



Case History for Surface Preparation of Steel Boat Hull

HoldTight® 102 Salt Remover / Flash Rust Preventer

Background

Customer is a coating application contractor based in New Jersey. Being in such close proximity to the coast, our customer frequently deals with coating maintenance of boats and other marine vessels. Properly preserving the integrity of the steel that these boats are made of is essential in optimizing the vessel's productivity and ensuring the safety of the individuals on board.



Corrosion Issue

- The coating systems used to protect the steel boats are exposed to various elements like salt, water, air, and sunlight that are present in marine environments.
- Everyday wear-and-tear and exposure to the elements listed above can severely damage a coating system that has been applied to an inadequately prepared surface. If the coating system is compromised, the underlying steel is left exposed and subject to the intrusion of soluble salts and other contaminants.
- The ultraviolet degradation of the organic coating resins and the corrosiveness of the salts in the sea water can cause under-creep in breaches of the coating.
- In this specific case, maintenance was needed because the coating was failing prematurely. This can be brought on by the various issues stated above.

- The most common methods used to prepare the steel surfaces for coating maintenance are dry abrasive blasting, wet abrasive blasting, and ultra-high pressure blasting. Wet abrasive blasting can also be referred to as slurry or vapor blasting.
- The problem that arises with wet abrasive blasting, which is what our customer uses for surface preparation, is flash rust. Flash rust can form on the bare steel within minutes of exposure to water.
- Having rust or any other salts/contaminants on the steel surfaces can have severe effects when it comes to applying a coat of paint and its adhesion. Premature failure, as highlighted by lifting of the coating referenced above, is a very common, yet avoidable problem caused by contamination.
- It is imperative to have a completely clean surface when applying paint so that the maximum adhesion and lifespan of a coating can be achieved.

Corrosion Solution

- Customer begins by properly diluting **HoldTight® 102** with potable water used in the wet blasting equipment. To get the maximum effectiveness out of our product, it is imperative that it is properly diluted in a potable water source at a ratio ranging from 50-100:1 (water to **HoldTight® 102**). Dilution rate depends on application, humidity, and level of surface contamination.
- The solution, consisting of the abrasive, potable water, and **HoldTight® 102** is then blasted on the steel surface at a pressure of 110-150 p.s.i.
- Following the initial blast, the abrasive is turned off and the steel is washed down using only the potable water and **HoldTight® 102**. The wash down is administered at a pressure of 110-150 p.s.i.
- After the steel is dry and free of moisture, the prime coat is applied.

Results

By properly using **HoldTight® 102** in their coating maintenance process, our customer removes both the current failing coating system and all soluble salts/contaminants from the steel surfaces while preventing the formation of flash rust. The extremely clean steel profile extends the window our customer needs before applying the coating which allows them to blast in a more efficient manner. The clean steel also allows for the maximum adhesion and lifespan of their coating to be achieved. A tightly adhered coating allows the boats to operate in an efficient manner because more time can be allocated to use of the vessel rather than coating maintenance. A strong coating system also preserves the integrity of the steel which ensures ruptures or leaks, which can be both threatening to members on board and very costly to the shipping company, do not occur.