



Case History for Surface Preparation of Offshore Oil Production Structures

HoldTight® 102 Salt Remover / Flash Rust Preventer

Background

Customer is a large offshore oil and gas exploration company. Maintaining a strong upstream division plays a crucial role in ensuring our customer can compete in such a competitive industry. Offshore structures such as oil rigs and production platforms are key resources our customer uses to retrieve oil. Preserving the integrity of the steel that these structures are made of is essential to ensure they operate at maximum levels of efficiency.



Corrosion Issues

- The coating systems used to protect the steel rigs and production platforms are exposed to various elements like salt, mist, 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 from the sun and the corrosiveness of the salts in the sea water can cause under-creep in breaches of the coating.
- Because of these various issues, under-creep repair or reapplication of the coating systems may be needed as often as annually.
- Due to the recent drop in oil prices, production platforms aren't operating at optimum levels. Thus, our customer has been able to allocate more time and money to maintenance activities.
- The most common methods used to prepare the steel surfaces for coating are dry abrasive blasting, wet abrasive blasting, and ultra-high pressure blasting.
- Our customer dry abrasive blasts their steel and follows up with a power wash.
- Exposing the bare steel, provided by the dry abrasive blast, to the water used in the power wash can result in the formation of flash rust within minutes. The water from waves, mist, and rain can contaminate the steel profile as well. This compromises the cleanliness of the surface which will in turn undermine the adhesion of the coating.
- To get the maximum adhesion and lifespan out of the coating, application to an incredibly clean surface is imperative.

Corrosion Solution

- Customer begins their surface preparation process by first dry abrasive blasting the steel surfaces of their offshore structures at a pressure ranging from 100-150 p.s.i.
- They follow up the dry abrasive blast with a power wash using **HoldTight® 102** as an additive to the potable or deionized water. To get the maximum effectiveness from our product, it is imperative that it is properly diluted at a ratio of 50-100:1 (water to **HoldTight® 102**) and the power wash is administered at a pressure of 2000-3000 p.s.i.
- After the steel is dry and free of moisture, the prime coat can be applied.

Results

By properly using **HoldTight® 102** in their coating maintenance process, our customer removes both the existing coat of paint and all soluble salts/contaminants from the surface of their steel while preventing the formation of flash rust. The extremely clean steel profile extends the window of opportunity for our customer to coat the exposed surface which significantly improves the efficiency of surface preparation and coating. Tests have confirmed that this window can last anywhere from **twenty-four to seventy-two** hours or longer depending on the environment where **HoldTight® 102** was used. The uncontaminated surface, provided by properly using **HoldTight® 102**, also optimizes adhesion and thus extends the life of our customer's coating. A tightly adhered coating minimizes future maintenance expenses.