

# SUPER DUPLEX TUBES (UNS S32750)

NORSOK-approved Super Duplex tubes custom-made for subsea oil and gas instrumentation applications.

Greater corrosion resistance allows for lighter tube thicknesses without compromising on performance and quality.

- NORSOK-approved
- Made to order in specialist non-standard sizes
- Superior strength and corrosion resistance
- Short lead times
- Small batch sizes

## TUBING EXCELLENCE

The Oil & Gas and Chemical Process sectors represent two of Fine Tubes principal markets for supply of a wide range of tubular product forms and materials. Our products have been successfully applied in some of the most aggressive subsea and downhole conditions and we have a long proven track record of supplying products that meet the strict quality requirements of the oil and gas sector.



### SUPER DUPLEX EXPERTISE

Fine Tubes offers tubing in a wide range of corrosion resistant stainless steels, Duplex and Super Duplex, titanium alloys and nickel alloys. We have extensive experience in product supply and innovation in the Oil and Gas sector, from the technological advances required for subsea developments in the 1970's up to the deep-water challenges of today.

### DEMANDING SUBSEA APPLICATIONS

Applications as diverse as Heat Exchangers and Flow Meters, measurement systems and Hydraulic Cylinder tubes are all supplied to the highest specification integrity.

For Chemical Process applications we utilise our unique strength as a seamless tube manufacturer to give our customers complete product flexibility specifically meeting project design criteria.

### CORROSION RESISTANT TUBES

With supply experience far exceeding typical BS/ASTM/ASME/TüV standards, Fine Tubes continue to evolve corrosion resistant alloys, specialising in Duplex, Super Duplex and nickel alloys for the increasing hostile temperature and operating environments where maximising operating efficiency demands total product reliability.

#### OIL & GAS CUSTOMER APPROVALS

ADGAS	KOC	SAIPEM SPA
ADMA	NPCC	SAUDI ARAMCO
ADNOC	ONGCC	Technip
KNPC	PDO	ZADCO

### TECHNICAL DATA

Super Duplex stainless like S32750, is a mixed microstructure of austenite and ferrite (50/50) which has improved strength over ferritic and austenitic steel grades. The main difference is that Super Duplex has a higher molybdenum and chromium content which gives the material greater corrosion resistance than standard duplex grades.

The balanced dual phase microstructure combines high strength with cost effective corrosion resistance particularly in high chloride environments.

Super Duplex has the same benefits as its counterpart – it has lower alloying costs when compared with similar ferritic and austenitic grades with equipment corrosion resistance in chloride containing environments due to the material's increased tensile and yield strength. In many cases this gives the purchaser the welcomed option of purchasing smaller thicknesses without the need to compromise on quality and performance.

#### AVAILABLE TUBE PRODUCT FORM

Straight

Seamless

Cold Redrawn and Annealed

#### TYPICAL APPLICATIONS

Offshore platforms

Fire-fighting systems

Injection & ballast water systems

Heat Exchangers

CCUS projects

#### TYPICAL MANUFACTURING SPECIFICATIONS

ASTM A789

ASME SA-789

Also individual customer specifications

#### INDUSTRIES

Oil & Gas

Chemical processes

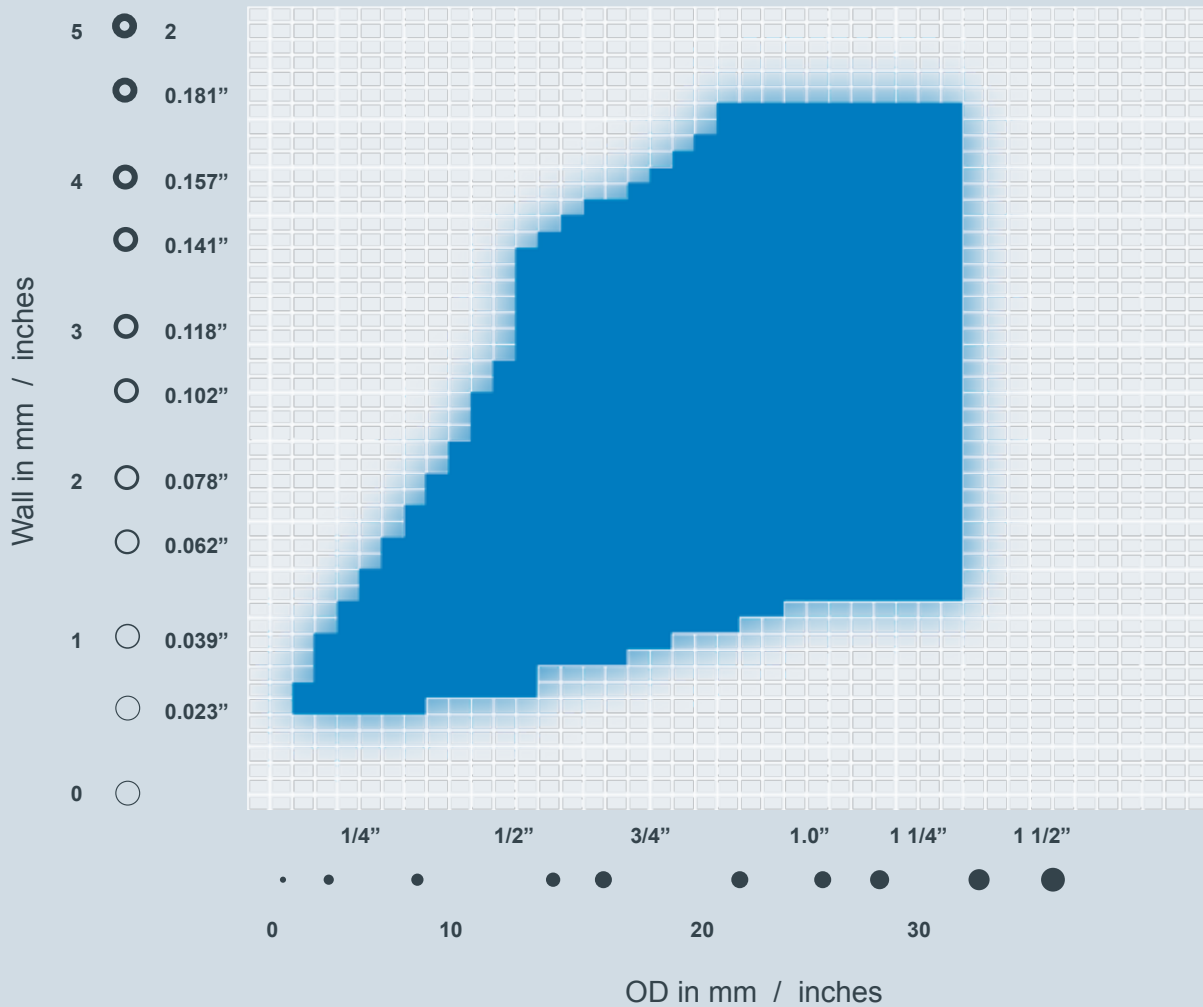
General Engineering

MECHANICAL PROPERTIES		
Temper	Annealed	
Tensile Rm	115	ksi (min)
Tensile Rm	800	MPa (min)
R.p. 0.2% Yield	80	ksi (min)
R.p. 0.2% Yield	550	MPa (min)
Elongation (2" or 4D gl)	15	% (min)

PHYSICAL PROPERTIES (Room Temperature)		
Specific Heat (0-100°C)	500	J.kg-1.°K-1
Thermal Conductivity	15	W.m -1.°K-1
Thermal Expansion	11	µm/µm/°C
Modulus Elasticity	200	GPa
Electrical Resistivity	8.12	Ohm-cm
Density	7.80	g/cm <sup>3</sup>

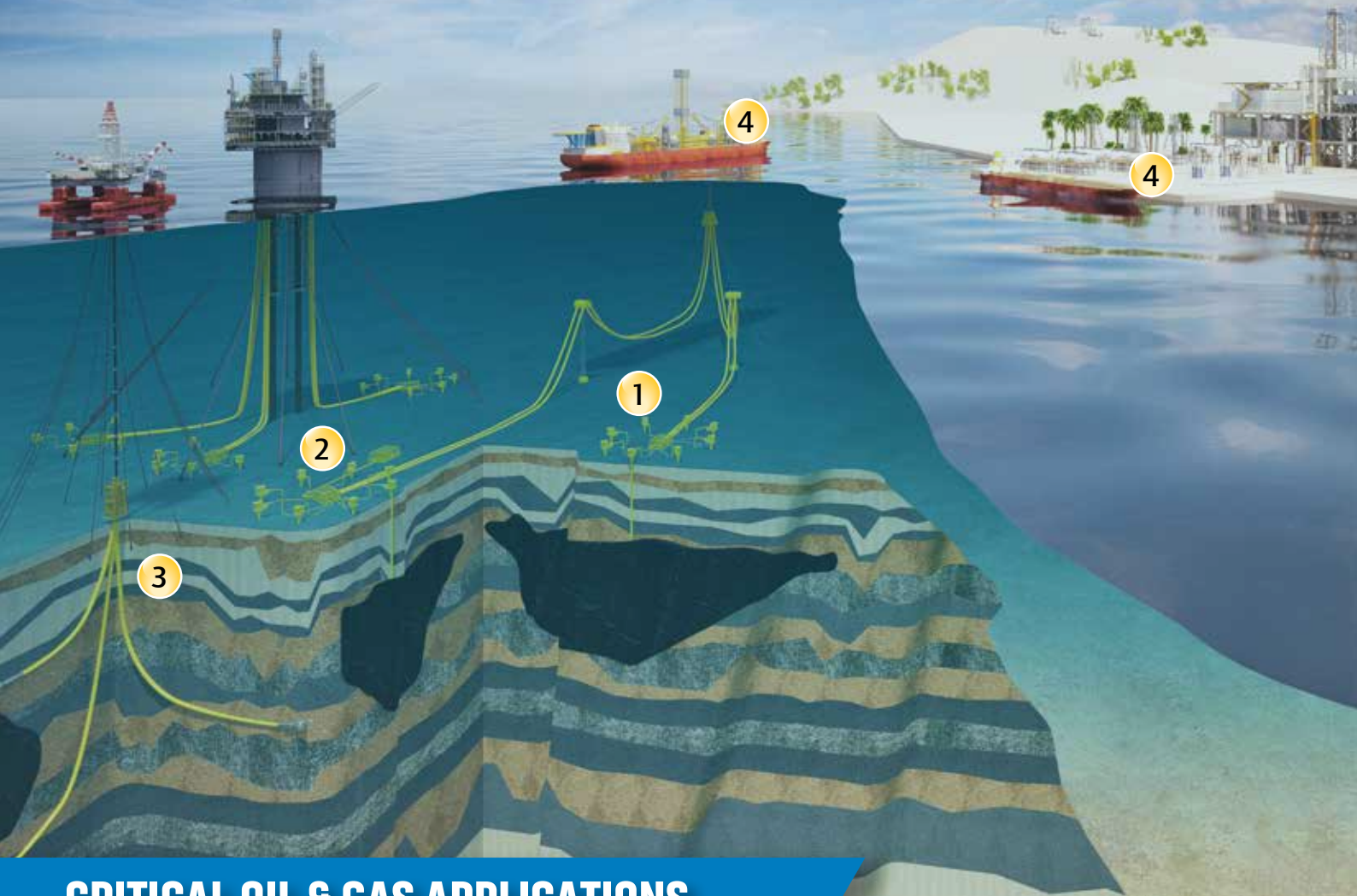
CHEMICAL COMPOSITION (% by weight)		
Element	Min	Max
C	-	0.030
Cr	24	26
Cu	0.50	1
Mn	-	2
Mo	3	5
N	0.24	0.35
Ni	6	8
P	-	0.35
S	-	0.015
Si	-	1

**SIZE RANGE FOR SEAMLESS SUPER DUPLEX TUBING**



Our tubing sizes typical for Super Duplex range from:  
3.18 mm (0.125 in) to 31.75 mm (1.25 in) outer diameter OD in seamless form.





## CRITICAL OIL & GAS APPLICATIONS



- 1** Subsea equipment, manifolds and Christmas trees



- 2** High pressure control instrumentation and flow meters



- 3** Downhole data logging/smart wells



- 4** Topside and onshore instrumentation

### OUR AGENT NETWORK

Fine Tubes co-operates with a network of agents covering the Middle East who represent our high performance tubing range for seamless Super Duplex.

#### QATAR



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#### SAUDI ARABIA



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### ABOUT AMETEK SPECIALTY METAL PRODUCTS

AMETEK Specialty Metal Products (SMP) is a business unit of AMETEK, Inc. a leading global provider of industrial technology solutions serving a diverse set of attractive niche markets with annual sales over \$6.0 billion.

The Specialty Metal Products business unit consists of five businesses and operating facilities in the United States and the United Kingdom.

These businesses are proven experts in the manufacture of advanced metallurgical products including roll bonded clad plate, precision metal strip, ultra-thin foil, shaped wire, engineered components, thermal management materials, water atomized powders and precision tube.

Our high performance metal products are used around the world for critical applications in a range of industries including aerospace, automotive, defense, electronics, industrial, medical, nuclear, oil and gas, and space and satellites.



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