

# Dissimilar Metal

## Chromium Pipe Handling



## THE SITUATION

The oil and gas industry often uses chromium piping (also referred to as corrosion resistant alloy tubing or CRA tubing) in wells that extract oil or gas. This piping is susceptible to dissimilar metal corrosion, meaning that it oxidizes or corrodes simply by being in contact with another metal such as steel. At a price tag of \$40,000-\$60,000 per pipe, this is a big problem.

For a large oil and gas company, the corrosion characteristics of the piping creates problems because the pipes are moved with forklifts made of painted steel and stored on the arms of floor to ceiling racking systems also made of painted steel. Through the course of normal use, the thin paint on the steel handling equipment chips off, allowing the pipes to come into contact with the steel which contaminates the specialized chromium pipe and leads to premature corrosion and oxidization of these expensive items.

## THE SOLUTION

LINE-X coated the arms of the racking system with XS-100 in the safety orange color the company required. They also coated the bases of the system, which are the rectangular metal pieces that sit directly on the ground and store pipes.

LINE-X also coated the lift forks with XS-350 in yellow the company required. The forks were encapsulated except where they connect to the truck.

## THE RESULTS

The oil and gas company is very pleased with the application. LINE-X protects the CRA pipes from coming in contact with the steel and corroding, which saves them labor and material costs as well as downtime. Moreover, due to the color application the customer was spared the initial and ongoing costs of maintaining a paint layer over the coating.

## THE PROCEDURE

Based on the usage and client requirement, the Franchisee recommended a thickness of 125 mils or greater of LINE-X XS-100 on the top surface, where the wear occurs, and 60-75 mils of protection on the other areas. The client and the Franchisee agreed that normal texture would be the best finish because it would look the most uniform and professional.

The oil and gas company dropped off about 50 arms at a time. LINE-X had the pieces sandblasted and then they primed them with XPM, particularly if they were rusty. The racks were blown free of contaminants and wiped down.

LINE-X sprayed the arms in groups of 10 to maintain quality. They used special racking to hold the arms during prep and spraying. Masking was important because tolerances are very low in the mechanical fit areas, so the applicators took special care and used wire trim.