

# ECOSPEED®

SHIP HULL PERFORMANCE TECHNOLOGY

# NEWS

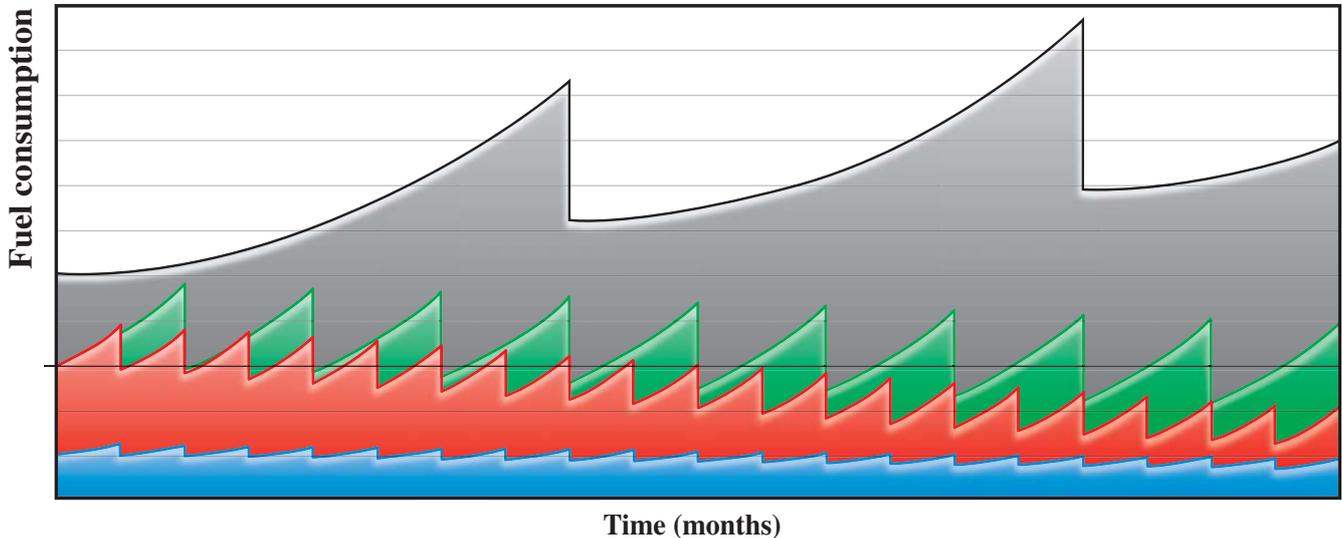
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# Millions in fuel savings

Development of additional fuel consumption over time



- Ecospeed with 2 cleanings per year
- Ecospeed with 4 cleanings per year
- Ecospeed with optimum cleaning intervals
- Active antifouling paints

**M**ost ships sail with a chartering contract that includes a penalty clause if fixed distance/fuel consumption ratios are not met. However, this is unpredictable with regular paint systems and will also worsen over the years. The ship becomes more expensive and profits are reduced.

The protective Ecospeed ship hull performance technology however

not only keeps the ship's performance stable but even improves it with repeated underwater maintenance. The coating is designed to be cleaned routinely with specially designed underwater hull cleaning tools. These simultaneously clean and improve the smoothness of the paint surface. This avoids penalties as well as producing enormous fuel savings.

One major cruise line has been quo-

ted as saying that they are saving 10% on fuel costs with Ecospeed compared to the earlier TBT coating which they replaced. Another cruise ship found that they gained 1.5 knots over sea trials speed when they replaced their hull coating with Ecospeed.

Contact us to find out how Ecospeed can help you achieve major fuel savings.

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# ECOLOCK® long-lasting protection for offshore hulls now available

**E**colock is a new product from the makers of Ecospeed and Ecoshield. It is designed to protect offshore vessels for decades without the need for drydocking. Increasingly, offshore vessels 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.

For decades it has been known that glassflake reinforced hard coatings last longer, are tougher and more resilient, need less repair and replacement than any other type of hull coating. Soft coatings such as biocidal antifouling and foul-release coatings do not hold up well. They need to be repaired or replaced often



*Surface preparation and application of Ecolock are similar to those required for Ecospeed and Ecoshield.*

which is not good news for ship-owners and operators and particularly offshore operators who need to keep their ships out of drydock. Their antifouling or foul release properties require that the ship move through the water at relatively high speed. On stationary vessels the fouling simply builds up.

Since the early 2000s a hard, cleanable, non-toxic, glassflake reinforced coating has been available, Ecospeed. Ecospeed is actually a coating system which combines a hard coating with routine in-water cleaning. The coating holds up for a remarkably long time, even in the ice or other harsh conditions. It can be cleaned as often as needed and becomes smoother not rougher with such cleaning. It has been used in offshore applications.

It was found over time that a tougher version of Ecospeed, Ecoshield, is an even more effective protection against the forces of cavitation and corrosion that constantly impinge on the rudder and other running gear of a ship. Now Ecospeed and Ecoshield have acquired a cousin, also a glassflake reinforced coating, but this one



*EXMAR chose Ecospeed to coat the hull of its first-of-a-kind floating LNG liquefaction, and storage unit, the Caribbean FLNG.*

**ECOLOCK®**  
PROTECTING STEEL



*Ecolock comes with a 10, 15 or 20 year warranty, if the coating is maintained according to the specifications.*

intended specifically to meet the hull protection requirements of offshore vessels: Ecolock.

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.

### **Glassflake reinforced, non-toxic, cleanable**

Ecolock is completely non-toxic. It is a hard, impermeable coating which even the toughest barnacle will not penetrate. This is in direct contrast to antifouling or foul-release coatings. Barnacles and other fouling organisms attach and penetrate those coatings right through to the steel permitting the start and spread of corrosion. In the case of Ecolock the barnacles, coral and other fouling organisms can be

removed completely by divers using special equipment, leaving no trace and restoring the coating to its original condition. And because it is non-toxic, it is safe to clean the Ecolock coated hull when needed for UWILD or simply to reduce the weight when too much fouling has accumulated. This can be done even in sensitive waters.

### **Application**

Surface preparation and application are similar to those required for Ecospeed and Ecoshield. The coating can be applied very rapidly. No primer, mid-coat, tie-coat, top-coat, corrosion protection scheme or any other complications. Ecolock is simply applied directly to the surface in two or more coats, each of 500µm DFT. Overcoating time is about three hours, depending on temperature and humidity. No special equipment is needed. Environmental conditions required are the usual ones for coating application. The vessel can be launched 24 hours after the final coat has been applied.

As long as it is standardly applied, Ecolock comes with a 10, 15 or 20 year warranty, if the coating is maintained according to the specifications. The thickness of the coating can be increased to extend its longevity. Even if minor mechanical damage does occur, because of the superior adhesion of Ecolock no undercreep will occur.

A White Paper with full details about protecting the hulls and tanks of offshore vessels is available in the Publications/Papers section of [www.shiphullperformance.org](http://www.shiphullperformance.org) for free download. ■



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# Ecoshield® running gear protection brings large savings

**O**ver the last few months a number of vessels have had their rudders coated with Ecoshield at shipyards in China, Singapore and Poland. These include several container vessels and car carriers. 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



*Ecoshield application of thruster tunnel.*

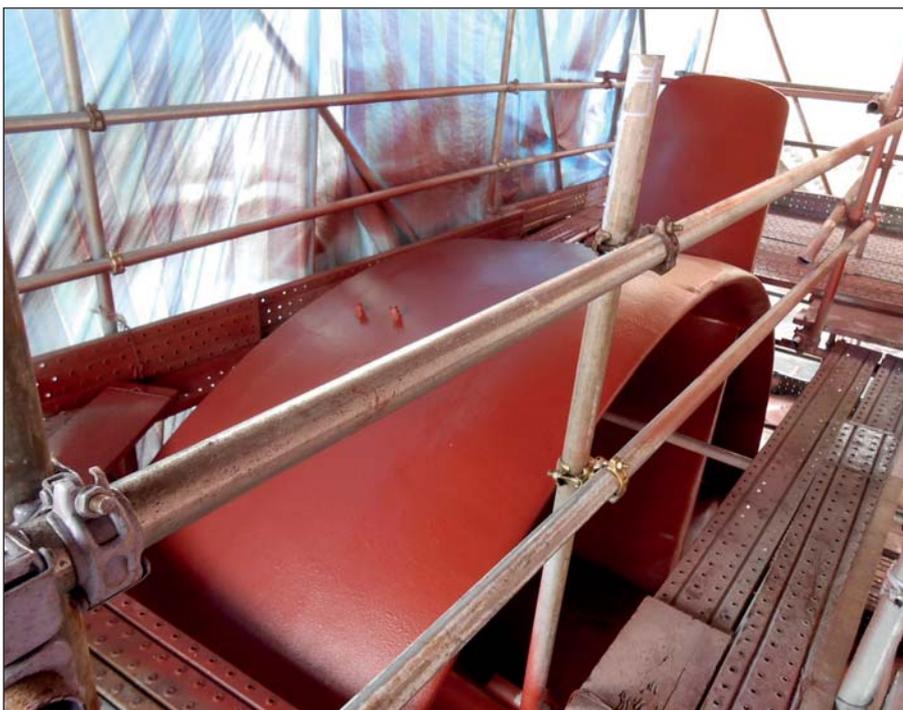
prevent corrosion and cavitation damage from reoccurring.

Cavitation tests in a flow channel, carried out in Grenoble, have con-

firmed 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.

## **Ecoshield protection for all running gear**

Besides offering rudder protection, Ecoshield is also suitable for thrusters, azimuth thrusters, azipods, thruster nozzles, kort nozzles, thruster tunnels and other underwater ship gear which needs special protection from corrosion. The extra strength coating protects these areas for the service life of the ship. There is no need for recoating or major



*The propeller enhancement fin of a container vessel was coated with Ecoshield.*



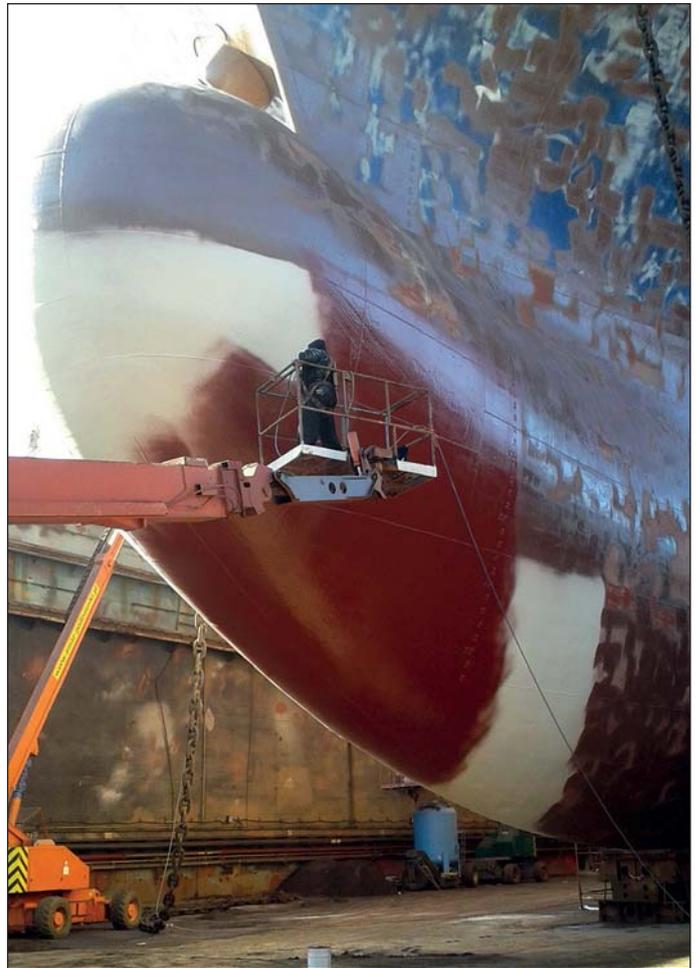
*Ecoshield is applied in two identical layers.*



*After application, the rudder is protected for the rest of its service life.*



*Condition of bulbous bow prior to Ecoshield application.*



*Application of second layer on bulbous bow of container vessel.*



*An Ecoshield application is fast and easily adapted to a yard's schedule.*



*Ecoshield protects running gear against cavitation and corrosion damage.*

repair. For this reason the thruster tunnels and bulbous bows of several of the container vessels were also coated with Ecoshield, as was the propeller enhancement fin of one container ship.

The coating can be applied at the newbuild stage or in drydock for ships already in service. Overcoating time can be as short as three hours, which means that the two coats required can usually be applied in a single day.

Evidence of the success of the product is the number of companies which began by coating a rudder on one ship experimentally and went

on to coat other running gear on the same ship and the rudders and running gear of other ships in their fleet. Most are converting their entire fleet as a result of seeing the pristine condition of the coated areas after sailing for several years (in some cases ten years and counting).

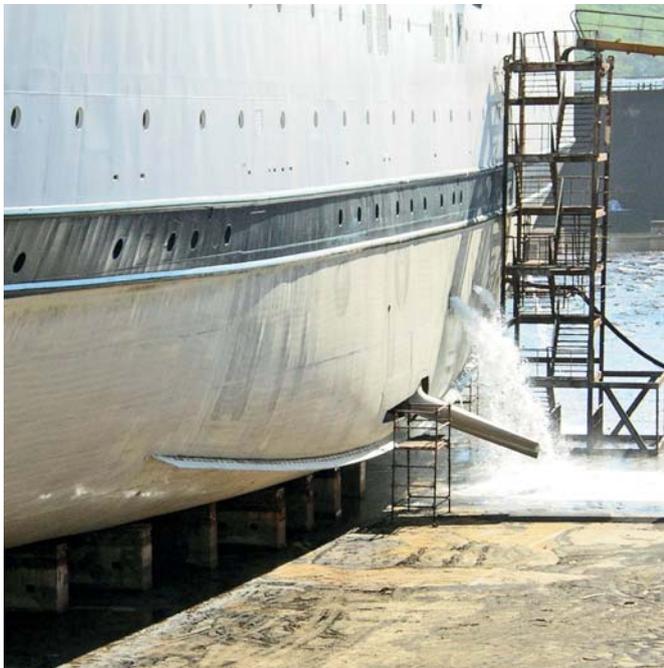
If one takes into account the costs of the temporary underwater repairs and the regular inspections required by a condition of class until the next drydocking, it becomes clear that the investment in a coating system that offers extra protection from day one is very easily won back. For this reason more 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 that will result.

Rudders and running gear can be given the same lifelong protection. Contact one of our offices for more information. ■

**KEEPING SHIPS  
IN BUSINESS**

# Save millions in drydock expenses and off-hire time



*Hull of cruise ship after 5 years with Ecospeed coating with no replacement or major repair. This is the state of the hull when the ship came out of the water; without any cleaning or touch-up in drydock.*

**W**hen your hull coating never needs replacing or major repair, you can save a lot of money in drydock fees, off-hire time, materials and labor.

becomes rougher until it's no longer worth trying to patch it up. And it costs you a fortune in fuel to compensate for the additional hull friction.

Imagine coming into drydock after 3 or 5 years and finding that your hull coating only requires a few minor touch-ups and doesn't even need to be washed off.

Most hull topcoats are designed to be replaced once or twice every five years. The full hull coating scheme has to be fully replaced every 10 - 15 years down to bare steel. Over that time period, the coating degrades and

Imagine a coating that's guaranteed for 10 years and is expected to last 25 without replacement or major repair. A coating that gets smoother over time, not rougher.

Just think how much money you will save.

Call us today for a quote to convert your hull to Ecospeed or start off right, with Ecospeed, on a new build.

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