

Selektope hard-fouling hotspots performance passes test

A two-year trial on a chemical and products carrier, which spent more than half of her time in biofouling hotspots, demonstrated that the patented antifouling ingredient Selektope provided an answer to the growing hard fouling issue.

Average global water temperatures are rising and the zones whose tropical, or sub-tropical, characteristics support a greater variety of organisms attracted to settling on ships hulls are experiencing increasing intensity. These zones, called 'biofouling hotspots', are creating a growing biofouling problem for ship operators and shipyards alike.

Idle hulls become prey to hard fouling, which can have a serious impact on fuel consumption and a fouled hull also increases maintenance costs, thus creating a headache for ship operators.

A problematic issue for shipyards with newly launched vessels, for example, is that the hulls can remain stationary for three to four months during outfitting and become so fouled that they perform poorly during sea trials. Protecting the hulls is part of the antifouling process and maintaining hull performance and vessel efficiency is a key driver for ensuring hulls remain foul free.

However, increasing regulatory pressure around the transfer of invasive aquatic species (IAS) via fouling on the hull means that ship operators need to ensure that their vessels have ultimate antifouling protection for whatever waters they sail in.

Technological innovation is supporting ship

operators facing the growing demands of fouling prevention. Unique antifouling solutions, such as Selektope, are demonstrating outstanding hard fouling prevention performance, developer I-Tech claimed.

Selektope is an organic, non-metal compound that works to prevent barnacle fouling by temporarily activating the swimming behaviour of barnacle cyprid larvae, making it impossible for them to settle on the hull. It is characterised by high efficacy at extremely low concentrations (0.1% w/w), is ultra-low leaching and offers paint manufacturers the flexibility to boost copper-based paint formulations, or replace copper completely.

A recent 24-month trial of an antifouling coating on Laurin Maritime's MR 'Calypso' has demonstrated that bio-repellent active agent Selektope is proving vital to meeting the rising challenge posed by hard fouling in biofouling hotspots.

The vertical sides and flat bottom of the 2010-built 46,067 dwt vessel were fully coated in 2015, during her first five-year drydocking. No special provisions were required beyond normal preparation work. During the trial period, 'Calypso' spent more than 50% of her operating time in biofouling hotspots with > 25 deg C (up to 32 deg C) temperatures.

Performance analysis

The performance of the coating applied to 'Calypso' was confirmed by independent hull and propeller performance analysis: total resistance increased by 7%, compared with a benchmark 10-20% for a new vessel. Over the period, speed losses experienced by the MR amounted to a mere 2% when measured against sea trial performance.

Data collected over the trial period also confirmed that the development rate of added resistance for 'Calypso' amounted to 0.1% (0.5% to 1.5% is expected). A subsequent underwater

hull inspection, conducted in November, 2017, found no soft or hard fouling over the starboard and portside verticals, flat bottom and bilge areas, with no antifouling loss established two years after the initial coating application.

Laurin Maritime's technical director, Bertil Andersson, commented: "The vessel has now operated for two years since last drydock, and we can conclude that the fouling of the hull (read added hull resistance) remains at a very low level and the trend continues being flat."

Created and marketed by Swedish bio-tech company I-Tech, Selektope was introduced in 2015 after 15 years of intensive R&D. The company's progress by the start of the century, caught the attention of coatings suppliers in the relatively early stages of R&D and, today, an increasing number of products are available through mainstream antifouling coatings suppliers that include Selektope.

I-Tech CEO Philip Chaabane welcomed the independent verification results for Selektope over an extended time period in biofouling hotspots. He commented: "This independent analysis of data and the underwater hull inspection provide convincing evidence supporting the performance claims for Selektope-containing coatings where fouling conditions are severe.

"The fact that the hull fouling trend continues to be flat means that our general outlook on the continuous performance of the coating is very positive. This delivers the proof required that our unique antifouling ingredient can offer ship operators guaranteed hard fouling prevention performance for any vessel activity and trading patterns," he said.

With multiple major coatings suppliers now turning to Selektope to enhance their products, I-Tech has urged shipowners to check whether the ingredient is available in all antifouling being considered as part of their coatings selection process.



Laurin's MR 'Calypso' was coated with an antifouling containing Selektope

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