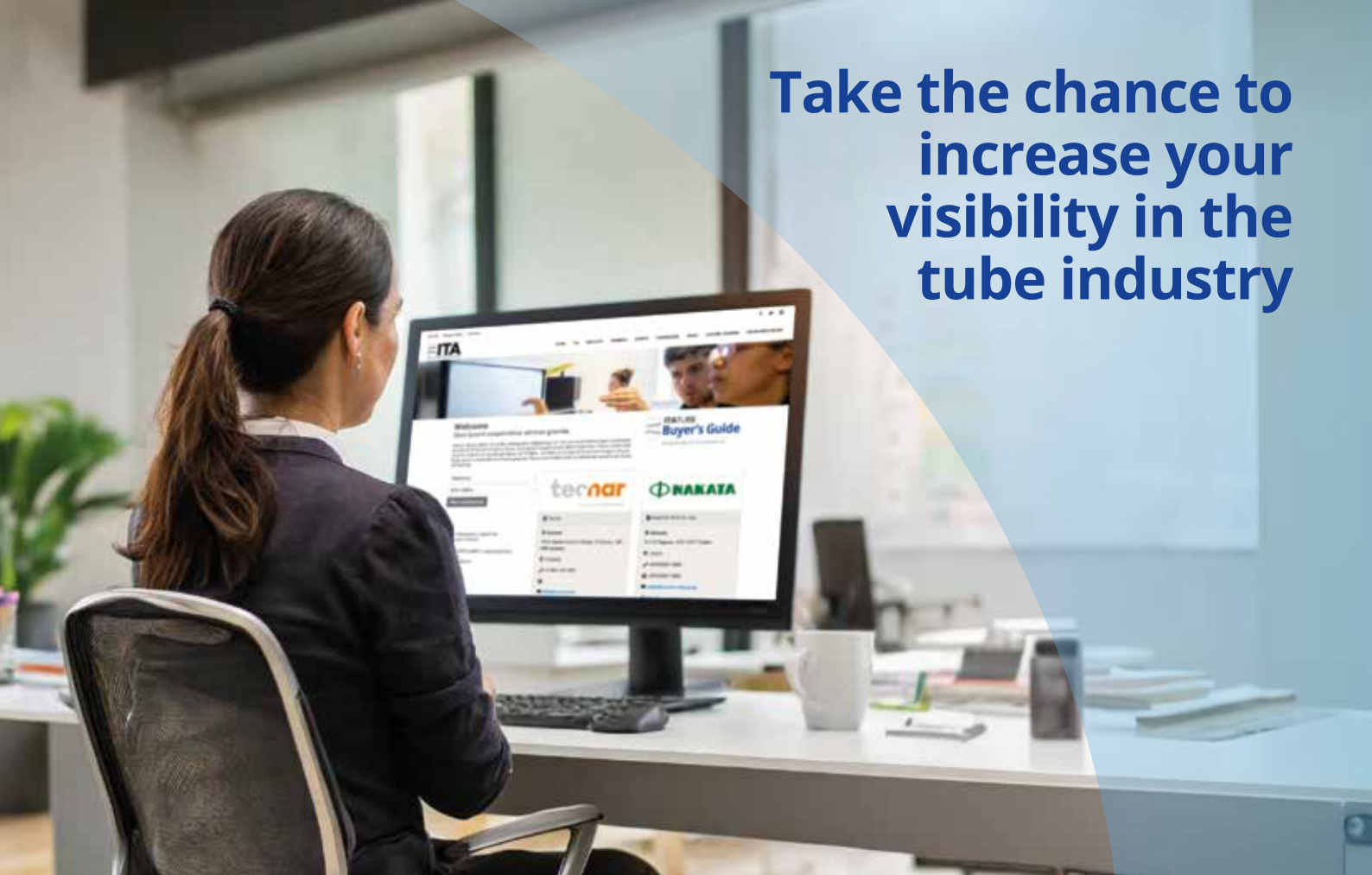


Magazine of the World's Largest & Most Influential Association of Tube & Pipe Engineers

**Measure.
Inspect.
Detect.**



Take the chance to
increase your
visibility in the
tube industry



ITATUBE **Buyer's Guide**

Global directory for the tube industry

- Global directory for the tube industry
- Transparent overview by targeted search
- Connect buyers and suppliers
- Showcase products and services
- Free information for the entire tube industry
- Free basic package for ITA members
- Premium package with extra features available
- Take advantage of the benefits

For more information contact Cornelia Buesing (info@itatube.org)

supported by





*Dr. Gunther Voswinckel
President ITA*

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

The global pipe industry is experiencing exciting times with both positive and challenging developments.

Most tube and pipe producers were able to report strongly improved economic figures in 2023. Global pipe production increased again last year, and the prospects for 2024 are promising.

The demands of climate change with regard to decarbonization of our industry as well as geopolitical challenges are having a lasting impact on the global pipe market. The transformation to green steel tubes requires high levels of investment and innovative technical solutions. New pipe markets have emerged because of decarbonization. Examples include electromobility, carbon capture and the planned supply logistics for green hydrogen, which will require large quantities of tube products.

The geopolitical trouble spots have also boosted the traditional OCTG business. To compensate for geopolitically risky oil and gas supply sources, other production capacities for oil and gas have been and are being massively expanded in regions such as North and South America. This has led to a boom in demand for OCTG pipe products.

However, it must also be mentioned that these opportunities for the pipe industry vary from region to region, as demand has changed, and production costs are regionally quite different. The political measures must be assessed in a differentiated manner in some cases.

The construction industry is becoming increasingly interesting, with new architectural solutions intensifying the use of tubular products.

For plant manufacturers, technology providers and suppliers to the tube and pipe industry as well, these dynamic times naturally offer market potential that needs to be tapped into. In addition, there are increasingly more innovative solutions for improved productivity and customer benefits. These include innovative AI-based technologies that are finding their way into the tube industry.

It is great to see, that our world-leading trade fair, the Tube 2024 Düsseldorf show, is taking place these days and offers our industry again the opportunity to intensify customer contacts as well as establishing new ones.

Innovative products and production processes will be presented and discussed intensively and personally with trade visitors from all over the world.

Yours faithfully

ITA Team

Table of contents



SMS group –
New piercer
concept

24



Fives – Advanced
technology for
demanding
electrical steel

36



Tecnar – LUT 2.0
sets a new record

52

Editorial

Greetings from Dr. Gunther Voswinckel	3
Table of contents	4

Market information

World Steel Tube Production – Review	6
Dr. G. Voswinckel, VOSCO GmbH – World Pipe & Tube Market	8

Technical Papers

MSG – Generating the real digital twin of long products	20
SMS group – New piercer concept	24
SMS group – ERW tube welding line RD 710	26
Thermatool Corp – Data Collection and Implementation	28

Press Releases

Boehlerit – New Drilltec indexable insert drill	32
Boehlerit – Microtec - highest productivity	33
Bültmann – Finishing lines for individual use	35
Fives – Advanced technology for demanding electrical steel	36
Fives – Project excellence award for SDI line	38
MAC – Feature Minimac® II Tester	40
Nakata – Announcing further FFX mill development	41
Sikora – World market leader champion 2024	44
QASS – Flawless tubes in record times	45
Quaker Houghton – Industry-leading fluid solutions	48
SMS group – Showcase innovations at wire and Tube 2024	50
Tecnar – LUT 2.0 sets a new record	52
Tecnar – Borusan Pipe adopts Lut 2.0	53

Interview

Interview with Daniel Ryfisch 56

Interview with Adrian Alecu 60

Reviews & Previews

Preview: Tube Düsseldorf 2024 62

Preview: Tube China 2024 68

Preview: Tube India 2024 70

Diary of world class tube events 72

ITA Inside

ITA Tube Forum 2024 74

Media Plan 2024 76

Rate Card 77

List of advertisers, Imprint 78

Join ITA 79



*Interview with
Daniel Ryfisch*

56



*Tube Düsseldorf
2024*

62



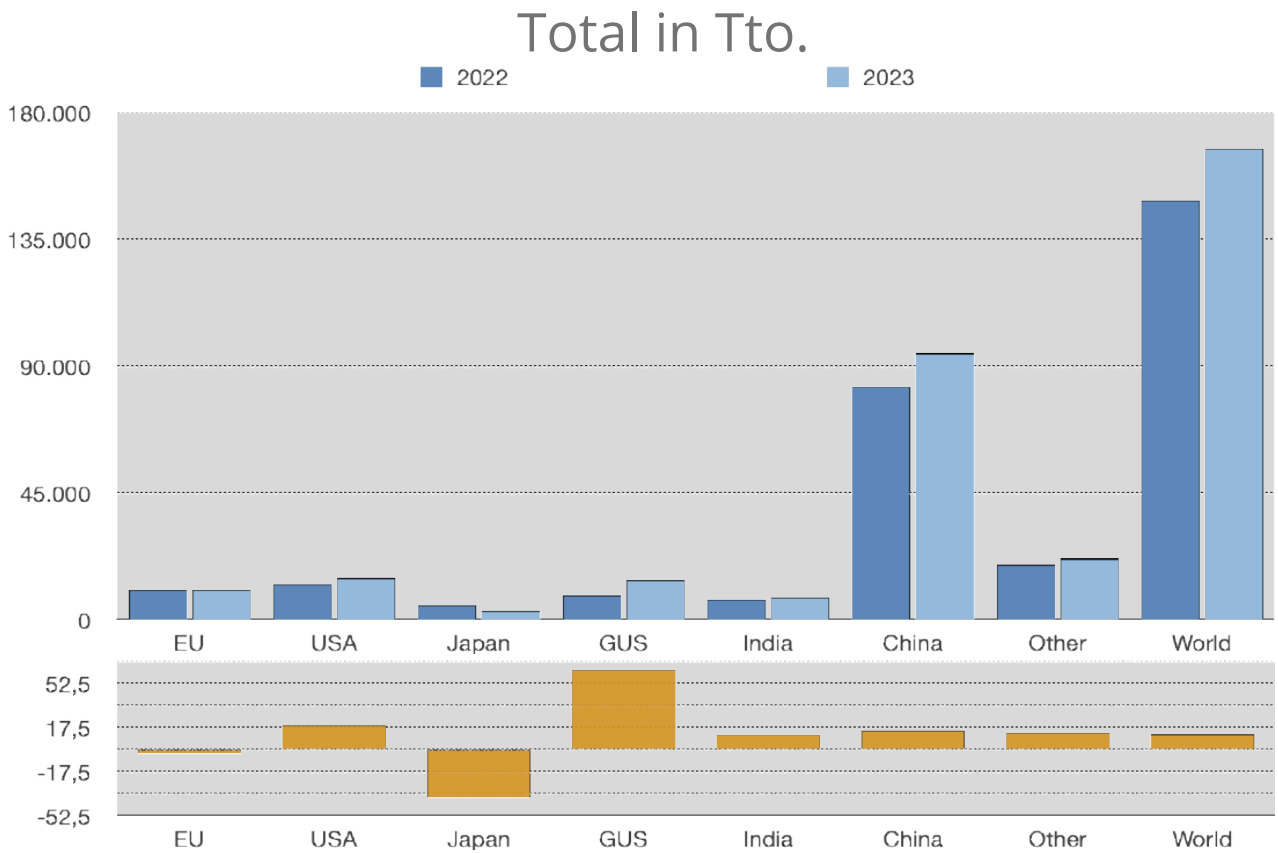
*Preview Tube
India 2024*

70

World Steel Tube Production – Review

A comparison of growth in 2022 and 2023 shows global growth of 12.3%. While the USA and the CIS states are leading the way, Europe has a decline of 1.8%. Bringing up the rear, however, is Japan with a decline of 37.5% in global steel production. However, the different growth rates in the individual sectors are also noteworthy here. For welded tubes >406, the EU also recorded

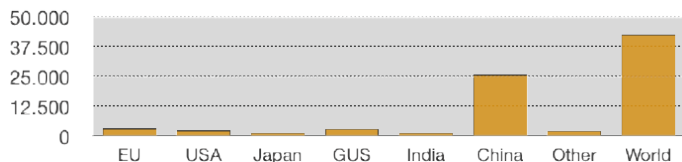
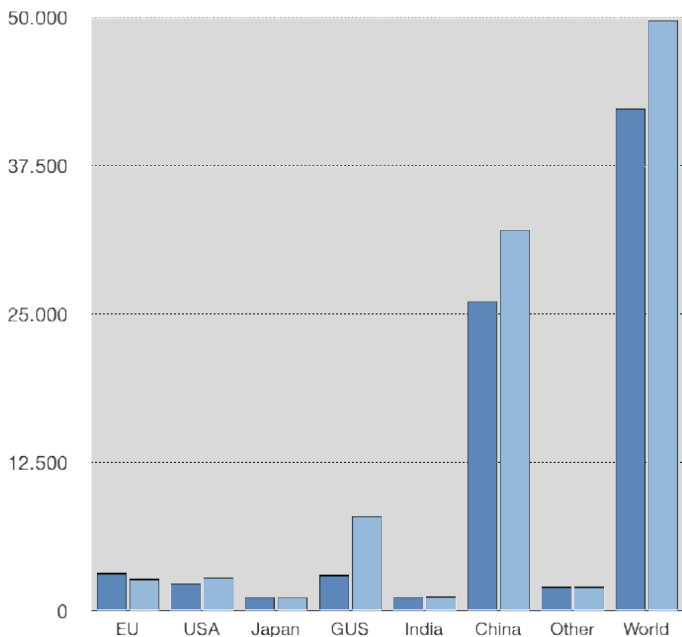
an increase of 25% and even Japan has a plus of 28%. The Chinese market is also showing growth figures of 14.8%. China's enormous growth figures are now being put into perspective. Worldwide, growth can therefore be seen in all the areas mentioned, with the exception of the EU and Japan.



Region/country	seamless tubes			welded tubes <406			welded tubes >406			welded tubes			TOTAL		
	2023	2022	in %	2023	2022	in %	2023	2022	in %	2023	2022	in %	2023	2022	in %
EU	2.700	3.200	-15,6	6.700	6.700	0,0	1.000	800	25,0	7.700	7.500	2,7	10.400	10.700	-2,8
USA	2.800	2.300	21,7	10.200	8.600	18,6	1.800	1.500	20,0	12.000	10.100	18,8	14.800	12.400	19,4
Japan	1.100	1.100	0,0	1.600	3.400	-53,9	500	700	28,0	2.100	2.400	-12,5	3.200	5.200	-37,5
CIS	7.900	3.000	163,3	2.800	4.500	-37,8	3.500	1.200	191,6	6.300	6.600	-4,5	14.200	8.700	63,2
India	1.200	1.100	9,1	3.600	3.200	12,5	2.900	2.600	1,5	6.500	5.800	12,1	7.700	6.900	11,6
China	32.000	26.000	23,1	53.000	48.000	10,4	9.800	8.600	14,0	62.800	56.600	11,0	94.800	82.600	14,8
Other	2.000	2.000	0,0	17.200	15.000	14,7	2.800	2.500	12,0	20.000	17.500	14,3	22.000	19.500	12,8
World	49.700	42.300	17,5	95.100	88.000	8,1	22.300	18.500	20,5	117.400	106.500	10,2	167.100	148.800	12,3

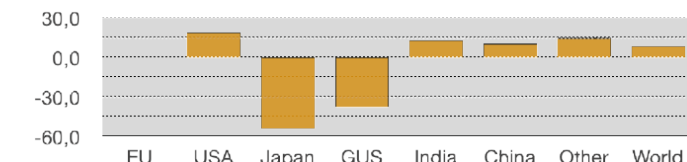
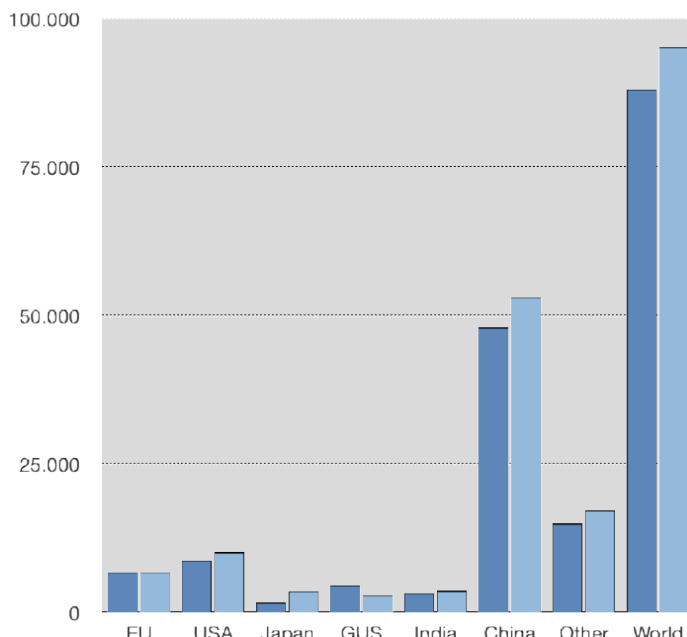
Seamless tubes in Tto.

■ 2022 ■ 2023



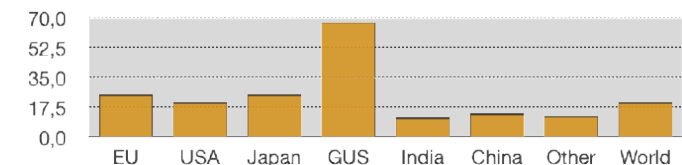
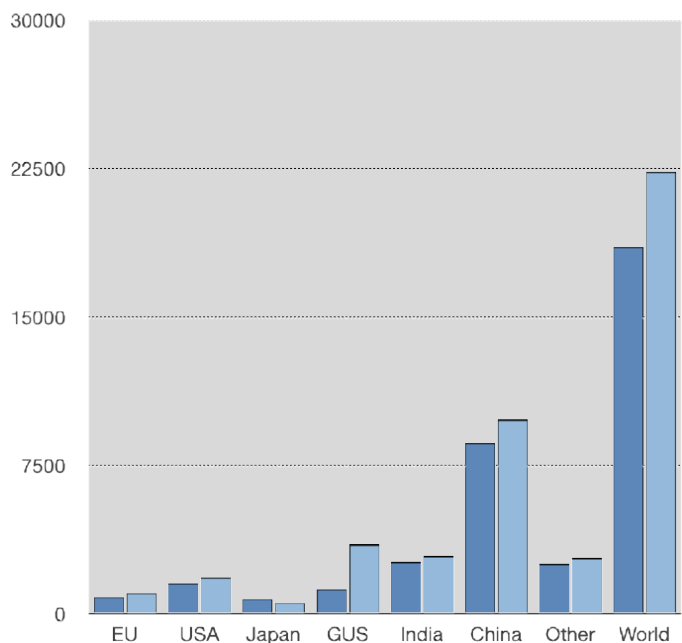
Welded tubes <406 in Tto.

■ 2022 ■ 2023



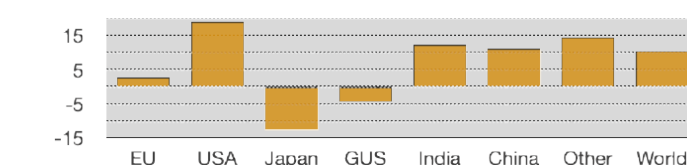
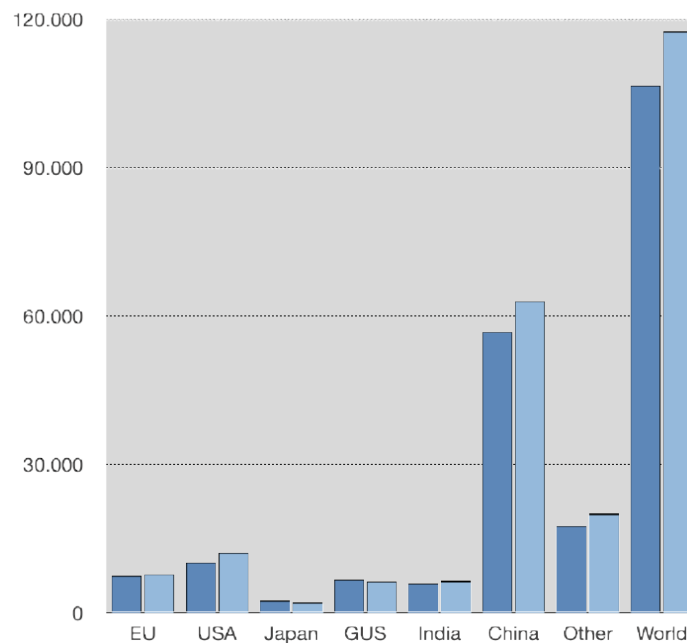
Welded tubes >406 in Tto.

■ 2022 ■ 2023



Welded tubes in Tto.

■ 2022 ■ 2023



Dr. Gunther Voswinckel, VOSCO GmbH

World Tube & Pipe Market: Factors influencing the current situation

Dr. Gunther Voswinckel – Update as per April 2024

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

The Russian invasion into the Ukraine in 2022 and its consequences are still creating challenges for the industry. The war between Hamas and Israel recently started October 2023 is another conflict threatening the world. So far, no consequences on the energy prices are to be seen since all involved parties manage to keep this conflict local without interference to other middle east countries. Increasing tension between the US and China officials create further clouds for free international trade. Political interventions and regulations are increasingly influencing industrial strategies and actions.

The necessary transition to environmentally friendly and carbon reduced production became a central mission of the industry. The consequences on the cost increases are unevenly distributed across the world. Europe is challenged by persistently high energy prices and levies on carbon intensive industries. Regions such as the USA, India, Turkey and China are benefiting from lower energy cost. The high level of public debt caused by the expensive measures taken to overcome the various crisis in recent years give rise to fears that the central banks' effectiveness in combating inflation will be limited and that the target value of 2% can therefore not be expected in short term. All these unexpected challenges are difficult to manage.

Many tube and pipe producers were able to report improved profits in 2023, but in Europe high energy prices and CO₂ levies are weighing on tube and pipe producers. Due to the dynamics of these developments, it is usually very difficult

for the producers to react appropriately. Some manufacturers are losing confidence to compete on the global market with these additional costs and consequently even reduce their involvement in Europe. As a result, some countries/regions are looking for suitable political countermeasures to compensate for their cost disadvantages.

Whereas previously only quality, delivery time and costs were decisive, now geopolitical and logistical risk considerations as well as current and future energy costs are increasingly taking centre stage. All sources of supply are being critically scrutinised, and one can only hope and warn that international trade will not suffer too much as a result. In particular, the regional differences in energy prices will have an impact on the current landscape of the energy-intensive steel as well as tube and pipe industry.

However, disruptive times also always create new opportunities for economic success. New markets such as carbon capture utilisation and storage (CCUS), new networks for hydrogen transportation, electromobility and productivity improvements at production sites as part of the transformation towards more environmentally friendly plants offer opportunities that should be seized.

Availability of economical energy is a decisive factor for the industry. Geopolitical turbulences and political regulations have changed the regional balance with increasing challenges for the industry in regions with higher energy cost. This may change the industrial landscape of the energy intensive industry with significant future consequences.

The prices for electrical energy in Europe, after turbulent periods, is now reported at a level of about 70 €/MWh with remarkable

volatility (Figure 1). Considering significant lower price levels in other parts of the world, e.g. USA about 20-30 €/MWh less, it is obvious that the environmental driven trend towards electrical energy in Europe is loaded by cost burdens. Measures to improve production efficiency need to be introduced to prompt such disadvantages.

Cost of natural gas, after turbulent times climbing in 2022 up to levels higher than 9 USD/MMBtu and another sharp increase in 2023 up to 4 USD/MMBtu, has now calmed down to a level of about 1,7 USD/MMBtu, which is the same price range as early 2020 (Figure 2). This is good news for gas intensive industries and gas power plants. Europe anyhow, originally being supplied by Russian gas via pipelines at good values, now sources its gas needs to a great extent as LNG. Just Austria and Poland still source their natural gas via Jamal pipeline from Russia.

The conflict in middle east, the war between Hamas and Israel, still does not have measurable impact on the gas prices. The involved parties seem to succeed in limiting the conflict local without being spread out to other middle east countries. The original concerns of analysts about possible upcoming consequences like in earlier conflicts in the middle east seem so far under control.

The European industry nowadays depends largely on imported LNG (Liquified Natural Gas). LNG on the other hand is by far more expensive than natural gas. Figure 3 displays the development of the global price for LNG. Since November 2023 the LNG-price for 1MMBtu was reduced significantly from 15 to 10 USD, anyhow this price is still more than 8 USD or 550% higher than the price of natural gas. These remarkable additional costs are applicable to such regions without sufficient natural gas supply. Europe is one of such regions with additional cost burdens. Europe is buying LNG from USA, Kuwait and also from Russia via third countries. Possible measures to overcome the price disadvantage of LNG are hardly to be seen. Extended European local gas exploration or shale gas exploration are politically banned. Therefore, hardly any short- or mid-term measures are visible to overcome cost disadvantages

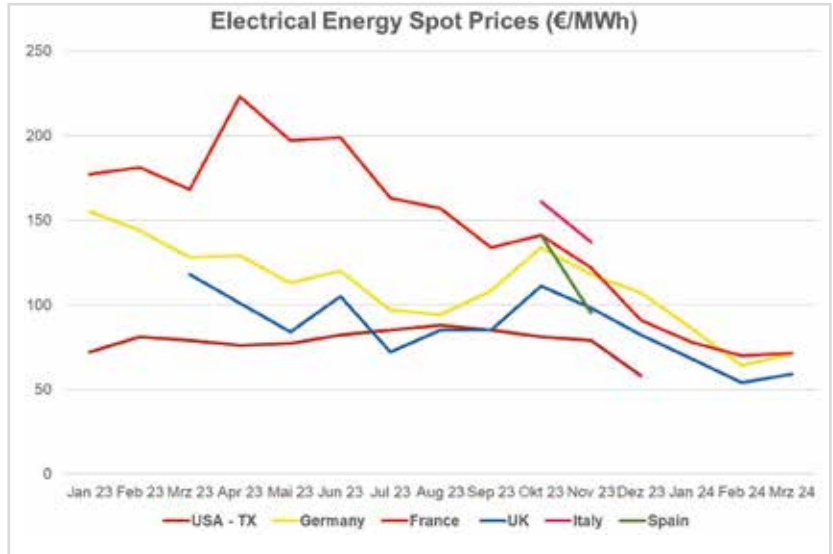


Figure 1: Selected spot prices of industrial electrical energy since 2023 in €/MWh
Source: Statista.com, Kallanish, com

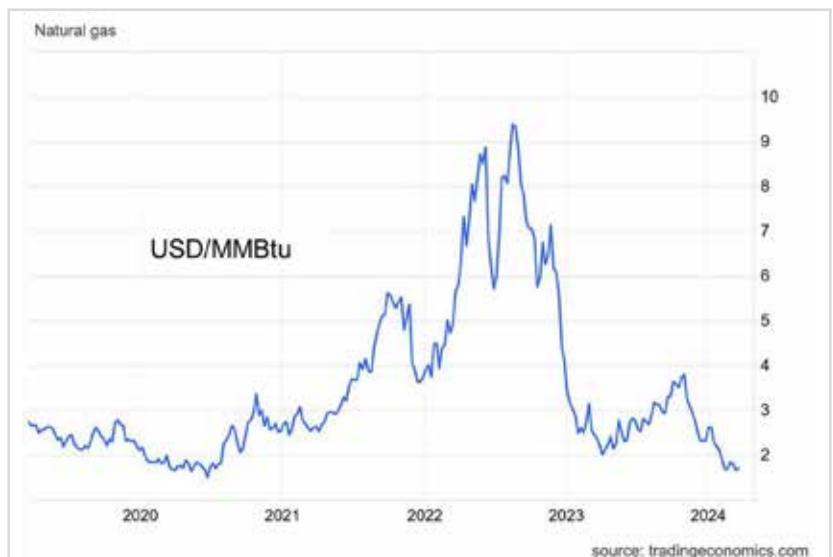


Figure 2: Natural Gas price development 5 years up to 19th of March 2024
Source: Trading Economics.com

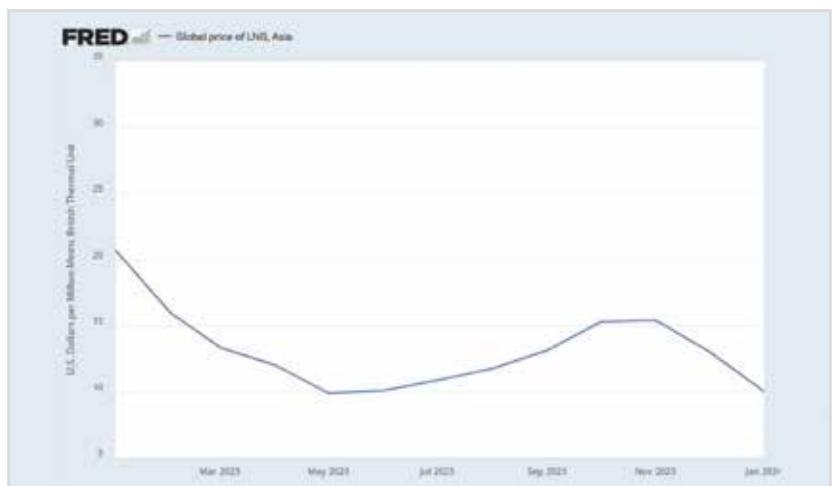


Figure 3: LNG Global Price development 1 year up to January 2024
Source: International Monetary Fund, US Bureau of Labor Statistics

European high energy consuming industries are confronted with.

The long-term strategy to shift towards green hydrogen to replace fossil energy sources such as natural gas, are also questioned by some specialists. Hydrogen production via electrolysis in an industrial scale requires not only masses of clean water, but also a lot of electrical energy. About 55 MW/ton of Hydrogen must be considered. Furthermore, the chemical process, the electrolysis, requires permanent electrical energy 24 hours over 7 days per week with limited power network variations. The lifetime of the electrolyse stacks is significantly reduced in case of larger power supply volatility. Therefore, green hydrogen production seems to be feasible in regions with steady sun and wind. In most parts of Europe such constant power supply at reasonable cost is still hardly to be realized by the green energy sources wind and sun. Some European countries therefore consider nuclear power as the green solution hereto.

Europe has established the ETS (Emission Trading System), to reduce CO₂ emission by introducing levies on each tonne of emitted CO₂. In addition, the CBAM (Carbon Border Adjustment Mechanism), was introduced as compensating levies on CO₂ intensive goods imported from third countries outside of Europe. This system, characterised by punitive tariffs, ensures a certain equalisation of costs within Europe,

local European producer however do not get any further protection. However, as it raises the overall cost level for goods in Europe, it is leading to cost disadvantages for products which are exported outside of Europe.

In contrast, USA has introduced an instrument with the introduction of the IRA (Inflation Reduction Act), which provides financial incentives for low-carbon investments. A climate protection package of 369 billion US dollars is providing tax credits for climate saving investments. The US IRA has created a boost of investments, whereas the European levies system did create irritations amongst investors and economic recession.

Therefore, the European energy intensive industry is confronted by a significant cost disadvantage. If no cheaper energy supply sources become available, this disadvantage remain as a major thread for the European energy intensive steel and tubular industry.

It is to be seen, to what extend measures to increase energy effectiveness and productivity can help European producers to compensate such cost disadvantages and the flood of additional administrative measures required by regulations such as ETS and CBAM. Lean and competitive production is somehow in danger to come out of sight.

Tube and Pipe manufacturers buy hot-rolled coils, round billets, or plates as input material for their production lines. More than 70 % of the total world pipe production, i.e. about 110 million tonnes/year, are welded tubes and pipes. Welded tube producers are highly dependent on attractive hot rolled coil prices and large OD pipe (pipeline) producers, on plate prices. Average prices for hot-rolled coils came down from September 2021 (ab. 2000 USD/ton) to September 2023 (ab. 700 USD/ton). Since then, the HRC prices strengthened again to prices of about 1120 USD/ton. Mid of March 2024 the price is at 880 USD/Ton (Figure 4). Furthermore, tube producers suffer from shortages in the availability of special tube material specifications. Special alloyed HRC as applied e.g. OCTG tubes and pipes, are traded at significant higher prices.

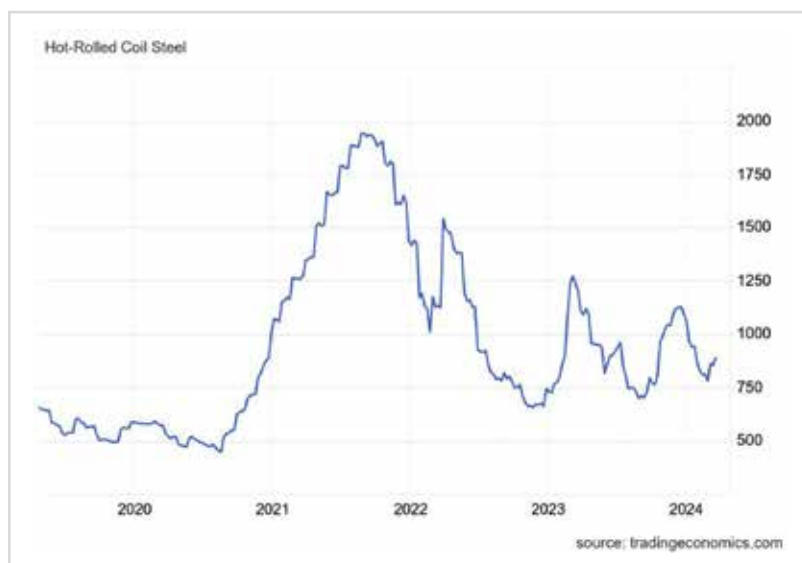


Figure 4: Hot-Rolled Coil Steel prices 5 Year until 19th March 2024
Source: tradingeconomics.com

Comparing the price difference between HRC and finished structural tubes and pipes type S 235 (Figure 5), it becomes obvious how small the margins for tube producers of such products are. There were even time periods, with negative margins.

Some tube and pipe producers even stopped their welding operations temporary and fed seamless pipes into their finishing lines to overcome such margin losses. Steel plates are traded according Kallanish on 19th March 2024 for low grade plates at about 650 USD/ton.

Billet prices, used for seamless tubes are traded for an average of around 500 USD/ton.

In 2024 almost all prices for tubular pre-materials were quite volatile. It remains a challenge to predict the pre-material price developments.

Figure 5, shows the price development for two representative tube grades since June 2022:

- P110 OCTG O.D. 5,5" alloyed casing pipe.
- S235 non alloyed structural pipe.

The OCTG pipe price for P110, after its high in October 2022 (ab. 3.900 USD/ton) suffered a price decline of ab. 46% until October 2023 (ab. 2.100 USD/ton) - however, since then, it seems the price has bottomed out.

The structural pipe S235 although on a much lower price niveau, characterized by much less volatility almost maintained its price level at ab. 700-800 USD/ton.

The world tube and pipe production after a slight downturn in 2022 of -1%, had an impressive recovery in 2023 of +14% (Figure 6).

Anyhow substantial regional differences are reported. CIS (+17%), the strong growth most likely due to compensation of imported pipes by local production (Figure 7). Remarkable is that contrary to the trend, the production of welded tubes < 406 mm OD was suffering by - 38%, whereas the segment of pipeline pipes > 406 mm OD was growing by 67% (Figure 7). This trend seems to be fired by the need to build new pipelines to redirect the gas originally

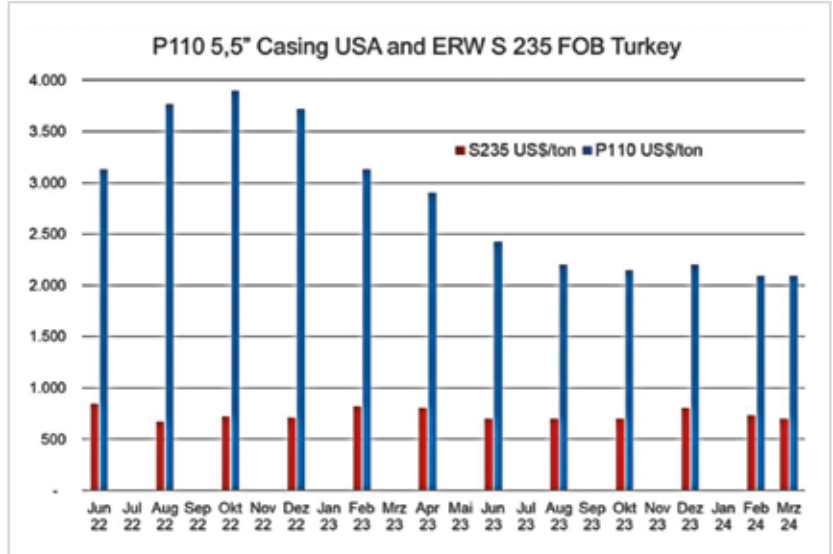


Figure 5: Representative Steel Tube and Pipe Prices (OCTG - P110 USA and Structural S235 Turkey)
Source: Kallanish.com

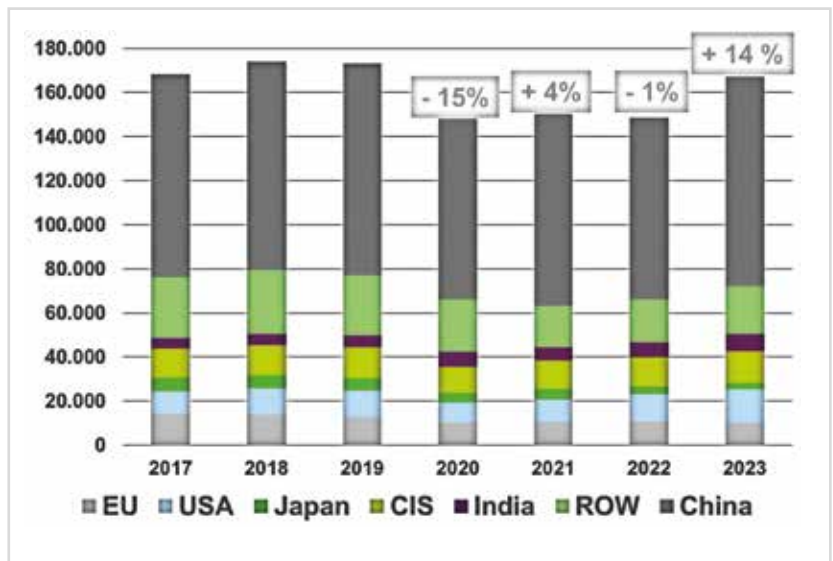


Figure 6: World Tube and Pipe Production 2017 - 2023.
Source: Wirtschaftsvereinigung Stahlrohre e.V.

send to Europe. USA (+19%) with strong growth in all dimensional segments driven by the strong economic situation and the strong oil and gas demand (Figure 8). China representing more than 50% of the world tube production had a further gain of 15%, which is by far more than the overall economic growth in China. Particularly the seamless tube segment reported a remarkable increase of +23% (Figure 9). India after a week 1st half year

2023 reported a booming 2nd half year ending up at a full year 2023 increase of

Market information

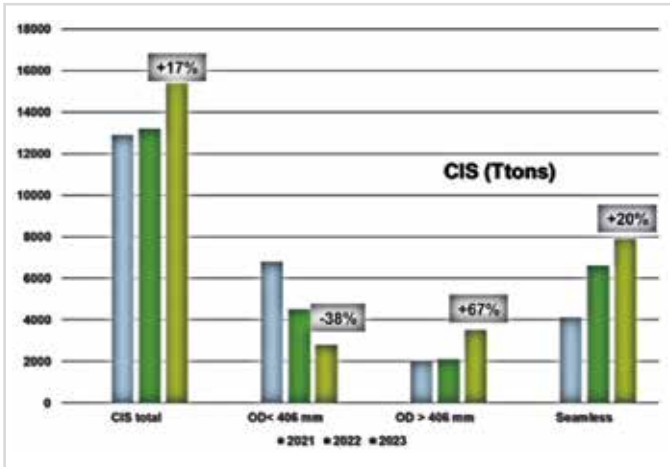


Figure 7: CIS - Tube and Pipe Production 2021-2023e
Source: Wirtschaftsvereinigung Stahlrohre e.V.

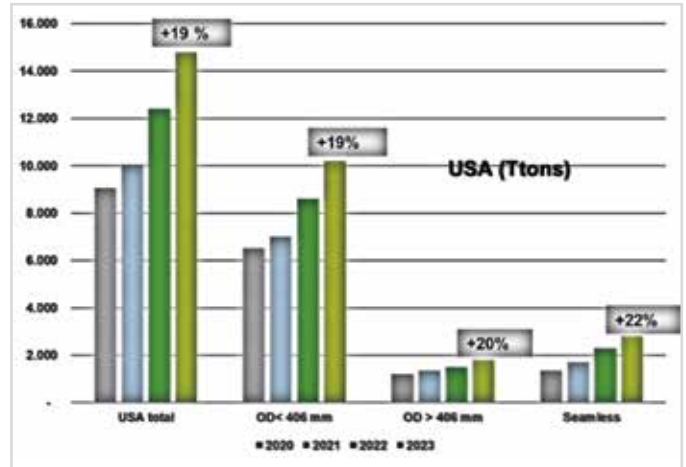


Figure 8: USA - Tube and Pipe Production 2020-2023e
Source: Wirtschaftsvereinigung Stahlrohre e.V.

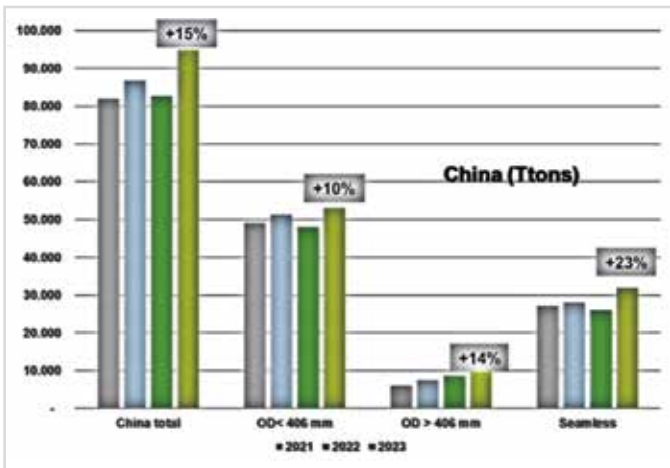


Figure 9: China - Tube and Pipe Production 2020-2023e
Source: Wirtschaftsvereinigung Stahlrohre e.V.

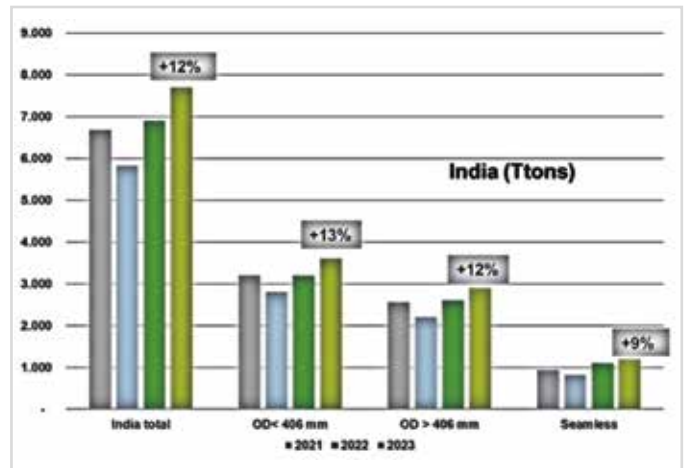


Figure 10: India - Tube and Pipe Production 2020-2023e
Source: Wirtschaftsvereinigung Stahlrohre e.V.

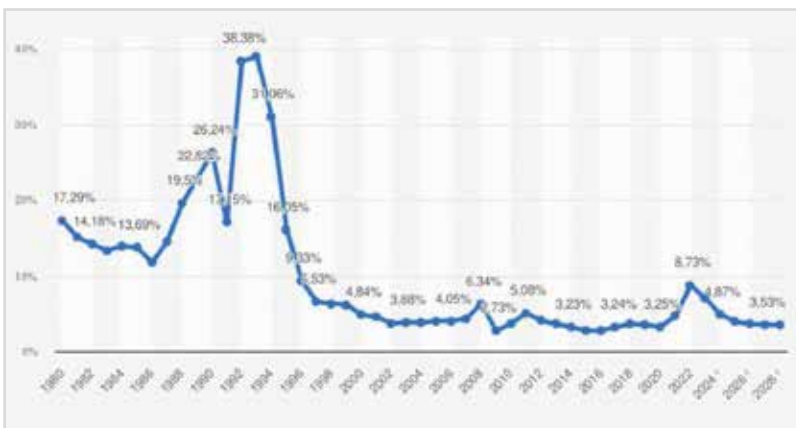


Figure 11: World inflation 1980 to 2028 projected
Source: IMF/Statista.com

+12% (Figure 10). This positive development was already expected at our last report and was covering all tube and pipe segments. In essence the tube and pipe producers in these four countries are benefitting the most from the present geopolitical turbulences. Japan and Europe on the other hand are suffering and do not participate in the general growth trend reported for 2023 in the range of +14%!

Europe has lost a significant amount of its production capacities second half of 2023 due to Vallourec's shut down of their major European production facilities, whose capacities need to be replaced by others as far as technically possible. Some tube customers do have problems for adequate replacement.

Inflation rate, which was considered as a major threat to economic growth seems to calm down in most parts of the world. The efforts of the central banks, especially these of the US FED, has stopped the galloping inflation and reversed the trend. Due to the high indebtedness of the central banks, however, it must be feared that the target inflation of 2% will not be reached for some time yet (Figure 11).

Besides the inflation rate, the producer price index is another important parameter for the economic efficiency, as it reflects the costs of the manufacturing industry. As Figure 12 shows, these costs vary greatly from region to region. Europe and the USA have aligned to a similar level due to the falling energy costs in Europe. China's cost situation is still particularly advantageous with an advantage versus Europe and the USA of about 25%. Japan as well has an advantageous situation in comparison to the USA and Europe of about 16%. Labour unions in the USA and Europe are currently concluding their wage rounds with significant wage increases, meaning that further increases in producer prices are expected. In Europe, the high energy prices must also be considered if these cannot be significantly reduced in the short term.

The major driver of the tube and pipe industry is the OCTG market representing about 51% of the world tube and pipe production. The consumption of OCTG tubes directly relates with the oil price (see previous tube market reviews). OPEC+ during the past months have tried to keep the oil price at a minimum level of 90 USD/Bbl. by voluntary supply cuts. The USA on the other hand tried to balance the possible supply shortages by additional own supplies. These measures kept the Oil price mostly in a range of 70 to 90 USD/Bbl. (Figure 13). Therefore, under normal conditions, the World bank projects the oil price to stay at 80 USD/Bbl. in 2024. This projection certainly only applies if the war between Israel and Hamas remains local.

World Bank on the other hand sees significant influence on the oil price if the Hamas-Israel war would escalate into a Middle East wide conflict disrupting the oil supplies.

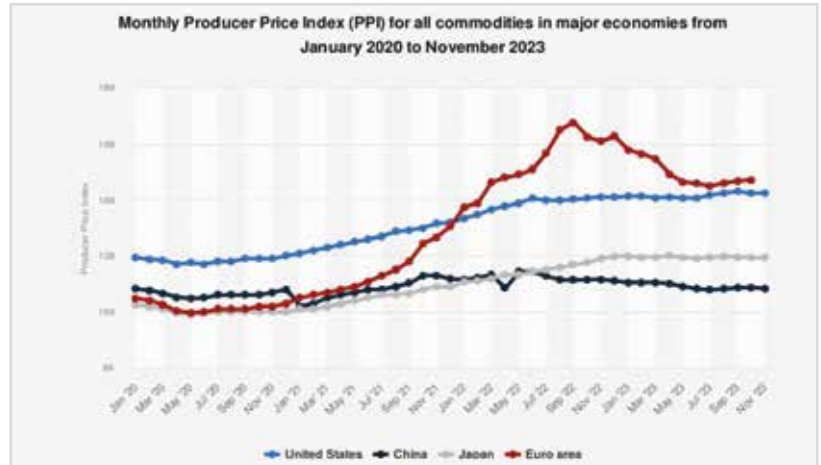


Figure 12: Growth rate of the producer price index in selected countries January 2020 to November 2023

Source: Trading Economics/Statista.com

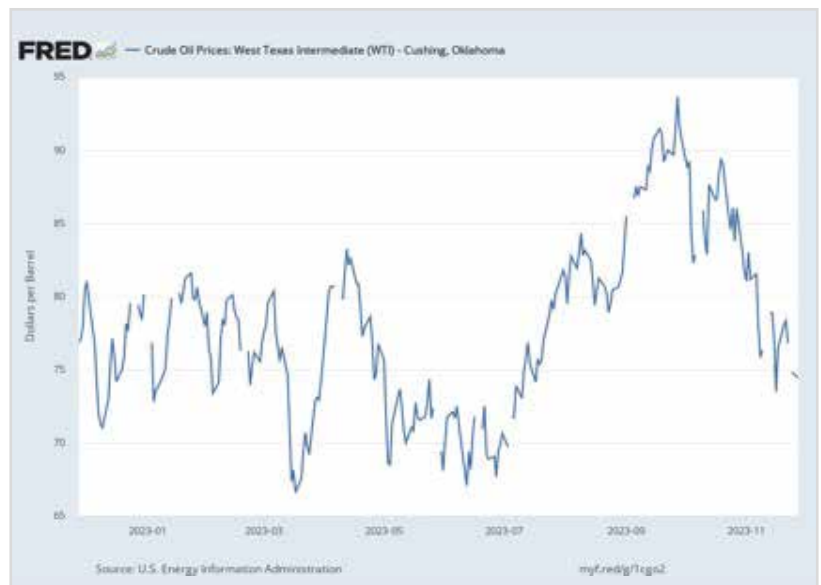


Figure 13: Oil price WTI development 1 year up to 14th of March 2024 (US\$/Bbl)
Source: US Energy Information Administration

Since it seems that all involved parties are trying to keep the conflict local and avoid any escalation, it can be assumed that the oil price stays at present level. Frightening scenarios like that in 1973 with disruptive impacts on the global economy a sudden four-fold increase in crude oil prices ushering in the higher inflation and rising unemployment that ended the long post-war boom in the global economy, as displayed by some world bank specialists' forecasts seems to be out of sight.

The USA to soften the inflation and to sacrifice the crude oil demand enlarged its crude oil production almost linear from

Market information

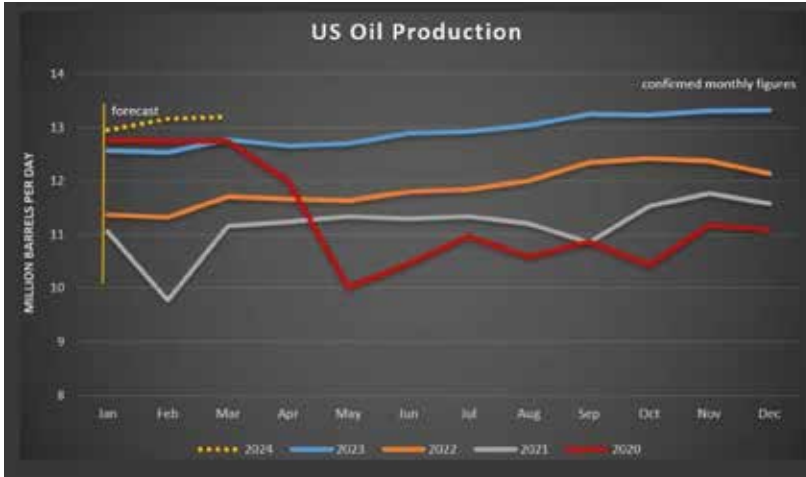


Figure 14: US Crude Oil Production since 2020
Source: OilPrice.com

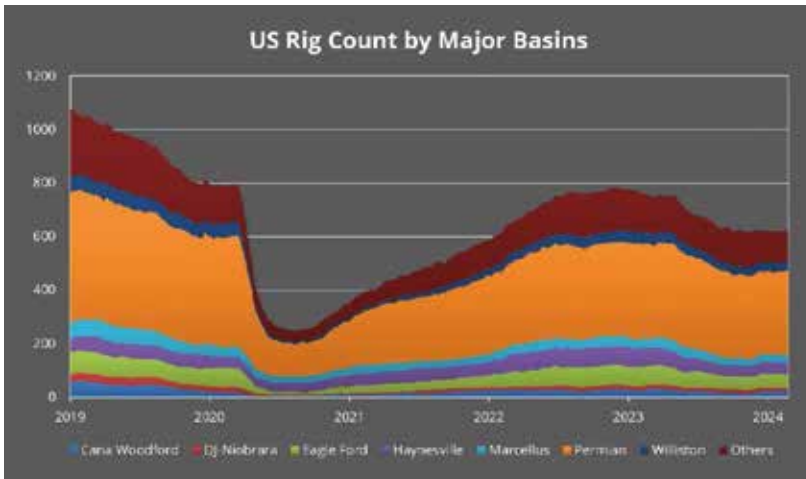


Figure 15: US Total Rig Count 5 years up to 14th of March 2024
Source: OilPrice.com

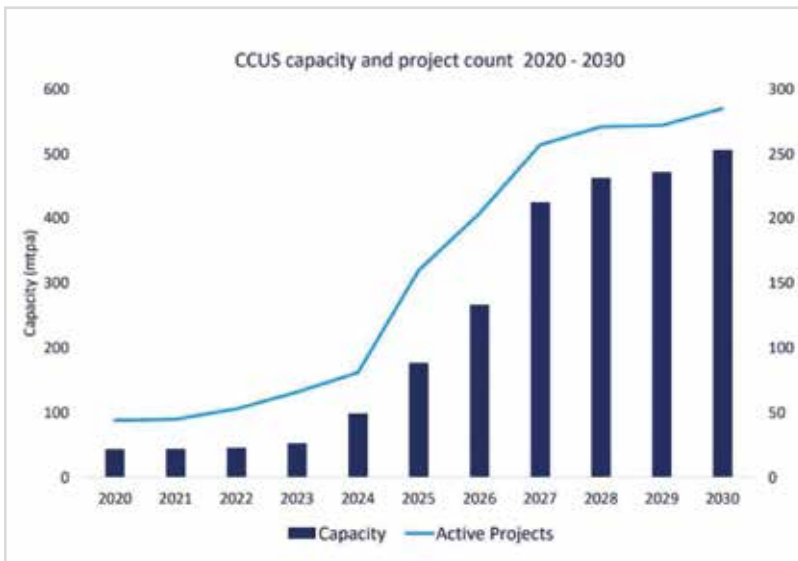


Figure 16: Positive outlook for CCUS projects, tightening tube supply in high alloy tubulars
Source: Energy Global Data

12 Mio. Bbl./day in September 2023 to 13,3 Mio. Bbl./day in March 2024 (+ 11%) by increasing the number of drilling rigs and their productivity (Figure 14).

The number of US drilling rigs was enlarged to about 800 by December 2022 (Figure 15). In 2023 due to declining oil prices, the number of rigs was reduced again to 618 rigs. Of these 618 rigs, 496 are dedicated for the extraction of oil and 118 for gas. Furthermore, the USA has relieved some of the oil export sanctions on Venezuela. Nevertheless, the US oil exports have reached a new all-time high with about 5,5 million Bbl./day.

Efforts to reduce dependence on fossil fuels can hardly be successful in the short term and can only contribute in the medium term. For our pipe industry, however, this means that crude oil prices can be expected this year at around 80-90 USD/Bbl. The investments to secure the world energy supply will keep the demand for tubular products high. Another driving factor is the record high global LNG production. Qatar, USA and Australia have record high LNG production. Consequently, the demand for OCTG products remain high. The LNG supplies ease the energy crisis especially in Europe to compensate the stopped Russian pipeline gas supplies.

Carbon Capture Utilisation and Storage (CCUS) is an upcoming interesting market for higher alloyed tubes. In CO₂ capture and sequestration, carbon dioxide is separated from combustion gases and then stored indefinitely in deep underground layers of rock without a container. For deep drilling and transportation of CO₂ into these deep underground layers of rock, increasing volumes of tubes and pipes are required. USA, China and Middle East are the centres for development following this technology. The project volumes of CCUS will achieve considerable volumes 2026 and the following years (Figure 16). CCUS refers to a suite of technologies that can play an important and diverse role in meeting global energy and climate goals. In addition to exploration activities, the need to build new pipeline routes has also increased since the ban on Russian pipelines to Europe and the strategy towards replacing natural gas by hydrogen. Globally

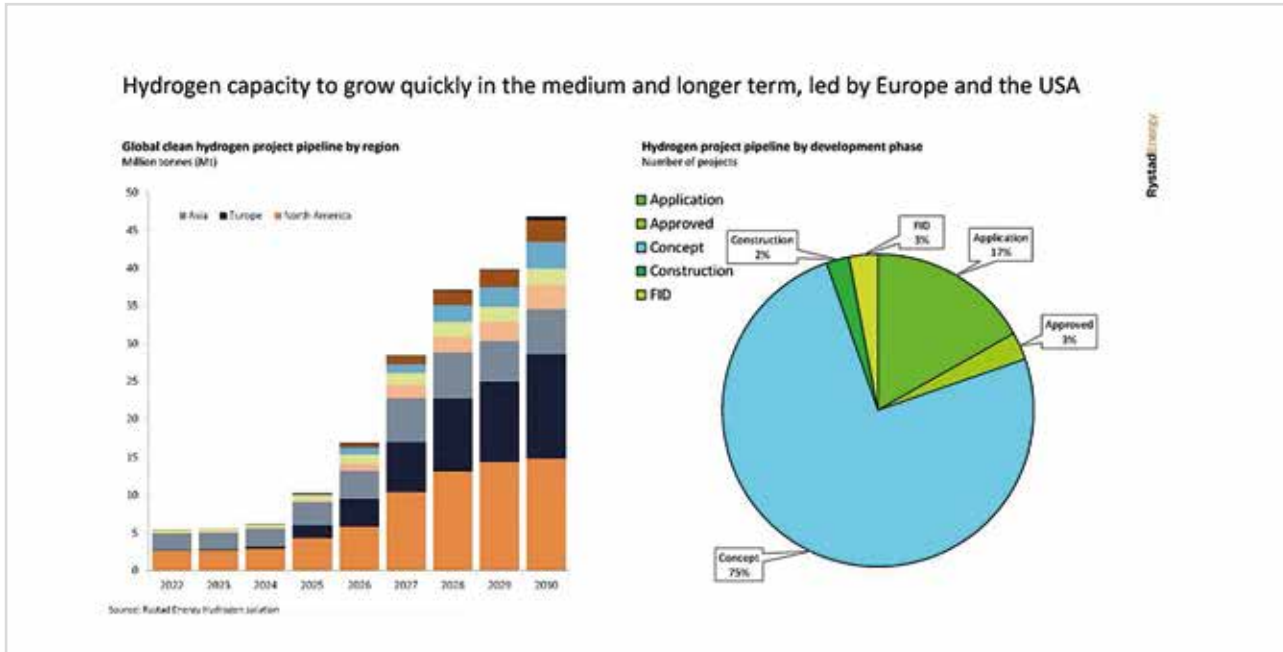


Figure 17: Global planned and announced hydrogen pipeline projects (2022-2030)
Source: Rystad Energy.com

a large quantity of pipelines is planned or announced to be built in the coming years up to 2027. A new market for hydrogen pipelines is upcoming (Figure 17). Particularly the US and Europe expect major growth in this segment. This development offers pipeline manufacturers of large-diameter pipes > 406 mm OD opportunities for interesting future business.

The automotive market, accounts for around 15% of the global tube and pipe market. With most car manufacturers and many of their suppliers now reporting that their production capacity is either no longer constrained by semiconductor shortages, overall car sales figures are rising - with global deliveries expected to reach 85.5 million units by the end of the year. As the macroeconomic outlook for the automotive industry deteriorates, a modest return to growth in new car sales of private and commercial vehicles is expected over the next two years. ABI Research forecasts global vehicle sales growth of 3.6% in 2024. Furthermore, car manufacturers can expect sales to exceed the 90 million units' level again in 2025 (Figure 18). In terms of regional growth in vehicle sales, the following chart summarises these findings. According to IHS, the recovery process in the volume markets of Europe and North America anyhow will take longer. Future

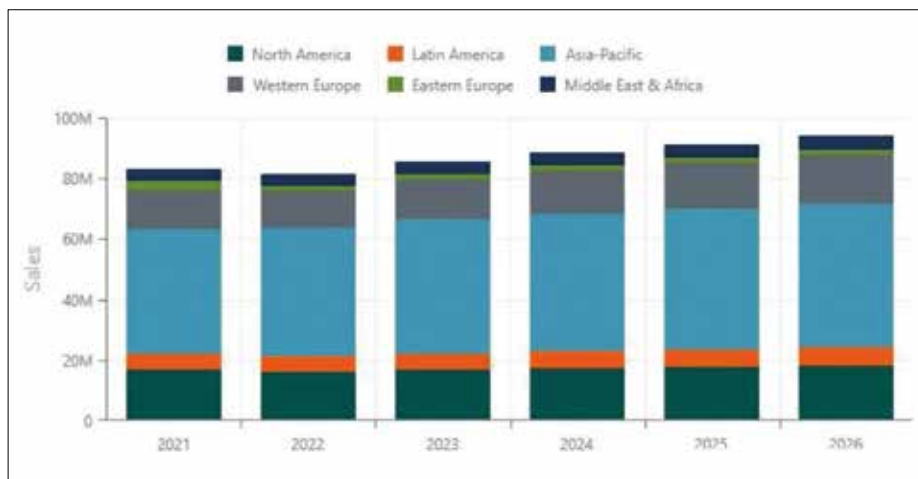


Figure 18: Global vehicle sales volume 2021-2026 (million units)
Source: ABI Research (MD-MOBI-108)

growth will primarily take place in Asia, particularly in China. However, China could increasingly become a sales problem for the western automotive industry due to the American decoupling tendencies and the strengthening local car industry in China. However, the tendency to further reduce the weight of vehicles supports the trend towards the use of tubular products. The transition to electromobility can also support the use of tubular components, as the additional weight of the batteries must

Market information

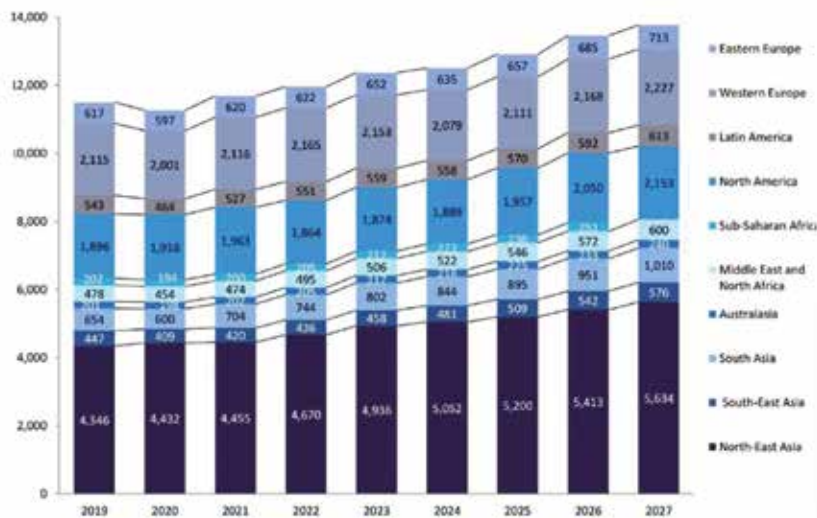


Figure 19: The Global Construction Market in Billion USD
Source: Global Data

be compensated as far as possible. The automotive industry offers many attractive applications for tubular products.

The greatest potential for the use of tubular products is seen in the vehicle frame, followed by the chassis and powertrain. Tube manufacturers will endeavour to enter new vehicle series with larger quantities in order to further expand their presence in the light vehicle industry.

Overall, the automotive industry faces the challenge of the transition to electromobility and the question how they can continue to serve markets in which electromobility cannot be introduced due to restrictions in the availability of electrical energy. Car manufacturers must therefore pursue all drive technologies to avoid losing major market potential. Environmentally friendly combustion technologies will continue to have their place. Political institutions, such as those in Europe, on the other hand, are setting deadlines to ban combustion technologies including green fuels. Present discussions may be understood that this paradigm may be opened again in favour of combustion engines with green fuel. In this area of conflict, the automotive industry, including its suppliers of tube products, must find suitable business approaches.

The mechanical engineering market segment, which accounts for around 9% of world tube and pipe production, has

developed well in line with global GDP in recent years. During the financial- and corona crisis, the market was characterised by higher volatility with sharper declines and quick recoveries. In 2022, the current further recovery was slowed down by geopolitical circumstances. Asia, and China in particular, although increasingly reaching self-sufficiency are still the largest markets for machinery purchases. It remains noteworthy that the Chinese industry has taken the global lead in machinery sales since the Corona crisis.

Here, the decoupling intentions of the USA must be observed since this may become a game changer for the worldwide mechanical engineering industry. The USA and Europe continue to be significant sales regions as well. This market segment certainly has the greatest variety of tube products. Cylinder-, ball bearing- and turned part tubes, to name just a few prominent representatives of this market segment, certainly show interesting prospects for tube and pipe producers.

The construction market with about 5% of the global tube market presents another opportunity for pipe manufacturers with growth potential. Despite the challenging macroeconomic and geopolitical backdrop, the global construction industry managed to continue to generate growth momentum in 2023, with output rising by 3.4% in real terms (Figure 19). Much of this was owed to China's surprisingly strong performance despite the prolonged real estate crisis there, which has significantly impacted investment in building activity. Construction in the US also picked up in the second half of 2023, which pushed global construction industry output growth excluding China to 2.0% in 2023. With interest rates remaining at a high level, new investment in the residential buildings sector has fallen sharply. This has particularly been the case across North America and Europe, where residential building permits have plummeted. The infrastructure, energy & utilities, and industrial sectors will be key drivers of construction output activity. There are also high levels of spending across areas related to the energy transition, with investment in renewable energy projects and in

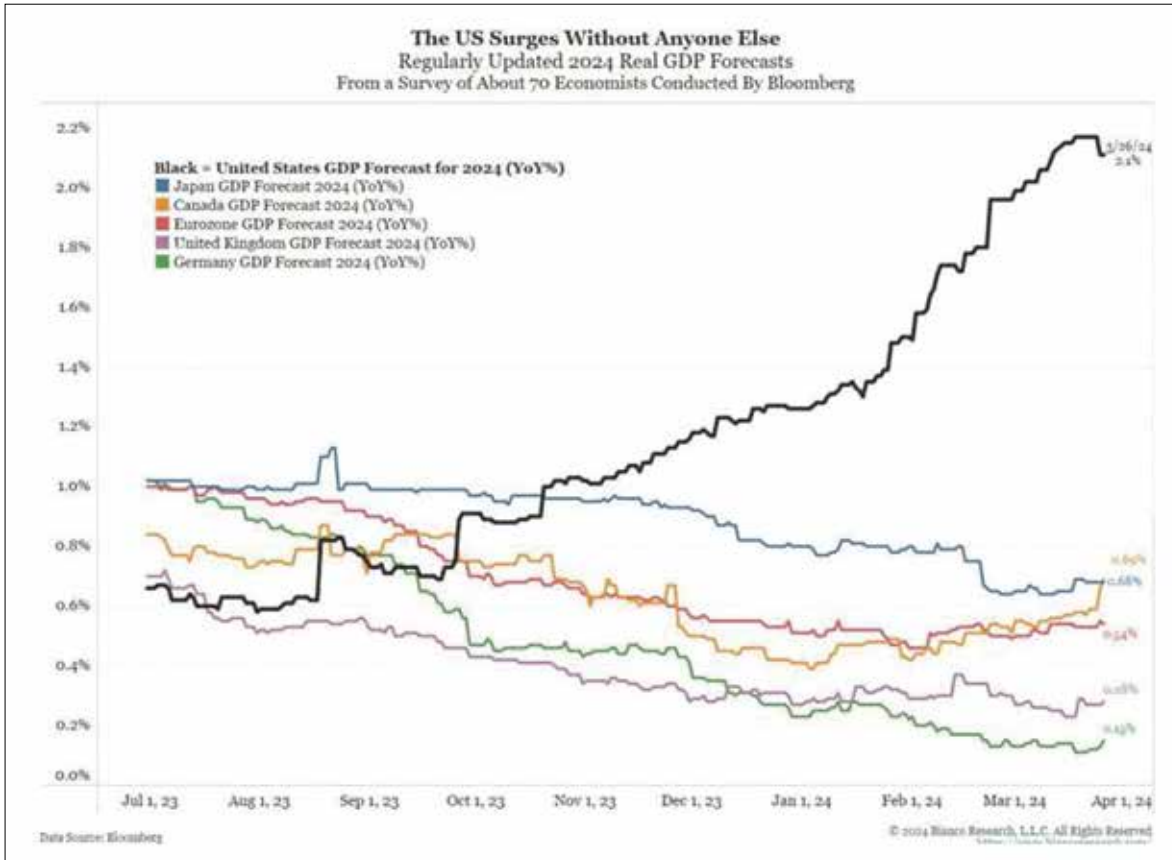


Figure 20: Global vehicle sales volume 2021-2026 (million units)
 Source: ABI Research (MD-MOBI-108)

manufacturing plants to produce electric vehicles and components. The market penetration of structural tubes, as shown is quite unevenly distributed in the world and the growth pattern is greatly dependent on the regional GDP growth (Figure 20). European countries face weak GDP growth, this in combination with cost increases for construction work, result in slow building activities. India and the USA on the other hand, based on their stronger GDP growth, report much more active building investments. China, one of the leading countries for construction works, presently is slowed down due to major real estate turbulences. Anyhow once these turbulences are under control again the potential for construction remains high.

In mid-term anyhow this market segment will offer again interesting opportunities also for Europe. North America and parts of Asia are widely using tubular products for structural buildings. Europe on the other hand still designs mostly with standard con-

crete or steel structures. The tube industry needs to further promote the benefits of tube applications and showcase the architectural perspectives. Tubular profiles are an ideal choice when visible structures are desired due to their varied shapes and closed cross-sections combined with smooth sides. Best mechanical properties and the possibility to bridge large spans are further highlights of tube profiles. Besides round shaped structural tubes, rectangular profiles are dominating architectural applications. Such profiles are normally cold rolled and formed in so-called turks-heads. In this process great attention must be given to the metallurgical properties of the edges. Normally unalloyed steel is applied, anyhow alloyed steels with its improved material properties should also be considered. Regarding the CO₂-footprint tubular profiles are of great advantage, since the applied steel can be produced from metal scrap in electric arc furnaces driven by green electrical energy. A recent study published

by Global Construction Perspective and Oxford Economics, entitled "Global Construction 2030", forecasts an 85% growth in global construction output to 15.5 trillion by 2030, with three countries, China, USA and India, leading the way and accounting for 57% of global growth alone. Europe, on the other hand, will reduce its pace of investment. There is room for additional production capacity for structural tubes, especially in India, to follow the market trend.

Most tube and pipe producers were able to report strongly improved economic figures in 2023. However, for European pipe producers, the persistently higher energy cost and the additional CO2 levies agreed to be imposed by the European Community represent major challenges. Confidence in being able to compete on the world market in the future with these additional costs is dwindling among some tube producers. Some tube producers even reduce their engagement in Europe as a consequence hereto.

New upcoming market segments such as carbon capture utilization and storage as well as hydrogen pipelines will start requiring larger tonnages of alloyed tubes and pipes in 2025 and thereafter. In general, there is enough production capacity to serve even the increased demand for tubes and pipes for all market segments. Anyhow the trend to produce close to the customers will have ongoing impact on the tube producer's landscape. Raw material prices for the steel as well as the tube and pipe industry would seem to have peaked early 2023. Still markets are nervous with potential for further volatility.

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 is restored, price volatility can be expected to calm down.

The transition towards environmentally friendly tube production to produce carbon reduced tubes and pipes became increasingly a major task for the industry. Tube and pipe producers are converting their production facilities from gas to electricity. Simultaneously they improve their productivity, flexibility, and customer service. Innovative instruments such as Artificial Intelligence (AI) and Industry 4.0 are introduced in this context. So far AI has only been applied to analyse the enormous amount of data available to the industry, but self-learning AI solutions will further revolutionize the tubular industry.

Many technology suppliers have already reacted and enhanced their product portfolio with the addition of environmentally friendly and digital solutions.

VOSCO

Management Consultancy GmbH

Leading by Experience – Our aim is the lasting enhancement of the value of your company

- Board- and Advisory Board Mandates
- Advisory Services for Investment Projects
- Inquiry Specifications, Evaluation of Proposals, Project Management
- Due Diligence and Audits
- Acquisitions, Company Appraisals and Strategic Planning
- Management Consulting
- Globalization, Profitability, Strategy, Investor Relation
- Participation as Investor in Companies

Scharnhorststraße 45
41063 Mönchengladbach
Germany
+49 2161309255
contact@vosco.net
www.vosco.net

**SIMPLY, QUALITY LONGITUDINALLY
WELDED PRODUCTS FOR MARKET LEADERS**

DANIELI

Danieli Competitive ERW Tube Plants



— Modern, competitive Electric Resistance Welding -ERW plants based on process layout, mechanical and electrical systems, and automation from the Danieli Research Center and the Digimet division of Danieli Automation.

— A winning package from Danieli as single-source supplier, along with excellent manufacturing quality from Danieli workshops, plant startup and after-sale services, for sustainable and safe worksites.

Danieli ERW mill portfolio for ½ to 26" OD tubular products:

- Strip preparation and accumulation
- Tube forming sections
- Welding and bead scarfing devices
- NDT and seam annealing systems
- Tube sizing sections
- Cutting systems and finishing lines
- Electrics, automation and robotics
- Monitoring, preventive maintenance
- Technical and after-sales service



Italy, Germany, Sweden, Austria, France,
The Netherlands, UK, Spain, Turkey,
USA, Brazil, Thailand, India, China, Japan

Danieli Headquarters
in Buttrio, Udine, Italy
www.danieli.com

@danieligroup



MSG Maschinenbau GmbH

Generating the real Digital Twin of long products

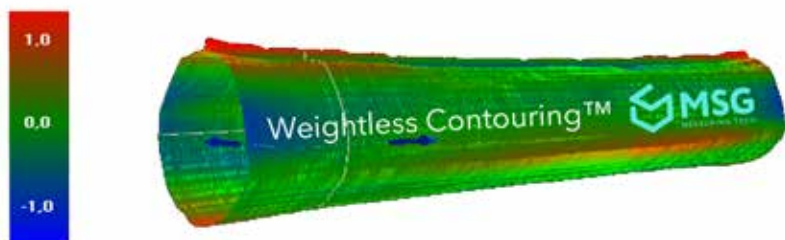


Figure 1: Weightless contouring™

MSG has developed a groundbreaking technology for objective contour scanning of long products, the so-called Weightless Contouring™.

The combination of MSG's 2D profiling systems together with its EP and US patented straightness and twist measurement device, which continuously and objectively determines the straightness curve of long products in the weightless state, lead to the real Digital Twin (Figure 1).

1. Geometric requirements for straightness and twist

Straightness and twist are playing an important role in the manufacture of semi-finished products. Their requirements are defined jointly by manufacturers and users of long products in standardization committees.

In the field of manufacturing straightness is

of great importance to ensure problem-free downstream processes.

In the field of application, the area of use plays a key role. For example, ERW welded tubes (e.g., according to ASTM A513 or DIN EN 10305-5) with excessive deviations in their straightness and/or twist must be joined with increased effort in building constructions.

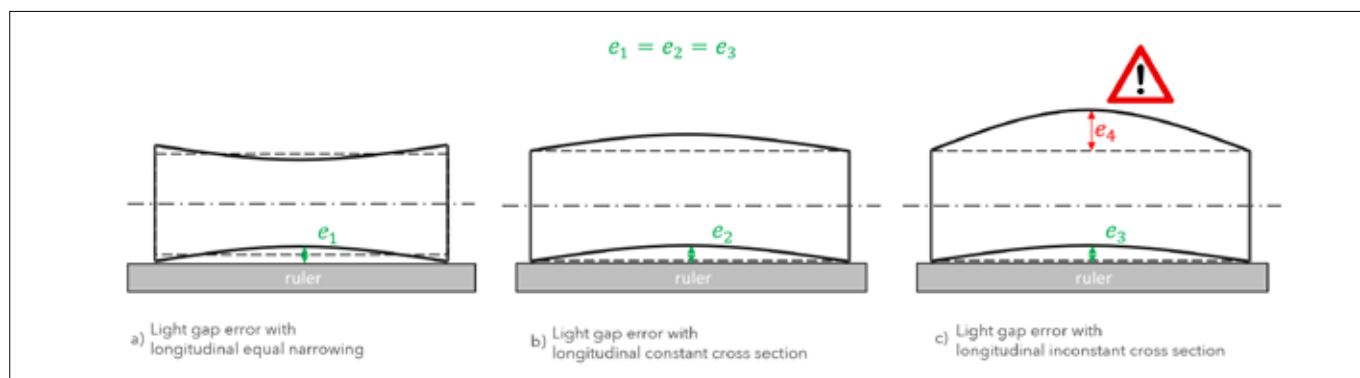
LSAW or SSAW welded large-diameter pipes (according to API 5L) are also examined for joining processes, especially regarding bent ends. A pipe that is too much deformed can only be integrated into a pipeline in the field with a great deal of effort.

Drill pipes should also have good straightness so that less friction is generated on the pipe surface during rotation due to centrifugal forces. Excessive resistance forces could also lead to breakage, for example.

Products deviating from the ideal contour that are used at high rotation speeds, e.g. in turbines, would lead to centrifugal forces and thus to vibrations that are harmful to the process.

In summary, it can be said that straighter bar products require less effort in further proceedings.

2. Definition of straightness and twisting in the state of the art



In DIN EN ISO 12780-1, straightness is defined as the “deviation of a point on the straightness profile from the reference straight line”. But at which points should straightness be measured on a free-form product such as an ERW squared tube? Or where should the reference line be placed?

DIN EN 10305-5, for example, specifies that the light gap of the concave bent side of a square tube is to be evaluated in relation to a ruler (reference).

However, this approach to straightness assessment is ambiguous. This is based due to the fact that in almost all standardization papers, cross-sectional defects (roundness, radii, perpendicularity) are considered separately from longitudinal defects (straightness or twist).

To understand this ambiguity Figure 2 presents three pipe segments with an identical concave straightness deviation on the same side ($e_1 = e_2 = e_3$). Tube a) is concave on the opposite side with the same oddity. According to the standard, the product might be labeled with an error e_1 even though it has none. In case b), the concave bent side is measured with the straightness error e_2 . Since the opposite side is convexly bent with the same deflection, the tube is actually odd. Even more ambiguous would be case c), where the product on the convex bent side might be specified as still OK, but it would no longer be straight on the opposite side due to a cross-sectional deviation (within the cross-sectional tolerance).

In summary, it should be noted that an assessment of the straightness of e.g. ERW pipes due to longitudinal variances in the cross-sectional geometry is ambiguous!

3. Weightless Contouring™ - The concept

In order to solve the ambiguity described above, it may seem obvious to use state-of-the-art profiling measurement systems. The color representations of a contour of the profiled pipe are well known on the market.

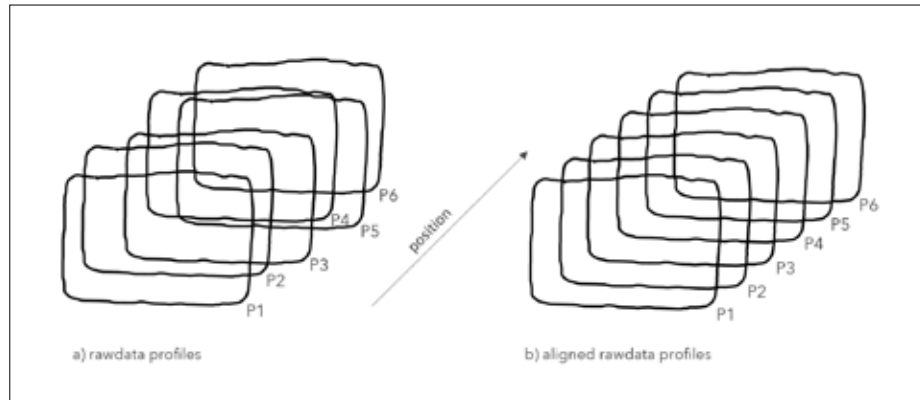


Figure 3: State of the art profiling technology

These are also the right tool for analyzing the quality of the 2D cross-section profile. However, it is important to know that all individual 2D profiles (Figure 3 a; P1, P2, P3...) are recorded independently of location. Due to transport movements in the transverse direction, they have no local connection. For better visualization, they are mathematically aligned with each other in the software (Figure 3 b). The image derived from this correctly describes the individual 2D profiles, but by no means the actual contour of the pipe. This pseudo-contour is often incorrectly referred to as a “digital twin”. However, it does not contain the longitudinal contour parts like straightness and twist.

For this reason, MSG has established for the first time that only a combination of 2D profiling systems and MSG’s EP and US patented straightness and twist measurement, which continuously and objectively determines the straightness of profiled bar products in the weightless state, describes a true contour measurement: So-called Weightless Contouring™.

4. Added values through Weightless contouring™

The advantages of objective, unambiguous contouring of bar products can be divided into two main areas.

Firstly, MSG now provides the market with a digitization process that enables

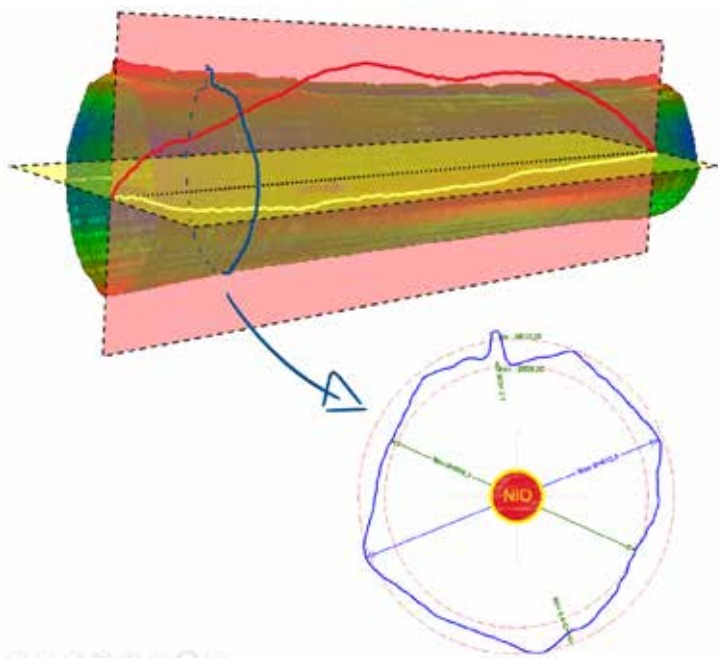


Figure 4: Straightness and cross-shape results based on Weightless Contouring™

maximum objective and uniform quality certification of semi-finished products along the supply chain.

Furthermore, Weightless Contouring™ forms the basis for process optimization. Increasing efficiencies during tube production can only run stable if the underlying measurement data is objective and beyond doubt.

In current projects, MSG displays the straightness and cross-shape results based on Weightless Contouring™ (Figure 4) on monitors alongside the production line so that the operator can see the influence of his manipulations directly on the geometry-producing and straightness-correcting machineries.

5. How Weightless contouring™ works in detail

In preparation for the Tube and Wire show 2024 in Düsseldorf, the topic of Weightless Contouring™ will be explained in detail on the MSG LinkedIn profile as part of a campaign. Be part of it and follow us!

MSG Maschinenbau GmbH

Hünegräben 17a
57392 Schmallenberg
Germany

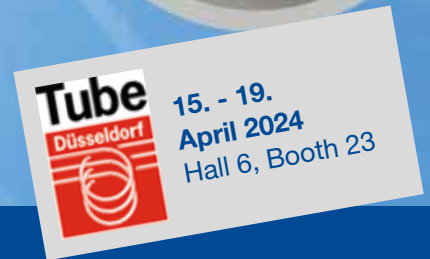
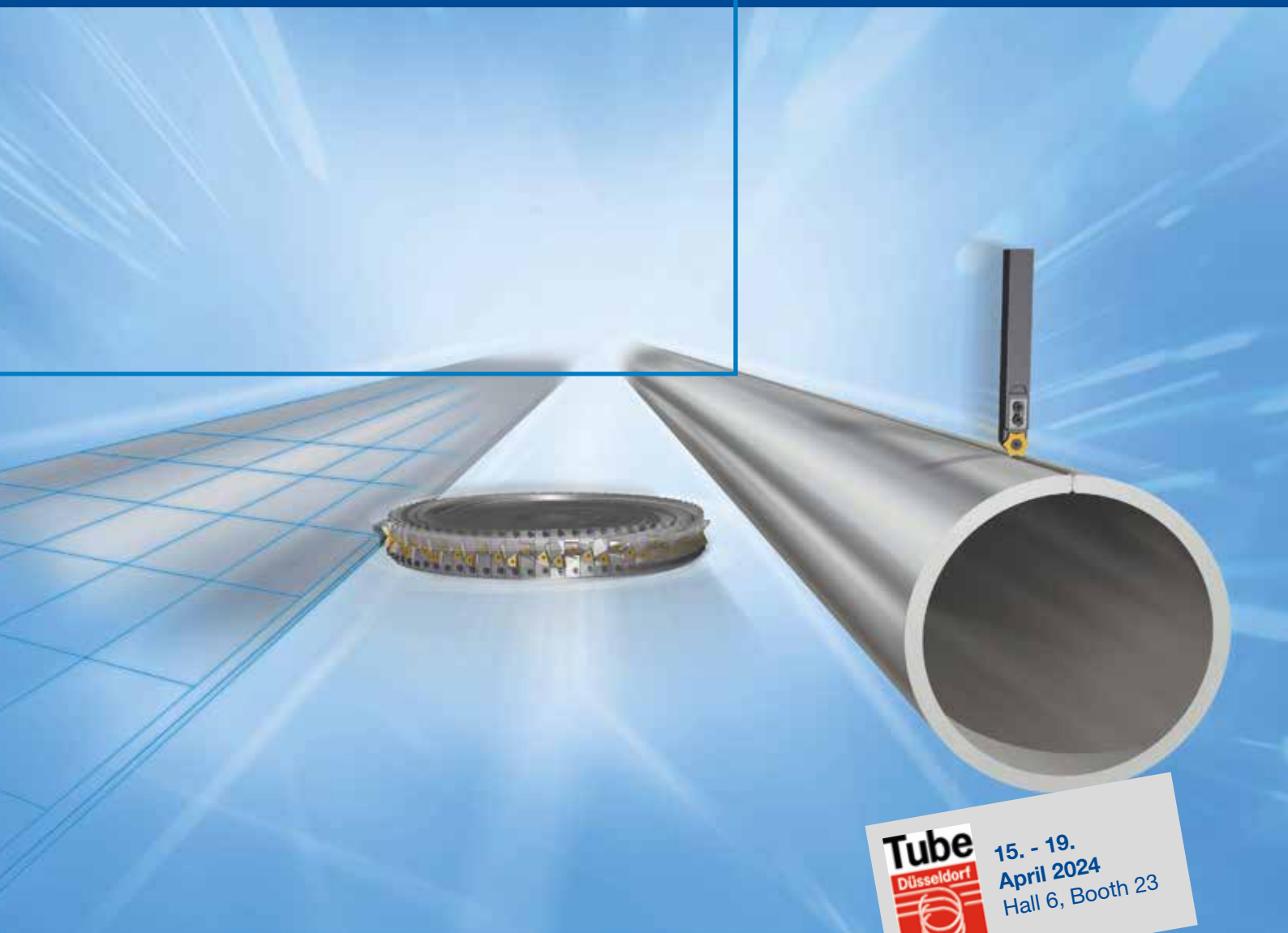
Tel: +49 2972 97740-1
Fax: +4376168801 44

info@msg-maschinenbau.de
www.msg-maschinenbau.de

+++ Do you know: The **ITA** offers **free publication** of press releases and technical papers on itatube.org for your business-, company and product communications up to **three times a year**. +++

boehlerit

Know-how in the field of tube machining



- Boehlerit offers an unrivalled diversity of products and the full range of cutting and machining solutions for the production of pipes.
- Other industries also draw on our decades of experience and know-how in very special machining processes, for example in the case of plate edge machining.

SMS group GmbH

New Piercer Concept On the way to “No-Eccentricity”

Author: Christian Haferkamp

1 Market requirements

OCTG products follow strict tolerances; standards like API form only the minimum requirement. Even though Tubing and Casing products are not necessarily seamless tubes, but can also be ERW-produced, often enough drilling companies do prefer seamless products. There are certainly different process technologies for the production of seamless OCTGs available, but one process step is common to all of them: Piercing.

2 Technological challenge

The seamless tube technology made several major developments steps in the past decades towards better tolerances and quality results: the 3-roll PQF® process in 2003, technological software like Carta Neo® optimizing the stretch-reducing process, or hydraulic adjustment of rolls, to name only a few.

The first forming step, which creates the hollow shell out of the billet, has often

been overlooked. Modern rolling mills use a Cross Roll Piercing Mill for this first step. The design of Cross Roll Piercing Mills has been improved throughout the recent past as well. One of the biggest challenges here is to control the eccentricity of the piercing process, as eccentricity has a direct impact on the result of the final tube. The subsequent processes, i.e. elongation and sizing/stretch reducing cannot correct the eccentricity, which has been introduced during piercing and have to cope with the results of the first process step in rolling seamless tubes.

However, controlling this parameter is not as easy as one might think. The impacting variables are manifold. Homogeneous temperature distribution in the hot billet, the material and mechanical properties as well as the dimensional tolerances of the billet itself are just some of the material parameters which impact the outcome of the piercing process. But also the equipment side has to be controlled, also here multiple variables

Jiangsu ChangBao Precision
Steel Tube Co., Ltd - PQF®
(Premium Quality Finishing)
seamless tube plant



impact the outcome: Alignment of the pass line, condition and adjustment of the rolls, guiding of the billet and hollow bloom, etc.

3 New Piercer Concept

SMS has been continuously working on improving the design of its Piercing Mill. A dedicated design team has been developing significant improvements. The improved design of the SMS piercing mill strives towards the vision of "No eccentricity". The design team made improvements to some core assemblies, such as:

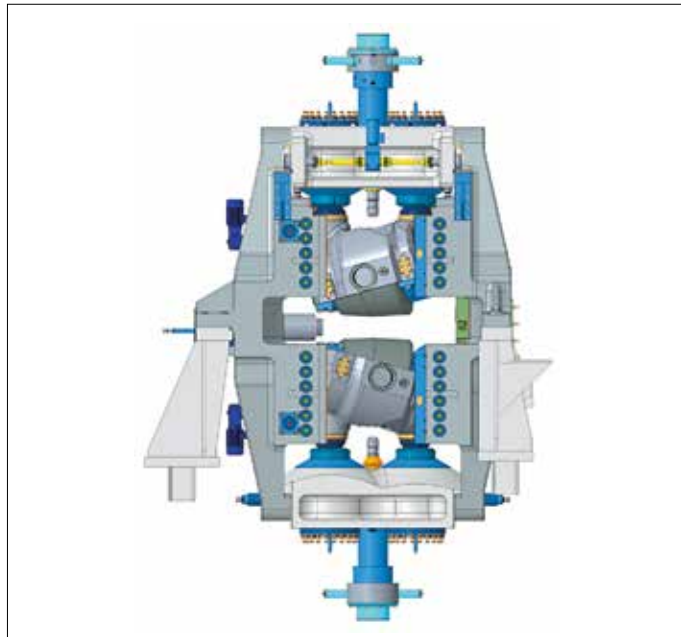
- Mill stand design,
- Hydraulic adjustment of the piercing rolls, and
- Diescher Disc adjustment.

The new design of the mill stand requires approx. 30% less height, but simultaneously improving its rigidity. This new symmetric stand design improves the flow of the rolling forces by transmitting the load symmetrically in the stand. This symmetric strain in the stand allows an optimized correction behavior during rolling to compensate the mill expansion.

The new mill stand design also considers changes to the Diescher Disc bearing. In the past, this was separated from the stand. The new solution integrates the disc directly into the mill stand, improving the rigidity of the system and bringing benefits to accessibility and changeover. Furthermore, the adjustment of the Diescher Disc has been redesigned allowing an infinite variable positioning of the disc in all three axes. This allows perfect positioning of the disc in relation to the technological process requirements.

Also integrated into the stand is the three-roll-guide at the outlet side of the piercing mill. With the modifications in the mill stand design, the distance of the first guide to the gorge is shortened, thus optimizing the guiding behavior.

Additionally, a new solution for hydraulic adjustment has been integrated. The solution optimizes the original design to a compact solution by substituting the mechanical screw down with hydraulics



New Piercing Mill Model

and combining it with the already existing hydraulic adjustment solution. This results in better system stability and a reduction of the loads on the roll assemblies.

Aside from the design targets of improving the process, the new design has also been optimized from a maintenance and accessibility perspective. One of such optimizations is the improved scale removal concept. The concept contains the scale falling off and guides it into dedicated scale removal pipes toward the flume system. This improves not only the necessary cleaning effort of the mill, but also reduces the risk of failure of assemblies due to scale particles.

4 Conclusion

Overall, the new design of the SMS Cross Roll Piercing Mill is another technological step in seamless tube technology. The advantages and new features bring new benefits and possibilities to the producer of seamless tubes for the OCTG market on the way to "No-Eccentricity".

SMS group GmbH

Ohlerkirchweg 66
41069 Mönchengladbach
Germany

Tel: +49 2161 350 0
communications@sms-group.com
www.sms-group.com

SMS group GmbH

ERW Tube Welding Line RD 710 A step into new dimensions

Author: Christian Haferkamp

1 Introduction

The SMS group is worldwide known for its capabilities to design and build plants for the steel industry. Usually, these are hot rolling mills for different products like plate, beams, sheet or tubes. These mills consist of tons of steel, highly sophisticated technology and automation to make complex processes work. The overall investment in such plants quickly exceeds one billion euros.

Plants for tube-producing Electric resistance welded (ERW) tubes are not playing in the same category, since now. The new RD 710 brings a new dimension of ERW-mill to the market. This largest ERW mill can produce tubes up to a max. diameter of 28", i.e. 710 mm.

Now why this new dimension of ERW-tubes? There are tube-making processes for this kind of diameter with a submerged arc welding process (SAW). The market for OCTG, automotive or boiler tubes doesn't use such sizes.

But the construction market does!

2 Hollow structural sections

This ERW mill is capable to produce Hollow Structural Sections (HSS) with dimensions of 22" square (559 mm x 559 mm) or 34"x10" (863 mm x 254 mm). These HSS are used as structural elements in buildings and other structures. These buildings are for example stadiums or skyscrapers.

These HSS bring significant benefits versus a comparable open section. The main benefits are:

- High Strength-to-Weight Ratio
- Closed Section
- Aesthetic Appeal
- Cost-efficient production

The high gyration radius brings a high strength-to-weight ratio resulting in less

weight and higher stability. Then, HSS are closed sections, which are advantageous for resisting torsional loads and, since HSS have approximately two-thirds the surface area of an open section of comparable capacity, the efforts in finishing (e.g. coating or painting) is less.

The shapes with smooth sides, rounded corners and closed sections have a natural aesthetic appeal so there is no need for cladding or facing.

On top of that, also the production process is more cost-efficient than the alternative rolling processes due to lower Capex investments and lower conversion costs.



Figure 1: X-Pact® Quicksetting by SMS group

3 Technical features of the RD 710

The RD 710 has been designed to allow customers to utilize these benefits and produce high-quality HSS. Not only the size range is pushing the limit, but also the wall thickness is. With up to 1" (25.4 mm) wall, the line is capable to produce thick walled ERW tubes. These dimensional capabilities, combined with production speeds up to 35 m/min allow the RD 710 to run a nominal capacity of 400.000 tons per year.

The line arrangement is quite usual with a strip preparation area, a horizontal strip

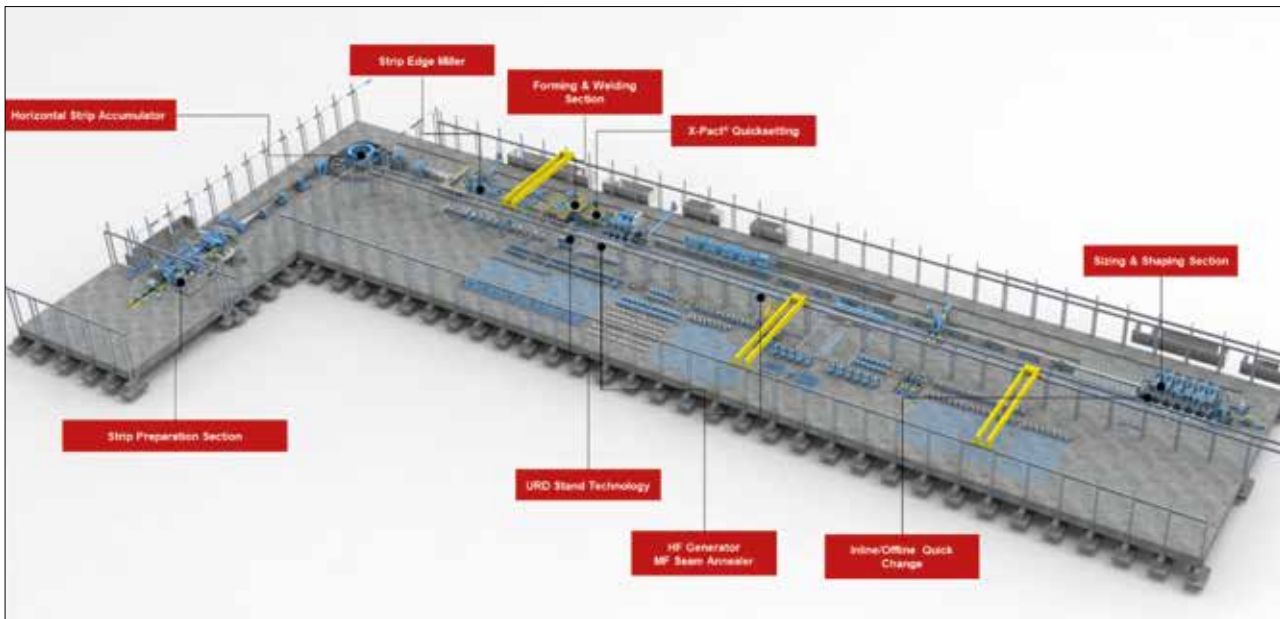


Figure 2: 3D Overview RD 710

accumulator and a strip edge miller. The forming & Welding section houses a lineal preforming section with an integrated flexible breakdown stand, three fin pass stands and a Sizing and Shaping section with six stands to produce the accuracy needed for the hollow sections.

The Quick Change System, paired with the X-pact® Quicksetting system supports the production line, reducing the changeover times to below 2 hours.

4 First reference

SMS group has successfully commissioned this RD 710 in 2022 at Zekelman Industries in Blytheville, AR (USA). Zekelman Industries and SMS group have enjoyed a long-term and trusting partnership for many years. The latest order – the world’s largest con-

tinuous ERW line – is the next step in this successful cooperation. As a result, Zekelman further expands its leading position in the manufacture of structural tubes in North America.



Square and rectangular hollow sections ranging from 8x8 inches to 22x22 inches produced on the 28-inch ERW tube welding line at Zekelman Industries, Blytheville, USA



Shaping section, 28-inch ERW tube welding line at Zekelman Industries, Blytheville, USA



Horizontal Strip accumulator, 28-inch ERW tube welding line at Zekelman Industries, Blytheville, USA

Thermatool Corp

Data Collection and Implementation of IIoT-Enabled Equipment for HF Welding in the Tube and Pipe Industry

Author: Olexandra Tupalo (Manager, Thermatool Labs), March 1, 2024

Introduction

Data collection and data analytics have become the new norm in most industries. Collecting and utilizing data can improve efficiency, ensure quality control, and increase overall productivity. Although the tube and pipe industry has undergone significant evolution and development from its initial manual processes phase, it has yet to fully embrace data-driven HF welding operations. This article covers the aspects of data-driven HF welding operations: setup, process control, condition-based monitoring, and preventive maintenance and troubleshooting. The article discusses the importance of data collection during high frequency welding and how it can be related to the quality of the final product. It also explores how the use of data can reduce human error and increase overall product yield. Additionally, this paper offers suggestions for incorporating IIoT-enabled equipment and preparing for upcoming advances in automation.

The Importance of Data Collection

Data has always been an important part of

any welding process, but in the era of IIoT and Industry 4.0 process data has moved from paper process data sheets to digital records and has become an immensely powerful tool.

With the ability to store and retrieve rich data sets, operations personnel can institutionalize knowledge, improve information sharing, and accelerate process improvements. In the past, the pace of industry development was limited by tribal knowledge and related human experience, as well as long learning curves. Each company has its own level of process and data knowledge.

Currently, most mills continue to rely on manual entry of weld process data on varying types of weld process datasheets (which are often company-specific). Manual data collection quickly becomes a very time-consuming task and, therefore, is often incomplete. Many companies heavily rely on their skilled operators' expertise and have only partial data records. This can result in variations in process parameters. A robust and repeatable process cannot be operator-dependent. Advanced software technologies employing automated data collection and IIoT-enabled equipment are key to maintaining a complete data record over time. The use of these data records provides efficient and effective solutions to limit variability and keep quality consistent even when faced with high operator turnover. Using data to drive decisions helps operators pinpoint slowdowns or other problem areas on the tube and pipe mill and contributes to profitability.

Data Collection during HF Welding

If we look at a standard tube mill, there are

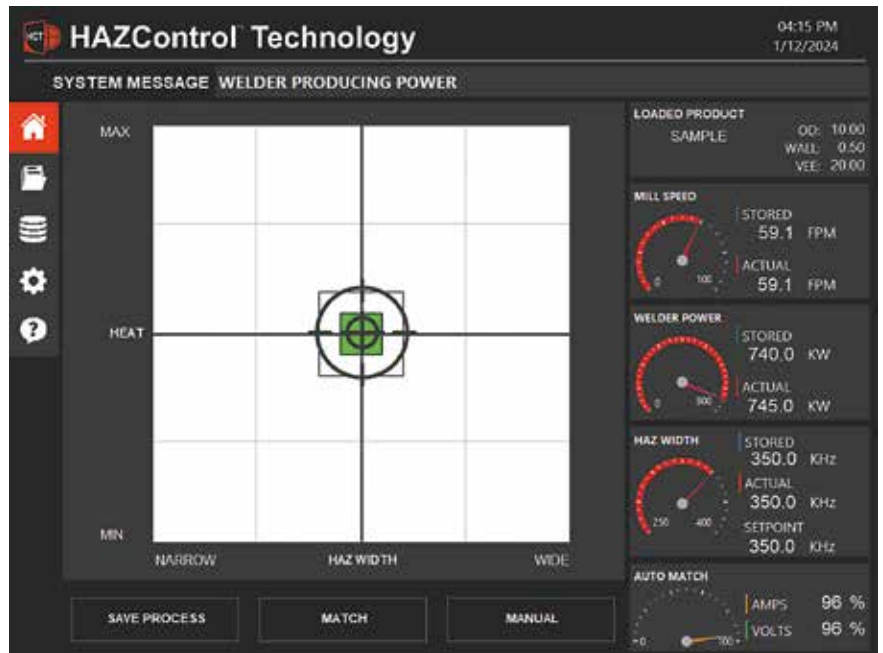


many operations that are being performed by various equipment. In a tube mill, we can divide data into four subcategories: process data (i.e., HF welding process parameters, heat treating, cutting, bending, etc.), equipment data, raw material data, and inspection/ quality data. This article focuses on data collection during the HF welding process and equipment. High Frequency (HF) welding is a multi-variable process with complex data. The key process parameters include power, frequency, tube OD and wall thickness, mill speed, as well as weld area parameters such as vee length, vee angle, impeder dimensions (OD, length, number of ferrite rods), induction coil length and ID, to name a few. It is important to keep track of key parameters during the run, in addition to knowing how parameters affect the final quality.

The recording of key process parameters for each piece of tubing is crucial for ensuring consistent product quality and performance. Product quality expectations should be in the Six Sigma range. This ensures customer satisfaction at the highest level. It is acknowledged that for some commodity-type tube and pipe products, the process window can be large and less critical.

While some have the approach “the more data- the better,” an argument can be made that the quality of the data is more important. The importance of a properly calibrated power supply was discussed in a previous paper [1]. It is imperative to use properly calibrated instrumentation to ensure the correct measurement values are recorded.

The latest Thermatool HF welders are equipped with software that enables real-time monitoring and data logging of various process parameters such as power (kW), frequency (kHz), Current (A), voltage (V), line speed, and other parameters and is also equipped with data analytics tools. This feature can show the length of material produced per day, week, or month, along with the equipment’s run time, downtime, and process efficiency. Data analytics tools allow the user to track values such as



HAZControl™ Technology software screen with Process Limits

kWh per ton or length of pipe produced. To reduce variability, Thermatool’s HAZ-Control™ Technology welder offers recipe creation and recall, ensuring the same process parameters are used on each and every run for a given product.

Thermatool now offers IIoT Cellular Connectivity available on select new welders as part of a commitment to expanding digital automation of routine tasks and data collection.

There are several benefits that data collection offers, and it can be utilized for various purposes.

The first and most obvious benefit of analyzing data is process optimization. Data collection in tube and pipe manufacturing facilities allows for real-time monitoring of various production processes. The monitoring of process parameters ensures consistent welder operation within a defined and validated process window. The latest HF welding power supply technology includes precise control of weld heat input [2].

Data collection can also be used to facilitate quality metrics. Once the process parameters have been validated, process limits can be set. With certain software capabilities and automation, it is now possible to create, save, and retrieve process “recipes” to ensure product quality and process

repeatability with high statistical process capability. If any of these process parameters are outside of preset process limits, secondary inspection may be

HAZControl Technology software screen with Process Limits necessary to qualify the quality of the product. The goal is to ship only qualified performance, high-quality products to the customer.

Another primary benefit of collecting data during HF welding is material tracking and traceability. Product traceability has been a requirement in various industries for many years. However, the tube and pipe industry at large has been slow to adopt this practice. Although product traceability is not mandatory for all tube and pipe products, other companies, particularly in automotive and pressure-bearing applications, have been following this procedure for quite some time now. This can be achieved easily by implementing individual barcodes tied to a full data processing package, made possible by IIoT-enabled equipment and smart machinery.

Data collection can be also beneficial for predictive maintenance. Unlike the previous benefits that were mostly linked to HF welding process data, this advantage is associated with equipment data and condition-based monitoring (CBM). Thermatool welders are equipped with a variety of digital sensors, gauges, and transducers to display the equipment's status, making troubleshooting easier and faster. The data can be utilized for predictive maintenance, which will help prevent unplanned shut-downs and material loss.

Lastly, the advantage of data collection is using the data along with process optimization for HF weld process energy efficiency. By identifying areas of inefficiencies, processes can be optimized, which will lead to improved energy efficiency in the long run. Thermatool has integrated a process efficiency value into the latest Human-Machine Interface (HMI) software. This feature provides a readout of the energy measure for every ton of material produced on the mill and is displayed in kWh/ton. This value

can be related to financial metrics and product quality. This enables customers to quantify the efficiency of their process with the help of Thermatool's calibrated calorimetric measurement of output power.

Challenges and Considerations

While data collection offers many benefits to the tube and pipe industry, it also presents some challenges. Manufacturers need to prioritize data security, system integration, and the expertise that is required to operate and maintain these technologies. Handling large amounts of data can be overwhelming without effective analytical tools available. Thermatool is continuously engaged in fundamental scientific research targeting process parameters that must be controlled to deliver the best HF weld possible [3].

Data storage is another important consideration that needs to be addressed. There are various cloud-based storage solutions available to manage large data packages, however, a system should be in place to manage the vast amount of data generated by sensors, gauges, and transducers with high sampling rates. These devices can produce thousands of data entries per 8-hour shift, making it important to have an efficient and robust system in place.

One way to address this challenge is by using Thermatool+ IIoT, which provides secure cloud-based storage, among other features such as condition-based monitoring (CBM), and a data retrieval dashboard. User accounts are secured with two-factor authentication, and the cloud platform uses industry-standard encryption and multi-tenant architecture. The platform is purpose-built for the tube and pipe industry, addressing many of the concerns of both large and small tube producers.

When implementing an IIoT-enabled HF welder, it is crucial to assess the current state of equipment and IT systems. An evaluation of the type of equipment and machines on the plant floor should be made, as well as an assessment of the age of the devices and systems currently in use. For example, if we talk about HF welding equipment, depending on the model of the

equipment, there may be some upgrades available. Beyond gains in process energy efficiency, weld quality improvements, and the use of product recipes, Thermatool HF welders offer a compelling case for investing in the future.

Another consideration about the implementation of data collecting is the human factor. Personnel are faced with the challenge of executing data collection, which can be a daunting task. Tube mill operators, maintenance personnel, and engineers can use data as an integral part of daily workflow. Operators will experience a reduction in workload through automation of routine and mundane tasks with a focus on critical data that helps them achieve production objectives. Improving workflows and data analytics will help tube and pipe producers deliver high-quality products on time and remain competitive.

Conclusion

Simple automated data collection can revolutionize the tube and pipe industry by increasing efficiency, improving production reliability, and product quality. With the integration of IIoT-enabled equipment, automation, and data analytics tools, the process control can be optimized and enhanced. Process data can also be used as an important production and quality tool, whereas equipment data can be used for predictive maintenance. Tube and pipe manufacturers can keep up with global market competition and meet increasing

demands for precision and reliability by implementing these advanced technologies. Data collection will become even more important in the tube and pipe industry as technology advances, leading to data-driven operations and improved product quality.

References:

1. O. Tupalo "Energy Efficiency and High Frequency Welding," Tube & Pipe Technology, May 2023, pp.70-72.
2. O. Tupalo, M. Nallen "A Path to a Better HF Weld - Part 2: Toward a Method for High Frequency Weld Heat Input Control", Tube & Pipe Technology, May 2022, pp.132-135.
3. L. D. Frame, O. Tupalo, T. Ignatowski, M. Nallen "Aspects of Precise Heat Input Control for High Frequency Welding." You can request the article at <http://thermatool.com/hct>.

Thermatool Corp

31 Commerce Street
CT-06512 East Haven
USA

Tel: +1203468 4100
Fax: +1203468 4281

Email: info@thermatool.com
Web: www.thermatool.com

+++ Seize the opportunity to boost your visibility with our **ITAtube Buyer's Guide** – the global directory for the tube industry. Join in and take advantage of the numerous benefits. +++



The new Drilltec indexable insert drill from Boehlerit impresses with high cutting and feed speeds, a high metal removal rate and outstanding drilling quality.

Boehlerit GmbH & Co KG

The new Drilltec indexable insert drill from Boehlerit sets new standards for productivity and cost-effectiveness

High cutting and feed speeds for maximum efficiency

Boehlerit, the carbide and tool specialist, is launching a new drilling tool on the market that optimises the production process and increases efficiency. The innovative Drilltec impresses with high cutting and feed speeds, a high metal removal rate and outstanding drilling quality. This reduces process times and significantly increases productivity. With the option of using 4 cutting edges, the Drilltec is extremely economical and guarantees a long tool life and cost-reduced tool utilisation. Thanks to a wide range of available diameters,

Boehlerit offers a high level of product diversity. In addition, the Drilltec is suitable for almost any drilling application.

The optimised chip removal channel ensures easy chip transport and thus guarantees a smooth and efficient work process. At the same time, the tool significantly improves surface quality and drilling precision, leading to outstanding machining results. The Drilltec is available in 2xD, 3xD, 4xD and 5xD sizes and therefore offers flexibility for different requirements. Different grades are available for machining steel, cast iron and stainless materials in order to achieve optimum results. "With our extensive and versatile drilling range, we offer our customers an innovative solution to optimise their production processes and increase their efficiency," says Kevin Mesanovic, Product Manager Turning at Boehlerit. "Our focus is on the highest quality, durability and cost-effectiveness."

The company

As a carbide pioneer, the Boehlerit Group is one of the world's leading manufacturers of wear protection solutions and cutting tools for machining metal and composite materials. With cutting materials, semi-finished products, precision tools and tool systems for milling, turning, grooving and forming, the family-owned company has been ensuring process reliability and efficiency worldwide since 1932. Around 800 employees offer customers comprehensive know-how in all aspects of metallurgy in order to be able to realise process-optimised manufacturing technologies, the highest quality

and an edge in tool productivity. With three production sites in Europe and Asia, international subsidiaries and a network of sales partners, the carbide and tool specialist has a global presence. Together with its two legally independent sister companies Leitz and Bilz, the Boehlerit Group forms the globally active Brucklacher Group, in which over 4,000 employees generate an annual turnover of around 450 million euros

Boehlerit GmbH & Co KG

Microtec - Highest productivity with the smallest bores



The new Drilltec indexable insert drill from Boehlerit impresses with high cutting and feed speeds, a high metal removal rate and outstanding drilling quality.

The new Microtec tools for internal machining with additional holder are an innovative solution for turning small and narrow bores. They offer a number of advantages over conventional clamp holders, including simple tool assembly. The new Microtec tools consist of two parts: the clamping

body and the drill shank. The Microtec basic holder is permanently mounted in the machine so that it only needs to be installed once. The clamping body is permanently mounted in the machine and has a holder for the drill shank. The boring bar can be replaced without removing the

entire holder, making it easier and quicker to change the indexable insert. This saves time and increases productivity as the risk of losing the screw or insert during assembly is minimised. There is also no need for re-setting after changing the insert. The Microtec has a prefabricated stop that enables the boring bar to be reinstalled in the correct position.

The Microtec system tools for internal machining with holder are ideal for turning small and narrow bores and are frequently used in micromechanics, medical technology and the aerospace industry. The five available boring bars are available for different bore diameters and cutting edge angles and can be used with the existing Minitools CCGT030102, DCGT and VCGT.

Boehlerit GmbH & Co. KG

Werk-VI-Straße 100
8605 Kapfenberg
Austria

Tel: +43 3862 3000

Fax: +43 3862 793

Email: info@boehlerit.com

Web: www.boehlerit.com



ITA on LinkedIn

+++ The **ITA** on **social media**.
Link up on **LinkedIn**. Use our
platforms to further your
business connections.
Get networking! +++



Bültmann GmbH

BÜLTMANN Finishing lines for individual use in seamless or welded tube production

BÜLTMANN finishing lines are used directly in tube rolling mills or welded tube mills. Both direct linking and stand-alone arrangements are possible here. Based on 50 years of BÜLTMANN know-how, individual special solutions for the tube industry are designed in close cooperation with the customer.

It goes without saying that the proven BÜLTMANN standard components are used. Depending on the requirements, the finishing lines are equipped with drawing, straightening, cutting, chamfering and NDT testing systems as well as automatic packaging and bundling systems.

Thanks to state-of-the-art Industry 4.0 technology, the finishing lines are very flexible and can be used for both large and small lot sizes. Sufficient buffer space on the entry and exit side areas ensures a continuous production.

Bültmann GmbH

Hönnestr. 31
58809 Neuenrade
Germany

Tel: +492394 18
Fax: +492394 18171

info@bueltmann.com
www.bueltmann.com



Fives Group

Advanced technology for demanding electrical steel

Fives, an international engineering group, produced the first electrical steel product for electric vehicle motors at its Zhixin plant. The project demonstrates Fives' commitment to its partners to provide dedicated solutions for demanding steel production.

Heating and cooling innovations

Shougang built a new annealing and pickling line (APL) to produce high-grade, non-grain oriented (NGO) electrical steel for the booming e-vehicle market. The new line required thermal technology that could keep up with its high capacity of 650,000 tonnes per year, which is much greater than a traditional APL.

Fives designed and supplied an annealing furnace that featured advanced heating technology and a flexible cooling system to meet the challenging thermal requirements for high quality electrical steel:

- Dedicated models specifically designed for electrical steel to achieve metallurgical control.

- Enhanced oxygen control for high product quality.
- High temperature thermal technology and heat recovery system to lower operational costs.
- Efficient thermal equipment combined with an emission reduction system.

The engineering and manufacturing of the main equipment were provided from China, while the burners, automation, and process instrumentation were delivered from France.

Unmatched partnerships

"We had a very challenging schedule, but we managed to produce the first commercial coil on February 1, 2024, just 16 months after the contract enforcement," says Benoit Crunelle, Project Manager at Fives Stein Metallurgical Technology, Shanghai, a Fives subsidiary in China. "This success is due to our rigorous planning, well in advance of manufacture and delivery, regular and



Weightless Contouring™ the real digital twin.

Suitable for ERW, LSAW, DOM, SSAW, All Profiles



◀ You can find detailed
information on our website!

MSG-MASCHINENBAU GMBH
Hünegräben 17a, 57392 Schmallenberg
Germany

Phone: +49 (0) 2972 - 9 77 40 0
info@msg-maschinenbau.com
msg-maschinenbau.com



transparent communication with the client and the good working relationship between both teams," he adds.

The partnership between Fives and Shougang continues with two more furnaces

ordered for the new annealing and coating lines (ACLs) in 2023 to produce electrical steel for the demanding e-vehicle market.

Fives Group

Project Excellence Award for SDI line designed by Fives

Steel Dynamics, one of the largest US steel producers, received a renowned AIST Award for its continuous galvanizing line (CGL) supplied by Fives, an industrial engineering group.

Association of Iron and Steel Technology (AIST) Awards serve to recognize those who have improved the steelmaking process and developed technical breakthroughs and outstanding achievements in the steel industry.

Steel Dynamics (SDI) CGL #3 at the Columbus plant in Mississippi was honored with

the AIST Project Excellence Award which recognizes the best practices of project management based on the following criteria: business success, technical success, safety performance, and project management success.

"This is a great award for SDI. We wanted to design a facility that was future-proof and could be flexible for a wide range of products. Fives offered an innovative package that guaranteed product flexibility and line capability. We are very satisfied with the productivity and metallurgical results," says Barry Schneider, President and COO of Steel Dynamics.



Fives designed and supplied the award-winning CGL #3 to increase SDI's production capacity and expand its product portfolio at the Columbus plant. The line has a capacity of 400,000 tons per year and is dedicated to producing unexposed automotive steel grades, as well as specialized grades for the construction, appliance, and automotive industries.

The scope of the project supply included entry & exit coil handling sections, a degreasing section, a horizontal annealing furnace, hot dip galvanizing and cooling equipment, a skin-pass mill and strip leveler, inspection, and metallurgical assistance for different steel grades and types of coating.

Strong partnership for first coil

The advanced line produced its first prime coil on schedule amidst challenging COVID conditions.

"Overcoming these challenges while ensuring the project's success was possible thanks to our strong partnership with the SDI team. We achieved the first coil in just 18 months because our operational objectives were clear and totally aligned with SDI. They had a great team on site, and we were able to ramp up in record time," says Guillaume Mehlman, President of Steel & Glass Division at Fives.

Fives - Steel & Glass Division

Natalia Artemieva
Tel: +33 6 11 56 19 28
natalia.artemieva@
fivesgroup.com

+++ The **ITA** informs you about the current trade fairs. This enables you to plan your trade fair appearances and visits in advance. For members we have some **interesting offers**. Get informed! **+++**

Magnetic Analysis Corporation

Magnetic Analysis Corp. to Feature Minimac® II Tester for Inspecting Tube

Visitors to Magnetic Analysis Corp. Stand F-19 in Hall 7A will see demonstrations of Minimac® II, the newest addition to MAC's range of eddy current test instruments for detecting surface and sub-surface defects such as laps, slivers, cracks and weld zone flaws in non-ferrous and ferrous tube. Minimac® II's compact design and versatility lends itself well to being used in a broad range of applications for tube producers and fabricators, on or offline.

The fully digital Minimac® II with its embedded processor, two test channel capability and MAC's proprietary Multi-Mac® eddy current software offers high performance, accuracy, and reliability at an affordable cost. Applications include finding weld faults, such as short ID or OD defects as well as open welds in magnetic and non-magnetic grades. The instrument operates with encircling or sector test coils for detecting short surface defects, or rotary mechanisms with rotary spinning probe sensors for finding long, continuous

flaws. Minimac® II can also detect ferrous inclusions in non-ferrous or austenitic grade products, including the popular 316, 304, and 254 stainless alloys. The operator friendly design ensures ease in setting sensitivity, phase, and filters on screen while viewing full color polar and linear display of real time, true waveform signals. Setups can be entered and monitored on site or through a computer network. Results and reports including location, time, amplitude, and phase information can be stored, annotated, and recalled from local or networked drives for an unlimited number of settings.

Visitors will also be able to see an Echomac® Ultrasonic demonstration unit with embedded processor for inspecting welded tube for incomplete seam welds and inclusions, voids, or cavities.

MAC Engineers will be available at the booth to provide comprehensive information on the company's full range of products, including standard and phased array ultrasonics, upgrades for existing Rowa installations, the MultiMac® eddy current tester with up to 8 test channels, Rotomac® eddy current rotaries for detecting long, continuous surface seams and custom automated mechanical handling test systems.



Magnetic Analysis Corporation

103 Fairview Park Drive
NY 10523-1544 Elmsford
USA

Tel: +1 915 530-2000
Fax: +1-914 703-3790

info@mac-ndt.com
www.mac-ndt.com



NAKATA MFG CO., LTD.

NAKATA is proud to announce further FFX mill development

NAKATA MFG. has successfully completed commissioning and final acceptance of a 5" ERW tube and pipe production line installed in Asia. The production line is equipped for the first time with the new type of FFX mill in breakdown section.

FFX mill, originally developed by NAKATA MFG, features the state of the art technology of roll common-use thanks to multi-radius (involute style) curvature profile. Recently, some radical improvements in the design of this unique forming equipment have been made, aiming at less installation space, easier maintenance and higher performance:

Diameter of rolls has been reduced and unified as far as possible, which resulted in machine compact size and more rigid

structure. Additionally, new "side pull-out" function for FFX BD stands provides operators with easy access to the rolls when any maintenance or roll regrinding is needed, while the latter will be required not more than once a year or several years, depending on the production volume.

Compared to the previous type of FFX mill design for the same range of products, the longitudinal dimension has been shortened by 1/3, which contributes a lot to using this design in forming section revamping projects.

Another change here: a specially designed roll APC devices reduced the quantity of electrical motors drastically, without sacrificing the quality of roll repositioning during size change. The great quantity reduction of positioning motors simplifies the control



system, leading to easy maintenance as well as sustainable upgrade of the system.

The success of the first new FFX mill has increased our motivation for further improvements including automatic origin returning function and profile scanning for deformed strip, by which the user can benefit more from introduction of FFX mill into his pipe production line.

Visit us at the Tube show in Duesseldorf at Hall 4 / G05

Or at www.nakata-mfg.com

The first FFX mill was designed in late 1990's, following the previous generation of Flexible Forming mills (called "FF") that came to market a decade before.

This state of the art forming mill technology has been designed on the basis of numerous analysis data computed by NAKATA's own developed FEM simulation software, and world's unique special profile roll that allows using the FFX rolls commonly for any products within OD range of 1:3. Common rolls together with NAKATA PC software for roll auto-positioning make it possible to switch to new product size within several minutes, which is considered as "shadow time" as no operator's work is needed here.

As of today, almost 90 sets of FF and FFX mills have been supplied and are successfully operating all over the world.

NAKATA MFG. CO., LTD.

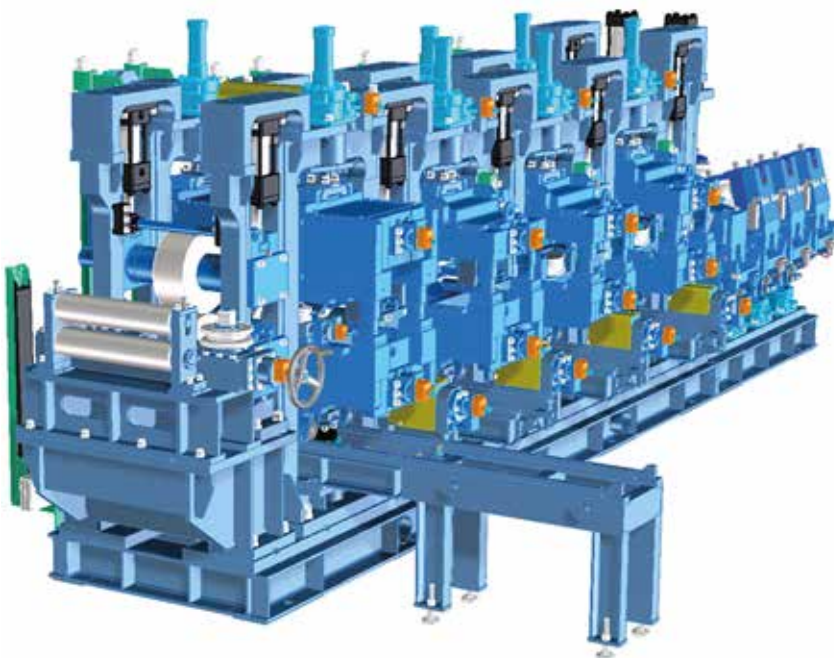
3-7-6 Tagawa, Yodogawa-ku,
Osaka 532-0027, JAPAN NAKATA
Manufacturing Co. Ltd. MAP

Tel: +81 6 6303 1900

Fax: +81 6 6303 1905

sales02@nakata-mfg.co.jp

www.nakata-mfg.com



#itsmorethanjustamachine

TRUSTED

TECHNOLOGY FOR TUBE ROLLING MILLS.

The Stretch & Reducing Block for rolling seamless tubes promises highest productivity at lowest operating costs.



1" - 16"

finished tube size

up to 70%

less roll stand
inventory

100%

quality assurance
by remote control



SIKORA AG

SIKORA awarded as world market leader champion 2024

The Bremen-based SIKORA AG is again among the 450 secret world market leaders of the German-speaking economic area in 2024. This is the result of the University of St. Gallen in cooperation with the magazine WirtschaftsWoche and the Academy of German Business Leaders.

Since 2016, SIKORA has been listed for the 6th time in the ranking of the world market leader champions, which is published annually by the WirtschaftsWoche. For this purpose, 450 companies are selected as world market leader by the University of St. Gallen and the Academy of German Business Leaders according to a strict procedure. The winners are number one or two in at least one relevant market segment and have annual sales of at least 50 million euros, at least 50 percent of which is generated abroad on at least three continents. Only official figures are included in the evaluation, such as published annual financial statements from the Federal Gazette or the latest annual financial statements of listed companies. In the current survey, SIKORA was one of three companies from Bremen, Northern Germany, to receive the award.

“Since our company was founded over 50 years ago, SIKORA has been known for future-oriented technologies,” says Dr. Christian Frank, CEO at SIKORA. “We are delighted about the repeated award as World Market Leader Champion. This is an absolute team effort. Our aim is to offer innovative solutions for our customers. This includes further developments of existing products as well as new technologies that meet the diverse requirements of our customers.”

Every year, SIKORA invests more than 10 percent of its revenue in the research and development of new measuring and control technology as well as inspection, analysis and sorting systems for quality assurance during the production of wires and cables,



tubes, hoses, pipes and sheets, optical fibers or plastics. With around 400 employees in Bremen, Germany, and its 13 operating international subsidiaries, the company offers innovative solutions and customized customer service.

SIKORA AG

Bruchweide 2
28307 Bremen
Germany

Tel: +49 421 48900-0
Fax: +49 421 48900-90

sales@sikora.net
www.sikora.net

QASS GmbH

Flawless tubes in record time – New quality standards in production processes

QASS is a manufacturing company of measuring systems for production processes. The initial success from the discovery of structure-borne sound as a relevant source of process information in straightening processes quickly developed into more use cases and different measuring approaches – now offering a wide portfolio of hard- and software for various production processes.

Improving tube drawing production efficiency and product quality

QASS offers a new revolutionary way of in-line process monitoring for tube drawing processes helping manufacturers to increase tube quality and production efficiency. Challenges that manufacturers are commonly facing, are chatter marks on the outer and inner surface of the tubes and the resulting scrap. Machine operators have to manually control the drawing speed to try to avoid those problems. This manual operation often leads to a relatively slow production to ensure quality standards.

Chatter free drawing - How it works

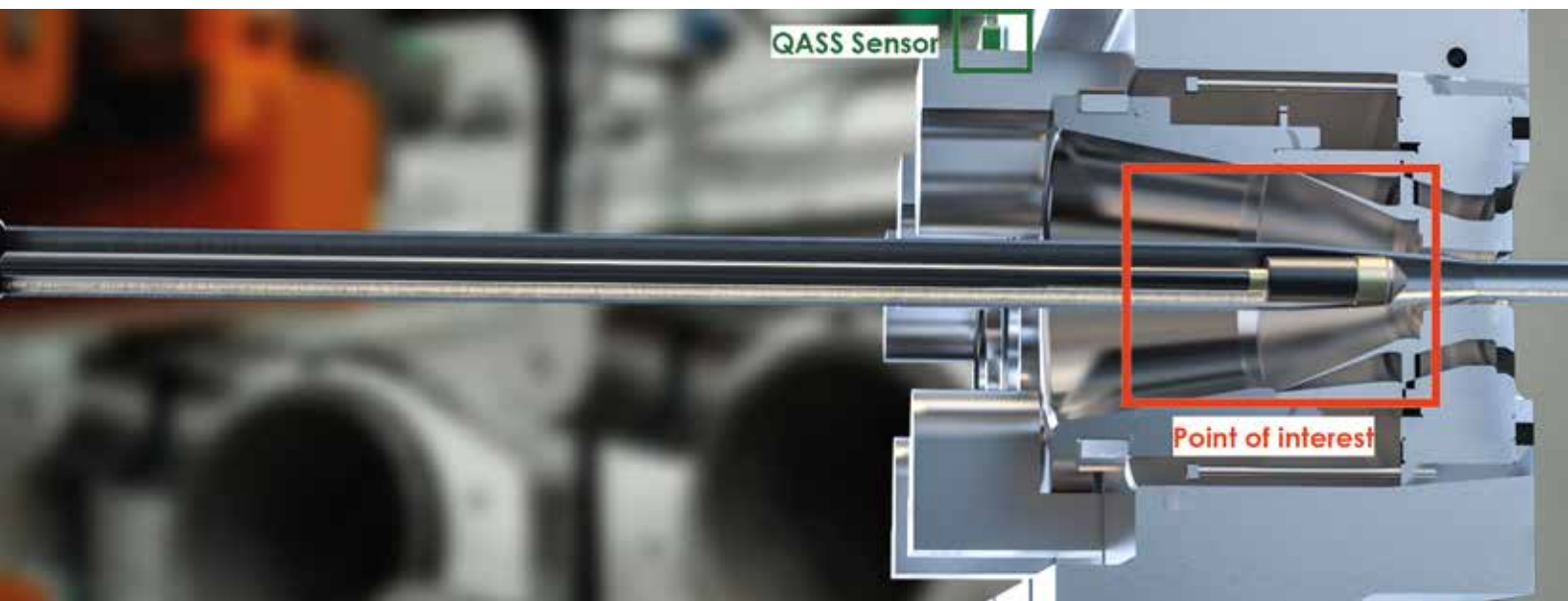
The robust QASS structure-borne sound microphones are bolted near to the drawing tools and sense all the forming and friction emissions in real time. QASS spectral analysis allows the suppression of all normal machine operating noise so that the earliest signs of chatter are detected. Long before the operator notices chattering, the QASS measuring device reacts and calculates an adjusted drawing speed. If the drawing process calms down, the speed is immediately increased again. The braking and acceleration values are adapted to the machine and pipe type.

Using this method, the drawing speed can be kept at a high rate for longer with only short periods of slowing down. With a subsequent increase in production volume, the system proves to be beneficial in more than one way.

Maximize drawing speeds for any tube

The latest QASS software is dedicated to increase the maximum drawing speeds.





QASS takes the initial drawing speed from the machine's control system, and then gradually increases it up to the possible maximum.

If the chatter tendency increases significantly after the drawing speed was increased, the QASS algorithm adjusts the drawing speed to an optimum of speed and chatter tendency in order to achieve a robust production process with highest drawing speed while simultaneously avoiding failures.

Refurbish and optimize any machine

The QASS sensors can be installed on all machines, regardless of age and condition. The operation of the measuring equipment can be handled easily by the customer's production staff. The graphical user interfaces of the device can be adapted to individual customer needs with on-site production conditions in mind.

Renowned tube manufacturers already profit from using QASS sensors and hardware by a faster drawing speed, improved production quality, reduced scrap and less production costs.

QASS – From startup to market leader

QASS was founded in 2001 by engineer and entrepreneur Ulrich Seuthe, who was determined to improve straightening processes. The use of structure-borne sound to detect emerging cracks, which is not perceptible without equipment, proved to be a game changer for manufacturers.

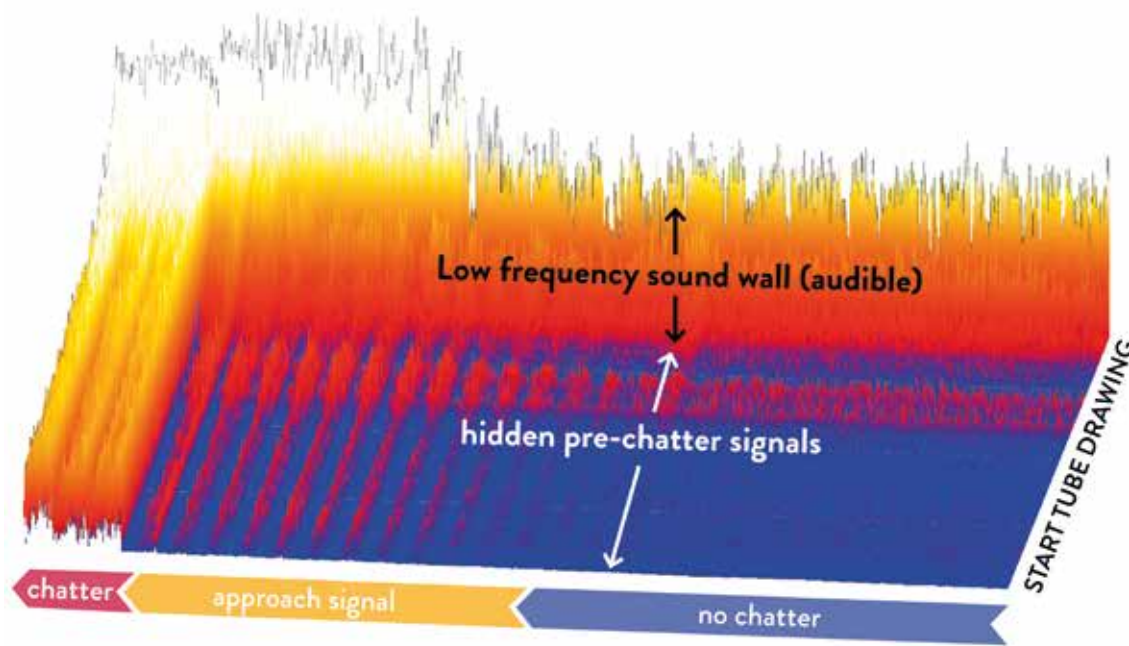
Materials did not have to be manually inspected anymore and valuable time was saved through in-process measurement. The innovation quickly conquered production sites and the company became market leader for the automotive industry. With an established partner network across the globe, QASS measurement technology has been made available internationally. Many reputable manufacturers around the world confidently rely on the expertise of QASS for process optimization and quality control.

High-performance hardware for rough production environments

With now more than 20 years of experience, the original measurement system has evolved into a high-performance industrial computer, which is constantly improving. Once a permanently installed device with local data and one use case only, the Optimizer4D is now a flexibly installed or portable device, which can be accessed remotely and has many application possibilities.

The highly adaptable tool works with pattern recognition and clustering algorithms, which can detect patterns in process data and interpret sensor signals accordingly. Using this method, process relevant signals can be easily identified in loudest environments.

In cooperation with manufacturing companies, universities and research institutes, many innovative approaches have been



taken to product maturity. As a result, the current measurement technology is not only equipped to detect cracks even before they become visible, but also to be able to perform tool wear monitoring, non-destructive hardness testing and more.

Come visit us at Tube and Wire in Düsseldorf in hall 6 at booth 6C10!

QASS GmbH

Schöllinger Feld 28
58300 Wetter
Germany

Tel: +49 2335 8020-0

info@qass.net
www.qass.net

+++ For members only: **ITA** offers you the opportunity to publish all your information and images on the **ITA** website and social media, **365** days a year - up to **15,000** visitors per month. +++



Quaker Houghton

Quaker Houghton to Showcase Industry-Leading Fluid Solutions at Tube 2024

Quaker Houghton, a global leader in industrial process fluids, corrosion preventatives, and protective coatings, will showcase its comprehensive range of Tube and Pipe products and services to industry decision-makers at Tube Düsseldorf 2024, which will be held in Düsseldorf, Germany, from April 15-19.

The event is the world's primary trade fair for the tube manufacturing industry. Quaker Houghton will showcase its wide range of process fluids, services and solutions to enhance manufacturing processes. This includes products which provide cost-effective and performance-enhancing options, like QUAKERCOAT® UV Coatings for critical protective needs.

At the exhibition, Quaker Houghton will also highlight QH FLUID INTELLIGENCE™, a complete ecosystem of process fluids,

application expertise, equipment, and software that enables customers to Measure, Control, and Optimize their production processes. Providing differentiated value to customers so they can operate safely, sustainably, and at the optimized total cost of ownership.

Ludovic Cressy, Senior Business Development Manager at Quaker Houghton, explained: "It is a transitional time for the tube industry, and the event serves as the premier trade fair, providing a platform for Quaker Houghton to share knowledge on our extensive industry-leading range of process fluids, services and solutions that focus on solving customer problems such as corrosion and wear, and helping meet the need for more sustainable practices.

"Our team, comprising chemists, engineers, and technical service professionals, collab-



orate with customers worldwide to develop fluid and technology solutions that drive profitability, elevate product quality, and reduce consumption and waste.

Ludovic added, "We will exhibit a range of products on our tube and pipe portfolio, including QUAKERCOAT® UV Coatings, which addresses the environmental challenges such as UV exposure and high humidity that can impact the protective coating performance of tubes or pipes over time."

Quaker Houghton will be situated in Hall 4, Booth H41. To find out more about Quaker Houghton at Tube Düsseldorf 2024 visit: <https://home.quakerhoughton.com/event/>

tube-24/ or to learn more about Quaker Houghtons Tube and Pipe solutions, please visit: <https://home.quakerhoughton.com/tube-pipe/>

Quaker Houghton

One Quaker Park 901 Hector Street
PA 19428-0809 Conshohocken
USA

Tel: +44 2476253015

jeremy.salisbury@quakerhoughton.com
<https://home.quakerhoughton.com>



DRAWING
STRAIGHTENING
PEELING



BARS
TUBES
PROFILES

SMS group GmbH

Wire and Tube 2024 is where SMS group plans to showcase innovations that are set to transform the tube and wire industry



- Focus on sustainability and innovation
- “Leading Partner Talks”: Customers and employees take the stage to report on innovations and ongoing projects and discuss the future of the industry
- SMS group is counting on personal exchanges at its booth in hall 7A, stand B04

SMS plans to focus on sustainability, digitalization, and the power of innovation at wire and Tube, the trade fair taking place in Düsseldorf from April 15 to 19, 2024. Special emphasis will be placed here on how energy transport and hydrogen influence the way the market develops.

Thomas Massmann, Executive Vice President Long Products at SMS, underlines the importance of this trade fair for the changes now

taking place in the tube and wire industry, which is increasingly relying on innovations that boost productivity and sustainability. “The inter-company dialogs on large-diameter pipe production, production quality monitoring, and hydrogen use are important topics that I would like to discuss with our customers and partners, and I look forward to a lively exchange of information and ideas,” says Thomas Massmann.

SMS is focusing on current topics such as decarbonization, digitalization, sustainability, and lifecycle partnerships, in order to redefine its role as a plant builder that goes beyond traditional boundaries.

Innovation and sustainability
SMS develops innovative solutions to mini-

imize losses when transporting highly volatile hydrogen or natural gas, as there is an urgent need for dense, pore-free pipes and containers. At wire and Tube, SMS will also be offering insights into solutions ranging from sustainable rebar minimills right up to the world's largest ERW tube welding line. The presentation of the largest ERW-welded tube of its kind is real proof of SMS's commitment to pushing the technological boundaries of the industry. "This exhibit symbolizes SMS group's commitment to innovation and ongoing development," adds Thomas Massmann. The new autonomous measuring system for premium threads will also be on display at the fair. These advances emphasize SMS's spotlight on innovation. "We are at a critical point in the steel industry where the focus on sustainable and efficient production methods has never been as important as it is today," adds Thomas Massmann.

Leading Partner Talks and shared success
The "Leading Partner Talks" that SMS plans to hold at its booth are an important element of its trade fair attendance. These provide participants with direct insights into technologies, collaborative partnerships and projects from the perspective of customers and industry experts. An overview of the dates of the talks, the topics covered, and the participating speakers can be found at <https://fairs.sms-group.com/tube-wire-2024>

SMS group GmbH

Ohlerkirchweg 66
41069 Mönchengladbach
Germany

Tel: +49 2161 350 0
communications@sms-group.com
www.sms-group.com

Q A S S

FLAWLESS TUBES IN RECORD TIME

Qualified **A**rtificial **S**mart **S**ensing

Quick and Easy Retrofit

Maximum Production Speed

Chatter Mark Prevention



FIND OUT HOW



www.qass.net

Tecnar Automation Ltée

TECNAR'S LUT 2.0 SETS A NEW RECORD in the seamless tube industry: 95-mm wall thickness measured without contact on hot pipe

Last fall, Tecnar's Lut 2.0 DPS Dual Probe Scanner set a new industry record by accurately measuring the true wall thickness of 95 mm on hot seamless steel tubes online and without direct contact.

Tecnar confidently anticipated that the Lut 2.0 could outperform other technologies, such as gamma-ray-based gauges, limited to an average wall thickness of approximately 50 mm. This confidence was validated by data from the Lut 2.0's successful installation at Daye Special Steel's production facility in Huangshi City, China

Operating downstream of Daye's Assel mill, the Lut 2.0 consistently demonstrated its prowess by routinely measuring tubes' wall thickness ranging from 30 to 90 mm and achieving a record-breaking thickness of 95 mm during a single run. This remarkable accomplishment, the result of a collaboration between the Tecnar and Daye teams, is a significant industry breakthrough.

Tecnar's Lut 2.0 leverages ultrasound technology to bring enhanced performance and



accuracy to the hot tube and pipe manufacturing process. By surpassing previous standards, laser ultrasonics is becoming the technology of choice for monitoring critical pipe characteristics, such as true wall thickness, length, temperature, and eccentricity. This industry milestone reinforces Tecnar's commitment to innovation and excellence.

See the Lut 2.0's dynamic evolution for yourself at the Tecnar booth, Hall 7A at D17, at Tube Düsseldorf in April 2024. It's the ideal venue to get the most up-to-date information on the leading online wall thickness gauge.

Tecnar Automation Ltée
1021 Marie-Victorin Street
St-Bruno, Canada, J3V 4B1

Tel: +1 4450 461 1221
Email: sales@tecnar.com
Web: lut.tecnar.com



Lut DPS Daye installation

Tecnar Automation Ltée

New milestone for Tecnar: Borusan Pipe adopts Lut 2.0 for pioneering online measurement of hot-welded pipe eccentricity

Tecnar, a leading innovator of industrial solutions, is pleased to announce that Borusan Pipe has chosen the Lut 2.0 SPS (Single Probe Scanning System) for its online wall thickness gauge. This state-of-the-art technology will measure hot welded pipe eccentricity online at Borusan Pipe's Gemlik plant in Turkey. This industry milestone introduces the Lut technology to welded pipe production.

Scheduled for start-up in late 2024, the Lut 2.0 SPS will be strategically placed at the

outlet of the stretch-reducing mill (SRM), after the cutting saw. Traditionally, the Lut has been pivotal to monitoring and correcting eccentricity in seamless steel pipe production, but now it will tackle the challenges of continuous longitudinal welded pipe production (ERW). The Lut 2.0's radial profile of hot pipes will detail key insights for enhanced process control.

The Borusan Pipe Gemlik plant is committed to process optimization and pipe quality improvement. It joined forces with

Tecnar to capitalize on their shared expertise in data analysis and evaluating pipe wall thickness characteristics. Now, this groundbreaking application of the Lut technology takes this collaboration to a whole new level. Their joint venture exemplifies commitment to innovation, efficiency, and the highest standards of quality in the steel pipe manufacturing industry. As the project is poised to launch, both companies are looking forward to seeing how the Lut will advance the capabilities and precision of welded pipe production.

About Borusan Pipe

Borusan Pipe, a key player in the global steel pipe industry and part of Turkey's Borusan Group, celebrated its 65th anniversary in 2023. It boasts over 2,500 employees and 11 facilities across three continents, plus over 4,000 varieties of products. Notable investments and acquisitions, such as Borusan Pipe US Inc. and Berg Pipe, showcase the company's global success and recognition, including prestigious awards for its advanced technology

and innovative products. Beyond industrial achievements, Borusan Pipe contributes to Turkey's economy through exports and its continuing quest for global investment opportunities to enhance the country's competitiveness. The company's commitment to sustainability, quality, and societal development positions it as a pivotal force in shaping Turkey's future.

About Tecnar

Based near Montréal, Québec, Canada, Tecnar designs, develops, manufactures and markets novel systems and sensors for industrial process monitoring and control. Founded in 1989, Tecnar has used its expertise to bring cutting-edge technologies to manufacturers. Over the past decades, Tecnar has diversified into four highly specialized divisions: automated pipe and vessel welding, thermal and cold spray in-situ monitoring, continuous steel galvanizing pot chemistry analysis, and non-contact laser-ultrasonic gauging for the seamless tube industry.





fives

Industry can do it

Your trusted partner

Under historical brands of
Abbey, OTO, Bronx & Taylor-Wilson:

- High precision tube mills
- Complete finishing floors
- Advanced digital tools
- Bespoke technical support

www.fivesgroup.com
tubeandpipe@fivesgroup.com

VISIT US:
TUBE
DÜSSELDORF
April 15-19, 2024
Booth #E04, Hall 6



“For the first time, Tube will be accompanied by an extensive supporting programme”
Daniel Ryfisch,
Director of Tube & Flow
Technologies at
Messe Düsseldorf GmbH

Interview with Daniel Ryfisch

An interview about the actual tube market, its influences on Tube Düsseldorf and Tube key topics.

Despite the geopolitical turmoil, the global pipe industry experienced an increase in production of around 15% in 2023. The forecasts for 2024 are also encouraging. Tube Düsseldorf is therefore coming at exactly the right time! How does this affect the trade fair?

Growth within the international pipe industry is the answer to upcoming global investments in key infrastructures. Particularly in the areas of renewable energies, retrofitting gas pipelines to make them H2O-ready, plastic pipes as substitutes for metal pipes or underground oil, water and wastewater pipelines - pipes are essential components of any infrastructure and are therefore indispensable.

The entire value chain of the tube and pipe industry meets every two years at Tube Düsseldorf. From raw materials, machinery and equipment for pipe production to processing and finishing machines, the finished end pipe, efficient and sustainable cutting and separating technologies; come to Düsseldorf and join the best! Currently (as of March 2024) we already have very good registration figures, Tube 2024 will take place with 1,200 exhibitors from 50 countries in exhibition halls 1 to 7. 52,190

square metres net are already occupied.

For the first time, Tube will be accompanied by an extensive supporting programme. This ranges from activities and presentations in the Special Area Plastic Tubes & Pipes (Hall 1), the SawExpo Forum for cutting and machining technology (Hall 6) and the ITA Tube Forum (Hall 1) to the daily ecoMetals digital and high potential tours to exhibitors focussing strongly on the areas of sustainability and promoting young talent. In its Green and H2 Summits, Vulkan-Verlag will be discussing current and future alternatives to fossil fuels with experts. Hydrogen is a key topic of the conference.

The decarbonisation of the industry has been set as a key theme of the trade fair. What are the reactions to this and what other focal points will be addressed at the trade fair?

Decarbonisation is a production goal that most companies are committed to. Out of a sense of personal responsibility towards the environment and future generations, but also to fulfil political guidelines.

In the long term, however, it is not enough if only our exhibitors produce sustainably and



THE MAC[®] EDGE



Visit us at
Tube
Düsseldorf
2024
Hall 7A,
Booth F19

resource-efficiently in their factories. There must be an economic policy pact for decarbonisation around the world, and here I am referring in particular to the major emitters such as China, South America, Russia and the USA.

With our ecoMetal trails, we are raising awareness of this for the second time at the Tube. We are offering individual digital trails for the first time. Visitors can use a QR code to choose when they would like to visit the participating exhibitors at their stand. This code will provide them with information about the products and the implementation of sustainable production steps by the participating exhibitors.

Do plastic tubes 2024 play a special role at Tube 2024?

Yes, and even more so than at Tube 2022: plastic tubes and pipes are now replacing metal tubes in many industries. Their production is nowhere near as energy-intensive as metal tubes. Plastic pipes are also easier to process. They can be used to solve logistical problems, such as simple and cost-effective transport. The logistics are significantly more CO₂-neutral.

This is why we are dedicating a special area to plastic tubes at Tube. In the Special Area Plastic Tubes & Pipes in Hall 1 C 35, visitors can discover the entire value chain of plastic tubes and find out from our exhibitors about all the innovations relating to this flexible material and its possible applications in the tube industry.

In addition to the topic of Industry 4.0, artificial intelligence is gaining increasing attention. Can you also confirm this for our Tube Düsseldorf?

Artificial intelligence has also found its way into our everyday working lives since the introduction of chat GPT at the latest. We are all aware that AI can make working environments easier but also jeopardise them. Therefore, the legal framework in which AI is used must be clearly defined.

Minimac[®] II
Digital ET Tester for
Tube, Wire and Parts
www.mac-ndt.com/minimac/



Tube[®]



15-19 April 2024
Düsseldorf



The fact that more and more pipe manufacturers and pipe processors are using AI to carry out simple, repetitive work steps brings advantages. Since generative AI is always learning, i.e. it remembers what it has done once and can draw conclusions from this, the working methods of skilled workers in the pipe industry could also change significantly.

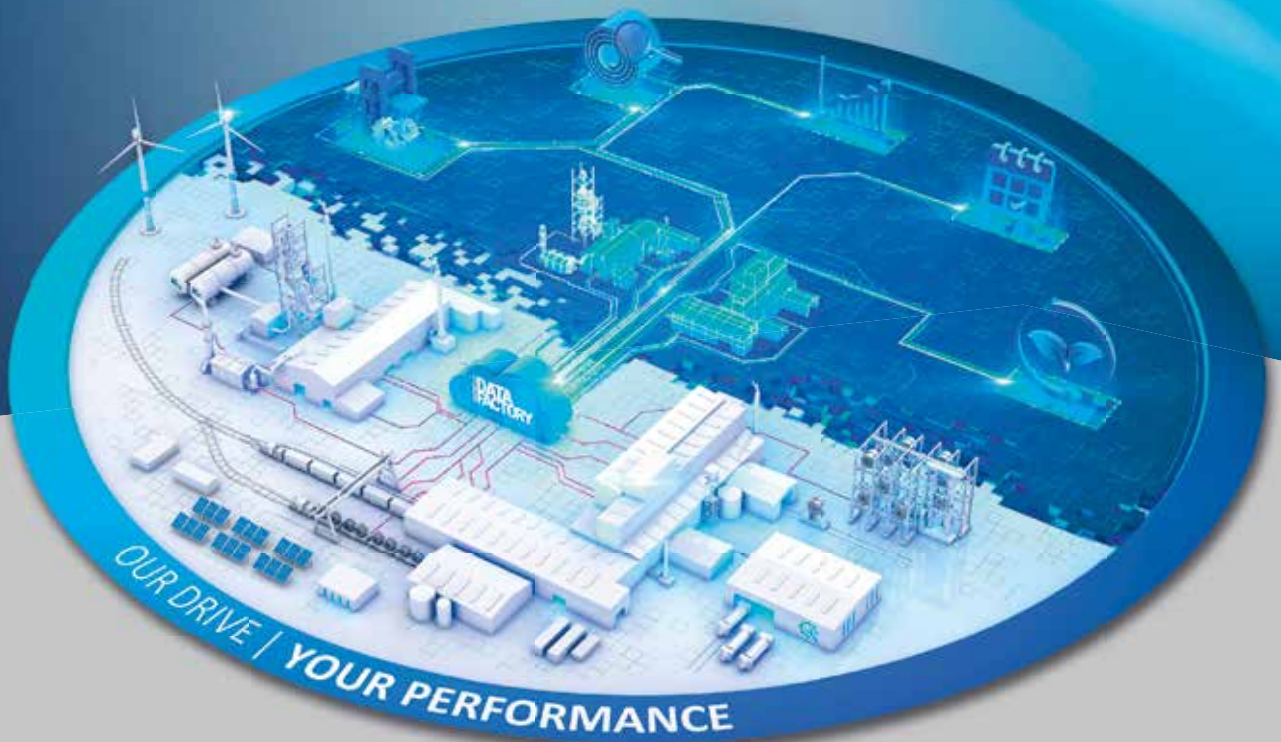
Decarbonisation has given rise to new pipe markets. Examples include carbon capture, hydrogen logistics and electromobility. Are these developments already making themselves felt at the trade fair?

Hydrogen plays a major role at Tube. We are dedicating a separate congress to this topic. Vulkan-Verlag will guide us through this topic in an extensive conference programme. On Tuesday 16 April, it will be hosting the H2-Summit by ecoMetals in conference rooms 14 and 15 in Hall 1. The SawExpo Forum in Hall 6 G07 is dedicated to cutting and machining technologies for pipes and the Special Area Tubes & Pipes in Hall 1 C 35 presents the value chain for plastic pipes. The ITA Forum will discuss the opportunities for the raw materials industry in turbulent times on Thursday, 18 April in Hall 1 A 47.

E-mobility has been driving our industries since the last Tube 2022, and politicians must send a clear signal here and create more incentives to make the switch.

The expiry of the subsidy programmes for e-car owners is certainly not the right signal. As long as e-cars are more expensive to buy and do not have enough range, it will not be possible to persuade large sections of the population to switch to e-mobility.

Integrated Lifecycle Partnership



To be the leading partner for our customers in this transformation, SMS group bundles all competencies from electrics/automation, digitalization, and technical service. Our goal is to maintain and expand the performance of our customers' plants throughout their entire lifecycle. Together with our customers, we develop integrated solutions specifically geared to the customer's use case. In doing so, we focus on crucial KPIs such as plant availability, product quality, productivity, or delivery reliability but also on increasingly relevant topics such as sustainability and safety.





“Some challenges for European tube producers”
Adrian Alecu
Head of BU Strategy & Business Development at ArcelorMittal Europe Tubular Products

Interview with Adrian Alecu

Despite the geopolitical turbulences, the global pipe industry experienced an increase in production of around 15% in 2023. The forecasts for 2024 are also encouraging. We think Tube Düsseldorf is therefore coming at exactly the right time.

Arcelor Mittal is a strong player in the supply of tubular products for the automotive and the construction Industry.

We are glad to interview Mr. Adrian Alecu.

The automotive Industry after prosperous years undergoes structural changes. Beginning 2035 Europe will ban combustion engines which will have significant impact. How the tubular industry intends to prompt this challenge?

Except in engine and drive-line-related applications tube will continue to be used in electromobility. However, the requirements will continue to evolve within the applications such as chassis, body-in-white, suspension etc. Weight reduction and high strength will remain the pacemakers for future tube applications in automotive. In addition, low-carbon solutions will become more demanded.

The rest of the world will still, even after 2035, need combustion driven vehicles due to regional lack of accessibility of electrical energy. In consequence some OEM's relocate parts of their production to regions outside of Europe. What are the consequences for tube suppliers hereto?

This is only partly true. Taking a look at China, we see a

strong increase in EV production. Currently, more than 90 companies produce electric cars in China. On the other hand, in fact, many of the well-known OEMs have developed production capacities outside Europe and flat production figures are forecasted for Europe until 2030. This means that tube production will partly also follow this trend.

The construction industry, despite a temporary slowdown will continue to grow. What measures takes the tubular industry to improve the awareness among architects and construction engineers about the merits of applying tubular products in construction designs?

There are several bodies promoting the use of tubes in steel construction. Associations like CIDECT and ECCS develop design guides, research projects and trainings concerned with tubular steel structures, but also individual company initiatives like ArcelorMittal's Constructalia (constructalia.arcelormittal.com) and Steligen (steligen.arcelormittal.com) promote tubular solu-

tions in the context of steel construction and explain the benefits of designing and building with steel tube. However, although tubes the superior solution in terms of creativity and design among architects, they are under-represented in final building projects compared to beams and plates.

The European tube industry is currently suffering from high energy costs compared to other regions in the world. What possible consequences do you draw from this?

On one hand, energy efficient production processes will be a must going forward. Machine and tools suppliers will play an important role to make production sustainable also for European producers. On the other hand, there will be little alternative for tube producers in Europe than to specialize into more sophisticated solutions for tube consumers. Again, an interesting field for innovation for machine and tools suppliers.

Artificial Intelligence (AI) and its possibilities to improve industrial processes and customer services seems to become a mega trend. In some areas of our industry AI has already been introduced. How do you see the prospects for the tubular industry incorporating AI?

In the industry, AI will certainly become one of the standard working tool in future. Just a way of efficiently exploiting big data. Not more and not less. In that sense, just as in

any other industry AI will establish its way in our industry for the enhancement of processes and decision-making in planning, production and quality. But there is still some time before we will see specific tools adapted to tube production.

The decarbonization of the industry has been set as a key theme of the TUBE Düsseldorf trade fair. We are aware, that Arcelor Mittal is here a leading trend setter. What are your expectation in this regard?

We definitely see increasing interest from customer side. Current economic challenges may temporarily cause doubts about the viability due to incurring costs and price premiums. But decarbonization will remain a paradigm of industrial policy not only in Europe. We just start to see more and more initiatives in the USA and India.

Companies with an industrial base in Europe will develop further on this path and will need a strong decarbonized supply chain. This is where ArcelorMittal is pioneering the industry with its extremely diversified XCarb product range of low-carbon products incl. tubes.

Furthermore, my hope is that during the Tube Fair we will succeed in raising the consciousness of our customer to tackle their Scope 1 and 2 quantification. This is why we welcome the EcoMetals initiative taken by Messe Düsseldorf.

+++ Seize the opportunity to boost your visibility with our **ITAtube Buyer's Guide** – the global directory for the tube industry. Join in and take advantage of the numerous benefits. +++

Tube 2024

The world's leading trade fair for the tube industry



**15-19 April 2024
Düsseldorf**



Over 1,200 exhibitors present their innovations along the entire value chain at the No. 1 trade fair for the tube industry: Tube showcases the entire spectrum - from raw materials to tube production, tube processing technology, tube accessories, tube trade, forming technology and machinery and equipment. Whether as an exhibitor, trade visitor or investor: the world's most important tube trade fair in Düsseldorf is "the place to be" for central industries, trade, commerce and research. Make valuable contacts at the highest level, be inspired and take advantage of opportunities for new business.

Hot topics & focus topics at Tube 2024

Where is the tube industry heading? Take a look into the future at Tube, also in our Hot Topics: The sustainable ecoMetals initiative provides a forum for drivers of environmentally friendly products, production and processes. And the topic of hydrogen is also occupying the industry, especially when it comes to expanding the transportation network. You can also experience our special topics: Plastics along the value chain, the world's largest stainless steel community and leading technologies for cutting, slicing & sawing.

Welcome to the "Homebase" of the largest Stainless Steel Community exhibitors around stainless steel

Innovations & know-how around the manufacturing process, processing and trading of stainless steel products: Experience the

largest stainless steel community worldwide! More than 400 exhibitors present the whole world of stainless steel in Düsseldorf, both at Tube and at the concurrent wire.

Meet the international trade community. Because if you are looking for business success, you have to be present where investors, innovators and top decision-makers are represented: at the world's leading trade fairs Tube & wire.

Cutting, slicing & sawing – Perfection in innovation and technology

In Düsseldorf, experts, suppliers and users exchange information about the constantly changing world of cutting, slicing and sawing technologies. As a trade visitor, meet manufacturers and suppliers of machines, tools, barrel finishing systems, deburring machines, accessories and consumables as well as service providers, associations and representatives from science and research.

Find solution partners for your questions and challenges!

Plastics Tubes at a glance – From pipe production to the finished pipe

Tube in Düsseldorf is regarded as the central industry platform for intensive exchange of views and productive technology transfer. Especially in the segment that faces the greatest challenges and opportunities in energy and environmental technology: the plastic pipe market. That is why we



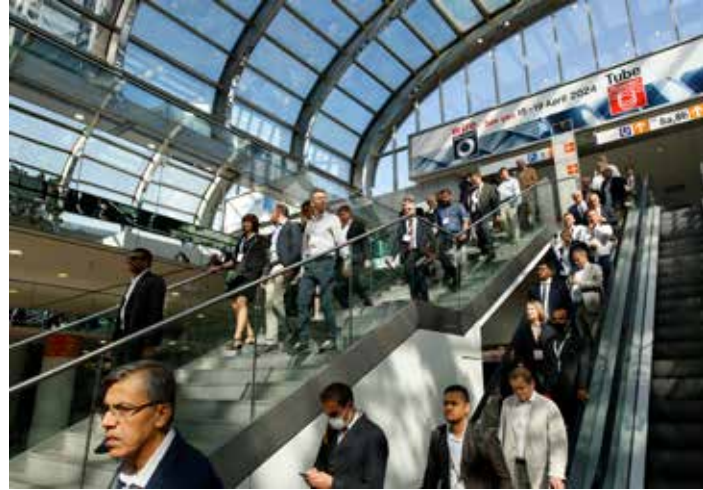
are offering you as an exhibitor an exclusive special area as a unique communication forum for 2024.

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.

Hydrogen as an energy carrier – The race for the best solutions

Intensive work is being done worldwide to reduce greenhouse gases and create attractive options, also for energy-intensive industries - including through the development of nationwide hydrogen distribution networks. The consequence: an increased demand for suitable piping and storage solutions, on which science and industry are already working at full speed. You too can gather new impulses at Tube 2024!



Press contact in Germany:

Petra Hartmann-Bresgen M.A.
Ulrike Osahon
Tel: +49 (0) 211/45 60 -541/ -992
E-Mail: HartmannP@messe-duesseldorf.de
www.wire-southeastasia.com,
www.tube-southeastasia.com

join the best:
15-19 April 2024

FORUM STAGES
HALL HALLE 1, A47
HALL HALLE 6, G07

EINGANG SÜD ENTRANCE SOUTH

Due to high demand:
Forming Technology additionally in Hall 4
Aufgrund der hohen Nachfrage:
Umformtechnik zusätzlich in Halle 4

Tube Düsseldorf

- Halls Hallen 1, 3, 4**
Tube Accessories
Rohrzubehör
- Halls Hallen 1, 3, 4**
Tube Manufacturing and Distribution
Rohrhandel, Rohrherstellung
- Halls Hallen 4, 5, 6**
Bending and Forming Technology
Umformtechnik, Rohrhandel, Rohrherstellung
- Halls Hallen 6, 7a**
Pipe and Tube Processing Technology
Rohrbearbeitungstechnik, Rohrhandel, Rohrherstellung
- Hall Halle 7a**
Plants and Machinery
Maschinen und Anlagen, Rohrhandel, Rohrherstellung
- Hall Halle 7**
Meet China's expertise

wire Düsseldorf

- Halls Hallen 9-13, 15**
Wire, Cable, Wire Products and Technology
Draht, Kabel, Drahtprodukte und Technologie
- Hall Halle 14**
Meet China's expertise
- Hall Halle 16**
Fastener, Technology and Spring Making
Technologie including Products
Befestigungstechnik und
Federfertigungstechnik inklusive
Endprodukte
- Hall Halle 17**
Mesh Welding Technology
Gitterschweißtechnik

Tube 2024

Exciting line-up of side events with an attractive mixture of lectures, info slots, “eco and high-potential trails”

Countering skilled labour shortages

Some 2,300 exhibitors on more than 118,000 square metres of net exhibition space – with these numbers wire and Tube 2024 are setting a powerful agenda. For the first time, the innovations showcased by the industry players in the exhibition halls will be accompanied by an extensive programme of supporting events tuned to the market – and what’s more – on all five trade fair days!

Premiere for the wire & Tube BME Einkäufertag / Buyers’ Day on the Forum stage of Hall 1 A47 on Monday, 15 April. Everything revolving around Due Diligence Supply Chain Acts, sourcing and logistics, transparently compiled and presented by the Federal Association of Materials Management, Purchasing and Logistics (Bundesverband Materialwirtschaft, Einkauf und Logistik).

On Tuesday, the wire & Tube Convention 2024 will follow with entirely different exhibitor insights for the Green Steel theme and its implementation in their own manufacturing halls. The organiser is the “Agentur Stahl-Kommunikation”.

From Monday, the SawExpo Forum will present news and trends from the multifaceted field of sawing and milling technologies in daily snapshots in Hall 6 G07. SawExpo GmbH is the organiser.

Publishing house Vulkan Verlag will organise a varied line-up of different focal topics on the Forum stage of Hall 1 A47 and in the conference rooms 14/15. Be it the Destination Green Summit by ecoMetals, the H2 Summit by ecoMetals or the Green Jobs Forum – exciting content presented in an infotaining way plus the mega theme Green Jobs are all aimed at attracting visitors.

In the Special Area Plastic Tubes & Pipes (Hall 1 C35) exhibitors will be showcasing

the complete supply chain for plastic tubes and pipes and provide impressive demonstrations of possible processing and finishing methods for plastic tubes and pipes.

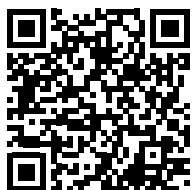
At the BDS Forum (Hall 1 A47) the Federal Association of the German Steel Trade (Bundesverband Deutscher Stahlhandel) will provide information on global trends in the steel trade. Here, experts will analyse the impact of current economic policy trends in the steel trade. Steel traders will also discuss sourcing and sales markets, economic framework conditions and the mega themes digitalisation and AI.

The ITA Forum (also on the Forum stage in Hall 1 A47) will address the global economic challenges for the industry in lectures and will project concrete impact scenarios for the tube and pipe industry.

The last two trade fair days will be all about the so-called High Potentials – i.e. promising skilled workers and young talents. Be they trainees, students or potential career changers – they will all have the opportunity in Hall 6 G07 to learn about vocational training and career opportunities in the versatile field of cutting technologies in numerous talks and information slots. Organised by SawExpo GmbH.

Also new are the daily digital ecoMetal and high potential Trails, allowing visitors to put together their personal itineraries online or by QR code to meet exhibitors from the fields of ecoMetals (producing sustainably and in a resource/environment saving way) and High Potentials (introducing themselves as attractive trainers/employers).

You can find an overview of the entire event program with dates and times on the Wire and Tube portals using the QR code opposite



wire and Tube
event programm

WELCOME TO THE WORLD OF MEASUREMENT



IMS inline measuring systems cover industrial needs to fulfill all measuring tasks throughout your tube production process.

Trust our attractive product range, which is unique in its scope worldwide for the precise measurement of:

- Wall Thickness
- Outside Diameter
- Surface Inspection
- Eccentricity
- Ovality
- Profile

MEASURE.INSPECT.DETECT.

Today, 20 of the 20 world's largest steel and aluminium manufacturers trust our real-time and reproducible measurements and evaluations to optimise their production lines and increase quality while simultaneously reducing production costs and reject rates.



15.-19. April 2024
Hall 07A |
Booth 7AB02

beInside.

Tube 2024

Further Highlights of Tube 2024

High Potential Days

Boost your career
@wireTube



Scan the QR code and discover the route

High Potential Days

Your next career opportunity. Discover exciting lectures, job trails and much more!

The diversity and momentum of both trade fairs, wire & Tube, make them the central hub for growing business with a sustainable focus. After all, topics such as ecoMetals and the use and transportation of hydrogen also occupy the players in both sectors - and require smart newcomers. You yourself have the chance to make a big difference, because wires, cables and/or pipes are important elements in a wide range of industries.

By taking part in the High Potential Job Trail, you have the chance to get the best industry overview at our world's leading trade fairs as well as valuable meetings with potential employers. Here, our exhibitors have the opportunity to present their companies up close - with digitally supported tours.

Discover our exciting jobs on our job walls on site and online in the future and don't miss the lecture programme on the forum stages from Thursday 2 pm in Hall 1 (A47) and Friday all day in Hall 1 and Hall 6 (G07)

High Potential Job Trail

Explore the most exciting employers in the industry with the High Potential Job Trail and recognise the top employers on site via the "High Potential Days" logo directly at the trade fair stand. The interactive hall plan shows you the best route for your career in the tube, cable and wire industry.

ecoMetals: Pioneers of sustainability

Developed for the pioneers of sustainable responsibility.

ecoMetals will once again turn wire and Tube into a place of action. Trade fair visitors will encounter innovative strategies of sustainable responsibility here and conduct inspiring discussions with experts at eye level. You can recognise the excellent innovations by the ecoMetals logo: Products, processes and technologies in harmony with nature. Discover the sustainable innovations of our exhibitors up close with new, digitally supported tours.



lut 2.0
by **tecnar**

**Hot tube
true wall
thickness
gauge**

Join us at

**Tube
Düsseldorf 2024**

Booth

#7A/D17 April 15-19, 2024

lut.tecnar.com



Tube China 2024

Tube China 2024 – The 11th All China-International Tube & Pipe Industry Trade Fair



25-28 Sept. 2024
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.

Tube China News: "SAW" and "THERMPROCESS" Industry Upgrading:Unlocking Opportunities!

The development of China's steel industry has been a crucial driver of the country's rapid economic growth. Within the steel industry, steel pipes are hailed as the "blood vessels" of modern industry, playing an irreplaceable role in the development of the national economy and industrial upgrad-

ing. From January to June 2023, Tube China learned that China's steel pipe production reached 48.67 million tons, a year-on-year increase of 12.2%, solidifying China's position as a major producer of steel pipes.

Processing Technology:A Key Driver of Progress in the Steel Pipe Industry

Processing Technology directly impacts product specifications and performance. High-precision processing techniques enable steel pipes to better meet diverse application requirements, enhancing production efficiency and reducing costs. Innovative processing technologies are crucial elements in ensuring industry competitiveness and sustainable development.

In the field of metal materials and pipe processing, besides traditional cutting processes, laser cutting, with its high precision, fast speed, and low cost, has gained significant favor within the industry.

Furthermore, the rise of heat treatment



technology has transformed the mechanical, physical, and chemical properties of metal components, significantly improving their quality. More importantly, green environmental protections have become the core of the future development of the steel industry. Heat treatment-related technologies provide greater feasibility for steel production, supporting the industry's transition towards a low-carbon and environmentally friendly direction.

Tube China 2024: 360° Showcasing New Technologies in Tube Processing

Thermprocess China

Depending on the excellent reputation and international acclaim of the "Heat Treatment" theme within the Düsseldorf GMTN (GIFA, METEC, THERMPROCESS and NEWCAST), as well as the strong support from domestic industry associations, this year, the organizers upgrade the Thermprocess China Pavilion which was held at Tube China 2023.

Holding Thermprocess China aims to provide a solid communication bridge for heat treatment system and equipment suppliers from all over the world.

Saw and Laser Cutting China

Based on the Saw Expo China Pavilion in Tube China, the organizers have established a new upgraded and transformed concurrent exhibition - Saw and Laser Cutting China and added laser cutting related machinery and technology.

Saw and Laser Cutting China will jointly exhibit with the two popular related industries of Tube China and Thermprocess China in order to create a more comprehensive display platform and provide a grand gathering for sharing of resources and exchanging opportunities for the saw industry chain.



Tube India 2024

10th All Indian Exhibition & Conference for the Tube and Pipe Industries



27-29 Nov 2024
Mumbai

In India, the building and construction industries along with the oil and gas sector are the leading marketplaces for pipes. Major projects in the rail and air transportation, urban and rural sanitation, infrastructure, water distribution, irrigation and power projects, automotive and energy sector will result in additional growth and business opportunities in India.

Innovators meet investors

There is nothing bigger for planners, customers and users: Tube India is number 1. Investors, innovators and world market leaders come together here. Are you a driving force? Then you will find your impulses here.

Show of superlatives

Experience the entire range of state-of-the-art machinery for tube manufacturing and processing, innovative tube materials and OCTG technology highlights.





Good Reasons to Attend Tube India

- Meet and connect with prospective customers
- Strengthen bond with existing customers
- Learn about new industry developments
- Announce and display latest innovation and developments
- Chance to look at cutting edge developments in your industry and the opportunities they create
- Expand distribution and supply chains
- Strengthen or establish your brand
- Connect with competitors to identify best practices
- Reach out directly to your target market
- Optimize sales and lead generation strategy

The global Stainless Steel Welded Tube and Pipe market size is expected to reach USD9.5 billion by 2030, growing at a CAGR of 5.1% from 2021-2030.

The Indian Pipe Industry is among the top three manufacturing hubs after Japan and Europe. However, the penetration level of pipelines in oil & gas transportation is quite low at 32% in India as compared to 59% in USA and 79% globally. The low

penetration of pipes in the domestic market provides a huge business opportunity. The Indian pipe industry is around Rs. 235bn

Main Exhibit Groups at Tube India 2024

- Raw materials, tubes and accessories
- Tube manufacturing machinery
- Heat Treatment Processing and Machinery
- Rebuilt and reconditioned machinery
- Sawing and Industrial Cutting Machinery
- Process technology tools and auxiliaries
- Measuring and control technology
- Testing Engineering
- Specialist areas (i.e. plant engineering and construction, logistics, consulting and other services)
- Trading, stockists of tubes
- Pipeline and OCTG technology
- Profiles / Machinery
- Compound Pipe
- Plastic Tubes (Introducing New Segment)

**For more information,
visit the event websites at:**

www.wire-india.com;
www.tube-india.com;
www.metecindia.com;

Tube events

Events for Business, Technology, Education and Networking

Diary of world class tube events

April 2024

15 - 19 Tube Düsseldorf tube.de

May 2024

06 - 09 OTC otcnet.org

13 - 17 IFAT ifat.de

June 2024

10 - 14ACHEMA achema.de

September 2024

03 - 05 Stainless Steel World Asia stainless-steel-world-asia.com

22 - 25 Tube China tubechina.net

October 2024

03 - 05 Tubotech tubotech.com

15 - 17 FABTech fabtechexpo.com

22 - 25 Euroblech euroblech.com

November 2024

06 - 07 Stainless Steel World Duplex stainless-steel-world-duplex.com

11 - 14 ADIPEC adipec.com

27 - 29 Tube India tube-india.com

December 2024

03 - 05 Valve World Expo valveworldexpo.com

spring 2025

ITA Tube Conference itatube.org

April 2025

09 - 12 Tube Eurasia tube-eurasia.com

September 2025

06 - 08 Tube Middle East Africa tube-mea.com

17 - 19 Tube South East Asia tube-southeastasia.com

October 2025

21 - 24 Blechexpo blechexpo-messe.de

November 2025

18 - 20 Stainless Steel World Expo stainless-steel-world-event.com

QUALITY IS EVERYTHING



The UPCAST® continuous casting technology
has been a jewel since its birth – a result
of technical innovation and process know-how.
The legacy continues: consistent high quality is still everything.



Upward casting since 1968



UPCAST OY, PORI, FINLAND
www.upcast.com



15 - 19 April 2024
Düsseldorf, Germany
Visit us at 9C06





Tube 2024

ITA at Tube Düsseldorf

We are looking forward to welcome you at our booth in **Hall 1 F70**. Please **safe the date** for the following program on **Thursday, April 18th**:

10.30 am – 2 pm ITA Tube Forum (hall1/A47)
3 pm - 4 pm ITA Annual General Meeting (AGM) – International Lounge
Afterwards meet & greet at ITA booth / booth party (hall1/F70)

ITA Tube Forum 2024

Opportunities for the Tube Industry in turbulent times

The ITA Tube Forum will address the key steel tube industry trends that will impact international tube and pipe markets. In addition, our panel of international experts will share their market assessments and offer strategies for success in a market characterized by volatility and uncertainty.

Focus areas and topics:

- Global overview of the pipe market: regional pipe markets, supply, demand and price trends
- Focus topics on the most important pipe market segments: OCTG, Automotive, Structural Piping and Mechanical Piping
- Energy costs: Effects of rising energy costs on production
- Overcapacity: Analysis of longer-term global market trends
- End consumer demand: impact of rising costs, inflation, supply chain risks and technical and technological innovations
- Energy transition: Challenges of sustainable decarbonization of the steel industry
- Market trends and what innovative measures pipe manufacturers can take in response: How can plant manufacturers support with their innovations?

This event is free of charge and already included in your trade fair ticket.

Date: April 18, 2024

Venue: Hall 1, Stand 1.A.47

Contact: Cornelia Buesing, info@itatube.org

ITA Tube Forum 2024

Key steel tube industry trends

Focus topics of main segments OCTG, Automotive, Structural and Mechanical Piping



**Welcome –
World Tube & Pipe Market and its
influencing factors
Presentation of ITAtube Buyer's Guide**

Dr. Gunther Voswinckel – President
International Tube Association



**How KOCKS Fosters Innovation Together
with Seamless Tube Producers**

Joerg Surmund – Area Sales Manager
FRIEDRICH KOCKS GMBH & CO KG



Conductive heating of bent tubes

Dr. Christine Tränkner – Process Engineering
ITG Induktionsanlagen GmbH



**Steering the challenges in Europe –
Perspectives for welded tubes**

Adrian Alecu –
Head of Strategy and Business Development
ArcelorMittal Tubular Products Europe

Media Plan 2024

April

ITA Tube Journal 1/24

publication: April 2024 (before Tube)
Tube Düsseldorf 2024

ITA at Tube Düsseldorf

Wall of Fame (15.-19.04.24)

Booth party sponsoring package (18.04.24)

ITA Tube Forum (18.04.24)

package by Messe Düsseldorf GmbH

High potential days (18./19.04.24)

package by Messe Düsseldorf GmbH

ecoMetals (15.-19.04.24)

package by Messe Düsseldorf GmbH

June

ITA Tube Journal 2/24

deadline: 30.05.2024

review Tube Düsseldorf 24 / preview Tube China 24

publication: June 2024

October

ITA Tube Journal 3/24

deadline: 03.10.2024

review Tube China 24 / preview Tube India 24

publication: 24.10.2024

If you are interested in our offers or have any questions, please get in touch with us. We will be happy to provide you with detailed information and advice on the individual points.

Cornelia Buesing, info@itatube.org

Do not miss that chance: Advertising in the next ITAtube Journal

“There is one rule for the industrialist and that is: Make the best quality of goods possible at the lowest cost possible (...)”

Henry Ford.

And show everybody your performance – by good commercials in proper journals ...

With a circulation of approximately 2,000 – 2,500 hard copies to be distributed to our members and as hand-outs at trade fairs the advertising rates are quite low. The online version of the ITAtube Journal will be posted also on our relaunched website. Here the ITAtube Journal will reach an average audience of 12,000 visits monthly.

Please see the prices below. Even if you do not book a double page, please be assured that your advert in the next edition of the ITAtube Journal will achieve a lot of general attention!

For more information please contact: cornelia.buesing@itatube.org

ITAtube Journal Rate Card – Member

	1x	2x	3x
Full page	€ 800.00	€ 760.00	€ 720.00
Half page	€ 450.00	€ 427.50	€ 405.00
Quarter page	€ 300.00	€ 285.00	€ 270.00
Double page	€ 1,500.00	€ 1,425.00	€ 1,350.00
Inside front cover	€ 1,200.00	€ 1,150.00	€ 1,100.00
Inside back cover	€ 1,200.00	€ 1,150.00	€ 1,100.00
Front page	€ 2,000.00	€ 1,900.00	€ 1,800.00
Outside back cover	€ 1,500.00	€ 1,450.00	€ 1,400.00

ITAtube Journal Rate Card – Non-Member

	1x	2x	3x
Full page	€ 1,600.00	€ 1,520.00	€ 1,440.00
Half page	€ 900.00	€ 855.00	€ 810.00
Quarter page	€ 600.00	€ 570.00	€ 540.00
Double page	€ 3,000.00	€ 2,850.00	€ 2,700.00
Inside front cover	€ 2,400.00	€ 1,900.00	€ 2,200.00
Inside back cover	€ 1,800.00	€ 1,710.00	€ 2,220.00
Front page	€ 4,000.00	€ 2,280.00	€ 3,600.00
Outside back cover	€ 3,000.00	€ 1,900.00	€ 2,800.00



International Tube Association

Heinz-Ingenstau-Strasse 9
40474 Düsseldorf
Germany
Tel.: +49 211 947-5650
info@itatube.org

www.itatube.org

Cornelia Buesing
cornelia.buesing@itatube.org

artworkshop.de
(Graphics and Print Design)



This publication and its full contents is copyright protected. No part of this publication may be reproduced in any form or by any means, electronic or mechanical, including photocopying, recording or in any other storage or retrieval system without the publisher's written permission. The publisher, owners, agents, printers, editors and contributors cannot be held responsible for and hereby exclude all liability whatsoever for errors, omissions or the accuracy and claims printed or inferred in the editorial published in ITAtube Journal. The **International Tube Association** reserves the right to edit, reword and subedit all editorial submissions in accordance with its editorial policy.

©2024 ITA. All rights reserved.

Imprint

Next Issue

Deadline:

30.05.2024

List of advertisers

IMS	front cover
Danieli	19
Boehlerit	23
MSG	37
Kocks	43
Bültmann	49
QASS	51
Fives group	55
MAC	57
SMS group	59
IMS	65
Tecnar	67
Upcast	73
Kallanish	back cover

Look at our next issue:

- Review Tube Duesseldorf 2024
- Preview Tube China 2024
- Preview Tube India 2024



- ITA – well respected since 1979
- non-commercial
- over 600 members worldwide
- sole globally active association of tube & pipe engineers from across the industry (supply and manufacture), related services and universities.
- global technical and market information platform supporting innovation and growth within the tube industry

Benefit

Free publication of specialist articles in the ITAtube Journal

Advertising at reduced prices

Free publication of press releases, reaching:

- more than 20,000 ITAtube Journal readers
- more than 15,000 visitors monthly to the ITA website
- worldwide users of social media

Free listing on the ITA website with link to your company website

Reduced prices for conferences

Free ITA services (hosting, interpreting, communication) at most major Tube & Pipe Fairs

Free admission ticket for wire & Tube Düsseldorf for one day

Participate

- ITA fair seminars
- ITA fair participation
- ITA website

ITA– your global tube platform





KALLANISH

DAILY STEEL NEWS & PRICES

ITA DISCOUNT

10% discount for all ITA members on any annual subscription service started in 2024

2-WEEK TRIAL

Start a free trial and truly experience everything Kallanish has to offer

GET STARTED TODAY

 www.kallanish.com

 sales@kallanish.com