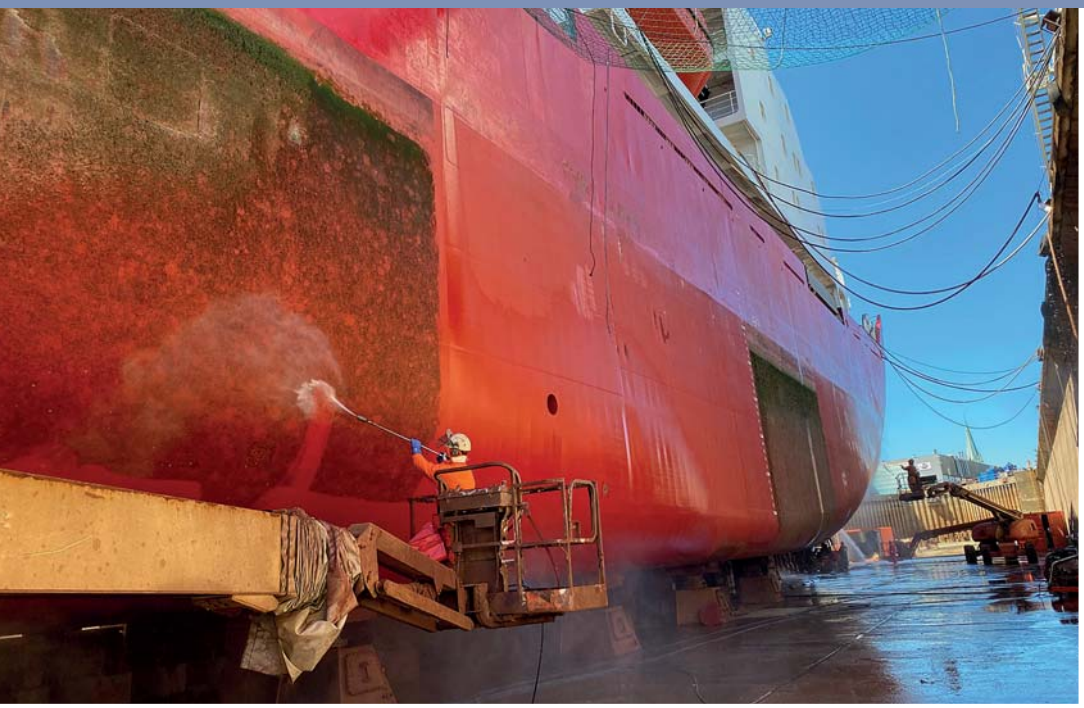
SUBSEA

PROTECTION AND PERFORMANCE

Magazine

212



Subsea Industries is looking for representative agents

To support our continuous growth, we are expanding our worldwide network of Subsea Industries agents. This allows us to reach a much bigger public directly than would otherwise be possible.

Subsea Industries NV was founded in 1983 to take care of the design, development and marketing of an evolving line of underwater hull and propeller cleaning equipment as well as a line of hard hull coating systems.

The purpose of the Ecospeed range of coatings and cleaning technology is to offer a long-lasting, non-toxic protection for all ships with a system that keeps a hull ultra-smooth and free of fouling for the service life of the vessel with minimal repair and no replacement. Instead of using chemicals to kill and repel marine fouling organisms, Ecospeed uses a hard, impermeable, impenetrable coating along with manual removal of fouling at an early stage.

Contact us if you are interested in joining our network and help us build a strong relationship with our prospects and customers. We look forward to hearing from you.

SUBSEA INDUSTRIES

Phone: + 32 3 213 5318
Fax: + 32 3 213 5321
agents@subind.net
www.subind.net

Editorial: Ecospeed ideal for long lay-ups

More and more ship owners are forced to lay ships up for longer periods. Having to re-coat the underwater hull afterward is a justified concern. Removing the fouling that has built up will damage most coatings severely. Ecospeed however can always be restored to its optimum condition, regardless of how much fouling has attached itself to the hull while the vessel has been laying idle.

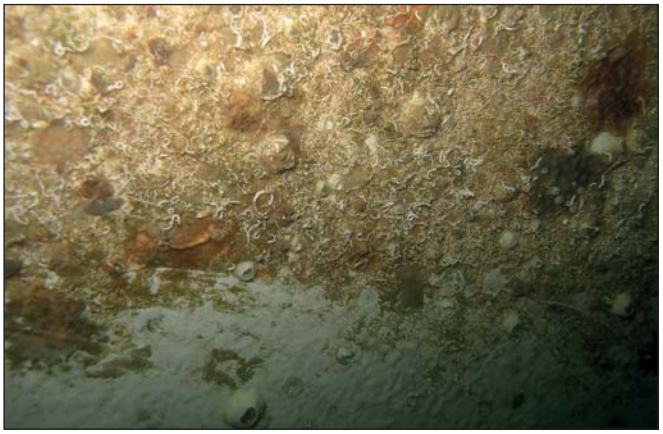
Ecospeed is ideally suited for ships during lay-ups because of its impermeability. This gives the coating its excellent and durable anticorrosive properties and protects the underwater hull against damage caused by any type of marine fouling. Despite the aggressive nature of certain types of fouling, no rust or damage to the steel will be present on the underwater hull of the vessel after cleaning.

This is illustrated by a cruise ship that remained stationary in the Caribbean for seven months. After this period Ecospeed's qualities allowed a complete removal of all fouling from the underwater hull of the vessel. This was done during an underwater cleaning without causing any damage to the underlying paint layers.

The coating's properties prevent fouling penetration, making the cleaning process extremely easy. It can be performed underwater or with controlled high-pressure tools in drydock and can be repeated whenever needed during the vessel's lifespan without causing damage or deterioration in quality.

The coating's surface characteristics even significantly improve with each underwater hull cleaning. This unique quality gives shipowners the opportunity to have their ship operational again even after an extended lay-up period. The hull can be restored to its optimum condition whenever needed without any additional financial setback.

Subsea Industries NV
Boud Van Rompay
Founder



Removing fouling that has built up during a lay-up will damage most coatings severely.

All fouling can be removed without damaging Ecospeed after laying idle for several months.

Corrosion simplified and solved

We are so used to corrosion on ships that no-one raises an eyebrow at the rust-stained hulls in any port or dock. It is, apparently, considered to be the way of things.

Bow area of RRS James Clark Ross after sailing in ice with Ecospeed for six years: no corrosion, only small mechanical damage from the anchor chain.

It is true that steel will rust. But with the knowledge and resources at our disposal we have long passed the point when we should have recognized that this is a problem and solved it.

Corrosion on ships is rarely recognized as a failure of the coating, but that is precisely what it is. The first job of a hull coating is to prevent the gradual weakening and destruction of marine assets that is caused by corrosion. It remains a massive problem for shipping despite coating repairs every few years, eating up valuable days in drydock. Not only that, but current coating compounds also leak a million ton of toxic material into our oceans every year.

Corrosion is not some unavoidable fact of life. The basics of the subject have been well known for centuries, but they are worth reiterating. The iron in a steel hull is, effectively, trying to return to the state in which it was taken as an oxidised ore. Three things are needed for rust to form: metal, water, and oxygen. Energy, the galvanic difference between metals, stimulates the process. Impurities in the metal, seawater, water vapor, acids, salts, carbon dioxide and stresses hasten it.

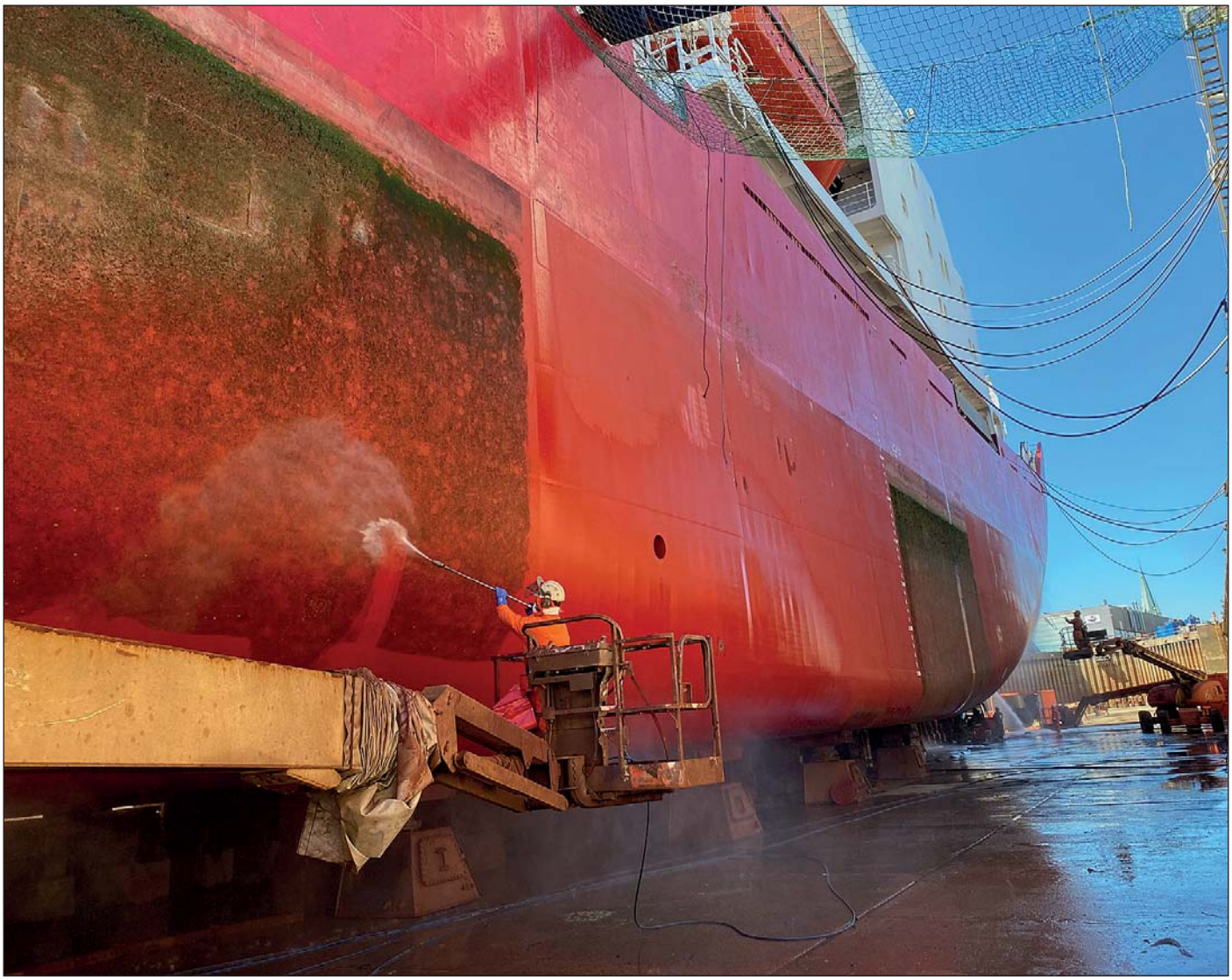
While cathodic protection slows the corrosion on a ship, total prevention is only achieved by preventing metal, water and oxygen from coming into contact with each other. That is the primary job of a coating. The problem is simply that most coatings fail poorly in that task.

One reason for their failure is the permeability of zinc primers, epoxies and antifouling coatings usually used. Water can get through and behind the layers of coating where it can start the corrosion process while accelerating it by causing coating delamination. This is the sequence of coating degradation which opens the door for further corrosion.

A second reason is the use of heavy metals in coating systems such as copper. These have a high galvanic differential with the steel of the hull. In practice we see copper-based coatings degrade very quickly – their difference in potential is the highest we encounter on ships. The fact that zinc, epoxy and antifouling, all of which have different surface tensions, are used together, further aggravates the problem.

Permeability, different surface tensions, poor adhesion and heavy metals are the four main factors that lead to an inferior protection on the ship hull.

It is not difficult to see that if a coating has no heavy metal content and therefore can avoid potential differential, is impermeable to water and achieves superior adhesion, the problem is solved. If the steel hull is isolated from its surroundings, then galvanic activity and corrosion are canceled.



The hull of RRS James Clark Ross was cleaned with high pressure washing. This process is fast, easy and does not damage the coating.

Our range of coating systems has achieved this.

Observation over twenty years on hundreds of ships protected with our coating systems, reveals a distinct absence of hull corrosion on any of them. We do not find corrosion on these hulls.

With our glass-flake coating systems we have the solution. Their superior adhesion, impermeability and toughness fully isolate the steel hull. Even heavy corrosive environments in port or in seawater fail to touch the anodes or the steel surface of the hull. In fact, anodes become superfluous on an Ecospeed hull.

Environmentally our coatings are a vital solution because they contain no heavy metals, no zinc and no pesticides or other biocides. Extremely high concentrations of these elements are already found in the sediments around ports, estuaries and even far out at sea. It is clear that using them on ship hulls is not sustainable.

More than 20,000 ships have been seen by divers of our sister company Hydrex over the last 45 years. After some time they all have corroded, rough, degraded and inefficient hulls.

An amazing discovery we frequently make during inspections of ships coated with our systems is that no corrosion of any significance occurs, even when there has been small impact damage. Not after two years, not after five years, not even after ten years. This proves that with an inert coating there is no influence on the steel, even when exposed to seawater.

The conclusion is simple: the majority of the coating systems in general use today do not protect the hull sufficiently. They should be replaced with coatings that can do the job. ■

ECOSPEED®
SHIP HULL PERFORMANCE TECHNOLOGY

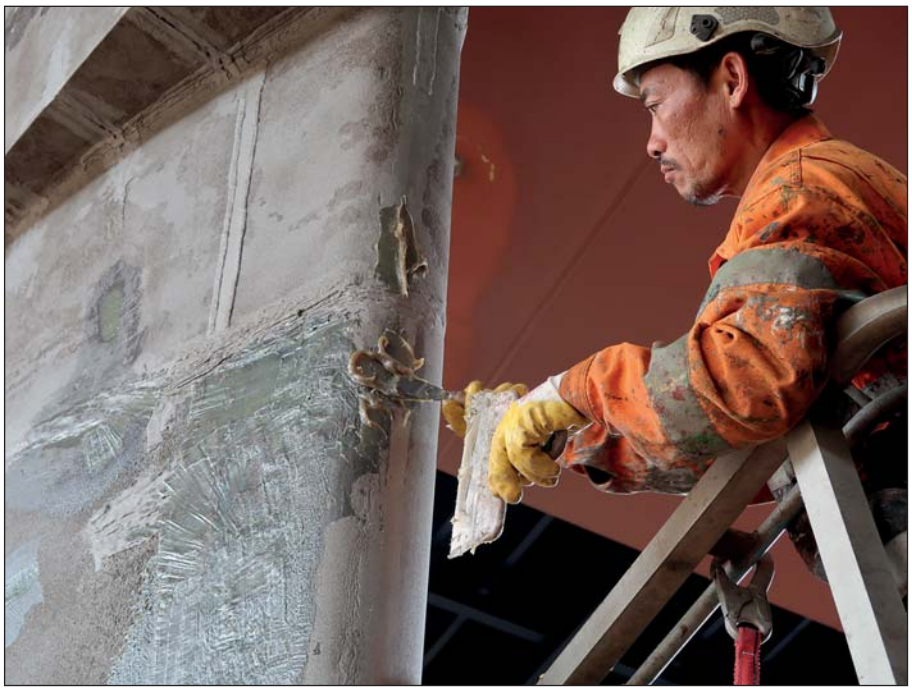
Ecofix restores corroded running gear to its original condition

Ecofix is a filler product which is used in combination with our award-winning Ecoshield hard coat system. Ecofix is specifically developed to provide ship owners and Original Equipment Manufacturers with a cost-effective solution for the repair of corroded or pitted steel surfaces.

When a rudder or other piece of underwater ship gear has not been properly protected, the surface will become severely pitted and corroded. The steel needs to be restored to its original shape with a smooth surface prior to recoating.

Ecofix restores the surface of the rudder back to its original condition.

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. Because it is part of the Subsea Industries family, it is fully compatible and homogeneous with our other coating systems.



Application of Ecofix on corroded rudder.

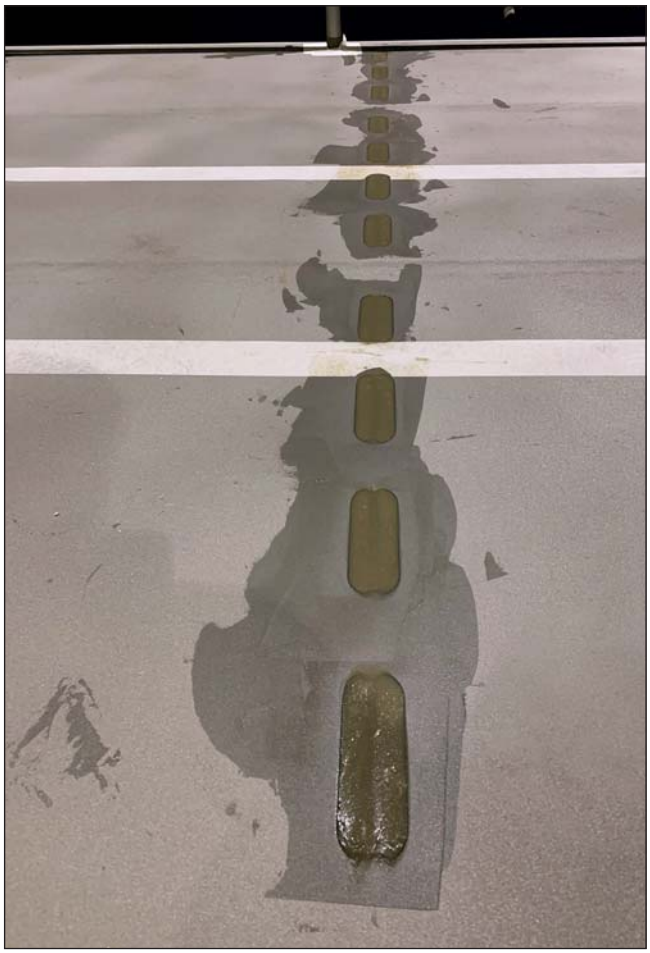
Ecofix can also be used to fill the slot welds on a newbuild rudder. This creates a perfectly even surface on which Ecoshield can be applied.

Rudders and thruster tunnel repaired and protected from further damage

A good example of the Ecofix benefits is the treatment of the rudder of a LPG tanker in Setubal, Portugal. First Ecofix was applied to restore the surface of the damaged rudder back to its original condition. Next it was coated with Ecoshield. This protects the rudder from ever suffering corrosion and cavitation damage again.

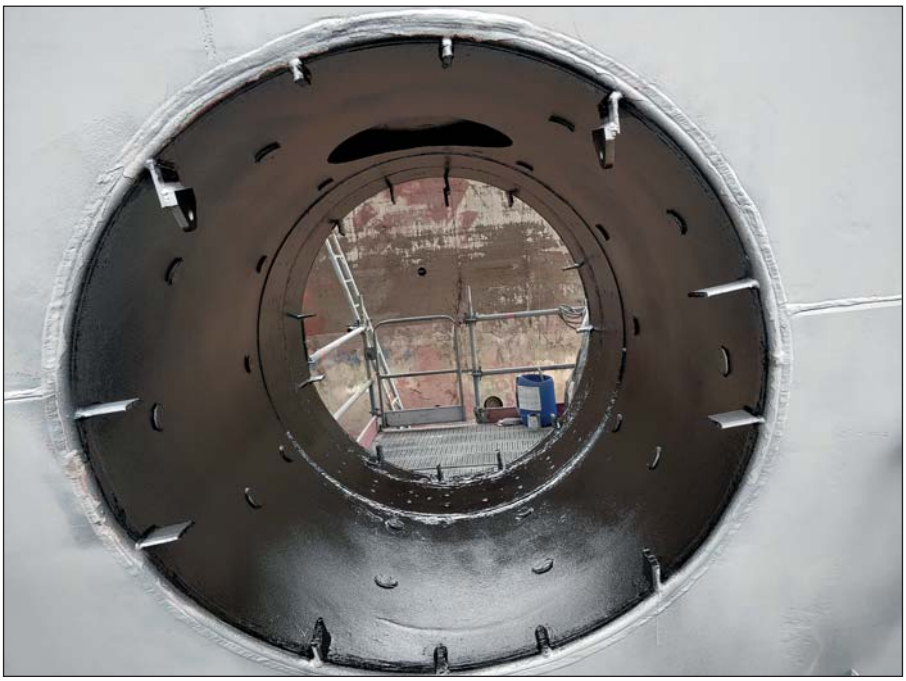
Ecoshield and Ecofix are also suitable for stabilizer fins, thrusters, nozzles and other underwater ship gear which needs special protection from corrosion. Now these items can

No damage will appear on this rudder from now on.



Slot welds filled with Ecofix on a newbuild rudder prior to Ecoshield application.

Application of Ecofix on corroded thruster tunnel.



All damaged running gear can be repaired with Ecofix and protected with Ecoshield.

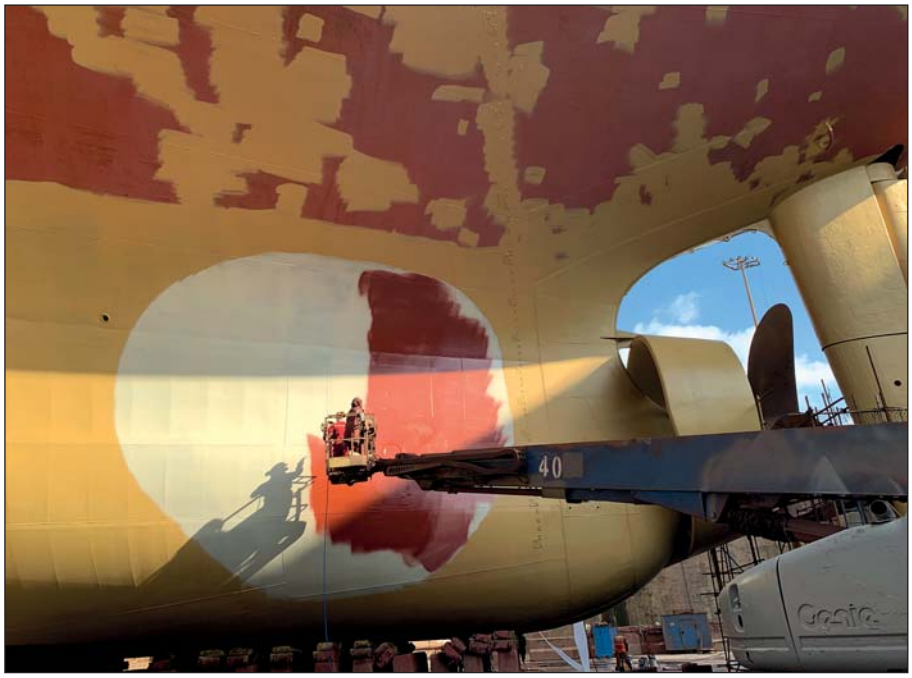
also be repaired prior to recoating when other, less effective coatings have permitted corrosion and cavitation damage to occur.

For this reason the corrosion damage on the rudder as well as in the thruster tunnel of a container vessel was repaired in Rotterdam with Ecofix before Ecoshield was applied.

Subsea Industries offers a full package; Ecofix restores the surface of the rudder or other underwater gear and Ecoshield will protect the area from ever suffering corrosion and cavitation damage again. ■

Lasting protection for scrubbers and outlets

Because of the tight regulations on emissions in the shipping industry, the installation of an exhaust scrubber system has become increasingly widespread. This unfortunately has also led to an increase of corrosion damage on scrubber pipes and outlets which results in water ingress in the engine room, ballast tanks and cargo holds.



Ecospeed will protect the area around the outlets for the ship's entire lifetime.

At the start of 2016 the inside of a scrubber was coated with Ecospeed for the first time. The scrubber was located in one of the ballast tanks of the vessel. Since then Ecospeed has been applied on scrubber systems regularly.

Ecospeed is highly chemically resistant. Using the coating to protect the exterior outlets as well as the interiors of scrubbers will prevent corrosion damage and the resulting consequences.

There are also several other benefits that make Ecospeed the perfect choice.

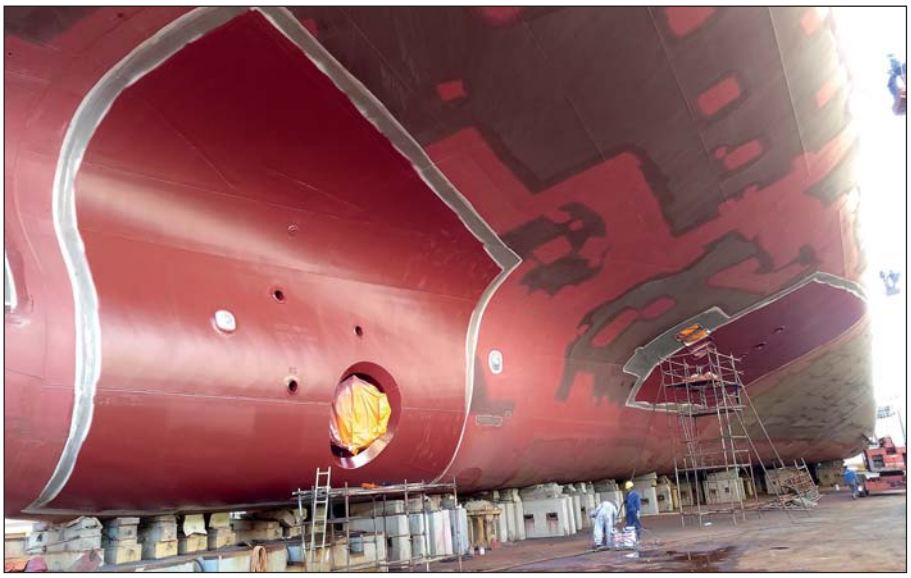

Ecospeed is highly resistant to chemicals, making it ideal for scrubbers.

- The coating system is highly chemically resistant. Taking into account the nature of the process taking place inside the scrubber, this is essential for our customers.
- Ecospeed lasts the lifetime of a vessel. No repaints will need to be scheduled during future dockings of the ship. This saves on time and money.
- It is a true biocide-free solution. Independent research has proven that the coating is 100% toxin-free and that there is no negative effect on the water quality or the marine environment at any point of its application or use.

Ecospeed fits in seamlessly with the environmental idea behind scrubber systems. It is a lasting, chemically resistant coating that will withstand the hazardous pollutants and protect the scrubbers for the lifetime of the vessel.

Inside of scrubber pipe protected with Ecospeed against corrosion.

Application of Ecospeed on interior of scrubber system.



The outlets of both scrubbers of this container vessel were given the same lasting protection.

Conclusion

Whenever lasting protection is needed for a ship, Ecospeed offers the best solution. Whether it entails the underwater hull of a vessel or any other part of the ship, applying this coating system will make sure you will not have to worry about corrosion damage. This will save you time and money. ■

Contact us for more information:
+ 32 3 213 5318
info@subind.net

Ecospeed application on scrubber system of oil tanker.

ECOSPEED®
SHIP HULL PERFORMANCE TECHNOLOGY

RRS Sir David Attenborough receives lifelong protection from Ecospeed

When the polar research ship RRS Sir David Attenborough was launched its hull was protected by the most environmentally-safe hull coating ever developed: Subsea Industries' ice abrasion resistant and washable Ecospeed.

RRS Sir David Attenborough is now afloat with a hull protected by the same Ecospeed coating that has protected its sisters, Ernest Shackleton and James Clark Ross, for many years.

The vessel will undertake world-leading environmental research into climate change and ocean protection. As such, the vessel required a fully ice-strengthened coating, without being harmful to the environment. Ecospeed fulfils that requirement.

Ecospeed is a safe, hard-type coating with zero toxic compounds. It eliminates the potential pollution of polar waters with heavy metals or biocides and hull contamination during research activities, which is extremely important to the scientific work the vessel will carry out.

Contact us for further information on the cost and energy savings Ecospeed will bring for your (ice-going) vessels.

SUBSEA INDUSTRIES

Phone: + 32 3 213 5318
info@subind.net
www.subind.net

SUBSEA

PROTECTION AND PERFORMANCE

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.

www.subind.net

Subsea Industries NV
Phone: + 32 3 213 5318
Fax: + 32 3 213 5321
info@subind.net

09/20