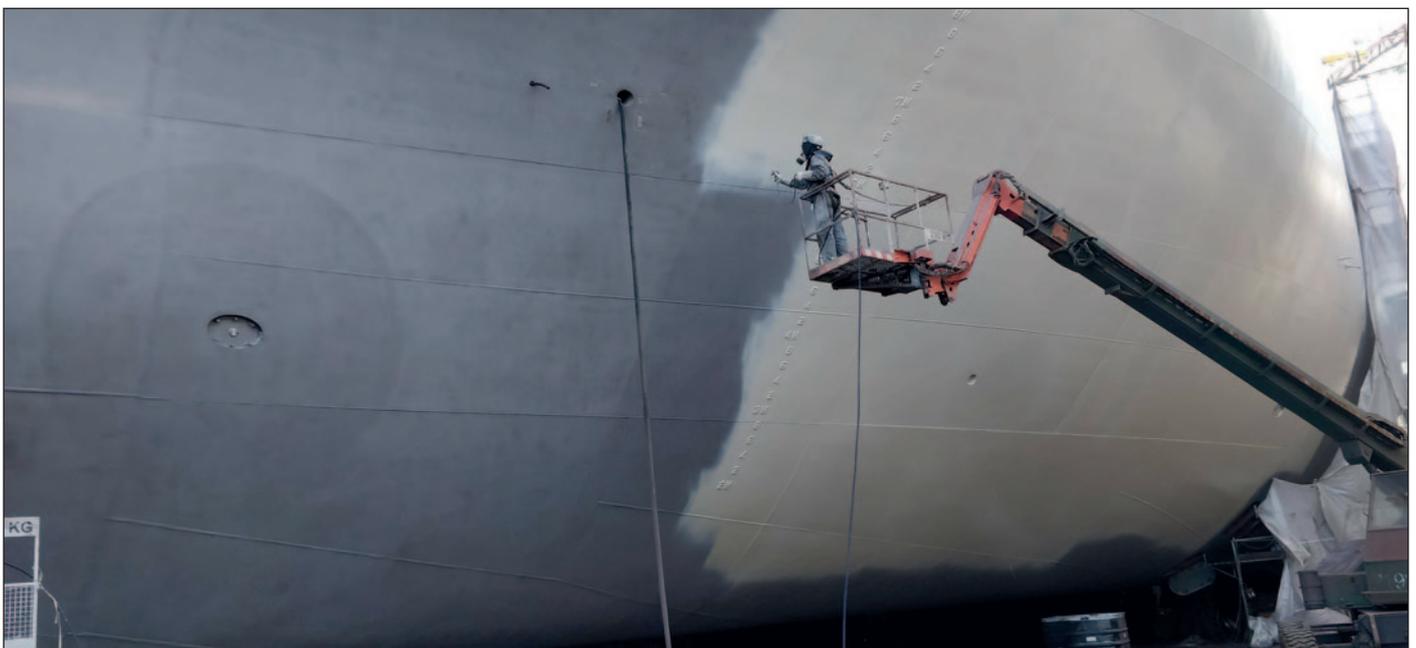


On its regular run down the Labrador coast, Umiak I contends with some of the world's most rugged ice conditions, including icebergs.

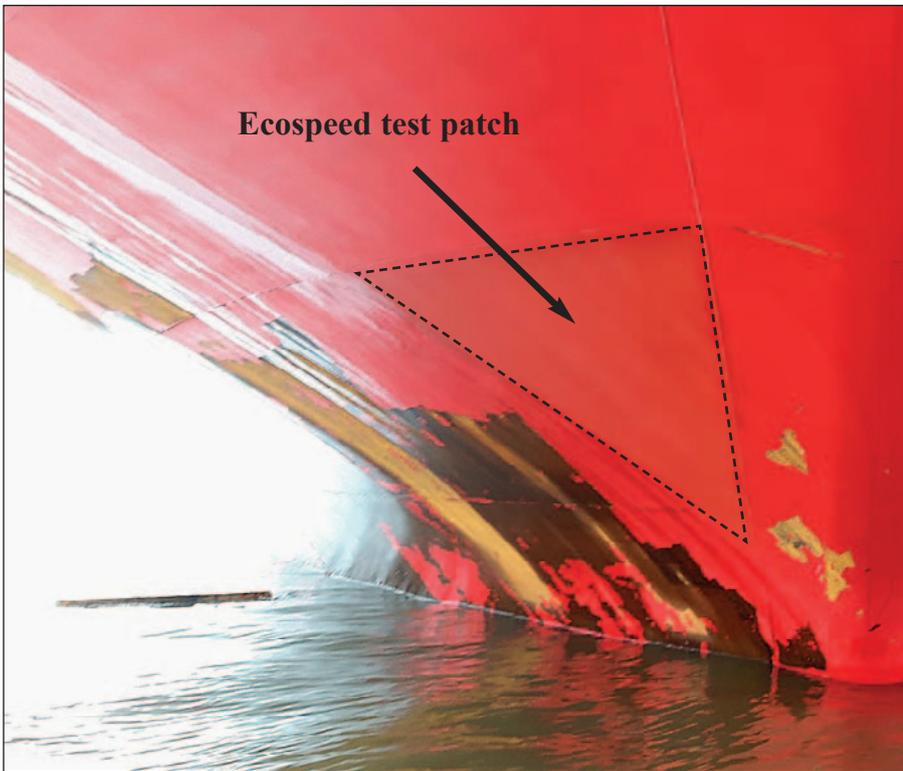
“Canship Ugland Ltd. is a Canadian ship management company located in St. John’s, Newfoundland. The company started its operations in 1997 when the first oil produced on the Grand Banks was transported

ashore. Besides *Umiak I* the company also manages a diverse fleet of vessels; two shuttle tankers in Europe, two local fire-fighting

¹ Source: <https://www.fednav.com/en/about-us>



Application of first Ecospeed layer.



One of two test patches on Umiak I after sailing in ice for several seasons.



Corrosion damage on rudder nozzle prior to Ecofix application.



Application of first layer on bilge keel section.

escort tugs, three pilot boats, an oil/chemical tanker on the East Coast of Canada and a passenger cargo vessel.”²

Stronger than the rest

“Umiak I was built in 2006 and is one of the most powerful of its kind.

The vessel operates year round on the Labrador Coast, delivering supplies to the remote mine, and hauling nickel concentrate to southern facilities. The hull is reinforced to navigate unassisted through ice that is 1.5 meters thick. On its regular run down the Labrador coast, Umiak I contends with some of the world's

most rugged ice conditions, including icebergs, from November to July each year.

While the open-water speed in a laden condition is some 13.5 knots, the bulk carrier is capable of making

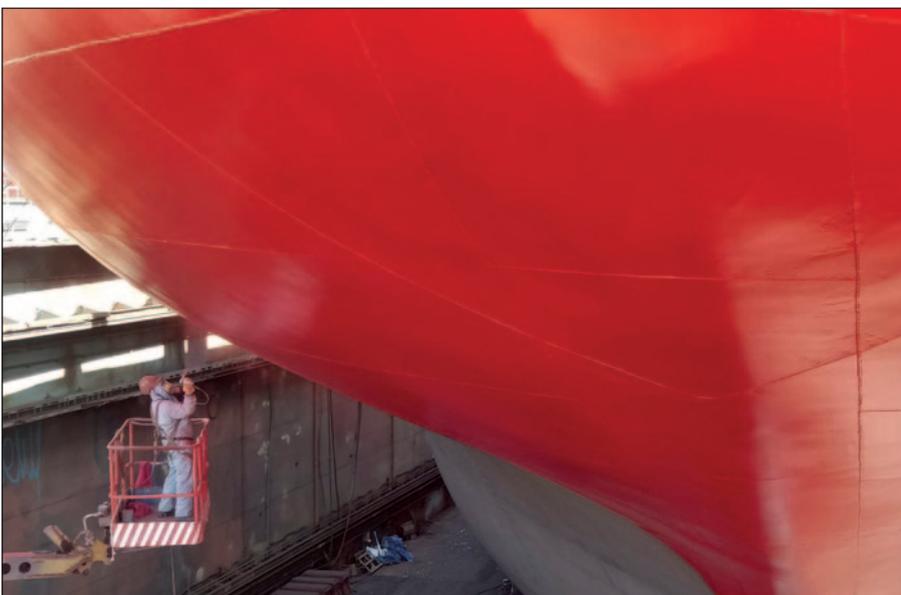
² Source: <http://www.canship.com/nl/about-us/>



The rudder and nozzle were also given the same protection.



Ecospeed is applied in two homogenous layers.



Application of second layer on bow area.

over three knots in level first year ice of 1.5-meter thickness. Capability for effective ice ramming goes hand-in-hand with the ICE-15 classification. The ramming procedure entails sailing at a specified speed through the ice until the vessel is brought to a stop by the resistance of the ice. The vessel is then put astern to come free of the packed ice, and is then sailed full ahead, to break through the ice until brought up again by the force of resistance. The procedure is used for thick ice and ice ridges.”³

Only the best protection good enough

It is not difficult to see that a special hull coating is required to withstand this kind of impact and tremendous power.

During the 2016 dry docking, it was decided to apply two test patches of Ecospeed coating to areas most prone to damage. Over the next five winter seasons the condition of the Ecospeed test patches was examined and found to hold up to the very difficult conditions despite the continuous impact with ice. The decision was made to replace the entire underwater hull coating with Ecospeed at the next docking.

The application was completed during *Umiak*'s scheduled main survey and BWTS installation at Remontowa Shiprepair Yard. Another advantage of Ecospeed to both shipowner and shipyard is ease and flexibility of application. The entire system is applied in only two homogeneous coats and the overcoating time can be as short as three or four hours, all the way up to weeks or even months if needed. Therefore,

³ Source: <https://www.fednav.com/fr/worlds-strongest-umiak-i>



Umiak I after application.

an Ecospeed application can easily be adapted to a shipyard's schedule or to unpredictable weather conditions.

The ship's rudder and nozzle were also protected with our coating system. First corrosion damage on the nozzle was repaired with Ecofix.

This restored the surface back to its original shape with a smooth surface prior to recoating with Ecoshield.

Conclusion

Experience has shown that our coating stays on the hull longer and resists the ice far better than the

most generally used specialized ice coatings. Ecospeed remains bonded to the ship's plates even as they flex and bend under ice pressure and impact.

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

Due to its unique composition, Ecospeed is not only the best protection available for underwater hulls of icebreakers and ice going vessels, the coating also provides the best hull performance and is the easiest ice going paint to apply and maintain. ■

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On its way back to Canada.

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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