

Jubiläum für Hurtigruten

Exklusiv-Interview: CEO Daniel Skjeldam spricht über Historie und Zukunft der Reederei

Vorgaben für Schiffsabwasser

Zwei Forschungsvorhaben aus Deutschland nehmen Lücken in der Regulierung ins Visier

Schutz für neue Columbuskaje

In Bremerhaven werden für 80 Mio. Euro Spundwand & Co. erneuert. Steelpaint sorgt für Korrosionsschutz



Long-lasting Corrosion Protection for new Columbus-quay
Since autumn 2021 the new »Columbuskaje« is being built in Bremerhaven for around 80 mill. €.

Company Steelpaint was commissioned with the corrosion protection of the structure using their 1-component, moisture-cure polyurethane-system on the Weser Port

STEELPAINT

SP-PUR-Protection
For highly corrosive environments

The new Columbus quay
sheet pile wall
coated with Steelpaint
at ArcelorMittal



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The Columbuskaje before service works in 1985 – extremely corroded

The public authority Bremenports as principal appointed Arcelor-Mittal from Luxembourg with the delivery of the sheet-piles for the new construction. The working group (ARGE) »Columbuskaje« was nominated as executive general contractor.

Steelpaint said, the Columbuskaje is a matter of special importance for the company. In the 1980s, professional surveys indicated that the load capacity and further use of the structure could no longer be guaranteed. The corrosion and erosion of the sheet piles was in an advanced stage leading up to pitting in some areas.

On board already for previous quay

The »Hansestadt Bremisches Hafenamt«, nowadays known as Bremenports, had to make a decision either to preserve the old quay and to save it from further dereliction – or to build a new one. Taking into account the financial situation, amongst other factors, led to the consideration of a transitional solution to prolong the service-life of the old structure

for another 10–15 years. Various corrosion-protection-systems from different manufactures were applied under the extremely harsh application conditions on the actual quay. The test patches had to be applied under real-life conditions in the tidal zone which has a range of 3.6 m. Additionally, an active cathodic protection system was installed which in turn required compatibility of the corrosion protection system.

Steelpaint said, it was the only supplier of a moisture-cure PUR-system in comparison to the conventional Epoxy-systems. After several weeks of seawater exposure, the PUR-system »provided the best pull-off results and the best visual appearance of all test patches«, it was said.

Another decisive aspect was that the PUR-system had been applied using the so called wet-on-wet application method in a single shift. Therefore, the whole system could be applied before the rising tide flooded the fresh coat with seawater.

The old Columbuskaje was treated in this manner. Using a combination of cathodic and corrosion protection, the results exceeded the expected additional



Some old sheet piles had to be replaced



After corrosion protection works in 1987

© Steelpaint



Pitting has formed



Old and embrittled epoxy coating



Intact PUR corrosion protection after 22 years

corrosion protection life time of 10–15 years by far as the construction of the sheet pile wall only started 35 years after refurbishing the old corroded construction.

Steelpaint offers a 10 year warranty against corrosion on the new quay – as well as on all new structures in hydraulic engineering. These warranties are protected by the producer's liability insurance provided by Gothaer Insurance AG. This insurance was signed in 1985 with a maximum coverage of 5 mill. € per project. Until today the insurance never had to be claimed nationally or internationally, Steelpaint says.

The old Columbuskaje was one of the very first hydraulic engineering structures that had been coated with the special material from the company Steelpaint. In the first years, the coating-experiences showed that the moisture-cure PUR-systems were offering superior performance, especially in cases where a long-life warranty was required on hydraulic engineering structures.

Epoxy material stopped

Therefore the delivery of Epoxy material was terminated which had still been offered as an alternative in the Eighties. For the management, »it was the right decision«.

Since 1986 Steelpaint is only offering its PUR-systems for the hydraulic engineering, marine and offshore segments in case an extreme corrosion protection was required for steel structures in or near the sea. Since the early Eighties millions of square meters have been coated with moisture-cure PUR-material »offering long-lasting pro-

tection from corrosion in Germany and abroad to the full satisfaction of the respective principals«, it is added.

Among the successfully executed projects on the coastline of Germany in the last decades are those in Bremerhaven, Cuxhaven, Wismar, Kiel, Emden, Hamburg, Luebeck and Brake and other facilities under control of different regional maritime authorities (WSAs) throughout the country.

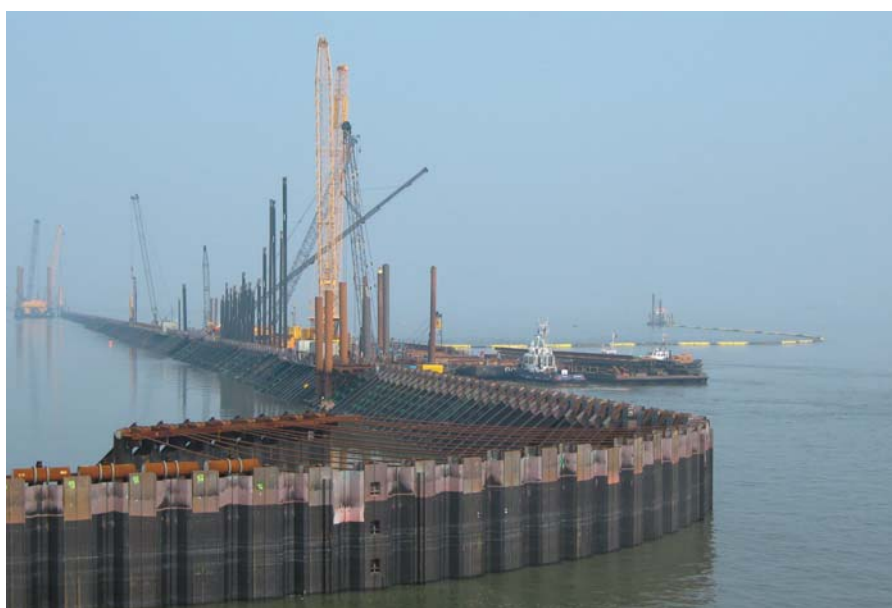
Protection for Jade-Weser-Port

The sheet pile wall at the young deep sea port »Jade-Weser-Port« was coated with moisture cure PUR-Systems double-sided as both sides are constantly exposed to seawater. Construction period was from 2008–2012.

The total area of the ports' sheet pile wall that had to be protected is 400.000 m². Also, the sheet pile wall of the naval port was coated with the same system.

Over 10 years have passed since the first paint material deliveries. The condition of the corrosion protection is still good which was the minimal expectation after this time of exposure given the higher initial costs for the superior corrosion protection in comparison to conventional coating systems.

The applied coating system is expected to still perform after another 10 or even 20 years from now. Extended life cycles like that should be the minimal requirement for all cost-intensive large constructions according to Steelpaint. ED



After more than 10 years of operation, the corrosion protection at Jade-Weser Port is intact

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Steelpaint is a subsidiary of the coatings company Emil Harrasser GmbH, established in 1890 in Kitzingen, Germany, who produce a wide range of coating substances based on polyurethane, epoxide, acrylic, vinyl, alkyd and other raw materials.

Steelpaint produces only high-performance single-component coatings based on polyurethane and silicone. These products are marketed worldwide under the Stelpant brand, a registered trademark, for use in hydraulic and civil structural engineering and the shipping industry.



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Columbuskaje Bremerhaven,
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