

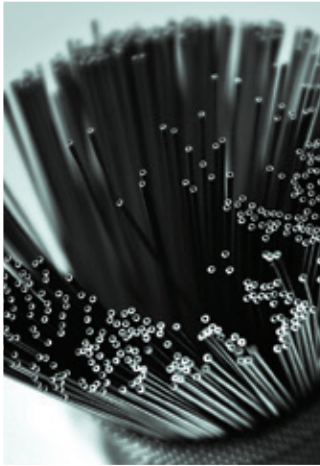
# Tube Products

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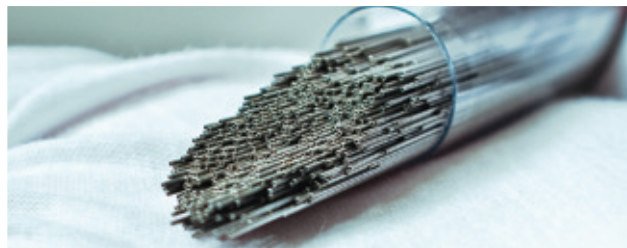
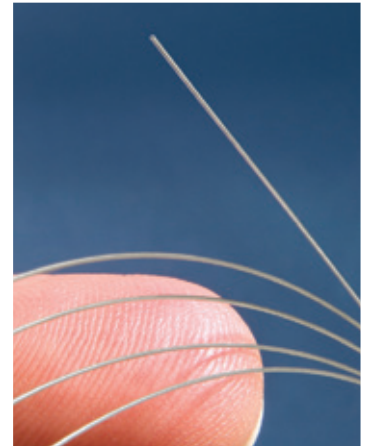
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January 2015



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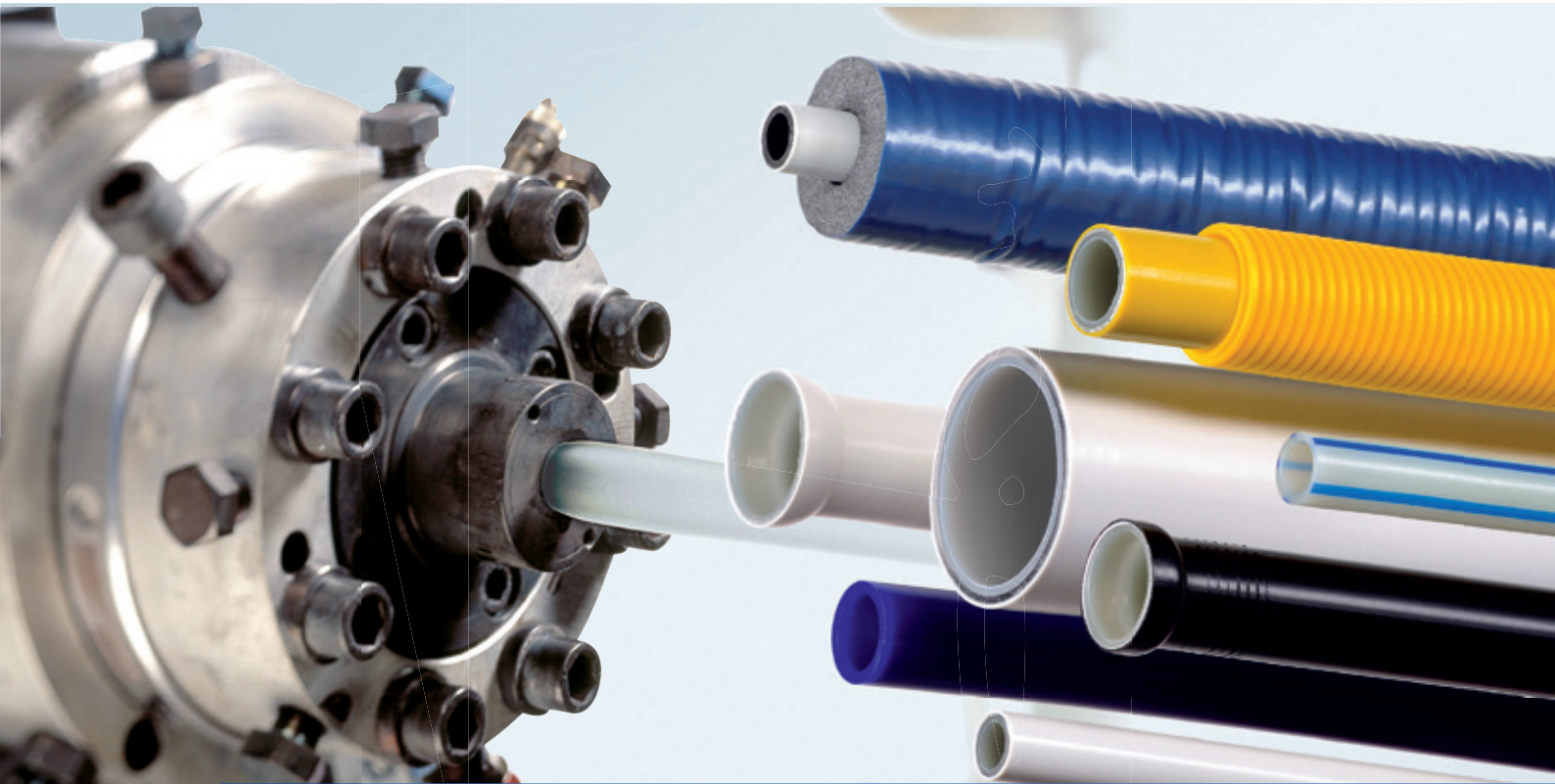
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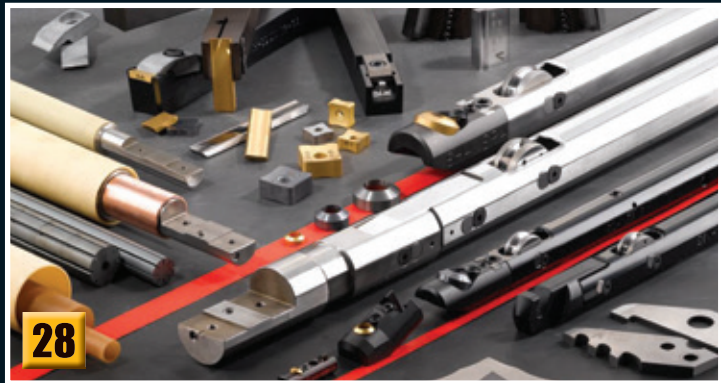
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# Tube Products INTERNATIONAL

The trade magazine for tube and pipe products



## The January issue

Welcome to the latest issue of Tube Products International magazine. First and foremost I would like to wish all of our readers a very happy, healthy and prosperous 2015. I have now been editor of TPI magazine for five years and I've travelled to every corner of the globe in that time – Brazil (twice), China, India, Dubai (three times) and I recently returned from my fourth trip to the US as well as regular visits to Germany. In the past 12 months of travelling I've really enjoyed seeing a sense of optimism and confidence return to the industry and my New Year wish would be for that to continue well into 2016.

This month we have special features on small diameter, high precision tubes and copper tubes. We also take a look at Boru 2015. The article is 'The pathway to ASME PCC-1 2013 and why it's of critical importance', by Neil Ferguson from Hydratight Ltd. It certainly makes interesting reading and hopefully offers some valuable insights for our readers.

Next issue we have features on coating and corrosion prevention; fittings, valves, flanges and connectors; profile materials for tube making; and automotive tubes. We also have articles on two important international trade shows: Tube Russia 2015 in June, and Made in Steel 2015, which is being staged in Milan, Italy in May.

If you would like to submit a story for the March issue then please send your press releases to [roly@intras.co.uk](mailto:roly@intras.co.uk) by the editorial deadline date of 21 January. The advertising deadline is 9 February.

I hope that you enjoy the magazine.

**Rory McBride**  
Editor



# events calendar

## 2015



**10-13 January**

**Tube Arabia** (*Dubai, UAE*)  
International Exhibition  
[www.tekno-arabia.com](http://www.tekno-arabia.com)



**26-28 March**

**Boru** (*Istanbul, Turkey*)  
International Exhibition  
[www.borufair.com](http://www.borufair.com)



**20-22 May**

**Made In Steel** (*Milan, Italy*)  
International Exhibition  
[www.madeinsteel.it](http://www.madeinsteel.it)



**8-11 June**

**Tube Russia** (*Moscow, Russia*)  
International Exhibition  
[www.metallurgy-tube-russia.com](http://www.metallurgy-tube-russia.com)



**16-18 June**

**Guangzhou Julang** (*China*)  
International Exhibition  
[www.chinaexhibition.com](http://www.chinaexhibition.com)



**15-16 July**

**Valve World Americas** (*Houston, USA*)  
International Exhibition  
[www.valveworldexpo.com](http://www.valveworldexpo.com)



**15-17 September**

**Tube Southeast Asia** (*Bangkok, Thailand*)  
International Exhibition  
[www.tube-southeastasia.com](http://www.tube-southeastasia.com)



**5-10 October**

**EMO** (*Milan, Italy*)  
International Exhibition  
[www.emo-milano.com](http://www.emo-milano.com)



**6-8 October**

**TuboTech** (*São Paulo, Brazil*)  
International Exhibition  
[www.tubotech.com.br](http://www.tubotech.com.br)



**9-12 November**

**FabTech** (*Chicago, USA*)  
International Exhibition  
[www.fabtechexpo.com](http://www.fabtechexpo.com)





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# business & market news

*400 tonnes of 3D profiled and SAW tubular steel is being used for a suction bucket foundation being trialled in the North Sea*

## Offshore wind turbine 'suction bucket' foundation prototype

Tata Steel, Europe's second largest steel producer, in conjunction with German pipe manufacturer Eisenbau Krämer, has completed delivery of 400 tonnes of 3D profiled and submerged arc welded (SAW) tubular steel to Bladt Industries, for use in an innovative suction bucket foundation being trialled in the North Sea.

In a bid to significantly reduce offshore wind energy costs by 40 per cent by 2020, the three-legged design uses vacuum-assisted technology to secure the structure to the seabed, reducing installation costs and the environmental noise impact of conventional steel piling. With limited time before

installation, profiled tubular assemblies were delivered to the Bladt Industries facility in Aalborg, Denmark, enabling the company to swiftly manufacture the foundation jacket structure.

The prototype jacket will sit alongside 77 standard turbines in the Borkum Riffgrun 1 wind farm, 37km off the northwest German coast in the North Sea, with capacity to generate CO<sub>2</sub>-free power for over 280,000 households.

Tata Steel and Eisenbau Krämer have collaborated on developing products and services for offshore wind foundations since 2011. A successful trial will enable the design to be moved

into serial production for future offshore wind projects, including UK Round 3 wind farms.

Speaking about the project, Tata Steel commercial manager Phil Knowles said, "We have successfully managed the timely delivery of jacket components for this evolutionary project, which is a positive statement of our intent and capability in this area. Bladt Industries has shown great faith in Tata Steel's reputation and we welcome their backing."

**Tata Steel Europe Ltd** – UK  
feedback@tatasteel.com  
www.tatasteeleurope.com

# Pressure pipes for water and gas – the European market

By the end of 2014, almost 300,000km of drinking water and natural gas pipe was installed in Europe, according to the new edition of the study 'Pressure Pipes for Water and Gas – the European Market' by Applied Market Information. Pipes for water supply and distribution represented more than 70 per cent of that volume, with the balance being gas transmission and distribution pipes.

Between 2007 and 2013 the European demand for pressure pipes lost roughly a fifth of the volume. Demand is expected to grow between 2014 and 2018, as the European construction industry recovers. However, 2018 volumes will remain below those registered in 2007, when demand peaked. In addition, Europe will see a lot of variability, with some markets performing very poorly, while others exhibit a relatively robust recovery.

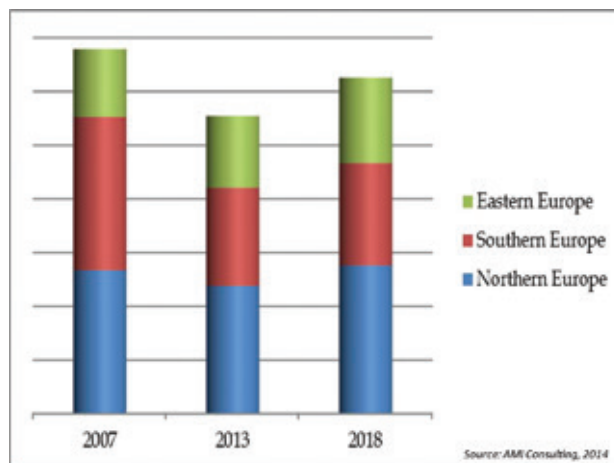
The study covers 31 European countries (the 28 European Union members, plus Iceland, Norway and Switzerland). In terms of pipe systems, it recognises polyethylene pipes (PE80, PE100 and PE100RC), PVC (including modified and oriented PVC) and ductile iron pipes. In

addition to demand in each country, it looks at the supply side, as well as at the market for raw materials.

Plastic pipes continue to gain market share from ductile iron pipes, but there are market sectors in which the latter maintain strong positions. Inter-polymer competition is driving fast changes in demand for the various plastic pipes systems.

A certain degree of consolidation has occurred on the supply side: the market share of the top ten pressure pipes manufacturing groups has increased from around 50 per cent in 2010, to 57 per cent in 2014. Nevertheless, the supply continues to be relatively fragmented, with a large number of small players serving local markets.

Competition among European resin manufacturers is growing in intensity. Strong regulation and standardisation prevent such competition from negatively affecting the quality and performance of products.



Trend in installed volume of pressure pipes

However, this drives a level of commoditisation – product differentiation becomes considerably more difficult to achieve.

This does not mean that differentiation cannot be generated. The key factor remains new product development. Progress in technology continues, in terms of manufacturing processes, component and system design, installation techniques, etc. New, improved raw material grades have also been developed, providing solutions to evolving market needs. Although reputed to be conservative, this market has a good track record of embracing and rewarding valuable innovation.

**Applied Market Information Ltd** – UK  
[info@amiplastics.com](mailto:info@amiplastics.com)  
[www.amiplastics.com](http://www.amiplastics.com)

## IIL expansion plans

International Industries Limited (IIL), a producer of GI pipes, API pipes, cold rolled tubes, polyethylene and PPR C pipes, is planning to commission a stainless steel tube factory in Karachi, Pakistan, from January 2015, and a large diameter tube mill by mid-2015. The company has also incorporated a wholly owned subsidiary in Australia: IIL Australia Pty Ltd.

IIL Stainless Steel Tubes will initially cater to the needs of ornamental and auto sectors for various applications by manufacturing austenitic and ferritic series in conformance with the ASTM A-554 international standard. In addition, the company is setting up a 12" diameter API and structural pipe mill

to cater to the growing demand of gas companies and the construction sector in the region.

IIL, which has 50 years of pipe manufacturing experience, will also

participate in BORU 2015, in Istanbul, Turkey.

**International Industries Ltd** – Pakistan  
[inquiries@iil.com.pk](mailto:inquiries@iil.com.pk)  
[www.iil.com.pk](http://www.iil.com.pk)



## Drill pipe market worth \$1.7bn by 2019

The report 'Drill Pipe Market by Grade (API, Premium), Application (Onshore, Offshore) & Geography – Global Trends & Forecasts to 2019', published by MarketsandMarkets, defines and segments the global drill pipe market with an analysis and forecast of the revenue. The report features 100 market data tables with 28 figures spread through 200 pages.

The drill pipe market will grow from an estimated \$1.17bn in 2014 to \$1.7bn by 2019, with a CAGR of 7.9 per cent.

The US market is driven by the major oil and gas exploration activities in major onshore areas, the Gulf of Mexico and Alaska. The US has experienced a rapid increase in natural gas and oil production from shale and other resources. High drilling efficiency and

new well productivity, along with an increase in the rig count, have been the main drivers of the recent production growth in the US. The recent boom in shale gas could also promote a rapid expansion of the petrochemical sector.

The US recorded the highest market size at a value of \$490.2mn in 2013. It is expected to reach \$828.2mn by 2019, from an estimated value of \$560.3mn in 2014, at a CAGR of 8.1 per cent during the forecast period.

The drill pipe market is segmented into two categories in terms of grade: API grade and premium grade drill pipe. The API grade is based on specifications defined by the American Petroleum Institute (API) and follows the latest API specifications, 5D and 7. The drill pipe market for the API grade segment

recorded the largest market volume in 2013, at 171.74 thousand short tons. This segment is expected to grow from an estimated 179.09 thousand short tons in 2014 to 183.46 thousand short tons by 2019, at a CAGR of 0.5 per cent from 2014 to 2019.

MarketsandMarkets is a global market research and consulting company based in the USA. It publishes strategically analysed market research reports and serves as a business intelligence partner to Fortune 500 companies around the world. The company also provides multi-client reports, company profiles, databases and custom research services.

**MarketsandMarkets – USA**  
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## ASTM Paul Finn Memorial Award

John Kurdziel, PE, chief engineer for Advanced Drainage Systems (ADS), has been presented with the American Society of Testing & Materials (ASTM) Paul Finn Memorial Award, for technical excellence in plastic pipe. He received the honour in recognition of his development of ASTM testing and manufacturing standards for corrugated polyethylene and polypropylene pipe.

"John has made a strong impact in moving the industry forward," stated Joe Chlapaty, chairman and chief executive officer of ADS. "His work with ASTM and many other organisations has been exceptional. His years of participation have led to many new standards that make it easy to specify long-life products and instil confidence in their use. John was the principle author for many ASTM storm sewer, sanitary sewer and recycled standards."

Among other industry honours, Mr Kurdziel has previously won the ASTM Spangler Award for technical excellence in concrete pipe, and the ASTM Award of Merit, the highest society award given by ASTM. He has also been



John Kurdziel (right) receives the Paul Finn Memorial Award from Tom Walsh, chairman of ASTM F17

appointed chairman for ASTM F17.65, Land Drainage Subcommittee. This subcommittee controls all the standards for agricultural drainage products, septic leach field pipe and chambers, including the StormTech product line, pavement underdrains, mine leachate and collection systems, and all polyethylene resins used for storm drainage products.

ASTM Committee F17 on Plastic Piping Systems was formed in 1973 and now has around 520 members participating on 18 technical subcommittees, which are responsible for 180 approved standards. These standards are referenced in many plumbing and building codes, and ensure quality and performance for the plastic pipe industry.

Founded in 1966, ADS produces corrugated plastic pipe, and is known for its storm water and sanitary sewer management pipe and products.

The company has 58 domestic and international manufacturing plants and 28 distribution centres. ADS products include N-12® corrugated HDPE pipe, SaniTite® HP pipe and fittings, and other storm water system components such as StormTech® storm water chambers, InsertaTee® fittings, and various geotextiles.

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## Stockist increases export sales staff

DK Jones Ltd, a UK-based stockist of butt weld and high-pressure forged fittings, weld outlet fittings, flanges and pipe in a wide range of material specifications, has increased its sales team with the addition of three new personnel in its export office.

Customers who have been dealing with the company for several years may remember Martin Mac, who previously worked for DK Jones and has now re-joined the company. Mr Mac has many years of experience in the piping products industry and his extensive knowledge and ability to source difficult-to-find items has already been put to good use to help DK Jones's customers and contacts.

Another new addition to the export sales office is Mark Hipkiss, who has worked in the tubular products industry for more than 20 years and has experience in the sourcing and sales of materials ranging from carbon steel to a wide variety of exotic alloys for many UK and overseas clients.

The third new recruit to the department is Greg Dare. This is Mr Dare's first job in the tubular products industry.



DK Jones's new recruits: Martin Mac, Mark Hipkiss and Greg Dare

Although he is still learning the in-house systems and the details of the wide range of products that DK Jones stocks, the company says that he is already an enthusiastic and helpful member of the sales force and is enjoying getting to know the industry and its complex range of products, specifications and materials.

With a stock of over 4,000 tonnes of high quality, fully certified materials, DK Jones regularly supplies standard and non-standard items and materials to customers in more than 60 countries.

**DK Jones Ltd** – UK  
sales@dkjones.com  
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## Investment in new R&D hub

As part of its ongoing growth and development strategy, flexible pipe specialist FlexTech has invested £500,000 into a new manufacturing and fabrication base in Lincolnshire, UK.

Since its inception in March 2013, the company has achieved turnover of £1mn, and is on track to reach £2.5mn by the end of year two. With existing research and development and manufacturing premises in Aberdeen, UK, and an R&D facility in Lincolnshire, FlexTech's new Grimsby base will help to expand its presence across the UK, with plans to extend its capabilities and offerings into the renewables sector.

FlexTech engineering director Craig Keyworth said, "Since start-up, the company has been performing

successfully within the oil and gas industry. The new investment in Grimsby is strategic due to the region emerging as a key player in the renewable energy industry, with potential to become the UK capital of the offshore wind industry.

"With such clear synergies between our services and equipment offerings within the oil and gas and renewables sectors, and the renewables developing at such a significant rate, the placement of our R&D facility in the region positions us well for an advance into the sector."

The newly acquired 1.5-acre facility with 3,000ft<sup>2</sup> office and workshop will provide FlexTech with a base in the region, both now and as it increases staff numbers and service offerings

in the future. The facility will support the delivery of projects worldwide, with the team in Grimsby supporting FlexTech's increased presence in the region. With direct access to offshore wind farms, and quayside access to the UK's largest port, it will also allow FlexTech to offer its range of products and services to a wider market.

FlexTech's core business is the delivery of flexible pipe and riser engineering projects, marine offloading systems and integrity management and inspection. It also has a range of products designed to facilitate ease of installation, ensure operational integrity and prolong the life of the flexible in field.

**Flextech Ltd** – UK  
info@flex-tech.co.uk  
www.flex-tech.co.uk

# EnQuest selects Technip for large subsea contract

Technip has been awarded by EnQuest a large engineering, procurement, installation and construction (EPCI) contract for the Kraken development located in the North Sea, 400km north-east of Aberdeen and 130km east of Shetland, at a water depth of approximately 120m.

The contract covers various project management engineering and installation works, which include: fabrication and pipelay of approximately 50km of rigid pipe – 25km of metallurgically clad pipe and 25km of HDPE lined; installation of three umbilicals totalling 14km, and 7km of flexible risers and jumpers; template and manifold installation at three drill centres; diverless tie-ins to pipelines and manifolds; and pipeline flooding, hydro testing and leak testing.

Technip's operating centre in Aberdeen, UK, will execute the contract. The group's

spoolbase in Evanton, UK, will weld and load-out the rigid pipe, and Technip Umbilicals, a wholly owned subsidiary in Newcastle, UK, will manufacture the umbilical. All construction work on the project will be undertaken via diverless construction methods.

A number of vessels from the Technip fleet will be used for the offshore campaign, including *Deep Energy*, one of the largest pipelay vessels ever built.

Bill Morrice, managing director of Technip in the UK, commented, "We are delighted to have been awarded this contract, which builds upon our excellent relationship with EnQuest. Our vast experience in the delivery of efficient, cost-effective solutions for our clients has been recognised once again and we look forward to supporting EnQuest to maximise production from the Kraken field, currently one of the



Bill Morrice is the managing director of Technip UK

largest developments in the UK North Sea."

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## Greater than expected growth at Offshore Energy Exhibition & Conference

The 7<sup>th</sup> annual Offshore Energy Exhibition & Conference (OEEC), held in October at Amsterdam RAI, Netherlands, attracted 13,452 visitors representing 81 nationalities, an increase of 47 per cent compared to the previous year. OEEC 2014 featured 630 exhibitors on 21,000m<sup>2</sup> of floor space, and 106 speakers in 22 sessions.

OEEC 2014 was opened by a high-profile keynote speaker. Dr María de Lourdes Melgar Palacios, undersecretary of

hydrocarbons of Mexico, spoke about the Mexican energy reform and its emphasis on increasing private sector participation through free competition and the opportunities this creates.

Dr Melgar opened the two-day event together with Pieter van Oord, CEO of Van Oord and chairman of the Association of Dutch Suppliers in the Oil & Gas Industry IRO, and Coert van Zijll Langhout, director of Navingo BV, creator and producer of OEEC.

The exhibition took place in four halls. Of the 630 exhibitors that showcased their solutions and services for the offshore oil, gas and renewables industry, 124 companies were foreign.

The three panel meetings at the conference offered discussions between captains of industry on industry-wide strategic challenge, trends in financing and resourcing in the offshore industry.

The eight technical sessions covered a variety of topics ranging from permanent well abandonment to offshore maintenance services, and from the latest in offshore vessels to technical and regulatory developments in wave and tidal energy. The masterclasses for young professionals were well attended and offered a unique setting for the exchange of ideas with CEOs.

During the second day of Offshore Energy, the full-day Offshore Wind Installation and Maintenance Conference was held at the same venue. This fifth annual wind conference covered some of the most pressing issues associated with wind industry growth.

The next Offshore Energy Exhibition & Conference will be held on 13 and 14 October 2015.

**Navingo BV** – Netherlands  
[www.offshore-energy.biz](http://www.offshore-energy.biz)

The 'Human Capital' panel at Offshore Energy



## Thermatool appoints new agent in Turkey

Inductotherm Heating & Welding Ltd, manufacturer of Thermatool induction welding systems for the tube and pipe sector and comprehensive ranges of induction heating systems from Radyne, Banyard and Newelco, has appointed Patech Metal as sales agent for Thermatool products in Turkey.

Patech Metal already serves the Turkish tube and pipe production market by utilising its own dedicated team, providing consultative methods for developing and obtaining the best production results from existing tube

and pipe mill set-ups, operation, production and maintenance.

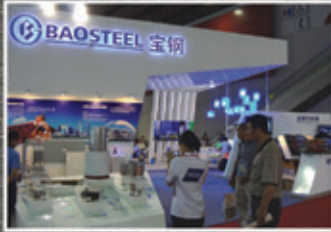
Wayne Hine, director of sales, commented, "The appointment of Patech Metal represents another step in Thermatool's continued development within the Turkish tube and pipe market. Strategically we are setting a business relationship that will continue for many years. We recognise that with the number of Thermatool units installed, the most in any single country, requires excellent local technical service and spares support. As one of Thermatool's

largest markets, investment has already been made locally with the set up and operation of Turkish service technicians at its facility in Inductotherm Turkey, Gebze, and this investment is set to continue."

**Inductotherm Heating & Welding Ltd**  
– UK  
[info@inductothermhw.co.uk](mailto:info@inductothermhw.co.uk)  
[www.inductothermhw.com](http://www.inductothermhw.com)

**Patech Metal** – Turkey  
[info@patechmetal.com](mailto:info@patechmetal.com)  
[www.patechmetal.com](http://www.patechmetal.com)





# THE 16th CHINA(GUANGZHOU) INT'L TUBE & PIPE INDUSTRY EXHIBITION

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Show time: 16-18 June, 2015

Venue: Ground Floor, B Area, China Import and Export Fair Pazhou Complex  
(No.380, Yuejiang Zhong Road, Guangzhou, China)

# Investment in second Singapore manufacturing facility

Premier Hytemp, a provider of metal-based solutions to the oil and gas industry, is increasing its engineering capability in Singapore with the development of a second manufacturing facility.

The US\$20mn investment will create a 67,000ft<sup>2</sup> precision engineering facility that will serve the downhole tools, wellhead and subsea tree markets. This will complement the established Premier Hytemp manufacturing operation in Singapore, which primarily serves only the wellhead and subsea tree markets.

The company has acquired land for the development adjacent to its existing

78,000ft<sup>2</sup> facility in the industrial area of Jurong in western Singapore. The strategic location offers easy access to Singapore and throughout Asia, with port facilities for export shipments.

Campbell MacPherson, chief executive officer of Premier Hytemp, said, "This \$20mn investment in our second Singapore facility will significantly increase our capacity to serve clients in the downhole tools market and complements our existing service offering for wellhead and subsea tree components out of Singapore.

"The expanded scope of the new facility and our ability to manage products from

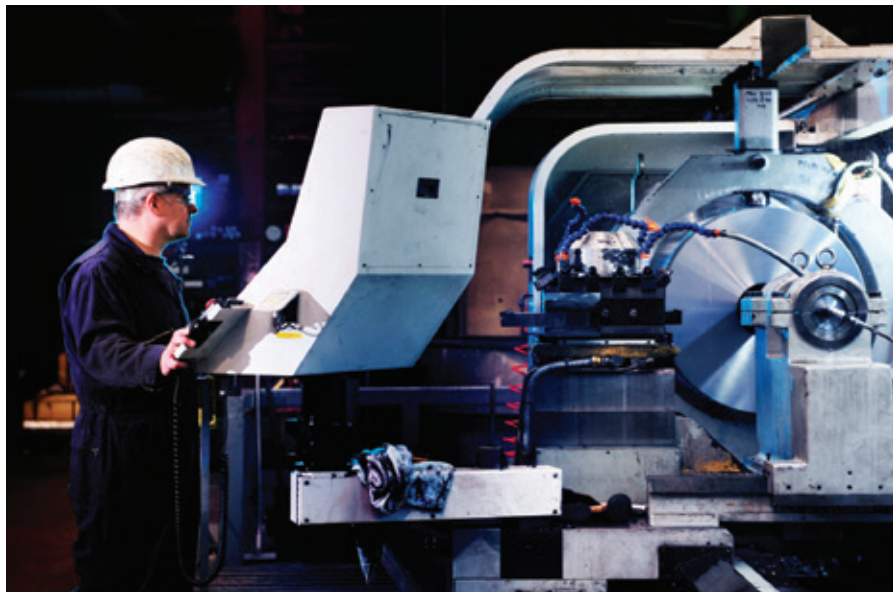
raw material through to fully tested, final machined and assembled consignments – supported by extensive in-house technical expertise developed over 30 years – means that we are strongly positioned to deepen our relationships with established customers and attract new business. Our control of all aspects of the product manufacturing process also provides our clients with additional assurance in terms of quality control and on-time delivery."

Premier Hytemp provides engineered solutions for low alloy, stainless steel and nickel alloy products in the global oil and gas industry. It manufactures operationally critical components for the industry's major original equipment manufacturers and service companies for applications in wellheads and production equipment, well construction, valves and actuators, and downhole tools.

The company is responsive to client needs, and can service contracts ranging from one-off commissions with short turnaround times, through to providing turnkey solutions and full supply chain management. Its suite of services include sawing and proof machining, heat treatment, testing, final machining, cladding and assembly, and is fully supported by an in-house technical team with expertise in metallurgy, forging, heat treatment, welding and project engineering.

**Premier Hytemp – UK**  
[www.premierhytemp.com](http://www.premierhytemp.com)

*Premier Hytemp is investing \$20m in a second precision engineering plant in Singapore*



## Wasser Berlin 2015

Wasser Berlin International, the International Trade Fair and Congress for Water and Wastewater, and the Federal Ministry of Economics and Energy (BMWi) are supporting the participation of innovative new companies in 2015. From 24 to 27 March 2015, for the third time in succession, Wasser Berlin

International will be supporting a sponsored combined display and promoting technological innovation in the German water industry.

The aim of the development programme is to help companies to gain a foothold in the market, in particular by placing a greater focus

on them at an international trade fair. Exhibitors from 36 countries and trade visitors from 94 countries took part in the previous event, in April 2013.

**Messe Berlin GmbH – Germany**  
[wasser@messe-berlin.de](mailto:wasser@messe-berlin.de)  
[www.wasser-berlin.com](http://www.wasser-berlin.com)

# Rewarding employees' focus on quality improvement

In recognition of employees' participation in the company's Quality Improvement Process over the past year, Marmon/Keystone held its 23<sup>rd</sup> Annual Quality Renewal Celebration. All 40 Marmon/Keystone locations across the USA and Canada simultaneously devoted half a day to recreation, team building and prize giveaways.

The Quality Improvement Process was started in 1990 with a capital investment of \$1.5mn. Each employee receives training in how the process works, and then serves on one of over 80 quality teams. These teams work throughout the year to identify and complete projects that make Marmon/Keystone's processes safer, more efficient and cost effective.

As a direct result of the quality teams' efforts to perfect processes and pro-

cedures, the company's quality goals continue to improve. The most recent company-wide statistics show on-time deliveries at 99.63 per cent, returned merchandise at 0.11 per cent, and an average of 544 safety points per location, surpassing a goal of 420 points.

More than 440 quality improvement projects were completed in the past year, and more than \$180,000 was awarded to employees for the time and effort they invested in the Quality Improvement Process.

In other news from Marmon/Keystone, the company has expanded its western seamless pipe depot. The Los Angeles branch is now stocking A-106 seamless carbon steel pipe as a depot to supply customers throughout western USA. An extensive inventory is available in both single and double random lengths,



Employees from Bucyrus, Ohio, celebrated quality by touring the ArcelorMittal plant in Shelby, Ohio, where welded and seamless carbon tubing is produced for Marmon/Keystone

and sizes run up to 24" OD, with an emphasis on heavier walls.

"The new seamless pipe depot is a great complement to our existing hot-rolled seamless depot in Los Angeles," commented Barry Glaser, VP of the western region. "This will allow us to promptly service the needs of our existing customer base, as well as many other seamless pipe users, from all of Marmon/Keystone's western locations."

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## Pipeline coating conference

The market for pipelines is growing worldwide, to secure energy, chemical and water supply and for carbon capture and storage from North America to the Far East. The advent of shale gas has led to new lines being planned to transport this cheap natural gas. In many areas the growing population is placing high demands on water supplies, and this is leading to more pipelines being built from desalination plants and other sources.

This expanding global demand is driving the construction of new pipelines across challenging environments from abrasive desert sands to deep subsea. Speakers from around the world will

be debating the requirements for ensuring the structural integrity and protection of steel pipes at the 7<sup>th</sup> AMI International Conference on Pipeline Coating 2015, scheduled for 17-19 February in Vienna, Austria.

Noru Tsalic of AMI Consulting will open the conference with a paper on the markets for pipe coatings. This will be followed by the PetroChina Pipeline Company speaking on the effects of shale gas exploration in China on the pipeline coating industry, and an overview of developments in the Netherlands from NV Nederlandse Gasunie. Other areas of interest that will be addressed include the challenges

of coating special steel pipes; new techniques for multi-layer coating; and the use of internal thermoset coatings.

There will be a number of key papers from pipeline operators who will talk about their experience of pipeline protection in the field, from coating selection to failure and repair. The conference programme will have a practical focus on coating selection and integrity from new factory technology to field studies of performance and repair.

**Applied Market Information Ltd** – UK  
info@amiplastics.com  
www.amiplastics.com

## Coated premium connection certified under ISO 13679 CAL IV

TMK, a producer of tubular products for the oil and gas industry, has run ISO 13679:2002 CAL IV tests on the premium connection TMK UP PF with lubricant-free coating GreenWell.

The tests were conducted at TMK's R&D centre in Houston, Texas, USA, and were observed by Texas International Engineering Consultants as an independent third party. All samples successfully passed abrasion resistance, gas tightness and ultimate load tests. The successful ISO 13679:2002 CAL IV

tests demonstrate the pipe products' quality, allowing oil and gas companies to use them for both onshore and offshore drilling and production projects in challenging environments.

TMK introduced the GreenWell lubricant-free coating technology in 2013. Polymer coating is an alternative to standard lubricants for threaded connections that ensures gas tightness of pipe connections along with compliance with environmental regulations and safer operating conditions.

TMK operates 28 production sites in the USA, Russia, Canada, Romania, Oman, UAE and Kazakhstan, and two R&D centres in Russia and the USA.

In 2013, the company's pipe shipments totalled 4.3mn tonnes. The largest share of sales belongs to high margin oil country tubular goods, shipped to customers in more than 80 countries.

**TMK** – Russia  
tmk@tmk-group.com  
www.tmk-group.com

## Atkore acquires American Pipe and Plastics

Atkore International has acquired American Pipe & Plastics, a US manufacturer of PVC conduit serving the telecommunications, cable TV, power and fibre optic infrastructure markets.

"We continue to strengthen our commitment to serving the PVC market with the addition of American Pipe & Plastics to the Atkore family," commented Bill Waltz, president of Atkore's plastic pipe and conduit business unit.

"This acquisition naturally complements our existing PVC product portfolio, expands our market presence in the northeast, and enhances the total suite of value-added solutions for our electrical raceway customers."

Atkore delivers a portfolio of integrated electrical raceway solutions that deploy, isolate and protect a structure's electrical circuitry from curb to outlet. Its product line includes steel, PVC and aluminium conduit, armoured

cable and flexible conduits, metal framing, wire baskets and cable trays, and complementary products such as fittings and mechanical, fence and sprinkler pipe.

**Atkore International Inc** – USA  
www.atkore.com

**American Pipe & Plastics, Inc** – USA  
ampipe@ampipe.com  
www.ampipe.com

# Polypropylene and plastic pipe industry forecasts

RnR Market Research has added the latest reports on the polypropylene pipe market and the plastic pipe industry for global and China regions to its store.

'Market Research Report on Global and Chinese PP Pipe Industry, 2009-2019' is an in-depth market survey on the global and Chinese PP pipe industry. The report reviews the basic information of PP pipe including its classification, application and manufacturing technology. The report then explores global and China's top manufacturers of PP pipe, listing their product specification, capacity, production value, market share, etc.

The report further analyses the market of PP pipe by calculation of the main economic parameters of each company. The breakdown data of the PP pipe market is presented by company, by country and by application. The report also estimates

2014-2019 market development of the industry, and analyses upstream raw materials, downstream clients and current market dynamics.

'The China Plastic Pipe Industry Report, 2014-2017' says that the country has become the world's largest producer and consumer of plastic pipes. In 2013, China's plastic pipe output and demand reached 12.1mn tons and 11.117mn tons respectively, representing a respective year-on-year increase of 10 per cent and 7.1 per cent.

The output of PVC pipes is higher than that of other plastic pipe varieties in China, followed by the output of PE pipes and PP pipes. In 2013 China's PVC pipe output hit 6.59mn tons, accounting for 54.5 per cent of China's total plastic pipe output, while the output of PE pipes and PP pipes shared 40.5 per cent. Municipal water

supply and drainage, building water supply and drainage and other fields act as the downstream of China's plastic pipe industry. In 2013 the downstream demand accounted for 69.8 per cent of China's total demand for plastic pipes. Propelled by the construction of Chinese municipal underground pipe networks and drinking water facilities, the share of the downstream demand is expected to rise to 75.4 per cent in 2017.

There are numerous small-sized Chinese plastic pipe enterprises. 300 companies achieve annual capacity of more than 10,000 tons, while only 15 have annual capacity of 200,000 tons. The complete reports are available for purchase from RnR Market Research's website.

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# Tenaris confirms full purchase of Socotherm Brasil

Tenaris has confirmed the purchase of the remaining 50 per cent of the participation of Socotherm Brasil, which belonged to Socotherm Americas – a division of ShawCor.

The Socotherm Brasil coating facility, located beside the Confab welded pipes mill in Pindamonhangaba, São Paulo, was previously managed in partnership by Tenaris and by ShawCor. The company to date has been constituted by Tenaris and Socotherm Americas, 50 per cent respectively.

As of 4 September 2014, Tenaris became the sole owner of 100 per cent of the shares of the company, with

full autonomy for the coating business. Its range of solutions for coatings, produced in the welded pipes facility, is now offered to the market under the Tenaris brand.

“The integration of this coating company with our operations will enable Tenaris to better serve our customers, offering a complete pipe and coating solution mainly for the oil and gas industry worldwide,” said Renato Catallini, president of Tenaris in Brazil.

In Brazil, the challenges of the exploration in deep and ultra-deep waters of the Pre-Salt layer, the perspectives from Petrobras and from

Sergipe Basin and Amazon Region, demand innovative and technological support for coatings solutions.

The Tenaris Research and Development Center in Rio de Janeiro, which was inaugurated in April 2014, will have a fundamental role in the development of new coatings for local and global markets.

Tenaris will continue its strategic relationship with Socotherm and ShawCor worldwide as suppliers of coating solutions for pipeline projects.

**Tenaris SA** – Luxembourg  
[www.tenaris.com](http://www.tenaris.com)

# Fine Tubes appoints new HR business partner

Fine Tubes, a manufacturer and global distributor of precision tubes for a wide range of critical applications, has appointed Claire Baker as HR business partner.

In line with its continued growth, the company has re-structured its HR department to ensure that the changing needs of the business continue to be met in line with best HR practice. Within the new structure, Ms Baker will have a key role in helping to create a working environment that encourages and supports continuous improvement at all levels of the company.

With more than ten years' HR experience, Ms Baker has held positions as HR manager and senior HR advisor within the manufacturing sector, including roles with Toshiba Information Systems and Plessey Semiconductors Ltd. In addition to a 1<sup>st</sup> class honours degree in human resources management, she has a diploma in business management.

Steve Tomlinson, head of HR, commented, “We are pleased to welcome Claire to Fine Tubes. With her knowledge and understanding of the business role that HR can play within

a manufacturing environment, she will undoubtedly be making an important contribution to the future development of the company.”

Fine Tubes manufactures both seamless and welded tubes, in a wide range of stainless steel, nickel, titanium and zirconium alloys, for critical applications in the oil and gas, nuclear and power, aerospace, chemicals and medical equipment industries.

**Fine Tubes Ltd** – UK  
[sales@finetubes.co.uk](mailto:sales@finetubes.co.uk)  
[www.finetubes.com](http://www.finetubes.com)

# ROI calculator for valve inventory

Wachs Water Services has released a new ROI Calculator. The free tool is based on a sophisticated yet intuitive algorithm that determines the ROI of a valve inventory programme.

ROI (return on investment) gauges investment performance. It is calculated as a percentage, taking into account the cost of the investment, and the gain from it. An ROI greater than zero indicates that the investment yielded more than

its cost. When allocating scarce financial resources among competing projects, it is generally wise to choose the project with the greatest ROI.

The higher an ROI for an asset inventory programme, the greater cost savings (ie gains) enjoyed by the utility and community. Cost savings include reductions in collateral damage, labour/equipment, outage disruptions, traffic disruptions and water loss. Being

able to show a tangible, positive ROI allows utilities to increase their chances of obtaining O&M and/or capital improvement funding, whether in the form of rate increases, loans, budget allocations or other sources.

The ROI Calculator can be found online at [www.wachsws.com/tools/roi](http://www.wachsws.com/tools/roi)

**Wachs Water Services** – USA  
[www.wachsws.com](http://www.wachsws.com)

# DeepFlex selected for field development supply project

DeepFlex has announced that RPSEA has awarded Phase 3 of its 'Qualification of Flexible Fiber-Reinforced Pipe for 10,000-Foot Water Depths' project. Phase 3 of the project – field development supply – includes field-specific engineering, fabrication, delivery, deployment and operations of the actual deepwater riser system as a verification of the composite fibre reinforcement technology.

The riser system is scheduled to be delivered and ready for installation in September 2016. The main maximum capability requirements are 10,000ft water depth, 7" ID, 120°C temperature, sour service, and a 25-year design life. Its design and manufacturing will be conducted in accordance with API 17J, API 17B, DNV OS-C501 and DNV RP-A203. Prototype development, testing and riser manufacturing will be performed at DeepFlex's Pensacola

Plant, which is currently under construction.

This riser system is a challenging application of composite fibre materials in subsea risers and pipelines. The benefits of the composite technology – light weight and corrosion resistance – are key enablers for future ultra-deepwater fields, and offer value for challenging subsea field developments worldwide.

The award is a major milestone for DeepFlex and is a result of years of work and perseverance in developing new technology in the subsea oil and gas production industry.

"We are extremely honoured that RPSEA selected our project," said Felipe Lamego, DeepFlex president and CEO. "This is the ultimate demonstration of our capabilities in research, development,

engineering and qualification of high technology flexible pipe solutions for harsh and challenging environments. The award of Phase 3 is a key step in technology development and also a cornerstone of success of DeepFlex's plant in Pensacola, Florida, further stimulating future growth of the region."

Headquartered in Houston, Texas, USA, with sales and engineering facilities in Rio de Janeiro, Brazil, DeepFlex develops, designs and manufactures premium, all-composite and hybrid unbonded flexible pipe used in the global subsea oil and gas production environment.

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info@deepflex.com  
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**RPSEA – USA**  
www.rpsea.org


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## Inauguration of major Russian PVC production facility

The RusVinyl PVC production facility in Kstovo, Nizhny Novgorod region, ranking among Russia's largest petrochemical investment projects, has been inaugurated.

Russian president Vladimir Putin attended the opening ceremony, along with Alex van Meeuwen, Belgian ambassador to Russia; Valery Shantsev, governor of Nizhny Novgorod region; and senior representatives of SIBUR and SolVin.

RusVinyl is a joint venture between gas processing and petrochemical company SIBUR and SolVin, and was created to construct a new PVC production site that could meet a significant part of domestic demand. It is one of the largest PVC producers in Russia, with an annual production capacity of 330kt of PVC and 225kt of caustic soda. It will benefit from the nearby supply of ethylene, a key raw material for PVC, from SIBUR-Kstovo's steam cracker, expanded to 360kt especially for the RusVinyl site. Salt, the other feedstock for PVC production, will be provided from Belarus and from the Astrakhan region of Russia.

RusVinyl will provide its products to the under-supplied Russian market, and aims to further develop downstream operations and consumption of petrochemicals.

Leonid Mikhelson, chairman of SIBUR's board of directors, said, "SIBUR has increased its production capacity of ethylene in Kstovo, which guarantees the supply of the raw material to the new PVC complex. This has ensured the creation of a new, competitive and cutting edge industrial facility. The best global practices and technologies have been introduced to the Russian market due to the realisation of the latest large-scale investment project. The new petrochemical facility will beneficially impact Russia's economic development by meeting the challenge of import substitution."

"SolVin is proud to have successfully completed this project, which is among its biggest industrial achievements ever. SolVin's experts from across the globe pulled together with SIBUR's team made this the most modern and most environment-friendly, fully integrated PVC production plant in the world," said

Jacques van Rijckevorsel, chairman of the board of SolVin.

The project, with an investment exceeding RUB60bn, entirely complies with Russia's strictest environmental regulations.

Each section of the facility has multi-tier safety systems, and an advanced membrane method prevents hazardous substances from being formed during electrolysis. RusVinyl also uses a patented technology that makes electrolysis completely waste-free.

RusVinyl is included in Russia's Oil and Gas Chemical Development Framework through to 2030. It is also on the List of Priority Projects of the Russian Ministry of Industry and Trade, and has been given priority status by the Government of the Nizhny Novgorod region.

**SIBUR** – Russia  
[www.sibur.com](http://www.sibur.com)

**SolVin** – Belgium  
[info.solvin@solvay.com](mailto:info.solvin@solvay.com)  
[www.solvay.com](http://www.solvay.com)

## New look for Hub Le Bas website

Hub Le Bas has updated its web presence with a new site that features a modern interface, in-depth product information, improved navigation and a branch locator.

The company is a stockist and distributor of steel products in the UK, serving clients such as shop fitters, material handling specialists, tube manipulators, construction and civil engineering businesses, fabricators, and sports and leisure equipment manufacturers. Its range includes over 8,000 steel product lines, including precision steel tubes, conduit and fittings, steel merchant bar, spiral welded tubes and structural hollow sections.

As part of its ongoing plans for growth, Hub Le Bas decided to upgrade its

website to better reflect its current online strategies and ambitions for the future. The new site, which features a more intuitive, contemporary design and a modernised company logo, is also in line with the increased importance of the digital customer for the business.

"As our client base is changing, so must we," said managing director Martin Benbow. "We are a forward-looking business that is increasingly embracing new cutting-edge technologies, and we wanted our online presence to reflect this. More and more of our customers come into contact with us for the first time through our site; it's very important that they get the right first impression."

Improvements to the website go beyond aesthetics. Business users

expect to obtain a large amount of information online (eg sizes, finishes, steel grades, delivery information, technical specifications and add-on services), and the new site caters to these requirements.

A major new feature is the branch locator, which is an improved way for prospective buyers to contact their local depot. "We have six branches across the UK – Bilston (West Midlands), London, Bristol, Manchester, Leicester and Wakefield," said Mr Benbow. "We want to make sure that customers make contact with the right depot as quickly as possible and get the real person support they are looking for."

**Hub Le Bas** – UK  
[www.hublebas.co.uk](http://www.hublebas.co.uk)



# 550-mile 'Atlantic Coast Pipeline'

Duke Energy and Piedmont Natural Gas have selected Dominion to build and operate a 550-mile interstate natural gas pipeline from West Virginia, through Virginia and into eastern North Carolina, to meet the region's rapidly growing demand for natural gas.

Called the Atlantic Coast Pipeline, it is expected to also serve as a key infrastructure engine to drive economic development and create jobs, helping counties on the pipeline's route attract new, energy-dependent businesses and industries, especially along the Interstate 95 corridor in eastern North Carolina.

Duke Energy and Piedmont selected Dominion's project after reviewing submittals by five companies in response to an April 2014 solicitation for proposals to build North Carolina's second major interstate natural gas pipeline. The pipeline has an estimated cost of between \$4.5bn and \$5bn, an initial capacity of 1.5bn ft<sup>3</sup> of natural gas per day, and a target in-service date of late 2018. The project will require Federal Energy Regulatory Commission approval, which Dominion will seek to secure by summer 2016.

The pipeline's main customers are six utilities and related companies that collectively will purchase a substantial majority of the pipeline's capacity to transport natural gas: Duke Energy Carolinas, Duke Energy Progress, Virginia Power Services Energy, Piedmont Natural Gas, Virginia Natural Gas and PSNC Energy. The purchases will be made through 20-year contracts, subject to state regulatory approval. The pipeline's owners are also negotiating with other potential customers.

Gas will be carried through a 42" diameter pipe in West Virginia and Virginia, and a 36" diameter pipe in North Carolina. In addition to its role as builder and operator, Dominion will be one of the pipeline's four owners – all based in the mid-Atlantic or southeast USA: Dominion (45 per cent ownership); Duke Energy (40 per cent); Piedmont Natural Gas (10 per cent); and AGL Resources (5 per cent).

In a joint statement, the four companies' CEOs said the pipeline represents a major step forward for the region's energy security, economic future and carbon reduction.

Dominion will build and operate the pipeline through a services agreement with its Dominion Transmission subsidiary, which will oversee siting, permitting, engineering and legal issues.

**Dominion Resources – USA**  
[www.dom.com](http://www.dom.com)

**Duke Energy – USA**  
[www.duke-energy.com](http://www.duke-energy.com)

**Piedmont Natural Gas – USA**  
[www.piedmontng.com](http://www.piedmontng.com)

**AGL Resources – USA**  
[www.aglresources.com](http://www.aglresources.com)

**metalforming**

**ADAMUS Metalforming , Mieszna / POLAND**

**[www.adamus.pl](http://www.adamus.pl)**

# FAA approves PP pipe for civilian airport water collection and disposal

Advanced Drainage Systems (ADS), a manufacturer of water management products and solutions for commercial, residential, infrastructure and agricultural applications, has welcomed the decision by the Federal Aviation Administration (FAA) to approve polypropylene pipe for subsurface water collection and disposal at civilian airports.

The decision to recognise polypropylene pipe as an equal alternative to other materials enables design engineers and contractors to leverage the benefits of the lightweight, durable solution for water collection and removal under airfield pavements. The updated standard follows the approval of HDPE pipe for under-pavement use in all airport areas, including de-icing pads, runways and taxiways.

“The nearly 400 commercial airports and 3,000 general aviation facilities in

the United States require infrastructure upgrades and expansion to meet the demand of continual increases in air travel,” said Greg Bohn, director of national engineering and product development for ADS.

“This update to the FAA policy is in line with a growing number of Departments of Transportation (DOT) across the country who have approved polypropylene and HDPE pipe for critical infrastructure needs. These are easy to install, lightweight and cost-effective solutions with a high degree of stiffness and strength, which enable developers to maximise a project’s budget and provide substantial alternatives that meet AASHTO and ASTM standards.”

ADS solutions are used for water management at airports, including Atlanta’s Hartsfield-Jackson International

Airport. The company manufactures both polypropylene and HDPE pipe in diameters up to 60”.

**Advanced Drainage Systems, Inc – USA**  
[info@ads-pipe.com](mailto:info@ads-pipe.com)  
[www.ads-pipe.com](http://www.ads-pipe.com)

## Tubltaly 2015

Following the positive results of the first event, which took place in 2013, Tubltaly has set ambitious new targets to further establish the importance of a sector with a strong international character.

Tubltaly, which will show the best of tubes, rods, pipes and profiles, and technologies for their production and processing, will be held in Piacenza, Italy, from 20 to 22 May 2015. Unlike the previous event, Tubltaly will not be held simultaneously with EXPOLaser, and this will allow the organisers, Piacenza Expo and PubliTec, to put the entire exhibition area at exhibitors’ disposal.

The slogan chosen for the promotional event, “Piping all forms of energy, we nourish life,” emphasises the fundamental role of pipes and pipelines, and everything that turns around them. Travelling underground or hundreds of metres below sea level, they transport the resources that are part of everyday life, such as water, gas or oil.

The decision to bring the event forward from November to May will allow Tubltaly visitors to take advantage of another exhibition: EXPO 2015. With close proximity to Milan, Tubltaly will benefit from the strong international appeal of EXPO, and this will help to increase the number of visitors to the exhibition in Piacenza in order to find the main players in the sector of tubes, pipes and profiles. The exhibition is supported by Federacciai, Istituto Italiano del Rame, and Fondazione Promozione Acciaio.

**Piacenza Expo SpA – Italy**  
[info@piacenzaexpo.it](mailto:info@piacenzaexpo.it)  
[www.tubltaly.it](http://www.tubltaly.it)

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## Superior Tube's 80<sup>th</sup> anniversary

Superior Tube, a manufacturer of precision tubing, is celebrating its 80<sup>th</sup> anniversary. From aerospace to power stations, and oil and gas extraction to medicine, the company's products are used in a wide range of industries where safety and reliability are critical.

Early technological advancements in radio and broadcasting, aeronautics, atomic energy and medicine led to a broad array of applications for Superior's tubing. With every technological advance, Superior has adjusted itself to the new needs created, leading to expansion of its manufacturing facilities and to the award of numerous patents.

A pioneer in the manufacture of the precision nickel tubing used in cathode

ray tubes and hypodermic needles, Superior Tube also lays claim to being the first precision tube mill to draw titanium, niobium and tantalum products, and manufactured the tubing used in the first cardiac stent implants.

Throughout its 80-year history, the company has supplied specialist tubing to customers who have been directly involved in a number of landmark technological developments: the Manhattan Project, which led to harnessing the energy of the atom; the USS Nautilus, the world's first nuclear-powered vessel; the Bell X-1, in which Chuck Yeager became the first man in history to break the sound barrier; and the Apollo Project, which put the first man on the moon.

As part of the celebrations to mark its 80<sup>th</sup> anniversary, Superior Tube held an employee barbeque at its site in Collegetown, Pennsylvania, USA, to acknowledge the dedication of its staff.

Bob Henry, Superior Tube's president, commented, "Celebrating our 80<sup>th</sup> anniversary is very much a time to look both backwards and forwards – backwards to the company's remarkable history of achievements over those years, and forward to the exciting future we face as we expand globally and continue to respond to the ever-evolving needs of our customers."

**Superior Tube Company, Inc – USA**  
[info@superiortube.com](mailto:info@superiortube.com)  
[www.superiortube.com](http://www.superiortube.com)

## CRCC for Raccortubi Group

Raccortubi do Brasil Ltda and Raccortubi SpA Group headquarters have both been granted Petrobras's seal of approval and awarded the Certificado de Registro e Classificação Cadastral (CRCC).

This follows on from Petrobras's technical approval of the butt weld fittings manufactured by the group's integrated Techninox plant.

With the launch of the group's latest subsidiary in South America, Raccortubi do Brasil Ltda, the news represents an important step in the development of business in the area.

Raccortubi do Brasil now has piping material in stock at its warehouse in São Paulo and key approvals in place.

Such approvals demonstrate the quality of the goods on offer from Raccortubi distribution points around the world.

The CRCC is one of many end-user approvals obtained by Raccortubi Group in recent months. Both Raccortubi stockholding facilities and the Techninox production were also included in Repsol's Approved Vendor List. Raccortubi Group is using both

the stockholding and manufacturing activities, inherent within its organisational structure, to maximise the services it provides worldwide.

The Techninox plant is constantly replenishing Raccortubi stocks with fittings in stainless steel, Duplex, Super Duplex, super austenitics and nickel alloys, while each Raccortubi location has developed stocks of pipes, fittings

and flanges on the basis of regional market demand to respond to local needs.

**Raccortubi SpA – Italy**  
[info@raccortubi.com](mailto:info@raccortubi.com)  
[www.raccortubi.com](http://www.raccortubi.com)

**Raccortubi do Brasil Ltda – Brazil**  
[brasil@raccortubi.com](mailto:brasil@raccortubi.com)  
[www.raccortubi.com](http://www.raccortubi.com)



*Raccortubi do Brasil is a South American subsidiary of the Raccortubi Group*



# products & developments

## Flame-free alternative to welding

Swiss firm Haelok has devised a high-pressure pipe fitting system that can take less than a minute, even for an unskilled worker. The fitting system, which has been used by one of Europe's largest energy providers to repair its network, uses metal-to-metal compression to offer a viable flame-free alternative to welding.

With no need for open flames, this eradicates the danger of repairing district heating pipes in dark, narrow spaces.

Pipes can be fitted quickly, while water is still running, so the district heating system was barely down for any time at all. A spokesperson from the energy provider said, "Obviously, the safety and convenience of our customers is always our priority and we want to keep downtime on our network to a minimum

without taking any health and safety risks. The Haelok system helped us get the best of both worlds – safe and cost-effective maintenance, and the district network back up and running before most of our customers even noticed it was down."

Haelok uses a wedge design and axial pressing with up to 60 tons to create a seal that is as strong as a welded connection. It was devised in Switzerland ten years ago, and was first used on a cruise liner two years later. Since then, the Haelok system has been used by more than 100 customers.

The spokesperson from the energy provider elaborated, "Haelok also gives us an edge because it can be used by workers without welding or specialist connection experience, so we are

not dependent on the availability of specialist staff, which again minimises inconvenience for our customers and maximum flexibility for ourselves."

The Haelok press has a purely steel composition, with no elastomeric or rubber sealings. It was invented with difficult, constrained working conditions in mind, and has a working temperature ranging from -50°C to 400°C and a certified working pressure of up to 600 bar.

The system has 16,500psi certification, and full conformity to ASME B31.1 Power Piping and ASME B31.3 Process Piping.

**Haelok AG** – Switzerland  
info@haelok.com  
www.haelok.com

## Cleaning technologies for oil and gas sector

Pipetech International, a specialist in the provision of advanced and environmentally friendly water-based cleaning technologies to the oil and gas and petrochemical industries, has hosted an interactive technology demonstration at its base in Portlethen, UK.

Pipetech works with a range of clients operating in the North Sea oil and gas and petrochemical industries, in both the UK and Norway. The demonstration and networking session allowed guests to learn more about the company's pipe cleaning systems.

AquaMilling® and AquaSonic® technology allow the removal of scale, cement and various debris from pipes while negotiating multiple 90° and 180° bends, over extended distances,

using high-pressure water technology. This helps improve safety and reduce shutdown time.

The demonstration event was hosted by Lindsay Young, managing director of Pipetech UK, May Britt Lillevedt, managing director of Pipetech Norway, and Leonard Hamill, operations manager of Pipetech UK.

"Pipetech has already demonstrated in Norway that it can offer a highly valuable solution to its customers and now we want our UK-based clients to have access to this technology, which will help them increase efficiency and reduce cost," said Mr Young. "We are thrilled to be able to show what outstanding results

Pipetech's AquaMilling and AquaSonic systems deliver for the industry and are very pleased to have the opportunity to further promote our message – cleaner, faster, safer!"

**Pipetech International AS** – Norway  
[pipetech@pipetech.no](mailto:pipetech@pipetech.no)  
[www.pipetech.no](http://www.pipetech.no)

*Before and after: Pipetech uses high-pressure water technology to remove scale and debris from tubes, pipes and process equipment*



## Portable workstation

Exact Tools has launched its latest product: the Pipe Bench. This portable workstation is suitable for both cutting and threading pipes and tubes, in all materials, up to a maximum outside diameter of 170mm. Assembly is quick and simple, and the lightweight construction makes the Pipe Bench easy to carry and suitable for use in on-site applications.

The Pipe Bench is available in three different options: cutting set, cutting and gripping set, or a complete set. Several pipe manipulating accessories are available that are easily fixed to or dismantled from the Pipe Bench.

**Exact Tools Oy** – Finland  
[steve.marsland@exacttools.com](mailto:steve.marsland@exacttools.com)  
[www.exacttools.com](http://www.exacttools.com)



*Pipe Bench – complete set*

## Bringing manufacturing back to Europe

JTW Engineering has 30 years' experience in producing valve components to customer specifications.

The company specialises in providing additional production capacity as required, allowing customers to reduce overheads.

It also offers emergency 24-hour production of components. JTW can manufacture parts such as stems, plugs, gates and actuator parts.

The company specialises in mass production and offers a direct alternative to traditional outsourcing solutions. It can provide prototyping, consulting, engineering, design and manufacturing tailored to specific needs. For large production runs, the company optimises its entire facility to the task at hand.

JTW's broad experience worldwide covers many sectors, including offshore, petrochemical, scientific,

medical, automotive, motorsport and instrumentation.

The company is conveniently located less than one hour from the largest port in Europe, with a global network of vetted suppliers, and has strict quality control systems in place.

**JTW Engineering** –  
 Netherlands  
[info@jtwengineering.com](mailto:info@jtwengineering.com)  
[www.jtwengineering.com](http://www.jtwengineering.com)

## Scarfig longitudinally welded tubes

During the last 15 years, Saar-Hartmetall und Werkzeuge GmbH has reinforced

its team, dedicated to techniques of scarfig longitudinally welded tubes. The company's staff have completely revised its range of products, and have made important innovations in the design of the tooling and in the quality of the carbide inserts concerning geometry and carbide grades.



The company is always involved in specific projects and customised equipment. Its hydraulic inside scarfers start from 19mm inside diameter, and its mechanical tooling from 14mm ID.

Saar-Hartmetall's partnership with a coating centre allows the company to improve all kinds of specific scarfig problems.

New products include short inside scarfig tow bars, and a new hydraulic power pack with pre-selected pressures and return button to accelerate the 'out of cut' movement. The company has also produced a new impeder filtration and pressure station with easy handling.

**Saar-Hartmetall und Werkzeuge GmbH** – Germany  
tube@saar-hartmetall.com  
www.saar-hartmetall.de

## Inspection, length measurement and weighing

Brandt Engineered Products has provided finishing floor solutions for the tube and pipe industry for over 30 years.

During that time it has engineered ways to ensure its equipment produces high quality pipe, while being robust enough to withstand the difficult environment that it operates in.

The company's Weigh Measure Mark Stencil (WMMS) provides a quick and accurate way to help ensure that customers are receiving material that adheres to their strict standards. The WMMS uses a PLC to automatically move pipe and capture measurements. It uses a walking beam to transfer pipe

to each station. Each unit has the option for inspection, length measurement, weighing, pin stamping, stencilling and colour banding pipe.

Each of the steps is recorded in a custom data logger, sent to the customer's database and available on screen for instant observation.

Lengths and weights need to be measured accurately and repeatedly. Brandt has been able to employ photo sensors and high-resolution encoders that can ensure lengths are measured and recorded within the guidelines of associations such as API. The weigh station is able to maintain defined tolerances over repeated use.

Shock absorbers and load cells are designed to ensure that the weights are measured precisely over a wide range of lengths and diameters, often within  $\pm 0.5$  per cent.

Labelling the pipe with a visual record of specifications and information observed during testing is accomplished by stamping,

stencilling and colour banding. Being able to produce a stamp and stencil that can print the correct information as well as being visible at the end of the mill process is a difficult task. Brandt works closely with customers to understand the environment and correctly choose the appropriate inks and paints.

Stencilling is accomplished with either a travelling stencil carriage attached to an overhead truss, or by moving the pipe and keeping the stencilling equipment stationary. Stencilling will brand each pipe with customer-specified information such as length, weight and any logos that may be required. Further solutions can include application of barcodes for quick and accurate pipe tracking.

A turning roll is used to turn the pipe during the application of a colour band. Paint is supplied to automatic spray guns via large pressure pots with agitators to ensure the equipment is usable on demand. Stamping is another option that customers can choose to add to the WMMS.

**Brandt Engineered Products Ltd** – Canada  
www.brandt.ca

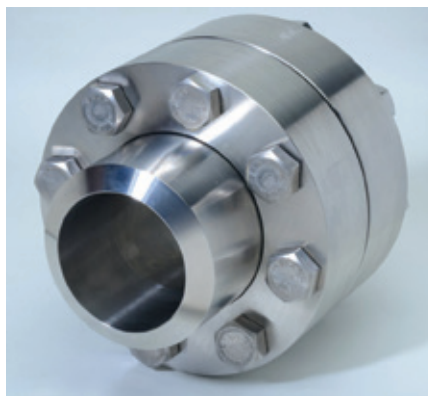


## Stainless steel fittings, flanges, tubes and valves

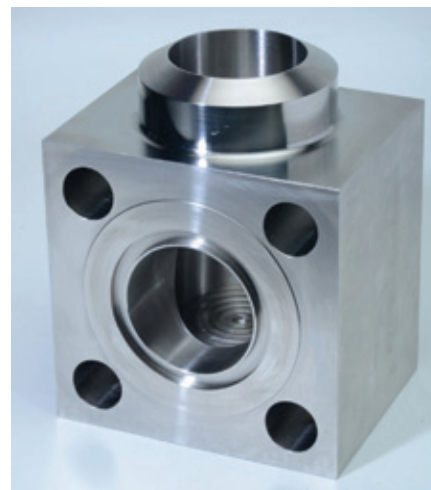
Advanced Fluid Technologies supplies stainless steel hydraulic, pneumatic and industrial-based engineering and pipeline products to the OEM, end-user and distribution markets.

Products include pipe and tube, DIN 2353 compression couplings, flanges (BS4504, BS1560, BS10 Table, SAE and CETOP), 150lb screwed fittings, twin ferrule compression couplings, hydraulic adaptors (BSP, BSPT, NPT, JIC, SAE and ORFS), ball valves (low and high pressure), and accessories (gaskets, O-rings, seals and washers).

Special focus is given to a complete range of SAE and CETOP flanges to



ISO 6162 and ISO 6164, in both mild and stainless steel: SAE 3000 from 3/8" to 5"; SAE 6000 from 3/8" to 3"; and CETOP from 3/8" to 8".



To further complement its flange portfolio, the company offers a range of three- and four-bolt gear pump flanges.

**Advanced Fluid Technologies – UK**  
[info@advancedfluid.co.uk](mailto:info@advancedfluid.co.uk)  
[www.advancedfluid.co.uk](http://www.advancedfluid.co.uk)

## Pipe sealing plugs and stoppers

The Pipestoppers® division of Huntingdon Fusion Techniques has released a set of literature describing its range of pipe sealing plugs and stoppers.

These accessories can be used for low pressure water or air testing of pipe systems in the water, gas, oil and other fluid industry pipe work, as well as for debris stopping during machining operations or overnight stopping for temporary closure of piping systems. All plugs conform to British Standard BS8005 for low pressure testing and sealing of pipes.

The mechanical plugs are simple to work with and install with a wing nut that rotates on a friction-free washer to compress the two plates together, expanding the natural rubber tyre to seal tightly inside the pipe or other chosen orifice.

For high temperature and aggressive applications the natural rubber rings can be replaced with silicon, nitrile or Viton rings as appropriate.

The Aluminium range plugs are strong and durable, non-rusting and are negatively buoyant so that they can be used subsea.

They are available for 1.5" to 36" pipe sizes, whereas the lower-cost steel plugs are available for 1.5" to 96" diameter pipes. However, the aluminium plugs are suitable for more arduous duties such as immersion in chemicals and use at higher temperatures.

All plugs and stoppers can be used to seal manholes or pipework entries so that during transportation of large vessels, like fractionation columns or

heat exchangers and other vessels or tanks, all entries and exits can be blocked off to keep inert gas trapped in or to keep contaminating air and fluids from entering.

The Nylon range plugs, with sizes from 0.5" to 6", are used for clinical applications as well as in the food, dairy, nuclear, shipbuilding, aerospace, water and gas industries to form a leak-tight seal inside tubes, pipes or orifices for leak testing, closure or weld purging.

Inflatable plugs and stoppers for all diameters are also in the HFT Pipestoppers range. The inflatable versions are available in different shapes to cater for a range of industrial and commercial applications. Inflatable stoppers can be inserted through small holes and expanded to maximum sizes inside.

Other plugs, stoppers and inflatable systems are available for use with – or containment of – drinking water and aviation fuel, for example, and can be used with other fluids or gases as appropriate.

**Huntingdon Fusion Techniques – UK**  
[hft@huntingdonfusion.com](mailto:hft@huntingdonfusion.com)  
[www.huntingdonfusion.com](http://www.huntingdonfusion.com)



*The Aluminium range of plugs*



*Nylon plugs*

## Rotary pneumatic valve actuators

Doruk Endustri designs, manufactures and distributes industrial valves and actuators under its registered Proval brand throughout Turkey and its international distribution network to over than 40 countries worldwide.

Proval has over ten years of experience in manufacturing and worldwide distribution of rack and pinion, rotary

pneumatic actuators in spring return and double acting configurations, that are capable of meeting diverse and specific actuation needs.

The company's A210 Series actuators are designed and engineered in the latest 3D CAD software, and machined precisely using the latest-technology horizontal and vertical CNC machining centres to meet rapidly changing demands in process flow control requirements.

Proval actuators are strictly inspected during all stages of the manufacturing process, and are fully tested individually before delivery. Special types of coatings applicable on Proval ATEX and GOST-R certified actuators enable them

to be employed in extremely harsh working conditions in the presence of corrosive substances.

A210 Series actuators are rack and pinion design, and rotate in two positions: 0-90°, 0-120° or 0-180°.

15 different sizes generate output torque ranging from 9 to 3,510Nm at 6 bar supply pressure.

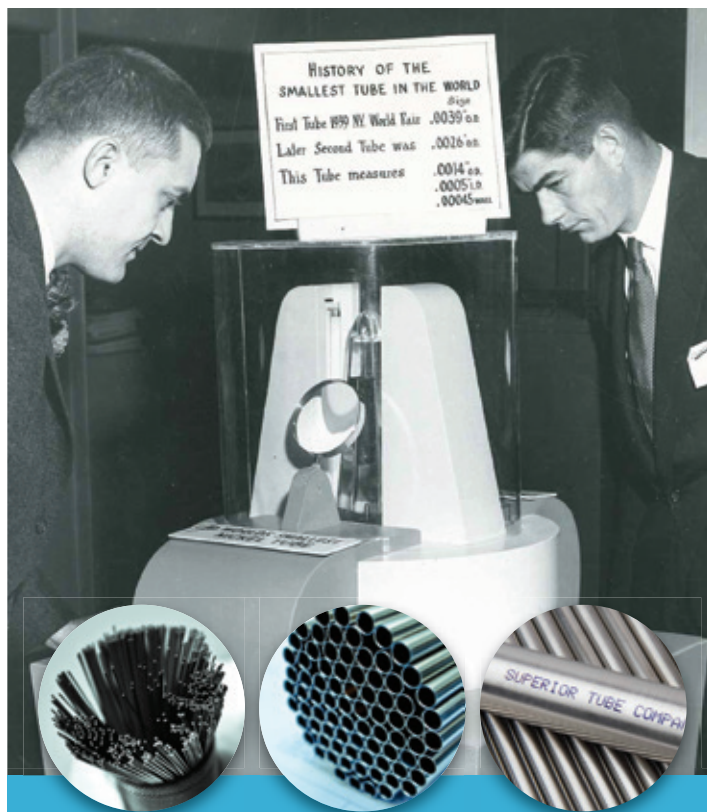
Proval A213 Series actuators rotate in three positions (0-90° or 0-180°), and are available in nine different sizes generating output torque ranging from 24 to 798Nm at 6 bar supply pressure.

The company also offers a wide range of accessories, such as Namur solenoid valves, Limit switch boxes, manual override gearboxes and positioners.

**Doruk Endustri Ltd STI – Turkey**  
[info@dorukendustri.com](mailto:info@dorukendustri.com)  
[www.dorukendustri.com](http://www.dorukendustri.com)



Proval pneumatic actuators



## A proud history of Innovations

Since the 1930's Superior Tube has been pushing the capabilities of precision tube engineering. Today, our team prides themselves in producing industry acclaimed small diameter tubing.

Key industries we serve range from nuclear power and oil & gas to aerospace and medical devices. We work closely with customers to develop high specification tubing for mission critical applications.



Superior Tube - we support your future applications as your global partner for a wide range of stainless steel, nickel, titanium and zirconium alloy tubing.

Contact Us

Tel: +1 610.489.5200  
 Email: [info@superiortube.com](mailto:info@superiortube.com)



[www.superiortube.com](http://www.superiortube.com)



## New videos demonstrate installation and product features

BrassCraft Manufacturing, a producer of plumbing products, has added 11 new how-to and promotional product videos, easily accessible on the company's website, and on its YouTube Channel at [youtube.com/brasscraft](http://youtube.com/brasscraft)

The company's Cobra brand has also added three new videos. Available at home centres and hardware stores, the Cobra product line is designed for ease of use by do-it-yourself customers. The Cobra videos can be accessed online at [www.cobraus.com](http://www.cobraus.com)

Each video explains which tools are needed for the application, while giving a step-by-step tutorial that is easy to understand for anyone from the average do-it-yourselfer to the seasoned professional. "The videos are great for anyone looking for guidance on the right way to install many of the BrassCraft and Cobra products," said BrassCraft brand manager Debra Lewis.

"They are packaged in a way that makes specific information easy to access and understand. In just a few short minutes

you also gain confidence in a procedure or just get a quick refresher."

The company states that the videos are a valuable addition to the resources it provides for customers. While the videos are not intended to replace written instructions provided in the owner's manual, they are designed to give a quick overview.

**BrassCraft Manufacturing – USA**  
[customerservice@brasscrafthq.com](mailto:customerservice@brasscrafthq.com)  
[www.brasscraft.com](http://www.brasscraft.com)

## Inspection tool for 'unpiggable' pipelines

Integrity technology services company Applus RTD showcased its RTD DTI Trekscan pipeline inspection tool at the International Pipeline Conference (IPC) in Calgary, Canada.

The RTD DTI Trekscan is a free-floating inspection tool designed to traverse back-to-back one-dimensional (1D) bends, with an optimum speed of 1m/sec (2.2mph). It can run in pipelines previously considered to be 'unpiggable'.

Standard tool configuration has a maximum battery life of up to 16km (10 miles) at 1.25m/sec (2.75 mph), and

for data storage the maximum standard tool configuration allows for 64km of data based on a 2.5mm axial sampling. The bi-directional tool measures the return echoes of a transmitted ultrasound beam. The amount of time it takes to receive an echo provides accurate information on the remaining wall and enables detection and sizing of metal loss anomalies.

Martin Fingerhut, president of Kiefner, an Applus RTD company, commented, "The development of the RTD DTI tool has many benefits for our clients, not least is its ability to measure metal loss

anomalies in pipeline that would have previously been considered unpiggable. It also provides high levels of detection for characterisation capabilities – a feature not previously available without compromising efficiency."

The standard configuration of RTD DTI Trekscan is available in 6" and 8" sizes. It is lightweight – 15kg (33lb) – and its maximum operating temperature is 40°C (104°F).

**Applus RTD – Netherlands**  
[info@applusrtd.com](mailto:info@applusrtd.com)  
[www.applusrtd.com](http://www.applusrtd.com)

## Automatic butt fusion for HDPE, PP and other plastic pipe

Ritmo's Easy Life automatic butt fusion system offers advantages for the welding of HDPE, PP and other thermoplastic pipes.

The system, designed and developed entirely by Ritmo, is now in its fourth edition. The concept is based on a hydraulic gear case provided with hardware in which the electronic system ensures continuous repeat of the welding cycles and automatic control of the preset parameters. The operator needs only to validate the welding phases. This

method of operation provides ease of use and the certainty of a correct weld.

The gear case features an intuitive control panel and graphic display that allows quick setting of the required parameters.

The Easy Life system can store up to 4,000 welding cycles and summarise them into a PDF file. This report can then be downloaded via a USB port. The data logging system also shows the date and time.



*Easy Life welding system*

The welding system is available on a wide range of Ritmo welding machines, and covers a working range from 40 to 630mm OD.

**Ritmo SpA – Italy**  
[info@ritmo.it](mailto:info@ritmo.it)  
[www.ritmo.it](http://www.ritmo.it)

## New purge products

Sumner Manufacturing has introduced two new purging products: Nylon Expansion Plugs and the Purge Buddy. Both products are suitable for purging oxygen from weld chambers, and can also be used to seal pipe as pipe plugs or drain stoppers.

Nylon Expansion Plugs are available in a range of sizes from 17 to 100mm (¾" to 4"). A 150mm (6") Aluminum Expansion Plug is also available. The plugs can be ordered individually, in sets of two, or



Nylon Expansion Plugs

as a kit complete with storage case (the kit does not include the 6" Aluminum Expansion Plug). Each Expansion Plug has a hollow shaft making them suitable for purging.

The Purge Buddy is similar to inflatable purge dam products, but has a single inflatable bladder instead of two inflatable bladders connected by a stainless steel hose. It is available in 18 sizes from 50 to 900mm (2" to 36"). Each Purge Buddy is constructed of a heavy-duty cotton/polyester material impregnated with canvas that is heat resistant to 100°C (210°F).

Purge Buddies inflate easily with a standard bicycle pump, and include a 1.5m (4.8 ft) inflation hose and pull loops for pulling through long lengths of pipe.

Purging products can be used to quickly and efficiently create a reduced oxygen



Purge Buddy

weld chamber where it is critical to avoid oxidation in the weld, such as when welding exotic metals like stainless, Duplex or titanium.

Sumner Manufacturing has served the welding and mechanical contracting industry for nearly a half century, creating material lifts, jack stands, pipe fit-up clamps, welding tools, and material carts that are used in more than 50 countries around the world in numerous industries.

**Sumner Manufacturing Co, Inc – USA**  
customerservice@sumner.com  
www.sumner.com

## Pipes, tubes, flanges, fittings and fasteners

Ambika Steel International is a manufacturer, exporter and supplier of pipes, tubes, flanges, fittings, fasteners, bars, plates, channels, angles and butt weld fittings, in grades of stainless steel, nickel alloy, Monel, Inconel, Hastelloy, Duplex and Super Duplex stainless steel, copper, carbon

steel and alloy steel, as well as non-ferrous materials.

International markets served include the USA, Europe, the Far East, the Middle East, Africa and Australia. Ambika Steel can also supply material with third party inspection by

internationally reputed agencies such as SGS, DNV, Bureau Veritas, EIL, Lloyd's and Bax Counsel.

**Ambika Steel International – India**  
info@ambikasteelinternational.com  
www.ambikasteelinternational.com

## Shot blasting inside large diameter pipes



Cogeim's GRT shot blasting equipment

The corporate philosophy of Cogeim Europe is characterised by continuous research and development of innovative solutions in the field of shot blasting equipment.

As a result of demands from clients, the company's team of engineers is engaged in designing a specific shot blasting plant, named GRT-I series, for cleaning and descaling the inside of large diameter steel pipes.

Plants of the GRT (engineered for treatment and descaling the outside of tubes) and the GRT-I series (for the

inside of pipes) are characterised by precision, fine recovery and recycling of grit, to ensure high productivity.

Their construction allows easy inspection for the periodic replacement of parts subjected to wear.

Cogeim Europe's range of products covers all requirements of blasting works, such as springs treatments, die casting, fasteners and steel structures.

**Cogeim Europe Srl – Italy**  
info@cogeim.it  
www.cogeim.it

# Marking and NDT products

Marktec, established in 1955, specialises in marking products and non-destructive testing products. Customers include companies in the steel, automobile and plant industries.

Features of the company's marking equipment and consumables include high-speed automatic marking, up to 4.6m/sec; high-quality distinct dot-matrix marking which lasts semi-permanently, even in an outdoor condition by using special paint; Drop-On-Demand does not need excess paint or thinner for proper adjustment; special paint is environment-friendly with low toxicity; and no need of thinner reduces vapour diffusion.

Marktec has more than 50 years' experience in manufacturing NDT equipment and relevant consumables such as penetrant testing (PT) products, magnetic particle testing (MPT) products, and eddy current testing (ECT) products.

The company has a global network of engineering and production facilities, with subsidiaries in China, Korea and Thailand. Its sales network is located in Taiwan, Indonesia, Malaysia, The Philippines, Vietnam, Turkey, Austria, Russia, Brazil and Argentina.

**Marktec Corp** – Japan  
cho@marktec.co.jp  
www.marktec.co.jp

# OCTG, line pipe and PVF

Flow Control Technologies is a supplier and distributor of OCTG, steel line pipe, HDPE pipe and PVF to the energy industry worldwide.

The company has global operations working towards the whole oil and gas value chain: upstream (exploration and production, offshore and onshore); midstream (pipelines, compression stations, pumping stations, storage and distribution terminals); downstream (refining, gas processing, petrochemicals and cogeneration); and mining, power generation and metal industries.

The company describes itself as a one-stop source for hard-to-find inventory items and short lead-time production.

Flow Control Technologies has constructed a network of quality vendors such as OEMs, leading producers, recognised mills, master stockists, foundries, castings, extrusions, forgings and machining shops to manufacture complex and critical components. It offers reliable sources to meet certifications established by ASTM, ASME, API, DIN, ECN, ISO and other international industry standards.

**Flow Control Technologies, LLC** – USA  
sales@flowcontroltechnologies.com  
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## Plastlock pipe coupling launched at marine trade fair

Teekay Couplings launched its new Plastlock pipe coupling at the SMM marine trade fair in Hamburg, Germany. Enabling simple, rapid and permanent joining of plain-ended plastic pipes, the product will increase the ability of the marine industry to specify plastic pipes in builds and therefore realise the cost, time, space, weight and simplification benefits of the material.

Key to the new product's capability is its patented dynamic axial restraint system, which locks plastic pipes together without the need for gluing, heat fusing, flanging or pipe inserts.

The system has two pipe wall gripping rings that adapt to higher levels of load as pressure in coupled pipes increases. These rings rotate on the pipe surface under higher loads, increasing the area gripping the pipe and reinforcing the seal.

This design concept follows through into the pipe anchoring mechanism, which includes three anchor rings at staggered heights. A chamber between each ring allows the pipe wall to migrate around the area where each anchor ring engages with it. These features allow for a dynamic lock on the pipe, ensuring all rings are continuously in contact with the pipe wall, resulting in a hold

that permanently locks the two pipes together.

"By simply butting two plastic pipes together and connecting them with a Teekay Plastlock pipe coupling, engineers can create a permanent coupling in an extremely short period of time and with a structure that is often stronger than the plastic pipes it's connecting," said Ian Webb, director at Teekay Couplings. "This should be seen as a significant new product by the marine industry. Plastic pipes have a multitude of potential applications in marine engineering, many of which are likely to prove quietly revolutionary in what they enable designers to achieve."

With methods of plastic pipe joining such as heat fusion or gluing, there is a cure time, which prolongs installation and delays testing and commissioning. If cure times are not closely observed, leaks at the joints can start to appear prematurely. In addition, hot working and fumes created by gluing present risks that have to be mitigated. As a result of these considerations and costs, metal piping is still extensively used in marine engineering.

Plastic piping has relatively low initial cost and can now be more quickly and easily installed, as well as maintained.

There is no possibility of corrosion, so the design process is simplified, as is the resulting installation. It is also much lighter, allowing fuel efficiencies.

Teekay states that Plastlock is likely to enable major design innovations, such as allowing tighter and neater pipework layouts that maximise space – particularly important on passenger ships. Pre-fabricated spool pieces, produced in factory conditions and joined together on site, can now be used to simplify builds. Very low maintenance (or maintenance-free) pipe systems will also be more cost-effective to install.

Plastlock is designed to work with a wide range of plastics used in piping, including polyethylene, polybutylene, polypropylene, PVC-C, PVC-U and ABS. The range includes 15 different sized couplings, fitting pipes with outside diameters from 25 to 315mm.

Couplings to fit plastic pipes outside the standard range can be manufactured to order. Plastlock is engineered to conform to WIS-4-24-01 and BS 851: 2103 standards. Minimum burst is four times working pressure.

**Teekay Couplings Ltd** – UK  
info@teekaycouplings.com  
www.teekaycouplings.com



Esco's Millhog Mini electric pipe bevelling tool

## Electric bevelling – end preps where air is unavailable

Esco Tool has introduced a new portable end prep tool that is suitable for metal fabricating shops and other applications where compressed air is not available.

The Esco Millhog® Mini electric pipe bevelling tool features an 1,800W, 110/230 VAC, 40-60Hz motor and a self-centring draw rod mechanism that rigidly mounts into a tube or pipe ID.

Developed for end prep applications where compressed air is not available, it uses the same wedge-lock blade locking

system as the air-powered model and pulls a thick chip without oils.

Suitable for boiler tubes and pipes from 31.8mm ID to 168.3mm OD, the bevelling tool has two-speed operation: low speed (18 rpm) for stainless steel, P-91 and exotic alloys; and high speed (60 rpm) for mild and carbon steels. It can perform any angle of prep, including compound bevels and J-preps.

**Esco Tool** – USA  
matt@escotool.com  
www.escotool.com

## Oil and gas breakthrough with PEEK stock shapes

Quadrant Engineering Plastic Products (EPP) is advancing industry standards by achieving Norsok M-710 compliance for its Ketron® 1000 PEEK (natural) extruded stock shapes (plates, rods and tubes). Samples machined from the shapes performed successfully when exposed to 10 per cent hydrogen sulphide (H<sub>2</sub>S) in 100 per cent gas phase, as described in the ISO 23936-2:2011 standard.

The new compliance qualifies not only the resin, but also – mandatory in this qualification process – the process and machinery used by Quadrant in its conversion of PEEK (polyetheretherketone) into semi-finished products, offering the highest compliance ranking of the supply chain to the market. This follows the 2013 achievement of Norsok M-710 multiphase compliance for Quadrant's Ketron 1000 PEEK, and is a major accomplishment as the industry prepares for future ISO 23936-1 standards.

All tested materials passed the various Norsok M-710 criteria, which cover such aspects as swell, Young's

Modulus and visual inspection. Based on these results, the qualifying institute, Element™ Materials Technology, was able to certify that Ketron 1000 PEEK extruded plate, rod and tube are resistant to 10 per cent H<sub>2</sub>S sour gas at temperatures up to 200°C.

Announcing the test results, Frank Olmos, global market segment manager oil, gas and petrochemical industry at Quadrant EPP, said, "Access to new reserves and deeper targets poses ever greater performance challenges for materials used in oilfield applications. Meeting the latest Norsok standards is a critical technology innovation criterion for us at Quadrant, allowing us not only to satisfy current industry demands but also anticipate future ones.

"Norsok M-710 Rev3 has not yet been released, and ISO 23936-1 is being revised, so we exposed our PEEK material to the most severe conditions, as specified in the latest draft versions of Norsok M-710 Rev3 and ISO 23936-2:2011. Machined test bars were exposed to 10 per cent H<sub>2</sub>S in 100 per cent gas phase, conditions that are five times more severe than the sour gas



Ketron PEEK stock shapes are aligned with new Norsok M-710 compliance to ISO 23936

phase described in Norsok M-710 rev2."

For the oil and gas production industry, Quadrant supplies its Ketron 1000 PEEK natural stock shapes (produced via extrusion, injection and compression moulding techniques) for numerous applications, including well completion, Christmas trees, control systems, downhole tools and valves.

**Quadrant Engineering Plastic Products** – Switzerland  
 contact@qplas.com  
 www.quadrantplastics.com

## Repairing corrosion damage

Corrosion causes damage to steel pipe, with effects that require immediate action, especially in industrial pipe plants. The SRS steel recovery system from VED, for the chemical and petrochemical industries for pressure pipes, makes it possible to intervene within industrial installations without having to shut down the plant or by interrupting the line.

Depending on the type of pipe repair service, it is possible to restore lines even if they are both externally and internally corroded, with loss of thickness, or if a leak is present. SRS provides a solution without adding weight to the pipe, tee, reducers, elbow and other components, by using composite material reinforcement, glass fibre and/or carbon fibre, and epoxy resin.

The guidelines that provide details about which kind of system to use to repair, and what kind of materials to use on industrial plants, are ISO TS 24817 and ASME PCC-2 standards. VED's materials, software and technicians are also certified as provided by law.

VED has worked in activities related to the world of piping since 1970 with GRP pipe production and installation.

Thanks to the technical design it has always been possible to directly test all the projects and cutting-edge design systems to meet the needs of the customer.

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## Heavy-duty pipe bevelling machines unveiled

TAG Pipe Equipment Specialists has announced the global release of its new line of ID locking pipe bevelling (end prep) machines. The Prep series is TAG's latest innovation in bevelling technology, and has been developed from over 30 years' experience in the industry.

TAG Pipe states that, as a company that prides itself in maintaining its market position, it is constantly evaluating its products, modifying and improving based on customer feedback, experience and requirements.

The flagship machine in the new range is the Prep 24. Covering a range of 7 to 24" pipe, it has been designed to suit the arduous conditions and materials faced by pipe fabricators. With a removable centre shaft for rapid and simple set up in the pipe, the revised, lightweight, yet heavy duty six-point locking system,

together with new motors (3,200W electric or 3.5Hp pneumatic) and an updated gearing system enable the Prep 24 machine to bevel pipe of almost any wall thickness, and any material.

For high volume repetitive work where consistent, high quality machine finish bevels are required, the TAG Prep series of bevelling machines are a solution for any job site or workshop application.

TAG Pipe's range of equipment also includes portable pipe bevelling machines; portable pipe cutting and bevelling machines; pipe alignment



TAG Pipe's Prep 24 pipe bevelling machine

clamps; pipe stands and pipe handling equipment; pipe purging equipment; plate bevelling machines; tube pulling and expanding equipment; and tube to tubesheet welding machines.

**TAG Pipe Equipment Specialists Ltd**  
– UK  
sales@tag-pipe.com  
www.tag-pipe.com



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## Heat exchanger tube restoration

Many failures of heat exchanger tubes occur within the first 6" of the bundle. Frequently encountered forms of such tube end damage are erosion, impingement attack, stress corrosion cracking (SCC) and pitting/crevice corrosion.

The accepted solution for repairing this highly localised tube damage has been full re-tubing, even though usually more than 95 per cent of the tube bundle length remains largely unaffected. This solution is costly and time consuming.

A restoration technique was developed in the mid-1970s that makes use of thin-walled metallic inserts, variously referred to as CTI Shield/Seals™ or sleeves, which are expanded into the existing tube ends, adding years of additional service to the exchanger.

The base material for the 'Shields' typically comes in the form of long, thin-

walled tubing, supplied by a redraw mill. This material is usually manufactured to a concise non-fractional OD, as it needs to fit snugly into existing parent tube IDs. The long 'tubes' are cut to the required length – typically 6" to 12" – and de-burred on both ends. One end receives a 45° pre-flare that is formed with a rotating eccentric flaring head contained within a forming die. The opposite end is machined to create a tapered ID chamfer, allowing the medium to make a smooth transition from the Shield to the tube. Once the Shields are expanded in place (either mechanically, hydraulically or a hybrid of the two), a final flare is performed in order to conform to the tube-to-tubesheet profile.

CTI Shields can be supplied in a number of different alloys, including copper-based, nickel-based, stainless steel and titanium. Choosing the proper alloy is critical and must take into account the

failure mechanism and the existing tube material. This allows plant engineers to select a more noble metal than the existing tube material, while maintaining galvanic compatibility. Shield material is manufactured to ASTM/ASME specifications, but physical properties must be carefully controlled to ensure that the required expansion can be performed.

Although Shields were originally intended for old, damaged tubes in large steam condensers at electric utility plants, the process has successfully been applied to HP feedwater heaters, air-fin coolers, waste heat boilers, etc. CTI states that many chemical and petrochemical facilities have elected to install its Shields into new exchangers that have a history of tube-end damage.

**CTI – USA**  
ctius@cti-ind.com  
www.cti-ind.com

## Growth for Stephens Pipe & Steel

Stephens Pipe & Steel is a chain-link fence manufacturer and distributor with 13 stocking locations throughout the USA, and corporate headquarters in Russell Springs, Kentucky. Company owner Terry L Stephens is always in pursuit of the latest technology and manufacturing practices in the industry, as shown by some of the company's recent ventures.

In 2012 it added its first tube mill, followed by a second in 2013. Both tube mills are located at the Kentucky branch and were on line to produce 33,000 tons of galvanised fence pipe in 2014. A portion of the tonnage produced at the tube mill is used for in-house manufacturing by Stephens for nationally recognised retail products. The remainder is sold into the fence market or other related construction projects.

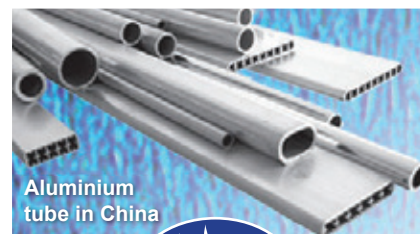
In the last two years Stephens has also added a new wire drawing line capable of producing 24,000 tons per year of strand wire used to weave into

chain-link fabric. The galvanised wire will be used in-house at Kentucky or directed to one of the weaving lines at the various branch locations. The fourth fused and bonded line and third extrusion line were added early in 2014, and took total capability to 12,000 tons per year of colour coated strand wire.

Along with an extensive line of domestic materials, Stephens Pipe & Steel continues to offer products from various countries. Fence specifications and customer demand drive the purchasing division to provide not only domestically manufactured products, but also those that are competitively priced in the foreign market.

After 40 years in business, the company attributes its continued growth and success to a strong management team, dedicated employees and loyal customers.

**Stephens Pipe & Steel, LLC – USA**  
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[www.hatal.com.cn](http://www.hatal.com.cn)

## New flaw detector ranges

Sonatest Ltd has launched the latest range of the Sitiescan and Masterscan series of flaw detectors. Retaining the best features of the established series, the new range has evolved in response to the requirements of users and their applications, combining simplicity of use with improved capability and field-proven reliability.

The user now has the freedom and flexibility to customise their instrument to fulfil their preferences and meet their application demands. All units are field upgradeable. New and standard software options can be customised to meet the needs of the project, as can the hardware of the instrument – either the traditional table-top style case or the more recent hand-held portable case with rotary wheel menu driver.

The flaw detectors offer new features to boost the productivity of the inspector.

Customisable and intuitive menus create a smooth workflow for the operator and, together with improved 4GB of data storage, simplified PC interfacing and new UT-lity reporting software, the post-inspection report writing and result processing is enhanced.

The new range consists of four models: the Sitiescan 500S and D-50 offer entry level broadband UT performance, and the Masterscan 700S and D-70 provide high specifications, including eight filter settings from 100kHz to 22MHz, with 100-450V square wave transmitter and 20m range.

DAC functionality, available on all models, now enables up to three custom DAC curves on-screen, meeting all known worldwide standards. Adjustable DAC curves increase the available dynamic range, and using the same reference indications DAC curves can now be converted to TCG and back again with ease. The unique Split DAC option gives up to three zones of additional gain to permit single-pass scanning of lossy materials and thicker sections.

Angle measurement mode is a new standard feature that simplifies beam plotting. Using the built-in peak detection mode, the beam profile for any transducer can be confirmed in moments. The introduction of a corrosion software option improves reliability over



Sitiescan 500S

spot-thickness measurements and includes a B-scan display function that shows a cross-section of the material being tested based on its wall thickness.

A-scan data can be stored with the thickness readings and transferred to a PC using the new UT-lity Pro data management software. UT-lity Pro also provides the user with the ability to create and manage inspection plans, location notes, historical data and other asset management information.

Typical applications include weld fabrications, corrosion detection, forgings and castings, power generation, composite inspection, bond testing and general UT inspection.

**Sonatest Ltd – UK**  
sales@sonatest.com  
www.sonatest.com

## Carbon and stainless steel pipes and fittings

Petek Boru Sanayi AS has been involved in the production and coating of carbon and stainless steel pipes and fittings, as well as production of polyethylene pipes and fittings, since 1979.

The company's spirally welded steel pipe production line can manufacture pipes between 219.1 and 1,626mm (8" to 64") diameter, and 3.2 to 16mm wall thickness, via continuous on-line ultrasonic test control.

Current production capacity is 18,000 tons per year. From early 2015, the company will be producing up to 2,000mm with the implementation of

a third spirally welded pipe production machine.

Petek Boru is experienced in the external coating of all types of steel pipes with PE (polyethylene), FBE (fusion bonded epoxy), liquid epoxy, bitumen, varnish, primer and wire-mesh reinforced external cement mortar. For internal lining, solvent-free and coal-tar epoxy lining as well as cement mortar lining are the most-used methods. Thermal insulation of pipes is another area of expertise.

The company has EN 10217-1, EN 12201-2 and ISO 9001-TUV SUD

certifications, and can produce according to ASTM A-53 standards.

Products include carbon steel and stainless steel spirally welded pipes and fittings (elbows, tees, reducers and flanges); HDPE 100 polyethylene pipes and fittings; chimney pipes; Victaulic pipes; Sigur-headed pipes; and threading and coupling.

The company also sells natural gas and petroleum pipes.

**Petek Boru Sanayi AS – Turkey**  
export@petekboru.com.tr  
www.petekboru.com.tr



# Polymer technology presents opportunities for pipeline industry

Over the last four years Swagelining, a designer and installer of polymer linings for pipeline and riser systems, has been working with a number of oil companies, resin producers, global subsea EPC contractors, universities and niche manufacturers to develop and qualify an integrated polymer lining system that is expected to expand the service application window for polymer lining.

One of Swagelining's technical experts discussed these developments at the Element Oilfield Engineering with Polymers conference. Allan Feeney, technical operations manager, discussed how plastic is being used as a cost- and time-effective method of delivering internal corrosion protection in carbon steel pipelines and risers.

Mr Feeney said, "Our developments in polymer lining technology have potential to transform the subsea and onshore

pipeline industry, thanks to major cost advantages, significant reductions in fabrication complexity and increased reliability of corrosion protection in long term service. Carbon steel with a polymer liner can now be considered in a range of applications where previously only CRAs would be specified. It changes the limits for the present cost/benefit comparison between the two material options."

As part of its research and development programme, Swagelining has also created the LinerBridge® weldable pipeline connector, which can be used to connect lengths of polymer-lined carbon steel pipelines, and addresses the constraints presented by clad CRA connectors. Mr Feeney's talk highlighted the extensive testing programme that the LinerBridge has undergone and the product's scope to change the landscape of the pipeline industry.

Mr Feeney continued, "We are stretching the reach of polymer lining technology and pushing the boundaries with an intensive pre-qualification testing programme and are about to mobilise a joint industry project. This is aimed at proving how polymer linings can prevent corrosion in carbon steel pipes transporting multiphase products at high temperatures. Our integrated lining system and LinerBridge together are a huge step forward for the pipeline industry and we are working with major operators and pipeline contractors who have realised its potential."

The Integrated Liner System can be installed onshore, or subsea by reel-lay, J-lay, CMDT, HDD or S-lay.

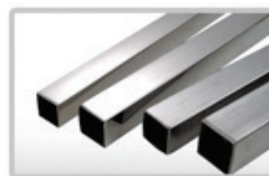
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stainless steel pipe	21.34~508	1.65~4.0	TP 304, 304L, 316L	ASTM A312, JIS G3459
stainless steel tube for mechanical and structure purpose	12~219.08	0.8~3.0	TP 304	ASTM A554, JIS G3446
stainless steel square tube	40×40~100×100	0.8~3.0	TP 304	

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## LEADING MAGAZINES

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## Line pipe coating increases bonding strength with field joints

Bredero Shaw, a division of ShawCor, provides specialised coating systems and related services for corrosion protection, insulation and weight coating applications on land and marine pipelines, including highly engineered corrosion and insulation systems for deep-water applications.

The company has introduced SureBond™ onshore pipe coating, developed to match or exceed the performance of three-layer coating products.

SureBond eliminates the need for an adhesive layer and creates a virtually unbreakable bond with field joint coatings, while maintaining stronger, virtually permanent protection of the

anti-corrosion layer. Formulated with a proprietary molecular structure, the coating is claimed to offer better pipe protection and superior bonding with all field joints.

The SureBond 100 product line performs across a wide temperature range, from -70°C to 100°C, with exceptional low temperature bending, and no delamination during field joint installation even under an aggressive heating profile. It also provides higher surface energy so field joints stay tightly bonded long term.

“SureBond opens up an important new category of line pipe coating,” said Cedric Oudinot, global product line manager at Bredero Shaw, “and now



*SureBond 100 pipes installed for the Audex Rotary project, UAE*

we’ve also engineered a SureBond field joint to deliver a fully integrated pipeline solution.”

**Bredero Shaw – USA**  
solutions@brederoshaw.com  
www.brederoshaw.com

## Tackling steel passivation process challenges

Quaker Chemical Corporation featured its Primecoat™ passivation product line at the 106<sup>th</sup> Galvanizers Association Meeting and Exposition in Jackson, Mississippi, USA.

In the steel making process, the passivation step treats the surface to protect it from the environmental factors that cause corrosion. Depending on the chosen chemistry and regulatory considerations, this process can be approached in several different ways. The Primecoat portfolio offers a product range consisting of hexavalent chromium (Cr6+), trivalent chrome (Cr3+) and chrome-free technology options to meet process needs.

The key benefits of the Primecoat line of products include a transparent appearance, corrosion protection even at higher coating weights, and the added advantages of lubrication and compatibility with subsequent paint films.

The Quaker Primecoat passivation product line complements the range of process fluids, coatings and chemical management services offered by Quaker.

**Quaker Chemical Corp – USA**  
info@quakerchem.com  
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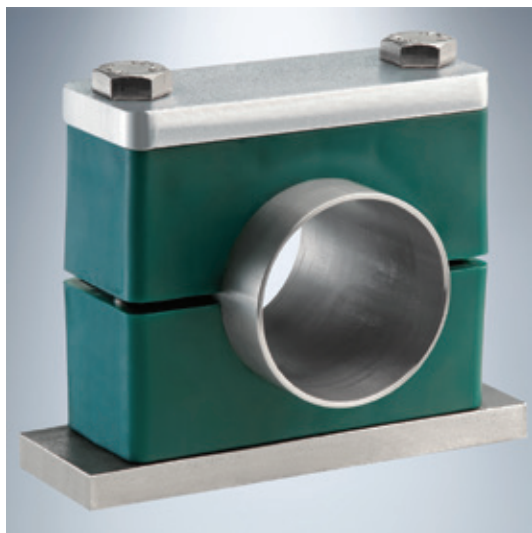


## Lightweight and durable alternative

Stauff has introduced aluminium mounting hardware for pipe clamps for the ship construction industry.

There are numerous benefits of using aluminium in machine and plant construction. Although aluminium is considered to be a light metal with a density of 2.6 to 2.8g per cm<sup>3</sup>, which offers a potential weight saving of up to 66 per cent compared to steel and stainless steel, it still has exceptional strength considering these properties. However, the design and concept of steel constructions can often not be transferred one-to-one, due to the

*Heavy Series pipe clamp with cover plate made of aluminium*



higher malleability and lower residual stress of aluminium components.

An additional benefit is the aluminium's inherent resistance to corrosion. When exposed to oxygen, the light metal forms an oxide coating, which is immediately regenerated upon permeation.

Standard processing methods, such as MIG, TIG and CMT welding, can easily be used on aluminium, particularly on substrates that are also made of aluminium. In some instances, they can be carried out more easily, more quickly and using simpler equipment. The magnetic neutrality can also be a beneficial side effect of using aluminium.

There is an increasing trend towards using special seawater-resistant, high-strength aluminium alloys for components and assemblies on sailboats and yachts. These materials, which contain small portions of magnesium, manganese and silicon in addition to aluminium as the main component, are popular due to their quality and attractive appearance.

In contrast to wood, they do not require continuous treatment or sealing.

For pipe clamps in the Standard Series as per DIN 3015 (Part 1), which are designed for easy and secure fixing of metric or inch pipelines with outer diameters from 6 to 102mm, Stauff offers an aluminium alternative for all dimensions of mounting hardware such as cover plates and weld plates. Even in the Heavy Series as per DIN 3015 (Part 2), certain components and sizes are available in aluminium.

The dimensions and material thicknesses of the aluminium components correspond to the standard surface-treated designs generally made of steel or stainless steel, and therefore facilitate the use of bolts of conventional types and lengths, using the usual recommended tightening torques. Due to the low tendency to corrosion when in contact with aluminium, the use of bolts with the standard Stauff zinc/nickel coating (material code W3) is possible.

The retention forces of the tested pipe clamps in direction of the cover plates, which were tested and documented under controlled conditions at the Stauff in-house laboratories, met the requirements.

**Walter Stauffenberg GmbH & Co KG**  
– Germany  
sales@stauff.com  
www.stauff.com

## Flexible rubber tubing

Artel Rubber Company manufactures and fabricates silicone and rubber tubing and hose. The company's flexible rubber tubing withstands repeated bending, stretching and pulsating forces, and is stocked in various sizes for fast delivery.

The natural latex rubber tubing, for applications requiring repeated flexing and stretching, is used by the health care industry, car and bus/truck companies, large food manufacturers, train companies, MOD, heating (boilers), engine companies, high-end car companies, large equipment companies, marine, construction and wind turbines.

Known for its flexibility, latex is among the most elastic rubber materials in use. Resiliency is another quality of latex tubing, allowing it to maintain memory after repeated elongation, distortion and pulsation. Artel's latex tubing also withstands repeated sterilisation with steam, ethylene oxide or gamma radiation. There are no added plasticisers, coagulants or fillers to migrate and contaminate the stream or cause tube hardening, and the tubing remains flexible even at cold temperatures.

Artel's latex tubing is made from pure liquid natural latex. The tubing

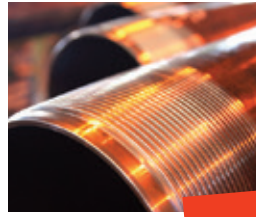
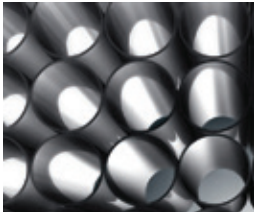
is seamless, uniform and smooth for maximum flow. All ingredients are non-toxic and conform to FDA standards.

A variety of fittings and clamps are also available. Synthetic latex and reinforced wire tubing is offered as a custom item. It is made without the allergen-causing protein found in natural latex.

ISO 9001:2008 accreditation ensures quality for the rail, automotive, food, pharmaceutical and defence industries.

**Artel Rubber Company – UK**  
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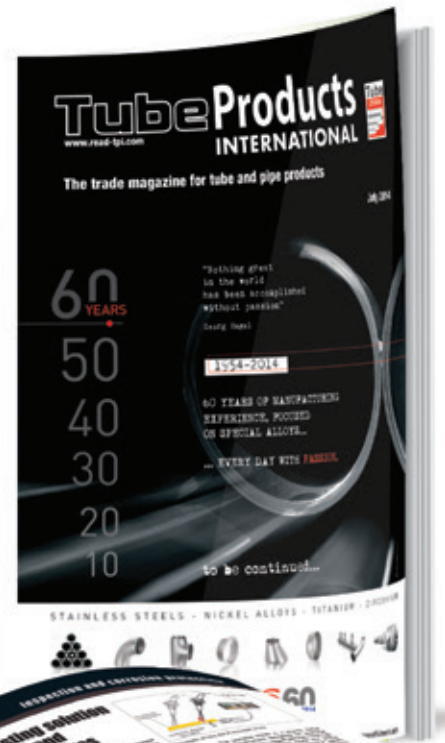
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# Copper tubes



For the acknowledged aristocrat of industrial metals, copper is a surprisingly obliging material. Rigid or ductile as required by the application, equally corrosion resistant in conditions of heat and cold, admirably trouble-free over a long service life – copper holds appeal for manufacturers of a wide array of tubing products.

- Copper-alloy pipes are the first choice for conveying the variety of fluids essential to the oil and gas, chemical, marine, food and beverage, and sanitation industries.
- The machinability and high heat-transfer characteristics of copper tubing make it indispensable for air-conditioning and refrigeration systems.
- The fastest-growing use for copper tubing is in the fire sprinkler systems and fuel gas distribution systems of residential and office buildings.
- Offering ease of installation and related labour savings, copper piping systems adapt readily to ecological imperatives for a reduced building footprint. The list could go on. But a single item is sufficient to make the obvious point: tubing makes the ideal partner for copper – and vice versa.

## Detection systems for copper and copper alloys

Contrôle Mesure Systèmes (CMS) designs, develops and manufactures quality and productivity solutions for all industrial applications, for ferrous and non-ferrous metals.

Its NDT range of products in eddy current and ultrasonic testing methods include high-performance instruments and systems, probes and transducers, accessories, and complete turnkey machines with associated mechanics.

Applications for copper and copper alloys tubes include detection of swimmer position inside the tube during the manufacturing process; eddy current defect detection on double wall tubes; and junction detection on copper alloys on double wall tubes with six eddy current Zet@Micro instruments, managing 12 lines simultaneously. CMS also provides other NDT systems for tubes in steel, stainless steel, carbon steel, titanium and zirconium. All systems meet quality standards such as API, ASTM and DIN, and can be used on-line and off-line.

**Contrôle Mesure Systèmes – France**  
 contactcms@cmseddyscan.com  
 www.cmseddyscan.com

*Junction detection in 12 lines simultaneously, with six eddy current instruments*



## Seamless copper and copper alloy tubes

Multimetals Limited is a manufacturer and exporter of seamless copper and copper alloy tubes with applications for defence, power, oil refineries, ship-builders and repairers, condensers, heat exchangers and ACR.

The company's product range includes seamless tubes of copper, capillary, cupro-nickel, admiralty brass, aluminium brass and other brasses such as bare, low fin and 'U' bend tubes. Copper alloy rods, profiles and wires of alloys such as aluminium and manganese bronze, phosphor bronze, naval brass, copper nickel, nickel silver and tellurium copper have also been incorporated. Multimetals has won 15 Export Excellence awards in India in the last 17 years, with shipment to all the continents across more than 60 countries worldwide.

The company has a range of certifications, including ISO 9001:2008, ISO/TS 16949:2009 and ISO 14001; prestigious works approval by Lloyd's Register; approval by Germanischer Lloyd (GL); self-certification of AD 2000 Merkblatt W6/2 from TUV, Germany; PED certification for Pressure Vessels Directive from TUV, Germany; certificate of recognition by Russian Maritime Register of Shipping; certificate of accreditation by NABL, India; and enlisted with Engineers India Ltd (EIL). Multimetals manufactures other copper-based alloy semis such as tellurium copper and nickel silver in the form of hollows, sections, profiles, rods and wires.

**Multimetals Ltd – India**  
 sales@multimetals.in  
 www.multimetals.in

## HVAC tubing

Ameritube, an ISO 9001:2008 registered company founded in 2004, has rebuilt a 40-year-old copper tubing facility that produced 500 tons per month. Specialising in copper, brass, and copper nickel, the company employs a unique business model to deliver value to its customers, leveraging overseas capabilities, US-based production, and US distribution, making Ameritube a valuable partner for HVAC tubing needs. Specialising in domestically produced copper nickel, Ameritube's knowledge, on-site laboratory and understanding of customers' applications positions the company to be a reliable supplier for the HVAC industry.

**Ameritube LLC – USA**  
 sales@ameritube.net  
 www.ameritube.net

# Copper piping system for hospital expansion project

During the installation of the plumbing and mechanical system at the Nemours/Al DuPont Children's Hospital, the shape of the new building created some unforeseen challenges for the contractor.

The semi-circular design of the new \$215mn, five-storey hospital building in Wilmington, Delaware, USA, required a large-diameter piping system that was lightweight, malleable and easy to work with. Black steel pipe – the material originally specified for the project – did not meet the criteria and was proving to be difficult for the job. As a result, Binsky & Snyder, Skanska USA and AEI Engineers, as a group, decided to contact the Copper Development Association (CDA) for assistance.

"We got a call from the engineer on the project asking about bending copper tube in sizes up to 2½ and 3" so that they could have it wrap around two football-shaped additions," said Dale Powell, project manager and piping application specialist for CDA. "Following discussions with the engineer and installing mechanical contractor, it was determined that the amount of bend required would be well within the limits for copper tube and could easily be accomplished by several local pipe bending companies."

On the advice and recommendation of CDA, the hospital opted to use a copper piping system instead of black steel pipe. Copper tube of various sizes is being installed for domestic hot and cold water service, HVAC systems, and for medical gas distribution. Copper's

performance, durability, versatility, reliability, resistance to corrosion, and ease for bending and fabrication made it the chosen option for this project.

According to Michael Duffy, project manager for Binsky & Snyder, "Given the radius of the building, the bending required and the weight of the piping, it was much easier for us to work with copper than steel pipe."

CDA has released a video case study to highlight the new copper piping system installation at the hospital.

**Copper Development Association Inc – USA**  
[www.copper.org](http://www.copper.org)



*Copper tubes were installed for domestic hot and cold water service, HVAC systems and medical gas distribution*



*The project design team worked at an off-site warehouse to pre-fabricate the plumbing modules*

## PlasmaANNEALER for small copper tubes

Plasmait has introduced a new PlasmaANNEALER for precision, thin-walled and small diameter, tubes. The annealer can be used for tubes made of copper, titanium, alloy, stainless steel and nickel alloy.

Plasma improves annealing speeds on small diameter and small cross-section tubes and improves surface quality of

the finished tubes. Plasma annealing can be performed in-line with tube welding or drawing substituting multiple lines of a traditional tube furnace.

The annealer features compact design, high energy conversion efficiency, very low gas consumption and gives the operator the ability to target mechanical properties with a great degree of

accuracy. Rapid heating and reduced time of recrystallisation results in fine grain size with uniform crystal structure. This in turn improves material formability, and its susceptibility to bending and further drawing.

**Plasmait – Germany**  
[info@plasmait.com](mailto:info@plasmait.com)  
[www.plasmait.com](http://www.plasmait.com)



## Faster joining for HVAC and potable water applications

Victaulic, a manufacturer of mechanical pipe-joining systems, has announced the availability of its grooved solution for copper systems in the UK.

The Victaulic copper connection system complies with EN1057 half hard copper tubing sizes DN50 to DN150 (2 to 6") and can withstand pressures up to 2,450kPa/355psi depending on the type and size of copper tubing. The product line consists of WRAS-approved Style 606 rigid coupling with grade 'EW' EPDM gasket for joining copper tubing and a range of full-flow, standard radius wrought copper fittings supplied with grooves.

"We are pleased to offer our customers in the UK a faster and more efficient solution for joining copper tubing," commented Ian Lawless, vice president UK. "Victaulic is committed to providing innovative solutions that lead to dramatic gains in productivity and the copper connection system is a result of that commitment."

The Victaulic copper connection system is designed for HVAC and plumbing applications, and is claimed to install

twice as fast as alternative joining methods, reducing rework on systems by 10 to 15 per cent when compared to brazed or soldered systems. The flame-free joining method also enhances on-site safety by eliminating toxic fumes associated with brazing or soldering.

The Style 606 rigid coupling provides a union at every joint for fast assembly and disassembly for any on-site rework and maintenance required.

**Victaulic – USA**  
www.victaulic.com



## Detecting metallic inclusions and defects in copper tube

A frequent problem for copper tube producers is the presence of foreign metallic inclusions, which can lead to failures, particularly in fluid transmission applications. Magnetic Analysis Corp's eddy current Multimac® tester with an additional magnetic inclusion detector (MID) absolute channel provides a convenient, reliable solution that can detect inclusions as small as 3mg.

In many cases, the inclusion can come from the material itself, which may contain residual impurities from continuous casting. In other cases, such as finned tube, the inclusions develop during the manufacturing process,

where small particles of metal such as tungsten can break off from fabricating tools and become imbedded in the OD or even through the wall.

The MID option uses principles of flux leakage technology. A magnetic dual-coil test sensor consisting of one primary winding, associated with a secondary arranged in differential mode, and one single absolute winding for detecting metallic inclusions, is used.

A stable DC magnetic field is created and, in its presence, a magnetic particle on or within the non-ferrous product passing through the test coil will distort

this magnetic field. The distortion induces a signal that is detected by the Multimac electronics, analysed and displayed on the monitor.

Additional conditions that can be detected by the Multimac are surface defects on the ID and OD, splits, tears, pinholes, and other irregularities such as indication of a broken disc. Setups and test data can be stored, recalled, printed and transferred to customer networks.

**Magnetic Analysis Corp – USA**  
info@mac-ndt.com  
www.mac-ndt.com

# Small diameter, high precision tubes



*Precision tubes from Sapa*

## Aluminium welded tube solutions

Sapa Welded Tubes, part of Sapa's precision tubing business area, operates in the field of aluminium welded tube solutions for a wide spectrum of HVAC&R, automotive and other industrial products.

The company states that, as an experienced developer and manufacturer of aluminium welded tubes, it aims to meet and surpass customers' expectations.

Sapa's worldwide network consists of four production plants and five sales offices located on three different continents. Customers benefit from this global footprint through efficient logistics, just-in-time deliveries and local service.

A dedicated team of development engineers supports customers in every step of their projects, and helps to select the right alloy, temper, clad

ratios and dimensions for the required application. The company offers a rapid prototyping service and keeps a well-assorted sample stock. Customers can also benefit from Sapa's expertise and in-depth knowledge of metallurgy, joining methods and brazing.

**Sapa Precision Tubing Lichtervelde NV** – Belgium  
weldedtubes@sapagroup.com  
www.sapagroup.com

## It began with “the smallest tube ever made”...

From its founding in 1934, Superior Tube has been working at the leading edge of tubing technology, manufacturing high-precision, small diameter tubes for industries whose products have changed the world.

In its first decade, the company became a major producer of seamless, stainless steel hypodermic needle tubing, contributing to the development of medical practice. It was also granted its first US patent for the design of a cathode component for the thermionic valves on which the radios of the day depended.

Superior Tube took advantage of the 1939 New York World's Fair to demonstrate that it had the capability to meet technological demands beyond those its customers yet required. On display was “the smallest tube ever made” – a tube with a total diameter of just 26/10,000<sup>th</sup> of an inch – which Superior Tube had manufactured in order to demonstrate its advanced capabilities.

Since then, the company has been involved in a series of world ‘firsts’ – from the Manhattan Project, as a result of which the energy of the atom was first harnessed, to the USS Nautilus, the first nuclear-powered submarine; from the Bell X-1, in which Chuck Yeager became the first man to break the sound barrier, to the Apollo Project, which put the first man on the moon.

As the company celebrates its 80<sup>th</sup> anniversary and looks back on its heritage, Superior Tube can also look forward from its position as a manufacturer of precision tubing for safety critical applications across a range of industries where the most exacting performance and reliability requirements are paramount.

With a long history of supporting the development of aviation, Superior Tube is involved in some of the largest and most advanced projects in the industry and is a qualified supplier to aerospace companies for both commercial and military aircraft. Applications for the company's tubing include aircraft

hydraulics, instrumentation and engine/fuel lines.

The company's association with the nuclear industry goes back to the 1930s, when the company supplied the Biochemical Research Foundation with tubes for a cyclotron, a type of atomic particle accelerator, used in early cancer treatment experiments. Since then, the company has been developing and supplying the specialist tubing required for an array of in-core components for the nuclear power industry, including heat exchanger tubes and nuclear control rods.

Superior Tube is also a supplier of tubing for the oil and gas industry around the world, including for some of the most hostile downhole conditions. Precision products are manufactured for a range of applications, from chemical injection and hydraulic control lines, to undersea umbilicals.

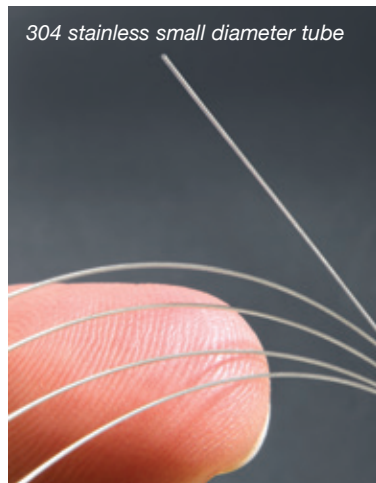
In the medical industry, where everything from strength to weight ratios and microbiological corrosion resistance to fatigue life can be critical, Superior Tube states that it has built up a reputation for the performance of its tubes, which are used for a wide range of applications, including coronary and peripheral stents, heart valve frames and surgical implants.

To meet the increasingly stringent requirements of these markets, Superior Tube has developed the capability to work with some of the

most advanced materials in stainless steels, including corrosion resistant austenitic, super austenitic stainless steels as well as nickel, titanium and zirconium alloys, in a range of sizes and cross section shapes to meet specific applications. Seamless and welded products can be manufactured either as straight lengths of tubing or in coils in sizes ranging from under 0.25mm to 38.1mm (0.01" to 1.5") outside diameter. Finished wall thicknesses can be produced from less than 0.05mm to 3.8mm (0.002" to 0.15").

The applications for Superior Tube's products have a critical nature in common – in many cases failure could cost lives. The company attaches the highest importance to maintaining and demonstrating its commitment to quality; it is ISO 9001 and AS9100 certified, as well as being accredited as NADCAP compliant, and its quality system meets all of the relevant industry-specific regulatory standards.

**Superior Tube Company, Inc – USA**  
info@superiortube.com  
www.superiortube.com



304 stainless small diameter tube



Small diameter tubing made by Superior Tube

## An interview with Charles Ferreira, Fine Tubes Nuclear Products Division

*Can you tell us about your role at Fine Tubes and Superior Tube?*

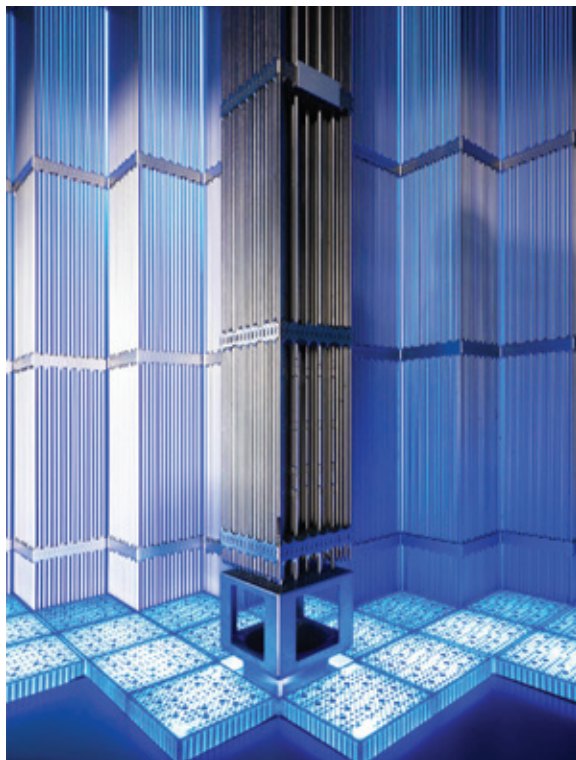
I am part of the nuclear products team and also the business development manager for Western Europe. I'm based in Orléans in France where I head up Fine Tubes sales office and manage the alliance with Superior Tube for Western Europe.

*In October, Fine Tubes exhibited at the World Nuclear Exhibition in Paris. Why did you choose to exhibit at this expo?*

This was the first edition and the first time that Fine Tubes had exhibited at the World Nuclear Exhibition (WNE) in Paris – Le Bourget. We decided to participate because we knew it would give us the opportunity to meet with existing and potential new nuclear clients as well as network with international nuclear EPC players, contractors and suppliers.

WNE covers the entire supply chain, showcasing global nuclear projects and giving both exhibitors and visitors alike a chance to view what is currently happening around the world in this sector. So it was an ideal expo for us to promote Fine Tubes' extensive

*Nuclear fuel element with fuel cans*



experience in supplying the nuclear industry worldwide.

*What were your reasons for exhibiting on the GIIN (Groupe Intersyndical de L'Industrie Nucleaire) stand?*

Fine Tubes is a member of the GIIN, and yes, we chose to exhibit on their stand at WNE. The GIIN works closely with operators in the nuclear sector as well as government agencies, international bodies and organisations responsible for radiation protection, nuclear safety and standardisation, but also on the new build projects. As a member of the GIIN, Fine Tubes is bidding for a number of global projects. We have also contributed to Flamanville French EPR, through the supply of specific tubing according the French construction standard RCC-M.

*Tell us about Fine Tubes' and Superior Tube's nuclear expertise.*

Fine Tubes has been developing and manufacturing tubes for the nuclear industry since the 1970s. We started supplying nuclear fuel cans for the UK's first generation of gas cooled reactors, and as the industry evolved so too did our expertise. Over the years we have manufactured products for AGR, pressurised water, light water, heavy water and fast breeder reactor technologies, and we have the ability to manufacture high-precision seamless and welded tubes in stainless steel, nickel, titanium and zirconium alloys.

Furthermore, our organisation has evolved with the global alliance of Fine Tubes UK and Superior Tube USA to offer much more extended expertise and service for the benefit of our worldwide customers and the success of their projects in the nuclear segment.

*High-precision tubes made by Fine Tubes*



Combined, Superior Tube and Fine Tubes have over 100 years of experience working with nuclear customers to solve tough challenges and achieve tight performance specifications.

With our combined engineering expertise, we can control tube dimensions down to just a quarter the diameter of a human hair, and in the fuel cans of advanced gas-cooled reactors our tubes have to endure temperatures of 650°C, without fail, for five years non-stop.

*Why do you think customers choose Fine Tubes and Superior Tube?*

Customers choose Fine Tubes and Superior Tube because of our excellent record and pedigree in developing and supplying tubing to the very highest specifications for mission critical components in the nuclear island, such as reactor core fuel cans and elements, control rods, wear sleeves instrumentation, steam generators and heat exchanger, condenser, absorber and cooling applications.

Nuclear is an industry in which strict specification compliance and integrity are absolutely critical, and we have a proven track record not only of meeting those criteria but also of developing new solutions to help the nuclear industry advance.

*How important is the nuclear sector to your global business?*

Today, approximately a quarter of Fine Tubes' and Superior Tube's global business is in the nuclear sector, providing tubes for both new nuclear power stations and also aging plants where we are involved in maintenance

# Small diameter, high precision tubes

programmes. It's also important to point out that our nuclear expertise spins off into other areas of the global energy industry, including the alternative energy sector.

For example, we contributed to the highly innovative solar power plant Gemasolar, near Seville in Spain. We developed and produced the corrosion-resistant heat exchanger tubes for the steam generators as well as the high performance tubing that makes up Gemasolar's central tower receiver.

*Where are Fine Tubes and Superior Tube currently working on nuclear projects?*

Our nuclear tubes are deployed in plants in the EU, USA, Canada, India and China. We are also seeing demand from the Middle East, Russia and Brazil.

A report published by the OECD (Organisation for Economic Co-operation and Development) in September 2014 projects that world nuclear electricity generation by 2035 is expected to increase between 7 per cent on the low side and 82 per cent on the high side.



*Tube for fuel cans*

We intend to be an important partner to nuclear customers in that growth.

*How do you add value for your customers?*

First and foremost through flexibility. Flexibility is key throughout the entire business development relationship with our customers where we become an integral part of the technical and engineering team. Our technical skill set and expertise mean that we are not just

able to join the technical discussion but actively lead the innovation process. This way we can add value and reduce cost for our customers.

Neither Fine Tubes nor Superior Tube is an integrated producer of raw material. However, this becomes a strength for us because of our strong relationships with many of the world's best producers.

This gives us the breadth of competitive material options needed to offer the best technical solutions for our customers.

Our company size and global footprint also enable us to offer competitive lead times, and with our production capabilities we can offer seamless as well as welded and redrawn high precision tubing or a combination of both in a wide range of stainless steels, nickel, titanium and zirconium alloys, which makes us unique in our product offering.

**Fine Tubes Ltd – UK**  
sales@finetubes.co.uk  
www.finetubes.com

## SAPA PRECISION TUBING

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Tel. : +32 (0)51 72 97 54

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# The pathway to ASME PCC-1 2013 Appendix A compliance and why it's of critical importance

By Neil A Ferguson, joint integrity leader – Americas, Hydratight Ltd

In November 2013 the American Society of Mechanical Engineers (ASME) released its updated PCC-1 guidelines<sup>[1]</sup> for pressure boundary bolted flange joint assemblies (BFJAs).

Contained within the document is Appendix A, which represents a major change from the previous 2010 release and is considered to be one of the most critically important changes for BFJA technicians, operators, and other industry professionals. Appendix A contains significant guidance for the levels of training and experience required for technicians working on BFJAs.

In the past, BFJAs were not as highly regulated as welded joints, despite the fact that both types of assemblies carry the same risk and are often securing the same process at the same pressures and temperatures.

In fact, as documented by the Society of Petroleum Engineers in its paper number SPE 164981<sup>[2]</sup>, about 60 per cent of leaks have been associated with manual human intervention in process systems. The most common activities involved with associated leaks include:

- Incorrect fitting of flanges, gaskets or bolts during maintenance
- Valves in incorrect position after maintenance
- Breakdown of the isolation system during maintenance

The paper states that a major contributing factor can be explained by a lack of competence of personnel involved in such activities. This conclusion is supported by a recent joint study by the Norwegian University of Stavanger and the Norwegian Oil and Gas Association<sup>[3]</sup>.

According to the study, the Norwegian oil and gas industry realised that the prevention of hydrocarbon leaks is of great importance because they are the most critical precursor event that can lead to major accidents. Yet, careful analyses and new training, methods, and personnel competency can greatly reduce the number of leaks in oil and gas installations.

Specifically, the study states that the number of hydrocarbon leaks on offshore installations on the Norwegian continental shelf peaked just after the year 2000, when more than 40 leaks per year of an initial rate greater than 0.1kg/s were found.

In response, the Norwegian Oil and Gas Association conducted a training and reduction project from 2003 to 2008, which resulted in only ten hydrocarbon leaks greater than 0.1kg/s in 2007.

Also, in 2011 the same association began a new project to further reduce leaks, which shows promising results. So far the study has shown that more than 50 per cent of leaks are associated with the failure of operational barriers during human intervention in process systems.

The single operational barrier that has failed most often is the verification of critical activities.

## Training, experience and assessment

Clearly, in the Americas, ASME has drawn the same conclusions, which has resulted in the new requirements of PCC-1 Appendix A.

According to the document, ASME has highlighted three major levels of qualifications. These require different degrees of training, experience and assessment.

Qualification to ASME PCC-1 can only be claimed once all the three elements of training, experience and assessment have been achieved.

Along with providing comprehensive guidance for the assembly and assurance of new and in-service BFJAs, ASME PCC-1 now outlines in specific detail the requirement for the training of bolted joint personnel, including:

- Qualified bolting specialists
- Qualified senior bolting specialists
- Qualified senior bolting instructors

The requirements for each of these roles are extensive, and renewal and maintenance of qualifications are mandatory. In order to meet the requirements, companies will need to upgrade training procedures and deliver them via a qualifying organisation to address any gaps specific to the ASME PCC-1 training and assessment requirements.

ASME-defined roles	Experience required		
Qualified bolting specialist	6 months continuous	1 year infrequent	2 years sporadic
Qualified senior bolting specialist	2 years continuous	4 years infrequent	8 years sporadic
Qualified senior bolting instructor	4 years continuous	8 years infrequent	16 years sporadic

Table 1: ASME defined roles and experience

Companies such as Hydratight have developed a multi-module training programme that aligns to the ASME PCC-1-2013 requirements:

- Module 1 Foundational Training
- Module 2 Principles of Joint Integrity
- Module 3 Joint Integrity Quality Assurance
- Module 4 Work Place Assignment
- Module 5 Works Scope Management
- Module 6 Joint Integrity Data Management
- Module 7 Supervisor Project Management

However, company managers should note that thorough training will take much longer than previous bolted training programmes to cover all the requirements.

For example, although only five days are required for the foundational module of the training curriculum, the training requirements from ASME include in excess of 200 individual topics.

ASME guidance expects all 200 individual topics to be covered during the training. Some industry managers and contracting companies could potentially misinterpret or dangerously dilute the requirements or try to shortcut the requirements. But to upgrade an individual technician to a bolting specialist will typically take as much as three weeks of training.

Furthermore, certification is not simply a matter of achieving qualifications once, with the expectation that the certification will last a workplace lifetime. All levels include requirements for re-qualification through a renewal programme every three years, as well as specific years of experience, as outlined in Table 1.

ASME defines “continuous” experience as relevant bolting work conducted on a daily basis, with all time worked on bolting assemblies. “Infrequent” is defined as intense periods

of work time as frequent as one week per month, and one-third of each year spent on bolted assemblies. “Sporadic” is defined as less frequent than that, but at least one-quarter of each year spent on bolted assemblies.

To qualify as a qualified senior bolting specialist, training modules 1 to 7 must be completed, coupled with at least two years of practical, theoretical, constant and continuous workplace experience.

Candidates also need documented workplace experience references from supervisors and clients, so they should keep a logbook to validate their work experience when requested by asset owners. The logbook should include details of the various types of joints worked on.

According to ASME guidelines, there are different routes to qualification. Specifically, workplace experience can be gained as follows:

- Before training and assessment
- After training and before assessment
- After training and after assessment

In other words, if candidates have been working historically in the sector they can capture that experience and then do the training.

Conversely, a new technician coming into the industry can do their training first, before obtaining assessments and experience.

After certification, bolted joint specialists and instructors should carry competency cards that can be presented to quality inspectors at any given time. Also included in the PCC-1 guidelines are expectations about quality assurance processes to be conducted by joint-integrity inspectors.

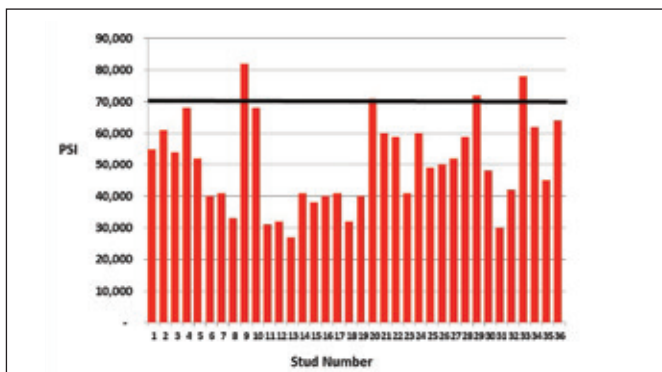


Figure 1: Bolted flange joint assemblies tightened by hand wrenches and new studs

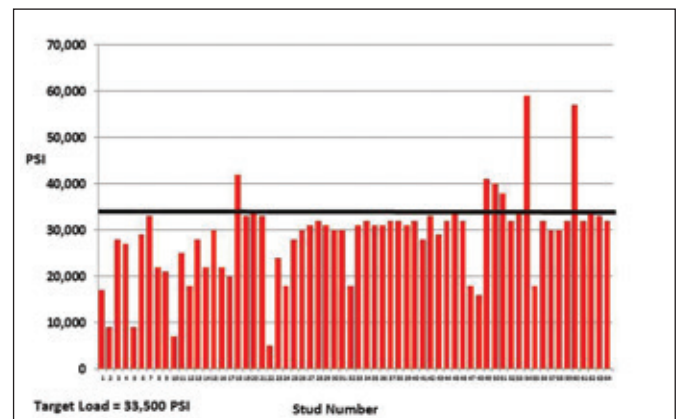


Figure 2: Bolted flange joint assemblies tightened by hand wrenches and used studs

## Industry case study on competency

Recently, a major oil and gas operator<sup>[4]</sup> conducted a case study on human interventions on BFJAs. The operator owns and operates both onshore and offshore assets, and was very keen to reduce leaks and improve safety, so conducted a series of BFJA tightening procedures using a variety of methods:

- BFJA – tightened using uncontrolled wrenches and new studs
- BFJA – tightened using uncontrolled wrenches and used studs
- BFJA – tightened by air impact guns
- BFJA – tightened by controlled torque wrenches
- BFJA – tightened by controlled hydraulic bolt tensioners

In Figure 1, a quantity (see x-axis) of bolts were tightened with hand wrenches and new studs. The operator targeted a bolt stress of 70,000 psi.

As is clearly shown, most of the hand-tightening procedures resulted in the bolts being under-tightened and falling dangerously short of the required load specification. In other cases, bolts were over-tightened, which can cause the bolt to yield, break or be destroyed.

This section of the case study determined that using hand wrenches and new bolts was not appropriate as a controlled method of tightening bolted joints.

In Figure 2, the operator targeted a bolt stress to be set at 33,500 psi. The operator asked technicians to tighten the bolts again and, as can be seen, the results show wide variances.

The average bolt stress with this method was 28,000psi, 15 per cent lower than required, and this can be concluded to also be unacceptable as a controlled bolting process.

The case study also found that re-used studs introduce a significant amount of variation in the final stud loads that are obtained due to friction increases from galling and corrosion in the threads, which can only be corrected by running taps and dies over the threads.

In Figure 3, the operator targeted bolt stress to be set at 45,000 psi. The operator asked technicians to tighten the

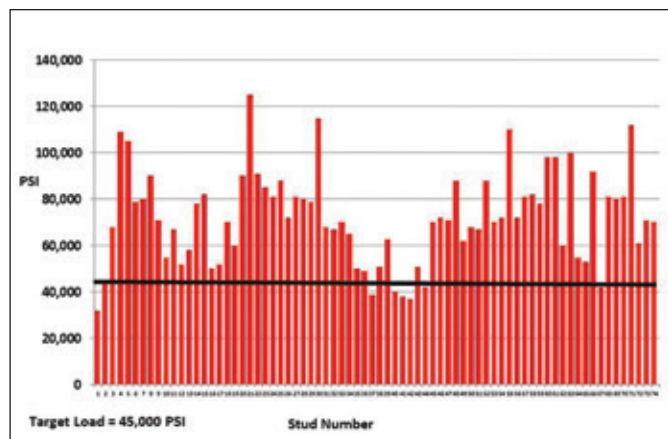


Figure 3: Bolted flange joint assemblies tightened by air impact guns

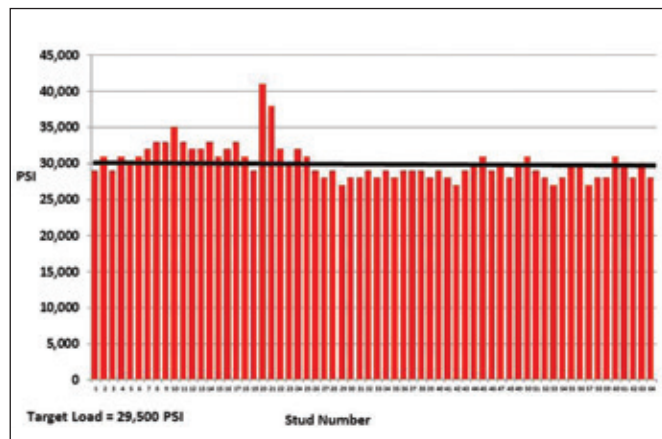


Figure 4: Bolted flange joint assemblies tightened by controlled torqueing

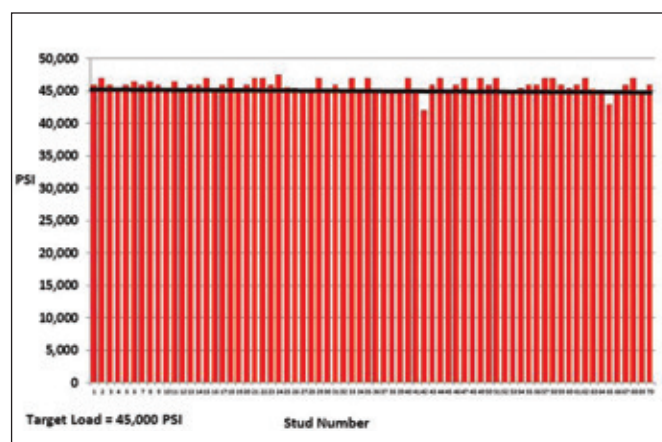


Figure 5: Bolted flange joint assemblies tightened by controlled hydraulic tensioning

bolts using impact guns. The results showed that nearly every joint was over-tightened and potentially yielded.

As a result of this method, the average bolt stress was 72,000 psi or 60 per cent over the targeted value, demonstrating using air guns to tighten bolts is unacceptable as a controlled bolting process.

In Figure 4, the operator targeted bolt stress to be set at 29,500 psi. The operator asked technicians to tighten the bolts using a hydraulic torque method. This was much better than the previous methods, although the average bolt stress was 29,500 psi.

Using the calibrated torque wrench with a gauge resulted in much more controlled bolting process with minimal variation.

In Figure 5, the operator targeted bolt stress to be 45,000 psi. The operator asked technicians to tighten the bolts with hydraulic tensioning. Although the average bolt stress was 47,300 psi, this method proved to be the best and most accurate method of tightening with minimal variation.

Clearly, using hydraulic tensioning for tightening studs provides the highest level of accuracy.

These case study results show the initial effects and results of various methods of tightening BFJAs. Yet technicians know



(or should know) that the initial tightening process results in relaxation effects and therefore further work might be required, particularly if the joint functions at elevated temperatures.

Specifically, after bolts are tightened or loaded to the designated calibrated tightness, the BFJAs immediately begin to relax, embed and settle. The bolt load begins to reduce.

In this case study, during the next six months about 47 per cent of the initial load in the joint was lost. Therefore, technicians should re-tighten the joint generally after 24 hours, although ASME states a minimum of four hours is required, so that the bolted joint does not relax below its sealing point over the longer term.

In Figure 6, the case study's results show that an average stud loaded to 98,000 psi dropped to 69,000 psi within about a month. The bolt was re-torqued but within one month it fell again to 95,000 psi and then continued to decline through operation before fully settling after 18 months.

Obviously, without a second pass, the joint could begin to leak within a short period of time if it falls below the required load to seal the gasket. In Figures 1 and 2, where the bolts were significantly under-tightened at the outset, these observations demonstrate the criticality of proper BFJA tightening methods and tools.

In conclusion and simply stated, only with BFJA technician training, experience and assessments can competency be achieved, safe operations be ensured, and ASME PCC-1 compliance be achieved.

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- [4] AFPM Reliability and Maintenance Conference and Exhibition Sealing and Bolting, Mark Ruffin, Chevron, David Reeve, consultant

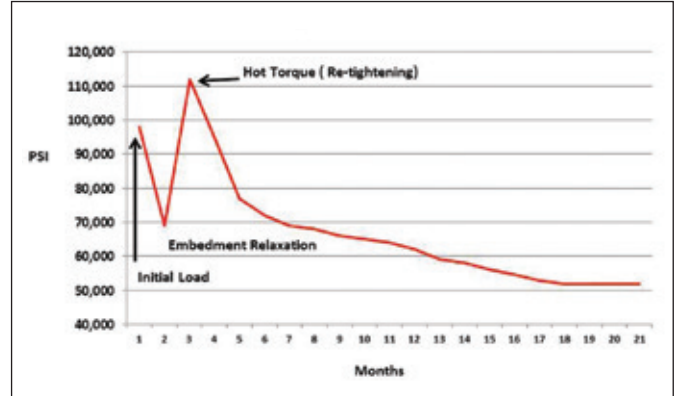


Figure 6: Long term gasket relaxation

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