BELZONA SOLUTION FOR TAIL SHAFT REPAIR AND COATING

ID: 9761

Industry: *Marine*
Application: *SOS-Ships and Offshore Structures*
Customer Location: *ABU DHABI, UNITED ARAB EMIRATES*
Application Date: *March 2017*

Substrate: *Stainless-steel*
Products: *Belzona 1321 (Ceramic S-Metal),Belzona 9111 (Cleaner Degreaser)*

Problem

One of our valued marine customers faced severe pitting on the exposed section of a vessel's tail shaft due to prolonged seawater exposure and barnacle adhesion. Over time, the harsh marine environment and biofouling caused localized corrosion, leading to deep pitting on the shaft surface.

The accumulation of barnacles further accelerated the corrosion process, contributing to surface degradation and potentially affecting the tail shaft's structural integrity and operational efficiency. This issue highlights the challenges of marine asset maintenance and reinforces the need for effective protective measures to prevent corrosion-related damage in seawater-exposed components.

Severe pitting on the exposed section of a vessel's tail shaft due to prolonged seawater exposure and barnacle adhesion

The first coat of Belzona 1321 (Ceramic S-Metal) was applied.

Wrapped with Belzona 9341 Reinforcement Tape, ensuring a 6 mm overlap, before the second coat of Belzona 1321 (Ceramic S-Metal).

Finally, two coats of Belzona 1321 (Ceramic S-Metal) were applied, following the Belzona Instructions for Use (IFU), to provide superior protection and long-term performance.

Application Situation

Exposed to harsh seawater, the tail shaft is susceptible to corrosion, wear, and biofouling. Implementing advanced protection, such as anti-corrosion coatings, cathodic protection, and biofouling-resistant treatments, helps minimize deterioration and preserve efficiency. These protective measures enhance durability, reduce maintenance needs, and ensure the vessel's reliable performance.

Application Method

The Belzona Tail Shaft Wrap System was applied in accordance with Belzona Know-How System Leaflet SOS-6, utilizing two layers of Belzona 1321 (Ceramic S-Metal) reinforced with Belzona 9341 Reinforcement Tape. This system provides exceptional corrosion and abrasion protection for the tail shaft, with the 9341 tape enhancing the strength of the coating. The process involved machining a 2 mm rebate on the shaft, creating a rough thread profile for surface preparation, and degreasing the surface. Areas not to be coated were masked off before applying the first coat of Belzona 1321. The surface was then wrapped with Belzona 9341, ensuring a 6 mm overlap, followed by a second coat of Belzona 1321 to fully encapsulate the reinforcement.

ISO 9001:2015
FS 695214
ISO 14001:2015
EMS 695213

Belzona products are manufactured under an ISO 9000 Registered Quality Management System.

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BELZONA® Repair • Protect • Improve

Belzona Facts

Belzona 9111 is a high-performance cleaner and degreaser formulated to eliminate contaminants such as oils, grease, dirt, and other residues from surfaces before applying Belzona repair and protection systems.

Belzona 9341 is a specialized wrapping system designed to reinforce protective coatings and enhance structural integrity.

Belzona 1321 (Ceramic S-Metal) is a two-part, solvent-free metallic compound engineered for repairing and rebuilding worn or damaged shafts, including tail and propeller shafts, as well as other metallic components exposed to wear and corrosion.

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