

SIGMAPRIME®

Excellent ballast tank protection results after 10 years of service

Case study



The Customer

Claus-Peter Offen

The Location

Hamburg, Germany

The Challenge

To provide long-term protection of water ballast tanks from corrosion

The Solution

The SIGMAPRIME universal primer

The Benefits

Less maintenance and longer time to first refurbishment of ballast tanks

The Result

After 10 years in service, the ballast tanks are in good condition (corrosion is less than 0.5%)

The Customer

The ship operator Claus-Peter Offen (founded in 1971) is based in Hamburg, and is one of the world's largest suppliers of modern container ship tonnage.

It has around one hundred container vessels in service with most chartered under long-term contract to leading shipping lines employed in worldwide service.

The M/V Cap Ricarda, M/V Cap Roberta and M/V Santa Romana are sister vessels that were all built by Samsung Heavy Industry approximately 10 years ago. These three vessels, part of a new-building series of seven container carrier units totaling 4,112 teu, were surveyed recently specifically for ballast water tanks after 10 years in service.

The Challenge

Marine coatings, especially for ballast tanks, are recognized as a crucial factor in the service life and operational profitability of shipping and have become an important consideration from the new-building design stage onwards.





The new-build coating specification for the ballast tanks was 2 x 150 microns (6 mils) of the SIGMAPRIME product without zinc anode installation. The applied system has to cope with a wide range of aggressive conditions: wet/dry seawater cycling; hot/cold temperature cycling, i.e. day/night condensation; cold wall effect, where external bulkheads may experience a temperature difference between ballast tanks and seawater; plus mechanical stress of the vessel during sailing and loading and discharging.

The Solution

Success or failure of coatings in service can influence the profitability rate at which a ship operates.

Therefore, ship owners have to carefully consider the coating choices needed for each specific vessel area, taking into account factors such as service conditions (immersed, non-immersed, exposed, etc.) as well as substrate type (shop primer, steel, aluminum, etc.).

The SIGMAPRIME product is a high quality epoxy primer specifically designed to fit shipyard building practices whilst offering excellent long-term corrosion protection. It can be applied to virtually all vessel areas and in all temperatures, all year round.

The Benefits

The SIGMAPRIME product delivers dependable, high-quality performance wherever and whenever it is used.

It offers excellent water and corrosion resistance when applied to steel and non-ferrous metals, exhibiting excellent adhesion, flow and wetting properties, as well as the abrasion resistance of any good quality epoxy primer.

The SIGMAPRIME product delivers an impressive range of proven benefits to shipyards and ship owners. One of the most significant is, of course, cost reduction. When only one universally applied primer is needed for an entire vessel there is less product wastage.

For the ship owner, this technically advanced epoxy product is an important element for the optimized protection of an entire vessel, helping to maintain it in good condition and minimize the need for costly off-hire periods, whilst extending its useful service life for the benefit of owners and operators.

As a result, the SIGMAPRIME product is the ideal solution for shipyards and ship owners. It makes the entire specification process simpler and cost effective; there is no need to think about which primer to specify for each vessel area, because the SIGMAPRIME product works perfectly for all of them.

The Results

The ballast tanks of three Claus-Peter Offen container ships, which had been coated with the SIGMAPRIME product, were opened and surveyed in July 2012 after 10 years in service. The inspection showed that the ballast tanks were in excellent condition with only minor rusty areas, as shown opposite:

- M/V Cap Ricarda (SHI-HN. 1359) built in May 2002
– Rusty areas less than 1.0% (Re3)
- M/V Cap Roberta (SHI-HN. 1360) built in August 2002
– Rust spots far less than 0.05% (Re1)
- M/V Santa Romana (SHI-HN. 1361) built in October 2002
– Local rusty areas less than 0.5% (Re2)

The superintendent of Claus Peter Offen: “After 10 years of service these ballast tanks are still in pristine condition!” This was also confirmed by the Germanischer Lloyd.



Top image: Water ballast tank after 10 years of service

Middle image: After 10 years of service the corrosion of the ballast tanks is less than 0.5%

Bottom image: The edges and corners are in excellent condition: no corrosion or cracking

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