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Tube Products

INTERNATIONAL

The trade magazine for tube and pipe products



The July issue

Welcome to the latest issue of Tube Products International. This month we have an extended feature on materials handling and logistics, and take a look at the Tube Southeast Asia show in Bangkok, Thailand, which is taking place in September.

We also have an extended article on optical strain measurement and the future for subsea pipeline testing by Ed Fowkes, technical production manager at Exova, UK.

I will be attending Tube Southeast Asia for the first time this year so I hope to see you there. I am looking forward to returning to Asia to meet our readers there as my last trip (to Shanghai) was a few years ago. Thailand's economy has not been helped by the recent slowdown in growth in China but it is still predicted to see a healthy growth in GDP this year, which is encouraging to hear.

Bangkok is a major centre for business, finance and tourism in the heart of Asia so it should be an excellent environment for a trade show to take place and a fun destination for eating the incredible local food and enjoying the vibrant street life.

Next issue we have features on oil & gas, renewable energy tubes, and alloy steels & materials. The issue will be distributed at FABTECH 2015 in Chicago, USA, and Tubotech in São Paulo, Brazil.

The editorial deadline is 8 July and the deadline for advertising is 14 July. You can contact me at rory@intra.co.uk and I will be happy to help with any enquiries about features, stories and technical articles.

Enjoy the magazine.

Rory McBride
Editor



events calendar

2015



16-18 September

Tube SE Asia (Bangkok, Thailand)
International Exhibition
www.tube-southeastasia.com



5-10 October

EMO (Milan, Italy)
International Exhibition
www.emo-milano.com



6-8 October

Tubotech (São Paulo, Brazil)
International Exhibition
www.tubotech-online.com



9-12 November

FABTECH (Chicago, USA)
International Exhibition
www.fabtechexpo.com



17-19 November

Stainless Steel World (Maastricht, Netherlands)
International Exhibition
www.stainless-steel-world.net



17-20 November

TOLEXPLO (Paris, France)
International Exhibition
www.tolexpo.com

2016



23-27 February

METAV (Düsseldorf, Germany)
International Exhibition
www.metav.com



22-24 March

FABTECH Canada (Toronto, Canada)
International Exhibition
www.fabtechcanada.com



4-8 April

Tube Düsseldorf (Germany)
International Exhibition
www.tube.de

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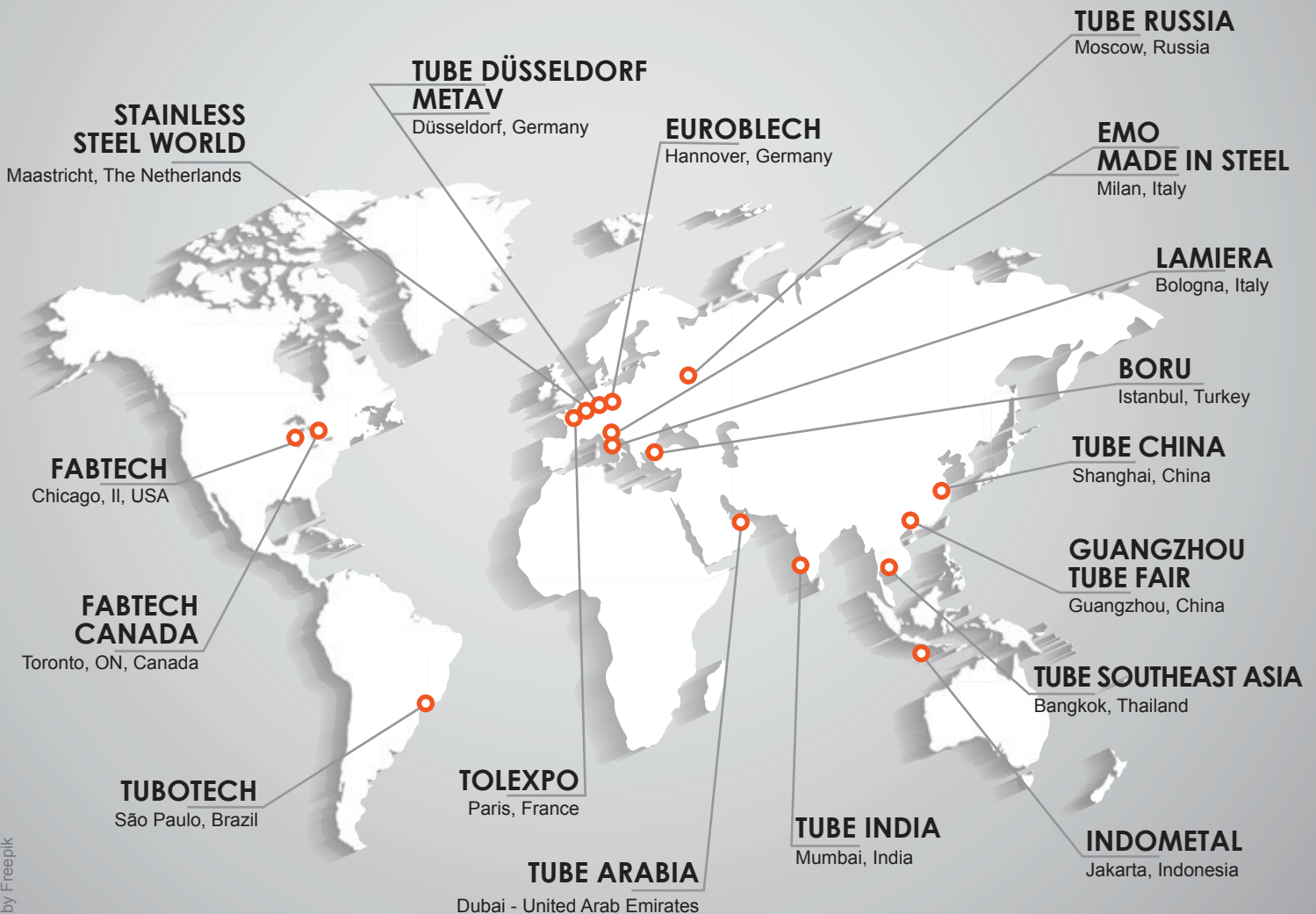
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2015 / 2016 INTERNATIONAL SHOWS

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Map by Freepik



business & market news

Fine Tubes Super Duplex oil and gas tubing

NORSOK Super Duplex approval opens global supply chain

Fine Tubes has received NORSOK approval to supply the oil and gas industry with UNS S32750 seamless straight length tubing in the wall thickness range of 1 to 3.98mm.

The NORSOK M-650 standard verifies through a set of established requirements that a manufacturer has sufficient competence with the relevant material grades, including Super Duplex stainless steel, as well as the necessary manufacturing facilities and equipment. Qualification is valid for five years.

Fine Tubes secured this additional approval by aligning its manufacturing process with NORSOK M-650 requirements and by demonstrating its

compliance through audits undertaken by One Subsea. The process, which was made possible through a frame agreement with One Subsea and TW Metals, brings Fine Tubes into the global supply chain for all One Subsea sites.

Chris Burrige, customer quality engineer for Fine Tubes, commented, "This is great news for us, adding another feather to our NORSOK hat and opening up further opportunities for us. Working in partnership with One Subsea gave us the dialogue we needed to qualify."

The Super Duplex NORSOK approval applies to Fine Tubes' site in Plymouth, UK, and covers a specific routing with

specific equipment. It complements the company's existing 6Mo NORSOK approval and ensures that Fine Tubes has a full range of suitably qualified alloys to supply the industry.

Fine Tubes works closely with its sister company, US-based Superior Tube, across all of its key markets, including oil and gas.

This new global structure enables Fine Tubes to further serve the global demand for approved Super Duplex tubing.

Fine Tubes Ltd – UK
sales@finetubes.com
www.finetubes.com

Connecting new and rehab pipe seals businesses

Trelleborg's pipe seals operation has restructured its business to consolidate all products under two solution areas – pipe seals and pipe rehabilitation. The new approach will enable customers to better utilise Trelleborg's experience and understanding of the whole pipe lifecycle, from manufacturing to installation, maintenance and renovation.

Bill Hagenberg, business unit manager for Trelleborg's pipe seals operation, said, "Whether you're a manufacturer or a pipe repair contractor, our aim is to make completely leak-free pipes, manholes and connectors entirely

achievable. And we will make the process easy from beginning to end, by combining our experience, high performance polymer products and the highest levels of service, under one clear message. Our team of experts has a track record for product innovation, but they know how to solve business problems too. So, no matter the requirement within the pipe cycle supply chain, we will provide solutions that add integrity and longevity to each water and wastewater pipe project."

The strategic re-structure will see all of the company's products consolidated

under the two clear application areas, to enable a more logical and accessible product portfolio. This will include the integration of MaxSeals and NPC seals into the pipe seals category.

Trelleborg's pipe seals operation offers new pipe seals for various pressure and non-pressure pipes and manholes used in potable and waste water applications, as well as no-dig rehabilitation solutions for house connection pipes and sewers.

Trelleborg Pipe Seals BV – Netherlands
www.trelleborg.com

Mexico diving support contract awarded



DSV Swordfish alongside a platform

Harkand has secured a US\$5mn contract in Mexico to perform saturation diving services in support of an offshore pipeline project for construction company Swiber Offshore Mexico SA de CV.

The global subsea inspection, repair, maintenance and light construction company has finalised a joint venture with Arena Servicios de Mexico, a local Mexican company involved in infrastructure projects, as its exclusive vehicle to deliver services in Mexico.

Harkand Arena will complete a wide-ranging scope of work, including the installation of risers and expansion spools to the Ayatsil Field, located in the waters of Campeche Sound. This project will be performed using a portable

saturation diving system to be provided by Harkand on board the client's vessel. The project includes an option to utilise Harkand's DSV *Swordfish*.

All on-shore support, including project management and engineering, will be performed by Harkand Arena personnel from Harkand's new office in Ciudad del Carmen, Mexico.

Arena's director, Eduardo Borja, said, "We have worked diligently over the past ten years as owner's representative for large infrastructure projects. Our interest in expanding into offshore projects brought us to Harkand, a company with a clear direction of becoming the leading IRM and light construction contractor. Harkand has the assets and, more importantly, the

people with the knowledge, experience and reputation of providing innovative and cost-effective solutions to the complex projects this industry brings to the table."

AJ Jain, managing director for Harkand North America and Africa, said, "This is a significant contract win for us, not only as our first under the Harkand Arena name, but it also represents our clients' confidence in our growing diving division team and their combined experience."

Harkand provides offshore vessels, ROVs, diving, survey services, project management and engineering to the oil and gas and renewables industries.

Harkand – UK
www.harkand.com

Ametek acquires Global Tubes

Ametek, Inc has acquired Global Tubes, a manufacturer of high-precision, small-diameter metal tubing, for approximately \$200mn.

The business has annual sales of approximately \$120mn, and is composed of two businesses: Fine Tubes, based in Plymouth, UK, and Superior Tube, based in Collegeville, Pennsylvania, USA.

Global Tubes manufactures customised metal tubing from a wide variety of metals and alloys, including stainless

steel, nickel, zirconium and titanium. Its products are used in highly engineered applications serving the aerospace, energy, power generation and medical markets.

Frank S Hermance, Ametek's chairman and chief executive officer, commented, "Global Tubes is an excellent acquisition for Ametek and a great strategic fit with our Specialty Metal Products business. It has strong positions in a number of attractive niche markets for high-precision, small-diameter metal tubing

used across a wide range of highly engineered applications."

"Global Tubes' metallurgical capabilities, processing capabilities and alloy ranges are complementary to our existing Specialty Metal Products businesses and give us the opportunity to expand our offerings both internationally and in attractive growth markets," added Mr Hermance.

Ametek, Inc – USA
info@ametekpr.com
www.ametek.com

VIP seals Middle East infrastructure deal

UK-based rubber sealing gasket manufacturer VIP-Polymers has started supplying large diameter sealing gasket contracts secured in Qatar.

The contracts won are in excess of £1mn and will continue into 2016.

The predominantly DN1600 large 'Tyton' sealing gaskets enable ductile iron pressure pipe to be joined, allowing the transportation of dirty and clean potable drinking water.

VIP-Polymers is one of the few gasket manufacturers to hold potable water certificates for temperatures up to 70°,

VIP's new vacuum compression moulding press



which was a factor in the contracts being successfully secured.

The investment forms part of the major infrastructure project within Qatar as part of its 2022 World Cup programme, which includes building 174 hotels and 12 stadiums, and the spending of \$4bn on the Qatar-Bahrain causeway and a further \$20bn on expanding the road network.

As a result of winning the contracts, VIP has invested a significant six-figure sum in manufacturing equipment, including a large bespoke vacuum compression moulding press. VIP now has the capability to produce single-piece moulded gaskets up to DN2200.

VIP-Polymers managing director John Millar commented, "The machine comes with many benefits, allowing us not only to increase our manufacturing capacity but to upgrade our capability by investing in the latest technology to ensure that we are able to continue to offer our customers the high level of quality and service they expect from us."

VIP-Polymers has also embarked on a manufacturing joint venture in Ras Al Khaimah in the UAE, in order to service a number of large diameter pipe gasket contracts secured in the Middle East.

The newly formed company, VIP-Polymers LLC, has signed a ten-year lease with options for expansion in Ras Al Khaimah.

The strategic location will enable VIP-Polymers LLC to meet the demands of three continents, providing shorter delivery times for some of its key customers.

In addition to the benefits to VIP's ductile iron pipe customers in the surrounding region, the joint venture is also expected to enable the company to continue to enhance its presence within the buoyant plastic and clay pipe sealing sectors. VIP-Polymers LLC will expand its manufacturing capabilities, with the new facility being equipped with mixers, extruders, compression and injection moulding machines, tooling and finishing equipment.

VIP-Polymers – UK
sales@vip-polymers.com
www.vip-polymers.com

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Fine Tubes gains approval as KNPC vendor



Fine Tubes, a manufacturer of precision tubing for critical applications across a range of global markets, has been approved as a vendor by the Kuwait National Petroleum Company (KNPC) for the supply of ferrous and non-ferrous tubing for its refineries.

The approval remains valid until March 2020.

Established in 1960, KNPC is the national oil refining company of Kuwait and became fully government-owned in 1975.

As owner of the Mina Al-Ahmadi, Mina Abdullah and Shuaiba refineries, KNPC is responsible for oil refining, gas lique-

faction and the distribution of petroleum products within the local market.

Kuwait, a member of OPEC, currently pumps around three million barrels per day (bpd), mainly from maturing oilfields, but plans to invest billions of dollars in exploration over the next five years in order to increase its output capacity to four million bpd by 2020.

The tubing applications that Fine Tubes will be able to offer to KNPC and its qualified suppliers include downhole, hydraulic and chemical injection control lines; control lines in subsea umbilicals; flowline control line tubing for pipe-in-pipe bundles; downhole gauge cables;

control and instrumentation tubing; pressure housings; and hydraulic tubing for control measuring devices and pumps.

Nicholas Head, Fine Tubes business development manager – oil and gas and chemical process, commented, “Securing this approval will not only open up important new opportunities with KNPC, it will also help to strengthen our position across the Middle East region, which is obviously a hugely important market for our oil and gas business.”

Fine Tubes Ltd – UK
sales@finetubes.com
www.finetubes.com

Tubular products for the Power of Siberia

TMK, a producer of tubular products for the oil and gas industry, has started large diameter pipe (LDP) supplies for the Power of Siberia gas transmission system by Gazprom.

Gazprom named TMK as one of the tubular product suppliers for the project following a tender held in March, where the company won a major lot to supply around 12.6bn roubles worth of LDP in 2015-2016.

Shipments by Volzhsky Pipe Plant include 1,420mm K60-grade steel pipes with wall thickness of 21.7mm, external anti-corrosion coating and internal flow coating, operating at over 9.8MPa. Throughout 2015 and in January-February 2016, the company

plans to deliver 152kt of pipe. The Power of Siberia is a key pipeline transport project to deliver natural gas from East Siberian Irkutsk and Yakutia gas production centres to Russia's Far East and China.

The trunkline will be around 4,000km long, with 38 bcm of gas annual design throughput. Construction started in September 2014, with the first section over 2,200km long to link the Chayandinskoye field with Blagoveshchensk by late 2018. More than 1.7MT of pipe will be required for construction in 2014-2018.

“Being engaged in the Power of Siberia project is a major opportunity and a great responsibility for TMK,”

said TMK CEO Alexander Shiryayev. “The new trunkline will be routed in adverse climate and geological conditions across highly seismic and active fault zones, requiring reliable and highly effective pipe solutions, ready to be provided by our company.

“TMK intends to bid for other contracts by Gazprom to supply pipe for the trunk pipeline. We also plan to supply a complete range of seamless casing and tubing pipe for the Chayandinskoye and Kovyktinskoye fields, which are to feed gas to the Power of Siberia.”

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

Welded stainless steel tubes to be manufactured in Chinese factory

Olimpia 80 Srl specialises in engineering and manufacture of complete tube mills for welded tubes.

The company recently installed and put into operation a complete tube mill for stainless steel tubes for a major tube manufacturer in China. The tube mill can produce an OD range from 12 to 50.8mm, in stainless steel quality AISI 300 and 400, Duplex and nickel alloy.

The line includes double decoiler, strip end welder, vertical strip accumulator, strip edge preparation, forming and welding sections, laser generator (6kW) and an Olimpia 80 patented bead grinder. Other features include an electro-magnetic bead roller, sizing group before and after the complete inline bright annealing system, eddy

current control, straightening, laser diameter control system, cut-off by cold saw, and run out and unloading table up to 12m length.

All the machines are engineered and manufactured in Olimpia 80's factory in Italy, including the different roll sets delivered with the tube mill.

Asia is an important market for Olimpia 80's tube mills. The company recently finalised several orders in this part of the world, for projects such as the production of carbon steel tubes in Myanmar, and stainless steel tubes in Bangladesh.

Olimpia 80 Srl – Italy
 olimpia@olimpia80.com
 www.olimpia80.com

New look for website

Inductotherm Group has embarked upon a complete redesign of its corporate and individual company websites.

The primary goal was to create an integrated digital information resource more tightly aligned with the company's corporate strategies and its focus on customer success. Every facet of the corporation, people, products and brands is now smoothly integrated under the Inductotherm Group super brand.

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The Power is Our Stock

Radiodetection wins Queen's Award for Enterprise

Radiodetection Ltd, a UK-based global supplier in the area of detection and inspection of underground utilities, is celebrating being announced as a winner in the International Trade category of The Queen's Awards for Enterprise. The International Trade category requires a business to show it has achieved substantial growth in overseas earnings and in commercial success for its size and sector.

Radiodetection's products for the location of buried utility infrastructures help reduce the risk of injury to personnel and damage to utilities during excavation.

The company develops and manufactures the majority of its products in the Bristol and South Wales area of the UK.

Managing director Kevin Lench commented, "It is such a great honour to receive this globally recognised accolade. It is a reflection of the hard work and dedication of people throughout our business – both from direct employees and long-standing distribution partners – who offer the highest standards of service and support to our customers throughout the world."

Mr Lench continued, "Along with our keen focus on customer service, our exceptionally strong engineering department has been a key factor in the success of our business and in winning the Queen's Award for Enterprise. We have close working relationships with industry associations and regulators in a range of countries, which ensure our products are accepted across the world and help us to grow our international trade."

Radiodetection was founded in the UK in 1970, and now serves utility companies and contractors in more than 60 countries. It offers a wide range of solutions that enable easy detection, inspection and maintenance of underground utilities, as well as helping to ensure personnel safety and prevent accidental damage to services during excavation. The company is a subsidiary of SPX Corporation.

Radiodetection Ltd – UK
www.radiodetection.com



The gC.A.T4 in use, with a Genny4 signal generator on the path in the background



Radiodetection's gC.A.T4 cable avoidance tool

Subsea contract for the Glenlivet project

Building on a previous award by Total E&P UK of the contract for the Edradour Subsea Development, located approximately 75km North West of the Shetlands in UK waters, Technip has been awarded an additional scope for the parallel development of the nearby Glenlivet field.

The Glenlivet specific scope includes fabrication and installation of 12" production pipeline and 6" mono-ethylene glycol (MEG) pipeline complete with a 2" piggy-backed service line. It

also includes supply and installation of steel tube umbilical, manufactured by Technip in the UK; supply and installation of flexible tails from Flexi France, the group's manufacturing plant in Le Trait, France; fabrication and installation of pipeline end manifold, flowline end terminations, flexible tails and rigid well tie-in spools, as well as the installation of CPI templates and manifolds; and rock dumping and pre-commissioning.

Technip's operating centre in Oslo, Norway, will execute the project. Vessels

from the Group fleet will perform the installation in the summer seasons of 2016 and 2017. The pipelines will be fabricated at Evanton, UK, and installed by Technip's vessel *Deep Energy*.

Knut Boe, president North Sea Canada, stated, "It is very good to see the benefits of the synergies between these two projects being realised by Total's award of this extra scope to Technip."

Technip – France
www.technip.com

Helping water conservation in California

Norma Group, a specialist in engineered joining technology, is supporting the regulation on sustainably reducing water consumption in California with its products.

Due to the ongoing massive drought, Jerry Brown, the Governor of the US state of California, has declared a state of emergency. Cities, businesses and private households have to reduce their water consumption by 25 per cent until the beginning of 2016. Landscape irrigation accounts for up to 80 per cent of household water consumption, according to the California Environmental Protection Agency.

“The regulation in California is significant as it accelerates the trend toward more efficient irrigation solutions, especially drip irrigation systems which are growing in importance,” said Mike Gummesson, CEO of National Diversified Sales Inc (NDS), a subsidiary of Norma Group SE. “As a result, innovation and growth in these markets will accelerate. We



support our customers in the conversion from conventional to more efficient watering systems and educate them about ways to conserve water. In addition, NDS drainage systems help to capture rainwater and other urban runoff water and return it back to aquifers.”

NDS provides drainage, irrigation and water infrastructure in the field of water management, with a portfolio of more than 5,000 products.

Norma Group SE – Germany
www.normagroup.com



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Major expansion plans for Metalube laboratory

Specialist lubricant manufacturer Metalube is to more than double the size of the laboratory facilities at its headquarters in Manchester, UK.

Metalube's new facilities will be purpose built and fitted with the latest specialist laboratory furniture



The company plans to considerably increase its laboratory capacity to 126m². The new, fully equipped facility will be used for both quality control and research and development.

Technical director Chris Nettleship said, "We create the best possible lubricants available in the market and our laboratory team plays a huge part in this. We have in recent times increased the number

of chemists within Metalube by 25 per cent. We can now give them an outstanding 21st century laboratory to work from."

Metalube manufactures a range of non-ferrous drawing oils and maintenance lubricants, as well as a variety of corrosion protection and forming oils.

The exporter has offices in China, India and Brazil.

Metalube Ltd – UK
post@metalube.co.uk
www.metalube.co.uk

Technology development centre

Pipeline Research Council International (PRCI) has opened its new Technology Development Center (TDC) in Houston, Texas, USA. PRCI, a global collaborative research development organisation for the energy pipeline industry, will utilise the TDC for research and technology development to ensure the safety and efficacy of global pipeline infrastructure.

Greggory Bigger, CEO and chairman of Save The World Air, Inc (STWA), a developer of integrated technology solutions for the energy industry, commented, "I would like to congratulate PRCI, both personally and on behalf of STWA, on the completion of the Technology Development Center in Houston. Having worked closely with PRCI in the past, we can attest to the organisation's position as an

independent, third-party entity that leads the industry forward through the testing, development and optimisation of innovative pipeline technologies. I have no doubt that the TDC will be a resounding success."

STWA was contracted by PRCI in 2011 for testing of the company's Applied Oil Technology™ (AOT) system for reducing the viscosity of crude oil. The tests, conducted in 2011 and 2012 at the US Department of Energy's testing center in Wyoming, USA were co-funded by PRCI and STWA. The test results found that AOT successfully reduces crude oil viscosity, pipeline line-loss and pump motor power consumption.

Mr Bigger continued, "I thank PRCI, and especially director of research

operations Michael Whelan, for their support of STWA over the years. PRCI partnered with the company as we built out our early-stage AOT technology, and the successful testing at the DOE's Rocky Mountain Oilfield Testing Center would not have been possible without Mr Whelan. We plan to reengage with PRCI in late 2015 to further optimise our entire technology portfolio, including both the AOT and STWA Joule Heat solutions. We continue to make great strides in business development and technology advancements as we move forward with our ongoing transition from R&D to commercialisation, and utilising the advanced capabilities offered at the Technology Development Center will allow us to provide additional enhancements to STWA's offerings as we look ahead to technology deployments."

Save The World Air provides the global energy industry with patent-protected industrial equipment designed to deliver measurable performance improvements to crude oil pipelines. Developed in partnership with crude oil production and transportation entities, STWA's solutions address the capacity inadequacies of domestic and overseas pipeline infrastructures that were designed and constructed prior to the current worldwide surge in oil production.

Save the World Air, Inc – USA
www.stwa.com

Nadcap accreditation for NDT

Oscar Production Group Ltd has received Nadcap accreditation for non-destructive testing, chemical processing and heat treatment. This important achievement will allow the company to extend supply of its products for customers in aerospace and defence industries around the world. The accreditation confirms Oscar's ongoing commitment to quality by satisfying customer requirements and industry specifications.

Oscar Production Group Ltd – Ukraine
mail@oscar-tube.com.ua
www.oscar-tube.com.ua

SoCalGas pursues expanded pipe replacement and repair programme

Southern California Gas Co (SoCalGas) is seeking to accelerate its pipeline replacement and leak repair programme, and has submitted a funding request with the California Public Utilities Commission (CPUC). If approved, it would enable SoCalGas to repair all currently identified, pending non-hazardous leaks on the SoCalGas system by the end of 2018 or earlier.

The company is also filing a report with the CPUC that outlines the utility's leak-management practices in compliance with Senate Bill (SB) 1371. The new California law seeks to reduce methane emissions from natural gas transmission, distribution and storage systems.

It also requires utilities to report information about leak-management practices, new leaks, leaks being monitored, leaks scheduled for repair

and a 'best estimate' of gas loss due to leaks. "SoCalGas has a longstanding commitment to reducing methane emissions, and we are proud to have one of the lowest natural gas leak rates of any utility in the nation," said Bret Lane, chief operating officer of SoCalGas. "We are working to make our system even safer, tighter and part of the solution to improving the environment."

Over the past year, SoCalGas has been working with major universities, regulatory agencies and environmental organisations to refine its approach in methane detection technology and to raise public awareness of its efforts to reduce methane emissions.

As part of this effort, the company has published an interactive map that allows the public to view methane indications and non-hazardous gas leaks located

near its pipeline system. The map can be viewed on the company's website, by searching for "methane map".

Federal regulations consider a non-hazardous leak to be one that is far from an ignition source and away from a structure where the gas can accumulate to dangerous levels. All hazardous leaks are repaired immediately and do not appear on the map.

With safety as a core priority, SoCalGas focuses ratepayers' funds toward strategically replacing pipe as prioritised through engineering studies. By this infrastructure strategy, SoCalGas has succeeded in maintaining safety and reducing its rate of overall methane emissions.

Southern California Gas Co – USA
www.socalgas.com



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30" pipe to be manufactured in China

Nakata has received its first order for the newly developed ODF (orbital die forming) pipe mill from a Chinese pipe manufacturer. The pipe size is up to 762mm OD, and 25.4mm wall thickness, and most of the products are API line pipes up to X80 grade.

Differing from the conventional roll forming process, ODF is an innovative technology in which movable dies are combined to form a continuous tool

surface and work like a huge roll or moving press machine. This concept makes the forming process very gentle and stable, resulting in adaptability to a wide range of product sizes and material properties, excellent surface quality and lower work hardening level in the material.

Both steel plates and coils can be used as raw materials in this production line, and the pipes can be produced in 'plate-by-

plate' or 'coil-by-coil' style respectively. This hybrid production process allows the user to have flexibility in selecting raw materials corresponding to the size of lot or dimensions of product. Nakata has a 4" ODF test machine in its shop, with which the customer can verify the performance of the forming process.

Nakata Mfg Co, Ltd – Japan
sales@nakata-mfg.co.jp
www.nakata-mfg.co.jp

A successful start to 2015

Tube Developments has reported a successful first quarter of 2015, with the award of contracts around the world, and the hope of continuing this success during the rest of the year.

The company supplied process pipes for the Total Mariner project. The Mariner is the largest new offshore

field development in the UK in over a decade, and is located on the East Shetland Platform of the UK North Sea, approximately 150km east of the Shetland Isles. Tube Developments also supplied structural tubulars to the Petrobras Iracema Sul project, where Saipem secured the EPCI contract.

In January, the company completed the evaluation procedures for Saudi Aramco and renewed its vendor and stockist approval status for the supply of pipes and tubulars.

Tube Developments Ltd – UK
info@tubedev.com
www.tubedev.com

Polysoude opens its doors in Nantes

Polysoude held open days at its Nantes, France, headquarters in June. Over the two days, the company presented its latest developments in the fields of welding and weld overlay cladding using the TIG and TIGer (GTAW) process. Professionals and decision-makers from all industries who use welding in their line of business were invited to come and discover how they can optimise their productivity and guarantee a quality product. Representatives of the specialised trade press were also welcome.

Polysoude has always aimed to optimise its customers' productivity while improving the quality of their products by developing new solutions that tackle the most complex issues. Workshops on different topics, described below, offered opportunities to exchange information on the various types of mechanised and orbital TIG/TIGer welding and cladding applications. These applications are commonly used across a wide range of sectors such as

conventional and nuclear power plants, solar farms, oil exploration, aerospace, processing of foods and pharmaceutical products, water treatment, etc.

For orbital welding, it can be easily demonstrated that using the hot-wire TIG process with an open head significantly increases welding speed, and it can be used to join thicker tubes than the cold-wire TIG process. Automation via a program recorded in the power source guarantees flawless production.

For very thick-walled parts, another way of increasing productivity in addition to the hot-wire TIG process consists of reducing the groove, and therefore the volume to be filled by the weld. The use of an open-type carriage welding head equipped with a narrow gap torch limits the quantity of metal to be deposited. Additional gains are made on preparing the groove by limiting the loss of material and the machining time. This technology guarantees a quality weld thanks to the TIG process and

is perfectly reproducible by virtue of automation.

When high quality welds are required, orbital TIG welding is a suitable technology for tube-to-tube or tube-to-tubesheet welding applications. With or without filler wire, this is a stable, reliable process that can be used on steel, stainless steel, titanium and nickel and aluminium alloys, for example. The development of a welding programme guarantees a high-quality weld through automation. The welding cycle can be repeated as often as necessary with the same result.

Orbital welding equipment can be used in difficult conditions such as a confined space or where there is a lack of accessibility or visibility. On all of these machines, the welding parameters can be checked and compiled into a printable protocol for guaranteed traceability.

Polysoude – France
www.polysoude.com

First hydraulic pipe recovery system delivered

Churchill Drilling Tools, the provider of Dart Activated Strings™, has announced that the first of its new HyPR™ HoleSaver™ hydraulic pipe recovery systems has been delivered. Two major operators have now selected the tool for projects in the North Sea, and another is planning imminent deployment in the Gulf of Mexico. Some onshore operators have also identified potential scenarios in which the system has applications.

Developed by Churchill Drilling Tools towards the end of 2014, the HyPR HoleSaver is claimed to be the world's first hydraulic pipe recovery system. It is said to be faster, simpler and safer than using traditional recovery methods. Director Mike Churchill said, "The first orders for the HyPR HoleSaver confirm the need for simple technology that lowers the cost of drilling, and we are delighted to have received such a



Churchill's HyPR HoleSaver hydraulic pipe recovery system

positive reaction so quickly. An operator who has concerns over stuck pipe can effectively insure against excessive costs by running the HyPR HoleSaver in the drillstring, to recover the programme more quickly should things go wrong. The low cost of running the tool, which requires no specialist mobilisation, combined with rapid recovery will provide significant cost reductions in these challenging wells."

The HyPR HoleSaver consists of a full-strength sub positioned in the drillstring, which is severed in approximately one hour. A jetting dart is launched and lands inside the sub and, after a relatively short period of pumping, the sub parts easily under a small loading, offering

a perfect fish-neck or immediate side-track cementing options. Mr Churchill added, "Stuck pipe incidents cost the drilling industry millions, if not billions of dollars each year. With the sector tightening the purse strings even further, it's paramount to ensure cost-effective solutions are established to mitigate the burden inherently associated with stuck pipe."

The HyPR HoleSaver can be run singly, normally above a circulation sub, or in multiples throughout the string to maximise coverage options.

Churchill Drilling Tools – UK
info@circlub.com
www.circlub.com



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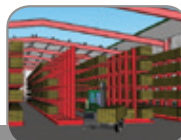
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Resin achieves Norsok M-710 compliance for oil and gas applications

Solvay Specialty Polymers, a global supplier of high-performance thermoplastics, announced at the Offshore Technology Conference that semi-finished tubes made of its KetaSpire® KT-820 NT PEEK resin achieved Norsok M-710 compliance for use in highly demanding oil and gas applications.

The M-710 standard specifically defines requirements for critical non-metallic (polymer) sealing, seat and back-up materials for permanent sub-sea applications.

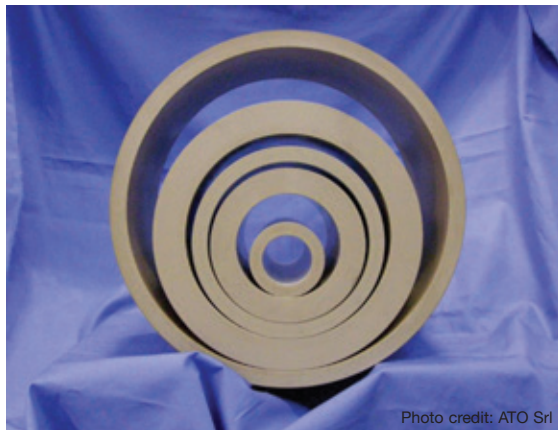


Photo credit: ATO Srl

Semi-finished tubes manufactured from KetaSpire KT-820 NT PEEK resin achieved Norsok M-710 compliance

ATO Srl, a supplier of sealing components, manufactured the semi-finished tubes using its Stabil hot compression moulding process. Following the certification of KetaSpire PEEK, ATO unveiled plans to specify the polymer for additional products distributed under its Stabil label, including bearings, seals and back-up rings that target critical oil and gas equipment and installations.

Element Hitchin, an independent testing and analytical laboratory (formerly known as Materials Engineering Research Laboratory, or MERL) evaluated KetaSpire KT-820 NT PEEK according to Norsok M-710 multi-phase sour service conditions in fluid at 10 per cent hydrogen sulphide, 5 per cent carbon dioxide and 85 per cent methane at 10 MPa (100 bar), and at test temperatures between 200°C and 220°C (392-428°F).

The exposure testing spanned 49 days and periodically measured swelling and tensile properties of the KetaSpire KT-820 NT resin samples. The tests showed Solvay's

PEEK delivered very good resistance to sour gas and no measurable chemical deterioration during the test period.

"As the sealing industry continues to specify very high performance, quality and durability, we are excited to collaborate with Solvay as an innovative global supplier of PEEK resins," said Davide Polloni, business export manager for ATO. "Our relationship ensures access to cutting-edge new materials as well as Solvay's industry-leading technical expertise as ATO seeks to develop advanced solutions for challenging oil and gas applications."

KetaSpire PEEK offers a combination of strength, toughness and fatigue resistance, with a continuous-use temperature of 240°C (464°F). It also exhibits high purity and consistent quality in processing and part performance. Glass fibre-reinforced and carbon fibre-reinforced grades provide a wide range of performance options for demanding applications.

Solvay Specialty Polymers – Belgium
www.solvayspecialtypolymers.com

ATO Srl – Italy
ato@ato.it
www.atoitalia.com

Quanta selected for Maurepas Pipelines Project

Maurepas Pipeline LLC, a subsidiary of SemGroup Corporation, has selected Quanta Services for the Maurepas Pipelines Project. Quanta subsidiaries, including Price Gregory International, QPS Engineering and Quanta Capital Solutions, assisted with the development of the project for SemGroup, and will provide engineering, procurement and construction services.

Engineering, permitting, right of way acquisition and materials procurement have commenced. Construction is expected to begin in the third quarter of 2015, with completion expected in

the third quarter of 2016. The Maurepas Pipelines Project has three separate pipelines measuring approximately 100 miles in aggregate, consisting of 24", 12" and 6" diameter pipe, and three new pumping stations.

The project spans the Ascension, St Charles, St James and St John the Baptist parishes in Louisiana, USA. Once completed, the pipeline system should enable local refineries to integrate and optimise their operations, and should provide the refineries with pipeline access to domestically produced crude oil. Quanta Services

is a specialised contracting services company, delivering infrastructure solutions for the electric power and oil and gas industries. Quanta's services include designing, installing, repairing and maintaining energy infrastructure. In certain markets Quanta licenses fibre optic telecommunications infrastructure, offers lit network management services and provides related design, procurement, construction and maintenance services.

Quanta Services, Inc – USA
info@quantaservices.com
www.quantaservices.com

Sutor receives new steel pipe export order for Saudi Arabia

Sutor Technology Group, a China-based manufacturer and service provider for fine finished steel products used by a variety of downstream applications, has announced that its subsidiary, Ningbo Zhehua Heavy Steel Pipe Manufacturing Co, has entered into a new contract to supply approximately 3,000 metric tons of large-diameter submerged-arc straight seam welded pipes for a dredging project of Saudi Arabia National Oil Company.

Lifang Chen, chairwoman and CEO of Sutor, commented, "The products

to be supplied under this contact are all high-valued welded pipes that meet American Petroleum Institute standards.

"We are proud of Ningbo Zhehua's advanced technologies, which enable us to supply steel pipes for national projects both in China and abroad."

The company exports steel pipes to overseas markets such as the Far East, the European Union, Southeast Asia and Africa, and last year received European Union Pressure Equipment

Directive and Construction Products Regulation certificates. Sutor uses a variety of in-house developed processes and technologies to convert steel manufactured by third parties into fine finished steel products, including hot-dip galvanised steel, pre-painted galvanised steel, acid-pickled steel, cold-rolled steel and welded steel pipe products. The company also provides fee-based steel processing services.

Sutor Technology Group Ltd – China
contact@sutorcn.com
www.sutorcn.com

New oil and gas VP at Victaulic

Victaulic, a global manufacturer of mechanical pipe-joining systems, has appointed Ian Lawless as vice president, oil and gas, Europe.

Mr Lawless, who moves from his previous role as manager of Victaulic's UK business, will focus on bringing effective piping solutions to owners, installers and engineers in the growing European oil and gas market. With eight years' service at a senior level within Victaulic, Mr Lawless has

experience of working in Europe, Canada, Australia and Asia Pacific. He has a proven track record of working with key stakeholders to specify products that help reduce installation time, enhance on-site safety and ease future maintenance.

"Refineries, biofuel and chemical plant projects that we've been involved in have demonstrated the many advantages of using our mechanical pipe-joining systems," commented

Mr Lawless. "Up to 50 per cent of piping in these plants is for utility services, for which Victaulic products are well suited, so there's great scope for efficiency gains. I'm looking forward to working with EPC companies and owners in the oil and gas sector to help them achieve maximum benefits on their piping projects."

Victaulic – USA
www.victaulic.com

JMC announces investment in VectorBloc

JMC Steel Group is making a significant investment in VectorBloc, a structural connection system for modular construction developed by Vector Praxis.

"JMC will be providing capital and technical expertise for the support and development of the VectorBloc system," said Barry Zekelman, chairman and CEO of JMC Steel Group. "This investment is paramount for the partnership of both of our companies. By investing in Vector Praxis and their VectorBloc system, JMC is enabling the development of exciting new opportunities for the structural steel industry."

The main purpose of JMC's investment in Vector Praxis is to develop the VectorBloc system's potential in the modular construction marketplace. Since VectorBloc uses hollow structural sections (HSS) as the structural members of the modules, it is an ideal partnership for JMC as the system promotes the use of HSS in modular construction.

"We are extremely proud of the fact that JMC has thrown its support behind VectorBloc," said Julian Bowron, president of Vector Praxis and VectorBloc. "JMC's vision and engineering support will be key as the

VectorBloc connection system becomes a vehicle for scaling the modular industry through supplier collaboration."

Vector Praxis specialises in high-end architectural fabrication founded on a multi-material, multi-process skill set. The company also designs and produces one-of-a-kind tooling and fixtures.

JMC Steel Group – USA
info@jmcsteel.com
www.jmcsteelgroup.com

Vector Praxis Inc – Canada
www.vectorpraxis.com

Pipe manufacturer installs straightener

Fives Bronx Ltd UK has agreed and signed a contract with a major Scottish pipe manufacturer, for the supply of a new straightening installation. The fully automated line has been purchased to process pipes in the range from 4½" to 16¾" diameter and at temperatures of up to 750°C.

Jon Dunn, managing director at Fives Bronx Ltd, commented, "This

new contract represents the eleventh straightening line that we have supplied to this internationally based client, worldwide, in the past ten years and shows the confidence that they have both in our equipment technology and our company.

"The new contract is to replace a Bronx line that was originally supplied back in 1969, confirming the longevity

and reliability of the Bronx brand, throughout the decades. The latest line will provide the client with a 21st century solution to their straightening requirements and is due to be delivered to their factory during the first quarter of 2016."

Fives Bronx Ltd – UK
fivesbronxuk-sales@fivesgroup.com
www.fivesgroup.com

Steel tubes from Taiwan

Kusakabe Electric & Machinery has supplied and commissioned two pipe mills in Taiwan for CHS Steel in conjunction with several other suppliers. This new installation is for a state-of-the-art operation and will make it the most advanced in Taiwan.

The 4" tubing line manufactures tubes from 60.3 to 114.3mm, up to 10.5mm thick, and steel grades with tensile yield strengths up to 750MPa.

The line starts with the uncoiler and shear welder, vertical looper (strip accumulator) all the way through to the hydrostatic pressure testing, UTS, coating and packing in a continuous process. The

tubing line itself incorporates Kusakabe's vertical looper (strip accumulator), flying strip shear and sub-based stands with independent drive to each shaft for quick changeover and improved drive. One squeeze stand is provided in a four-roll configuration, with internal and external weld bead removal and swarf chopping.

After the weld seam annealing and cooling stage a rotary sizing mill sizes the tube to the customer's requirements before it is cut to length by a three-bladed rotary cut off.

The 13" casing line manufactures tubes from 114.3 to 355.6mm, up to 16mm thick, and steel grades with tensile yield

strengths up to 750MPa. The line starts with the uncoiler and shear welder, horizontal strip accumulator all the way through to the hydrostatic pressure testing, UTS, coating and packing in a continuous process.

The pipe mill itself incorporates Kusakabe's latest universal forming, followed by three cassette fin passes and a five-roll squeeze stand, and internal and external weld bead removal and swarf chopping.

Kusakabe Electric & Machinery Co, Ltd – Japan
sales@kusakabe.com
www.kusakabe.com

Handheld pipe/tube straightener

The new handheld pipe/tube straightener from Kwix UK is an efficient handheld manually operated tube straightening tool that easily and accurately straightens light wall tube from a coil or any other tube.

The low cost handtool will straighten all types of coiled tubing – copper, aluminium, stainless steel and brass. It maximises the flow, simplifies installation, reduces labour costs and material usage, accelerates the flow for better efficiency and gives a professional looking finish. The straightening process also strengthens the tube.

Kwix UK manufactures the Kwix tool for all popular coiled tubing with outside diameter sizes in both metric: 4, 5, 6,



8, 10, 12 and 15mm, and imperial: ½", ¾", 1", 1¼", 1½", 1¾", 2", 2¼", 2½", 2¾", 3", 3½", 4", 4½", 5", 5½", 6", 6½", 7", 7½", 8", 8½", 9", 9½", 10", 10½", 11", 11½", 12", 12½", 13", 13½", 14", 14½", 15", 15½", 16", 16½", 17", 17½", 18", 18½", 19", 19½", 20", 20½", 21", 21½", 22", 22½", 23", 23½", 24", 24½", 25", 25½", 26", 26½", 27", 27½", 28", 28½", 29", 29½", 30", 30½", 31", 31½", 32", 32½", 33", 33½", 34", 34½", 35", 35½", 36", 36½", 37", 37½", 38", 38½", 39", 39½", 40", 40½", 41", 41½", 42", 42½", 43", 43½", 44", 44½", 45", 45½", 46", 46½", 47", 47½", 48", 48½", 49", 49½", 50", 50½", 51", 51½", 52", 52½", 53", 53½", 54", 54½", 55", 55½", 56", 56½", 57", 57½", 58", 58½", 59", 59½", 60", 60½", 61", 61½", 62", 62½", 63", 63½", 64", 64½", 65", 65½", 66", 66½", 67", 67½", 68", 68½", 69", 69½", 70", 70½", 71", 71½", 72", 72½", 73", 73½", 74", 74½", 75", 75½", 76", 76½", 77", 77½", 78", 78½", 79", 79½", 80", 80½", 81", 81½", 82", 82½", 83", 83½", 84", 84½", 85", 85½", 86", 86½", 87", 87½", 88", 88½", 89", 89½", 90", 90½", 91", 91½", 92", 92½", 93", 93½", 94", 94½", 95", 95½", 96", 96½", 97", 97½", 98", 98½", 99", 99½, 100". Over 10,000 units have been sold worldwide in the past two years, and the tool comes with a 12-month guarantee. The Kwix tool is used by plumbing and heating,

air-conditioning, refrigeration and HVAC engineers as well as car, plane and train restoration companies.

Kwix UK – UK
www.kwixuk.com

DBSC contracts for FES

Two automatic diverless bend stiffener connector (DBSC) units produced by FES International, a global supplier of fluid transfer systems, have been delivered to Oceaneering International, Inc, and installed at the Esso Exploration Angola (Block 15) Limited Kizomba Satellites Phase 2 development located off the Angolan shore, West Africa.

DBSCs enable the quick and efficient installation of bend stiffeners on offshore deep sea drilling operations. The automatic DBSCs are being used to connect the umbilical bend stiffener to the floating production storage and offloading (FPSO) unit. Manufacture of the DBSCs was completed at FES International's UK headquarters in Northumberland earlier this year.

As part of the deal with Oceaneering International, FES was also contracted to provide on-site support for the connection of the male end fitting adaptor to the umbilicals, as well as technical offshore support during the installation of the DBSC.

Rob Anderson, managing director at FES International, said, "We were delighted when Oceaneering appointed us for this project and once again we have demonstrated our capabilities to deliver timely and flexible solutions on a global scale. This work is a great example of how our team of subsea engineering specialists become fully immersed in the project from start to finish, providing installation and on-site support services."



A diverless bend stiffener connector

FES International has also been awarded a contract by Subsea 7 for the supply of fully automated DBSCs. The manufacture of these DBSCs is currently underway.

Ian Latimer, technical director at FES International, commented, "We have previously worked with Subsea 7 on a number of fields. Repeat orders are the biggest endorsement that a customer can give us, so it's great to be on board for another exciting new North Sea project. Our ability to design and install DBSCs in projects with extremely tight space constraints demonstrates how versatile our DBSC system can be for our clients."

FES International – UK
fes@fesltd.co.uk
www.fesinternational.com

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- Thai Subcontracting Promotion Association (ThaiSubcon)
- Electrical Engineering Academic Association (Thailand)
- Electrical Electronics & Allied Industry Club
- Thai Electrical, Electronics and Telecommunication Industries Association
- Association of Thai Steel Industries

Messe Düsseldorf Asia Pte Ltd
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Singapore 099254
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tube@mda.com.sg





products & developments

The Strenx brand includes all of SSAB's hot-rolled plate and strip steels with a yield strength 600-1,300 MPa

New brand for high-strength steels

SSAB is launching Strenx, a new high-strength structural steel product brand, which the company claims will open up new competitive possibilities for customers to make stronger, lighter and more sustainable products.

Strenx is designed for sectors where structural strength and weight savings are key competitive factors, especially in the lifting, handling and transportation industry. Strenx is also suited to agriculture, the frames of heavy mobile machines, rolling stock, offshore and construction sectors. Customers will be able to design competitive, sustainable

products, such as cranes that reach further, trailers that carry more payload, and trucks that use less fuel.

“For customers, this is a totally unique product, since Strenx now covers the three product brands, Optim, Weldox and Domex, that are well-known trademarks of SSAB and the former Ruukki,” said Gregoire Parenty, head of market development at SSAB.

Strenx features a wide choice of high-strength structural steels, in terms of both strength and dimensional range. Yield strengths range from 600 to

1,300 Mpa. Strenx is available in plate, strip and tubular products in thicknesses ranging from 0.7 to 160mm.

“We give full support to designers and customers to help them upgrade to Strenx,” commented Mr Parenty.

“By sharing our in-depth experience and wide knowledge of steel we can guarantee the best results for end-product performance.”

SSAB AB – Sweden
info@ssab.com
www.ssab.com

High-performance rubber materials for subsea

Precision rubber moulding specialist Metflex Ltd has introduced a new range of high performance rubbers designed specifically for demanding subsea applications.

Named MetflexSubsea NRX, the API 17 compliant, natural rubber materials are available as moulded shapes for pipeline pigging connectors, protective shielding for HPHT pipelines, and riser and umbilical connection systems.

Advantages of natural rubber include high tensile strength, resilience, the ability to absorb dynamic stresses, and abrasion resistance.

The NRX rubbers offer temperature resistance in the range -50 to

+80°C, 67-73 Shore hardness and compression set up to 14 per cent. In large rubber blocks where greater stiffness is needed, Metflex is able to supply mouldings containing single and multiple metal inserts.

“The NRX range of rubber materials are the result of a three-year subsea rubber development programme working closely with the offshore industry,” said Steve Parry, director of development at Metflex. “These new rubber grades are designed to assist engineers in meeting the challenges of long term water immersion, robust handling and rigours of subsea deployment.”

Metflex is an established supplier to the offshore industry, and has over 70

years’ experience in rubber moulding. It manufactures precision rubber moulded components, rubber seals and gaskets, and diaphragms to a worldwide customer base.

The company offers a complete design service, and production methods that include rubber to metal bonding, and ultra-thin (0.2mm), 3D fibre reinforced mouldings based on the company’s proprietary DFT (dispersed fibre technology), using a combination of injection, compression, transfer and flashless fabrication techniques.

Metflex Ltd – UK
sales@metflex.co.uk
www.metflex.co.uk

Circular saw blades

50 years’ experience in metal cutting circular saw blade production, along with constant technical cooperation with pipe producers and machine manufacturers, enables Stark to offer the high performance Olympic line, fully dedicated to tube cutting applications.

The range includes three kinds of blades: HSS circular saw blades; throw-away TCT saw blades; and resharpenable TCT saw blades.

The HSS circular saw blade is an alternative to TCT saw blades for tube cutting. Its special steel and PVD coating allow it to be used at the same peripheral speed as TCT circular saw blades. The feed rates in the central area of tube crossing are claimed to be 40 per cent higher than feed rates of TCT saw blades, and so the blade cuts thin tubes 20 per cent faster than TCT saws. It is suitable for carbon steel, alloyed steel with high tensile strength, stainless steel, stainless steel and non-ferrous materials.

In recent years, tube processing technology has changed greatly. Steel’s

higher tensile strength values, greater tube thickness, and faster production line speed are often required by customers. The range includes Olympic 100, suitable for hard material, cutting with low vibrations; and Olympic 200, suitable for stainless steel cutting.

Stark Olympic also includes a range of TCT circular saw blades suitable for orbital cutting machines. For cutting tubes with large dimensions, customers are increasingly using orbital cutting heads equipped with two to four blades.

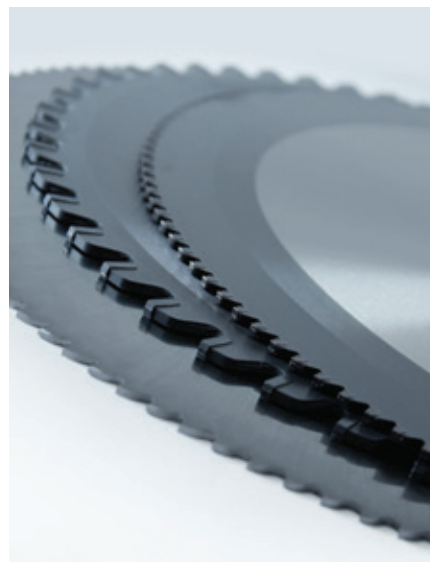
Stark developed a new PVD-coated resharpenable blade with special tooth shape, with the aim of reducing the effort during cutting and to reach a longer tool life.

According to the section and the material to be cut, Stark can supply different toothing geometries, specially developed to obtain the highest cutting performance.

Stark SpA – Italy
info@starktools.com
www.starktools.com



Circular saw blades from Stark



Composite tubes prevent loss of production at pulp paper plant

Sandvik Materials Technology has supplied its Sandvik Sanicro™ 28 composite tubes to a eucalyptus pulp mill in Uruguay.

An important part of the pulp production process involves the use of superheater panels manufactured from composite steel tubes, which are used with chloride within the pulp bleaching process.

Accumulations of the chemical, in conjunction with the high temperatures involved, were having a detrimental effect on the existing carbon steel tubes. Despite the installation of a chloride removal system, the chemical is still a vital part of the overall process and it therefore cannot be completely eradicated from the production environment.

Depending on the size of recovery boiler, the production loss varies case by case, but downtime during superheater maintenance causes profit loss regardless of the type of boiler. In addition to the amount of tube replacements that were needed on a regular basis, the issues of increased production downtime, inspection and maintenance required were also major areas of concern.

Andritz, a fabricator of pulp and paper equipment, was brought in to undertake



Composite tubes

a replacement project of the original superheater equipment. The company carried out a full evaluation of the site and processes, and carefully examined the previous carbon steel tube usage.

Computer modelling was then used to seek the best solution for the mill.

Based upon the findings of the evaluation and Andritz's previous experience with Sandvik products, Sanicro 28 composite tubes were selected for the superheaters, and have since reduced the amount of downtime required and enabled continuous production.

Sandvik Sanicro 28 is a high alloy, multi-purpose austenitic stainless steel,

developed especially for use in highly corrosive conditions. Offering good weldability, its characteristics include high resistance to strong acids, and resistance to stress corrosion cracking and pitting, crevice corrosion, and intergranular corrosion in certain environments.

A year after the installation of the Sanicro 28, Andritz has reported that there are no defects or corrosion damage found in the composite tubes.

Timo Peltola, global product manager – composite and boiler tubes for Sandvik Materials Technology, said, "This is an excellent example of how selecting quality composite tubes will provide a reliable solution for customers when compared to some of the cheaper, inferior products on the market. We've worked with Andritz on a number of similar projects in the past, and they are familiar with our products and their ability to deliver the right result for the end customer. Loss of production time is something that any manufacturer wants and needs to avoid, and ensuring they have the best equipment made from superior materials will inevitably reduce the amount of costly downtime."

Sandvik Materials Technology – Sweden
www.smt.sandvik.com

Metal-seated swing check valves



Val-Matic swing check valve

Val-Matic has expanded its swing check valve range to include metal-to-metal seating.

Metal-seated swing check valves are designed for municipal and industrial water and wastewater applications. Series 7900 oil cushion swing check valves are provided with metal seating as standard, and this is available as an option on Series 7800 swing check valves. Both the removable body seat and integral disc seat are made from C95400 aluminium bronze for reliable operation under harsh conditions.

Metal-seated valves can be fitted with any of Val-Matic's closure options, including lever and weight; air cushion; or lever and spring.

As with the company's standard resilient seated swing check valves, all metal-seated swing check valves are designed, built and tested for compliance with ANSI/AWWA C508, NSF/ANSI 61, NSF/ANSI 372 and MSS SP-71/MSS SP-136.

Val-Matic Valve & Mfg Corp – USA
valves@valmatic.com
www.valmatic.com

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Low-force fusion

Thermoplastic pipe fusion equipment expert McElroy has launched the Acrobat™ 160, a low-force fusion machine for 63 to 160mm polypropylene pipe.

The Acrobat 160 allows operators to fuse pipe for plumbing, mechanical and geothermal projects and a variety of other indoor applications where work spaces are often very limited. Its small footprint and light weight makes it an easy machine to manipulate when performing fusions overhead as well as on the ground, within crawl spaces, attics and other confines.

“The unique installation challenges that commercial buildings present was a perfect fit for us because of McElroy’s extensive background in product innovation,” said Chip McElroy, president and CEO of McElroy.

“We are excited to offer job site solutions in this market with the Acrobat 160 and our entire line of polypropylene tools and accessories.”

The Acrobat 160 can be configured from four to three jaws without using tools, for added flexibility in tight spaces. The machine weighs 40lb in the four-jaw

configuration, and only 29lb in its three-jaw set-up.

The narrow jaws allow fusions for flanges to outlet branches of tees and most fittings.

The machine is provided with a hydraulic power unit (HPU) and inserts for commonly butt-fused polypropylene pipe sizes.

The facer and heater can be loaded from the top or bottom (in the three-jaw configuration) of the carriage, giving the operator better access and flexibility regardless of the joining challenge.

The Acrobat 160 is compatible with the DataLogger® quality assurance tool, which allows operators to record and document the key parameters of the pipe fusion process to ensure the integrity of fusion joints and increase job site accountability.

It is also available in a productivity package that includes a manual machine stand and two PolyPorters®, which aid in lifting the pipe as well as performing as a pipe stand.

McElroy – USA
fusion@mcelroy.com
www.mcelroy.com



McElroy's Acrobat 160 low-force fusion machine

DP Seals sets NORSEK standard

Seal and moulding manufacturer DP Seals is setting a standard in components conforming to the rigorous NORSEK M-710 benchmark, and claims to be one of the few companies to insist on only using materials that meet the full requirements of just the top two grades.

Originally developed by the Norwegian petroleum industry, M-710 has now become an internationally recognised standard for non-metallic seals and bearings, offering oil and gas companies an assurance of quality, performance and durability in components designed to operate

in hostile sub-sea environments. To meet M-710, materials must achieve accepted criteria for both rapid gas decompression (RGD), also known as explosive decompression (ED), and sour gas ageing (H₂S), both of which are proven indicators of long-term performance and viable life expectancy.

DP Seals has been working to the NORSEK standard virtually from its inception, and has developed and supplied a wide range of seals and custom-moulded components to customers in the UK, Scandinavia and further afield.

“High quality components have been the cornerstone of our success,” said MD Andrew Piper, “and adhering to M-710 is simply one more way in which we can be sure of meeting the stringent specifications of our customers in the oil and gas industries.”

A stand-alone website (www.norsekready.com) has been launched, with full information on NORSEK testing criteria and a list of approved materials used by DP Seals.

DP Seals Ltd – UK
sales@dpseals.com
www.dpseals.com

Strong demand for titanium tubing in India

Fine Tubes and Superior Tube recently exhibited at the biennial Aero India exhibition in Bengaluru, India.

As manufacturers of a wide range of titanium, stainless steel and nickel alloy tubing, the two companies supply products for critical aerospace applications including hydraulic tubes, aero engine tubes, instrumentation and transmission tubing and mechanical tubes.

Paul Mallett, aerospace product manager, said, "With an increasing aircraft build rate globally, India is succeeding in winning business for the manufacture of aircraft structures and components. This success has led to a strong interest in precision high-strength, tubing and the meetings at the show indicated a particular demand for titanium Ti3Al2.5V (Grade 9), Ti6Al4V (Grade 5) and TiX tubes, matching our expertise in manufacturing these specialist light weight products."

Fine Tubes and Superior Tube also offer a comprehensive portfolio of aerospace tubing in stainless steel, including 21-6-9, 321 and 347, and in nickel alloys, including 625, X-750 and Waspaloy.

Gagan Sood, business development manager India, added, "The active discussions at our booth enabled us to broaden our understanding for the latest challenges in the aerospace industry. As one of the leading innovators in metal tube fabrication, we have the capability to manufacture tubing solutions in new, higher strength grades of titanium offering substantial weight savings compared to the current industry standard."

UK minister Lord Astor of Haver spent time talking with representatives from Fine Tubes and Superior Tube at their exhibition stand. Lord Astor, who recently spoke at a conference on UK-India aerospace industry, commented that the UK is a natural partner for India's

'Make in India' initiative, based on UK research, development, design and the UK's expertise in manufacturing.

Lord Astor commented, "The UK aerospace industry is the largest in Europe and second only to the US globally. It has huge potential for growth. We have more than 30 UK companies participating at Aero India 2015. I encourage UK companies and Indian companies to collaborate and deliver winning business solutions."

He was joined at the exhibition by the British High Commissioner to India, Sir James Bevan. They both visited numerous stands, and also met Indian Prime Minister Narendra Modi after the air show's inauguration.

Fine Tubes Ltd – UK
www.finetubes.com

Superior Tube Company – USA
www.superiortube.com

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Certified steel composite repair system extends pipe life

The Henkel Loctite® all-in-one Composite Pipe Repair System has completed a rigorous test programme by DNV GL that spanned over two years, to ensure the products' conformity with global quality standard ISO/TS 24817.

This standard defines the design, installation, test and inspection criteria for the use of composite repair systems for oil and gas pipelines and pipework carrying petrochemicals. Compliance of the Loctite Composite Pipe Repair System with this standard gives added assurance of certified safety and performance.

One of the first companies to take advantage of this combination in the UK is Bilfinger Industrial Services, a supplier to the UK process, petrochemical, oil and gas and power industries. The company delivers long-term engineering and maintenance solutions, and considers the Loctite system an ideal addition to its armoury.

As specified in the ISO certification and required by DNV GL, Bilfinger engineers have completed the specially developed, certified training programme for pipe

repair at Henkel's Technical Applications Centre in Hemel Hempstead, UK.

Steel pipelines are costly to install, and effective maintenance is essential to maximise their service life. The structures are exposed, both internally and externally, to the combined corrosive effect of the climate, mechanical stress and chemical attack. As the renewal of damaged and ageing sections stops production, maintenance and repair organisations are increasingly choosing to repair rather replace pipework.

Central to the Loctite pipe repair system is a resin-based composite material reinforced with fibres. The composite reinforces the damaged pipe sections while also protecting them against renewed corrosion. The system is suitable for repairing both Type A (non-through wall) and Type B (through wall) defects, covering all repair classes 1 to 3. In addition to straight pipes, the system can be used to repair other structures and components, such as bends, tees, reducers and flanges.

The first step in the repair procedure is to clean and sandblast the surface of

the damaged area. As this treatment makes the substrates susceptible to flash rust, Henkel recommends applying the corrosion inhibitor Loctite SF 7515, to provide immediate temporary protection.

For Type A defects, the original outer pipe diameter needs to be restored by filling the cavities with Loctite EA 3478, a ferro-silicone filled epoxy compound that provides compression strength. This product was specifically developed for renewing surfaces subject to compression, thrust, impact and harsh environments.

The pipe is then wrapped with Loctite 5085 glass-carbon fibre tape that has been impregnated with temperature-resistant, two-part epoxy resin Loctite PC 7210. This product is designed for bonding steel substrates and exhibits high adhesion.

The repaired section is finally sealed with the sprayable ceramic topcoat Loctite PC 7255, a two-part epoxy that is WRAS-approved. The resultant composite repair reinforces steel pipes for continued duty under high pressure and thermal cycling while increasing their chemical resistance.

The system eliminates the need to replace pipe components: corroded pipes can be repaired in situ, without interruption to operations and even with high internal pressure. Henkel claims that the quality achieved by the repair can increase the lifetime of steel pipelines by up to 20 years.

As part of the solution package, Henkel can provide calculations of project-specific repair designs. These differ from project to project depending on the range of parameters, such as the forces acting on the pipeline, temperature, pressure and the extent of damage. To maximise the safety and efficiency of this process, Henkel has developed a software tool to determine how the repair should be executed; this is also covered by DNV GL certification.

Henkel Ltd – UK
www.loctite.co.uk



Applying the Loctite Composite Pipe Repair System

Nickel, titanium and alloys

Harald Pihl distributes a large range of nickel, titanium and alloys. With products in all forms and most dimensions, the company is able to supply customers with materials without unnecessary lead times.

With a growing focus on the international market, Harald Pihl's products are used in different productions all over the world.

The company is represented across Europe, and with recently opened offices in both Norway and Poland the local presence is now greater than ever.

Harald Pihl's speciality is very fast delivery times. All enquiries are answered within an hour, and orders placed before lunch are shipped the same day. The company has embraced the latest technologies to become a 'one-stop shop' for customers. The entire stock offering is listed on the company's website, available in 16 languages, which saves customers time as they can easily and quickly find the products they need in the materials and sizes required.

The company has a wide assortment of corrosion-resistant alloys, heat-resistant

alloys, creep-resistant alloys, special alloys, stainless steel, titanium alloys, low melting point alloys, copper alloys, welding material and refractory metals. The materials are available in most forms, including wire, rod, sheet, plate, strip, tubes and pipes, and in several dimensions.

The diversity of the product range allows Harald Pihl to supply almost any market. In addition, the company offers customers value-added services such as sawing, shearing, and welding and cutting by laser, plasma and water jet.

Harald Pihl gained Aerospace EN9120 approval in June 2013. The company also supplies NORSOK M650 certified material in different grades of titanium. This is mainly used in the oil and gas industry for pipes, bars and fittings.

Harald Pihl AB – Sweden
info@haraldpihl.com
www.haraldpihl.com



SAWL pipe through reeling method

Tata Steel claims to have become the first company to manufacture a SAWL (submerged arc welded longitudinal) line pipe installed through reeling method in the North Sea.

The pipe was developed as a bespoke order for an international energy company that required an urgent replacement pipeline.

Working closely with the end client and lay contractor from an early stage, the project had a demanding specification that provided a new challenge for all parties. Tata Steel used some of the best pipe plate available to create a product that both increased the maximum thickness of pipe that can be produced for a 406.4mm (16") pipe, and re-established the reel-ability of SAWL pipe.

Due to the success, the product is now being launched into the wider market.

Martin Connelly, Tata Steel's technical manager, said, "This project was a

huge success for Tata Steel and there were key features to this achievement. Firstly, at 22.2mm, the size represented the thickest 406.4mm (16") outside diameter SAWL pipe delivered by Tata Steel, and secondly, the thickness was originally outwith the capacity of the 42" UOE mill until this project. With the aid of our state-of-the-art finite element (FE) modelling and tooling programme, the pipe was manufactured and delivered ahead of schedule."

The chosen installation method meant the pipe wall thickness needed to be designed to withstand the strains associated with the reeling process.

Tata Steel recently invested in welding control technologies within the 42" UOE mill, including weld condition monitoring and digital front-end control of the SAWL welding process.

Investment was also made to ensure delivery of as round a shape of pipe as possible to the expander, with the business reviewing the full forming



The pipe was designed to withstand the strains of the reeling process

process, including tooling design and a fully validated FE model. Mr Connelly added, "Tata Steel will continue to develop its understanding of the reaction to reeling of its small diameter/thick wall SAWL pipe and we are planning to conduct a number of full scale simulations over the next few years as part of our research and development programme."

Tata Steel – UK
feedback@tatasteel.com
www.tatasteeleurope.com

Pipe finishing

Copier Bevelmachines, a manufacturer and engineer of stationary machinery for metal pipe finishing, provides a standard machine portfolio for metal pipe machining, in addition to custom-made solutions. Products include stationary pipe bevel machines, stationary pipe cutting and bevel machines, mobile pipe bevel machines, orbital pipe cutting machines, pipe roll grooving machines and production lines for pipe end preparation. The company specialises in machinery for metal pipe finishing, including pipe or tube sawing, cutting, bending, grooving and bevelling, and markets its products through online research and regular attendance at international exhibitions.

Predominantly focusing on the oil and gas industry, pipe fabrication shops, manufacturers of offshore structures and pipeline construction companies, Copier Bevelmachines sells its products worldwide. Although based in the Netherlands, only around 5 per cent of sales are made there each year. In addition to its main markets, the company works with oil and gas related regions worldwide through agents and resellers, with the majority of its customers based in the construction of boilers, pressure vessels and heat exchangers, as well as in the fabrication of oil and gas pipelines or related pipe fabrication companies.

Copier Bevelmachines – Netherlands
www.bevelmachines.com

Compact socket welding machine



Ritmo's Prisma Jig

Prisma Jig is a compact socket welding machine for HDPE, PP and PP-R, PVDF, and PB OD 20-125mm. Standard composition steel clamps are available from 63 to 125mm, or on request from 20 to 63mm.

The machine has a steel frame that can be used as a support to the aligning body. The unit can work in tight spaces, after a swift releasing manoeuvre of the frame.

The Prisma Jig has two trolleys – one fixed and one movable – with practical closing hand-wheels in order to ensure a perfect grip between clamp and pipe/fitting. The machine also features steel auto-centring clamps: a special clamp for the fitting, and a couple of paired clamps designed to keep the pipe in position. The trolley closing and opening operations are performed by a 'mutual' starter. The special fittings clamp is placed on the fixed trolley. Whenever the type of work requires a different clamping configuration, it is easy to unlock and change the machine's operation.

Heating is performed by the R 125 Q hand socket welder with TFE fixed temperature control. The main feature of the TFE device is its security: an acoustic auto-diagnosis alarm indicates when the heating plate has reached the working temperature, but also shuts off the heating plate automatically if an anomaly occurs.

With a combined control system, the TFE device responds quickly to temperature fluctuations caused by external causes. It also gives greater stability, welding precision and reliability. A sustaining handle may be placed at the heating plate, in order to simplify the working phases.

The R 125 Q is available in 110 and 230V. The welding machine is available in two versions, depending on the type of sockets and spigots supplied.

Ritmo SpA – Italy
info@ritmo.it
www.ritmo.it

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 SPECIALTY METAL PRODUCTS

Oswal expands into USA, Europe and Japan

Industrial valve manufacturer Oswal Group has experienced robust growth in recent years. Starting with a foundry in Gujarat, India, in 1985, the company ventured into industrial valves in 1995.

The products and services offered serve all markets and industrial sectors. With a full complement of engineering resources and facilities Oswal Infra provides process equipment and process skids with complete automation for both domestic and international

markets. Products and services include process equipment, pressure vessels, heat exchangers, tanks, columns, process skids and process packages.

Export sales have grown by more than 50 per cent in the last two years, and the company has seen a large increase in orders for higher alloys such as Duplex, Super Duplex and exotic alloys, and cryogenic and critical application valves. To further expand its presence in the global market, the company has

opened offices in Europe, the USA and Japan, having already established itself in the Middle East. Valves and skids manufactured by Oswal Group are primarily used in oil and gas, petrochemicals, refineries, power, steel, chemicals and fertilisers, water treatment, offshore, nuclear and other sectors, in India and around the world.

Oswal Industries Ltd – India
mktg@oswalvalves.com
www.oswalvalves.com

Tube connection breakthrough speeds assembly of instrumentation systems

A breakthrough in high-integrity tube connection technology that offers performance and time-saving advantages to instrumentation system designers and installers is now available from Parker Hannifin.

Designed for working pressures as high as 22,500 psi (1,550 bar), the new 'flared cone' technology advances the performance of compression style tube connections. It provides users with a simple and reliable means of speeding the assembly of instrument tubing systems for use in higher pressure applications in the oil and gas industries.

Developed by Parker Autoclave Engineers, the new flared cone connection (FCC) technology is an advance on the type of 'cone and thread' tube connections pioneered by the company.

The new connections are simpler to make up, and installers can typically complete the task in less than four minutes, after only minimal training. Flared cone connections are also effective in applications where leaks caused by vibration are an issue.

According to Michael O'Keane, product marketing manager for Parker Autoclave Engineers, "Our new FCC technology offers the best of both worlds. It combines the make-up and installation simplicity of compression-style connections with the strength of cone and thread, and has more features and higher pressure capabilities than similar technologies."

The patent-pending FCC technology is based on a single sleeve compression style system. However, unlike conventional designs, the tube end is flared to

prevent any possibility of ejection, and also provides the connection's primary metal-to-metal seal. When the gland nut is tightened, the inside surface of the anti-ejection flare mates with a cone in the fitting or valve. The compression sleeve then mates with the body of the component to form a second, redundant, metal-to-metal seal.

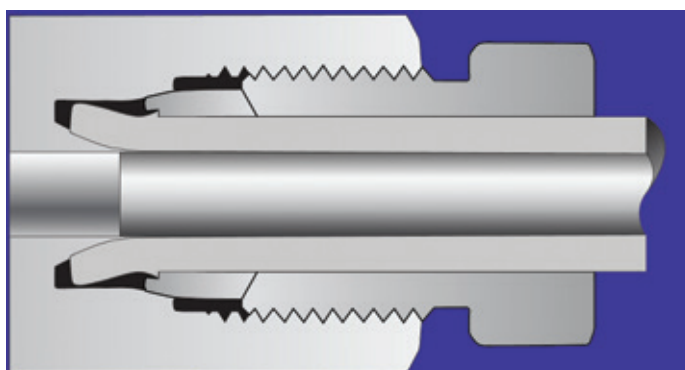
This dual seal approach has a major reliability benefit: in the unlikely event that the primary seal fails, the secondary seal preserves the integrity of the connection. Installing a flared cone connection is simply a matter of screwing the gland nut into the fitting or valve and tightening it to the prescribed torque.

Parker Hannifin – UK
ipd@parker.com
www.parker.com/ipd



Flared cone connection technology is designed for working pressures as high as 22,500 psi

The new tube connection technology uses a flared cone design that prevents tube ejection and forms the primary metal-to-metal seal



Storm water attenuation tank for housing development

Asset International Ltd, a water management solutions company, has provided residential developer Taylor Wimpey with a storm water attenuation tank for its Kings Grange housing development near Manchester, UK.

The bespoke modular design provided by Asset International utilised large diameter Weholite pipes to suit the site requirements, in order to create a massive attenuation tank – one of the largest the company has ever supplied within the United Utilities region for a housing development.

The tank will be used to help reduce peak flow caused by heavy rainfall at the housing development, by restricting the flow of excess water before releasing it gradually via an outfall back into the ground.

This will provide invaluable protection for the site. The installation consisted of three 3.5m-diameter pipes, which were

each 36.5m in length, connected at each end with a factory-manufactured manifold, creating a total capacity of 1,551m³ (approximately 1,055,100 litres). Asset's British-made 3.5m-diameter pipes are the largest of their kind.

The attenuation tank will provide protection to the 200 new homes at the site, which is located five miles from Manchester city centre.

The Weholite pipes were procured and installed by national contractor John Reilly Civil Engineering Ltd, which was the principal contractor for Taylor Wimpey Manchester on the site. Jamie Austin, of John Reilly Civil Engineering, commented, "The Weholite system employed saved a considerable amount of time and money and I would not hesitate in recommending the product in the future."

Gareth Green of Asset International said, "The Kings Road project demonstrates

the versatility of our Weholite product and how it can be effectively used as a solution for managing excess storm water. The attenuation tank was installed on-site extremely quickly, adding value and cost efficiencies that our client would not have achieved using traditional materials. This is a particularly important requirement on such a large development."

Weholite exploits an advanced technology polyethylene material and is used primarily in water infrastructure projects across the UK.

It is a lightweight, durable, easy-to-install and abrasion-resistant product that is tolerant of ground movements. Weholite is manufactured in internal diameters from 400 to 3,500mm.

Asset International Ltd – UK
sales@weholite.co.uk
www.weholite.co.uk

The storm water attenuation tank will help reduce peak flow caused by heavy rainfall



Venturi valve scores top marks in technical tests

Advanced Interactive Materials Science Ltd (AIMS) has successfully manufactured a Venturi valve using HIPed powder metallurgy and near-net shaping techniques. Used to measure the flow of oil and gas as it comes out of the ground, Venturi valves need to withstand extreme conditions and meet the stringent oil and gas subsea standards.

Last year AIMS unveiled a patented Mud Motor Stator (featuring a telemetry hole) that can resist corrosive, erosive and abrasive conditions at high operating temperatures.

AIMS technical director Geoff Archer said, "Replacing Venturi valves is a difficult and costly process, so producing components with high quality isotropic material structures that reduce manufacturing risk and maintenance costs is something the industry is keen to exploit. We believe we have accomplished this with the Venturi

valve, which has exceeded all technical test results to date. It's extremely exciting and initial feedback from the oil and gas industry has been positive."

There is growing demand for HIPed and near-net shaped products due to the efficiency of the process and the quality of the component. However, the mechanical properties of the end result have to meet specific international standards, and this has not always been achieved.

The AIMS product, when tested, revealed that it had zero argon ingress during the hot isostatic pressing process. "This is an outstanding result, as it has overcome one of the major problems for the industry," explained Mr Archer. "It highlights the high quality standard of our powder containments and HIPing capabilities which, when coupled with



near-net shaping techniques, minimise the need for second stage machining."

At the cutting edge of manufacturing technology, near-net shaping delivers savings in terms of energy, materials and labour, while allowing complex structures to be created, such as the Venturi valve and the Mud Motor Stator with telemetry hole.

Advanced Interactive Materials Science Ltd – UK
info@aimsltd.com
www.aimsltd.com

Aluminium drawn tubes

Siddhi Engineers is engaged in the processing of aluminium drawn tubes for a variety of applications. The firm was established in 1988 by two mechanical engineers with a mission to develop and export products globally.

The company has established the cold drawing process along with supporting operations, where various aluminium alloys are cold drawn to achieve close dimensional tolerances, desired mechanical properties and orientation towards end use.

Certification includes ISO 9001: 2008, ISO 14001: 2004 (environment management system), and ISO/TS 16949 (quality management system for automobile products). The company is also in the final stage of certification for aerospace products (AS 9100 C), which would make it the first firm in

India to gain aerospace certification for aluminium tubes.

Siddhi Engineers has engineered products for defence, aviation and space organisations in India, for applications such as telescopic masts for telecommunication, bomb disposal manipulators, aluminium tubes for amphibian tanks, wave guide tubes for satellites, special alloy tubes for cryogenic engine fuel supply lines, tubes for helicopter core coolers, and tubes for air frames for missiles (prototype).

The company exports aluminium cold drawn tubes to 16 countries, including the USA, Germany, France, Netherlands, UK, Turkey and Israel.

Siddhi Engineers – India
simktg@siddhiindia.com
www.siddhiindia.com

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1+ compression fittings

Fluid flow technology company Asahi/America, Inc now offers 1+ style compression fittings by EM-Technik. The 1+ provides a complete seal without the use of tools, and significantly reduces assembly times.

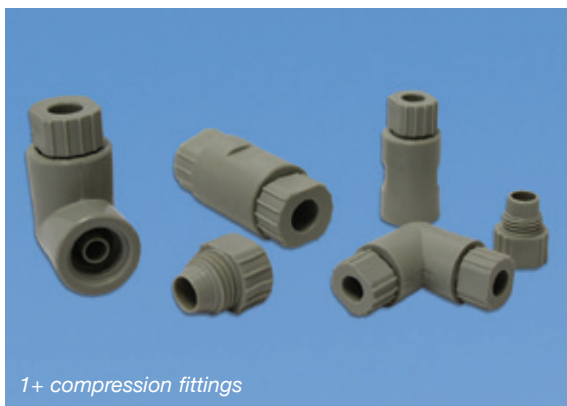
The patented new design of the 1+ compression fitting is highlighted by an integrated clamping ring that allows for a secure, reliable and reusable tube connection without the need for loose ferrules.

including biopharm, analytical, chemical handling, laboratory and research, and food processing.

Asahi/America specialises in providing solutions for fluid handling systems, individualised to meet customers' requirements.

The company manufactures corrosion-resistant thermoplastic fluid handling products, including valves, actuators, pipe and fittings. It also maintains an extensive custom fabrication department, and provides on-site consultation, supervision and training where required.

Asahi/America, Inc – USA
asahi@asahi-america.com
www.asahi-america.com



1+ compression fittings

Available in PP, PVDF and PFA, the 1+ compression fitting is easy to install: simply slide the tubing through the nut, and hand-tighten to create a tube connection rated up to 230psi. The fittings are currently available in 1/4", 3/8" and 1/2" sizes in union, elbow, tee and threaded configurations, and are suitable for air and liquid handling applications in a wide range of industries,

Corrosion mapping solution

At this year's NACE International Corrosion Exhibition, Phoenix Inspection Systems launched a scanner that provides continuous corrosion mapping along unlimited lengths of small bore pipework.

The design of the new Sp-Arc scanner offers fast corrosion assessment longitudinally of a sector of the pipe circumference, with coverage of up to 120° in a single scan.

The main element of the scanner is an irrigated water box housing a curved ultrasonic phased array probe. The water box is set concentric to the pipe surface and seals Sp-Arc to the pipe with replaceable low friction foam gaskets to provide immersion quality ultrasonic data with excellent near-surface resolution.

Equipped with an adjustable buggy and four high-strength magnetic wheels,

Sp-Arc is suited to inspecting the important underside of ferritic pipes. Available with multiple water boxes to suit the full range of small bore pipe diameters from 1" to 4" NPS, Sp-Arc is a versatile tool for measuring wall thickness.

Andrew Brewis, sales manager – key accounts at Phoenix Inspection Systems, said "Phoenix is always striving to be at the forefront of technology and innovation and with our latest product, the Sp-Arc, we feel we have again delivered a product that is not only unique but delivers a cost-effective corrosion mapping solution to the end user."

Phoenix Inspection Systems specialises in the design and manufacture of ultrasonic non-destructive testing solutions for sectors including energy, aerospace, process industries and rail.

The company offers a wide range of standard NDT products and provides custom-made solutions to clients worldwide.

Phoenix Inspection Systems Ltd – UK
sales@phoenixisl.com
www.phoenixisl.com



Sp-Arc scanner from Phoenix Inspection Systems

Stainless steel press fitting option

Plumbing fittings manufacturer Conex Bänninger has launched the new >B< Press Inox range.

The addition of a stainless steel press fitting complements the range, and gives contractors and specifiers a comprehensive choice for applications in copper, carbon, red brass and now stainless steel.

>B< Press Inox is manufactured using hygienic materials, making it suitable for potable water, and with its >B< profile can be used in almost all new and existing domestic supply systems.

The flame-free press fitting can also be used for hot and cold drinking water applications, cooling water, heating systems, compressed air (oil free), oil/fuel, rainwater and waste, offering contractors and installers more application options.

>B< Press fittings are quick and simple to install, and are compatible with a variety of tools and jaws.

Conex Bänninger >B< Press offers installers a fail-safe function to check the systems for leak using the unique pressing indicator, ensuring there is no need to go to full test pressure.

The fittings are specifically designed with a high-quality EPDM seal with a reduced section on two positions causing leaks when not pressed (from 0.1 bar).



Un-pressed joints can then be quickly identified and corrected. When the fitting is pressed, the O-ring material compresses itself to form a permanent, leak-free joint.

>B< Press requires no hot work licence or additional jointing materials for installation.

Conex Bänninger – UK
www.conexbanninger.com

2,500kg capacity pallet truck

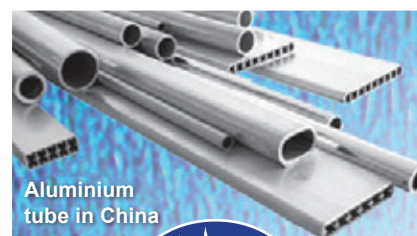
Midland Pallet Trucks is a UK-based provider of pallet trucks and manual handling equipment.

The company says that its 2,500kg capacity Eoslift hand pallet truck, with PU rollers and wheels, is a popular option for businesses looking for heavy-duty lifting options. A practical addition to a factory, warehouse, stockroom or delivery bay, the hand pallet truck is Euro-compatible, which means the forks are perfectly aligned with the popular Euro pallets. A hydraulic pump offers

a smooth lifting action, with minimal maintenance required to keep the truck in prime condition.

Phil Chesworth, managing director of Midland Pallet Trucks, commented, "This pallet truck is one of our most popular models, thanks to its high capacity, its compatibility with Euro pallets, and its robust and hard-wearing construction."

Midland Pallet Trucks Ltd – UK
sales@midlandpallettrucks.com
www.midlandpallettrucks.com



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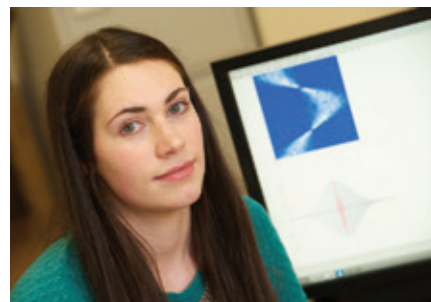
A system for using sound waves to spot potentially dangerous cracks in pipes, aircraft engines and nuclear power plants has been developed by an academic at University of Strathclyde, UK.

A study found that transmitting different types of sound waves can help to detect structural defects more easily. This is achieved by varying the duration and frequency of the waves and using the results to recreate an image of the component's interior.

The system is a model for a form of non-destructive testing that uses high-frequency mechanical waves to inspect structure parts and ensure they operate reliably, without compromising their integrity. It will be developed further and could potentially also have applications in medical imaging and seismology.

Katherine Tant, a research associate with Strathclyde's Department of Mathematics and Statistics who led the study, said, "Welds are vitally important in 'safety critical' structures, like nuclear power plants, aeroplane engines and pipelines, where flaws can put lives at risk. However, as with any type of bond, they constitute the weak part of the structure.

"One particular type of weld, made of austenitic steel, is notoriously difficult to inspect. We were able to devise solutions involving the use of 'chirps' – coded signals with multiple frequencies which vary in time. The type of flaw identified depends on the method used. An analogy would be the type of echoes produced by clapping loudly in a cave – a single clap may allow you to judge the depth of the cave while a round of applause will give rise to a range of



The study was led by Katherine Tant, a research associate at Strathclyde

echoes, perhaps allowing you to locate boulders."

The study has been published in the journal *Proceedings of the Royal Society A*.

It was funded through the UK Research Centre in NDE Targeted Programme by the Engineering and Physical Sciences Research Council, AMEC, the National Nuclear Laboratory, Rolls-Royce, Shell and Weidlinger.

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Email: tubingsolutions@outlook.com

High performance testing with Minimac 55

Magnetic Analysis Corporation (MAC) will feature the new Minimac 55 eddy current tester at this year's Tube Southeast Asia show in Bangkok, Thailand, in September. The company will be co-exhibiting with its Thai representative, Siam Charn Co, Ltd.

The Minimac 55 brings high-performance eddy current testing to a broad range of production applications. It is the first eddy current tester to offer the robust capabilities of MAC's top-of-the-line Multimac®, in a powerful, compact design.

The instrument is suitable for dedicated, continuous production line testing where simple setup, without the need for constant operator adjustment, is desirable. Once the optimum settings have been established, a lockout mode feature can be set to prevent unauthorised changes.

Defects and conditions that can be readily detected by the Minimac 55 include finding short surface and some subsurface defects such as laps, slivers and cracks in tube, bar, wire and parts, and locating weld line faults, including

short ID or OD defects. The Minimac 55 can also check continuity and locate welds in single- and multi-conductor insulated wire and cable and, using the MID model, detect magnetic inclusions such as iron filings in copper material.

The Minimac 55 features MAC's proprietary Multimac performance in a single-channel instrument, with software controls for all functions, including phasing, filtering and sensitivity, all while operating at speeds over 4,000fpm.

The test results are displayed in full-colour polar and linear mode showing real-time, true waveform signals for easy review on a separate on-site monitor or

at remote locations. The Track screen depicts the test product's length, with data on line speed, end suppression, flaw tracking, piece count and alarm routing.

Linear strip charts and complete test data, as well as an unlimited number of settings, can be stored, annotated and recalled from a library on the internal storage device or network. When networked, multiple instruments can share the same library to ensure correct settings in multiple test lines. Setup and monitoring can be handled through a computer network, and reports with customer, product information, defect location, time, amplitude and phase can be stored locally or on a network server for quick follow up and quality assurance.

MAC's broad range of encircling and sector test coils is available for use with the Minimac, which can also be configured for flaw or absolute mode, depending on the application.



Magnetic Analysis Corporation's Minimac 55 eddy current tester

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

Electro hydraulic trip throttle valve

Dresser-Rand, a global supplier of rotating equipment solutions to the oil, gas, petrochemical and process industries, has launched the new Gimpel® electro hydraulic trip throttle valve (EHTTV).

Designed to prevent the catastrophic failure of steam turbines, the EHTTV stops the flow of steam to the turbine in less than 0.3 seconds, a closing force that is four to ten times faster than typical latch-type valves.

Additionally, the back-seated stem design prevents steam loss when the valve is in the fully open position.

EHTTVs operate independently of the installed turbine oil system and only require electrical power to operate.

They can be locally or remotely actuated and exercised. The valves maintain a five-year overhaul cycle with no lubricating requirement, and comply with API-612 standards. They can also be used to improve efficiency by saving steam.

The valve underwent extensive testing at Dresser-Rand's facility in Burlington, Iowa, USA, and performed as expected under designed conditions.

EHTTVs were developed for steam turbines in a wide range of industries, including power, ethylene, ammonia, pulp and paper, petrochemical, steel, medical, education and refinery.

"Our new electro hydraulic trip throttle valves bring a new level of performance

and efficiency to the market and are performing very well for our clients," said Maged Mikhail, vice president engineered solutions and Gimpel SBU for Dresser-Rand. "We have an installed base of more than 17,000 Gimpel valves and have an excellent track record, which is why we're now the only trip throttle valve manufacturer with SIL-3 certification."

Dresser-Rand's president and CEO, Vincent R Volpe, presented the Gimpel valve team with the Company President's Award in the technology and innovation category during the Dresser-Rand Worldwide Management Meeting in March.

Dresser-Rand – USA
www.dresser-rand.com

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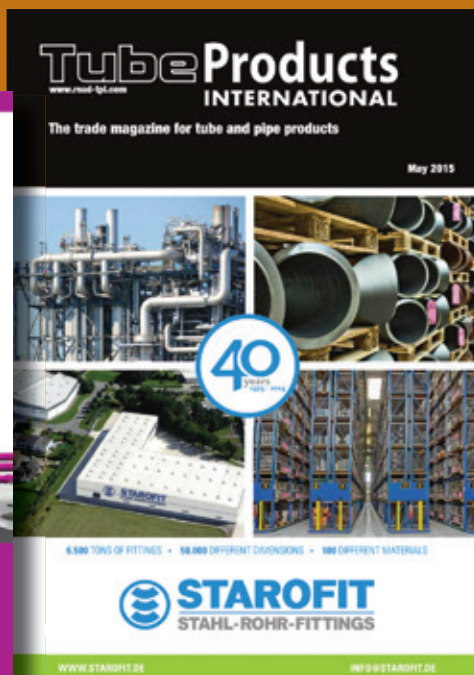


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Ball valves and moisture indicators for R744 applications

Emerson Climate Technologies has expanded its range of moisture indicators and ball valves for R744 (CO₂) subcritical applications.

The CIA series of fully hermetic moisture indicators includes all features of the existing MIA series, such as the crystal indicator element for long lifetime and reliability, or the four-colour indicator for easy determination of moisture content.

The maximum working pressure of the CIA series has been increased from 45 to 60 bar.

Seven models are available, with ODF connection sizes from 6 to 16mm.

The CVE/CVS series of ball valves also feature a hermetic design with laser-welded valve body and full flow design for minimal pressure drop. Compared to the existing BVE/BVS series the maximum working pressure has been increased from 45 to 60 bar. Nine new models are available with connections ranging from 6 to 22mm, and each model is available with or without Schrader valve.

Emerson Climate Technologies provides heating, ventilation, air conditioning and refrigeration solutions for residential,

industrial and commercial applications. The group combines technology with engineering, design, distribution, educational and monitoring services to provide customised, integrated climate control solutions.

Emerson Climate Technologies GmbH – Germany
www.emersonclimate.eu



Moisture indicator and ball valves for CO₂

Victaulic mobile truck hits the road

Victaulic's mobile truck will be touring the UK throughout this year, stopping at handy locations to showcase the company's grooved piping system solutions.

The facility is designed to help engineers, contractors and building owners discover first-hand solutions that are relevant to their projects.

From effective pre-planning, product selection, system design and modelling, to prefabrication and on-site installation, the truck addresses each element of a project.

Through an interactive blend of hands-on experience, demonstrations, product displays and discussions, visitors will learn how Victaulic's products and services can boost efficiency.

Engineers will be able to discuss drawing packages, 3D modelling and BIM coordination packages, along with value engineering, value analysis, estimating, pre-planning, project management and other aspects that contribute to project success. Contractors will learn how pre-fabrication techniques can be

applied to pipe fabrication and job-site construction. They will be able to discover how to reduce their system's total installed cost and how CAD and other software solutions can help.

Building owners will find out how proper pre-planning, good system design, product selection and value-added services from Victaulic can help compress schedules, reduce risk, improve productivity and facilitate system maintenance and expansion.

"Our UK touring truck is a great opportunity for clients and potential customers to explore the comprehensive range of Victaulic solutions in one place and discover the advantages they deliver," said Jared Breidinger, divisional manager, Northern Europe, at Victaulic.

"Visitors can see actual examples of mechanical room installations, view pump displays, and have a go at using grooving tools and installing couplings.

Local representatives will be on hand to demonstrate, answer questions, and give out information to help customers make the very best use of what Victaulic has to offer."

Those wanting information on truck stops or wishing to book a visit should call Victaulic on +44 1438 310690.

Victaulic – UK
www.victaulic.com



Victaulic's truck will be touring the UK throughout 2015

Underground freight pipes to reduce congestion

According to Roger Sumner-Rivers, founder of international courier ParcelHero, a new system of underground freight delivery tubes being trialled in Northampton, UK, has the potential to reduce both city traffic and emissions.

Freight capsules in the Mole Solutions system would be powered by electricity, producing magnetic fields to propel the

capsules along tracks. The technology is similar to the maglev rail system in use at some airports and being developed for mainline operation in China.

Mr Sumner-Rivers commented, "This is clearly more than a pipe dream. A nine-month trial of the Mole Urban Project has just been started and the supply chain industry is watching the results with interest. It's been proven that home

delivery reduces car journeys to shops and therefore traffic and emissions. An underground city-wide and inter-urban system of parcel and freight delivery to out-of-town freight hubs and key nodal links would further significantly reduce emissions.

"A tube system would operate under our homes and roads, moving freight to out-of-town hubs, slashing traffic in towns and reducing CO₂ emissions. ParcelHero has advocated out-of-town consolidation hubs for some time, and this looks to be an excellent way to improve these gains still further."

In addition to Mole Primary, which delivers pallet and tote loads suited to retailers using city freight hubs, the idea can also be used for Mole Bulk, using trunk pipe networks built alongside existing infrastructure, which can also take away other waste, such as biomass, as well as deliver heavy ores and minerals. This will cut down on HGV loads, again reducing congestion.

Mole Solutions – UK
info@molesolutions.co.uk
www.molesolutions.co.uk



Expanded production capacity for Valspar Pipeclad technology in Europe

Valspar Corporation has announced the expansion of its production capability for the Valspar Pipeclad® family of fusion-bonded epoxy powder products in Europe. In April, the company began expanded manufacturing of Pipeclad products at its facility in Thouars, France, to meet growing global demand.

"Investing in the increased production of Valspar Pipeclad globally ensures that both applicators and pipeline owners around the world can continue to depend on Valspar to meet their growing needs," said Karl Jorgenrud, vice president and general manager of protective coatings at Valspar. "Like our other powder coatings facilities,

Thouars produces a range of high-quality, consistent coating products that are engineered to protect against corrosion in the harshest environments."

Valspar Pipeclad fusion-bonded epoxy products are used as the corrosion protection layer for single-, dual- and three-layer applications on a wide variety of pipe sizes and wall thicknesses. With their advanced coating technology, Valspar products are used by petroleum and gas producers around the world, providing long-term protection for more than 100,000 miles of pipelines.

Pipeclad fusion-bonded epoxy coating protects against underground soil

stress, bacteria and fungus attacks, soil acids and alkalis, as well as the corrosive elements associated with underwater use, including saltwater, wastewater, petrochemicals, solvents and corrosive gases.

To meet demand from a growing worldwide customer base, Valspar Pipeclad is produced in several regions, including Asia, Europe and North and South America. The products are part of Valspar's broad range of coatings for automotive, packaging, architectural, wood and general industrial customers.

Valspar Corporation – USA
www.valspar.com

Safety tubes and system efficiency

Wieland Thermal Solutions presented its GEWA-safe double-wall safety tubes atACHEMA in Frankfurt in June.

The GEWA-safe tubes feature defined leakage paths between the inner and outer tube for the reliable separation of fluids, eg reactive, hazardous or explosive fluids, without the need for additional circulation (closed loop intermediate fluid).

This ensures system availability, efficiency and safety, as damage to inner or outer tube is immediately recognisable and can be fixed as part of regularly scheduled maintenance.

The thermal contact of the two tubes results in outstanding heat transfer without additional heat transfer fluid. GEWA-safe tubes enable the manufacture of very compact heat exchangers, reducing material costs and fill levels.

Depending on the desired application, the tubes are available with either smooth or profiled surface in copper, cupronickel and stainless steel.

The safety tubes are used, for example, in the pre-heating of fuel gas for gas turbines, for protection against environmentally harmful and toxic substances, for the isolation of heat transfer oil in transformer stations, and for drinking water protection according to DIN EN 1717 in heat-pump systems.

They are also used in so-called safety heat exchangers for high standards regarding system safety in chemical processes, for example in the production of polysilicon.



Low-finned tubes

Wieland also presented current solutions for system efficiency increase in the oil, gas and petrochemical industries, as well as in the power generation industries. GEWA-PB tubes enable a compact design of heat exchanger. The surface structure of the tube enhances the effect of nucleate boiling, intensifying the evaporation process.

For different requirements regarding thermal conductivity, mechanical properties and corrosion resistance in the oil and gas processing industries, Wieland Thermal Solutions also presented atACHEMA its portfolio of low-finned tubes in a wide range of materials. GEWA-K, GEWA-KS, and Trufin S/T and Turbo-Chil tubes are manufactured in the materials carbon steel, stainless steel and titanium.

They are mainly used in coolers, preheaters, condensers and evaporators to achieve savings in both equipment and overall plant design.

Wieland-Werke AG – Germany
info@wieland.de
www.wieland.de



GEWA-safe double-wall safety tubes



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info@tecron-piping.com
www.tecron-piping.com

Freeze sealing for pipe repairs

The Pipestoppers division of Huntingdon Fusion Techniques (HFT) has introduced two new product ranges – Qwik-Freezer® and Accu-Freeze® systems – for making repairs to pipes with fluid inside.

Freeze sealing is an increasingly popular alternative to 'hot-tapping', and eliminates the need to shut down or drain a system for repairs and maintenance. The systems work by creating ice plugs (or 'freeze seals'), either upstream of the repair site or on either side of an area where a pipe system needs to be maintained, for example where a valve has to be replaced, a section of pipe needs to be cut out, or a leak has to be fixed.

The Qwik-Freezer system uses liquid carbon dioxide and a series of insulated freeze jackets to wrap around the pipes to freeze the contents inside the jacket. The system is quick and easy to use, requiring almost no set-up time. It is claimed to be the only CO₂ pipe-freezing system capable of freezing up to 8" pipe.

Accu-Freeze uses liquid nitrogen with either copper coils wound around the pipe or with aluminium clamshell-



style LN₂ freeze jackets that are bolted together around the pipe. The primary advantages of this system include the increased freezing capability of liquid nitrogen, and the ability to control the pipe wall temperature throughout the freeze process.

The LN₂ injections are automated, which reduces the operator's workload

and reduces the amount of LN₂ that is consumed. The system can also be operated remotely, making it suitable for use inside 'hot' nuclear areas where personal exposure must be kept below certain limits.

Huntingdon Fusion Techniques – UK
hft@huntingdonfusion.com
www.huntingdonfusion.com

Developments in cutting and bevelling

The E-Z Fab is an innovative development in workshop-based, semi-portable, self-centring, semi-automated cutting and bevelling systems, offering high pipe cutting and bevelling speed, range and capacity. Seven models enable the TAG E-Z Fab to cover a range of ½" to 30" pipe.

TAG's split-frame toolboxes are bolted to a rotating ring on the E-Z Fab machine. Due to the rigidity of the frame and the strength of the ring, these toolboxes, fitted with TAG HS HD tooling, can be rotated around the contour of the pipe at high speed (up to 35 rpm), and are fed into the cut on every rotation by a striker system, feeding the tooling down a thread via a gear-controlled transmission slide.

As an example, 6" carbon steel with 22mm wall thickness can be set up,



TAG's E-Z Fab pipe bevelling machine

cut and bevelled in six minutes and 34 seconds. Pipe is loaded into the machine and clamped in seconds by a rapid self-centring jaw system. Power is delivered from a new single-phase 1.75kW NC-controlled servo motor that delivers power and torque, even under heavy load, enabling uninterrupted cutting and bevelling. The system can be coupled with TAG's new programmable Delta touch screen control.

The Delta NC control delivers a signal to the servo motor according to the operator's touch screen instruction. Pulse (jog), start/stop and soft start features are incorporated into all modes, allowing tool set-up and final checks of tool positioning to be made.

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

Measuring complex tube geometries

Thousands of Hexagon Metrology portable measuring arms (also known as 'portable coordinate measurement machines') are utilised every year in industrial applications that range from high-accuracy inspection of turbine blades to the laser scanning of Olympic athletes. However, what is not widely known is that this versatile technology actually has its roots in tube production, back in the 1970s.

The first articulated measurement arm was constructed for the measurement of complex tube geometries by Homer Eaton of the Eaton Leonard Corporation in 1974.

While it used a computer that weighed more than 20kg – more than twice the weight of a modern Romer Absolute Arm – it provided the basic measurement concepts that are still in use today.

"No one could have imagined how the use of portable measurement arms

has changed over the last 40 years," said Stephan Amann, global business development manager for Hexagon Metrology, which today produces the Romer Absolute Arm in its two original factories in the USA and France.

"Originally the arm was developed for tube measurement only, and today it's used in industries ranging from aerospace to dentistry. Portable computers, smaller electronics, 3D laser scanning and better accuracy have led to this change in our business over the last three decades, but now we're going back to our roots with a totally new product."

This product is the Romer Absolute Arm Tube Measurement solution, using TubeShaper – Hexagon Metrology's new software for tube and pipe measurement.

"Our last step in this market was back in 2005; that's a lifetime ago in the software



world. Since then, we've maintained our product range, but some new thinking was overdue. The tube measurement market has changed radically in the last ten years, and the competition is stiffer than ever before, so we're really proud of what we've done with TubeShaper."

Hexagon Metrology – Switzerland
www.hexagonmetrology.com

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www.hammerschmid.at

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Pushing the limits of EDM inspection

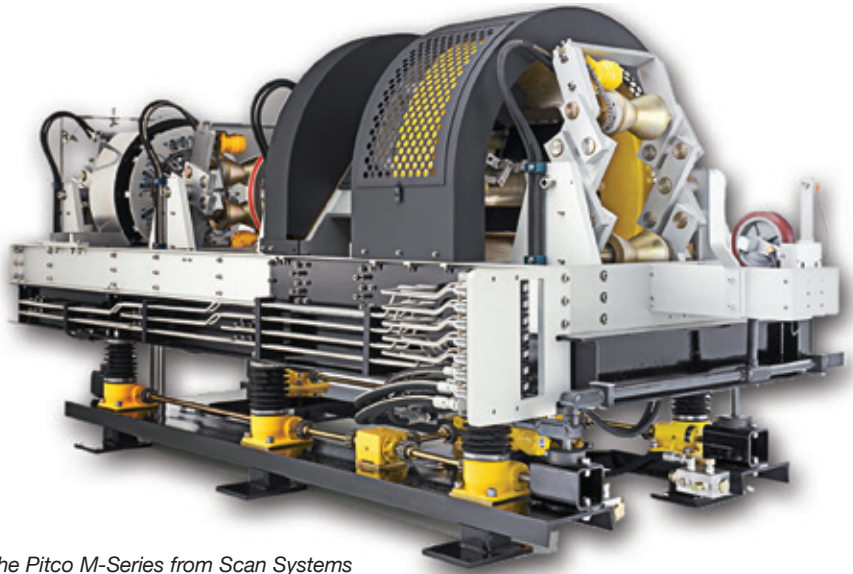
Scan Systems, a USA-based company in the OCTG industry, offers “out-of-the-box” on-location custom flaws and artificial reference indicators to create test standards for calibration. The company has developed innovative detection technology over the years that has helped to overcome a number of challenging industry obstacles.

EMI inspection machines have traditionally relied upon slip rings to transmit data from the longitudinal rotating assembly back to the computer for processing and interpretation. Worn out or dirty slip rings can cause signal loss, leading to less reliable data and unseen indication of potential flaws.

Scan Systems applied some Silicon Valley-style technology to the EMI process and has incorporated wireless capabilities into its M-Series EMI inspection equipment, and removed slip rings from data transmission. This development utilises a Wi-Fi radio inside a rotating head spinning up to 250rpm, and overcomes the large amount of magnetic flux created by the surrounding large electromagnets. This benchmark in the industry allows for improved data accuracy and elimination of significant data errors, and because the data is digitised immediately at the sensor, any signal noise from outside interference is non-existent. “Your Internet went wireless years ago. It’s about time that EMI inspection equipment followed suit,” said Matt Rutledge, general manager/VP of Scan Systems.

Scan Systems’ ESP upgrade to its M-Series line is the first EMI inspection technology to use hall elements in the longitudinal sensors, which enable detection and repeatability on flaws up to 30° off the axis on the OD surface and 20° off axis ID surface (industry standard is 7° to 10° off axis).

Additionally, by utilising hall elements, the number of sensors can increase from 16 to 64 channels of data for better resolution and ability to detect much smaller flaws than the limitations of traditional PC coils. Scan Systems claims to be the first in the world to bring the ability to detect oblique flaws to EMI inspection. Also, because of the use of hall elements and the proprietary



The Pitco M-Series from Scan Systems

Digi-Pro® processing software, if the operator is set to detect at 30°, he will pick up flaws between 0° and 30°, making for a more accurate and precise pass.

Scan Systems has developed an EMI system that can report the linear location of a longitudinal flaw, the circumferential location, and whether it is on the ID or OD surface of the pipe. Historically, EMI inspection equipment was limited to reporting the linear location of a potential flaw. Though a few manufacturers would discriminate between ID and OD indications, the reliability of the methods utilised made the reporting less than accurate. Through significant innovations made in sensor technology, data collection methods and sophisticated software algorithms, Scan Systems’ latest ESP upgrade to the Pitco™ M-Series EMI inspection now provides the inspector with a level of accuracy unseen in EMI inspection of OCTG material. This advancement provides the circumferential location and can report on multiple flaws on the same plane and ID/OD location in degrees of probability, saving valuable time during the prove-up process.

One of the toughest tasks for an EMI unit operator can be interpreting and locating the signal from a pipe flaw. Having an alternative view of the data can be beneficial in determining a pipe’s condition. Scan Systems developed a display that not only makes it easy to

illustrate where pipe flaws are located but also provides additional information on the characteristics of the flaw.

Many OCTG MFL equipment manufacturers claim their machines detect flaws on 0.545" (13.84mm) walls and greater during the inspection process, but often these claims ignore a key component of a quality inspection – repeatability.

This refers to equipment’s hardware and software capabilities to identify the signal given by an imperfection or artificial reference indicator and report those imperfections at a similar amplitude consistently and repeatedly.

API 5CT specifications require a minimum of 20 per cent repeatability on all inspection runs. Using advanced signal processing algorithms combined with proprietary sensors and cutting-edge signal detection hardware, Scan Systems’ Pitco M-Series with ESP upgrade has dramatically improved the ability to separate a flaw’s signal from the background noise offering the best S:N ratio on any given pipe. Scan Systems’ Pitco M-Series with ESP upgrade can reliably detect and repeat on N5 ID notches up to 0.545" (13.84mm) wall thickness and N10 ID notches up to 0.625" (15.875mm) walls.

Scan Systems Corp – USA
mattr@scansystems.com
www.scansystems.com

Resin pipes achieve highest chlorine resistance classification

Dow Europe GmbH has announced that pipes manufactured with Dowlex™ 2388 PE-RT (polyethylene of raised temperature resistance) resins have received the highest chlorine resistance certification (Class 5).

The certification was issued by Jana Laboratories, Canada, and conducted on pipes in accordance with the conditions specified in ASTM F20231 and ASTM F2769-102.

The Dowlex 2388 PE-RT extruded plastic pipes were submitted to different temperatures and pressures at a chlorine concentration of 4.4 ppm, and were tested for more than two years until a failure could be observed. The results allowed extrapolation to lower temperatures, and the pipes exceeded the requirement of 50 years at 60°C at such high chlorine concentration.

“Dowlex 2388 PE-RT resins have a unique molecular structure which makes

them highly resistant to the oxidation caused by chlorinated water,” explained Alex Stolarz, senior development

engineer at Dow Performance Plastics.

“As a consequence, the resins are most suitable for plumbing pipes conducting water subject to disinfection techniques. Chlorine resistance is also a requirement for some of the drinking water markets around the globe.

“We are extremely happy with the test results. With the proven chlorine resistance we can offer our customers a solution which enables them to extend their product offering to new markets.”

Pipes manufactured with PE-RT resins have the ability to be welded, enabling connection through inexpensive, injection-moulded connectors. Surface smoothness of the end product also means reduced pressure loss and



PE-RT pipes are widely used in drinking water applications

less deposit formation, meaning less maintenance is required.

In addition, using PE-RT resins can improve recycling potential compared to alternative materials, and the reduced energy demand during processing has the potential to improve the overall CO₂ footprint of the end product.

According to Guillaume Metral, EMEA market manager at Dow Performance Plastics, “Dowlex 2388 PE-RT resins are already widely used across Europe for pipes destined for drinking water applications and this new certification is confirming the suitability for applications requiring high chlorine resistance.”

Dow Europe GmbH – Switzerland
www.dow.com

Plastic pipe solution to saving water

Plastic pipe manufacturer JM Eagle has urged cities and municipalities to save water with plastic pipe. With conditions worsening regarding the drought crisis in western USA, the company is sharing the benefits of plastic pipe in the states affected by the drought, including California, Washington, Oregon, Arizona, New Mexico, Nevada, Utah, Colorado, Idaho, Wyoming and Montana.

In California, Governor Brown has called for a 25 per cent reduction in water use throughout the state. JM Eagle states that cities in California can reach the governor's goal by using plastic pipe. The underground water infrastructure in the USA is predominantly made up

of metal pipe, which is prone to leaks and breaks when corroded.

The city of Pleasanton, California, made the switch to plastic pipe after experiencing consistently high failure rates and water loss with an old system made of ductile iron. After the switch, the city showed savings of 70 per cent on material cost alone. Plastic pipe will not corrode, and with proper installation will not leak or break, and virtually eliminates the potential for water loss.

JM Eagle's Ultra Blue C909 is a lightweight pressure pipe for potable water systems. Its product attributes reduce labour and installation time.

Municipalities in California can find the full Ultra Blue product line at the company's Fontana plant. A 50-year warranty is offered to customers who purchase Ultra Blue.

The company is promoting its message to engineers with an online course titled *The Plastic Pipe Solution for Water Infrastructure Failures*. The company's goal is to educate and bring awareness of the benefits of using plastic pipe. The course is the first in a series that will offer engineers and contractors annual continuing education credits in order to remain licensed.

JM Eagle – USA
www.jmeagle.com



16-18 September 2015

Tube Southeast ASIA returns to The Bangkok International Trade & Exhibition Centre (BITEC) from 16 to 18 September 2015 in Bangkok, Thailand. The trade fair provides an attractive focal point and springboard for local businesses and international companies seeking to broaden their export of tube and pipe products and technologies.

Organised by Messe Düsseldorf Asia, more than 400 companies will be exhibiting their latest innovations during the three-day event. As ASEAN prepares for further development with a major line-up of infrastructural projects in the pipeline, the wire and tube industries remain strong through robust support from the region and around the world.



Venue

Halls 102, 103 and 104
BITEC – Bangkok International
Trade & Exhibition Centre
Bangkok, Thailand

Organiser

Messe Düsseldorf Asia Pte Ltd
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Fax: +65 6337 4633
Email: tube@mda.com.sg

10th International tube and pipe trade fair for Southeast Asia



www.tube-southeastasia.com

Materials handling & logistics



Materials handling in a state-of-the-art tubemaking facility is streamlined to the point of leaving little room for improvement. The seamless assimilation of the handling process into the broader production cycle might provide the sole area for avoiding what economists call opportunity cost: the loss of the benefits of taking an alternative action.

A minute is always 60 seconds long, and minutes lost at the stage of reception and presentation of the feedstock are just as precious as those lost in less-than-efficient collection, bundling, packaging, and transport of the output. And just as irrecoverable. And just as damaging to productivity.

That is where logistics comes in – and where tube and pipe professionals excel. Opportunity cost is not in their outlook. Full-bore efficiency in materials handling is never out of it.

Remote lift technology

Crown, a material handling company, has extended its QuickPick Remote technology with a variant that controls lift and lower functions.

Available now for fitment to Crown's ES 4000 and ET 4000 series stackers, this version of the remote glove technology features a special transceiver for the stacker's lift system.

The new lift technology means operators can now raise and lower the truck's forks without having to use its control handle.

Consequently operators have both hands free and no longer have to walk as far, bend as often or lift as much – all of which help improve productivity by reducing physical strain and operator fatigue.

The transceiver communicates with the truck via a receiver mounted on the mast. A light indicates system status (raising or lowering).

By pressing the button, operators can position the forks at an ergonomic working height of up to 1.8m, making it easier to transfer objects between pallets and shelving. In addition to filling shelves, remote adjustment of the height of the forks can provide an ergonomic aid for setting up production machinery or carrying out a range of workshop or assembly activities.

Switching the QuickPick Remote lift function from raise to lower is effortless, while the function is automatically deactivated as soon as the operator activates the control handle or climbs onto the driver platform. The truck can continue to be operated in the conventional way, regardless of whether the glove is being used.

"With QuickPick Remote lift technology, Crown has developed yet another highly ergonomic solution that improves safety and efficiency while also offering specific benefits and genuine added value in a wide variety of applications," said Ken Dufford, vice president Europe at Crown.

Crown's QuickPick Remote technology entered the low-level order picking market in 2014. It has already been honoured with five awards, including the IFOY Award (International Forklift Truck of the Year), iF Design Award and German Design Award.

Crown produces a wide range of forklifts, as well as automation and fleet management technologies. The company has global headquarters in Ohio, USA, and regional headquarters in Australia, China, Germany and Singapore. Crown operates a service and distribution network that exceeds 500 retail locations in over 80 countries.

Crown Equipment Corp – USA
www.crown.com



Crown's QuickPick Remote technology allows control of lift/lower functions via 'magic glove'

Robot with an elevated payload

A new model has been added to the Comau range of robots. The Smart NJ 650 features an elevated payload, and was designed to meet the need for robots that can efficiently manipulate components of significant size and weight.

The robot can handle a payload of up to 650kg, has a maximum horizontal reach of 2.7m and ISO 9283 repeatability from 0.15mm. Like Comau's other heavy load and high reach robots, the Smart NJ 650 is characterised by high stiffness, a compact, space-saving design and an optimised load capacity/payload relationship.

The Smart NJ 650 is suitable for multiple industrial applications, including handling, spot welding of large body parts for the automotive sector, and the manipulation of heavy components for machine tending operations, as well

as palletising, deburring and polishing, packaging and machining in general. It can also be deployed within the food and beverage industry, foundry operations or virtually any other industrial sector.

Arturo Baroncelli, segments management director at Comau, said, "The new Smart NJ 650 allows us to expand



The new Smart NJ 650 has a load capacity of 650kg and reach of 2.7m

and strengthen our presence in market segments that need to process heavy pieces. It also enables us to respond to new production areas that increasingly require robots with a large payload capacity."

Comau SpA manufactures flexible, automatic systems and integrating products, processes and services that increase efficiency. Headquartered in Turin, Italy, with an international network that spans 15 countries, Comau offers systems, welding lines and body assembly lines (body welding), machining systems for the assembly of engines (powertrain), and a wide range of industrial robots for all application areas. The company also provides eco-sustainability and maintenance services for a wide range of industries.

Comau SpA – Italy
www.comau.com

Tubular handling systems

Essentra Pipe Protection Technologies in Aberdeen, UK, was established in 1965 to service the North Sea oil and gas industry. Within its 5,000ft² production facility, equipped with CNC lathes and polyurethane casting machinery, the company is able to provide a wide range of premium, API tubular and drill pipe thread protectors, special protection products, stabbing guides and tubular handling systems.

The company's Rhino[®] tubular handling system is designed to provide a safe, efficient and easy-to-use method of

transportation for tubular products, worldwide. The Rhino exceeds existing pipe handling specifications, ensuring maximum safety for handling crew, the transporter, and the general public. It can be modified to accommodate any combination of tubular goods, including accessories fitted to the pipe prior to transit. It also increases shipping flexibility to accommodate a variety of pipe sizes.

The system eliminates metal-to-metal contact, and allows high-density stacking. Lifting eyes facilitate any

type of handling or loading, including truck, rail, ship and offshore transport. Premium materials and construction are employed to ensure years of service. The system is designed to lift and handle loads with a large safety margin, providing unlimited storage options and maximum storage room. A variety of pipe sizes are accommodated, and the system is manufactured to meet 6 or 12 metric ton lifting capacity.

Essentra Pipe Protection Technologies – UK
www.essentrapipeprotection.com



Pipe protection technology



Two-ton gantry

The GH2T Gantry by Sumner Manufacturing has a lift capacity up to two metric tons (4,400lb), and is available in four imperial sizes (8ft, 10ft, 12ft and 15ft) and three metric sizes (3m, 4m and 5m). The all-aluminium gantry lift is lightweight and portable.

The lift consists of two A-frames, a crossbeam and attaching hardware. The A-frame legs lock in a folded position using a push-button release, and feature a removable quick-action locking pin. An adjustable lifting handle allows height adjustments to be made in 15cm (6") increments. The GH2T Gantry assembly is specifically designed to be erected by a two-man crew.

The GH2T Gantry's A-frame legs lock in opened or closed position utilising a push-button release and casters with foot brake that lock at 90° angles. The new design of the A-frame assembly eliminates the need for a locking cross bar to hold legs in the open position. Gantry models weigh between 146.5kg and 129.2kg (285 to 331lb).

Sumner Manufacturing has served the welding and mechanical contracting industry for nearly half a century, creating material lifts, jack stands, pipe fit-up clamps, welding tools, and material carts that are currently used daily in more than fifty countries around the world, in numerous industries. The company maintains offices in the USA, Canada, China, the UK and the Netherlands.

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

*Sumner's GH2T Gantry
 (chain hoist not included)*



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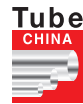
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 Düsseldorf

RFID pressure transmitters for hydraulic applications

Stauff presented its PT-RF series of pressure transmitters at Hannover Messe 2015.

The innovation in the field of universal pressure measurements for fluid technology applications will provide benefits for system operators, maintenance personnel and repair technicians, as well as for original equipment manufacturers.



PT-RF pressure transmitter with reader

The use of these transmitters in a hydraulic system allows the wireless collection of pressure data without having to connect measuring devices to the user's equipment, eliminating the possibility of introducing contamination into the system and speeding up the process.

The operating principle of the pressure transmitters is based on RFID (radio frequency identification) technology.

The energy required for a measurement is transferred to the pressure transmitter via the antenna of the associated reading and display device so that the transmitter requires no internal or external power supply in the traditional sense (eg in the form of a battery) and no external wiring.

As well as the system temperature, other relevant information is transmitted as standard, including media temperature, date and time of the measurement, and the unique serial number of the pressure transmitter. The software included with the unit allows subsequent evaluation and further processing of the measurement results previously transmitted to PC or notebook via the USB interface.



PT-RF pressure transmitters for direct installation

The pressure transmitters are available in five different versions and cover the usual measuring ranges for hydraulics between 0-16 bar and 0-600 bar (absolute), depending on requirements, with a precision of max ± 1 per cent full scale. Temperature values can be displayed from -40°C to $+85^{\circ}\text{C}$.

The pressure transmitters are available with $\frac{1}{4}$ " BSPP (with FPM profile sealing rings) or $\frac{1}{4}$ " NPT screw-in threads. Corresponding connection pieces are available for the temporary or permanent use of existing test couplings.

Measurements can be carried out at the press of a button, without extensive training and within a few seconds, and then documented in a reliable process. Unscrewing and re-installing pressure gauges or other measuring and display devices – practically a temporary opening of the system – is not required. Potential hazards for people, machines and the environment, for example from emitted residual oil in the test hose or leaks at the measuring point, as well as ingress of dirt into the system (eg in dusty environments) can be effectively excluded.

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

Vacuum handling system

The Starlift vacuum system from Acimex can handle tubes, pipes (concrete, steel or cast-iron), tanks and any other cylindrical device.

Handling by suction cups is a safe way to move products without any mechanical contact. A rubber gasket ensures a soft touch without leaving marks or deformation of the pipes.

Both driving and remote handling operations are carried out by a single operator, on either an excavator or a forklift crane. Remote control ensures 100 per cent security.

Acimex – France
contact@acimex.net
www.acimex.net

DNVGL-qualified deepwater lowering system

Cooperation between three companies developing solutions for deepwater installation has led to the introduction of a new system capable of handling heavy loads at depths of more than 3km.

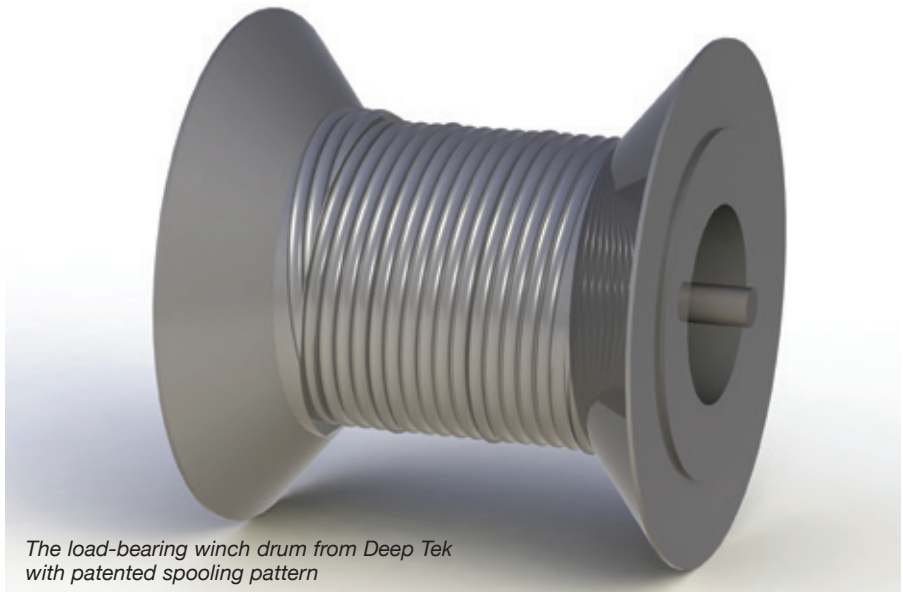
The companies involved are Deep Tek, which provides a wide range of services to the oil and gas, salvage, scientific research and deep water mining sectors; Lankhorst Ropes, a rope technology innovator and manufacturer of high-performance synthetic ropes; and DSM Dyneema, the producer of Dyneema® ultra-high molecular weight polyethylene fibre.

Working closely together, the three companies have developed a fully integrated system based on Deep Tek's drum winch technology for deploying and recovering payloads in deep waters.

Deep Tek has developed and patented a spooling pattern that allows multiple layers of synthetic fibre rope to be spooled onto a load-bearing winch drum with no risk of cutting in.

Lankhorst has created a new rope design with fully optimised fatigue and load bearing characteristics for use in the deepwater lowering system. This rope is based on DSM Dyneema's DM20 XBO fibre and a proprietary coating technology.

A new rope design from Lankhorst with optimised fatigue and load-bearing characteristics



The load-bearing winch drum from Deep Tek with patented spooling pattern

The new system makes use of a rope condition management system and takes full advantage of Dyneema fibre's strength, enabling vessel owners to maximise their vessel output by dispensing with the weight of steel wire. It is currently being qualified by classification society DNVGL using Assurance Case methodology, which enables introduction of new technology without relaxing certification requirements.

The system has already found its first commercial success, with two orders placed by Jaya, an offshore energy

services group that is now part of the Mermaid Marine group of companies. Jaya will fit the system to 110-tonne cranes designed by JJ Offshore for two new 88m ships.

Deep Tek's managing director, Moya Crawford, commented that the joint development leverages the three companies' technological capabilities and expertise, for the benefit of their customers: "It responds to the needs of vessel owners that wish to install higher loads in deeper waters using smaller and more economic vessels than before. It also addresses concerns of major oil companies about the rising cost of developing deepwater fields."

Wilco Stroet, senior vice-president maritime, oil and gas at Lankhorst Ropes, said, "All three partners believe the prospects for the new deepwater lowering system are excellent, and we will all be putting our weight behind the technology to make sure it succeeds in what are very competitive markets around the world."

Jorn Boesten, segment manager offshore at DSM Dyneema, added, "Dyneema fibres have outstanding potential in deep-sea environments, and we are very happy to work together with Lankhorst Ropes and Deep Tek to maximise this potential."

DSM Dyneema – The Netherlands
www.dyneema.com

Optical strain measurement techniques and the future for subsea pipeline testing

By Ed Fowkes, technical production manager at Exova, UK

Ensuring the integrity of subsea pipeline welds is vital for the oil and gas industry, with potentially damaging practical and economic consequences if they fail. Vigorous testing before the pipe is put into service is crucial, and can be the difference between a successful project and one that could prove to be an expensive disaster.

However, such testing comes with challenges. Modern techniques used in the installation of subsea pipelines can impose relatively high levels of plastic strain in the pipes being laid. Therefore, in order to assess, in a laboratory environment, the properties of pipes and associated girth welds after installation, it is necessary to simulate the installation straining process.

Traditional methods of simulating plastic strains generated during installation have used bonded strain gauges. However, work has been carried out at Exova's specialist mechanical and fatigue testing plant in Daventry, UK, to measure the limitations of this type of gauge. Most notably, the gauges may vary in performance when subjected to multiple reversed plastic strain cycles, which is not surprising given that bonded strain gauges are essentially elastic devices. Consequently, the Daventry team researched improved methods of measuring applied strains, and carried out performance comparison tests on two optical strain measurement (OSM) systems.

The results showed that the alternative systems offered more accurate and reliable performance with reduced consumable costs and specimen preparation times. These findings could prove to have a lasting effect on the way in which subsea pipelines are tested in the future.

Background

An increasingly significant number of offshore installation vessels employ pipe reeling systems, making them an industry-wide trend. This method employs a 'string' of pipes welded together onshore and wound onto the vessel around a large diameter storage reel for transportation. Installation involves the pipe string being 'over-boarded', a technique

that sees the string wound out of the storage reel over a similarly large diameter aligner reel and then into a clamping mechanism that straightens the pipe before it enters the water.

While efficient, this method is very demanding upon the pipeline and its welds, as the reeling cycle process imposes high levels of plastic strain in the pipe and weld material. For any post-installation assessment of fracture toughness and material properties, the imposed strain of the installation must be accounted for.

One way of achieving this has been to simulate the reeling cycle of the whole pipe in the laboratory before test specimens are extracted from the sample pipe material. This is expensive and limited in the number of samples with the correct strain imposed that can be extracted. An alternative is to remove relatively small strip samples from across the weld and impose the strain on individual sections of material loaded to a set of target strain values.

These are usually calculated using reeling parameters such as:

- The reel radius
- Pipe diameter
- Pipe wall thickness

Industry standards must be adhered to during this process, for example DNV-OS-F101, requiring the strain to be measured either side of the weld and on the inner and outer wall of the sample.

Since 2010, Exova's Daventry facility has been assessing alternative methods of measuring strain that aim to mitigate some of the limitations found in strain gauges. In particular they focussed on two optical variants: one based on a laser light source and another based on high-resolution cameras.

Through testing and experimentation, it has been found that OSM systems offer a number of benefits. Crucially, they are not susceptible to mechanical degradation during testing, so accuracy can be maintained, regardless of the loading and cycle length of testing.

Being almost completely non-contact, they are also extremely flexible with virtually no limitations on the types of rigid materials that can be tested, allowing for greater scope in analysis and practicality.

Timing and costs are very important factors in testing. Both systems offer quicker test coupon preparation when compared to bonded strain gauges, requiring only the removal of surface mill scale, spraying with low reflection paint and installing contrasting adhesive backed markers where gauges would usually be located.

Laser system

The first system tested was laser based. The apparatus used a pair of laser light source generators, one aimed at the outer 'cap' surface of the test coupon and the other aimed at the inner 'root' surface, to scan the sample.

As the light source passes from a black painted surface over a white marker, the reflected light is diffused. Changes in diffusion are tracked and software interprets each scan of the light source, which is then compared with the previous image and changes in elongation or compression between them calculated. The resulting data is converted into a real-time strain output for real-time analysis.

Trials undertaken compared the results of dummy test coupons, instrumented with both strain gauges against laser system markers and also calibrated extensometers. Post-verification work proved that the laser system measures strain to within, at most, 0.05% to a magnitude of 3% strain.

While these figures were considered to be accurate, some challenges were identified during the trials. Some variation in precision, due to changes in ambient light conditions and local temperature fluctuations, was noted, and precautions had to be taken for future testing to avoid these influences.

Following the investigation, trial and verification process, finalised system specifications were provided to the manufacturer by the Exova Daventry team. After a final shakedown, the complete system was installed in the Exova Spijkenisse laboratory, and has been in use in the Netherlands since 2012.

Real Time Strain Sensor (RTSS) system

The second system trialled was a camera-based module. Named Real Time Strain Sensor (RTSS), it consists of two high-resolution cameras aimed at the test coupon and operating at a frame rate of approximately 200Hz. The system identifies significant contrast change in order to determine the position of the markers.

This is similar in principle to the marker detection process of the laser system. The software tracks the pixel change between markers during loading by comparing the latest frame to the previous frame. This then converts the change into a real-time strain output.

A major difference between the systems is the need for much greater light in the area on which the RTSS camera is focussed. The use of an 'anti-buckling device', which encases the test coupon during compressive loading, shields the markers from ambient light, so an external light source is required.

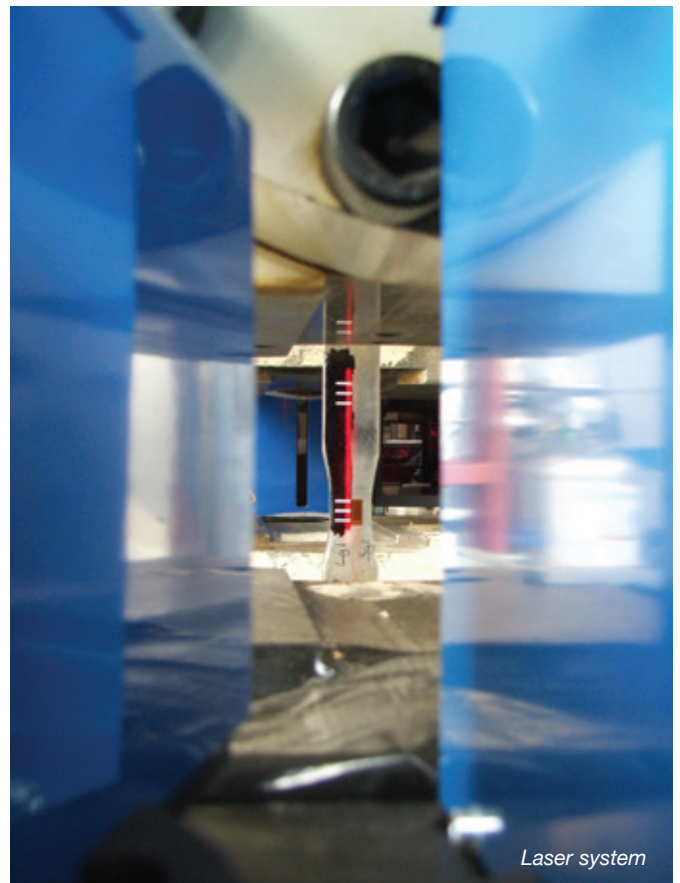
A number of different light sources were trialled, with a series of thin, high-intensity white LED array bars mounted on the testing machine's crosshead and bed being the best. These provide enough light to enable the camera system to be run with very low gain settings, with the additional benefit of flooding the sample with enough illumination to reduce the effects of external light fluctuations.

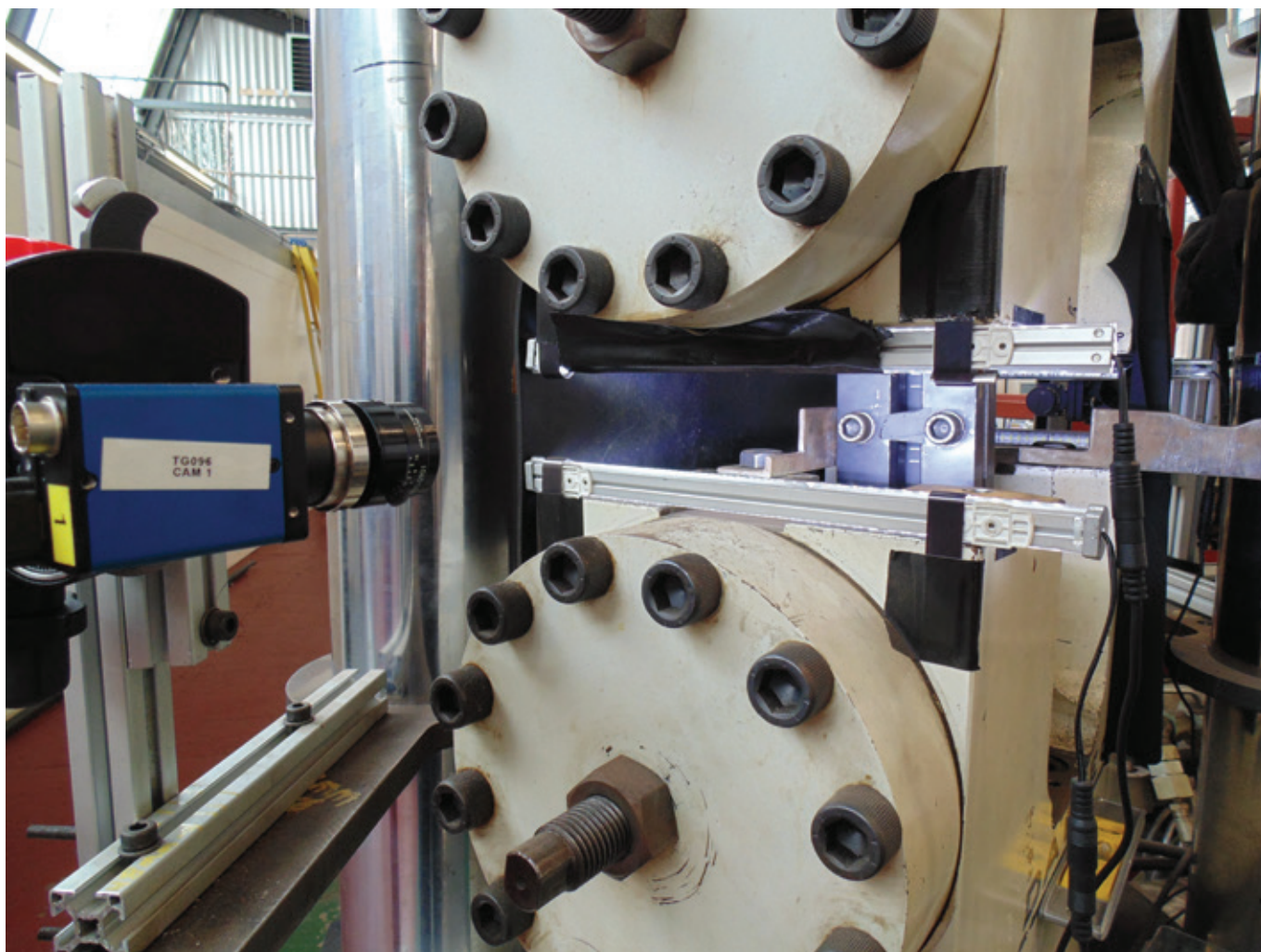
Further trials on the camera-based system showed that painting the anti-buckling device in 'blackboard' paint, with extremely low levels of reflectivity, helped to reduce the likelihood of the camera system accidentally targeting a reflection instead of the markers, and produced a cleaner signal.

In both cases, verification work has shown that OSM systems offer an accurate, cost-effective alternative to electrical resistance bonded strain gauges, especially as there is no mechanical degradation when the test material is subjected to cyclic plastic strain.

For the laser system, signal quality when compared with strain gauges can be more open to influence from external sources such as airflow and ambient light fluctuations. However, the implemented set-up has ensured that signal quality is well within acceptable limits to provide the levels of accuracy required.

The RTSS proved to be less sensitive to the surrounding environment. It is also quicker and less complex to set up, and can be transported between test rigs with ease. The comparative flexibility of these modules has meant that it has been possible to utilise them in multiple testing activities.





Camera system

The present RTSS camera systems have been used in a number of two- and four-post test frames ranging from 50kN to 1,800kN capacity to test specimens of varying length and cross section with cyclic strain cycles of up to 3.5%.

These alternative uses for the equipment are another key driving force when it comes to considering this type of OSM system.

The camera system at Exova Daventry has been used to perform cycle straining of pipe material then pulled to failure, with positive results and more investigations underway to further the scope for the introduction of OSMs into other areas of the laboratory.

Conclusion

The adoption of OSM systems by Exova has significantly reduced preparation time when compared with strain gauging. In what is usually a very time-critical test process, this is an important aspect that Exova is keen to use moving forward with its clients.

Looking to the future, non-contacting OSM for pre-straining has now been adopted in Exova's laboratories in Daventry

and the Netherlands. It has been recommended that this be applied as the Exova global standard method for oil and gas laboratories conducting cyclic plastic strain simulations.

This continued roll out across the Exova labs shows how influential these new findings have been. The transition to OSM systems for this aspect of testing of subsea pipelines will continue to be a popular technique.

Ed Fowkes

Mr Fowkes is a technical specialist and the production manager based at Exova's facility in Daventry, UK. He is responsible for ensuring that test programmes meet clients' needs both technically and commercially, as well as driving continual improvement within the laboratory. He has experience overseeing multi-stage testing projects, predominantly for the oil and gas industry, and has proven success in developing laboratory processes and capabilities.

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www.exova.com

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