



INSTRUMENTATION TUBING FOR DEMANDING ENVIRONMENTS



OIL + GAS + TRANSPORTATION + MARINE + DEFENCE + MEDICAL



**NO RECORDED
FAILURES
OF TUNGUM TUBING**

FEATURES AND BENEFITS:



Excellent lifetime cost



Highly resistant to sea water



High resistance to fatigue and shock



Compatible with all industry recognised tube fittings.



Quicker installation times

TUNGUM TUBING:

Product summary

Tungum Tubing has been used in the field for over 80 years in demanding, safety critical applications. There are no recorded failures of Tungum when correctly used and installed. This is why we use the expression: 'fit and forget' due to its long life and excellent corrosion resistance.

Features and benefits of Tungum:

- + Excellent lifetime cost compared to other tubing options. Typically 15% cheaper than 6Mo and Super Duplex tubing.
- + No recorded failures of Tungum Tubing when correctly used and installed in over 30 years of application experiences.
- + Material of choice for Oxygen and hyperbaric systems.
- + Compatible and approved with all industry recognised tube fittings.
- + Quicker installation times – can be as little as 75% of the time compared to 6Mo or Super Duplex.
- + Reduced system down times due to its longer life.
- + High resistance to fatigue and shock for applications where there is excessive vibration.
- + Over 30 years of experience of real time Oil & Gas applications.
- + Highly resistant to sea water and its atmosphere. It resists both pitting and crevice corrosion to offer outstanding performance, especially in highly corrosive 'splash zones'.
- + Non-magnetic and non-sparking properties make it ideal for high pressure gas applications.
- + Cryogenic material, suitable for chemical engineering and low temperature processes.
- + Wide range of sizes in both imperial and metric.
- + World wide distributor network.



Tungum Tubing is found around the world contributing to the success and longevity of applications in a wide cross section of industries, including:

- + HIGH PRESSURE GAS
- + OFFSHORE OIL
- + AEROSPACE
- + RAIL AND TRANSPORT
- + DEFENCE
- + CIVIL ENGINEERING
- + PHARMACEUTICAL
- + MEDICAL
- + NUCLEAR



COMPARED TO 316 STAINLESS STEEL:

- + 4 - 6 TIMES THE WORKING LIFE
- + DOES NOT SUFFER THE SAME PITTING AND CREVICE CORROSION ISSUES
- + UP TO 1/3 LESS TIME TO INSTALL



COMPARED TO SUPER DUPLEX MATERIALS:

SIGNIFICANTLY CHEAPER AND EASIER TO INSTALL THAN SUPER DUPLEX MATERIALS

PROJECT BASED TUBE AND FITTING COST COMPARISON

Reason: Concerns about differences in total material tube/fitting combination costs.

Notes: prices shown are in \$ USD and are based on the quantity of Tungum Tubing supplied on a project during 2015

TUBE SIZE AND WALL THICKNESS	QUANTITY IN FT.	TUNGUM TUBING AND 316 FITTINGS	TUNGUM TUBING AND TRIPLELOK BRASS FITTINGS	316 TUBE AND FITTINGS	6MO TUBE AND FITTINGS	2507 TUBE AND FITTINGS	625 TUBE AND FITTINGS	C276 TUBE AND FITTINGS
.250"od x .065"	40	\$353	\$328	\$123	\$538	\$940	\$1,008	\$931
.500"od x .083"	147,592	\$1,512,365	\$1,331,233	\$1,202,422	\$2,896,919	\$4,677,597	\$9,341,364	\$9,102,331
.750"od x .109"	930	\$29,266	\$26,752	\$11,977	\$43,892	\$69,613	\$98,617	\$132,597
1.00"od x .134"	49,282	\$1,328,798	\$1,055,307	\$1,110,479	\$2,698,912	\$5,076,157	\$6,882,351	\$11,141,531
TOTAL		\$2,870,782	\$2,413,620	\$2,325,001	\$5,640,261	\$9,824,307	\$16,323,340	\$20,377,390
INITIAL SAVINGS USING TUNGUM TUBING AND 316 FITTINGS				-\$545,782	\$2,769,479	\$6,953,524	\$13,452,558	\$17,506,608
PREDICTED TIME TO FAILURE		30 YEARS PLUS	30 YEARS PLUS	4 YEARS	20 YEARS	20 YEARS	30 YEARS	30 YEARS

Project Cost Comparison

Changes in material selection on instrumentation tube lines have large cost implications when calculated over a whole project.

Shown on the chart are the quantities of Tungum tube supplied on a project during 2015.

Selecting Tungum tube and 316 fittings for non-process lines saved millions of dollars without having to make any sacrifices on long-term system integrity.

Although choosing a complete 316 stainless steel based system would have been the cheapest option it is widely accepted that this material can no longer offer the life span or level of integrity required in modern system designs.

Tungum's unrivalled history of use in offshore systems proved to be both the most cost effective and technically correct choice for this system.



THE FACT THAT IT DOESN'T GIVE US ANY ISSUES, WE HAVE NO RECORDED FAILURES AND IT DOES EXACTLY WHAT IT WAS SPECIFIED FOR, IS A MAJOR SUCCESS IN KEEPING US WORKING WITHOUT ANY DOWNTIME.

IT ALSO LASTS WHERE OTHER PRODUCTS HAVE BEEN AN ISSUE WITH REGARD TO CORROSION DAMAGE IN THE HARSH SALT WATER ENVIRONMENT.

Bruce Collie, Snr. Tech. Support Diving Equipment, Subsea 7.



ACCREDITATIONS, APPROVAL AND DESIGNATIONS

**Tungum Ltd is totally dedicated to the concept of quality.
The Quality Management System is approved to BS EN ISO 9001.**

We see this as a clear endorsement of our robust operating procedures which are dedicated to delivering the high levels of products and service our customers have come to expect. DNV already carries out third party inspection checks of our Tungum Tubing on behalf of customers and is an internationally recognised name in our major tube market sectors.

Tungum Alloy tubing has the approval of:

- + ASME B31.1 and B31.3
- + NORSOK M-650
- + USCG – United States Coast Guard
- + Lloyds Register of Shipping
- + DNV-GL



+

Tungum has passed extensive testing and is segment defined for mitigating and preventing external corrosion on topside small bore tubing.

Tungum tubing has been specified and used on many projects with companies such as:

- + AIR LIQUIDE
- + AIR PRODUCTS
- + AMEC
- + BAE
- + BECHTEL
- + BOC
- + BOMBARDIER
- + BP
- + CONOCO PHILLIPS
- + DRASS
- + HESS
- + JGC
- + KBR
- + MOD, UK
- + MODEC
- + PRAXAIR
- + SHELL
- + SUBSEA7
- + TECHNIP
- + WILLIAMS

 **tungum**[®]
PROVEN PERFORMANCE

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