



# Neotiss: Global welded tube innovator & NDT pioneer

Neotiss has been perfecting its expertise in producing thin welded tubes close to end users around the world for four decades. Formerly known as Vallourec, Valinox Welded or Valtimet, celebrations for its 40<sup>th</sup> anniversary last year were the culmination of decades of pioneering work in the development of high quality welded tubes. Today the company has a large share of the market for titanium and stainless steel welded tube, while continuing to expand into new and demanding applications. Stainless Steel World spoke to Neotiss President Mr. Albert Bruneau and Technical Director Mr. Pascal Gérard about how the company's drive to innovate and develop high quality welded tubes remains undiminished.

*By Joanne McIntyre*



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**New name, single brand**

2016 marked both the 40<sup>th</sup> anniversary and a change of ownership for Neotiss, as the majority of its shares were transferred from Vallourec to American Industrial Acquisition Corporation (AIAC).

“AIAC is a major holding with over USD 1 billion in aggregate revenues, and 20 companies in 13 countries,” explains Mr. Bruneau. “AIAC already owned several companies in the steel transformation and titanium business and it has been very supportive in successfully repositioning our company. The move has significantly improved our competitiveness and flexibility. We took this opportunity to develop a new single brand name to reflect our core business and values: NEO (new), TI (titanium), SS (stainless steel) = NEOTISS.”

local) strategy, bringing us close to customers with lean, flexible local facilities fully supported from the core team in France. This strategy resulted in the development of sites in China, USA, South Korea and most recently India, all staffed with 100% local teams. This strategy continues to create opportunities, for example in the Middle East or Eastern European countries.”

Neotiss has always focused on establishing strong partnerships with local players, benefiting from their experience to rapidly and efficiently penetrate markets.

“Our expertise is based on longstanding relations with leading stakeholders worldwide, explains Mr. Bruneau. “We value co-development with our customers and at present have five ongoing partnerships for innovative products.”

**Core business**

“The core business of Neotiss is to weld, fin and bend thin and hard tubes close to the end user market,” explains Mr. Bruneau. “Our ambition is to be the reference supplier requested by end users for high quality welded tubes.

Neotiss is the leader for hard material finning, the main supplier of advanced tubes for MSR (Moisture Separator Reheater) for the nuclear market and a major player for titanium, with over 50% market share of the global titanium tubing market.”

The company holds a unique position in the eclectic world of welded tubes suppliers.

“At the time Neotiss was founded, welded tubes were not used for demanding applications because there simply weren’t any non-destructive testing (NDT) methods sufficiently accurate to detect weld defects,” begins Mr. Bruneau. “The launch of the French nuclear program in 1974 created demand for a huge amount of high quality heat exchanger tubing. Neotiss pioneered technology to guarantee the integrity of its products for this market. The challenge was to develop advanced manufacturing processes and NDT to compete with

seamless tubes. The control methods we developed became the standard in the market and opened up a wide range of applications for welded tubes.”

Having established itself as a pioneering leader in the development of NDT and high quality welded tubes, the company soon set its sights on foreign markets.

“Transporting 25m tubes around the world was clearly not a fast, economical or sustainable business model. Therefore in the 1990s we implemented our GLOCAL (globally

## 40 years of innovations

*Mr. Gérard highlights some key innovations from Neotiss.*

**1970s** - "The launch of the French nuclear program in 1974 demanded huge quantities of high quality stainless steel and titanium heat exchanger tubing. In 1976 Neotiss (then Vallourec) built a new plant in Venarey-Les-Laumes. We created a technique to double the welding speed: we are still the only manufacturer able to weld titanium and stainless steel tubes at such high speed. Neotiss pioneered ultrasonic inspection, now the standard for all welded titanium and stainless tubes."

**1980s** - "MSR tubes were the next challenge. These are 30-40m finned, bent tubes in ferritic 439, a product very difficult to manufacture and for which Neotiss is a specialist."

**1990s** - "Welded duplex tubing in grades 2205, 2507 was developed, allowing EDF (Electricité de France) to be the first company in the world to use duplex tubes in nuclear power stations. EDF then asked us to manufacture welded copper alloy and brass tubes."

**2000s** - "Laser welded tubes were a key innovation and Neotiss was the first in the world to supply these for critical applications such as high pressure water heaters."

**2010s** - "A key innovation was titanium Helix tubes for condenser applications, which increase the rate of heat exchange by 40%. Our latest innovation is a fully automated helium leak test."

Its strategy of positioning its production close to end users with seven plants in five countries and dedicated local sales teams sets it apart from most competitors.

It is also a technical pioneer for processes and products with several innovative solutions launched every year.

"Eventually, being a non-integrated company is an additional advantage in today's changing and competitive market. We are able to utilize our long term relationships with leading raw material suppliers to purchase very efficiently."

### A history of innovative solutions

"When Neotiss started out in the 1970s the only NDT technology for welded tubes was eddy current testing, which couldn't detect defects such as lack of weld penetration or weld mis-matches," explains Mr. Bruneau. "Neotiss pioneered advanced welding processes and ultrasonic testing for welded tubes allowing us to exceed the ASTM B338 requirement and to guarantee the integrity of the tubes for demanding applications. This test has now become one standard on market and significantly opened the range of applications for welded tubes. A good example is our exclusive solutions for welded ferritic TP439 tubes used for the demanding nuclear market. More recently, we are the only company able to perform Helium test

control in line with a fully automated process."

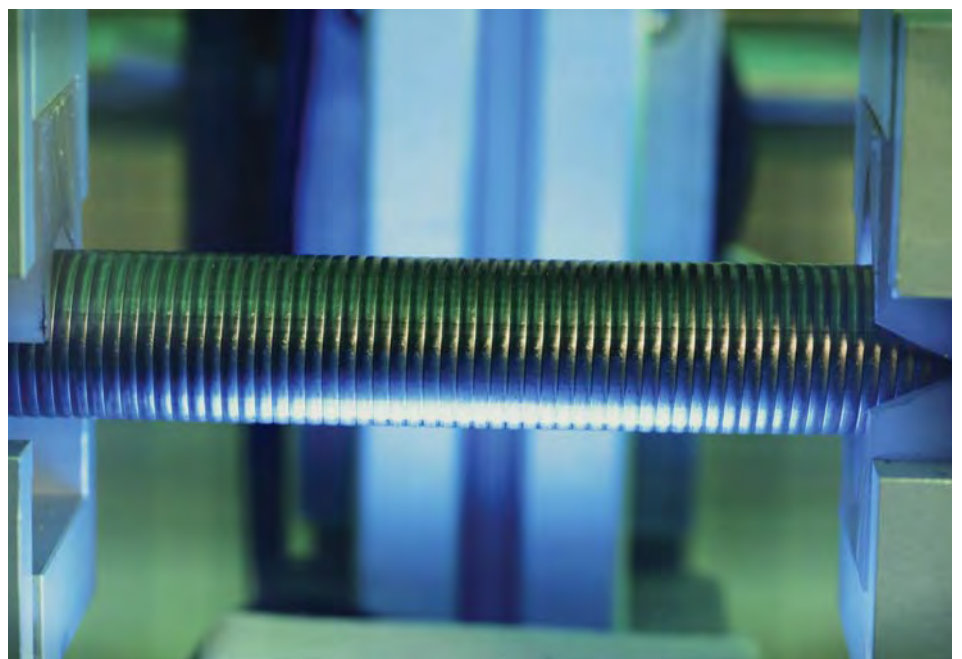
The company's innovations have opened up several demanding markets to welded tubes.

Mr. Gérard explains further: "Welded tubes are not restricted just to below 1mm wall thickness. When the need arose for High Pressure Feed Water Heaters for thermal power plants in India, Neotiss developed an innovative process in Hyderabad to manufacture heavy wall stainless steel tubes above 3mm thickness."

"Finning hard material is another of our strengths; this expertise was gained through the acquisition of the American company High Performance Tubes (HPT) in 2008. We are now able to fin very demanding materials such as titanium or duplexes. Our finning profiles are dramatically improving the heat exchange efficiency of the tubes."

"EGR Cooler Tubing is the latest technology that we have developed over a very short period of time in our plant in China to serve the automotive industry. It includes a wide range of small tubes: smooth, corrugated, flat, and with dimples."

With such a strong focus on innovation the company has a dedicated research facility in Venarey-Les-Laumes, France with an annual budget of up to USD 2 million. Ten research and technical support managers carry out R&D to develop reliable and



*One of the most recent innovations to be launched is NEOTISS™ Helix tube designed to improve the performance of the condenser by increasing by above 40% the heat transfer of the tube.*

energy saving solutions to reduce operating costs for end users and test new products. A recent example is the advanced finning design for Moisture Separator Reheaters (MSR) adopted in China by key market player DFHM for the nuclear project Fuqing 5&6. Neotiss currently has 80% of the global MSR market share, providing a good example of an international company selling differentiated products in China.

A second example is the Helix Tube for heat exchangers, a titanium tube with a patented helix design configuration which generates turbulence in the cooling water and consequently increases the overall heat transfer by up to 40%. "We're convinced that within five years this will be the standard design for condensers," smiles Mr. Bruneau.

### Targeting new markets

Created originally to supply tubes to the French Nuclear Industry, today Neotiss serves various markets including desalination, automotive, process and aerospace. "Powergen is still a key market for the company but we are expanding into new markets," explains Mr. Bruneau. "Aerospace offers great growth opportunities, and we're also growing in the chemical and petrochemical markets which have traditionally been dominated by seamless tubes.



Mr. Pascal Gérard: "Today it is nearly impossible to see the difference between welded and seamless tubes."

We're convinced that welded tubes can be a good alternative with the same or even better performance and are happy to provide support and expertise to anyone interested in learning more."

Mr. Gérard adds: "Today it is nearly impossible to see the difference between welded and seamless.

We can support the same NDT

specifications and cold-working after welding ensures the weld is very homogenous and practically indistinguishable from the rest of the tube. This is opening the door to new applications, particularly those requiring highly corrosion resistant tubes."

### Conclusion

"Professionalism, resilience and innovation are core values shared by all Neotiss employees around the globe," Mr. Bruneau concludes. "These principles drive our day-to-day activities, bringing customers unparalleled quality. While this is a very challenging market with strong competition and demanding customers, this is our world and we are determined to continue on our successful path with the support of our strong team and new shareholder AIAC."



The Neotiss team is proud to supply the Facility D desalination project in Qatar. With more than 10000 km of titanium tubes, it is the biggest titanium order secured by one supplier. Tubes for the project are being manufactured in the company's USA and South Korea plants.

### Facts & Figures

Name:	Neotiss
Founded:	1976
Headquarters:	Boulogne Billancourt, France
Employees:	654
Turnover:	USD 100 million
Website:	www.neotiss.com