

Case Study 05: Nuclear Application

Tungum® tubing is utilised in non-process saltwater corrosion resisting applications in the Hunterston B Nuclear Power Station.

The Challenge

Tungum Alloy is a material that excels in harsh environments. It is ideal for the applications where the material must withstand pitting and crevice corrosion. The main applications are for the use in non-process saltwater. In salt-laden marine atmospheres, '316' stainless steel for example, is highly susceptible to crevice corrosion and chloride pitting. After just a few years of salt spray exposure, it may still look bright from a distance, but closer inspection reveals telltale signs of imminent failure to hold pressure.



Tungum tubing installed in the Hunterston B power station.

The Tungum Solution

Tungum Alloy Tubing combines excellent corrosion resistance, unusually high strength to weight ratio, ductility and first-class fatigue properties. Highly resistant to saltwater and its atmosphere, Tungum resists both stress and crevice corrosion to offer outstanding serviceability.

Tungum alloy, possesses a natural protection mechanism whereby, on exposure to salt spray, a very thin oxide coating is generated over the exposed surface, no more than two thousandths of an inch thick, when complete. The tube becomes discoloured, it may even have a verdigris coating, but under the oxide layer the tube material is perfect and will remain so for the lifetime of the installation.

The Result

Tungum Alloys non-magnetic and non-sparking properties make Tungum invaluable in piping high pressure gases, particularly oxygen where its thermal conductivity/diffusivity characteristics virtually eliminate the potential dangers present when materials are employed.

Tungum alloy is also a cryogenic material, suitable for chemical engineering and low temperature processes. Its corrosion resistance often enables its use in conveying fluids and gasses containing corrosive elements.

Tungum tube is being used for non-process applications in Nuclear power plants to resist pitting and crevice corrosion. It is utilized on sea water systems such as impulse lines.

Tungum Alloy is approved by Westinghouse, Babcock & EDF Energy.

For more information go to www.t2alloys.com