



OVERVIEW

High Precision Tubing Solutions for Demanding Applications

- Aerospace
- Space and Satellites
- Defense
- Oil and Gas
- Nuclear
- Medical
- High Performance Instrumentation
- Renewable Energy & Net Zero

TUBING INNOVATIONS

Fine Tubes and Superior Tube benefit from a world-class reputation for innovative and high quality tubing solutions. Here are a few examples:



1936

Superior Tube manufactures hypodermic needle tubing for critical medical instruments including catheters and cystoscopies.



2008

Fine Tubes supplies CERN with cooling tubes for the Large Hadron Collider experiment.



1940

Superior Tube supplies tubing for the Manhattan Project, where mankind first learned to control the energy of the atom.



2012

Fine Tubes manufactures high performance tubing for the Gemasolar thermosolar plant in Spain.



1965

Fine Tubes and Superior Tube collaborate to supply AM350 tubes for the Concorde programme.



2014

Fine Tubes supplies specialist tubing for the Solar Orbiter satellite to investigate the sun.



1980

NASA Space Shuttle life support system relies on high pressure stainless steel tubing made by Superior Tube.



2018

Fine Tubes reaches new heights manufacturing products for advanced space exploration programmes.



2003

Superior Tube's proprietary tube rolling process is used to produce titanium alloy tubing for artificial heart valve frames.



2021

Fine Tubes develops specialist Super Duplex tubing for corrosive oil and gas, and chemical process applications.

TUBING EXCELLENCE

With more than 85 years of engineering expertise in manufacturing high precision tubes, Fine Tubes and Superior Tube work closely with customers worldwide, to solve their technical and metallurgical challenges.

We manufacture high performance tubes for supercritical applications in an ever expanding range of stainless steel, nickel, titanium and zirconium alloys.

TUBING CAPABILITIES	
ALLOYS	
Stainless Steel	303SE, 304, 304L, 310, 316, 316L, 316LN, 316LVM, 316TI, 317L, 321, 347, 35NLT, 6Mo, 904L, 15-5PH, 16-6 PH, 17-4PH, 17-7PH, 21-6-9, 42-6, 446, FV607, Nitronic 50™, Duplex S31803, Super Duplex (S32750 and S32760)
Nickel	36% Ni-Fe, 42% Ni-Fe, 59, 75, 188, 200, 201, 211, 263, 29-17 (Kovar), Monel 400, 600, 625, 690, 718, 800-H-HT, 825, C22, C276, C902, HX, K500, L605, MP35N™, X750, Waspaloy™
Titanium	Ti CP (Grade 1 and Grade 2), Ti 3AL-2.5V (Grade 9), Ti 6AL-4V (Grade 5), Ti 6AL-4V ELI (Grade 23), Ti A-40
Zirconium	Zircaloy 2, Zircaloy 4

SIZE RANGE



Seamless, welded or welded and redrawn with outside diameters from 0.25 mm (0.010 in) up to 38.1 mm (1.5 in).



Straight lengths up to 20 m (65 ft) and coils up to 10,000 m (33,000 ft) with orbital joints.



Profiles include round, rectangular, square, oval and elliptical.



Wall thicknesses from less than 0.05 mm (0.002 in) up to 3.8 mm (0.150 in).

For further details, please see our interactive size range chart on our websites:

www.finetubes.com/products/sizes or www.superiortube.com/products/our-sizes

TUBING SOLUTIONS

OIL & GAS

For the most challenging subsea and downhole conditions including seawater, high temperature and sour oil well environments we use materials such as austenitic, super austenitic, duplex and super duplex stainless steels, as well as titanium and nickel alloys for our tubing. We also hold Norsok M-650 approval for 6Mo and Super Duplex S32750 tubing. Seamless tubes are mainly used for hydraulic and instrumentation applications, in onshore control panels, topside processing facilities, on subsea manifolds and templates. Applications for seam welded & redrawn tubes are umbilicals, subsea control lines and chemical injection tubes.

ENERGY

As long established suppliers to the nuclear industry, our core products include specialised stainless steel tubes for fuel cans, control rods and tie bars. We also manufacture precision tubes in zirconium alloys for fuel cans, in nickel alloys for heat exchangers and in titanium alloys for the fabrication of condensers. Our control and instrumentation tubes are widely used within the AGR, PWR, CANDU and PHWR. For the conventional and solar power industry we also supply specialist heat exchanger tubing.

AEROSPACE

We develop high strength tubing for aircraft engines and airframes in today's leading military and civil aircraft programmes. This includes tubing for hydraulic and pneumatic control systems, torque control rods, transmission, landing gear and instrumentation. Our materials such as titanium 3Al-2.5V, titanium 6Al-4V and Ti CP offer excellent strength/weight ratios for 3,000 or 5,000 psi systems. We also specialise in high temperature nickel alloys and stainless steel grades such as 21-6-9. Besides our AS9100 approved quality system, we have NADCAP certification on heat treatment, non-destructive testing and fusion welding.

MEDICAL

Medical tubes are used in critical cardiovascular and trauma procedures. Our process capability delivers precise control of tube dimensions. We supply high specification tubing for heart valves, trauma and orthopaedic implants, surgical instruments, catheters, stents and orthodontic applications. Materials include a range of titanium alloys along with conventional or vacuum melt stainless steels in circular or bespoke profiles.

CHEMICAL PROCESS

High quality tubes in the chemical process industry are used in a variety of applications, such as flow meters, measurement systems, condenser tubes, shell and tube heat exchangers, paper production and acetic acid alloy plants. Typical materials include austenitic stainless grades in standard or modified analysis, as drawn or electropolished.

PRODUCTION FACILITIES:

- Pilger mills
- Multi-roll rolling mills
- Draw benches
- Tube welding mills - In-line weld mills
- Controlled atmosphere heat treatment
- Bright annealing/hydrogen furnace
- Vacuum annealing
- Pickling & passivation plant
- NDT ultrasonic & eddy current testing
- Hydrostatic testing
- Radiographic examination
- Electropolishing capabilities
- Full chemical and physical laboratory analysis

HIGH PRECISION TUBES



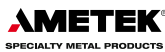
ABOUT AMETEK SPECIALTY METAL PRODUCTS

AMETEK Specialty Metal Products (SMP) is a business unit of AMETEK, Inc. a leading global manufacturer of electronic instruments and electromechanical devices with annualized sales of approximately \$5.5 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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