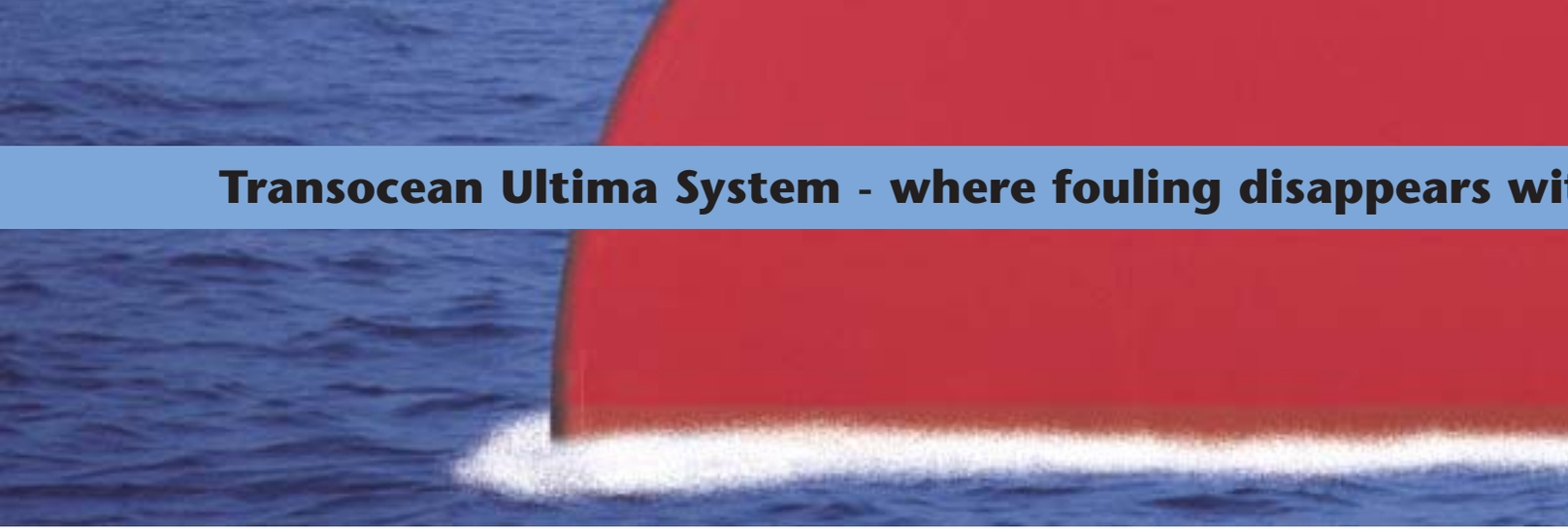
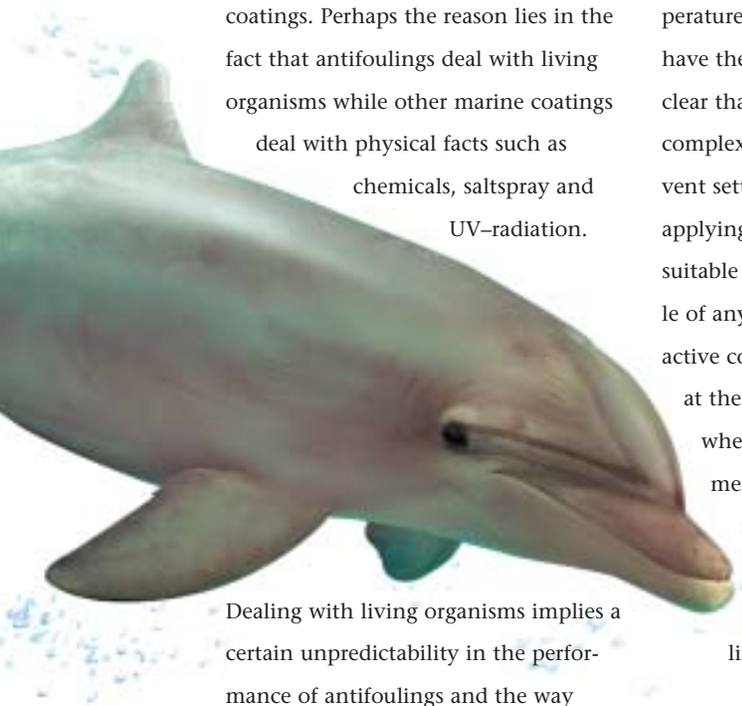

TRANSOCEAN
MARINE PAINT
A coating as smooth
as a dolphin's skin!
DISCOVER THE HUGE
ADVANTAGES
OF A LOW SURFACE
ENERGY COATING

Transocean Ultima System - where fouling disappears wi



Antifouling coatings are rather strange products in the world of marine coatings. Perhaps the reason lies in the fact that antifoulings deal with living organisms while other marine coatings deal with physical facts such as chemicals, saltspray and UV–radiation.



Dealing with living organisms implies a certain unpredictability in the performance of antifoulings and the way in which organisms respond to a coating. Any seafarer will be able to mention well-known fouling organisms as algae and barnacles. However, it is not often realised that both terms represent hundreds or even thousands of different species living in the world's oceans and each of these may react in a different way to an Antifouling coating. When we also consider the fact that apart from the antifouling performance other influences such as seawater temperature, salinity and nutrition level have their effect on the organisms, it is clear that the combat against fouling is complex and difficult. One way to prevent settlement of fouling is by applying an antifouling coating on a suitable anticorrosive. The basic principle of any antifouling is the presence of active compounds, also called biocides, at the coating–seawater interface where it creates a hostile environment for fouling organisms. The mechanism of how biocides are released at the coating-water interface varies from antifouling to antifouling and depends on lifetime required, the coating system and, of course, the available budget. Transocean offers four ranges of antifoulings and the use and working mechanism of each type is explained in the Antifoulings Brochure.

Restrictions in formulating

Antifouling chemists sometimes feel that they are fighting an uphill battle. A major restriction in their work is testing time. Antifouling chemists do not have the possibility to carry out accelerated tests such as f.i. saltspray, that other paint chemists have. Newly developed antifouling coatings have to be tested on rafts and such tests take at least one year depending on the type of antifouling. In addition trial formulations have to be tested on several locations in the world because many vessels also sail worldwide.

Other restrictions in developing antifoulings are environmental regulations that may ban or limit the use of a certain antifoulings in a country. By now one can imagine that due to the long testing times, antifouling chemists have to anticipate today about a market demand or an environmental

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regulation which may become effective years ahead.

One of the anticipations has led to development of biocide free antifouling systems.

Biocide free antifoulings

Many methods have been described in the past but only a few of them have the possibility to be translated into commercial products. The most promising direction is the approach is to create a surface that is difficult for organisms to adhere to.

This direction has led to the introduction of silicone based systems on the market. The main philosophy behind the use of silicone based systems is that although fouling organisms will adhere to the coating, the force of adhesion will be weak to such an extent that any fouling will be easily removed.

In order to reduce the strength of adhesion it was necessary to use a special silicone system.

Silicone Inversion Technique

Normally when applying a bath tub sealant, it forms a hydrophobic (literally 'fear of water') surface and remains unchanged during its service life.

In our case a silicone system is used that when applied also forms a hydrophobic film but when immersed the layer at the silicone/water interface changes into a hydrophilic ('water loving') surface. This process is called silicone inversion technique and is used in the Transocean Ultima system.

In practice this means that when a ship coated with Transocean Ultima is immersed, fouling organisms will be confused as they 'see' only water and not the ship. Although in the end settlement of fouling organisms will occur,

the adhesion will be weak since they prefer to move on to a more favourite spot to settle.

The Transocean Ultima system consists of a tiecoat and a topcoat. The tiecoat provides adhesion to the underlying anticorrosive system and offers the necessary toughness. The silicone inversion technique is incorporated in the topcoat reducing the strength of fouling adhesion. Removal of fouling will commence automatically when the ship is sailing but it may be removed manually too.

The Transocean Marine Paint Association

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Key Facts

Transocean Ultima Tiecoat 95.50

Transocean Ultima Topcoat 95.55

- The Transocean Ultima system is based on two functional layers. The first layer, Ultima Tiecoat provides toughness and adhesion properties to the anticorrosive system. The second layer, Ultima Topcoat is formulated according to the Silicone inversion technique, reducing the strength of fouling adhesion and facilitating easy removal of any adhered fouling.
- Free from biocides.
- Silicone inversion technique presents unfavorable surface to fouling organisms
- Transocean Ultima system can be used in conjunction with standard epoxy anticorrosive systems. Does not require any modified epoxy tiecoats.
- Application by spray, brush and roller.
- Usage down to 0°C possible.
- Transocean Ultima system can be recoated with itself.
- Suitable for vessels made of steel, aluminum, GRP or wood. Exceptionally suitable for fast-moving vessels.