

SIGMAPRIME® 700

Outstanding ballast tank protection for long-lasting performance

Case study



The Customer

Chandris Hellas

The Location

COSCO Shipyard Zhoushan, China

The Challenge

Long-term anticorrosive protection for the harsh conditions encountered in water ballast tanks

The Solution

SIGMAPRIME 700 universal primer – compliant with the IMO PSPC standard

The Benefits

Universal, premium-quality epoxy primer with excellent anticorrosive performance, ideal for new-building projects, including in water ballast tanks

The Result

After 5 years in service, Mariloula's water ballast tanks are in such an excellent condition that no repair work has been required

The Customer

Chandris (Hellas) Inc., established in 1915, is a ship management company based in Piraeus, Greece and specializes in the management and operation of oil tankers and bulk carriers. All vessels are owned by individual companies and are registered mostly under the Greek flag.

As of 2014, the fleet's deadweight capacity is close to 4 million DWT tonnes with an average age of about 7 years.

The Challenge

Over the years, corrosion in water ballast tanks has been identified as a major concern. This issue triggered the establishment of a new set of regulations under the auspices of the International Maritime Organization. This Performance Standard for Protective Coating (PSPC) is dedicated to seawater water ballast tanks and is compulsory for all steel ships above 500 GT, which have building contracts that were signed after July 1, 2008. Under these regulations, the coating requires regular assessment and the service lifetime should be at least 15 years.



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The SIGMAPRIME Series has been addressing the issue of corrosion in such difficult areas long before the IMO PSPC was issued, which allowed PPG to be among the first paint suppliers to comply with the corresponding IMO PSPC class approval.

The Mariloula is a bulk carrier of 94,232 GT, 291 m long and 45 m wide, and was the first vessel built under the IMO PSPC rules. Delivered in 2008, Chandris, DSME and PPG worked together for the implementation of the upcoming regulations. The SIGMAPRIME 700 coating was selected for this pioneering work that involved the application of new coating working procedures.

The Solution

The SIGMAPRIME 700 primer is specially designed to provide excellent and long-lasting cracking resistance, even after multiple immersion and temperature cycles. It is not only an ideal choice for the harsh water ballast area but also a coating solution that reduces complexity during the new-building period. The SIGMAPRIME 700 primer can be applied all year round to virtually all vessel areas and in all temperatures.

The Benefits

The water ballast tank area is a critical area for the safety of the ship and its crew at sea. It is compulsory to regularly survey the ballast tank and conduct repairs whenever appropriate. However, repairs in this area are very difficult due to its physical nature: its confined space reduces accessibility and makes any surface preparation and coating application complicated. That is why repair costs per square meter are among the highest in the business.

The excellent performance of the SIGMAPRIME 700 coating provides customers with significant savings by avoiding complex and lengthy repair procedures and by allowing the vessel to immediately resume its commercial operations after inspection.

The Results

After 5 years in service, the performance of the SIGMAPRIME 700 coating is outstanding and its appearance is as good as new. On inspection, there was no need for any repair in the water ballast tank area to the satisfaction of Mr. D. E. Kourouklis, Director Marine Operations of Chandris Hellas who stated, "With less than 0.1% damage, the coating is performing very well, as expected from a SIGMAPRIME product."



Top image: The water ballast tank area is vast and complex making access and repairs very difficult. The SIGMAPRIME coating is the optimal solution for any water ballast tank project

Middle image: SIGMAPRIME 700 has been designed for optimal edge protection: no corrosion has been found

Bottom image: The sacrificial zinc anode is as good as new as a result of the outstanding anti-corrosive properties of the SIGMAPRIME coating

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