

# steel

compact

## In great demand: Materials for hot forming

thyssenkrupp Steel is supporting its customers with innovative products and comprehensive service packages.

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### Energy turnaround with precision steel strip

Unique pilot project in Hohenlimburg

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### Digitalization and AI

Optimizes and improves processes

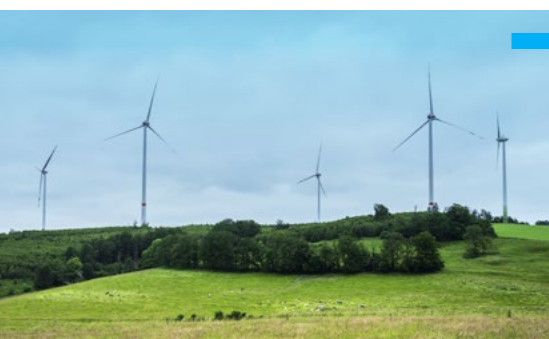
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## In great demand: Materials for hot forming

thyssenkrupp Steel is supporting its customers in hot forming with innovative materials, modern analytical systems and comprehensive service packages.

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## Energy turnaround in precision steel strip production

With the direct connection to a wind farm thyssenkrupp Hohenlimburg is switching its power supply over to renewable energies.

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## Realignment for NO electrical steel

The NO division has a new management team. The personnel shake-up is being accompanied by far-reaching investments in the production network.

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## Digital powerhouse

thyssenkrupp Steel produces steel based on digitalized and highly automated, high-tech processes. Our goal: improved quality with even greater reliability.

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# "The aim is a robust, competitive, and customer-centric company."



Since the beginning of this century Europe has been concerned about the slowdown growth. Strategies to increase it have come and gone, but the trend has remained unchanged." This is how former ECB President Mario Draghi begins his report on the future of

European competitiveness. The analysis is a stark description of Europe's structural shortcomings in a global context. Draghi's report is a wake-up call.

This wake-up call should be taken to heart, especially by us in Germany, as we are now central to the problem, unlike in previous years. COVID and the war in Ukraine have obscured the fact that a structural crisis has developed in Germany: energy price shocks, decarbonization, digitalization, demographic change, and China's altered role in the global economy are putting pressure on our established business models. This applies to energy-intensive industries in particular.

As a steel producer, we feel the effects of economic disruptions particularly early on. Moreover, our analyses have also identified long-term implications for our business development based on the structural changes described above. In short: Our markets will not return to a level sufficient to sustain our current production capacity.

With this in mind, we are therefore working on aligning our production network with these new realities. Our aim is to shape a robust, competitive, and consistently customer-centric company.



**Dennis Grimm,**  
Spokesman of the Executive Board

Despite all changes we have on our agenda, one thing remains clear: we will continue to make the investments provided for in our Strategy 20-30 and wrap up the projects. The focus here is primarily on the decommissioning of our casting rolling mill in Duisburg, and the construction of the new hot strip mill and the continuous casting lines. The new units are scheduled to go online in May 2025 – an investment in the technology, quality, and stability of our processes from which our customers will directly benefit.

We are also continuing with the construction of our first direct reduction plant. The green transformation remains the necessary and right path to take. We aim to be among the first steel producers able to supply their customers with CO<sub>2</sub>-reduced steel. That said, it is also a fact that clear industrial policy initiatives are required in order to secure the success of the transformation and keep European industry competitive. Mario Draghi's wake-up call needs to be taken seriously.

I wish you an interesting read.

Yours,

Dennis Grimm



An aerial photograph of two large, white wind turbines with three blades each, situated on a densely forested hill. The scene is captured during sunset or sunrise, with a warm, orange glow on the horizon. The turbines have red and white striped sections on their blades and tower. The surrounding landscape is a mix of green forest and rolling hills under a clear sky.

# Green wind power for steel production

In Hagen, thyssenkrupp Hohenlimburg is operating the first German industrial plant to receive locally generated wind power through a direct connection. In future, around 40% of annual energy demand will be generated by four wind turbines up to 160 meters tall, and with a rotor diameter of 138 meters. The turbines are directly connected to the plant network via a dedicated cable line that is a good three kilometers in length. The wind farm generates over 55 million kilowatt hours annually, allowing the majority of this energy to be used directly without relying on the public grid.





# In conversation with ...

**Dennis Grimm**

Spokesman of the Executive Board



## **Mr. Grimm, you became Spokesman of the Executive Board virtually overnight. How did things kick off for you in the new role?**

Fortunately, I have an extensive tk background, and come with "steel experience". I started my professional career in Duisburg, at the steelworks, then held various positions in the thyssenkrupp Group before becoming Managing Director at Hüttenwerke Krupp Mannesmann. I've now been at thyssenkrupp Steel since Juli. But yes, it's a fact that the latest development was not planned that way and came as a surprise to me. In the first few weeks, it was important for me to restore a stable and positive atmosphere in the company. And, of course, I spoke to a lot of customers to affirm our support for them and that we are and remain fully operational.

## **What is on the agenda for the months ahead?**

Let me clarify the situation, as we have three elements to consider: a revised business plan, the independence of the steel business, and the green transformation. The business plan will define the capacity and the production network with which we aim to work in the future in order to become profitable. It is clear that we need to downsize due to market factors. Then there is the fact that thyssenkrupp, our parent company, is working in parallel toward the independence of our company. Success in this will make us a focused steel company able to earn the investments it needs under its own steam on the market. The Executive Board of thyssenkrupp Steel shares this objective. Finally, the green transformation: by means of our direct reduction plant being built with federal and state government funding, our aims are to be among the first steel producers in the market for CO<sub>2</sub>-reduced steels, and to supply our customers with corresponding premium products "in green". All these elements have an impact on the structure of our business plan. In order to assess the company's continuity prospects, we have commissioned an independent expert opinion which will provide us with valuable insights for the business plan, and will be incorporated into the decision-making process for the restructuring.

## **There are three of you on the Executive Board at present. Who is still missing?**

On the one hand, we still have the Human Resources position to fill. We are subject to the co-determination rules for the coal and steel industries, meaning that the right of nomination rests with IG Metall, the trade union representing workers in those industries. The position of Chief Sales Officer also remains to be filled. This role is new in its planned structure, and will incorporate the research and innovation activities as well as sales. I see this as an important signal, in that we are looking for a dedicated CSO who, together with the Sales team, will comprehensively attend to the needs and our customers and support them.

**Dennis Grimm is CEO, and is responsible for the entire operational and technological management, and further development of the company. In addition, he is responsible for the technological implementation of the green transformation, the areas of Upstream, Downstream, Implementation of the Direct Reduction Plant, Legal, Technical & Environmental Management as well as Technical Services & Energy.**





# Steel News

## Personnel

### Executive Board reorganized

The Executive Board of thyssenkrupp Steel Europe AG has been reorganized. In addition to CEO Dennis Grimm (who is interviewed on page 9), Dr. Marie Jaroni (CTO) is responsible for the strategic development and performance-oriented management of the company, as well as the areas of Communications & Sustainability, Government & Regulatory Affairs, and Logistics Services. Philipp Conze (CFO) is responsible for the areas of Controlling, Accounting and Risk, Procurement and Supply Management, Digital Solutions as well as Financial Management & Strategy, and Energy Strategy. In addition, as CHRO, he is responsible for Human Resources.



Dr. Marie Jaroni



Philipp Conze

## Products

### ZM Ecoprotect® Solar: Delivery range expanded

thyssenkrupp Steel has received a good resonance from its presence at the Intersolar 2024 trade fair. Intensive discussions with partners and customers revealed that the energy sector in particular is continuing to generate demand for high-quality steels with environmentally friendly zinc-magnesium coatings. To meet the increasing demand for products such as ZM Ecoprotect® Solar, thyssenkrupp Steel has expanded its production capacities with two new melting pots at the hot-dip galvanizing line (FBA) 6 in the Siegerland region. This means a significantly larger range of dimensions is now available. The ZM 310 and ZM 430 coatings are currently already in series production, with further coatings also being tested.

<https://www.thyssenkrupp-steel.com/en/solar/>

## Material news

### New steel grade for high-end precision steel tubes

High-strength precision steel tubes offer enormous potential for weight reduction in automotive engineering, and are used in the powertrain and suspension of cars for stabilizers, camshafts and rotor shafts, among other things. With tubor® 45, thyssenkrupp Steel's portfolio now features a new segregation-optimized manganese-boron steel with a uniform surface that is ideal for the production of welded, cold-rolled or cold-drawn precision steel tubes. The new steel grade has a homogeneous and fine-grained microstructure with a low sulfur and phosphorus content, and achieves a strength of over 1,800 MPa and a surface hardness of over 56 HRC in the quenched and tempered condition.

<https://www.thyssenkrupp-steel.com/en/tubor/>

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## Production network

### With immediate effect: Oiling with Prelubes2

In 2024, the production facilities of thyssenkrupp Steel in Bochum and Dortmund were converted entirely to give the option of applying Prelube2 oil (FUCHS Anticorit PLS 100 T). These high-quality lubricants are applied to the steel strip in a very thin layer, and are a suitable forming promoter during subsequent processing by the customer. They also protect galvanized surfaces against corrosion. In the next step, the systems at the Duisburg site will be converted to make them Prelube2-capable, including hot-dip galvanizing line 4 (FBA 4). Coils treated with Prelube2 are particularly popular with customers from the automotive industry, and have taken the step to mass production at many well-known brand manufacturers.



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SCIENCE  
BASED  
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

THE NET  
ZERO  
STANDARD

APPROVED NET-ZERO TARGETS



## Green transformation

### Ambitious climate targets scientifically confirmed

thyssenkrupp Steel has taken another important step toward sustainable development: The company has had its climate targets validated on the basis of the science-based guidelines of the "Science Based Targets initiative" (SBTi). This makes thyssenkrupp Steel one of the first steel manufacturer to have had its climate targets reviewed on a scientific basis, and assessed as being in line with the 1.5 degree target of the Paris Climate Agreement – both in terms of the short-term 2032 target and the 2045 net-zero target according to SBTi. The "Science Based Targets initiative" is backed by the organizations CDP, United Global Compact, World Resources Institute (WRI) and World Wide Fund for Nature (WWF). It offers companies an independent, transparent, and acknowledged assessment procedure for their climate targets. This helps toward limiting global warming to a maximum of 1.5 °C, as envisaged by the Paris Agreement, and supports companies in achieving their net zero targets.

## Green transformation

### Cardboard replaces hard fiber as packaging medium

thyssenkrupp Steel is gradually switching to sustainable cardboard packaging material to protect its coils during transportation. Compared to the conventional hard fiber materials used to date, the new packaging made from 100% recycled paper and cellulose offers a number of additional advantages while retaining the same stability: less dust is generated during handling, which reduces not only contamination but also the health risks faced by employees, and the material is also completely recyclable. The new packaging efficiently prevents any form of damage, for example when steel from thyssenkrupp Steel is transported as a compactly stowed load by ship or by multiple modes of transport.





## Personnel

## New Executive Manager for DR plant construction

On June 1, 2024, Ulrich Greiner Pachter was appointed Executive Manager with responsibility for construction of the direct reduction plant. He will therefore take over the commercial and technical project management. The construction of the direct reduction plant is a forward-looking project, and the centerpiece of the technological transformation taking place at thyssenkrupp Steel. It therefore demands a high degree of management attention and expertise. Ulrich Greiner Pachter has many years of extensive project experience under his belt in highly diverse metallurgical plant engineering environments. Most recently, he was Director Project Execution at Loesche in Düsseldorf and before that, as CEO of SMS India, he was responsible for all business activities in the India & Asia Pacific region.



Ulrich Greiner Pachter

## High Availability

## thyssenkrupp Hohenlimburg receives TISAX label

After twelve months of intensive preparation, thyssenkrupp Hohenlimburg successfully received the TISAX "High Availability" label required by the automotive industry in June 2024. TISAX stands for Trusted Information Security Assessment Exchange, and describes a cross-company testing and exchange procedure for information security in the automotive industry, which also includes its components suppliers. In order to achieve this complex certification and, building on it, to continuously improve its own IT architectures and business processes, thyssenkrupp Hohenlimburg has established an information security management system similar to the ISO 27001 standard in close cooperation with experts from Duisburg. In this way, the required information security has been guaranteed across all relevant functional areas and processes of the company since early summer.



Photos: Rainer Kaysers, Nils Roscher

## bluemint® Steel

## New in the portfolio: bluemint® recycled 25

thyssenkrupp Steel has set itself the goal of making the previously CO<sub>2</sub>-intensive production of primary steel more climate-friendly in the short term. To do this, the company is using various technical processes such as increasing the proportion of scrap in the converter and, more recently, adding a mixture of iron ore and processed scrap to the blast furnace. A scrap variant optimized for this purpose has been developed by thyssenkrupp Steel as a cooperation partner together with TSR. What is called TSR40 is produced directly at the Duisburg site using innovative scrap processing technology on an industrial scale. End-of-life vehicles, for example, are the precursor material. In this way, old cars are turned into new ones. The mixture is melted into pig iron in the blast furnace. The new bluemint® recycled 25 variant uses 25% scrap in the blast furnace. The pig iron melted in this way is being further processed into steel in the normal way in the metallurgical plant, without any loss of quality. In the end, the entire steel portfolio including electrical steel is available in the bluemint® recycled 25 variant.



# thyssenkrupp initiates energy turnaround in precision steel strip production

As part of a **pilot project** that is unique in Germany, thyssenkrupp Hohenlimburg is switching its power supply for producing precidur® precision strip over to renewable energies. In future, more than 40% of the industrial plant's power will come from **locally generated wind power**. This saves costs and cuts CO<sub>2</sub> emissions.

Text Jan Ritterbach



For Minister Mona Neubaur, the cooperation between thyssenkrupp Hohenlimburg and SL NaturEnergie is groundbreaking – and for other industrial companies too.

**T**he energy transition in the German steel industry is not necessarily starting where it might have been expected. For instance, it is not kicking off in the strongholds of heavy industry. Instead, it will begin in the picturesque town of Hagen at the densely wooded south-eastern edge of the Ruhr region. Since June 2024, a German industrial plant has been supplied with locally generated wind power via a direct connection for the first time, without using the national grid.

We are talking about thyssenkrupp Hohenlimburg, where hot-rolled precision strip is manufactured – an indispensable specialty product for the automotive industry. Thanks to a wind farm

built by cooperation partner SL NaturEnergie, around 40% of the annual electricity requirement can be supplied directly by green energy via a three kilometer-long cable line. The location also benefits from further savings potential: "We avoid network charges and relieve the burden on the national grid through the direct connection," explains André Matusczyk, Managing Director of thyssenkrupp Hohenlimburg.

## Sustainability to the power of two

Another important aspect for thyssenkrupp Hohenlimburg is that electricity from wind power reduces its own CO<sub>2</sub> emissions by eleven percent. Matusczyk: We are thus reducing our own carbon footprint and reducing the carbon intensity of our products – a clear benefit for our customers too, and a clear commitment: we are taking the turnaround in climate policy seriously."

The significance of steel in the turnaround in energy and climate policy is exemplified by wind energy in particular. thyssenkrupp Steel not only contributes to the CO<sub>2</sub>-reduced manufacture of precision strip, but at the same time the steel producer's special electric strip product

## Green electricity for hot-rolled precision strip

thyssenkrupp Hohenlimburg employs around 1,000 people to produce a high-quality specialty product: hot-rolled precision steel strip from Hohenlimburg, with an annual production capacity of around 1 million metric tons. Customers are primarily the cold rolling industry, the automotive industry and its suppliers, as well as the sawmill and agricultural machinery industries. The central production unit is the precision strip mill, which is a hot-strip mill capable of processing steel slabs with particularly narrow dimensions. It accounts for a considerable proportion of the plant's electricity requirements, which amount to 110 gigawatt hours per year – corresponding to around 80% of the electricity requirements of the neighboring town of Iserlohn.



thyssenkrupp Hohenlimburg  
Managing Director André  
Matusczyk is able to use his  
plant's direct connection to  
reduce its own carbon footprint  
and the CO<sub>2</sub> intensity of its  
products.

### Hagen project supports decarbonization

As an intensive user of energy and emitter of CO<sub>2</sub>, thyssenkrupp Steel is a company determined to make its production comprehensively climate-friendly in the future. The first direct reduction plant being constructed at the Duisburg site is at the core of these initiatives, and once operational, it will have the capability to prevent up to 3.5 million metric tons of CO<sub>2</sub> from being emitted. The aim is also to decarbonize the supply and processing stages. The green electricity project at thyssenkrupp Hohenlimburg is a role model here, because it is the first time that a wind farm has been directly connected to an industrial plant.



of the powercore® brand ensures that the wind turbine spins, and electricity is transported from the source of generation to the consumer. The company is also contributing to a more sustainable future in another respect. "The surplus of green power from the wind farm in Hagen covers around 15% of the electrical power required by our sister company thyssenkrupp Electrical Steel in Gelsenkirchen," explains Jens Schöllnershans, who as Head of Procurement & Supply Management is responsible for purchasing at both the precision strip specialist and the electrical steel manufacturer. "A classic win-win situation: our electrical steel extracts maximum amounts of electricity from wind turbines. The green electricity produced in turn reduces the carbon footprint of our steels."

### Historic day for Germany

Mona Neubaur, Ministry of Economic Affairs, Industry, Climate Action and Energy of the State of North Rhine-Westphalia, described the day when the Hagen plant was officially connected to the wind farm on June 3, 2024 as a "historic day for Germany." She sees the cooperation between thyssenkrupp Hohenlimburg and SL NaturEnergie as an important step on the transformation path towards a climate-friendly industry and future. Neubaur: For the first time, an industrial plant will be supplied directly with locally generated green wind power. I'm sure that this pioneering project will have a strong impact and set a good example for other industrial companies.

**Local wind power for a steel mill: the energy transition in industry is becoming a reality at thyssenkrupp Hohenlimburg.**



### Podcast

To the new episode of our podcast "Gekocht, gewalzt, veredelt" (Smelted, rolled, refined):

Pioneering project in Hohenlimburg – steel production with wind power



Spotify-Podcast



Apple-Podcast



YouTube-Podcast

### Web

More about green wind power for steel production:

<https://www.thyssenkrupp-steel.com/en/pr/wind-farm/>

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# "Fundamentally, it's all about consistently optimizing and improving our company"

There is no need to travel to Silicon Valley to understand how digitalization works: the Ruhr region is a digital powerhouse that doesn't have to shy away from international comparison. Deeply involved: thyssenkrupp Steel. The company manufactures steel using digitalized and highly automated high-tech processes. In this context, the use of **artificial intelligence (AI)** offers the potential for enhanced product quality and manufacturing dependability.

Photos: Rainer Kaysers

Text Jan Ritterbach





Professor Boris Otto from the Fraunhofer ISST in Dortmund (left) and thyssenkrupp Steel CIO Volker Lang see enormous potential for the use of AI and digital technologies in the Rhine-Ruhr industrial region.

### "Digital twins" for horizontal networking

As part of its digital transformation, thyssenkrupp Steel is driving forward the concept of horizontal networking with customer companies. What are known as digital twins have already been used by the pioneering company thyssenkrupp Hohenlimburg for quite some years now. These are accurate digital snapshots from production. Customers are thus empowered to track the current status of their order. In addition, they receive selected quality data from production before the delivery of the ordered materials, so that they are able to adapt their own processes accordingly. At the same time, the digital twins help the company to better understand its own processes, control the use of raw materials and operating resources, and keep an eye on the condition of plants and products. In this way, digital twins also help to further enhance delivery performance and material qualities.

**V**olker Lang has seen and experienced a lot during his time at thyssenkrupp Steel. As far back as around 20 years ago, the business IT specialist began his career with the Duisburg steel manufacturer in what was then the Heavy Plate division. Today, as Chief Information Officer (CIO), he is leading the company into the digital future. And that is no easy task, since combining the agility of digital-based business models and the requirements of a production network centered on stability can hardly be described as a straightforward undertaking. "The challenge for us as an industrial company lies in developing a hybrid culture and finding ways to cope with the dynamism unleashed by digitization and AI," says Lang.

### Steel remains steel

The necessary changes are much easier to manage in administration than in production, where the integration of smart IT solutions is often based on the investment cycles imposed by the plant systems. "The focus in the specialist and administrative departments is on boosting the efficiency of business processes. Apps, digital workflows, and smart assistants have long been integrated into the digital infrastructure here," says Lang. One example in this context is the introduction and use of what are known as low-code platforms and citizen development. This approach enables all employees to develop basic applications and bots independently that lighten their daily workload, and thus actively contribute to the digital transformation. "In production, on the other hand, the focus is on stable processes, plant availability, and quality," he emphasizes. "And here, too, a lot has already been achieved in recent years through the consistent implementation of numerous digitalization projects."

What is clear, however, is that the core product, namely steel, will remain a physical factor in the future. And digital technologies nevertheless play an increasingly key role in its manufacture and marketing. Lang: "Steel is a proven high-tech material that thyssenkrupp Steel has been producing for decades, using increasingly optimized, highly automated production methods." Thanks to the continuous advancement of digitization, the company is now able to collect and evaluate millions of items of data in real time along the entire value chain via sensors and actuators across all locations and systems.

### Digitalization makes for enhanced competitiveness

The big-data approach is not an end in itself, but instead contributes directly to transparency. "Today, we offer our customers the possibility to follow every step of their order in a way that has

never been achievable before. The detailed insights give them a clear competitive edge, and enable them to optimize production processes and qualities: with the help of data analytics, for example, material properties can be predicted more precisely and tolerances met with greater accuracy," says Lang.

Moreover, the extensive collections of data accumulated over a period of in some cases 15 years give engineers and data scientists the opportunity to develop and train new AI models in order to leverage further potential in production. "Given the volume of our production, we at thyssenkrupp Steel are talking about an enormous scale, and even small improvements in detail help to achieve a significantly impressive overall effect."

The same applies when it comes to the steel producer having to meet regulatory requirements. For example, in the area of sustainability, where the carbon footprint of products is becoming increasingly important for clients and end users alike. Volker Lang knows: "Anyone who cannot provide transparency in the form of digital data on CO<sub>2</sub> emissions along the value

chain will find themselves at a clear competitive disadvantage in the long term."

With this in mind, the steel producer also participates in creating what are known as data spaces, which allow secure and confidential data exchange between different companies. This is extremely important for a great many branches of industry with production processes that are independent of each other, and geographically separated. One example is the Cate-na-X Automotive Network, a project in which the Fraunhofer Institute for Software and Systems Engineering (ISST) plays a crucial role. Here, the collating data specifically from all participating companies means that automobile manufacturers can, for example, meet the documentation requirements specified by the Supply Chain Due Diligence Act.

### Right place, right time

thyssenkrupp Steel is making a decisive contribution toward achieving such improvements. This is how Professor Boris Otto from the Fraunhofer ISST in Dortmund sees it: "The location in the heart of the Ruhr region provides ideal con-



# Off to the data pool

The pooling of **energy data** is an important initial step toward making the green transformation measurable and transparent to the outside world.

Text Katja Marx

**E**nergy consumption is an example that makes clear the role played by digitalization in the green transformation of Europe's largest integrated steel plant: if material flows are not only recorded in detail but also in full with the help of sensors and meters, it is possible, for example, to calculate the mode of operation for a specific plant that uses resources most efficiently. Or to determine the carbon footprint of the most



ditions for the continued development and marketing of physical products. These activities now need to be gradually supplemented with digital services that increase added value for the customer." Otto continues: "The Ruhr area has always been the industrial heart of Germany, but it is also home to a digital powerhouse: we have various universities within a radius of 50 kilometers, where thousands of students study subjects such as computer science and logistics. This is precisely where those digital services and services that are needed by industry are created." Volker Lang shares a similar view: "We don't need to travel to Silicon Valley or Tel Aviv to see how digitalization works. That is also possible here, seeing as we have a vibrant university environment in this region, and also the right use cases as well." This means that the next step for the CIO is to ensure that the technologies available around the world reach thyssenkrupp Steel and provide tangible benefits across all areas of the company. "Fundamentally, it's about consistently optimizing and improving our company – that's the essence of steelmaking."

## Podcast

The new episode of our "gekocht, gewalzt, veredelt" podcast (Smelted, rolled, refined):  
AI in industry – competitive advantages through digital transformation



Spotify-Podcast



Apple-Podcast



YouTube-Podcast

## Web

More about digitization at thyssenkrupp Steel:  
[www.thyssenkrupp-steel.com/en/digitalisierung/](http://www.thyssenkrupp-steel.com/en/digitalisierung/)

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recently produced coil. Data analyses can also be used to help verify whether implemented climate change mitigation measures actually achieve the expected CO<sub>2</sub> reductions in practice.

"The detailed and transparent evaluation of energy data is gaining in importance, especially from a sustainability perspective," says Mohamed El Haouati, who is responsible for material flow management as member of the digital team at thyssenkrupp Steel. "Because in the future," says Carsten Rokitt, Head of Sustainable Development & ESG, "companies will have to report in more detail, among other things in compliance with European climate legislation, on how they are integrating the path to climate neutrality into their business practices."

### Pooling makes for transparency

Against this background, experts from various areas of the company are working on the pooling of energy-related metrics on one single platform in the future, the objective being to create a central point of contact for climate and energy-related questions and issues.

Anyone familiar with the topic is aware of the mammoth project behind turning the vision into reality. More specifically, a big data application. Mohamed El Haouati: "Energy consumption accumulates in countless places throughout the plants. We have installed around 10,000 meters just to record the energy carriers such as water, electricity or technical gases which are transported within networks." Furthermore, there are also, for example, coal, coke and addi-

tives, the consumed quantities of which are not recorded automatically. The first milestone is thus hit once all data is available on the shared platform, complete, free of errors and in real time. Only then does the exciting phase of processing begin: data models based on algorithms help, for example, to link and evaluate energy data with relevant financial metrics. And they make for transparency, for instance by enabling the traceability of CO<sub>2</sub>-reduced products. "In the medium term, the energy data platform will become a control station for the green transformation," explains Carsten Rokitt.

In the future, the platform could also be expanded to form a central point of contact for issues relating to sustainability. Data on occupational safety or compliance with due diligence obligations in the supply chain would then also be available at the touch of a button.

## Web

Find out more about intelligent networked processes:  
<https://www.thyssenkrupp-steel.com/en/smart-factory/>

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# "Electrical energy is the new gold"

The energy turnaround and the associated transition from fossil fuels to renewable energies are essential to effectively combat climate change. Steel – in particular **powercore®** electrical steel – plays a central role as the **backbone of the energy infrastructure**. How exactly it does so is explained by Georgios Giovanakis, CEO of thyssenkrupp Electrical Steel in an interview with steel<sup>compact</sup>.

Text Jan Ritterbach

## Mr. Giovanakis, what leverage does switching our energy supply to renewable energies offer for the turnaround in climate policy?

Industrial CO<sub>2</sub> emissions are a major cause of climate change and the associated shock headlines that we read almost every day all over the world: torrential rain, floods and heatwaves – and we in Germany are now also directly affected. So if we want to combat climate change effectively, we need to drastically cut global CO<sub>2</sub> emissions from the current level of around 40 billion metric tons per annum. The biggest lever here is to replace fossil fuels such as gas, coal, and oil with renewable energies. Unfortunately, solar parks, wind turbines and hydro-electric power plants are usually built at a great distance from the industrial centers where large amounts of renewable electricity are needed. This is why gigantic investments in new grid infrastructure are required.

## What dimensions are we talking about here?

The International Energy Agency (IEA) has looked into the issue, and its analysis indicates that we will have to expand our power grid from its current 80 million kilometers to at least 160 million kilometers over the next 20 to 30 years. If we want to make the Paris Climate Agreement binding, global investment in the power grid must be tripled from its current level of around 300 billion euros annually. And it is precisely for such investments that the regulatory framework conditions must now be created on the political side – for example with a view to faster approval procedures, the economic viability of green electricity and protecting systemically relevant resources.

## How can steel help to gear up the energy infrastructure for the future?

Steel is a key material for the energy turnaround. For one thing, steel production is responsible for around seven percent of global CO<sub>2</sub> emissions. Consequently, the decarbonization of steel production is one of the biggest and most economical levers for reducing CO<sub>2</sub> emissions. For another, steel is the backbone of the infrastructure for renewable energies.

## What exactly do you mean by that?

From the base and tower of a wind turbine to generators and transformers that feed electricity into the grid – steel is indispensable. Grain-oriented electrical steel (GOES) is particularly important, because it is used in the cores of transformers. Our top grades of the powercore® brand enable the efficient conversion and transportation of electrical energy, and thus make a decisive contribution to the performance and reliability of the entire energy supply.

## What makes electrical steel of the powercore® brand so efficient?

For one thing, it is the excellent magnetic properties that maximize the efficiency of transformers. Our top grades are among the best grades on the global market. With them, it is possible to extract the maximum amount of electricity from the wind turbines, while minimizing losses during transport to the consumer. And we are already developing the #nextgeneration TOP grades. Because electrical energy is the new gold. This is why ever more efficient transformers are required for the necessary grid expansion. We are continuously working on further reducing hysteresis losses and enabling our customers to



## powercore® – key material for the future

Grain-oriented electrical steel is the optimum material for the heart of transformers

Soft magnetic properties form the basis for highly efficient magnetization of the transformer core

A highly complex manufacturing process aligns the crystal axes of the grains in one direction

Thin top grades enable maximum energy efficiency and a smaller transformer size

continue complying with the efficiency requirements for transformers described in the EcoDesign regulation. We also focus on CO<sub>2</sub>-reduced manufacturing in the production of our electrical steel strips, which further strengthens our contribution to sustainability.

### How do you achieve this reduced-emission production?

We have taken several measures and invested in improving our plants and equipment to reduce our carbon footprint. In future, the production of hot metal in Duisburg alone using the direct reduction plant will decrease our carbon footprint by over 40%. We are achieving further improvements at the Gelsenkirchen site by successfully electrifying our gas-powered continuous annealing lines. In addition, there are groundbreaking pioneering projects such as at our sister company thyssenkrupp Hohenlimburg in Hagen, where the site has become the first ever

German industrial plant to be directly connected to a wind farm. This supplies production directly with electricity from renewable energy. And we also benefit from this. We cover around 15% of our electricity requirements with this wind farm.

### What is thyssenkrupp Electrical Steel's long-term vision for a sustainable energy future?

Our idea is to use carbon-neutral production to manufacture grain-oriented electrical steel of the powercore® brand. First and foremost, these are top grades of the next generation – with excellent remagnetization and noise properties. On the one hand, this reduces direct CO<sub>2</sub> emissions and, on the other, contributes to efficient and low-loss electricity distribution.

**Mr. Giovanakis, thank you very much for the interview.**

"Top grades of the powercore® brand enable the efficient conversion and transportation of electrical energy."

Sees steel as a central material in the energy turnaround:  
**Georgios Giovanakis, CEO of thyssenkrupp Electrical Steel**



### Podcast

To the new episode of our podcast "Gekocht, gewalzt, veredelt" (Smelted, rolled, refined):  
Electrical Steel – shaping the energy turnaround together



Spotify-Podcast



Apple-Podcast



YouTube-Podcast

### Web

More about thyssenkrupp Electrical Steel:  
<http://www.thyssenkrupp-steel.com/en/electricalsteel>

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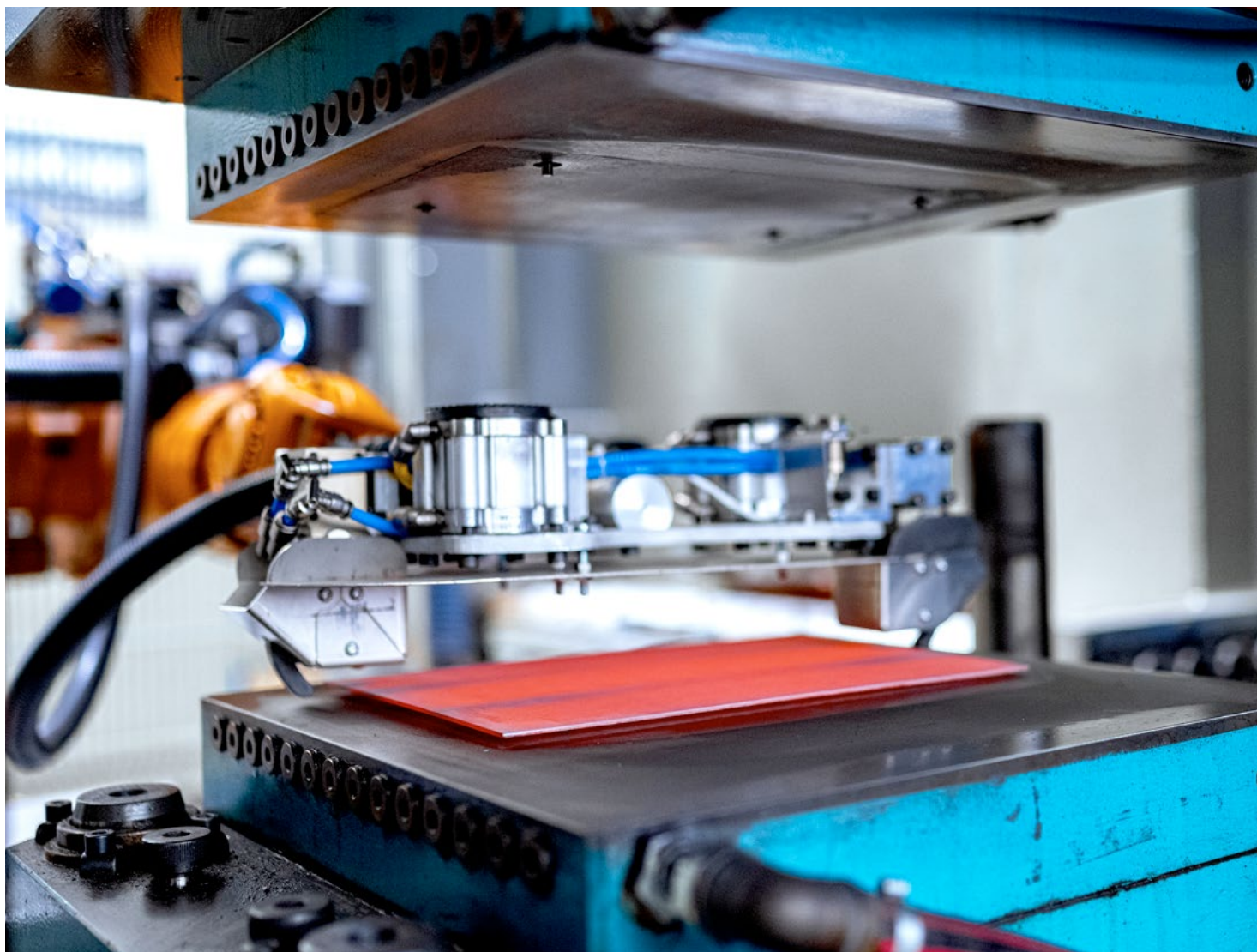
**In great demand:**

# Materials for hot forming



Steel is unmatched when it comes to economical lightweight construction in the automotive industry. Hot forming has played a large part in this success. With innovative materials and comprehensive service packages, thyssenkrupp Steel is supporting its customers in applying this manufacturing process, which makes efficient use of materials.

**Text** Katja Marx



**T**he first patents for hot forming with direct press hardening of steel were registered 50 years ago. The materials treated in this way achieved a high final strength, making them particularly popular in agriculture: expensive tools such as harrows, plows or spades were better protected against wear by using manganese-boron-alloyed steels.

The automotive industry only recognized the potential of the process later. After the hot-formed steels initially had proved themselves on simple components, innovative material and coating concepts expanded the possible areas of application in the bodywork. As a result, the first manufacturers began to produce more complex, safety-relevant components with hot-formed steels in the 2000s. Since then, growing demands in terms of safety and environmental compatibility of motor vehicles have reinforced this trend.

### **Between customer requirements and cost pressure**

"More than ever before, the automotive industry needs materials that combine diverse, sometimes contradictory requirements," says Rüdiger Schorn, Product Manager Hot Forming at thyssenkrupp Steel. "For example, high crash performance

with simultaneous weight reduction, and thus material savings. Or alternatively, an increased use of lightweight materials without significantly increasing costs."

The trend towards intelligent component integration – where several components are joined together before they reach the assembly line – is also boosting production efficiency on the part of original equipment manufacturers (OEMs). To ensure that the individual elements of the vehicle do not lose any of their functionality, it is necessary to address the question of how different requirements can be combined in a single, complex component.

### **Lightweight and safe at the same time**

Manganese-boron hot-forming steels provide a comprehensive answer to these requirements. The material is typically heated to between 880 and 950 °C, formed in a heated state, and then rapidly cooled in a targeted manner. The advantage: the method can be used to produce geometrically complex components with high dimensional accuracy, which have a high final strength and thus a pronounced lightweight construction potential due to the temperature control in the process. At the same time, the high-strength steel grades are particularly suitable for safety-relevant components in vehicles.



Rüdiger Schorn is Product Manager Hot Forming at thyssenkrupp Steel. He sees a continuing trend in the automotive industry towards the use of hot-formed steels.



Being used in the front and rear bumpers, A and B-pillars, side intrusion beams, and various body reinforcements, they ensure that the occupants remain optimally protected in the event of a crash. "The use of hot-formed steels is increasing worldwide in the automotive industry," says Schorn. "Particularly in the newer model series, we can see that the body has a higher proportion of hot-formed components." The Product Manager assumes that electric mobility will further strengthen this trend. This is because the battery must also be well protected in the event of a collision, which in turn places special demands on the design of the surrounding safety structure.

Added to that: with their potential for weight reduction, hot-forming steels help to reduce the vehicle's carbon footprint. Due to its comparatively low CO<sub>2</sub> value, steel has a lower impact on the overall vehicle balance than alternative materials. Additional lightweight steel construction

reduces the amount of material used in the component, while maintaining the same performance. This means less steel is produced from the outset, so that even lower climate-damaging emissions are emitted. This effect can be further enhanced by using CO<sub>2</sub>-reduced bluemint® Steel.

Against this backdrop, thyssenkrupp Steel has steadily expanded its expertise in the field of hot forming over recent years. On the following pages, we provide insights into current developments, product and process innovations, and services relating to hot forming.

At the model lines in Dortmund, thyssenkrupp Steel is simulating the processes used in series production. Good for series production support at the customer.



The steel blanks are automatically gripped on the model lines and placed in the furnace.

## Web

More about hot-forming steels:  
<https://www.thyssenkrupp-steel.com/en/products/sheet-coated-products/manganese-boron-steel-for-hot-forming/>

## Kontakt

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# New application perspectives for MBW® steels

The materials specialists at thyssenkrupp Steel are meeting increasing demands in automotive engineering by developing ultra-high-strength materials with differentiated property profiles.



Dr. Cássia Castro Müller (left) and Anastasia Schüssler opened up the innovation process at an early stage, involving customers in order to compare and evaluate technological options for the new material at an early stage.

# M

## BW® 1900 AS Pro: Exploiting lightweight construction potential

MBW® 1900 is at its best when maximum deformation resistance is required in the event of a crash. Boron-alloyed quenched and tempered steel is one of the materials with the highest strength levels currently available. However, the desired property in combination with a standard aluminum-silicon coating also poses specific challenges in the forming process. For this reason, the high-performing product, while ready for series production, was for a long time only available in an uncoated version – limiting its possible uses in motor vehicles. That changed in summer 2020: for the first time, a development team at thyssenkrupp Steel succeeded in modifying the coating concept previously used in such a way as to meet a more specialized requirement profile of the automotive industry as well.

"The task was clearly formulated," recalls project manager Dr. Cássia Castro Müller: "Firstly, we needed to prevent increased hydrogen absorption during the forming process, in order to protect the material from embrittlement. And secondly, we had to ensure that the coated variant did not impair either the forming behavior or the further processing of the material."

### Reliable protection against embrittlement

The breakthrough came with AS Pro, a further development of the aluminum-silicon coating used for MBW® steels in the lower strength classes. With AS Pro, a small amount of magnesium is added to the molten metal bath. This has the effect that significantly less hydrogen is formed during the annealing process. Hydrogen can penetrate the material and increase the susceptibility to cracking due to its mobility in the material. "This was very good news for our customers, because it meant that the additional energy and time-consuming measures were no longer necessary in the process," says Cássia Castro Müller.

Other welcome features were revealed during the extensive test and analysis phase. This is because AS Pro not only proved to be a protective shield, but also an enabler for further material and weight savings. Anastasia Schüssler, who took over the commercial management of the project: "Thanks to the novel surface coating, MBW® 1900 AS Pro can now be used in various innovative material and process concepts, for example in tailored blanks or in partial press hardening processes, where we define areas with different strengths in advance. In this way, we achieve further significant weight savings compared to our standard lightweight construction material, MBW® 1500."





## Ready for series production

Perhaps the most important argument in favor of MBW® 1900 AS Pro: the concept for increased crash safety can be processed in existing series production lines without any modifications. To ensure this, thyssenkrupp Steel opened up the innovation process to the outside world at an early stage, involving customers and plant manufacturers, for example. Cássia Castro Müller: "This allowed us to compare and evaluate technological options for the new material at a very early stage." And that paid off: "With the current solution, we can meet many previously incompatible requirements of the automotive industry in the ultra-high-strength range," observes the project manager, summing up.

## Web

More about MBW® AS Pro:  
[www.thyssenkrupp-steel.com/en/as-pro/](http://www.thyssenkrupp-steel.com/en/as-pro/)

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## MBW® 1200 + AS: Performance during forming is available with immediate effect

It is a conflict of objectives: the higher the final strength of a manganese-boron steel, the lower its ductility. The following customer example shows how important it is to design the material concept optimally for the respective application. The focus is on the ID. Buzz from Volkswagen, the all-electric successor to the popular "Bulli" transporter. "Volkswagen had actually already decided on a material concept together with our customer, the component supplier Snop," says Sebastian Mieberg, sales engineer at thyssenkrupp Steel. "However, crash simulations showed that the standard hot-formed steel originally planned for the longitudinal member covering part was too hard, and therefore too susceptible to cracking."

## Greater ductility required

It was therefore up to Snop to find an alternative without changing the manufacturing process. Among other things, this would have been costly and time-consuming due to the complex adapta-

## Materials for hot forming

**MBW® 1500:** Standard hot forming quality, offers high resistance to deformation, ideally suited for safety-relevant components of the passenger compartment

**MBW® 1200:** Meets higher ductility requirements compared to MBW® 1500, offers impressive spot weld performance in the event of a crash, in combination with MBW® 1900, it is optimally suited for customized manufacturing processes, such as Tailor Welded Blanks (TWB)

**MBW® 1900:** Maximum potential for weight savings by increasing strength to up to 2000 MPa after hot forming, maximum deformation resistance in the event of a crash, ideally suited for bumpers, side intrusion beams or in laterally loaded cross members

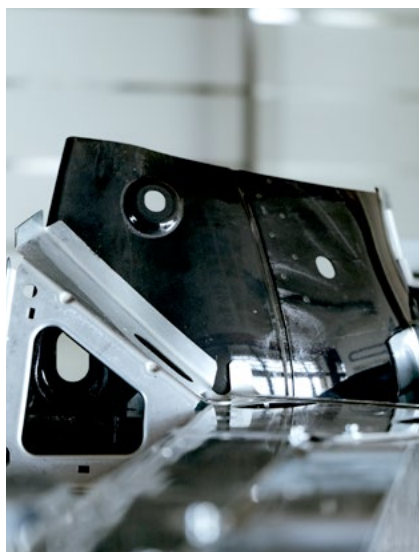
**Good to know:**  
All materials are available in the **CO<sub>2</sub>-reduced variant bluemint® Steel**.

tions to the tooling. The supplier therefore decided to enter the race with a new material for hot forming that could be used in the stamping shop with existing tooling. The choice fell on MBW® 1200 from thyssenkrupp Steel, and thus on a steel grade that has a higher bending angle compared to the standard. This makes it better suited to absorbing energy in the event of a crash.

Based on material cards, the partners carried out all the necessary digital simulations within a very short time. The result was positive: the material not only met the desired requirement profile in virtual tests, but was also able to prove its qualities on the test bench only a short time later. As a result, MBW® 1200 was approved for series production in the VW ID. Buzz, and has since been used as a longitudinal member covering part in the body of the popular family vehicle.

## Fast-paced partnership

The fact that Snop was honored with the VW Supplier Award following the project clearly indicates the value of cross-company cooperation. "We were only able to achieve this flexibility and speed of action through close coordination with our materials partner thyssenkrupp Steel," summarizes Jan Selbach, Senior Director Purchasing at Snop. In fact, it took less than six months from the start of the project until the release of the MBW® 1200 grade for series production in the ID. Buzz. Normally, the test and analysis phase takes about twice as long.



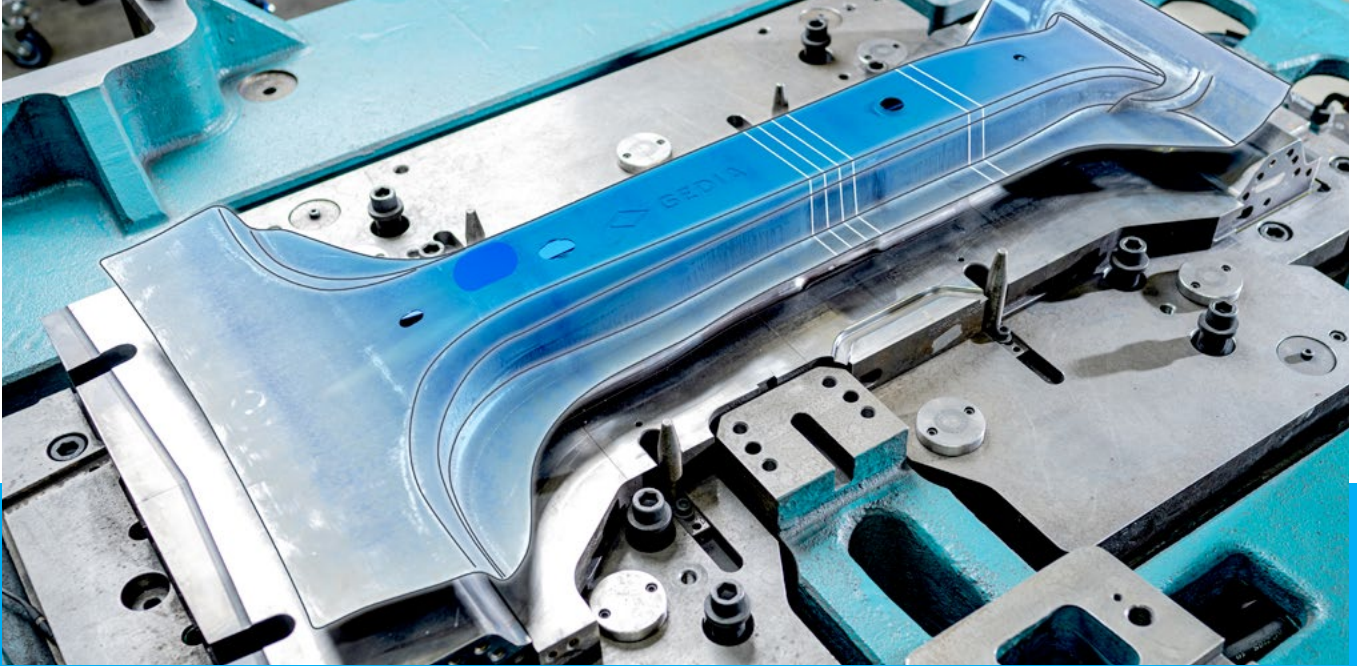
**Successful cooperation: Snop's longitudinal member covering part won the VW Supplier Award.**

## Web

More about the MBW® portfolio:  
<https://www.thyssenkrupp-steel.com/en/products/mbw/>

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## Part II: Analytics focus

# Ready for virtual planning processes

The software provider, AutoForm, is now providing comprehensive material cards for using MBW® 1200 + AS and MBW® 1900 AS Pro coated steels in hot forming.



**M**ethod planners can draw on a wide range of digital tools when developing and designing forming processes for smooth component production. In particular, this includes simulation programs for detailed representation of the forming tools and their kinematics, as well as the material behavior in hot forming: from heating and machining to the cooling process. The subsequent performance properties of the steel used can also be calculated in advance using appropriate simulation programs, and a corresponding material description. The data on which this virtual process design is based comes from the material cards – digital profiles that describe the properties of a material in detail.

"Only if method planners have suitable forming material cards can they design a suitable forming process at an early stage of development, one that guarantees a component can be manufactured, while at the same ensuring that the requirements for the final component properties are met," observes Dr. Stéphane Graff from the Forming Technology team at thyssenkrupp Steel, summing up the situation. However, a

recent search in the database of AutoForm, the leading provider of simulation software for sheet metal forming and body-in-white, revealed a significant gap: more than 1000 material cards for use in cold forming processes were stored there, but there was only one for hot forming. "We wanted to change that," says Dr. Alper Güner, Team Leader Technical Product Management at AutoForm. "Firstly, to respond to the growing importance of this process in the automotive industry. And secondly, to validate the MBW® 1200 + AS and MBW® 1900 AS Pro coated steel grades for use in hot-formed components."

### Hardness levels on the test bench

As a result, thyssenkrupp Steel launched a pioneering joint project in March 2023. The other project members are GEDIA Automotive Group, supplier and specialist for lightweight body construction, and AutoForm. "Our cooperation was focused on hardness predictions for press hardening, which were also validated for the tailored tempering process we developed and for the Temper-Box® tempering process used at GEDIA," says Melanie Dinter, sales engineer responsible for product management and launches at thyssenkrupp Steel.



"The patented technology makes it possible to produce components with precisely defined zones of varying strength or ductility in the hot forming tool."

It took around twelve months for the project team to complete its extensive data collection and preparation, the validation tests at laboratory scale and under series production conditions, as well as the corresponding simulation work. Dinter: "Thanks to open discussions and short information pathways, we have been able to react flexibly in this project, and quickly achieve our common goals. It worked, and was enjoyable because our companies have enjoyed a positive working relationship in a spirit of partnership for years."

forming material cards provide reliable results for all press hardening processes, and thus allow design reliability.

For project partner GEDIA, the result really makes work easier. "The better we can assess in advance what works and what doesn't when designing a component, the more accurately we can achieve the desired result. This certainty is also important for establishing innovative materials on the market," says Maik Winderlich, hot forming expert at GEDIA.

**In a joint project, Melanie Dinter and Dr. Stéphane Graff (center) from thyssenkrupp Steel, together with Maik Winderlich from GEDIA and experts from AutoForm, have developed material cards for hot forming.**

## Application technology services

Simulation-based material selection for process design and component use

Validation of all process steps in our own hot forming laboratory close to series production, validation and evaluation of joining technology for suitability for coating

Accompaniment of processing from prototyping to series production

Workshops and seminars on the hot forming portfolio, influencing variables of the hot forming process and material testing (mechanical properties, material structure and effect of hydrogen in the material)



## Reliable properties

The meticulous work has paid off: in all cases examined, the hardness values predicted by the simulations matched the values measured in the real tests. Consequently, it is now certain that both materials can be used in standard press hardening processes, as well as in partial press hardening processes in which selected component areas have lower hardness levels. It has also been shown that the jointly developed

## Web

More about innovations in steel material:  
<https://www.thyssenkrupp-steel.com/en/model-and-simulation-facility/>

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# Shaped blanks from a single source

thyssenkrupp Steel is responding to the dynamic developments in hot forming with smart collaborations. The most recent example is the close cooperation with the steel processor Knauf Interfer Automotive Blanks.



**T**he collaboration between thyssenkrupp Steel and Knauf Interfer is a classic win-win situation: both companies possess specific expertise in the field of hot forming, but it is only when the partners work together that a customized full-service package for the automotive industry is created. "Together, we can provide our customers with shaped blanks, i.e. individually tailored steel parts, from a single source," says Hasan Usta, thyssenkrupp Steel key account manager in the Automotive Sales division. "In this way, we can reduce our customers' procurement costs while continuing to meet all the requirements of series production."

The search for a partner who could cut sheet steel flexibly and reliably lead to Knauf Interfer's door. "We have invested in a new line on which we can produce shaped blanks," explains Thomas Gramann, Plant Manager Presses/Blanking at Knauf Interfer Automotive Blanks. "As a result, we have significantly expanded our expertise in the field of hot forming, which has been very well received in the market." Both the geographical proximity – the main buildings of the two Duisburg-based companies are less than ten kilometers apart – and the long-standing business relationship were reasons to expand the collaboration between thyssenkrupp Steel and Knauf Interfer.

**Together, thyssenkrupp Steel and Knauf Interfer offer shaped blanks, i.e. individually tailored steel parts.**

## From the idea to the business model

Success was not long in coming: the partners landed their first major joint order in 2023. The total annual volume already amounts to almost one million components; the customer is the component supplier, Snop. While thyssenkrupp Steel is the contractual partner and handles all of the order processing, Knauf Interfer is responsible for the production and logistics of the shaped blanks: The A-pillars and side wall reinforcements that have been ordered are produced in Duisburg using customer-specific tooling, and delivered just-in-time to the Snop plant in Malacky, Slovakia, where the automotive supplier manufactures components for the new model series of its customer, Volkswagen.

"Our customers are highly appreciative of the fact that we are using the current push on the market to enable automotive manufacturers to order their desired materials from us as shaped blanks," says Hasan Usta. The excellent cooperation with Knauf Interfer played a decisive role in this: "The model also works so well for us since our cooperation partner is very familiar with the processes in the automotive industry, and because we are on the same wavelength when it comes to customer service." Is the project-related cooperation between material supplier, Steel Service Center and automotive supplier a model with a future? "In any case," says Domenico Marino, COO of Knauf Interfer. "We are pooling expertise





## Shaped blanks: services at a glance

Advice on material selection

Implementation of all necessary test processes

Manufacture of customer-specific tooling for processing

Manufacture of shaped blanks

Logistical handling (just-in-time, Europe-wide, container management)

and creating new networks together with our partners. By rethinking the supply chain, and thus simplifying the sometimes highly complex processes for automotive manufacturers, we are ensuring the long-term success of all companies involved." And the partners themselves also believe in the success of the model: our order books already contain future purchase orders for more shaped blanks.

### Web

More about cooperation in the steel industry:  
<https://www.thyssenkrupp-steel.com/en/cooperations/>

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Shaped blanks await delivery to the customer at Knauf Interfer.



# 3

## questions to ...

### Janko Banik

Project Coordinator Hot Forming  
thyssenkrupp Steel



#### Will the trend towards hot forming continue?

Definitely. Hot forming has made a significant contribution to breaking the weight spiral in automotive construction. Thanks to their high strength, hot-formed steels reduce material requirements and save valuable resources. At the same time, they meet increased requirements in terms of occupant safety. All of this suggests that hot-forming steels will continue to establish themselves on the market.

#### How is thyssenkrupp Steel dealing with these developments?

We have continuously expanded our expertise in hot forming, and we now offer our customers a comprehensive portfolio of materials and services. For example, we can simulate the processes used in series production on our model lines in Dortmund. This means we can provide our customers with optimum support during development and series production. Partnerships with suppliers such as equipment builders and component suppliers also help us to fulfill complex requirement profiles in the best possible way, all while providing customers with targeted support for the green transformation, for example.

#### Are further product innovations to be expected?

Control of the process makes it possible to increase the strength and ductility of hot-forming steels further. Overall, the steel development process is far from exhausted. Research is much more networked, so that data and new findings are available faster. This favors innovations, as does the fact that external requirements can change very quickly. As a result, we will certainly bring quite a few more innovations to the market in the steel sector, some of which we cannot even foresee today.

### Web

More about hot-forming steels:  
<https://www.thyssenkrupp-steel.com/en/products/sheet-coated-products/manganese-boron-steel-for-hot-forming/>

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# Realignment of the NO electrical steel business

A **new management team** has taken the helm of the Non-Grain-Oriented Electrical Steel (NO) business sector. The personnel shake-up is being accompanied by **investments** in the production network, and represents an important new departure that will enable the company to respond with even greater agility to customer requirements in a dynamic market.

**Text** Jan Ritterbach



**N**on-grain-oriented electrical steel strip (NO) has been produced at thyssenkrupp Steel for almost 70 years: from 1955 to the present day, the steel manufacturer has established itself as one of the leading producers of this highly efficient, high-performance material with continuous research and development. Customers such as stamping shops and electric motor developers, home appliance manufacturers, and energy companies in particular already rely on thyssenkrupp Steel's powercore® brand of NO electrical steel. Another customer group is now being added as part of the mobility revolution: the automotive industry.

### Proven product in a new application

NO electrical steel is indispensable for building motors due to its special magnetic properties, and demand for this steel is increasing worldwide with the advance of electric mobility. thyssenkrupp Steel meets the special requirements of the automotive industry – such as high mechanical strength and low core losses for higher energy efficiency – with its powercore® Traction grades. "By producing our material in the heart of Europe, we are strengthening the resilience of the value chain, while at the same time benefiting from the opportunity to grow in a supply-critical market. After all, no automotive manufacturer can afford to rely on insecure supply chains," says Anja Brüggemann, who has headed the NO business sector since July 1, 2024.

In her new role, Brüggemann will be working closely with Lars Bode, who is following in the footsteps of the long-serving Sales Director, Volker Kamen. Kamen comes from a family of steelworkers: not only did his grandfather's and father's generations work for thyssenkrupp Steel, but he and his daughter also work there. He is now due to retire at the end of 2024. Bode and Kamen are tightly coordinating their work to ensure that his expertise can be passed on smoothly to the next generation: "For one thing, we ensure that personal relationships with our existing customers are maintained in a spirit of trust, and that the exchange is further intensified. After all, they are the backbone of our business. For another, electric mobility is about seizing new opportunities and meeting the challenges of a dynamic market. We have now introduced the necessary changes to achieve this," says Bode.

### An agile team for a dynamic market

The combination of new management and the experienced NO Sales team will create a compact and powerful business unit that understands the specific needs of both established customers and new customer groups. Anja Brüggemann is the former Key Account Manager for the VW Group, and Lars Bode was previously Key Account Manager for the customers Ford and BMW. This means both of them possess extensive automotive experience, which also contributes to this understanding. "The automotive manufacturers among our customers often have a different organizational structure to the privately managed SMEs from the industrial and energy sectors that we work with at NO," explains Brüggemann. "With our new personnel structure, we are sending a strong signal to the market that we are equally well positioned for all future challenges in the industrial and automotive sectors," continues Brüggemann.

One of the biggest challenges remains the volatile market environment of NO. There is strong pressure to innovate, particularly in the automotive sector. thyssenkrupp Steel must be able to respond to this promptly: "The rapid pace of development in electric mobility means that the general conditions are also changing rapidly. We've got to be agile enough to keep up with this pace," explains Lars Bode.

### Customer service at NO more agile than ever

To ensure that flexible customer requirements can always be met as effectively as possible, thyssenkrupp Steel has combined its development and consulting expertise for NO electrical steel and firmly integrated all important functions under the overall management of Anja Brüggemann: Sales, customer consulting, and research and development are all available from a single source. In addition, the flexible organizational structure guarantees an agile planning landscape – which also includes variable quantity planning – as well as market-driven research and development work, ensuring that the NO business sector is geared up to the customer as far as possible. Brüggemann: "We are building a highly functional team in which one cog meshes with another. Not only with regard to product development, technical and sales marketing, but also all other aspects: Innovation, production, quality – everything dovetails optimally so that we can participate in the valuable future market for non-grain-oriented electrical steel."

### New AIL for innovations

The new annealing and insulating line (AIL) enables thyssenkrupp Steel to produce innovative high-performance materials and coating variants of the highest quality for mass production. One example of this is stabosol®, the highly reactive adhesive and insulating varnish. It is ideal for joining innovative electrical steel to form rotor and stator stacks – the core assemblies of an electric motor. In contrast to other processes commonly used in mass production, stabosol® avoids adverse effects such as material damage, while increasing thermal stability and impermeability. As a result, innovative electric motors can be built with significantly higher efficiency and power density. Another example is the new top grade for electric mobility, powercore® Traction NGO 020-120Y420. At 0.20 mm, it is extremely thin, and is about to go into series production. The material was developed for ultra-efficient automotive electric drives and offers the lowest hysteresis losses of 12 watts per kilogram, with a mechanical strength of 420 megapascals. This makes thyssenkrupp Steel the European leader for production of this top grade for mass production.

### Customers benefit from investments in production network

thyssenkrupp Steel is accompanying the structural changes within the NO business unit with investments aimed at strengthening product quality and production capacity for non-grain-oriented electrical steel. thyssenkrupp Steel is thus setting the course for manufacturing new, sophisticated products for lightweight automotive body and chassis elements. To this end, the steel manufacturer is currently building new facilities in one of its Bochum plants, which will turn the site into a center of excellence for electric mobility in the future.

In various finishing steps, the new units give electrical steel the final properties it requires and represent the final links in a highly complex production chain which thyssenkrupp Steel is implementing entirely under its own steam with its iron and steel plant. For example, the double

reversing stand (DRS) was already taken into operation in 2023, and will be used for new dimensions of thin and high-strength grades for NO. "Specifically, the new system can produce non-grain-oriented electrical steel strip with very good flatness and extremely tight thickness tolerances between 0.35 and 0.20 mm. The double reversing stand is also used to produce high-strength multiphase steels," explains Andy Rohe, Senior Vice President Downstream Operations.

### New facilities support corporate strategy

A central element of the investments at the Bochum site is the construction of a modern and energy-efficient annealing and insulation line (AIL) with rapid heating. The line, with a price tag of around 300 million euros, complements the existing units which are relatively long in the tooth, and supplies innovative technology for new electric mobility grades with the highest







One of the two core units at thyssenkrupp Steel's new center of excellence for electric mobility in Bochum: the new Annealing and Insulation Line (AIL).

demands on magnetic and mechanical properties. Andy Rohe: "The AIL is thus contributing to thyssenkrupp Steel's strategy of focusing even more strongly on the demand for thinner, high-silicon and high-strength NO products in the future." Customers will also benefit from the line's resource-saving processes as well as its high degree of automation and digitalization.

With the construction of the new facilities at the Bochum plant, thyssenkrupp Steel is once again proving itself to be an important supplier to the automotive industry. Simon Stephan, Senior Vice President Sales Automotive at thyssenkrupp Steel: "Like no other supplier, we combine experience in lightweight construction with decades of expertise in electrical steel. That

is why we are the ideal partner for advancing economical lightweight construction concepts and the electrification of new vehicles. In addition, by modernizing our production network, we are not only ensuring thyssenkrupp Steel's ability to deliver, but also strengthening the resilience of the local value chain. Because one thing is clear: without our locally produced non-grain-oriented and, of course, grain-oriented electrical steel, there can be no mobility revolution and energy turnaround in Europe."

## Web

More information about NO electrical steel:  
<https://www.thyssenkrupp-steel.com/en/products/electrical-steel/electrical-steel-non-grain-oriented/electrical-steel-non-grain-oriented.html>

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Continuing to drive forward the modernization of the production network and the powercore® brand of thyssenkrupp Steel in the field of electrical steel: Andy Rohe (left) and Simon Stephan.

# "Tinplate is ahead in terms of sustainability and recycling"

**Clarissa Odewald** has been at the helm of thyssenkrupp Rasselstein, one of Europe's largest packaging steel manufacturers, since July 2024. In an **interview** with steel<sup>compact</sup>, the CEO, who previously headed up the company's Overseas Sales unit for three years, takes stock and talks about upcoming opportunities and challenges.

**Text** Jan Ritterbach



**Ms. Odewald, when you look back on your first 100 days as CEO of thyssenkrupp Rasselstein: How do you feel in your new role, and what are the first things you have learned so far?**

The first weeks and months were extremely intensive, and characterized by many worthwhile discussions. Among other things, I visited the early, day and night shifts in production to

introduce myself personally and seek direct contact with my colleagues. I did the same with the employees from the various administrative departments. The result was a very open and honest dialog about the things that are going well for us – while not forgetting areas where we can still improve, of course. In addition, we are facing challenging processes of change in the green transformation and digitalization. We



must now set the right course for this. For example, by automating processes within the supply chain and production that are still being carried out manually today.

**A change of generations is underway at the top of the company, now that you have succeeded Dr. Peter Biele. Will customers and the workforce notice changes in how they work together with you as CEO?**

Of course, everyone is unique and has their own individual style. However, I am sure that not much will change here. Just like Peter Biele, I stand for ongoing cooperation with our customers in a spirit of trust and partnership; this is the foundation of our joint success. With regard to our workforce, I believe it is very important for me to be visible, approachable and accessible to all colleagues in our day-to-day business.

**That sounds very direct and straightforward. Why is this so important?**

My wish is that, as an international packaging steel manufacturer, we should act not only with foresight and prudence but also with agility and dynamism, when external circumstances make this necessary. This is crucial in view of the volatile markets in which we operate. That is why my door is always open to anyone with good suggestions, and I encourage everyone to develop ideas under their own steam, which we can then boldly implement together in short decision-making processes.

**To what extent does the experience from your previous activities in Purchasing and Sales benefit Rasselstein's international business?**

I was in charge of overseas sales at Rasselstein for three years before taking on my new role, and I spent more than a decade dealing with the international procurement of iron ore and coking coal, overseas logistics and sales management at thyssenkrupp Steel. This experience is extremely useful, because it has given me a broad knowledge of the supply chain, simply because many customers already know me well. I also benefit from having worked on the international stage, because our business has also become much more global. Sometimes, it comes down to important details: for example, which country-specific norms need to be observed when addressing the customer. Cooperating with American and Asian companies are two very different kettles of fish. It is extremely important to adapt to different cultures in order to be successful.

**Your own corporate culture also seems to be a success factor for you. What do you think about the special spirit in Andernach?**

We do indeed have a unique corporate culture at thyssenkrupp Rasselstein, and I have felt this

since the first day I joined the company. The cohesion within the workforce – also between production and administration – and the strength of identification with the company are particularly remarkable. That is something we are all very proud of. After all, it is no mere chance that we have colleagues whose parents and grandparents have already worked with us.

**Is this special identification a factor that is also reflected in performance?**

Absolutely. My colleagues are passionate about our products, and are prepared to go the extra mile for our customers. It is great to see this, and it is exactly the spirit we intend to maintain in order to attract and develop new, young employees in the future.

**Since you allude to the workforce's enthusiasm for the company's products: in your opinion, what are the greatest strengths of thyssenkrupp Rasselstein's product and service portfolio?**

For one thing, tinplate is a highly innovative product that is ahead of other packaging materials in terms of sustainability and recyclability. In addition, we offer a comprehensive service that many of our competitors do not provide: for example, we go directly to our customers' facilities and endeavor to develop individual solutions together on site. For example, when it comes to making cans even thinner. Or with regard to reducing Scope 3 emissions through the use of CO<sub>2</sub>-reduced bluemint® Steel. Our Technical Customer Service works closely with the Sales department to ensure seamless support from a single source at all times.

**Ms. Odewald, thank you very much for the interview.**

**Web**

More about thyssenkrupp Rasselstein:  
[www.thyssenkrupp-steel.com/en/packaging-steel/](http://www.thyssenkrupp-steel.com/en/packaging-steel/)

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Looking optimistically  
into the future  
of thyssenkrupp  
Rasselstein: the new  
CEO Clarissa Odewald.





# Hero has got it covered – with tin plate from Rasselstein

The Spanish company Bemasa uses recyclable tin plate from thyssenkrupp Rasselstein to produce twist-off **jam jar lids** for international food retail brands such as Hero. For the first time, **CO<sub>2</sub>-reduced bluemint® Steel** is also being used, bringing even more sustainability to the breakfast table.

**Text** Jan Ritterbach

There's a lid for every pot" – figuratively speaking, hardly anyone knows this better than Bemasa. For around 35 years, the innovative SME from Murcia in south-eastern Spain has specialized in the production of twist-off lids for jars, which it supplies to food manufacturers in the European market. The recyclable input stock required for production must be easy to form, with a surface that is

resistant to corrosion and easily paintable. This is how tin plate from thyssenkrupp Rasselstein came into play. Bemasa has been sourcing its volumes from Andernach since 2005. The material is currently used for twist-off jam jar lids, which the lid specialist produces for the popular European brand Hero, among others.

## **Tin plate delivers many advantages**

When it comes to capping jam jars, the material





"made by Rasselstein" offers several advantages that are of great importance to both the manufacturer and the end consumer. "When you open a jam jar, you expect the typical 'popping' sound," explains Miguel Valdivia, Head of Sales Overseas at thyssenkrupp Rasselstein. The consistent quality of tin plate is one of the reasons why the opening of Hero jars is always accompanied by this acoustic seal of approval: this is the only way it can be processed smoothly in the presses. Another important reason is the reliable and punctual delivery of even large quantities of tin plate. The packaging steel specialist supplies several tens of thousands of metric tons to Spain every year.

### **Corrosion-resistant and climate-friendly**

Another argument in favor of tin plate from Andernach is that its surface is resistant to corrosion and easy to paint. After all, Bemasa has to paint and print the lids for its international customers in the food industry in line with the strictest specifications. Miguel Valdivia: "The lithography for a product like this is a fine art. It requires not only specialized machinery and experts trained over several years, but also a surface that can serve as a suitably reliable and consistent substrate." Tin plate from thyssenkrupp Rasselstein combines these excellent properties

with another advantage that will become increasingly important over coming years. At the end of 2023, Bemasa worked with CO<sub>2</sub>-reduced bluemint® Steel for the first time to produce Hero twist-off closures. CO<sub>2</sub>-reduced steel is increasingly coming into focus in the food industry because it can be used to significantly reduce Scope 3 emissions along the value chain. Miguel Valdivia: "With bluemint® Steel, we are offering our customers and clients an even more sustainable alternative with which they can develop packaging concepts with scope for future modifications, as well as cutting CO<sub>2</sub> emissions and protecting the climate. The collaboration with Bemasa is a perfect example of this, and will hopefully be followed by many more."

### **Web**

More about the rasselstein® packaging steel:  
<https://www.thyssenkrupp-steel.com/en/packaging-steel/>

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