



PROBLEM

The inboard section of the stern tube presented severe corrosion, with extensive pitting and metal loss that compromised the component’s integrity. Traditional repair options would have required hot work or full replacement, which was not ideal due to safety concerns and limited access. The client needed a cold-applied, high-performance solution that could be applied in confined spaces without dismantling the structure.

APPLICATION SITUATION

The Belzona SuperWrap system provided a cold-applied, in-situ repair alternative that eliminated the need for hot work, welding, or full component replacement. This solution drastically reduced downtime, labor costs, and safety risks associated with confined space work. The rapid curing and easy application process allowed the vessel to remain on schedule without disruption. Additionally, the successful pressure test at 5 bar confirmed the system's mechanical strength and impressed the client, encouraging further consideration of Belzona in future repairs.

APPLICATION METHOD

The stern tube surface was first grit blasted with virgin crushed glass to achieve a minimum 2.5 mil profile. The damaged area was rebuilt using Belzona Super Metal to restore lost material and create a uniform profile. Thickness was verified using a PosiTector gauge. Belzona SuperWrap was then manually applied following the specified wrap pattern and layer count. Release film was used to compress the wrap during curing. After curing, the film was removed, revealing a smooth, reinforced surface. A protective topcoat was then applied over the SuperWrap II to enhance long-term durability. The application was completed in a confined marine compartment using hand tools and PPE for surface prep, mixing, and wrapping.

BELZONA FACTS

The use of Belzona SuperWrap offered a cold-applied alternative to welding or full part replacement, significantly reducing downtime and eliminating the need for hot work permits. Competing solutions would have required cutting and fabricating replacement sections or scheduling dry-docking, which would have been both time-consuming and expensive. Belzona allowed for an in-situ repair inside a confined space, using minimal equipment and manpower. The system's proven mechanical strength, validated through a successful 5 bar pressure test, confirmed its performance, leading the client to consider Belzona as a superior alternative to traditional coatings.

INDUSTRY

Marine

LOCATION

Fort Pierce

APPLICATION DATE

May 2025

PRODUCTS

Belzona 1982 (SuperWrap II)

SUBSTRATE

Carbon steel

PHOTOS

1. Visible pitting and metal loss on the inboard section of the stern tube before repair. Surface preparation and thickness readings marked prior to SuperWrap application.
2. Post Belzona Super Metal application on stern tube. Surface was rebuilt prior to wrapping to ensure proper profile and integrity.
3. Final Belzona SuperWrap application on stern tube with release film in place. Wrap was applied following manufacturer guidelines to ensure proper compression and curing.
4. Completed Belzona SuperWrap application after release film removal. The final cured system restored structural integrity and provided a long-term corrosion protection solution.