Case Study 01: Oilfield Services Vessel - Reducing Risk of Corrosion Failure on Hydraulic, Potable Water and Chemical Lines

By selecting Tungum® tubing a leading deepwater project company was able to reduce the risk of tube line failure due to saltwater corrosion while also cutting downtime and refit costs.

The Challenge

In 2009 a leading deepwater project company BJ Services (*a Baker Hughes Incorporated company*) was building a new oilfield services vessel - the Blue Dolphin. On previous vessels they had experienced corrosion problems after using stainless steel tubing for the hydraulic, potable water and chemical tube lines used to transfer chemicals to the mix tanks. Outside of the tanks the lines leave the protection of the vessel and are exposed to a saltwater environment. As a result of the corrosion and resultant leak points, they had to replace stainless steel tubing multiple times on previous vessels at considerable cost and downtime.

BJ Blue Dolphin – Oilfield Services Vessel

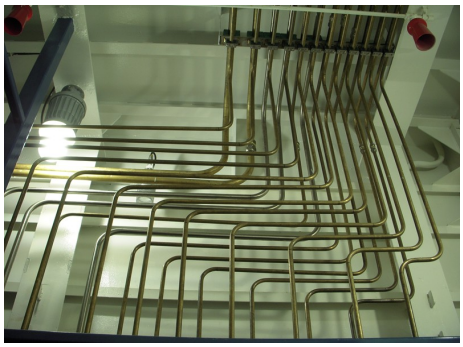
Tungum tube (top) remains unscathed despite more than 10 years marine exposure on a semi-submersible support vessel. Stainless steel (bottom) showed both crevice and chloride pitting after barely five years in the same environment.

The Tungum Solution

Baker Hughes chose Tungum tubing for its proven history in seawater environments and its resistance to stress and crevice corrosion. The tube possesses a natural protection mechanism whereby, on exposure to salt spray, a very thin oxide coating is generated over the exposed service, no more than two thousandths of an inch thick, when complete. The tube becomes discoloured and it may even have a verdigris coating, but under the oxide layer the tube material is perfect and will remain so for a very long time.

The Result

Baker Hughes replaced the corroded lines with Tungum and was pleased with the performance of the tubing. Tungum tubing now plays a major role in eliminating downtime of many systems in this vessel as it is highly resistant to seawater and its atmosphere, resisting both stress and crevice corrosion to offer outstanding serviceability, even at intermittent duty in the highly corrosive splash' zone.


Tungum tube lines on BJ Blue Dolphin

©2018 T2 Alloys Limited, 200A, Ashchurch Business Centre, Alexandra Way, Tewkesbury, Glos. GL20 8TD, UK