

Sandvik Hydraulic & Instrumentation tubing for the world's toughest jobs



Sandvik is well known for its extensive range of tubing products, and one of the stars in the company's portfolio is its hydraulic and instrumentation (H&I) tubing. These high quality tubes are produced to close dimensional tolerances and play a vital role in ensuring safe, uninterrupted operation in some of the world's toughest applications. Stainless Steel World spoke to Global Product Manager Dennis Ruh from his base in Germany about developments in the H&I sector and how Sandvik has provided peace of mind to its customers for over 150 years.

By Joanne McIntyre

Materials challenges

“The main challenge facing the downstream chemical, petrochemical and oil & gas industries today is the recent low oil price which has had a significant effect on behaviour in the industry. The main impact has been to cause an adjustment in the drivers for decision making in relation to projects, and in particular we’ve seen an overall increase in demand for cost reduction. Besides margin adjustment - which can be addressed with some improved product performance and co-efficiency in the supply chain – this situation has been an opportunity for Sandvik to show

*“Research is in our DNA”
- Dennis Ruh*

customers how we can help them to remain successful even in a challenging economic climate. At our distribution centres in the Americas, Europe and Asia, our local sales and technical support teams and R&D experience allows us to support customers in finding cost-efficient supply routes, while providing reliable solutions to support the various segments in the industry.”

Sandvik is ideally positioned to achieve this because it produces hydraulic and instrumentation tubing in all regions, explained Mr. Ruh. “With production facilities across three continents we are



As Global Product Manager Hydraulic & Instrumentation (H&I) Tubing Mr. Ruh is accustomed to tackling some of the toughest challenges that materials can face. “Our H&I tubing is used in the world’s most demanding upstream and downstream applications where the challenges on materials are extreme,” he explains. “These range from being able to handle hotter, sourer wells under extreme pressures in the oil & gas industry,

to highly corrosive environments in chemical and petrochemical plants. When it comes to the world's toughest jobs, only the most advanced and well-proven materials will deliver safe and reliable performance.” Sandvik produces its comprehensive range of H&I tubes in stainless steels and nickel alloys covering outside diameters from (OD) 1.59 to 50.8 mm (0.0625 to 2 in).

About Dennis Ruh



Dennis Ruh started working for Sandvik Materials Technology 15 years ago as a trainee in the sales organisation in Düsseldorf, Germany. In 2007 he relocated to Sweden to establish a new finance and sales support centre, but has been back in Germany since 2009 and today holds the position of Global Product Manager for hydraulic instrumentation tubing.

[COVER STORY]

always close to our customers and ready to support them on a very localised basis, with the backing of our global presence.”

Strong focus on R&D

With 2700 researchers all around the world, new product development and the implementation of ongoing improvements to its existing product portfolio are key components of Sandvik’s general strategy, explains Mr. Ruh. “Research is in our DNA and it will remain an important part of our strategy moving forward. Sandvik has always had a very strong focus on research and development and this drives product development and evolution as well as identifying areas where we can produce innovations for a range of industries.” The outstanding consistency of our products is also largely due to our many years of R&D work.

“Research is not just about developing new grades; it’s also about the company’s internal development to optimise production, enhancing the properties and performance of our products by investing in modern manufacturing technologies, and it also allows us to offer new chemistry from existing products. We really want to make sure that our customers are able to take the full advantage of our capabilities in producing seamless stainless steel tubing.”

“As one of the world’s leading producers of hydraulic & instrumentation tubing we also continue to innovate in this sector. For example we recently added nickel alloy tube Alloy 625 (Sanicro™ 60) and Alloy C276 (Sanicro™ 56) to our portfolio. Of course we also have the more well-known grades such as



Sandvik maintains a broad range of sizes and grades in multiple stock locations around the globe, ready to be sent to local customers at a moment’s notice.

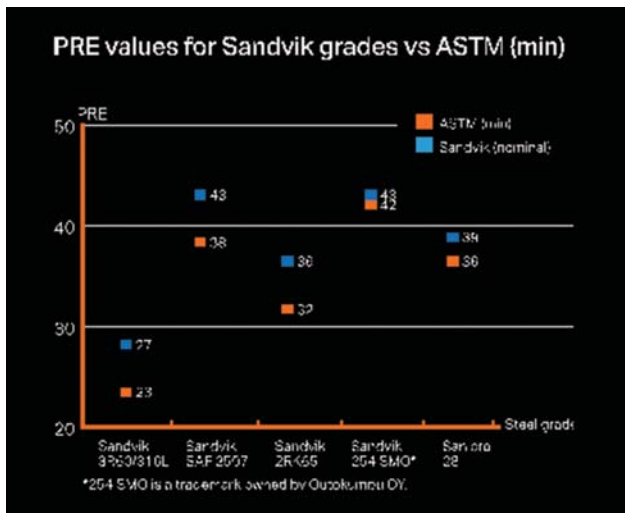
Sandvik 254 SMO. When you consider these factors and our historical achievements such as inventing super duplex Sandvik SAF 2507™, it is clear that Sandvik is really driving forward material evolution.”

“The main factors pushing ahead development are our customers and their challenges in the market,” continues Mr. Ruh. “It’s only feasible to develop new materials and products in close cooperation with customers and in particular with end users. They are the reason that we are able to make the next step forward.”

1000m weld-free tubing

In 2016 Sandvik celebrated a significant breakthrough when its high-precision

tubing unit in Werther, Germany developed a breakthrough method enabling the production of stainless tubing in lengths exceeding 1,000 meters from a single hollow with zero welds. The new production technique is a combination of sophisticated pilgering, precision drawing and proprietary processes and is expected to be highly beneficial for the oil and gas and other industries. The Werther operation specializes in thick walled tubing (1-70 mm OD), extreme pressures (700 bar, or 10153 psi, up to 160,000 psi), exacting tolerances, low defects, extreme temperature and more. Many of these extreme needs for high-precision tubing are becoming increasingly acute as industry heads



Dennis Ruh: “Research is not just about developing new grades; it’s also about the company’s internal development to optimise production.”



A key factor in Sandvik's Peace of Mind approach is creating and operating in a safe working environment.

into the era of Industry 4.0, with higher needs for interconnected control. "This is a major step forward in producing super long tubing also for hydraulic instrumentation applications," Mr. Ruh smiles. "We've seen a very positive response from market to these extra-long tubes and have already booked the first major contract. It's clear that this product has enabled us to add future growth to our market share."

Emerging opportunities

The trend towards constructing mega-scale refineries alongside petrochemical facilities in the Middle East and China is creating new market possibilities for Sandvik, explains Mr. Ruh. "We are able to find more business opportunities and challenges in those areas. The Middle East area is a huge potential market for the refineries industry. As a result of the US, EU, Russia and others lifting nuclear-related sanctions under the JCPOA, more and more governments want to build the new petrochemical facilities in these areas. For Sandvik, this is a new opportunity for business in the region. Our products and materials can be involved in many of new projects."



Sandvik produces its comprehensive range of H&I tubes in stainless steels and nickel alloys covering outside diameters from (OD) 1.59 to 50.8 mm (0.0625 to 2 in).

Looking to China, the "one belt, one road" initiative launched in 2013 involves the country underwriting billions of dollars of infrastructure investment in countries along the old Silk Road linking it with Europe. China is spending roughly USD 150bn a year on the scheme. "This will certainly see the building of new mega-scale facilities," explains Mr. Ruh. "Apart from our quality products, we also meet our customers' needs with a global R&D centre in China which provides good service to our customers."

The Peace of Mind Standard

There is more to success than providing high quality products, Mr. Ruh is keen to emphasize.

"At Sandvik we talk about our Peace of Mind Standard and this is quite simply a holistic approach to quality which can be summarised in a few key points. Firstly we have a very broad range of sizes and grades, plus global production and stock locations. We have a consistent quality due to fully integrated production from melt to final product. We have an over 150 years of history in stainless steel, extensive R&D experience with different R&D service centres around the world; and finally we are creating and operating in a safe environment."

"In addition to the Peace of Mind Standard we also provide additional services to our customers. In every marketplace our highly trained sales teams all have a good technical background to provide support to customers in a range of ways. Technical Support teams are located in various regions to provide additional support, and finally we have R&D engineers who are also available to work closely with our customers. These factors all bring additional value to our products and services."



The company's plant in Werther, Germany is now producing stainless tubing in lengths exceeding 1,000 meters from a single 125 kg hollow without any welds.

Sandvik has decades of experience in demanding chemical and petrochemical applications which require flawless H&I Tubing. Mr. Ruh continues: "The question we need to ask here is whether it's worth taking a risk in complex systems to save cost on the wrong end. Tubing quite often presents less than 5% of the total system cost. However buying low cost alternatives can result in leaking connections, fouling filters, pressure drops or premature corrosion. This is where our H&I Tubing and technical expertise can make a real difference. It's a great example of our Peace of Mind principal: peace of mind is having a corrosion expert that helps you choose the right chemical composition for safe, trouble free operations."

Facts & Figures

Name:	Sandvik Materials Technology
Product range:	Tube, primary products, strip, wire, heating technology
Sales:	2016 sales from Sandvik Materials Technology: 13 billion SEK (USD 1.5 billion)
Employees:	approx. 6,500
Website:	http://materials.sandvik