

Belzona Helps to Refurbish Historical WWII USS Bowfin Submarine

ID: 9057

Industry: Marine
Application: SOS-Ships and Offshore Structures

Customer Location: Honolulu, Hawaii
Application Date: October 2022

Substrate: Carbon steel
Products: Belzona 1121 (Super XL-Metal)

Problem

The USS Bowfin a Historical WWII Submarine had been situated in the Pearl Harbor Submarine Museum and Park since it was retired in 1971. After 20 years in the water since last dry dock visit it was finally brought back to dry dock for refurbishment. There was extensive and deep pitting of the submarine's hull down the waterline and had to be fixed/repaired during the dry dock refurbishment.



USS Bowfin on dry dock being refurbished.



Contractors applying Belzona 1121 across the pitted waterline of the entire hull of the submarine.



All of the pitted area filled with Belzona 1121 around the hull of the submarine.



The hull of the submarine being painted over after the Belzona 1121 was fully applied and cured. Application finished.

Application Situation

The customer needed to repair the pitting corrosion on the waterline area around the whole submarine. The customer needed to get the repair done in the time frame established for the whole submarine refurbishment. The customer did not want to add welding to the hull where it was not critically necessary. Also they did not want to add metal plates/weight to the pitted areas and wanted to keep the correct contour of the hull. The customer was looking for a polymeric option but with a Naval approval product for the repair.

Application Method

Hull area was blasted to SSPC SP-10 cleanliness and a 3 mil profile. The repair area was clean with the proper solvent cleaner after blast. Belzona 1121 was applied in the critical pitted area that was identified. After the 1121 was fully cured the hull was painted with the specified product.

Belzona Facts

300 kgs of Belzona 1121 were used in the 2kg units to repair the pitted hull area. The cost to the customer was around 48K of Belzona product. The alternatives were welding and plate welding in the pitted area. Belzona offered a fast and effective solution to the damage. No hot work or special machinery or specialized personnel were needed for this part of the refurbishment. The customer saved money and time limiting the hot work and specialized personnel and safety measures. Belzona 1121 was approved for MIL-PRF-24176C. CEMENT, EPOXY, METAL REPAIR AND HULL SMOOTHING, this meet the requirement of the Navy for a repair

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FS 695214
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