## Journal

Magazine of the World's Largest & Most Influential Association of Tube & Pipe Engineers



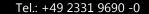








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Dr. Gunther Voswinckel President ITA

Dear colleagues from the Tube and Pipe industry, dear readers of the ITAtube Journal,

We are still suffering from the consequences of the Corona pandemic and its effects on the supply of goods, especially from China, which is currently again in a Corona lockdown. This year we are experiencing another striking turning point with the Ukraine war. While our thoughts and actions over the last 70 years have been shaped by the assumption that international trade strengthens peaceful coexistence in the world, this spring we had to painfully realise that this maxim unfortunately has only limited validity. This painful realisation now has a direct and significant impact on the further strategic orientation of our industry. While quality, delivery time and costs were previously the only decisive factors, geo-political and logistical risk considerations are now increasingly taking centre stage. All sources of supply are being subjected to critical scrutiny, and one can only hope and warn that international trade will not suffer too much as a consequence.

Massive bottlenecks in the supply of energy, primary materials and qualified personnel must continue to be feared. These supply shortfalls due to the corona pandemic and the Russian invasion into the Ukraine will lead to further price increases and will have to be compensated by other pipe producers. Pipe prices have risen by more than 50% in this context. The increasing momentum in the realignment of the energy market continues to lead to increases in demand for pipes. Markets such as USA, India, Europe and the Arab states are characterised by high demand for steel products as well as pipes. As a result, prices for steel pipes in the USA and other regions have risen sharply. Some steel and pipe producers and engineering companies, who equip the steel and pipe industry with high-performance plants were able to massively increase their economic successes.

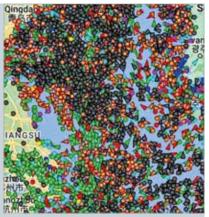
Despite travelling limitations caused by the Corona pandemic, the International Tube Association ITA contributed successfully to keep the exchange in our industry ongoing. The ITA, organized several webinars in 2020, 2021 and 2022 for our tube and pipe industry. For the first time we arranged the ITA netForum which was established to substitute the finally cancelled tube show Tube 2020 in Düsseldorf. On top, with our tube market reviews we also participated in some webinars organized by other reputed organisations.

It is great to see, that our largest industrial event, the Tube Düsseldorf 2022 show, is now taking place and offers our industry again the opportunity to meet and exchange the latest innovations.

Yours faithfully

ITA Team

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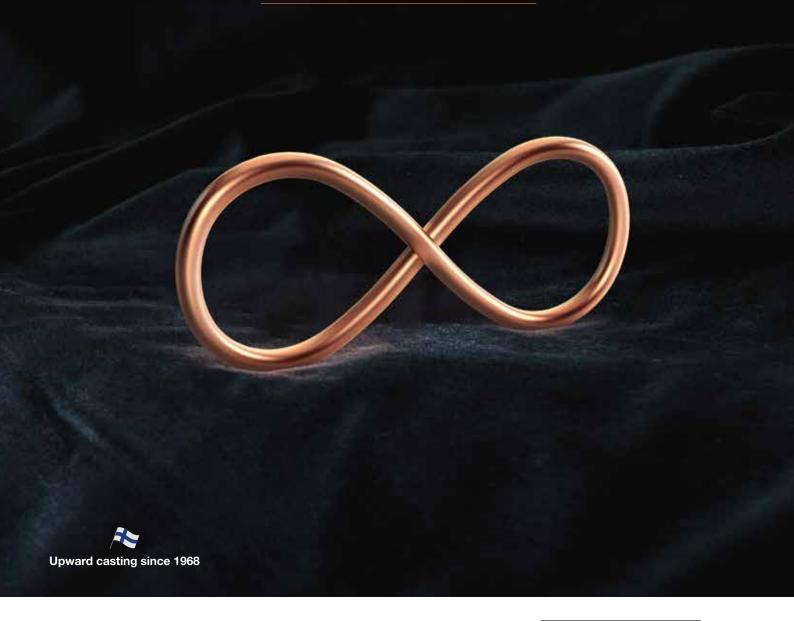
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# EXCELLENCE IS A CONTINUOUS PROCESS





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#### World Steel Tube Production - Review

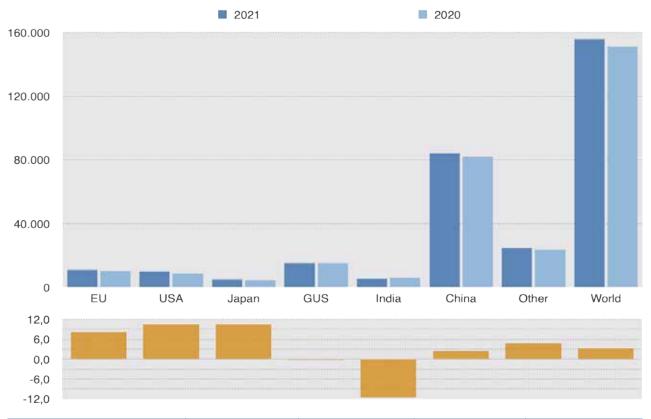
In 2021, 155.7 million tonnes of steel pipes were produced. Compared to the previous year 2020, this represents a increase of 3.1%. The production of seamless tubes increased by 2.6 % to 43.4 Mio tons; the increase in the USA was particularly significant at 22.2%.

Europe, with a plus of 8.5%, displayed a positive result in the seamless tubes market, and a plus of 8.0% in total productions.

The Chinese steel tube producers produced 84 million metric tons, a plus of 2.4%, the production in the USA rise to 10.5% to 10 Mio tons.

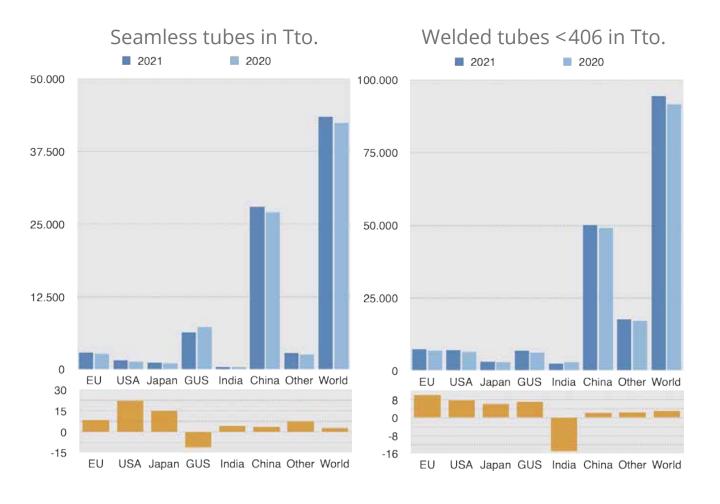
Because we have not received any more recent statistics since the last issue due to the current situation, we decided to publish the data unchanged in this issue.

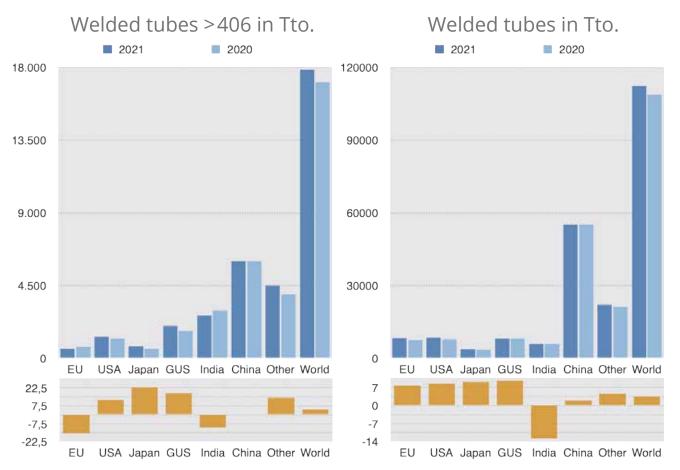
#### Total in Tto.



	seamless t	ubes	welded	d tubes	<406	welde	ed tube:	s>406	we	lded tub	es	-	ΓΟΤΑL	
Region/ country	2021 2020	in %	2021	2020	in %	2021	2020	in %	2021	2020	in %	2021	2020	in %
EU	2.930 2.70	0 8,5	7.500	6.800	10,3	610	720	-15,3	8.110	7.520	7,8	11.040	10.220	8,0
USA	1.650 1.35	0 22,2	7.000	6.500	7,7	1.350	1.200	12,5	8.350	7.700	8,4	10.000	9.050	10,5
Japan	1.150 1.00	0 15,0	3.100	2.920	6,2	750	610	23,0	3.850	3.530	9,1	5.000	4.530	10,4
CIS	6.449 7.25	3 -11,1	6.800	6.350	7,1	2.000	1.690	18,3	8.800	8.040	9,5	15.249	15.293	3-0,3
India	470 450	4,4	2.438	2.863	-14,8	2.643	2.958	-10,6	5.081	5.821	-12,7	5.551	6.271	-11,5
China	28.000 27.00	0 3,7	50.000	49.000	2,0	6.000	6.000	0,0	56.000	55.000	1,8	84.000	82.000	2,4
Other	2.800 2.60	0 7,7	17.600	17.200	2,3	4.500	3.930	14,5	22.100	21.130	4,6	24.900	23.730	4,9
World	43.449 42.35	3 2,6	94.438	91.633	3,1	17.853	17.108	4,4	112.29°	1108.74	1 3,3	155.740	151.09	943,1

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ITAtube Journal June 2022

Dr. Gunther Voswinckel, VOSCO GmbH

## World Tube & Pipe Market: Factors influencing the current situation

Dr. Gunther Voswinckel - Update as per June 2022

Welcome to ITA's and VOSCO´s regular presentation of the main worldwide economic factors influencing the tube and pipe industry.

We are still suffering from the consequences of the Corona pandemic and its effects on the supply of goods, especially from China, which is currently again in a Corona lockdown. This year we are experiencing another striking turning point with the Ukraine war. While our thoughts and actions over the last 70 years have been shaped by the assumption that international trade strengthens peaceful coexistence in the world, this spring we had to painfully realise that this maxim unfortunately has only limited validity. This painful realisation now has a direct and significant impact on the further strategic orientation of our industry. While quality, delivery time and costs were previously the only decisive factors, geo-political and logistical risk considerations are now increasingly taking centre stage. All sources of supply are being subjected to critical scrutiny, and one can only hope and warn that international trade will not suffer too much as a consequence.

Currently, global supply bottlenecks, high energy costs and massively rising inflation pose unexpected challenges that are difficult to calculate. As it is usual the case in such disruptive times, we are seeing crisis winners who are maximising their profits - but also crisis losers who have to fear for their existence. Due to the dynamics of these developments, it is usually very challenging for the crisis losers to react appropriately.

If we look at the pipe market in Europe, about 20% of its imports have so far

been supplied by Russia and Ukraine, we are currently experiencing significant increases in demand to compensate for these losses. Russia, under the influence of the supply embargo, will certainly be out of action for a longer period of time. Ukraine, whose logistics have already been massively destroyed by the war, will certainly not be able to deliver again in the short term. Massive bottlenecks in the supply of energy, primary materials and qualified personnel must continue to be feared. These supply shortfalls will lead to further price increases and will have to be compensated by other pipe producers. Pipe prices have risen by more than 50% in this context. The increasing momentum in the realignment of the energy market continues to lead to increases in demand for pipes. Markets such as the USA, India, Europe and the Arab states are characterised by high demand for steel products as well as pipes. As a result, prices for steel pipes in the USA and other regions have risen sharply. Some steel and pipe producers as well as mechanical engineering companies, which equip the steel and pipe industry with high-performance plants, were able to massively increase their economic successes.

Despite high capacity utilisation of the plants worldwide due to the high demand, some pipe manufacturers were unfortunately not able to take advantage of these so-called windfall profits and therefore had to report losses in the first quarter of 2022. Further challenge is imposed, if political measures to prevent climate change, such as the additional CO2 costs agreed by the European Union, are not introduced in a balanced way. These effects may also lead to possible consequences, being the migration

of high energy consuming industries to lower-cost regions. The confidence to be able to compete on the world market with these additional costs in the future is dwindling among some pipe producers. Vallourec, for example, recently announced the definitive closure of its traditional European plants in Saint-Saulve (F), Düsseldorf (D) and Mülheim (D). It remains to be seen to what extent the loss of these European quality-oriented plants can be compensated for by other producers and whether further price increases for tubes can be expected as a result. In general, there is enough production capacity to serve even the increased demand for tubes and pipes for all market segments.

Raw material prices for the steel as well as the tube and pipe industry would seem to have peaked by the end of 2021. Energy costs, however, remain high and climb even further due to market interventions (e.g. OPEC plus) and the geopolitical conflicts. Nonetheless, if the balance of supply and demand within the tubes and pipes industry can be restored, price volatility can be expected to calm down.

Tube plant infrastructure with respect to tube mills and finishing lines as well as digitalisation and applied quality assurance systems also plays a significant role. Growing importance can be attributed to agile management strategies regarding customer benefit, process and product quality enhancement as well as purchasing processes by applying "Industry 4.0" measures.

With an eye to the return to something like normal, it should be noted that plant builders and technology suppliers alike increasingly find interesting business opportunities in this new market segment. Some technology suppliers have already reacted and enhanced their product portfolio with the addition of digital solutions.

The International Tube Association organized several well attended webi-

nars in 2020, 2021 and 2022 to keep the exchange within our industry ongoing. Some interesting applications of "Industry 4.0" in the tube and pipe industry were presented by various companies at the ITA netForum which was organized to substitute the cancelled TUBE 2020 in Düsseldorf. August 2021 new technologies for the application of pipelines for hydrogen and in May 2022

"Engineered Tubes for the Automotive Industry" were successfully presented at the webinars organized by the ITA Indian chapter. The overwhelmingly positive response to these events is a sign of impressive optimism in our tube industry.

The increasing demand for green technologies creates further growth potential. The ITA together with Messe Düsseldorf have taken these developments towards environmentally friendly and resource-saving green technology into account by organising so-called "ecoMetal Trails" at the Tube 22 trade fair. Exhibitors can present their innovative green technologies to an interested audience in special guided tours.

Global supply shortages, high energy costs and the continuing rise in inflation are major challenges for our industry. The industrial world is currently focused on compensating for the certainly lasting supply shortages caused by the sanctions imposed on Russia due to the Russia-Ukraine war and the destruction of Ukraine's supply structures.

In addition, the renewed lockdowns imposed by Corona in parts of China, especially the region around Shanghai, have led to massive supply chain failures. Figure 1 clearly shows the massive congestion of transport ships off the coast of China.

Globally, goods worth about US\$ 683 billion are currently stuck on unmoving container and transport ships, equivalent to about 0.72% of global GDP in 2021. As you can see in Figure 1, the congestion is improving. Anyhow experts fear that even after

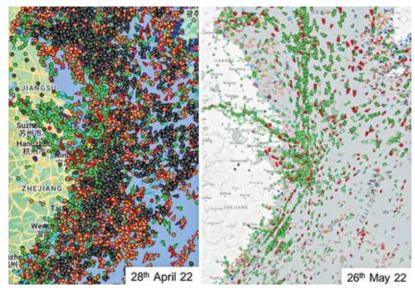


Figure 1: congestion of transport ships off the coast of China Source: marinetraffic.com

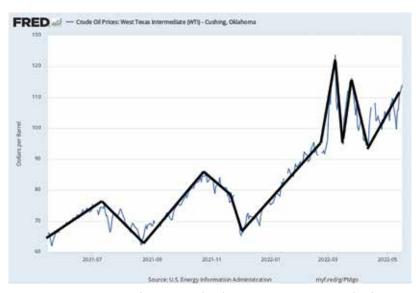


Figure 2: Oil price WTl development 1 year up to 24th of May 2022 (US\$/Bbl)

Source: US Energy Information Administration

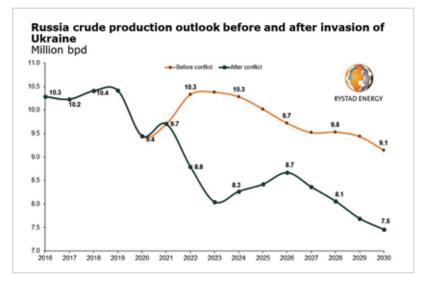


Figure 3: Russia crude Oil production before and after Invasion of Ukraine

Source: Rystad Energy research and analysis

the Corona-related lockdowns in China are lifted, it will take months for these supply bottlenecks to return to normal. In the wake of these logistics bottlenecks, the cost of a standard 40-foot container on the major east-west routes has risen from less than US\$2,000 to more than US\$10,000 since the beginning of 2020. Chinese pipe producers are currently particularly affected by this, as they can hardly transport their goods to their international destination markets.

As far as possible, the industry is trying to compensate for these bottlenecks with alternative sources of supply. However, it has become apparent that in the past decade's dependencies have arisen here, not only in energy supply but also in raw materials, which can hardly be alleviated in the short term. This bottleneck is currently leading to a boom in demand on the local markets, which in turn is causing prices to rise. In this context, the current trend towards decoupling, i.e. becoming independent of singular sources of supply or supplier countries, poses great challenges for our industry. Anyway, it is to be hoped that post the current conflicts on the eastern borders of Europe, trade relations with neighbouring European countries will return to normal while avoiding unilateral dependencies.

Energy prices represent another challenge (Figure 2). Two major phenomena have caused prices to rise massively.

Firstly, industrial production, which has picked up after Corona, has led to a sharp increase in energy consumption since 2021, so that supply has hardly been able to meet demand. Secondly, possible geopolitical sanctions creating a massive contraction of Russian production have caused speculative price increases (Figure 3). It is anticipated that the Russian Oil production may be reduced by up to 20%.

The corona lockdown in Shanghai at the end of March briefly eased the situation on the price front, as demand for energy fell noticeably as a result (Figure 4). According to Platts estimates, China's April demand plummeted to 13.35 million b/d, down

11.5% year-on-year, though recovering transportation demand may push May figures back above 14 million b/d.

At the peak of lockdown mandates, gasoline and diesel demand in coastal regions dropped by as much as 40%, with a grand total of 45 cities with some form of movement restrictions.

Now, however, prices rose again. The oil and gas producing countries could certainly have increased the supply volumes so that the energy prices would have fallen to a normal level. The refusal to increase supply sufficiently has been reflected in the balance sheets of energy producers. Aramco, the world's largest producer of fossil fuels, has become the world's most valuable company this first quarter 2022. Currently, there is no evidence that oil and gas producers are increasing supply to capture market prices. The USA anyhow significantly increases the number of rigs from 531 in May 2021 to 728 in May 2022 (Figure 5).

Of these 728 rigs, 576 are dedicated for the extraction of oil and 150 for gas. Canada at the same time increased their number of rigs by 30 to 88. Efforts to reduce dependence on fossil fuels can hardly be successful in the short term and can only contribute to decoupling in the medium term. For our pipe industry, however, this means that high energy prices must be expected in the near future as well. Some analysts are anticipating another surge towards the \$130-140 per barrel range this summer.

On the other hand, investments to secure the energy supply will keep the demand for tube products high.

Energy prices in particular, as well as existing supply bottlenecks, are cost drivers and are fuelling a worldwide inflation that is threatening to gallop. So far, the central banks have not succeeded in containing inflation (Figure 6).

In America, we are currently experiencing inflation of 8.3% with a decline in economic output growth of 1.4% in the first quarter of 2022. The Fed now seems determined

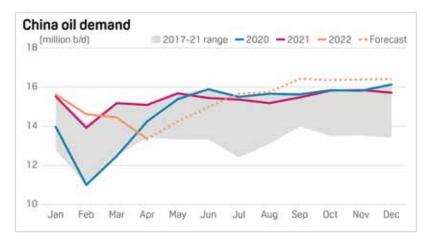


Figure 4: China Oil Demand 2017- 2022 (US\$/Bbl) Source: Oilprice.com, PLATTS

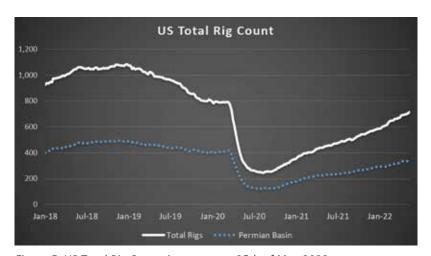


Figure 5: US Total Rig Count 4 years up to 25th of May 2022 Source: OilPrice.com

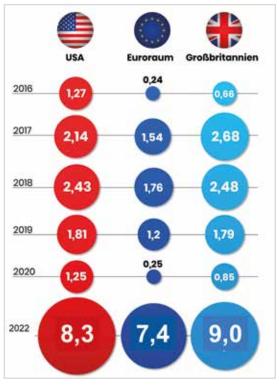


Figure 6: Annual Inflation 2016 to 2022 Source: US Bureau of Labour and Statistics, Eurostat, Office for National Statistics, The Pioneer

to counteract this massively by increasing the key interest rate; it has already implemented two interest rate hikes. Apart from possible further negative consequences for the economy and the labour market, it will certainly take a while before measures are taken to curb inflation. In recent days, the US administration has even tried to modify the European sanction plans against Russia's oil and gas supplies so that no further supply shortages and price-driving supply restrictions of oil and gas will result. The US government is also working on the difficult task easing sanctions against Venezuela and Iran in order to increase the supply of oil.

In Europe, inflation has already risen to 7.4%. However, inflation rates vary widely and clearly reflect the dependence on fossil energy with world market prices as well as on alternative energy sources. Countries with a higher share of non-fossil energy sources such as Norway with 5.4% due to a high share of wind and water energy and

France 4.8% due to a high share of nuclear energy are much less affected by inflation than countries with a high share of fossil energy, such as Estonia with 18.8% or the Czech Republic with 14.2%. For reference, the Russian inflation rate reached already 18,8%. Geopolitical dependencies as well as their energy supply shortfall risks have an additional price-driving effect. Many economies are currently examining the extent to which the energy self-sufficiency share can be expanded more quickly. In addition to the more conventional alternative energy generation with hydropower, wind power or solar energy, energy sources such as shale gas, nuclear fuels and hydrogen are increasingly in focus. The European Central Bank is much more reluctant than the US Fed to raise interest rates to curb inflation. The high indebtedness of some European countries and the high financial burden that interest rate hikes would mean for these countries, certainly explains this restraint. In the long run, however, Europe



will not be able to continue to ignore interest rate hikes. Hints from the European Central Bank lead us to expect the first interest rate hikes this summer. It is to be expected that other central banks besides the Fed will also feel compelled to make high interest rate hikes, which could then have a negative impact on the economy and thus lead to an increase in unemployment. Stagflation is the economical consequence due to the present situation of high inflation in combination with small or no economic output growth.

If we look at the European pipe market as an example, so far about 20% of pipe imports have been served by Russia and the Ukraine. In the case of seamless pipes, the import share from Russia and Ukraine was even as high as 40%. These volumes need to be supplied by other tube and pipe producers. Russian shipments in 2022 will decrease by 34% on-year to 1.06 million tonnes, the RBC newspaper reports, citing a presentation from fund director Alexander Semenchishin. Domestic consumption in Russia is seen decreasing by 2% on-year in 2022 to 9.12mt. As a result, pipe production will fall by 5.5% to 10.04mt. Many regions of the world such as Europe and North America need to compensate their pipe and tube imports from Russia and Ukraine.

As a result of the increased demand and the lower supply of pipes, pipe prices have risen by more than 50% compared to the previous year 2021 (Figure 7) and possibly may climb even further this year.

Figure 8 shows some current high pipe prices in the USA and the import prices for pipes in Europe. The Chinese welded pipe production decreased in April 2022 by about 16,5%. In this context it is remarkable, that Chinese tube producers try to attract with low prices to compensate their actual burdens of delivery bottlenecks, high transport costs to and import duties in the relevant regions.

Most pipe and steel producers were able to report strongly improved figures for Q1 2022 in the wake of the price increases. However, for European pipe producers, the additional CO2 costs agreed to be imposed

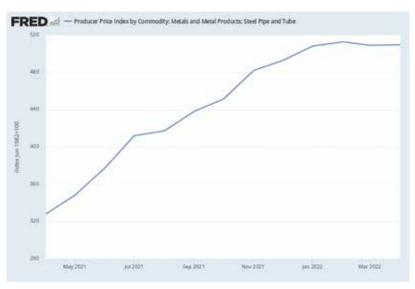


Figure 7: Producer Pipe Price Index as of 24. May 2022 Source: US Energy Information Administration

Tubes Standard	Price Range
ASTM A500 USA	2.160 US\$/ton - 2.390 US\$/ton
OCTG P110 USA	3.540 US\$/ton - 3.760 US\$/ton
ASTM A53 USA	1.650 US\$/ton - 1.985 US\$/ton
Europe Imports	1.080 €/ton - 2.690 €/ton
API 5I Gr. B China FOB	830 US\$/ton - 990 US\$/ton

Figure 8: Price range as of May 2022 for some selected tubular products

Source: various



Figure 9: Vallourec Tube Mill in Saint-Saulve Source: Vallourec

by the European Community represent another major challenge. Confidence in being able to compete on the world market in the future with these additional costs is dwindling among some tube producers. Vallourec, one of the largest producers of quality tubes, reported losses in the first quarter of 2022 and at the same time announced the closure of its traditional plants Saint-Saulve in France (figure 9)

as well as Düsseldorf and Muelheim in Germany.

This will not only mean the abandonment of prominent milestones in the European pipe manufacturing tradition, but it also remains to be seen to what extent the quality products from these plants can be taken over by other producers without any loss of quality. Furthermore, it remains to be seen whether these closures will cause pipe prices to rise further.

In general, there is enough production capacity to serve even the increased demand for tubes and pipes for all market segments. Raw material prices for the steel as well as the tube and pipe industry would seem to have peaked by the end of 2021.

Energy costs, however, remain high and climb even further since market interventions (e.g. OPEC plus) and warlike actions call free world trade into question. Further challenge may be imposed, if political measures to prevent climate change are not introduced in a balanced way, with possible consequences being the migration of high energy consuming industries to lower-cost regions. Nonetheless, if the balance of supply and demand within the tubes and pipes industry can be restored, price volatility can be expected to calm down. Tube plant infrastructure with respect to tube mills and finishing lines as well as applied quality assurance systems also plays a significant role. Growing importance can be attributed to agile management strategies regarding customer benefit, process and product quality enhancement as well as purchasing processes by applying "Industry 4.0" measures.

With an eye to the return to something like normal, it should be noted that plant builders and technology suppliers alike may find interesting business opportunities in this new market segment. Some technology suppliers have already reacted and enhanced their product portfolio with the addition of digital solutions.

It is good to realize, that besides the virtual exchange in our industry, such as the webinars organized by the International Tube Association (ITA) now again hybrid or even personal events for industrial exchange take place.

It is great to meet tube producers as well as suppliers to the tube and pipe industry at our world largest tube and pipe show "Tube Düsseldorf 2022".

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Bültmann GmbH

### Endforming at its best

Increasing quality and production demands of precision tubes require a more precise tube end preparation upstream of drawing processes. Therefore the leading tube ends need to be properly prepared.

This work step is perfectly covered by the state-of-the-art BÜLTMANN tube pointing machines.

This well established technology based on combined BÜLTMANN tube pointing machine, type HAM/PH, has been specifically developed to handle the increased requirements associated with the pointing of tubes. Due to the combination of both proven pointing methods - folding tag forming and push-pointing - integrated in one machine it is possible to point tubes with small wall thickness as well as tubes with a larger one (ratio > 1:10) in one working station.

As this machine type requires very little space it is perfectly suited to retrofitting into an existing line. Furthermore the simple technical concept offers considerable cost benefits as only one machine for this application has to be purchased instead of two.

Lowest noise emissions as well as optimal ergonomics due to the use of tool changing devices are further advantages of the system.

Moreover, the ingenious design of the push-pointer modules makes it possible to retrofit on site already existing folding tag machines with this add-on, so that a "state-of-the-art" pointing system can be used with a low investment.



MSG-Maschinenbau GmbH

Effort reduction with intelligent implementation of patented straightness and twist measurement



MSG – Schmallenberg – Germany. The assessment of effective straightness of bars, wires, tubes and/or profiles is not trivial. This is mainly situated in the effects of gravity, dynamics and external contact forces introduced by the measurement apparatus itself.

For example, a rod product placed on a reference table will be influenced by its own weight and contact forces like friction. On reference tables the straightness is mainly measured with feeler gauges. In case of

rotating the product radially the results are varying a lot.

The patented GMS-Sprofile developed by MSG Maschinenbau GmbH solves this problem. The solution is quite simple: measuring forces in all existing points and all directions. Bending errors due to vertical own-weight and horizontal contact forces (e.g. friction) are eliminated. That's why this system measures an undiscussable, absolute objective – a so called effective straightness value (figure 2).

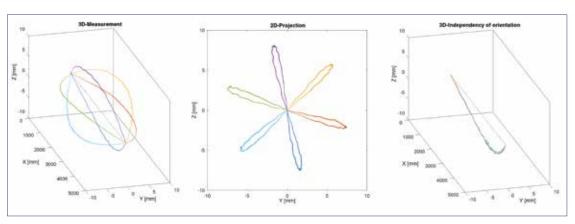


Figure 2: Effective straightness measurements by GMS-S

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Only this unique system enables you to get extremely accurate and detailed measurements of each bar and also enables you to directly diagnose numerous adjustment problems in the production line.

Beside the accuracy of a measurement equipment used for final certification, which is hardly connected to product specific standardization-papers, there remains one more important criterion which explains the ROI: Production effort reduction!

ing to different accuracy classes with the purpose of quality related price settings.

A second effective possibility for placing a GMS-S inside a production line is close to a straightening machine (figure 3, 2). Whether locating the GMS-S up- or downstream depends on the straightening technology itself. In case of a roller straightener where rollers are adjusted manually, the GMS-S is mainly placed downstream assisting the worker with displaying the highly objective straightness results on a monitor.

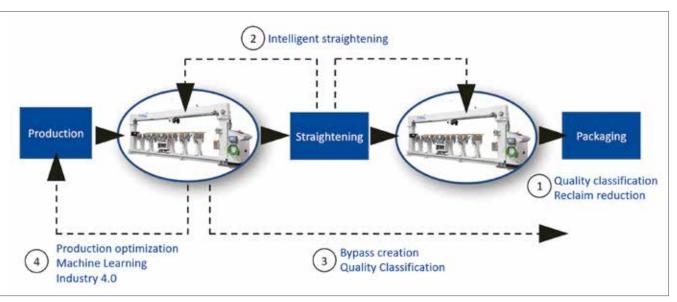


Figure 3: Generalized production line

The above image shows a generalized process flow between product forming and correcting as well as the main possibilities for integrating one GMS-S.

One of the most obvious locations of GMS-S is at the end of production after straitening and immediately before packaging (figure 3, 1). There are manufacturers using this location for 100% product classification, digitalization and of course certification. They reduced reclaim by more than 50% and – if one occurs – they are able du verify the exact product within their database. "The mere fact that the generated measurement protocols are easily accessible, increases production reliability and drastically reduces the processing effort," Operations Manager Markus Fritz from VDM Metals says. Furthermore, you're able to divide products accord-

Beside digitalization and classification this is the best location if straightening is done for all products anyway.

If there is an insecurity whether the product is already straight enough according to its standardization papers and the downstream straightening system is a complex equipped straightening machine (e.g. stamping press, or continuous profile straightener), the GMS-S can be used for pre-measuring the products and build up a bypass line (figure 3, 3).

Furthermore, non-productive times can be reduced by minimizing wear and tear. Related to further production steps like grinding and peeling better straightness lead to higher rotation speeds and therefore faster cycle times.

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In other cases the preliminary measured straightness in front of a straightening machine can be displayed to a worker adjusting a stamping press manually or – and this is the most desired functionality – building up a completely autonomous straightening press (figure 3, 2). This degree of automation has its highest ROI in reducing process time and – not to be underestimated – transferring the knowledge of specialists to a computer. This technique ensures competitiveness for future businesses!

Why correcting straightness if the upstream production itself can be influenced and improved (figure 3, 4)? Understanding straightening as a correction of inaccurate produced bars or pipes lead to a direct connection of a GMS-S to different production steps. In case of a drawing bench, e.g. for longitudinal welded automotive tubes, you're able to influence the drawing die angle for gaining more accurate straightness results. This is mainly done manually by the plant operators. This process can be

updated with a GMS-S where the straightness information automatically controls the die angle. A downstream straightener may be unnecessary.

Considered with distance, the main efforts created with GMS-S are not generated only by installing this equipment. Dealing with intelligent connections between production steps and absolute objective straightness results mainly lead to sustainable production efforts.

For more information: www.msg-maschinenbau.de - +49 2972 97740 0

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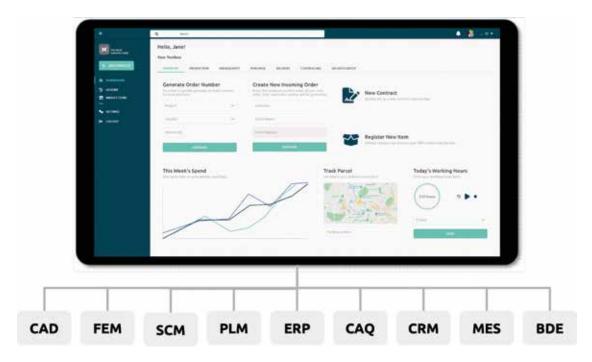
MAESN GMBH

## Robotic Process Automation as key for process efficiency boost in tube industry

Robotic Process Automation (RPA) offers extensive opportunities for companies in the tube industry to automate their processes by uncomplicated, freeing up resources and gaining competitive advantages.

Companies in the pipe industry vary from serial to contract manufacturers. Although products, manufacturing processes, fields of application as well as daily challenges vary greatly, they all have one thing in common: complex, often cross-IT system

There is a simple solution: Through robotic process automation and the use of its' various technological approaches, reliable and safe automation solutions can be built. The key here are so-called bots which are performing rule-based activities exactly like the user would. This enables fast and targeted integration without having to connect each system via individual or complex interfaces. These bots can also act bilaterally between systems by extracting, preparing and exploiting data suitable for the respective application and the user.

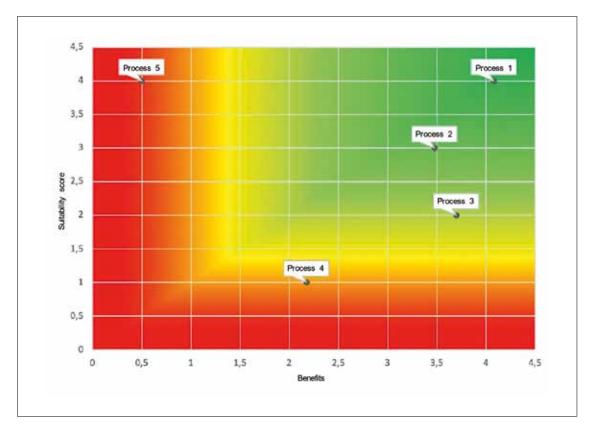


and manual processes that require a lot of work without adding much value. The multitude of repetitive and administrative tasks in IT systems, where data is searched, copied and evaluated between different systems, as well as Access and Excel solutions, regularly leads to a high number of errors. In addition to dissatisfied employees due to such inconveniences and unintuitive systems, training new employees is a lengthy and costly task.

With the process-based approach of maesn, almost every existing IT-system can be integrated into the automated workflow and lifted into a state-of-the-art working experience. This has enabled far-reaching



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added values to be achieved in past projects: Process cost reductions of over 50%, productivity increases of up to 90%, and error rate reductions of 100% have been achieved using maesn RPA. In addition, the preparation of KPI and BI boards can also be extracted as needed and linked to automations. With the consolidation of these functionalities within one frontend, the maesn workspace ranges from your efficient work-support to the intuitive single-source-of-work.

The steps to more efficient processes are to be built up according to the following sequence:

- I. Identification of suitable processes along the order fulfilment process, considering the IT infrastructure involved. For this purpose, methodical approaches can be chosen from classic process capture, process recording to process mining. In this case, it is advisable to perform business process management directly and to optimize the modelled processes.
- II. Evaluation and prioritization of the identified processes by means of RPA assessment regarding compatibility and cost-benefit ratio.

- III. Conceptual design, development and implementation of the automation solutions into the server structure of the applying company.
- IV. Integration of the bots into the workspace as well as instruction of the users.

#### **About maesn GmbH:**

As a provider of RPA technologies, Maesn GmbH specializes in manufacturing companies and heterogeneous IT infrastructures for operational as well as administrative processes. By offering end-to-end solutions from business process management to the development and implementation of automation solutions using Maesn's own framework to the functional guarantee during the lifecycle, Maesn is the ideal partner for your automation goals.

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Matplus GmbH

## Right decisions by next generation material information management

#### **Materials Technology with Passion**

Materials determine costs and value of products. Materials technology optimizes the balance of costs, product properties and environmental impact. The objective of a circular economy can only be achieved with appropriate materials. Matplus experts develop industrial material technologies - from the idea to the semi-finished product - as part of their daily work. Materials simulation and materials information management are vital for success in many projects. As a result, the Matplus product EDA® is now a leading solution on the market for advanced materials engineering by providing a technology for a cross department collaboration of materials information management.

### More than Materials Reference Data from material catalogs to a single point of truth

In many cases, the effort to make material data available in a digitalized format has led to unmanageable islands of data in companies. Inconsistent data, missing interfaces, lack of traceability and incomplete information in combination with a large variety of (file) formats leads to inefficient business processes. Materials knowledge, which is

needed to accelerate processes and for decision making, is not available as a corporate solution.

Material catalogs and reference databases are a first step to create such a knowledge base. As an example, the Stahldat SX (www.stahldaten.de), which is also available online, provides the data for all European steels. In the aerospace sector, the MMPDS (Metallic Materials Properties Development and Standardization) database (www.mmpds.org) is an accepted starting point for material properties. It is crucial to extract a company-specific subset of released information from the multitude of heterogeneous information sources and databases.

Computational simulation is an increasingly important data source for material formulations and application designs. For structural metals, like steels and aluminum alloys the material properties can be calculated as a function of temperature and process conditions using JMatPro® software (www.jmatpro.com). JMatPro® solves the model equation based on validated material models and is able to calculate a large number of variants with very little effort.

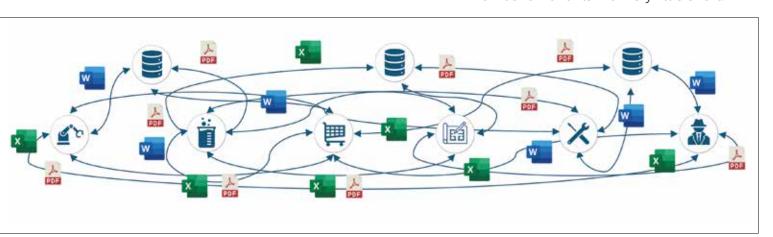


Fig 1: Materials Information in industry today – needs experts to locate right information

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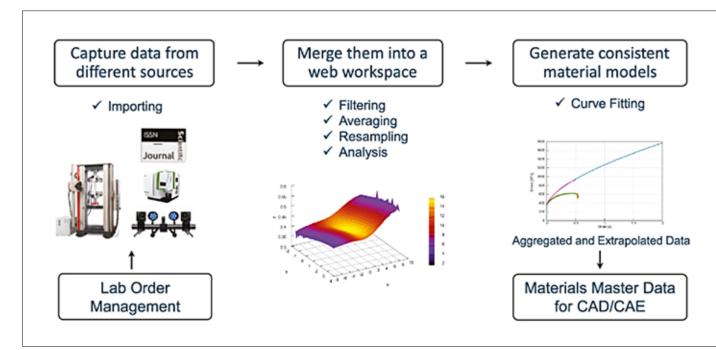


Fig 2: EDA® supports the entire workflow from data acquisition to material modelling for CAE

JMatPro® reduces testing efforts and allows the assessment of virtual chemical compositions leading to an optimized material in very short time. Thus, helping to reveal new and improved materials and to reduce costs.

A major benefit of EDA® is the consolidation of all referenceable data sources into a single centralized repository available both in the cloud or on premises:

- Material Optimization: Explorative data analysis of JMatPro® calculations and materials testing.
- Test Data Management: Consolidate and evaluate demanding test data with their curves from different sources.
- Material Models: Create and fit models for Plasticity, Fatigue, Damage – ready to be used in CAE downstream applications.
- Knowledge Management: Integrate reference data, own test data, documents, files and reports to the single source of enterprise materials knowledge.

**Designed for Materials Engineering** EDA® was built to support and accelerate

materials engineering processes over the life cycle of product applications:

- Master data management and material approvals
- Qualification processes, material testing and digital test certificates
- Declarations of hazardous substances
- Creation of material cards for CAE (Fig 2)
- Pre-development and design of products and processes with material selection
- Purchasing processes with cost optimization by reducing the number of variants

Beyond storing information in a big-data compatible database, EDA® provides extensible functionalities for processing, evaluation and visualization of data – hence the name EDA® originates from Explorative Data Analysis.

#### **Consolidation of material cards**

Product development using CAE tools is a standard in industry. Having consistent materials information for all the different tools of an enterprise is still an issue. EDA® helps to consolidate as it can import and

export such information for many popular systems:

- CAE: Abaqus, ANSYS Workbench, LS-Dyna, PamCrash, HyperMesh, Patran
- CAD: Catia, Creo, Solid Works, Solid Edge, NX

#### Overall business value using EDA®

- Lower Costs by managing complexity, alloying & energy costs
- Improve Quality of products and processes, create sustainable products
- Decrease Time for processing of inquiries and quality management

#### And additionally:

- Increased productivity: (New) employees will make better decisions since they are able to find consistent knowledge and replace the "data security by obscurity" paradigm.
- Accelerated development cycles having the most recent versions of the right information, like material cards and

material tests immediately available.

 Reduced complexity will help to streamline production and lead to savings in procurement.

#### **Customers testimonies:**

"We decided to upgrade to Matplus EDA® and now benefit from extended capabilities"

Dr. Thomas Witulski, head of materials and processes at Otto Fuchs KG

"Using EDA® we reach our goals much faster thanks to better evaluable data" Dr. Walter Berger, CEO at voestalpine Research Service

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24



IMS measuring systems have been a guarantee for highest product quality in the production and processing of steel, aluminium and non-ferrous metals since 1980.

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Exactly reproducible measurements and evaluations in real-time optimise your production lines. The product quality of the end products is significantly increased while simultaneously reducing production costs and reject rates!

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System TUBE

The existing IMS tube gauge can be used as before

No need to create additional space

Only minor adjustments to the roller table elements and their surroundings are necessary



Boehlerit GmbH & Co.KG

## The Boehlerit material grades MB30EDM and MB40EDM – tough and corrosion-resistant

Tool manufacturers have high standards when it comes to materials: not only must they be tough and hardwearing, but their toughness must also result in a long lifespan.

Bearing all this in mind, tool expert Boehlerit has, with MB30EDM and MB40EDM, launched two material grades on the market that offer tool manufacturers highly favourable characteristics. Both have a coarser grain, which increases the fracture toughness of the carbide and minimises the breakout of cutting edges. For instance, the MB30EDM grade has a KIC value of 18.4 with a hardness of 1,250 HV30, while

the MB40EDM grade achieves a KIC value of >24 with a hardness of 1,070 HV30. With these ideally balanced features, both materials are suitable for the punching and/or forming of even thick sheet metals that until now had to be worked using tool steels, with only minimal wear. This is entirely in line with the Boehlerit motto of "as tough as necessary, as hard as possible", explains Marien Melchionda, head of international sales segment wear protection and semi-finished products.

In addition, both MB30EDM and MB40EDM offer a high level of corrosion resistance. As is the case with the mixed binder grades MB05, MB10EDM and MB20EDM that have long been a fixture of the Boehlerit product range, this corrosion resistance also makes for increased process safety and a longer product lifespan. Accordingly, the grades are highly resistant against corrosive attacks, both during the manufacturing process and during actual use. Boehlerit now has a total of five corrosion-resistant grades in its product portfolio, covering most application requirements that arise with tool manufacturers and making even fine punching and forming a reality.

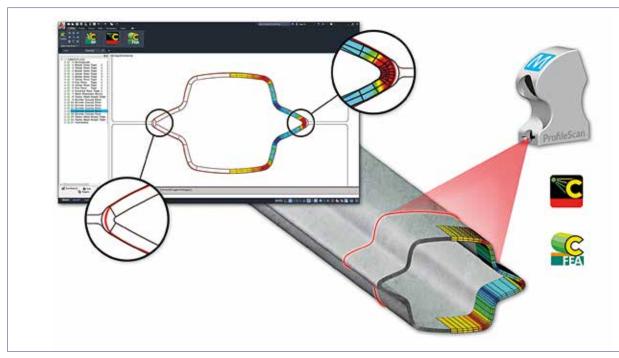


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Example-of-a-sheet-thickness-study-for-a-closed-profile

data M Sheet Metal Solutions GmbH

## data M – First Company to Combine Measurement and Simulation Data on Single Platform

Valley, 21. April 2022 The German roll forming specialist data M pushes the integration of its products even further and is now the first company to offer a solution that combines measurement and simulation data on one platform. Data from both simulation and quality control can be aggregated, evaluated and reused for design.

This is reflected for example in the interaction between the market-leading design software COPRA® RF, the simulation software COPRA® FEA RF and the optical profile measuring device COPRA® ProfileScan. data M at Tube 2022 in Dusseldorf demonstrates that the sheet thickness can be analyzed even if it is a closed profile. The profile scanner measures the outer contour while COPRA® FEA RF simulates the sheet thickness. The combination of both provides the designers with an overall picture of the profile geometry.

The close integration of all COPRA® products allows for the early detection of errors,

provides a deeper insight in the manufacturing process and offers significant optimization potential at the border between design and manufacturing.

Managing Director Max Sedlmaier comments on the product strategy of data M: "Due to the progress in integrating our products over the years as well as new, data-driven technologies, we can offer our customers future-oriented solutions leading towards a 'smart factory'".

At TUBE 2022 data M also presents further enhancements of the "Automatic Report" module introduced in COPRA® FEA RF. New in "automatic reporting" is that simulated results like "cross sections" or "shaft deflections" are being presented in the designer's language. The result quantity "sheet thickness" has been implemented according to customer requests.

The reporting module is continually being developed into an autonomous analytics tool. It identifies areas with the highest

ITAtube Journal June 2022

forming forces or stations with forming energy deviating from the design parameters. Using the data provided by Automatic Report, designers can check the stations individually and compare them with results from other applications.

About data M

data M Sheet Metal Solutions GmbH specializes in software solutions and services for roll formers. The programs COPRA® RF and COPRA® FEA RF are the leading solutions for design and simulation worldwide. The company also offers the optical measuring systems COPRA® ProfileScan Desktop/ProfileScan Inline/ProfileScan Stan-

dalone 200 and COPRA® RollScanner for efficient quality control of products and roll tools. In addition, data M is also a service provider for design, simulation and analysis in forming – it maintains an international partner network and subsidiaries.

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Gräbener Maschinentechnik GmbH & Co. KG

## More flexibility, time and cost savings in step bending

First pipe bending press worldwide for pipes and half-shells up to 75mm wall thickness - more flexibility, time and cost savings in step bending. A leading global manufacturer of longitudinally welded large-diameter pipes relies on the special machine manufacturer from the Siegerland region. With the new Graebener® Pipe Bending Press, the global player optimizes its production processes and is able to manufacture an enormous range of the most diverse special pipes with a wide range of dimensions and extreme diameter-to-wall thickness ratios.

The machine manufacturer Graebener® Maschinentechnik has been building customized machines for use in pipe mills for decades. The recently developed pipe bending press is used for bending open seam pipes and half-shells in a step bending process. The special feature of this custom-built machine is its enormous flexibility, as it can be used to produce tubes of the most varied dimensions: with outside diameters from 12" to 48" (up to 100" for half-shells),

wall thicknesses from 12 to 75 mm, and lengths between 6 and 13.2 m. Above all, the unique feature of the bending press is that it can also be used to produce tubes with very small diameters and high wall thicknesses. Materials with high yield strengths, such as X80, X90 and X100, are processed without any problems. For such an enormous production spectrum, large-diameter pipe manufacturer normally need several lines.

Another economic plus point common to all Graebener® Pipe Bending Presses is the enlarged stroke of the bending sword as well as its stable lateral guidance. The enlarged stroke ensures that the sword can be completely pulled out of the tube after completion of the bending process. This means that the remaining gap in the tube can be closed directly in the machine with the aid of the sword itself. The stable lateral guidance makes this process possible even for small, thick-walled tubes. An additional pipe closing press, as would be regularly used, is thus no longer necessary.

With the Graebener® Pipe Bending Press, investment volumes can be reduced and

production cycles shortened - the basis for a long-term economical production process.

#### **Technically superior**

The bending press has a press force of 70,000 kN, which is achieved by six controlled hydraulic cylinders on the bending sword. Thanks to a special force distribution and control system, even the small, thick-walled tubes can be produced. For six-meter-long tubes, for example, the press achieves a press force of an exceptional 52,000 kN.

If tube diameters of up to 100" are to be produced, the press can be used to bend half-shells which are later assembled into a tube. A specially developed handling system ensures the automated removal of the half-shells after the bending process. Simultaneously, all process parameters are stored with help of the Graebener® BendPro automation system, so that the settings and travel range for recurring products can be recalled at any time.

#### Faster production of different batches

On the one hand, large pipe producers have to ensure high throughput with consistent quality. On the other hand, they are expected to respond flexibly and quickly to customer requirements, even for special dimensions and small batches. Frequent

tool changes, however, especially for small batches, cost time and money. All Graebener® bending presses are therefore designed in such a way that the various tube sizes in the standard dimension range can be produced flexibly and without changeover using only a single tool set. The changeover time for dimension-dependent tools is eliminated and thus contributes to increasing the efficiency of the bending process.

#### Limited heavy-duty route requires design rethinking

It was not only the customer's requirements that demanded special design solutions. The new pipe bending press was also a challenge for the special machine builder from a logistical point of view. Due to the required output and the resulting design, the press weighed around 1,100 tons and was not only the largest and heaviest pipe bending press in the history of Graebener®, it also required a special design of the cross beams. Since these far exceeded the maximum weight of the heavy-duty route, Graebener® carried out

the construction in such a way that the individual cross beams were manufactured in two parts and welded together on site.

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MAIR Research S.P.A.

## MAIR Research has just supplied to an important US customer a 4" ASTM tube welding line

Mair Research has over 40 years of experience in the design, manufacture and supply of tube and bar finishing lines and has just supplied to an important US customer a 4" ASTM tube welding line together with its customised finishing line for the production of Conduit and Sprinkler tubes, besides conventional tubing.

Mair Research has over 40 years of experience in the design, manufacture and supply of tube and bar finishing lines and has just supplied to an important US customer a 4" ASTM tube welding line together with its customised finishing line for the production of Conduit and Sprinkler tubes, besides

conventional tubing. The entire equipment has been successfully commissioned in 2021. The main feature of this line is the high output of 20 tubes/min which the Mair equipment must guarantee to follow with no bottlenecks or hindrances. Particular attention is given to tube handling in order to avoid denting and scratching on the tube surface

#### **The Tube Welding Line offers**

- A completely automated entry line equipped with a robot for coil strap cutting and strip introduction excluding any presence of the operator
- Fully automatic mill adjustment
- Quick change operation by means of



motorised trolleys The Finishing line composed of:

- Tube sample testing
- Chamfering machine
- ID scarf flushout
- High productivity Hydrotester
- · Grooving machine
- Coating station
- Automatic bundling machine and strapping
- The line is designed to bundle directly all square and rectangular tubing (mechanical tubing).

Concerning conduit or sprinkler tubing, tubes will undergo chamfering, ID flushout, hydrotesting and grooving on both ends.

The Hydrotester is a high productivity, rotative type machine and designed to cope with the mill speed.

Grooving operation is selectable by the operator.

#### Data tracking / Industry 4.0 compliance:

The line is completely controlled by a digital system able to trace and follow any single tube. Based on this, the line is able to change order and make the right setup of any single component "on fly" (washing, chamfering, packaging) without stopping the tube production.

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Olimpia80 S.r.L.

### OLIMPIA80 commissioned new HF tube mill for Mexican Market

Olimpia80 to consolidate his position in Mexican market has recently commissioned for one of the world's leading steel company, a HF tube mill for carbon steel high precision tubes, mainly high strength material, and structural application.

Mentioned HF tube mill covers a range from OD 60 mm up to OD 172 mm and wall thickness from 1,5 mm up to 7,1 mm with all corresponding hollow section.

To perform restrictive tolerance, in accordance with ASTM A513 and ASTM A787 Olimpia80 supplied a HF pipe mill with the latest developments and with all modern and advanced technical features.

Olimpia80 supplied turnkey system, finding custom-made solution, the layout has been designed to optimize the available floor space.

The tube mill is equipped with a complete automatized entry section with the aim to reduce insertion strip time.

Independent motorization for each stand in order to equilibrate the used power and to better control the torque in every passage, consequentially reducing the rolls wearing and power consumption.

Innovative cut-off machine, equipped with a new structure and implemented software which gives the opportunity to cut, at a settled frequency, a tube sample with 300 mm up to 1000 mm length.

Quick-change system by cassettes permits to reduce drastically set-up time.

Furthermore, the main advantages of this technology are:

Facility and rapidity in changing the profiles dimensions

Very simple and easy maintenance Simplicity in the software utilization High production capability





#### Olimpia80, Tube Mills

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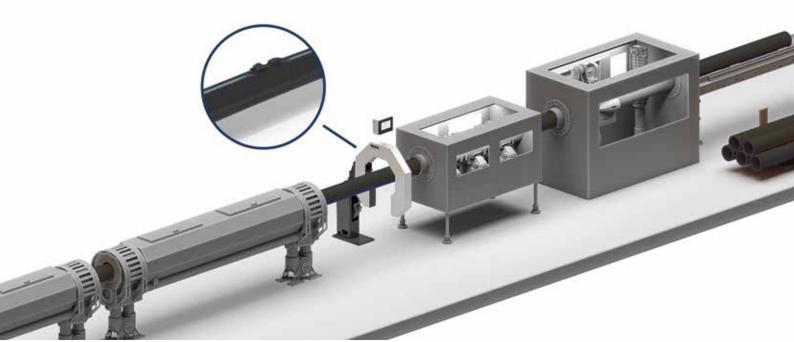


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SIKORA AG

#### Quick and reliable detection of surface defects on the cooled tube or pipe



A LASER gauge head detects faults on the pipe surface How to avoid complaints by using SIKO-RA measuring technology

Measuring tube and pipe dimensions after the vacuum tank has long been an integral part of comprehensive inline process control. However, a new comparison of product parameters at the

end of the extrusion line also offers tube and pipe manufacturers attractive advantages.

The SIKORA diameter gauge heads of the LASER Series 2000 and 6000 are versatile applicable in the line. In addition to the common wall thickness measurement after the vacuum tank, for example by SIKORA's

The measuring values of the LASER Series 6000 gauge heads (here: 4-axis solution) are visualized on the ECOCON-TROL 600



X-RAY 6000 PRO X-ray device, another LA-SER gauge head can be installed at the end of the line where the tube or pipe is already crystallized. On the one hand, the diameter values of the cold measurement provide information about the shrinkage behavior of the tube respective pipe. On the other hand, an additional ovality measurement is thus realized.

Furthermore, the tube or pipe surface is inspected for defects and protruding defects are reliably detected. This final quality control leads to the avoidance of complaints by the end customer. The combination with an ECOCONTROL 600 processor system (with 8.4" touch screen) enables the measuring values to be logged in detail at the end of

the line. The installation of a LASER gauge head is thus an attractive option for tube and pipe manufacturers for a final quality control at the end of the line.

Depending on customer requirements, SIKORA offers flexible solutions from 2 to 12 measuring axes. The SIKORA sales team has developed its own tool for this purpose, which calculates how many measuring axes are required for a 100 % surface detection. In a customer meeting the calculation is done together to determine the best solution for the customer.

SIKORA AG

### SIKORA is one of Germany's innovation leaders 2022

SIKORA AG was awarded as "Germany's innovation leader 2022" by the F.A.Z.-Institut. The worldwide patent applications of companies operating in Germany were analyzed for the study. As a leading company for measuring and control technology, SIKORA is among the winners of the study.

The survey evaluates patent families from over 500 technology and knowledge areas. Not only the number of patents filed in the last ten years is evaluated, but also their relevance. In this way, index points are given for the companies analyzed. These take into account whether the invention influences other inventions and how often a patent cites another patent family. The less often this is the case, the more innovative the patent is perceived. SIKORA received the award in the category "Measuring, Testing".

Every year, SIKORA invests about 10 percent of its turnover in research and development of new measuring and control technology as well as inspection, analysis



and sorting systems for quality control during the production of wires and cables, hoses, tubes, pipes and sheets, optical fibers or plastics. With around 350 employees in Bremen, Germany, and its 15 international subsidiaries, the company offers innovative solutions and customized customer service.

SIKORA is a leading supplier of measuring and control technology, among others for quality control of cables.



Reduction of material usage with SIKORA measuring technology

SIKORA AG

## What to do against rising plastic prices: material savings in the mid 6-digit euro range

Reduction of material usage with SIKO-RA measuring technology

Rising plastic prices confronts the industry with enormous challenges. Manufacturers and processors for all types of plastics are equally affected. There is no end in sight to the price increases. Thus, new solutions for savings have to be found. In extrusion, costs can be specifically compensated by using sustainable measuring technology as an example calculation shows.

Measuring technologies from SIKORA are used in tube and pipe production for process control after the first cooling or at the

end of the extrusion line. These measure product parameters such as wall thickness, diameter and ovality. As the measured values are available immediately after switching on the system, extrusion tools can be centered quickly and thus start-up scrap can be reduced enormously. For example, optimal centering by the CENTERWAVE 6000 measuring system leads to a material savings potential of approx. 5 %.

Real-time measurement also enables fast line control to minimum wall thickness during the running process. Safety margins in the wall thickness can thus be significantly reduced. "Depending on the tube or pipe type, this corresponds to annual

cost savings in the mid 6-digit euro range," says Christian Schalich, Head of Sales - Hose & Tube. "As plastic prices continue to rise, the savings are even higher," adds Schalich, further explaining why the acquisition of a measuring system is particularly worthwhile in these times. "Before the price increase, buying a SIKORA measuring system had already paid for itself within 8 months. Today – with approximately 35 % higher material costs – manufacturers even achieve a return on investment of less than 6 months."

According to Schalich, the investment pays off even further: "By using SIKORA measuring technology, highest product quality and optimal processes are ensured. Start-up

scrap is reduced to a minimum and you save not only material but also valuable production time, which can be used for the processing of additional production orders. In addition, you also save energy during the production of the tubes and pipes and, at the same time, contribute to more sustainability by conserving valuable resources."

SIKORA has developed its own tool to calculate the possible savings potential in terms of material, production time, costs and CO2 emissions. If you would like to receive further information, please contact us at: sales@sikora.net.

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Messe Düsseldorf

# The green wave for the steel industry

# wire and Tube in June: Exhibitors present sustainable solutions on the way to the Green Transformation

The steel industry is already working on nothing less than a historic technological transformation. Direct reduction based on hydrogen will replace the conventional production method as a clean production process – and experts agree with this. Steel production based on carbon will lose its place at the top.

The steel industry has the target to reduce emissions by around 30 percent by 2030. A development that the wire, cable and tube industries are also paying close attention to. For them, climate-friendly steel as the basis for their products is also an important aspect when it comes to being environmentally friendly and competitive. The green transformation covers all industrial sectors – from suppliers to users.

The European steel industry is responsible for 5.7 percent of the total greenhouse gas emissions in the European Union – which means that reducing emissions is a mammoth task. By 2050, it must be producing in a climate-neutral manner. This is stipulated in the Paris Climate Agreement of 2015. But the steel industry has already got off to a strong start.

# The steel industry is setting the course thyssenkrupp Steel is a shining example of this. "If production is converted to climate-neutral steel by 2045 at the latest, we will be the largest single European consumer of CO2-neutral hydrogen", says Dr Arnd Köfler, Chief Technology Officer (CTO), with confidence. In principle, the steel industry will be one of the main consumers of green hydrogen. What in turn shows they are leading the way when establishing hydrogen technologies as the key to decarbonisation.



Hydrogen orders are already a matter of course at thyssenkrupp. For example, thyssenkrupp Uhde Chlorine Engineers has signed a supply contract with Shell for the major 'Hydrogen Holland I' project in the port of Rotterdam in the Netherlands. As part of the contract, thyssenkrupp Uhde Chlorine Engineers will manufacture a 200 MW electrolysis plant based on its 20 MW large module for alkaline water electrolysis.



The EU-funded GrInHy2.0 hydrogen project is also part of the SALCOS® programme. Within this framework, the world's largest high-temperature electrolyser for the production of green hydrogen is being tested. The picture shows the GrInHy2.0 project team in front of the electrolysis plant in the Salzgitter steelworks.

thyssenkrupp Steel aims to save 30 percent CO2 in this decade alone. To achieve this, four blast furnaces will be gradually replaced by direct reduction plants operated with green hydrogen from 2025, each supplemented by smelting units, in order to turn the solid raw material into liquid pig iron. According to thyssenkrupp, two billion euros will be needed for implementation by 2030, and up to eight billion euros in investments will be needed for the complete transformation.

#### **Decarbonisation cooperation**

Salzgitter AG has also initiated the decarbonisation of its processes and products. It plans to start production of low-carbon on a new production route from the end of 2025. "The expected CO2 saving after completion of the transformation will be more than 95 percent", the company explains.

Salzgitter is entering into cooperation to push forward decarbonisation. The Group has entered into an agreement with Uniper to create the SALCOS® project, which is part of the 'Salzgitter AG 2030' strategy. This project is to be supplied with green hydrogen for the production of

climate-friendly steel by the international energy company Uniper. SALCOS® (Salzgitter Low CO<sup>2</sup> Steelmaking) is a transformation programme to convert production to a hydrogen-based route.

In Wilhelmshaven, Uniper is developing two projects with green hydrogen. Here, the company is planning an import terminal that converts ammonia back into hydrogen. In addition, large-scale electrolysis is provided, which will generate green hydrogen with an output of up to 1,000 MW. For this purpose, a direct connection of new offshore wind farms to be built in the North Sea will be examined.

# Low-carbon steel for the automotive industry

Salzgitter has already agreed with Volkswagen AG to supply low-carbon steel from the end of 2025. Volkswagen plans to use this steel in future projects such as the Trinity 1 e-model. The automobile group wants to focus on reducing CO2 emissions where they are primarily generated, i.e. during automotive production. "In addition to the



ArcelorMittal has successfully tested the use of green hydrogen in the production of direct reduced iron (DRI) at its steelworks in Contrecoeur, Quebec. The company views this test as an important milestone on the way to producing carbon-free steel via the DRI-based steel production route using green hydrogen as an input.

battery-powered electric powertrain and aluminium components, this is especially the case with steel", the Group explains. For Volkswagen, the reduction of CO2 emissions in the supply chain "is a central component in order to gradually become a mobility provider with a neutral CO2 balance by 2050, as part of the Group's goTOzero strategy".

In addition, a closed recycling cycle for steel is to be set up between Volkswagen's parent plant in Wolfsburg and the integrated smelter plant in Salzgitter. Volkswagen is again making the steel remnants of the production available to Salzgitter AG, which melts them down, processes them into new steel products and delivers them to Wolfsburg for car production.

### **Expansion of hydrogen infrastructure**

ArcelorMittal aims to achieve carbon-neutral steel production at its European sites by 2050 and to reduce emissions by 30 percent by 2030. "The German flat steel sites in Bremen and Eisenhüttenstadt are fully integrated into the Group's strategy on climate neutrality", the company explains. Two blast furnaces will be converted at the sites in order to blow in natural gas and reduce CO<sup>2</sup> emissions. With the planned expansion of the hydrogen infrastructure in Germany, ArcelorMittal intends to build a large industrial plant for the direct reduction of iron ore (DRI) in Bremen and a DRI pilot plant in Eisenhüttenstadt in combination with electric arc furnaces by 2026.

#### Own process gases and hydrogen

With 'H2Syngas', Saarstahl and Dillinger rely - together with the engineering company Paul Wurth (part of the SMS group) -, on the use of their own process gases and the use of considerable amounts of hydrogen in the blast furnace process. The corresponding pilot plant was built in cooperation with Paul Wurth.

"The new process developed by Paul Wurth – known as dry reforming – enables the conversion of the coking plant gas produced in the coking plant into a hot reducing gas or synthesis gas", explains Saarstahl. This is enriched with hydrogen and then used as a reducing agent for the reduction of the iron ores. The injection of the hot reducing gas into the blast furnace "leads to a considerable reduction in coke consumption and thus to a reduction in CO<sup>2</sup> emissions".

#### The green transformation is also digital

The green transformation has already begun and is setting itself high targets – but it needs digital support. According to the ifo Institute, the digital transformation of the energy industry – and ultimately the steel industry - is an integral part of the energy transition. It is one of the biggest IT projects of all time. In the future, many new and decentralised producers of renewable energy will enter the market. "These must be connected to the grid and their fluctuating production must be controlled. As a result, suppliers will have to manage large data streams, including data on feed-in or local consumption", explains the ifo Institute. Digitisation therefore not only supports efficient production, but also a sustainable distribution of energy to steel companies. A mammoth task that must now be mastered.

The exhibitors at wire and Tube 2022 are prepared for this and will present new technological solutions from the wire, cable, tube and pipe industries at the Düsseldorf Fairgrounds from 20 to 24 June 2022. For further information, industry and company news on both trade fairs, please visit: www. wire.de and www.Tube.de.

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### 02 | GMS-I

Profiler inside contour

### 03 | GMS-E

Profiler cross section

### 04 | GMS-P

Profiler outside contour For bars, tubes and profiles

### 05 | GMS-S

Straightness and twist measurement

### 06 | GMS-P

Profiler outside contour For linepipes and construction pipes













You can find detailed information on our website!





Thermatool Corp

# A Major Tube Producer in North America Chooses Thermatool Once Again!

[May 2022] - A Major Tube Producer in North America, has invested in Thermatool equipment again. This tube producer supports a wide customer base spanning from automotive to furniture markets. With the overwhelming success of a previous installation of a Thermatool CFI HF Welder and an Alpha Flying Shear Cutoff, the company has selected these machines a second time for another mill to support the growing specialty tube demand in North America. Building on their commitment to quality and on-time delivery, Thermatool was chosen to support their goals for 2022 and beyond.

The Thermatool CFI HF Welder will ensure that they achieve stable weld heat input control from the most reliable solid-state tube and pipe welder on the market today. The patented Thermatool AutoMatch™ ensures full power output over a wide range of product sizes and stabilizes HF welding frequency over the full range of diameters and wall thicknesses produced. Operators depend on the ability to provide a stable welding frequency even when experiencing changes in the weld area set up, tube OD, wall thickness, and impeder material. Thermatool's proven HF welder provides excellent speed and power regulation and process stability throughout the mill production range.

Alongside the CFI HF Welder, the Alpha Flying Shear Cutoff enables this customer to achieve higher productivity, closer tolerance cut lengths on the mill, and optimized cutting tool life. Perfect for heavy wall, high strength tube and pipe, Alpha Flying Shears are a great solution for demanding

Thermatool CFI HF Welder





Alpha Mach 2 Flying Shear Cutoff

production requirements of shearing high strength tube at short cut lengths. With optimized blade life of up to 80,000 cuts on a vertical blade, there will be fewer mill stops and less open seam and scrap. The compact Alpha footprint will save factory space while achieving high mill speeds by using fully automated lubrication and batch processing controls. These are just a few of the advantages that make Alpha Flying Shears the most reliable and accurate highspeed flying shear cutoff available today.

Through the implementation of state-ofthe-art technologies and proven process tools, this tube producer continues to deliver the highest quality products to an ever changing and demanding marketplace – requiring the ability to make tubes with increased strength to weight ratios.

"Our industry leading and advanced technologies across High Frequency Welders and Alpha Flying Shears gives tube and pipe producers the ability to grow and pivot into any industry or business they choose. We will be here for years to come and will support our customers for the long term to help them get the most value from their investments," said Kris Livermore – Director for Thermatool Corp.

As part of the Inductotherm Group, Thermatool is structured to service and support local and global markets. We have a global network of more than 50 service technicians who are on call 24/7/365 which makes it an easy decision for Thermatool customers to continue partnering with Thermatool. Additionally, Thermatool now offers online training to help operators run their equipment at continued peak performance with enhanced digital support tools.

To find out more information about how Thermatool can service your needs, please contact us at 1.203.468.4100 or info@thermatool.com; or you can visit us at thermatool.com

### **Thermatool Corp**

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Email: info@thermatool.com Web: www.thermatool.com ITA India Chapter 2022

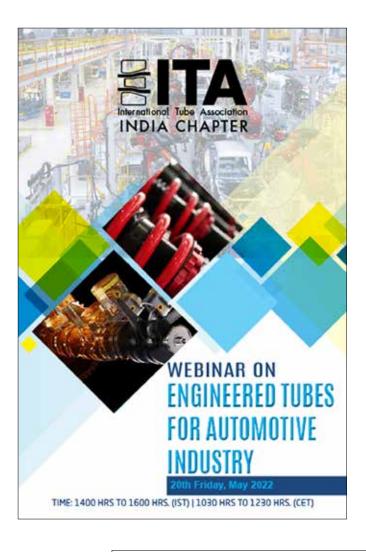
# Webinar on engineered tubes for automotive industry

A webinar was held by ITA India Chapter along with support from Messe Dusseldorf India on 20th May 2022. This comes as a sequel to similar seminar s and webinars organized by ITA on Oil and Gas Pipes, Structural Tubes and Pipes, Tubes and Pipes for conveying Water, and Tubes and Pipes for transportation of Hydrogen Gas, all of which were focused on the end user Industry.

There were seven speakers with the focus on the industry value chain, starting from raw materials, tube processing and usage of the products in the automotive industry. Indian automotive Industry is dominated by motorcycles, scooters and passenger cars. The recent focus on the electrical vehicles was also covered by drawing upon the industry experience. Speakers included tube manufacturers with knowledge of automotive applications, automotive manufacturers, electric vehicles designers and the raw material producers. It was a good blend of experienced Industry actioners and brought out the strength in the industry from design to implementation and practice.

The stake holders in the chain are very aware of the need for integrating and drawing upon individual experiences to craft tubes and their processing to fulfil the automotive industry needs of cost optimization, reliability, endurance and safety. Given that energy, it's cost, availability and variety, has occupied center stage in all forums worldwide, the automotive industry too, along with its supply chain partners emphatically established this as the primary focus.

The webinar attracted a delegate strength of about 150 and received positive feedback for its subject and coverage. With this the plans are being drawn up for a technology focused ITA conference in Mumbai alongside the Tube, Metallurgy and Wire Fair being organized by Messe Dusseldorf.









Tube Southeast Asia 2022

# 13th International Tube & Pipe Trade Fair for Southeast Asia

# One-stop gateway to Asia's thriving tube and pipe industries

Returning to Bangkok in 2022, Tube Southeast Asia – driven by the global expertise of Tube Düsseldorf, marks its 13th edition as Southeast Asia's leading trade fair for the tube, pipe and related industries in the region.

Since its inaugural staging in 1997, the specialist trade fair has set the bar as a trade-focused platform for international exhibitors to showcase their latest tube and pipe processing equipment and machinery, materials and solutions to key local and global manufacturers, suppliers, and service providers from the tube, metals, automotive, oil and gas, and other related industries.

Held alongside the synergistic wire Southeast Asia 2022, both trade events will bring together some 400 exhibitors from over 30 countries, providing an attractive focal point and springboard for both international companies and local businesses wanting to make their foray into Asia's markets.

With its proven track record, Tube Southeast Asia has garnered consistent results for both exhibitors and visitors with its ability to:

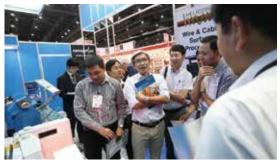
- Address current and future demands by showcasing leading-edge innovations, machinery and technologies
- Connect top manufacturers and leading brands to active buyers and influential decision makers
- Maintain regional market-relevance by staying on top of global industry trends





5 - 7 Oct 2022 Bangkok







### Press contact Tube Southeast Asia:

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Tube 2022

# EcoMetals – Pioneers of sustainability

How "green" is the wire, cable, tube and tube processing industry? wire and Tube invite you to get to know the trendsetters of sustainability. The new initiative of Messe Düsseldorf is called ecoMetals and provides a forum for the drivers of environmentally friendly products, productions and processes. After all, those who intelligently merge economy

and ecology lead the competition – and become sought-after partners for their customers.

The relevant exhibition stands and the ITA stand will show how new technologies, machinery and equipment in their production facilities improve the energy and carbon footprint to minimise the company's ecological footprint and explain to visitors how they manage to reconcile economy and ecology in their production and process chains.

This seems to be more important than ever to survive in international competition and to remain a sought-after business partner. The meeting point for all free guided tours is the ecoMetals information counter at the North Entrance of the Düsseldorf exhibition centre.

Exhibiting companies can already find out more on the Tube website at www.tube. de/ecometals or info@ITAtube.org and, if interested, register directly to take part in the ecoMetals trails: exhibitor@Tube.de or directly with Vanessa Mauch at MauchV@ messe-duesseldorf.de or Cornelia Büsing at info@ITAtube.org











### Discover new ways in value creation: The pillars of ecoMetals.

ecoMetals is dedicated to three areas of sustainability – with trendsetting answers, machines and products along the value creation chain.

#### Resources

How can raw materials be extracted in a more resourcefriendly manner and processed more efficiently? What is the trend in material recycling from metal to plastic? What alternative raw materials are being used?

#### **Production & Processes**

In what way can better energy savings be achieved in production and processes? What does optimised energy controlling look like? How are emissions reduced and the climate-friendly use of renewable energies systematically controlled?

#### **Innovation**

Which new technologies, machines and plants will improve the energy and CO<sub>2</sub> balance? How do digital and industrial innovations contribute to a more optimal ecological fingerprint?











Tube 2022

# Leading global trade fair Tube 2022 in Düsseldorf: anticipating the industry highlights in June



After a 4-year Covid-induced break the world's No.1 trade fairs wire, International Trade Fair Wi **Tube, International Tube and Pipe** Trade Fair, will again be held jointly at Düsseldorf Fairgrounds from 20 to 24 June 2022.

> Anticipation is high and the sectors are confident they will be able to experience five days packed with technology innovations in Düsseldorf, talk to experts from all over the world and also enjoy the social part of a trade fair outside show hours again. Especially these days, promoting communication and exchange is of prime importance.







ITAtube Journal June 2022

Since the pandemic is subsiding in summer and entry and exit regulations have been relaxed internationally, it becomes possible for both exhibitors and trade visitors from around the world to travel to Düsseldorf for trade fair events. Hygienic conditions are ensured across the entire Fairgrounds and inside the halls by a multitude of sanitizer dispensers and a constant circulation of air; nevertheless, wearing face masks and keeping a 1.5m distance during conversations are recommended.

For over 35 years the key players of the wire, cable, tube and pipe industries have come together in Düsseldorf to showcase the latest machinery, plants, products and services, meet international customers and conclude business deals.

At this stage 1,000 companies from 47 countries have already registered for wire 2022. They occupy 53,210 square metres of net exhibition space. The leading international trade fair of the cable sector presents cable manufacturing and finishing

machines, process technology tools and auxiliary process technology materials as well as materials, special wires and cables. Furthermore, innovations from the areas of measuring and control technology as well as test engineering and specialist areas will be on show. For the first time now, finished products from the traditional segments of fastener and spring making technology will also be exhibited. This means such finished products as technical springs, screws, cable strands, eyelets etc. will also make their way into the ranges of wire 2022.

The international trade fair wire will occupy exhibition halls 9 to 14 with the segments of wire, cable, wire products and manufacturing technology, fastener technology and spring making technology plus finished products with Hall 13 dedicated exclusively to fastener and spring making technologies and their finished products. Following on from this hall will be the large and energy-intensive mesh-welding machines plus associated technologies in Hall 15.









Once again, 2022 will also see the traditionally strong attendance of exhibitors from Italy, Turkey, Spain, Belgium, France, Austria, the Netherlands, Switzerland, Great Britain, Sweden, Poland and Germany. As regards overseas exhibitors, registrations from the USA, Canada, South Korea, Taiwan, India, Japan and China have been received.

On over 40,000 square metres of net exhibition space the international tube and pipe trade fair Tube presents the complete bandwidth from tube manufacturing and finishing to pipe and tube processing and tube trading. Exhibits range from raw materials, pipes and tubes and accessories, tube manufacturing machinery and second-hand machinery to process technology tools, auxiliaries and measuring and control technology as well as test engineering. Pipelines and the area of OCTG technology as well as profiles and machinery complement the ranges. So far 735 exhibitors from 44 countries have registered.

At Tube the strongest exhibiting countries will also be Italy, Turkey, Great Britain, the Netherlands, France, Austria, Switzerland, Poland, Spain, the Czech Republic, and Germany. As regards overseas, most exhibitors come from the USA, India, South Korea, Taiwan and China.

The No. 1 trade fair for the pipe and tube industry will occupy the new Hall 1 for the first time as well as the adjacent Halls 3 and 4 with the segments tube manufacturing, accessories and tube trading. Following on from these halls will be bending and forming in Halls 5 and 6, and pipe and tube processing in Halls 6 and 7a. Hall 7a will be occupied by big plant and machinery.

# Premiere for the ecoMetal trails for the trade fair duration:

Sustainable, eco-friendly, energy-efficient and innovative: this is how most manufacturing companies want to "shine" in public. However, the path towards this is often long, especially in the resource-intensive technology companies of the wire,

cable, tube and pipe industries. It often takes companies years to incorporate the demands made on climate-efficiency, sustainability and resource savings into their own production operations.

All the more Messe Düsseldorf will now look to its ecoMetals Campaign at the leading global trade fairs wire and Tube: from 20 to 24 June there will be daily guided tours offered for free to visitors. These so-called ecoMetals-trails will guide them to the stands of sustainably manufacturing exhibitors.

# **Expert meeting revolving around Green Transformation**

Under the heading The Steel Industry is enforcing its Green Transformation an expert meeting will held on Monday 20 June. From 2.00 pm an approximately 4-hour programme will feature eight expert lectures in the new Hall 1, ground floor Süd/South, Room 15. Rising to the challenges of the Green Transformation experts from international companies will report exciting transformation processes from their production halls and research labs.

The event is organised by the agency Stahl-Kommunikation. Since the number of visitors is limited early informal registration is recommended – sending your name, company address, telephone no. and e-mail address to hgd@stahl-kommunikation.de

For current information on both trade fairs visit: www.wire.de and www.Tube.de.

# Press contact wire and Tube 2022:

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Tube China 2022

# Tube China 2022 – The 10th All China-International Tube & Pipe Industry Trade Fair



Shanghai

After 20 years, Tube China has not only become Asia's leading tube and pipe industry exhibition, but also a pioneer in the industry. The organizers Messe Düsseldorf (Shanghai) Co., Ltd. and MC-CCPIT will leverage their respective advantages to promote technological innovation, green and intelligent transformation, focus on industry trending topics and provide a brand-new upgraded trade platform to present the state-of-the-art products, technologies and solutions from a professional perspective.

As Asia's first influential international trade fair for the tube and pipe industry held last year, Tube China 2020 successfully concluded at SNIEC under the strict prevention measures on pandemic, providing effective experience reference for 2022 edition. From 26 to 29 Sept. 2022, the 10th Tube China will be upgraded and set off another new milestone at Shanghai New International Expo Centre. The organizers Messe Düsseldorf (Shanghai) Co., Ltd. and MC-CCPIT will leverage their respective advantages to promote technological innovation, green and intelligent transformation, focus on industry trending topics and provide a professional trade platform

to present the state-of-the-art products, technologies and solutions. Product categories are further expanded, focusing on the segmented fields of heat treatment, saw and laser cutting

Based on the product categories including tube manufacturing machinery, processing technology, raw materials, tubes and accessories, pipeline and OCTG technology, testing engineering, etc., the organizers have upgraded the previous pavilions of thermal process and sawing products and have established further refined concurrent exhibitions - THERMPROCESS China and Saw and Laser Cutting China.

Heat treatment technology changes the mechanical, physical and chemical properties of metal workpieces, thus greatly improving the performance. Green environmental protection is important in the future development of iron and steel industry, and heat treatment related technology provides greater feasibility for low-carbon and environment-friendly steel production.

Therefore, holding THERMPROCESS China at Tube China 2022 aims to provide a solid communication bridge for heat treatment



system and equipment suppliers from all over the world. The metal and tube processing related products and technologies can be further derived and connect more dots of the entire industry chain.

Accurate cutting is an important part of metal and tube processing, the new upgraded and transformed collocated exhibition Saw and Laser Cutting China will not only showcase the sawing products and technical solutions but also add the laser cutting related machinery.

### Positive feedbacks from exhibitors

Post-show statistics showed that 91% of exhibitors were satisfied with Tube China 2020. Despite the impact of the pandemic last year, the former exhibitors and new customers still show their confidence to the fair.

Mr. Zhang Luyao, President of Zhejiang Tsingshan Steel Pipe Co., Ltd., expressed his recognition of the exhibition:" Tsingshan steelmaking capacity is among the highest level in the world. It's the 8th time that we participated in Tube China. Here we can not only showcase the innovative products, but also enhance brand image."

Mr. Ma Jianfeng, General Manager of HIM-MELWERK China gave the feedback:" Since our company was established in Germany in 1950, we have been committed to the development and production of high-frequency and ultra-high frequency induction heating equipment. We are very optimistic

about the development potential of the Chinese market, so we chose to participate in the newly launched THERMPROCESS Pavilion at Tube China." With Tube China's good reputation in the industry and the rise in market enthusiasm, many former exhibitors have expressed their willingness to participate in Tube China 2022.

# Professional buyers come to Tube China in flock

Tube China 2020 attracted 36,552 professional visitors and 49 high-quality buyer delegations (including the number of concurrent event wire China). Many of the buyers were from fortune 500 companies in automobile manufacturing industry, chemical industry, oil and gas industry, energy industry, aerospace engineering, construction industry and other application industries.

Tube China 2022 is expected to gather 46,000 professional buyers (including the number of concurrent event wire China) to discover new business opportunities with industry colleagues. Booths are open for reservation now, and we look forward to your participation in Asia's leading tube exhibition and explore a new era in the development of tube & pipe Industry. See you in Shanghai from September 26 to 29, 2022!

#### Press contact Tube China:

Messe Düsseldorf (Shanghai) Co., Ltd.

Ms. Una He



Tubotech 2022

# The International Trade Fair for Pipes, Valves, Pumps, Fittings and Components in Sao Paulo, Brazil



A success story: The International Trade Fair for Pipes, Valves, Pumps, Fittings and Components was launched in 2001 and has recorded an increase in floor space of 21% since then.

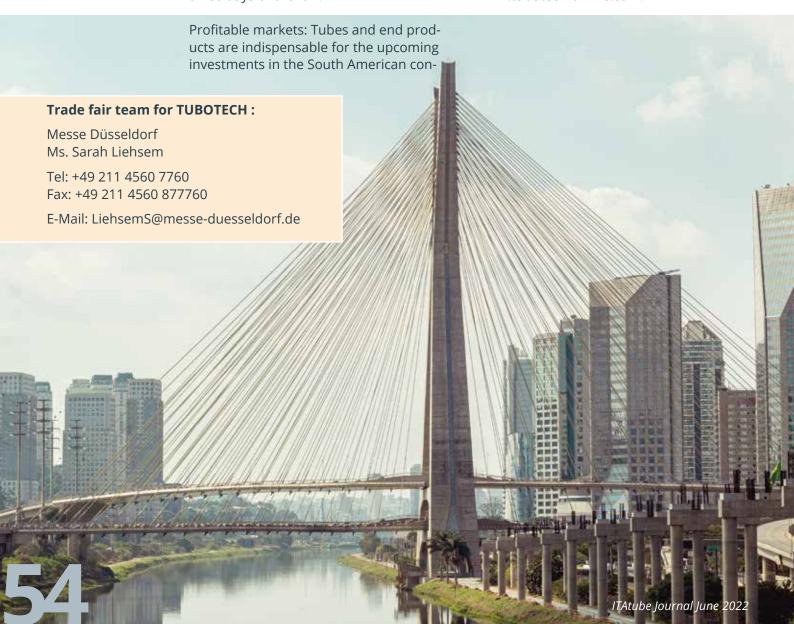
Competent audience: Approximately 12,000 trade visitors, mainly from the oil and gas, automotive, construction, metal construction and mining industries, will gather information on the latest technologies and current pipe processing products over three days of the fair.

struction, automotive and energy industries. The interest in investing in Brazil and the entire South American market is growing and increases the prospect of good trade fair business.

#### Good reasons to attend

The Internet portals contain up-to-date information on both trade shows at:

www.wire-south-america.com and www.tubotech-online.com.





Tube India 2022

# Good reasons to attend Tube India

Over three days of the trade fair the latest technologies from the wire and cable industries, tube processing and tube trading as well as metallurgy were presented by 406 exhibitors on just under 8,000 square metres of exhibition area. Alongside a high percentage of exhibitors from India, there were again large country pavilions from Germany, Austria, Italy, the USA and China.

#### Good reasons to attend

- Oldest & largest exhibition of Tube & Pipe Industry in India
- International participation from Australia, China, Germany, Italy, Japan, South Korea, & Turkey
- Industry integrated Manufacturers & Suppliers under one roof
- One day high level conference focusing on Digital Technologies in Tube & Pipe Industries
- Broader spectrum of technical expertise & solutions

Thomas Schlitt, Managing Director of Messe Düsseldorf India, explains, "Our goal

remains to support economic recovery by providing a leading platform for conducting business safely and effectively through our trade shows. However, the current development of the pandemic situation does not allow for reliable planning for our trade fairs in India for the coming months. These circumstances make it impossible to hold the Indian Metal Fairs in September 2021."

With this decision, Messe Düsseldorf India is honoring its commitments to its partners in the metals and metallurgy industry in India and around the world. 2 "We trust that by 2022, global travel restrictions will be lifted and we will once again see a large international turnout given the international nature of the metals trade show quartet. We are grateful to all our partners for their continued support during these unprecedented times," adds Schlitt.

Interested exhibitors should contact the following mail address: messeduesseldorf@md-india.com www.iewc.in

For more information, visit the event websites at:

www.wire-india.com www.tube-india.com

# **Tube events**

Events for Business, Technology, Education and Networking

# Diary of world class tube events

# June 2022

30 May - IFAT www.ifat.de

3 June 2022 Munich, Germany

14 - 15 Stainless Steel World Asia stainless-steel-June 2022 Singapore world-asia.com

ld-asia.com

20 - 24 Tube www.tube.de

June 2022 Düsseldorf



# August 2022

22 - 26 ACHEMA www.achema. de

August 2022 Frankfurt, Germany



# September 2022

26 - 29 Tube China www.tubechina.net

Sept 2022 Shanghai



27 - 29 Stainless Steel World Conference & Exhibition

Sept 2022 stainless-steel-world-event.com

Maastricht, Netherlands



# October2022

5 - 7 Tube South East Asia tube-southeastasia.com

Oct 2022 Bangkok, Thailand



5 - 7 METEC metec-southeastasia.com

Oct 2022 Bangkok, Thailand



# October2022

25 - 27 Tubotech Oct 2022 São Paulo, Brazil tubotech.com

26 - 27 Stainless Steel World Asia Conference & Expo

Oct 2022 stainless-steel-world-asia.com

Singapore



# November 2022

23 - 25 Tube India Nov 2022 Mumbai, India www.tube-india.com



# November - December 2022

29 Nov - Valve World Expo www.valveworldexpo.de

1 Dec 2022 Düsseldorf



# June 2023

12 - 16 METEC

June 2023 Düsseldorf

www.metec.de





20-24 June 2022 Visit us in hall 3 booth C45.



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# **ITA Inside**



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