The customer magazine of ThyssenKrupp Steel Europe

compact

www.thyssenkrupp-steel-europe.com

1/2012

Engine of the German economy

The future begins with steel

Electrical strip in India

Demand rising constantly

ThyssenKrupp Rasselstein

Management system saves energy

ThyssenKrupp Steel Europe
Thinking the future of steel

ThyssenKrupp

compact

Issue 39 – 1/2012

Front cover:
Climate protection begins with steel. Increasingly, wind turbines are trapping the power of the air and turning it into electricity. Without steel, these giants on land and the high seas would be inconceivable. ThyssenKrupp Steel Europe has long been supplying this high-performance material for them, with other group companies supplying key components. Wind farms are just one example of how the future starts with steel. For more details, read our cover story on p. 6 onwards.

ThyssenKrupp Steel Europe AG
Kaiser-Wilhelm-Strasse 100, 47166 Duisburg
Postal address: 47161 Duisburg
Tel. +49 203 52-0, fax: +49 203 52-25102

Editorial team:
Rolf-J. Neumann (legally responsible)
Strategic Marketing/Support
Tel.: +49 203 52-41003
Fax: +49 203 52-41007
eMail: rolf-juergen.neumann@thyssenkrupp.com

Christiane Hoch-Baumann (editor in chief)
ThyssenKrupp Business Services GmbH,
Communication Services
Tel.: +49 201 844-524515
Fax: +49 201 845-6524515
eMail: christiane.hoch-baumann@thyssenkrupp.com

Photos:
ThyssenKrupp Steel Europe Photography
p. 6–7 Scholz & Friends Agenda, Berlin
p. 8 Steel Federation
p. 18–19 Dr. Bettina Wiess
p. 19 (second from right) ThyssenKrupp Electrical Steel
p. 19 (third from right) Shutterstock
p. 20 (top left) TU Freiberg, (bottom left) Plainpicture, (right) TUD/Eckold
p. 22 Getty Images
p. 23 Panthermedia
p. 32–33 ThyssenKrupp Rasselstein
p. 34 (r.) Jan Bitter

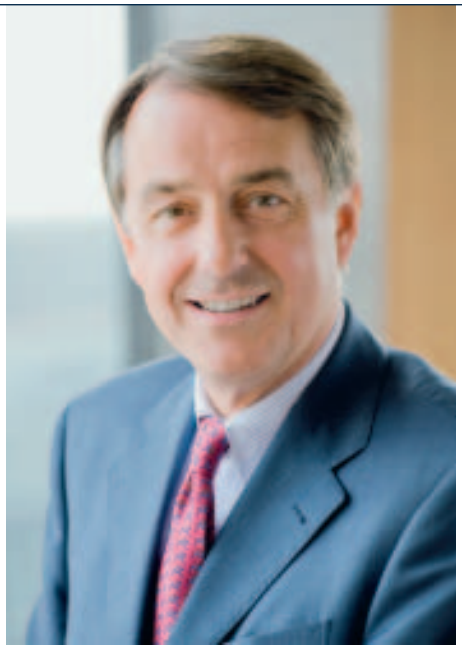
Design:
MERZ Werbeagentur, Düsseldorf

Print:
ThyssenKrupp Printmedia GmbH, Duisburg

Publication frequency:
The next issue will appear in summer 2012

Issue 39:
1/2012 – April

info.steel-europe@thyssenkrupp.com
www.thyssenkrupp-steel-europe.com



"We have no doubts that steel is and will remain base material number one."

Dear Readers, dear Customers,

Since the beginning of the year there have been growing signs that the steel industry is back in calmer waters, with crude steel production slowly increasing and demand remaining robust. One of the driving factors behind the positive trend seen in recent weeks is the inventory cycle. Inventory volumes had previously dropped to a very low level at year-end 2011, but the steel sector's key customers are now replenishing their stocks since they anticipate growing business in spite of a weakened overall economy. Germany's automobile industry, for example, is reckoning with a 2-percent rise in output, the steel and metalworking sector with 4 percent, and the construction industry with 1.5 percent. Though downwardly adjusting its forecast for 2012, the machine and plant engineering sector is nevertheless maintaining a high production output. The growth in production in 2010 and 2011 alone made for an aggregate 22 percent.

The signals reaching us from overseas are increasingly positive too. The US market is in upward mode, in turn boosting the ramp-up curve at our plants in Alabama and Brazil. That said, the weak state of the economies in the eurozone's southern member states is generating cause for concern – as is the situation on the raw material supply front where there has been no relaxation in cost, with the prices of iron ore today more than treble the average level in steel boom year 2007.

Nevertheless, we have no doubts that steel is and will remain the base material number one for our industry. The value chain in Germany is extremely closely knit, and intensive cooperation and geographical proximity between steel producers and processing companies is certainly the rule rather than the exception. Steel is absolutely indispensable for the key national sectors of industry, and thus engine of the German economy, innovation driver and driving force towards the sustainable conservation of resources. Any threat to the steel sector via energy and climate-related regulations imposed from beyond the industry automatically puts all the other links in the chain at risk. This issue's lead story provides a detailed insight into this sensitive interdependency, and makes it clear that steel producers and steel processing companies are often system partners and – among other things in terms of the topical subjects of mobility, climate protection and energy supply – are in the same boat.

And that applies throughout the world: read how our subsidiary ThyssenKrupp Electrical Steel has already become one of the leading producers of cold-rolled steel strip in India – a base material in the building up of the modern infrastructure there.

In this issue we also report on Saudi Arabia and the demand there for our know-how; special acid gas resistant steels produced by our Heavy Plate BU help ensure safe, environmentally friendly production of natural gas.

These and many further and future successes on the part of ThyssenKrupp Steel Europe would and will not be possible without qualified young engineering talent, among other things. In this issue we tell you how we are counteracting the imminent demographic gap and already attracting talented young people still at university by offering them internships and a lot of other support.

The future – and thus first and foremost growth, innovation and climate protection – begins with steel: in Germany, Europe and throughout the world. We, as steel corporation, have no doubts about that: now let this issue of compact convince you too. I wish you an interesting and entertaining read.

Kind regards

Dr. Jost A. Massenberg
Executive Board Member Sales
ThyssenKrupp Steel Europe

ReflectionsPearl®
Facades accentuated by play of colors

Good, better, ReflectionsPearl – the new coil coating from ThyssenKrupp Steel Europe attracted major interest at DEUBAU 2012 in Essen in mid January. ReflectionsPearl® is the first collection of its kind for steel and offers a unique appearance: The combination of special-effect paints and light surface texturing produces an elegant look that varies depending on light and viewing angle to create a lively, changing play of colors. 16 exclusive coordinated tones are available in six technically and visually harmonious color scales, offering architects and clients maximum freedom when it comes to designing facades.

To maintain an attractive appearance and effective protection even after years of use, the Color/Construction business unit of ThyssenKrupp Steel Europe relies on a special combination of substrate and coating system. The polyvinylidene fluoride (PVDF)-based coil coating paints with their premium pigments are a match for any weather, while the hot-dip coated ZM EcoProtect® sheet with a 160 gram per square meter zinc-magnesium coating guarantees extremely high corrosion resistance. The newly developed ReflectionsPearl® is designed above all to bring facades of high-grade multi-story buildings alive. The first reference products are already in progress.

Photo: Rainer Kaysers

Contact: **Axel Pohl,** Color/Construction business unit, tel. +49 2732 599-4578, eMail: axel.pohl@thyssenkrupp.com

The future begins with steel
Engine of the German economy

Growth, innovation and climate protection begin with steel – those are the headlines of a new image campaign with which the German Steel Federation is promoting the competitiveness of the material. "The importance of the role played by the steel industry in terms of value creation and the successful German model is all too often forgotten nowadays", emphasizes Hans Jürgen Kerkhoff, the German Steel Federation's president and chairman of the German steel institute VDEh. He, together with steel industry representatives, is aiming to rectify this situation and reestablish an awareness of that role by means of the broadly based "Future begins with steel" communication campaign. And the federation is aiming to make for greater political input by opening an office in Berlin-Mitte, not far from the Gendarmenmarkt and Reichstag.

Germany's steel industry supplies base material number one – around 55 percent of companies in the manufacturing industry process input material of which steel accounts for a proportion of over 10 percent. The industries are the basis for 3.5 million qualified jobs, and shape our country's prosperity. "Our sector is the basis for the German growth model. Without steel, modern industry's complex value chains would be incapable of functioning", explains Mr. Kerkhoff. What's more, the steel industry is directly involved in the development of new products and applications in virtually all areas of industrial activity, and there is an unparalleled network of research institutions and facilities. "High-grade steel accounts for a proportion of over 50 percent of the overall production output here in Germany, and is used for building the best machinery and the most efficient plant systems." The success of Germany's export industry proves his point: Worldwide, every fifth car and every sixth machine come from Germany, and more than 50 percent of the goods the country exports are steel intensive. "German vendors would be a lot less successful at the international level without steel", asserts Mr. Kerkhoff.

Scientific studies conducted by the Rhine-Westphalian Institute for Economic Research (RWI) and management consulting firm Booz & Company corroborate Mr. Kerkhoff's view.* For example Prof. Dr. Roland Döhrn of the RWI sees the German steel industry as part of a successful cluster, the strength of which is greater than that of every one of its individual members. "The steel industry's importance to overall economic performance goes far beyond the proportion of employment or value creation for which it accounts. As a primary industry, it contributes significantly via innovation alliances to the competitiveness of the German economy. The impacts in the event that the steel industry should no longer be competitive in Germany as center of economic activity would be correspondingly negative." Dr. Joachim Rotering, managing director of Booz & Company, goes a step further: "Without the supporting function

The German Steel Federation is using the „Future begins with steel“ communication campaign to promote the importance of the steel industry in Germany. They focus on the three mottos: GROWTH BEGINS WITH STEEL, INNOVATION BEGINS WITH STEEL, CLIMATE PROTECTION BEGINS WITH STEEL

of steel as material, it would hardly be possible to master the global megatrends such as energy efficiency, environmental and climate protection, new mobility and urbanization. In the interests of achieving economic success therefrom, Germany needs to sustain its unparalleled advantages of integrated development and production. This means that all links in the industrial value creation chain must remain strong."

Crucial measures are lined up for 2013 within the framework of energy and climate policy. The steel industry is among the energy-intensive sectors, and rising energy costs are not only negatively impacting Germany's competitiveness as against other economic regions but also constituting a threat to all participants in the value chain. "High energy prices in Germany must not be allowed to harm the steel industry's competitiveness. It is reckless to argue that the energy transition is at worst only going to cost the existence of a few old industries. Deindustrialization is something that must not be allowed to happen", warns Dr. Markus Kerber, CEO and Director General of the Federation of German Industries (BDI).

Modern environmental technology is inconceivable without steel: the material's spheres of application in this respect extend from the manufacture of wind turbines and high-efficiency turbine systems to energy generation and right through to the production of lightweight cars and new electric motors. "Six times more CO_2 emissions than those generated in the production of the steel required for those purposes are prevented by modern steel applications of that nature – which in turn means that steel makes a particularly effective contribution towards climate protection", says Mr. Kerkhoff. By way of the communication initiative he intends to intensify the dialog with the politicians, provide information about the steel industry's contributions and limits, and represent the sector's interests in discussions.

Representing the Federal Ministry of Economics, Secretary of State Peter Hintze welcomed the representatives from the steel industry at the federation office's opening in January: "It is a positive sign that the Steel Federation is opening its office here in Berlin as Germany's capital. This shows that the steel industry intends to participate more intensively than before in the political discussions. And that is a good thing, because we need its expertise in times of difficult decisions." He continued that it is a matter of preserving the international competitiveness of the German and European centers of industrial activity, and that this makes fair competitive conditions an absolute necessity, especially also where the energy prices are concerned. This is a view shared by the politicians in the Reichstag, he added. Besides a large number of representatives from industry and the media, the "guests of steel" welcomed by Hans Jürgen Kerkhoff in mid January at the new office also included members of the German parliament, for instance Ernst Hinken MP, chairman of the parliamentary committee for economic affairs and technology, who said: "Our steel industry is one of the strong pillars of the German economy. As committee chairman, I regard it as my duty to help ensure that the international competitiveness of our steel companies is strengthened, for example where access to raw materials and where energy prices are concerned, and thus keep the existing jobs and create new ones. I am sure that in the future too, the steel industry will master the challenges it faces in coping with the structural transition and remain one of our economy's innovation engines." His committee colleague Doris Barnett MP added: "We are doing everything possible to keep this sector of industry in Germany by continuing to alleviate the levies on energy-intensive businesses. The international competition never sleeps, however. Like German industry as a whole, the steel industry must also let itself be measured by its efficiency in the use of resources. That said, I am confident that German engineering skills will also set new standards in this context as well."

Modernity is born of tradition. In the coming months the steel industry will also be drawing attention to the significance and importance of its material in the interests of its customers, with posters on display in German cities, showing how the future built on steel is arising in the form of cities, wind farms and other innovations. A series of events taking place throughout Germany – in which approaches to solutions for the energy transition are highlighted – already commenced in late March in Potsdam. The German steel industry is not only well positioned at the international level, and is thus presenting itself to the general public in Germany.

Dr. Bettina Wieß, business journalist

www.stahl-online.de

*Rhine-Westphalian Institute for Economic Research (RWI): "The economic importance of a primary industry with the steel industry as example", Essen 2011; Study conducted by Booz & Company: "The steel industry: Backbone of Germany as center of industrial activity", Düsseldorf 2012.

Hans Jürgen Kerkhoff
"Economic growth stands on steel feet"

Hans Jürgen Kerkhoff has been president of the German Steel Federation and chairman of the steel institute VDEh since 2008. Born in 1956 in Süchteln am Niederrhein, he studied Art/Humanities and Economics at the universities of Düsseldorf and Cambridge before spending the period 1982-1985 as research assistant to the German Bundestag. Having then worked as political researcher, he switched to the German Steel Federation in 1987, for which he took charge of its office in Bonn until 1991 and subsequently the office in Brussels from 1991 until 2008. Mr. Kerfkhoff was head of the Politics business area from 1999 till 2008, at the same time occupying the position of Managing Director of the German Steel Federation in 2003 and that of Chief Executive Officer from 2004 onwards. Mr. Kerkhoff is regarded both at home and abroad as a highly competent representative of the German steel industry and of Germany as center of industrial activity.

Mr. Kerkhoff, the past two years have seen the German economy grow by 3.7 and 3 percent respectively. What does that mean for the steel industry?

The steel industry benefited from the economic trend and the robust level of income orders among its customers. But it has also helped ensure that the customers are able to use steel materials of the very highest quality for their products, and thus make optimal use of the chances and opportunities in the world markets.

In other words the significance of steel extends beyond the steel industry itself?

Most certainly. Steel is the base material used in the manufacture of a diversity of goods. This in effect means that the energy transition would simply not be possible without steel, which, for example is used to build wind turbines or power stations. With an aggregate workforce of 3.5 million, the steel-intensive industries form a core of Germany's export-orientated economy. However, the experiences made from the financial and economic crisis underline the fact that Germany's competitiveness as center of industrial activity can only be permanently secured through the close networking of the innovative steel industry with the key German sectors such as the automobile or mechanical engineering industries. This view is also corroborated by scientific studies, for example those conducted by the Rhine-Westphalian Institute for Economic Research (RWI) and management consulting firm Booz & Company.

How close are the links between the steel industry with other sectors?

The links between the steel industry and its customers' sectors are indeed very close. As primary industry, it is of great importance in terms of the German value chains. Synergies between the various links in these chains are a decisive factor towards the competitiveness and success of German industry as a whole. And a further distinguishing factor lies in the German research landscape involved with all aspects of steel as material, with a large number of locations and the close networking among universities, the Fraunhofer or Max Planck institutes as well as the steel corporations' numerous development centers. These joint research endeavors have also resulted in an ongoing process of development of the approximately 2,500 steel types in collaboration with our customers. The annual volume of patent applications has virtually doubled in the course of the past twenty years. Just short of 1,000 patents are published per year in Germany alone, equating to around one third of patent applications in the steel sector worldwide.

You are calling on the political powers that be to create framework conditions towards securing the German steel industry's competitiveness – also in the interests of its customers. Where do you see the risks to the future of the steel industry?

I see a risk to the future of Germany as steel production center in the imminent additional burdens of up to EUR 1.5 billion per year, these being the result of the EU's emission trading, the Renewable Energies Act levy, higher energy taxes and rising electricity costs arising from the energy transition. Those who negatively impact the steel industry affect a lot of others as well. Only by means of concentrated joint efforts will it be possible to implement the energy transition project without damaging the steel industry – and the material industries constitute an indispensable basis to that end.

What can the steel industry and its customers do to ensure their common success in the world market in the future as well?

We aim to continue advocating excellent supplier and customer relationships, long-term perspectives and firmly entrenched political framework conditions in Germany. Cooperation in the sphere of research and development pays off for both sides, with new, high-performance steels in particular enabling steel processing companies to come up with innovative applications. The regularly conferred Steel Innovation Award is a good example in this context. The steel industry is increasingly offering customer-orientated solutions, and steel "made in Germany" can help make for success in international competition as well.

What will steel look like in the future?

The fact that the steel industry is in a constant state of technological advancement and the requirements placed by customers on the products are becoming ever more demanding means that the industry will continue developing and manufacturing high-grade steels. The research network and the companies in Germany are well equipped for doing that. In other words: steel from Germany will figure among the world's leading products in the future as well. Against this background, Germany's political policymakers must therefore have an interest in competitive framework conditions and not allow any deterioration in terms of the prospects for innovation.

This interview was conducted by Dr. Bettina Wiess, business journalist

www.stahl-online.de

First Innovation Forum
It starts with the customer

Innovations make for and ensure competitiveness. Not only at the company level but also in the sector as a whole. And first and foremost where individual customers are concerned. With this in mind, the people at ThyssenKrupp use a variety of means to take the initiative so that customers, steel manufacturers and first-stage processing partners conduct an even more intensive dialog about the future of steel and the associated services. This was the case, for example, at the first Innovation Forum in Frankfurt. Initiated by the ThyssenKrupp Steel Service Center, this was a dialog event with talks and an exchange of knowledge and views concerning future-orientated topics.

Above Business partners of ThyssenKrupp Steel Europe and the Steel Service Center engrossed in conversation about pathbreaking topics of future relevance.
Below, left The first Innovation Forum for business partners of the steel sector left its participants room for thought. Researchers and developers exchanged knowledge and views in Frankfurt in late January.
Below, right Dr. Lothar Patberg (L), Head of Innovation at ThyssenKrupp Steel Europe, and Steel Service Center boss Detlef Schotten are in agreement, and conduct regular dialog with customers in a common search for decisive success components for innovations.

"Good ideas are a dime a dozen, but only a very few become true innovations. Besides having to overcome technical hurdles, it is a matter of understanding market and customer, so what could be better than listening even more intensively to what our customers have to say right at the very beginning of the process?" As Dr. Lothar Patberg, Head of Innovation within the R&D unit at ThyssenKrupp Steel Europe, sees it, the decisive success components lie in dialog with customers.

That said, how does a company get into conversation with its business partners about future-relevant topics? At the ThyssenKrupp Service center too, this question is more in the spotlight than ever before. "We are in daily contact with our customers, listen to their wishes, and in doing so get to hear a lot of new information about changed demand structures and requirements on us as service provider. This potential simply merits a forum of this type", says CEO Detlef Schotten. "Our concept: a diverse group of participants, compact presentations and lectures, followed by a discussion to give our customers the opportunity for an open exchange of views with us. And the event as a whole featuring selected speakers and exciting topics. In other words: the aim is to enable our customers to join us for a look into the crystal ball in the course of the afternoon. This enables us to provide them with optimal support on their way into the future."

"We want as much openness as possible – even if some things which are already technically conceivable today naturally still have to be kept behind the curtains." Patberg thinks that there is enough to talk about even when that is the case. For instance about new materials which can be formed more stably and easier. Or new methods of surface treatment and finishing which then enable the kind of appearance that designers look for. Or innovative concepts which could enable the increasingly high wind turbine towers to be built on a significantly more economic basis in the future – as well as simplifying their transport and erection.

Or about the global future-orientated project of electromobility: after all, the car of the future needs a particularly light, weight-saving platform, apart from which there are also requirements which do not immediately spring to mind. For example that electric vehicles also have to offer their driver and passengers warmth in winter, and therefore require a thermally insulated interior in order to save electricity without any reduction of their traveling range. The development of corresponding sandwich materials combining steel and plastic is a highly promising approach in this respect, though ideas such as this are certainly not only interesting where carbuilding is concerned. However, it is only those who know a thing or two about development who can concern themselves accordingly and make use of this potential for their applications and products. Which points to the fact that – and this part of his lecture at the Innovation Forum in Frankfurt met with general agreement – the German steel industry's users and the steel manufacturers are ultimately in the same boat. The challenges in competition – and thus the innovation drivers – are practically one and the same. From the demographic trend and limited resources right through to political boundary conditions: the objectives of innovation everywhere are optimum efficiency and low costs.

The objective might well be the same, but: there can be no general, all-embracing solution. The world of steel is simply too diverse. It has to be possible to come up with innovations to meet highly specific requirements as well. Nonetheless, one single idea can have a big impact. How about, for example, a steel which functions like a switch? Which in other words opens a door, closes a valve or regulates a flow rate simply by virtue of an impulse-changing structure rather than requiring a motor, hydraulic system or any other form of energy source. There can be no doubt that an invention like that would be a revolution for countless applications – and make for savings in terms of energy, components while ultimately creating fresh competitiveness at the same time.

With all the above in mind, the developers at ThyssenKrupp Steel Europe are increasingly first meeting at customer workshops before actually getting down to the development work. "We are grateful for every single idea, and evaluate them very seriously – even if the concept seems surprising at first glance. Our doors are always open for new ideas. All it takes is a telephone call or eMail." It goes without saying that Mr. Patberg also knows that in many companies there is hardly any time for an exchange of knowledge and views, so ideas very often have to be gathered in. "We are at last deploying trend scouts. And we are gathering information from the world of science on a more intensive basis than before – and even approaching research institutes and facilities which are rather less directly connected with our sector of industry."

And because innovation is a continuous, never-ending process, or, more precisely, remains a permanent challenge, the event planners at the Steel Service Center are already planning the second Innovation Forum. Detlef Schotten: "The feedback was very positive and the interest is clearly discernible, so we are already looking forward to the next Innovation Forum with our customers."

Wolfgang Kessler, freelance journalist

Contact: **Chantal Ender,** ThyssenKrupp Stahl-Service-Center, tel. +49 2151 6168-410, eMail: chantal.ender@thyssenkrupp.com
Dr. Lothar Patberg, Innovation, tel. +49 203 52-45558, eMail: lothar.patberg@thyssenkrupp.com

New project: Light-eBody
Electromobility in large-scale series production

Left ThyssenKrupp Steel Europe supports the Light-eBody with innovative high-end steels such as ultra-thin hot-formed grades. At just 0.5 mm thick, this sheet is suited to the floor tunnel in the car.
Below T³® technology is also involved. Today's hollow section components are already playing a key role in lightweight car body construction,

LIGHT - eBODY

There should be around one million electric cars on German roads by 2020, according to the Federal Government's national development plan (NEP). For this, we need economically viable, series production ready vehicle designs. Which is why the Federal Ministry of Education and Research (BMBF)'s Light-eBody research project is fostering the development of a light body design for electric cars. And ThyssenKrupp Steel Europe is one of the 14 consortium partners involved, ensuring the optimum material mix.

The research consortium aims to design a series of bodies that will give the electric cars of the future a range of 150 km with a battery capacity of 25 kWh, using body structures around 25% lighter than conventional models. By means of what is known as the "Purpose Design", the aim is to use the new design opportunities in electric vehicles: more space is available at the front end of the car, for example, because there isn't an internal combustion engine there any more. Nor does the car need space for a fuel tank any longer, although the batteries need to be distributed optimally around inside the car and housed safely.

The Light-eBody researchers will also be looking at the car's climate footprint over its life cycle as a whole, looking not just at saving CO2 emissions while driving, but also while making materials and components, and how far the product can be recycled at the end of its lifecycle. Electromobility with intelligent steel products: ThyssenKrupp Steel Europe will be supporting this product with innovative high-end steels. The futuristic products involved here include ultra-thin hot molded steel sheet from as little as 0.5 mm thick. Such sheet could be used in the Light eBody floor tunnel, for example, in which case some of the batteries could be housed here. The intention is that the Light e-Body will also use advanced MBW 1900 hot-formed steel: this material provides component strengths of up to 1,900 megapascals. ThyssenKrupp Steel Europe's patented tailored tempering technology that can be used to make hot-formed components with differing local strength and stretch characteristics, will also play its part in the Light-eBody.

The Duisburg steel company's likewise patented T³® technology is also set to be used. This method makes hollow sections already shaped largely in line with the final component design, saving car makers outlay-intensive steps in the production process. Hollow section components are seen as one of the keys to making light car bodies. Unlike conventional shell components, they do not need welding flanges, are more torsion-proof and make better use of design space available. Another material highlight for Light-eBody: new steels with a high manganese content and strengths of up to 950 megapascals. These materials combine thin-walled, weight-saving components without compromising on safety, and an ultra-thin dual-phase steel with a strength of 500 megapascals and top-class surface quality offers a promising solution for the Light-eBody's outer skin.

Light-eBody is a joint project by carmakers Ford and Volkswagen with other industry partners and research establishments. The individual project partners involved are Ford Forschungszentrum Aachen GmbH, Volkswagen AG group research, the Institute of Motor Vehicles, welding systems and jointing systems and the machine tooling laboratory of RWTH Aachen, Altair Engineering GmbH, Dow Automotive Systems, Fraunhofer Institute for Structural Durability and System Reliability (LBF), Hydro Aluminium, the University of Paderborn's laboratories for materials and jointing systems, Linde + Wiemann GmbH KG, Röchling Automotive AG & Co. KG, ThyssenKrupp Steel Europe AG and Wilhelm Böllhoff GmbH & Co. KG.

Bernd Overmaat

www.lightweight-design.de

Contact: **Andreas Breidenbach,** Application concepts, tel. +49 203 52-24256, eMail: andreas.breidenbach@thyssenkrupp.com

Life cycle assessment
Interactive app for the iPad

Modern lightweight steels are well in the forefront where climate protection in the sphere of automobile construction is concerned, as made evident in a new study conducted by the University of California, Santa Barbara (UCSB). Commissioned by the WorldSteel Association and validated by independent experts, this study compares the CO_2 emissions generated by a lightweight car body and one made from aluminum. It considers the entire life cycle, from the production of the materials concerned to the vehicle's operational phase right through to the ultimate recycling of the materials. ThyssenKrupp Steel Europe took this as basis and developed am app which depicts the results in a clear and interactive manner on an iPad.

How much CO_2 does a car cause? A simple question to which there is no really simple answer. European Union legislation, for example, exclusively considers the emissions generated while a vehicle is actually being driven, and imposes financial penalties if the limit values are exceeded. That is not enough, say a growing number of environmental experts who are calling for an holistic life cycle assessment.

Take materials, for instance: While aluminum enables even greater savings than modern lightweight steels in terms of weight and thus CO_2 emissions during travel, the average volume of CO_2 emissions generated in the production of a metric ton of aluminum currently stands at five times those arising with steel. That is at any rate what can be concluded from the value published by the International Aluminium Institute. Then comes the next question: How far does a car have to travel in order to balance that out again by emitting less CO_2 during travel and as compared with a lightweight steel construction? Around 204,000 kilometers according to calculations using the UCSB model and presuming plausible assumptions. That is more than the majority of cars travel throughout their useful lives.

So do we have a simple answer after all? Not quite, because the Californian scientists did a comprehensive job and investigated a number of alternatives. The reference size for the comparison between the aluminum and lightweight body versions is that of a conventional steel car body. Eight key parameters influence the results of the life cycle analysis, one of which is the saving in weight, on the one hand with the lightweight steel construction and on the other with the aluminum version, as well as secondary weight savings, for example where engine, brakes or transmission are concerned. Further parameters are the assumed electricity mix for the aluminum production and the recycling credit. It goes without saying that account is also taken of the fuel consumption differential, in other words the amount of fuel saved by weight reduction.

Since a part of these influencing variables – for example the recycling credit – has not yet been clearly defined in the specialist world, the study plays through scenarios based on various fundamental assumptions. This means that the automobile manufacturers have a good basis for decision-making when selecting the materials for their future products. Given the large number of parameters with their respectively variable values, the study is also highly complex, however, for which reason ThyssenKrupp Steel Europe has developed an app for the iPad.

This app successfully transforms the extensive life cycle analysis into a user interface with clear and comprehensible graphics and layout. It shows knobs for the various influencing variables, and a display resembling a speedometer. The knobs can be adjusted by stroking a fingertip over the iPad display. The position of the speedometer needle changes according to how the parameter values are set. It always shows the distance that needs to be traveled in order that the additional emissions generated in the production process are balanced out by weight savings in travel as compared with lightweight steels. These “break-even points” can also be depicted in other ways, for instance by means of curves in a coordinate system.

How much CO_2 does a car cause? Even with ThyssenKrupp Steel Europe’s iPad app, there is no simple answer to this question, but you do get answers quicker and easier – for well founded decisions regarding sustainable mobility.

Bernd Overmaat

Contact: **Jia-Uei Chan,** Application Concepts, tel. +49 203 52-24229, eMail: jia-uei.chan@thyssenkrupp.com

Harvesting the wind

In the front line between growth and protecting the environment

cover s

More and more wind farms are being built to trap the power of the air and turn it into electrical energy. And the giants onshore and offshore would be nothing without steel. ThyssenKrupp Steel Europe has long been supplying the high-performance materials required for these, while other Group companies supply other essential components.

In Kaiser-Wilhelm-Koog, they don't have to have a storm on the way before they start harvesting the wind. "We were one of the first towns on the German coast to use wind power. And all our citizens agreed," says Anken von der Geest-Borwieck, Mayor of the community of 400 souls on the Schleswig-Holstein Wattenmeer national park. Ninety of those citizens are currently investing in a new 'windmill', as the Mayor calls the high-tech installation, making this the town's sixth wind turbine. The marshland on the dyke behind the mouth of the Elbe and the North Sea is one of the windiest places in Germany: which is why researchers built the first test installation here in the mid-1980s, only to dismantle it again some 25 years ago.

But now the citizens of Kaiser-Wilhelm-Koog want to harvest the wind. Some companies and individuals are already building their own wind turbines, combining them in some cases to make wind farms. "We can use the wind which blows around our ears daily to generate energy and make money," the Mayor says proudly: thanks, not least, to those who supply today's wind turbines: which has long included ThyssenKrupp Steel Europe and other subsidiaries of the Essen-based technology and materials

group. "Our solutions put us in the front line between growth and protecting the environment for sustainable progress, and are making an outstanding contribution to expanding the generation regenerative energies," stresses Dr. Heinrich Hiesinger, ThyssenKrupp's CEO. The Group is heavily involved in wind turbines, and its activities are wide-ranging, reflecting the full breadth of its know-how. It's mainly about using steel, but that's not all. Today's wind turbines, whether onshore or offshore, are steel giants, up to 100 m and more high, and it is this material alone which makes them robust enough for their job. And electricity can only be generated because special steels in the generators high up in the wind turbines do their job reliably, day in, day out. All in all, the Steel Information Center in Düsseldorf estimates, each turbine offshore uses up to 1,000 t of steel – in foundations, in the tower itself and in the gondola. The mast alone, many meters tall, can weigh anything up to 1,000 t, and the steel plate used in the tower casing around 200 t. So the days when windmills were made of wood and simply looked pretty are long past.

Steels from ThyssenKrupp Steel Europe in a diversity of specifications are used in the building of wind power systems. The Heavy Plate division in Duisburg provides the starting material for masts and gondolas; ThyssenKrupp Electrical Steel in Gelsenkirchen provides high-tech electrical strip for the generators; and ThyssenKrupp steel also goes into making the massive roller bearings in which the rotor blades turn when they catch the wind. Group subsidiary Rothe Erde also assembles these essential structural components and connections in-house and sells them worldwide. Steel from Duisburg is used in wind turbine foundations onshore and under water; and ThyssenKrupp also provides the specialist equipment and engineering know-how required to build such foundations, especially offshore, via ThyssenKrupp GfT Bautechnik und Tiefbautechnik in Essen. And, last but not least, the lifts that go up and down the wind turbines come from ThyssenKrupp Elevator, in Essen again. All these contributions are liable to become even more important once the Energiewende or energy transition the federal government has announced kicks in. At any rate, the German wind market is growing healthily again, according to the German Wind Energy Federation's annual accounts for 2011. Nearly 900 new installations were built in 2011, compared with around 750 in 2010. Modernizing existing installations, that is, repowering through installation and upgrading, is also increasing noticeably. "This is increasing steadily, as much as 30% this year," says Hermann Albers, the federation's president. "This makes repowering a relevant option for new installations."

Repowering is also precisely about optimizing efficiency in generating, transmitting and distributing electricity from wind power. The same applies to completely new installations, both onshore and off. Efficiency in both cases also depends mainly on electrical strip. "The electrical strip we've developed enables forward-looking solutions," says Martin Gallelli, Senior Engineer Technical Marketing at Electrical Steel. "It makes no difference, technically speaking, whether electrical strip does its job in wind turbines on- or offshore." PowerCore® is the name of the innovative starting material, with its special magnetic characteristics, that turns the mechanical energy from wind turbines into electrical energy as efficiently as possible. PowerCore® is non-grain-oriented, and comes in a range of grades and thicknesses from 0.2 to 1.0 mm. Gallelli says, "Non-grain-oriented electrical strip is used mainly in rotating parts like generators, and plays an essential role in determining how efficient wind turbines are. One of Electrical Steel's specialties is non-grain-oriented highly polarized strip, which we make using a special treatment no other company has mastered. This innovative starting material is particularly suitable for synchronous generators." ThyssenKrupp Steel Europe has been supplying heavy plate for towers, gondolas and equipment foundations since the 1990s, when most wind turbines were built onshore. In building these onshore wind turbines, the emphasis for some time now, as well as on safety, has been very much on safeguarding resources and segmenting modules to increase efficiency, says Dr. Hans-Jürgen Kaiser, Technical Marketing Manager at Heavy Plate. "Our high quality steel combines significant weight reductions with maximum robustness and strength."

The energy transition looks very promising for offshore installations: but the technical conditions involved here are different, because of the applications involved above and below the waterline and being anchored on the seabed. Kaiser says, "For the foundation structures, we weld individual plates together to create structures, with optimal weldability being a focal prerequisite." For the offshore business, therefore, ThyssenKrupp Steel Europe is bringing the licensing procedure for the 355-megapascal (MPa) tensile strength range with German Lloyd safely home and dry. "We are already licensed for plates up to 30 mm thick for offshore use. Specifically, this is about being able to weld TM rolled plate in a salt-water environment with strong currents and low temperatures like those which prevail in the North Sea and the Baltic. For these primeval underwater forces, we use the top steel plate grades described in the offshore standard up to S 355 G9/G10."

There's no question about it: this also means offshore wind turbines are more cost-intensive in investors' eyes: which is why the citizens of Kaiser-Wilhelm-Koog are building onshore. Their new wind turbine will cost EUR 1.8 m, will generate 2.3 MW and is due to be commissioned in the fall, according to Boje Schoof, managing director of the 90-strong local group of investors. "We're counting on 4.5 m kWh wind yield and a 9.5% return on capital." Mayor Geest-Borwieck says, "At 5.5 m kWh, we can even expect 13.2%."

Ulrike Wirtz, freelance journalist

www.tkes.com

Contact: **Katja Schenkmann,** Heavy Plate business unit, tel. +49 203 52-75671, eMail: katja.schenkmann@thyssenkrupp.com
Nicole Wiese, ThyssenKrupp Electrical Steel, tel. +49 209 407-50845, eMail: nicole.wiese@thyssenkrupp.com

ThyssenKrupp Electrical Steel India
Succeeding in the market, committed to society

ThyssenKrupp Electrical Steel India is one of the leading producers of cold-rolled electrical strip in India. The company is the sole producer of grain-oriented strip under the PowerCore® brand and one of the top producers of non-grain-oriented products in the subcontinent. Sustainability and innovation, quality and customer focus: these are the goals the electrical strip specialist is tackling successfully.

With its latest investment, ThyssenKrupp Electrical Steel India is responding to increasing demand from its home market: its new production plant for grain-oriented electrical steel has been up and running and delivering additional volume since February. "We've been setting the standards in innovative electrical strip products in India for years, and now we're expanding our market share," says Dr. Peter Biele, marketing director at ThyssenKrupp Electrical Steel. Electrical strip is used throughout the energy value chain, from power generation (generators) to transmission and distribution (transformers) right through to consumption (electric motors and appliances), and is making a major contribution towards safeguarding resources: "With its increasing population and industrial demand, India is aiming to, and has to, move more sustainably into energy and environmental policy – and our products can help here," forecasts ThyssenKrupp Electrical Steel India's director, Kesava Iyer Venkatesan. The Indian Government sees investing in energy supply as a top priority: as well as expanding power station capacity, the investment required for the electricity transmission and distribution system in the 12th five-year plan (2012-2017) is estimated at around 2.4 bn rupees. Germany Trade & Invest estimates the demand for electronic equipment should increase nearly ten-fold from USD 45 bn recently to USD 400 bn by 2020."

Observers are certain Asian steel groups, especially from China, will be pushing into the Indian market increasingly in coming years. "European businesses should put the effort into having a presence in the subcontinent and not simply stand by and watch while financially strong Asian competitors move into pole position in a key market," is how Biele justifies the investment. Germany is one of the top ten investors in India; the inflow of foreign direct investment could reach the US 35 bn mark in 2011/2012. The Federal Republic is also India's biggest trading partner in the European Union: the bilateral trade volume, that is, total exports and imports, has more than tripled in the last ten years, and broke the EUR 15 bn barrier in 2010. ThyssenKrupp Electrical Steel India is based in the Nashik district, around 180 km from Mumbai, India's economic and financial center. It employs around 600 people, and occupies a special position in the Group: the plant processes hot rolled strip from Germany, and is the only plant making both grain-oriented and non-grain-oriented electrical strip and carbon steel with a range of carbon content.

Contact: **Nicole Wiese,** ThyssenKrupp Electrical Steel, Tel. +49 209 407-50845, eMail: nicole.wiese@thyssenkrupp.com

India is growing: and, for the Indian Government, investing in expanding energy supply is top priority.
ThyssenKrupp Electrical Steel India services this market with cold-rolled electrical strip, making it the number one supplier in the subcontinent. ThyssenKrupp Electrical Steel's boss Dr. Peter Biele (photo right, second from left) checks out product quality on a visit to the Nashik works.

And investing in a precision punching unit means they can make pre-punched parts for electrical equipment both large and small.

The plant has its own training establishment, and is certified and has won a number of awards for its quality, environmental and safety at work standards. "We've built up stable customer relations since we've been in the Indian market," says Kesava Iyer Venkatesan proudly. "We stand for top quality and top-rate customer service, in delivering right on time, for example. Neither of these is easy in a country which is still building up high-grade industrial production and an infrastructure network that meets today's mobility demands." With its nine sales offices and seven warehouses throughout the country, the electrical strip specialist offers its customers top-quality service. "Our establishments put us close to our customers, and we can respond fast and flexibly. That's not something you can take for granted in a country like this."

The emphasis at Nashik has been on reliability and cleanliness, right from the start. "We measure up to European standards. Our staff live by them, and that permeates our company's culture," says Dr. Johannes Sippel, the company's managing director. The company also cultivates good relations with the communities who are the large-scale works' neighbors. "We aim to be good neighbors, so we don't just put money into a fund, but we've also been engaging as a corporate citizen in social projects for many years now," Kesava Iyer Venkatesan confirms. The company funded the building of sanitary facilities at a school in Mukane and a hospital, for example; another project takes on young unemployed from Gonde and trains them to be drivers or electricians. At present, it is helping widows who are the sole breadwinners for their families by buying them bread and noodle machines, while teaching others to sew. "We hope that helping these women help themselves will offer them prospects in life; and what they are doing makes them important role models for their children," says director Venkatesan. The company boss is also opening the works up to business partners and customers, and even has a guesthouse to put them up in. "We're part of a major business network in the Greater Mumbai area and Nashik district," he says, and is involved amongst other things in the Confederation of Indian Industries as regional vice-chairman and on the board of the German-Indian Chamber of Commerce in Mumbai. One event his guests remember in particular is planting a tree on the company's property, as part of a reforestation campaign to preserve the environment they have been running for years. "We just use the manpower," he explains, smiling. But he's lost track of how individual visitors' trees are developing: "With all the trees there are on the company's property, that's rather difficult."

Dr. Bettina Wieß, business journalist

www.tkesindia.com

*"Economic trends late 2011/early 2012 – India", Germany Trade & Invest, November 2011.

Seeking out talent on campus
ThyssenKrupp recruits engineers of the future

Qualified new engineering talent is vital if companies are to succeed in the future: so the technology and materials group goes precisely where this talent is to be found – at selected colleges. Here, all ThyssenKrupp's areas – represented by their managers – present themselves regularly at all-day events, including evenings.

Stefan Wagner says a high-caliber event by the ThyssenKrupp Group is paving the way for the future as far as he is concerned. "And I'm not exaggerating," stresses the 27-year-old mechanical engineering student from the Technical University of Dresden. The event? The technology and materials group's managers presenting their corporation and its operations right there on campus at the Technical University (TU) of Dresden. Their aim? To make students in the disciplines that are important to ThyssenKrupp's activities aware the Group exists. Student Wagner took this opportunity to get closer to decision-makers, and won an internship at ThyssenKrupp Steel Europe in Duisburg at the same time. "Until then, I only knew of ThyssenKrupp through the media. Now I've talked with top engineers about the areas the Group is involved in and the options open to me as a future graduate engineer, and I even left the event with an offer of an internship."

They met with one another in the fall of 2009; and the mechanical engineering student now has a respectable list of four internships at ThyssenKrupp Steel Europe to show. "Stefan Wagner is not an isolated case as far as we at the Group are concerned, but his example shows how ThyssenKrupp presents itself to good talents and recruits them," explains Dr. Peter Biele, who is jointly responsible for the

presentations in his position as a ThyssenKrupp university liaison officer. The Essen-based group cultivates systematic experience and know-how exchanges with selected colleges and universities – particularly via partnership agreements. Know-how transfer is a key issue, says Biele, "And looking to find talent early is another. And this new talent is in short supply, too. That's not all either – ThyssenKrupp is also competing here with other attractive high-tech or car companies whose famous end products mean they are better known."

Which is why the Group presents itself as an attractive place to work, with an exciting product portfolio and international opportunities, to the colleges concerned directly on site, namely RWTH Aachen, TU Dresden and TU Bergakademie Freiberg. Here, each year, under the banner "ThyssenKrupp meets …", high-ranking company representatives come and give presentations to communicate how versatile the Group is – whether as system builder or steel supplier, and not just to the automotive industry, either. The next event is in Aachen on 9 May; the events at Dresden and Freiberg have already been held, at the start of the year. The interest was enormous, once again, says Andrea Sonderkamp, one of the company's university liaison officers, like Biele, and jointly responsible for the presentations. "More than 750 interested students, postgraduates and staff came to us in Dresden and Freiberg; and some were awarded internships or posts as student trainees on the spot once again."

The two university liaison officers expect Aachen to be just as good, and particularly for ThyssenKrupp Steel Europe. Biele: "RWTH Aachen and ThyssenKrupp Steel Europe have been partners as classic materials specialists for many decades." For searching for talent on campus, as at Dresden and Freiberg previously, there will be a full day's program, followed by presentations and podium discussions with ThyssenKrupp managers in the evening. "People come and go constantly during the day, as classes are running as usual," says Roger Hannig, Technical Marketing Manager at ThyssenKrupp Steel Europe, and the company's representative on campus for the second year running. In discussion groups, the host wanted to know what students saw as priorities when it comes to employers, whether they could imagine car sharing rather than having their own car, whether they would pay more for e-mobility, or whether it is reasonable to use farmland to grow (bio) fuels in Europe. "The students were surprised we were interested to hear what they think about these trends, and the discussion was very soon fully underway," says Hannig. "And the podium discussions in the evening were well attended too. That shows students are interested in our company."

Such intensive days on site work just about automatically in creating face to face contacts with potential new talents, who for their part are looking for potential internships, working as student trainees or finding a sponsor for undergraduate degrees, theses or doctors' degrees. The very first contacts could lead to more, Hannig says, "And even if you're only the first point of contact for questions. Developments show there are often jobs to be had ultimately." He thinks it's important for potential employers to present themselves to new talents and show a human face. "And it helps us a lot to understand how students approach companies today, how they help one another through discussing things." He gives an example: "At the discussions in Dresden, some students thought an old industrial area like the Ruhr would not be a pleasant place to live and work; but students who had been with us soon put them right."

ThyssenKrupp Steel Europe aims specifically to catch talented next-generation students early on in their courses. "We need engineers in production, research and development and sales," Biele says. "And the people we need are precisely those whose abilities and grades match one another. It's about discovering these new talents early on, seeing their potential more precisely and cultivating it and winning them for us for the long term. That's the way to guarantee our company's future success, and is vitally important. So internships are an essential tool. Which is why we award such places quite deliberately at the event itself, even preferring those in their early years of study." He says this unique, fast-track procedure boosts the company's image amongst students enormously, and can help not just ThyssenKrupp to get to know the students better, but also vice versa. "The days when it was just students who applied to companies are long gone: today, it works both ways." The ThyssenKrupp Group can make placements directly because its Materials and Technologies divisions alone set aside 150 places for this a year. "So we don't need to discuss the companies or areas taking them about who, when or whether to employ each time."

And what happens if an internship comes up? "He or she must show on the spot that their studies are on track and they are getting good grades," explains Sonderkamp, "And then we can fix them up, right there and then." As with student Wagner, who will be starting his eighth semester in April: first contact fall 2009, first internship at ThyssenKrupp Steel Europe's technical customer services in spring 2010, internship at the Finnentrop works in spring 2011 and invited to the mentee program to promote new talent in June 2011. Here, the student made contacts who made a 20-week internship as part of his studies possible, including an opportunity to spend two months at ThyssenKrupp Electrical Steel's Nashik plant in India and a plant at Isbergues in France. Now he still has two semesters' study ahead of him. And what then? "Then I could very well see myself joining ThyssenKrupp Steel Europe permanently. The company offers so many opportunities."

Ulrike Wirtz, freelance journalist

Contact: **Dr. Peter Biele,** University Liaison, tel. +49 209 407-50500, eMail: peter.biele@thyssenkrupp.com
Roger Hannig, Technical Marketing, tel. +49 203 52-41154, eMail: roger.hannig@thyssenkrupp.com
Andrea Sonderkamp, University Liaison, tel. +49 203 52-40641, eMail: andrea.sonderkamp@thyssenkrupp.com

X-COR

Heavy plate for the energy of the future

Natural gas provides around one quarter of the energy we need on Earth. There are major reserves, but prospecting in many areas is very expensive. How highly specialized quality flat steel can help here is illustrated by the example of the new sour gas resistant X-COR steel, which ThyssenKrupp Steel Europe's Heavy Plate business unit supplies to make pressure vessels.

"Sour gas – so what's that then?" That's something Dr. Hans-Jürgen Kaiser gets asked repeatedly: because what is the keyword for a market of the future to the head of Technical Marketing at Heavy Plate is still largely unknown to the world at large. After all, many people think natural gas just bubbles out of the ground somehow before we use it in our homes. In fact, though, natural gas as an energy medium is rather complex: its main ingredient is methane, but its chemical composition otherwise varies considerably from one location to another. As well as 75-95% methane, however, it also contains unwanted components such as hydrogen sulfide and carbon dioxide. What this means is that, rather like oil, the gas has to be processed before it can be supplied to businesses and consumers as an end product. Such as 'sour gas', for example. We say natural gas is 'sour' if it has hydrogen sulfide (H_2S) mixed in as well. With some gas deposits, this accounts for 30% or more. You may remember hydrogen sulfide from your chemistry classes at school, from that favorite experiment, reacting ferrous sulfide with sulfuric acid, giving off an evil-smelling gas. Which shows the product was H_2S.

Which is where the problem comes in. Sulfur and iron are very alike in some ways. Putting that in simple English: both react readily and relentlessly with water. Kaiser explains: "If hydrogen sulfide attacks conventional steel, this can cause hydrogen induced cracking, or HIC for short. Hydrogen atoms form under certain ambient conditions; and if they can establish themselves in joint anomalies such as inclusions and segregations, they expand strongly by combining with one another to form stable hydrogen molecules. The result? The material cracks up. Such cracks are highly dangerous, of course: sour natural gas would ruin conventional boiler steel installations very quickly."

Take Saudi Arabia, for example: not only does this country have the largest oil reserves in the world, it also has massive natural gas deposits. And because the natural gas market is growing, while oil has already peaked, the country wants to tap into this resource more as well. Gas from the Gulf is also typically rich in H_2S, however: so this must be removed as soon as possible, for economic reasons alone, ideally close to where it is extracted. And the steel for these installations is made in Duisburg: X-COR. This brand name stands for eXTRA-CORrosionresistant, and the Heavy Plate business unit's R&D department developed it specially for sour gas resistant boiler plate, led by Prof. Dr. Andreas Kern. "Our product meets the highest requirements. This material consists almost purely of the basic alloy of all steels, namely iron and carbon, plus a special micro-alloy of copper, nickel and niobium," Kern explains. That may sound simple, but that's precisely where the secret lies. "We don't want impurities or high alloy contents," he says.

"And, above all, the sulfur content must not exceed ten parts per million (ppm). Imagine a drop of water, out of a whole bucket." To ensure this, you need a high level of technological know-how and sophisticated secondary metallurgy. The underlying process involved, which involves injecting gasified calcium into the steel melt, was developed as TN treatment by Thyssen Niederrhein AG as it was then. So the business unit is pleased it still leads on quality here today. "We've only just had X-COR certified by Saudi Aramco," says Kern. "And the standards they demand are extremely high – an Aramco certificate qualifies as the seal of quality in the industry. This means meeting far-reaching requirements: not just in production, but also, and in particular, through consistent quality assurance, which we can offer with our own in-house corrosion testing labs."

Which is a good sign as far as ThyssenKrupp Steel Europe is concerned, because this segment has a very high, and sustained, potential demand of several thousand tons a year. And, finally, gas infrastructure is expanding constantly. There are large sour gas deposits, not just in the Gulf region, but also in the Gulf of Mexico and Canada. Deposits which are inaccessible, or were not economic to exploit before, are being tackled increasingly. And there are undoubtedly still many left to be discovered. If we can use all this natural gas, the experts believe, we will have enough for another 300 or even 500 years.

Wolfgang Kessler, freelance journalist

Contact: **Dr. Hans-Jürgen Kaiser,** Heavy Plate tel. +49 203 52-75114, eMail: juergen.kaiser@thyssenkrupp.

Fifteen years of compact
Talking to today's steel market

"How do I talk to my customers?" There are many ways Rolf-Jürgen Neumann, head of Strategic Marketing and Support, communicates with the market – via fairs, events, product brochures, etc. And there's one medium he will be sharing an anniversary with when he retires at the end of April: Neumann has been publishing ThyssenKrupp Steel Europe's international customer magazine compact for 15 years. He was a trailblazer when he founded this, the first of its kind in the steel industry, in 1998.

The compact team celebrates the 39th issue of its steel customer magazine. Editor-in-chief Christiane Hoch-Baumann (l.) and marketing strategist Rolf-Jürgen Neumann, who retires at the end of April, were here from the start. His successor, Josefine Sarfert, is taking the concept to the next level: for the first time with this issue of compact, a multifunctional e-journal will also be published on the Internet, with a wealth of sound and visual images.

compact is a double-sided format. The marketing strategist, who is now retiring after 44 years in steel, created a magazine then that, even now, combines tried and tested engineering know-how with an appetite for information and entertainment. "compact is tailored 100% to our readers' interests," is how Neumann lets out the secret of the magazine's strategy. "We provide technical and background information on in-house innovations and product developments, but we also look beyond ourselves as a steel company and report on growth markets and current issues – and with a passion for language – in German and English."

compact stands proud in the steel market. With the future firmly in its sights, the editorial team, led by Christiane Hoch-Baumann, spots trends right from the start. "To enlighten the market and show everything you can do with ThyssenKrupp Steel Europe as your development partner," is how Neumann defines his mission. And that's how it was in the first issue in summer 1998, too: "Our front page story was about building our continuous casting/rolling unit in Duisburg," he remembers. "The technology was considered revolutionary, and we explained it to our readers, describing what the unit could do." The issue was a runaway success: the first 5,000 copies off the press were snapped up immediately. Boosted by this success, the Duisburg steel company started out publishing two, and soon three, issues a year; and each issue grew, from a modest 24 pages to anything up to an ambitious 40. "At first, the contributions were highly specialized, being written largely by our technicians and engineers themselves," says editor-in-chief Hoch-Baumann. "But, as the issues grew and our readers became increasingly demanding and wanted to read something up to date, an editorial team gradually established themselves who communicate steel specific market topics informatively and at the same time excitingly, even today. Making it a pleasure to read," she says. Being a pleasure to read also includes its appearance, of course. In compact's 15 years, the layout has changed three times. Today, it is highly sophisticated, aesthetically speaking, with its own visual language. "That was often because our company was changing direction," says Neumann the ground-breaker. "And we wanted our customer magazine's image to reflect these strategic changes too, of course."

As well as Neumann and Hoch-Baumann, his editor in chief, who have had a major influence in how the magazine has developed the way it has, there is another constant involved in communicating with the market: the customer. Neumann says, "What issues we take up depends on what our customers need to know about our company and our products." The compact team sees ThyssenKrupp Steel Europe as a whole – from steel maker through the different processing stages of our business units and subsidiaries through to a highly specialized input material supplier that incorporates what our customers and their end products need. "Customer portraits make an exciting background, showing the market for steel applications – which is why they are a runaway success," is how Neumann celebrates the permanent focus.partner section. Hoch-Baumann adds, "The portraits are fresh and original, because our editors bring out how each of our customers is unique and special in each and every article."

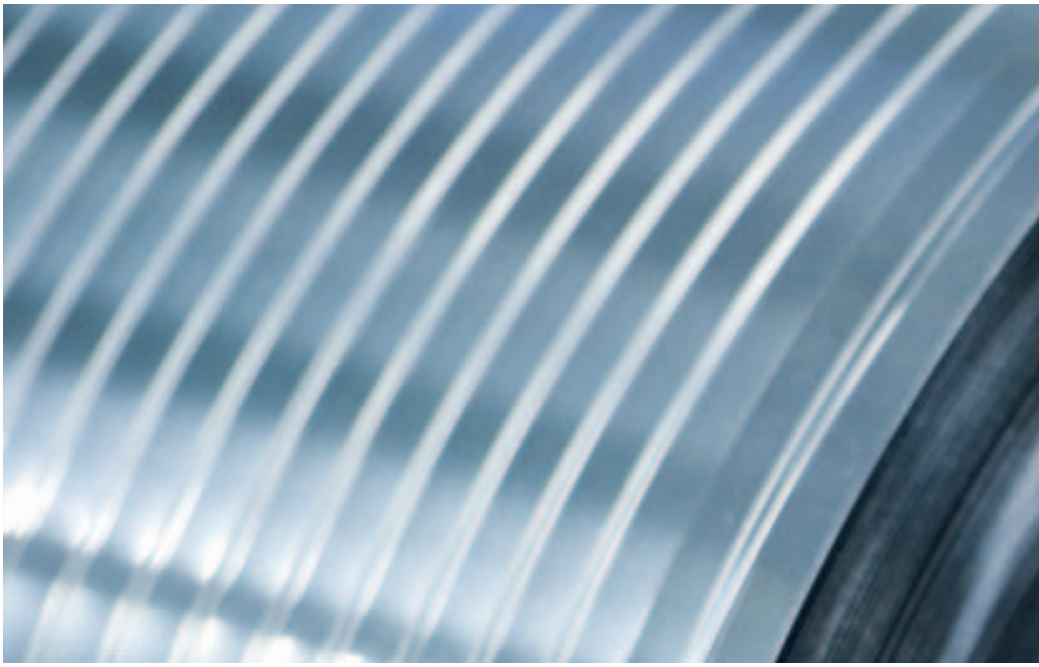
Neumann's departure leaves Josefine Sarfert with a major legacy, as she knows herself. "For years, compact was unique in the steel landscape. Only gradually did the competition come to realize how much potential this form has too." And Sarfert is taking the concept to the next level. "With this issue, for the first time, we will be putting a multi-functional e-journal on the Internet, making compact even more of an experience. You can do more than just read it, you can also listen to it and, from the summer edition onwards, see it, too." So publishing the magazine online takes it a step ahead again – and we can look forward with excitement to the coming years.

The editors

www.thyssenkrupp-steel-europe.com/en/publikationen/kundenmagazin.jsp

C.D. Wälzholz looks optimistically to the future

Internationalization and innovation on the up

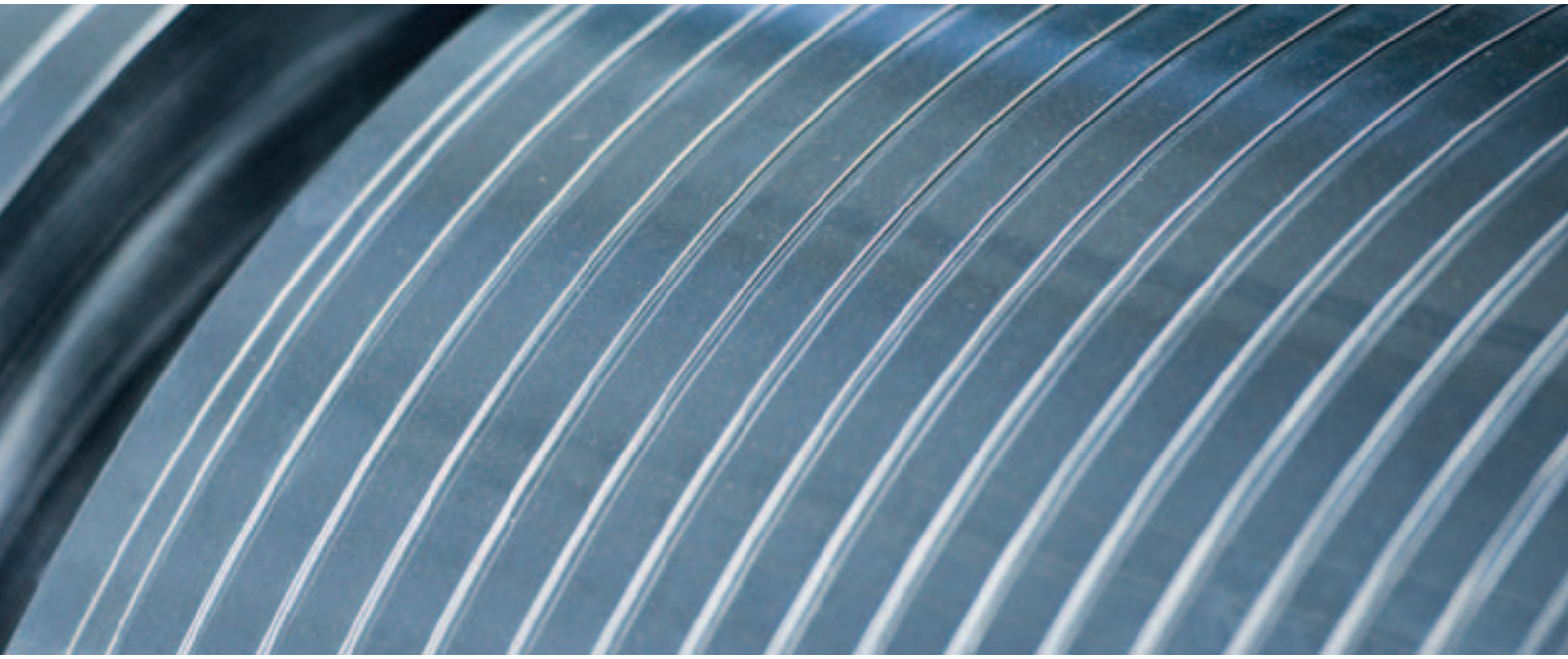


C.D. Wälzholz specializes in processing hot-rolled steels and rolled wire. The cold rollers from Hagen are strong in innovative materials solutions for complex applications: their products can be found in a wide range of areas – from tools, household and garden equipment through sports products like ski edges to electromobility and renewable energies. Their main customer is the automotive supplier industry.

"Working continuously to develop products with our customers and suppliers plays a key role in expanding our position as market leader in specialist high-grade steels," is how C.D. Wälzholz's managing director Dr. Matthias Gierse summarizes the company's philosophy in brief. This SME has a clear growth strategy, aimed at internationalization. That much is apparent just from looking at an atlas: the family business is active on four continents – Europe, Asia, North and South America. "We export around 50% of everything we make," says Gierse. "Hagen is our nucleus, but we are involved worldwide. We will be expanding our service center in China to be a cold rolling works by mid-2013, for example. In Cleveland, Ohio, in the USA, we are an established supplier of our German strip steel products – and have been for 10 years." In São Paulo in Brazil, C.D. Wälzholz has a cold rolling mill with more or less the same product portfolio as its German sites at Hagen, Plettenberg and Oberkochen.

"To secure our market share, we need to grow where our customers are," the managing directorexplains. "We will also be keeping our eye on India as one of the most developed emerging nations." But what would growth targets be without any new ideas coming up behind them? There are no worries about that at C.D. Wälzholz, however: 50% of the 29,000 or so different products it makes are four years old or less. Such a performance deserves a medal: not for nothing was the Hagen company named one of the top 100 most innovative SMEs recently. "Innovation is our strength," stresses Norbert Brachthäuser, head of Quality and Environmental Management. "So we work only with the best – and that's what our customers expect of us too." C.D. Wälzholz has already established a wide range of developments on the market using the high-quality materials from ThyssenKrupp Steel Europe. "That's because they analyze everything in depth and keep to within the strictest tolerances." And the Duisburg steel company is there beside the SME, advising it – optimizing its analytical and production processes to suit each and every processing application. "Our partnership plays a major role," is how Gierse rates the collaboration, which benefits both sides. "Our high-end products could not exist without high quality steel, which is something very few people make. And the people in Duisburg cover nearly the whole spectrum." When it comes to innovating technol-

C.D. Wälzholz processes hot-rolled steels and wire rod to make for innovative material solutions for tools, house and garden equipment, sports products and regenerative energies.



ogy together, there are many examples: one of them is the punching tool used to cut and emboss cardboard and leather goods. "This involves taking analytically fine-tuned carbon steel and subjecting it to special heat treatment. On the one hand, the steel strip must be extremely flexible, while at the same time non-wearing and hard," is how Brachthäuser describes the apparently contradictory demands made of the material. ThyssenKrupp Steel Europe's customer adviser Dr. Roman Borovikov adds, "We are constantly developing with and for our customers to meet such requirements, including into the future. We are constantly exchanging know-how on the wide range of feasible technical possibilities and new design solutions."

The Duisburg steelmakers are C.D. Wälzholz's number one hot strip supplier. The partnership goes back to the 1960s. "ThyssenKrupp Steel Europe and its subsidiary Hoesch Hohenlimburg supply more than 50% of our needs," as purchasing manager Winfried Seifert knows. There are also some critical voices, however, reflecting not just the highs of this long-standing partnership. "We hope steel remains an important area at ThyssenKrupp: because we need market leaders, strong, reliable suppliers, if we are to give our customers what they want." As customers' demands increase, this calls for reliable logistics strategies: a point on which Seifert thinks there is still room for improvement. "Being flexible, responsive and reliable will ensure we succeed together in the medium term," he says clearly. Being close to the customer also means having your own processes under control. As leader in technology, the family company, founded in 1829 and now being managed by the sixth generation, keeps its production facilities at the latest state of the art at any time. It was in response to exceptional demands that they developed innovative processes such as rolling with nitrogen, which allows extremely clean strip surfaces, and lightning quenching. Systematically networking their core processes, from purchasing through design, production and quality management through to sales, also lets them exchange information quickly and respond fast. And ThyssenKrupp Steel Europe is also involved as a strategic partner. Borovikov: "We send our hot strip data to C.D. Wälzholz, who use them in processing immediately." To both ThyssenKrupp Steel Europe and C.D. Wälzholz, quality is not merely making perfect products. "Optimally coordinated processes and top class customer service are essential to peak performance: so we need strong partners supporting us on the supplier side. That's the only way we can show how strong we are in the world market and keep on growing," is how managing director Giese sums it up.

Johanna Flöter

www.cdw.de

Dr. Matthias Gierse of CDW (on the left), with his colleagues Norbert Brachthäuser (second from left) and Winfried Seifert (third from left), welcomes Dr. Roman Borovikov of ThyssenKrupp Steel Europe.

Contact: **Dr. Roman Borovikov,** Technical Customer Support Industry, tel. +49 203 52-25547, eMail: roman.borovikov@thyssenkrupp.com

Agenda

Achema
18–22 June 2012, Frankfurt am Main
The 29th Achema international exhibition congress, with around 4,000 exhibitors, opens its doors in June. Achema is the world forum for the process industry, and the trend-setting technology summit for chemical technology, environmental protection and biotechnology. This fair offers an overview of comprehensive problem solutions for all areas of process technology. Isocab N.V. will be presenting its cleanroom application products in Hall 5.1, Stand B82.

CWIEME
26–28 June 2012, Berlin
CWIEME is regarded as the leading international coil winding, insulation and electrical manufacturing trade fair and conference. More than 500 exhibitors from around 40 countries will be presenting electrical equipment, insulation and materials and the latest machinery, products and services for the coil winding sector. In Hall 2.2 on Stand 3323 ThyssenKrupp Electrical Steel is presenting its innovations in grain- and non-grain-oriented electrical strip under the PowerCore® brand to the international specialist audience for the tenth time. ThyssenKrupp Magnettechnik will also be on the stand.

Ideas Park (IdeenPark)
11–23 August 2012, Essen
Following the success of the Ideas Park in Stuttgart in 2008, ThyssenKrupp is putting on its world of technology experience for the fourth time once more in 2012. This time, the event is being held at the exhibition center in Essen. Visitors to the Ideas Park will find new ideas and today's technical solutions. Anyone interested can get ideas for their choice of career and be encouraged to come up with new ideas themselves. At the Ideas Park, many fellow exhibitors will offer an entertaining glance into the world of technical opportunities and innovations. What's special about the Ideas Park is the intensive face to face dialog it offers and the fascination of technology and the natural sciences, with engineers, researchers, gadgeteers and students on hand to advise and answer the mostly younger visitors, explaining their ideas and showing at first hand how innovations come about and work. But that's not all, though: visitors can become constructors themselves, and make simple robots or mini-racing cars. Entertaining stage shows, original lectures and many exciting workshops for all ages round off the two-week program. Admission free.

Coiltech
28–29 September 2012, Pordenone, Italy
For the third time, the Coiltech coil winding, electric motor and transformer technology exhibition invites anyone interested to Pordenone, Italy. The range on show covers all kinds of materials and machines and services for making electric motors, generators and transformers. ThyssenKrupp Electrical Steel will be attending this fair for the first time.

IZB
10–12 October 2012, Wolfsburg
The International Suppliers' Fair (IZB) is Europe's leading fair for automotive industry suppliers, presenting the latest trends and innovations in the industry. Here in mid-October, national and international companies will be presenting themselves at the Allerpark, Wolfsburg. As well as groundbreaking ideas from the automotive value chain, this fair focuses on lightweight construction and electromobility. "Connecting Car Competence" – that's the motto of this year's IZB, with three days for trade visitors, offering both exhibitors and visitors outstanding opportunities to network and many platforms on which to discuss using steel in the automotive industry. This year's IZB partner countries are Brazil and Argentina. ThyssenKrupp Steel Europe will also be there, once again, in Hall 7, Stand 214.

Chillventa
9–11 October 2012, Nuremberg
Chillventa will be opening its doors for the third time in Nuremberg at the beginning of October. This fair is regarded as the largest specialist event of its kind, and presents cooling systems with comprehensive system solutions, components and applications. It also serves as a specialist forum for product and system development in the spheres of air conditioning, ventilation and heat pumps. ThyssenKrupp Steel Europe will be there this year once again, with ThyssenKrupp Bausysteme and Isocab N.V., showing special products for frozen and deep-freeze store construction and clean room technology.

EuroBLECH
23–27 October 2012, Hanover
ThyssenKrupp Steel Europe will be back again this year at EuroBLECH, Europe's leading sheet metalworking fair with other Group companies in Hall 16, presenting innovative steel solutions for industrial sheetworking for a wide range of industries and applications. This leading industry fair is seen as the place to meet for sheetworking technology manufacturers, and is the first point of contact for cutting edge technology and practical know-how, with around 1,460 exhibitors from 43 countries worldwide. On 24 October, ThyssenKrupp Steel Europe will be inviting our customers to our traditional steel customers' day at the Expowal Hanover.

Contact: **Achim Stolle,** Strategic Marketing, Tel. +49 203 52-41005, eMail: achim.stolle@thyssenkrupp.com

Echo

The Ideas Park is coming to Essen this summer
This summer, the exhibition center and Grugapark, Essen, will be turning into a wonderful world of technology for two weeks. "We want to create an 'a-ha!' experience," ThyssenKrupp's Chairman, Heinrich Hiesinger announces. He says technical ideas are a regenerative raw material. The Ideas Park aims to inspire young people and attract them to working in engineering. Visitors can go on a journey of discovery over 60,000 m².

WDR 2, 29.02.2012

Rasselstein now ThyssenKrupp Rasselstein
Andernach-based tinplate manufacturer Rasselstein becomes ThyssenKrupp Rasselstein GmbH with effect as of 15 February 2012. This reflects what has already been essential for the tradition-rich company to survive and grow for many years. At the same time, the name Rasselstein associated with the company for more than 250 years will remain, enjoying a high reputation worldwide for high quality packaging steel from Germany.

Stahlbroker.de, 20.02.2012

ThyssenKrupp Steel Europe supports new talent researchers
ThyssenKrupp Steel Europe is supporting a group of new talent researchers at the Ruhr University Bochum. The IT engineers and mathematicians will be researching jointly with the Interdisciplinary Center for Advanced Materials Simulation (ICAMS) for six years (…) To work even more efficiently, ICAMS wants to use large computing systems in its research in future, for which this new talent group, which ThyssenKrupp is supporting to the value of EUR 1.2 m, will be developing methods.

Schweissen und Schneiden, 12/11

NewsFlash

Supporting young researchers
ThyssenKrupp Steel Europe has been supporting the "High Performance Computing in Materials Science" group of young researchers at the Ruhr University Bochum since the start of the year; this project involves IT engineers and mathematicians working with the Interdisciplinary Center for Advanced Materials Simulation (ICAMS) for the coming six years, developing materials models and simulations on large high-performing computing systems as efficiently as possible, with materials being developed by computer simulation and being tested to see how they work and react. Put in simple terms, the group will be assembling new materials theoretically from individual atoms to simulate how they behave when processed and used. Because modeling materials on computer and being able to predict their characteristics in the real world reliably saves time-consuming, expensive test series and brings new materials faster to market. ThyssenKrupp Steel Europe is supporting them to the tune of EUR 1.2 m.
http://aktuell.rub.de

Blast furnace modernized
ThyssenKrupp Steel Europe has been replacing the fireproof brick lining and parts of the furnace cooling system in blast furnace 9 in Duisburg since January. The steelmakers are investing EUR 37m in this 180-day modernization project to make the site more competitive and future-proof. This blast furnace dates back to 1962, and was rebuilt completely and enlarged in its current form in 1987, and has produced around 40m t of crude iron to date. The other three blast furnaces at Duisburg are running flat out while it is down, ensuring the liquid phase is operated optimally in technical and economic terms. The modernization should be completed by mid-2012.

Schwelgern 2 celebrates 70 m t
In the course of its first furnace cycle, the largest blast furnace in Europe produced its 70 millionth tonne of pig iron in February. The giant 90-meter Schwelgern 2 went into operation in the fall of 1993, and is one of the largest blast furnaces of its kind in the world. It turns out around 12,000 t crude iron a day, for which just under 19,000 t of prepared iron ore and up to 4,000 t of coke have to be loaded into the blast furnace vessel from above. "The first new lining is planned for summer of the coming year, and preparations for this are already running at full speed," says Wolfgang Wiese, the Schwelgern blast furnace operating manager.

Siegerland commissions chemcoater
ThyssenKrupp Steel Europe's Siegerland plant commissioned a new chemcoater to coat quality flat steel with chemicals at the start of the year. This improves working procedures on strip coating line 3 and is contributing actively to protecting the environment. "Through investing around EUR 6m, we can now do without chrome-based pre-treatment for the corrosion-proofing of organically coated components," explains team coordinator Ralf Wittkowski. "Using zinc-magnesium hot-finished input material means corrosion-proofing involves applying much less zinc coating, and with better results. It uses less water, too: using two rinsing cascades with five circuits mean we need 8,000 l less operating water an hour than before."

ThyssenKrupp Galmed wins award
First prize goes to ThyssenKrupp Galmed: at the end of 2011, FEMEVAL, the Spanish metal employers' association for the state of Valencia, gave its award in the category "Innovative management in industry" to the hot-dip galvanizing line (FBA 9) in Sagunto. This serves as a bridgehead for the automotive markets of Southern Europe: "With us, the focus is on managing ideas and R&D and to keep optimizing our product quality and remain competitive," explains director Wolfgang Born. "We mainly supply car makers with high-grade surface finished materials. Over the past five years we've invested 6.8% of our sales in new and upgrade investments to maintain our quality standards." The award ceremony was attended by the patron and Minister for the Autonomous Community of Valencia, Enrique Verdeguer, and the president of the association, Vincente Lafuente, and other political and economic personalities.

All-time tinplate recycling record
Germany already achieved an unheard-of tinplate recycling rate of 93.8% in 2010, beating the 2008 record by 0.2% points. With the new quota, tinplate is extending its lead position in recycling packaging materials – and without harming the environment or compromising on quality at all. "Its magnetic characteristics make steel packaging simple and safe to separate, making it the recycling material par excellence," explains Dr. Ulrich Roeske, Chairman of the Management Board at ThyssenKrupp Rasselstein, Germany's only packaging steel maker. As a packaging material, tinplate cans are also robust, easy to store and keep their contents fresh for a long time.

Steel production expected to settle in 2012
Hans Jürgen Kerkhoff, President of the German Steel Federation in Düsseldorf, says reduced stockholding levels put the steel business in a good starting position in 2012, since the euro crisis peaked in the fourth quarter of 2011. The uncertainty in the market has still not gone away for good: but the latest forecasts by the economic research institutions say the downturn in Germany will not last long, and will not be serious, and they expect it to end by the summer. Kerkhoff says the signs from the main customer industries are looking good: "The automotive industry expects to make as many cars as it did in the record year of 2011, and mechanical engineers and plant builders believe growth will continue. The steel and metalworking industry expects output to rise 3-4%; and the construction industry is expected to keep growing, not just in house-building, but also in particularly steel-intensive commercial construction."
www.stahl-online.de

ThyssenKrupp joins Global Compact
ThyssenKrupp emphasized its commitment to sustainable development by joining the United Nations Global Compact at the end of last year. The UNGC calls on companies worldwide to implement ten principles in the fields of human rights, working standards, the environment and anti-corruption. These are derived from the Universal Declaration on Human Rights, the Declaration on Fundamental Principles and Rights at Work of the International Labor Organization and the principles of the Rio Declaration on Environment and Development. Almost six thousand companies and organizations worldwide have now signed up to this initiative. Meeting these principles is self-evident as far as ThyssenKrupp is concerned, because sustainable business is a permanent part of the Group's model and strategy. In joining the UNGC, the technology group confirms it will work even more intensively on implementing the principles within its scope of influence, in other words amongst its suppliers and customers too, and report on this transparently.

R&D open day
ThyssenKrupp Steel Europe's R&D innovation department already held an open day at the end of last year, with around 150 attendees finding out on thematic stands about what the department is doing currently. As well as the main tasks of analyzing trends and technologies, methods for finding and assessing ideas and some current projects were the subjects of presentations; and all R&D staff members had the opportunity to look around the redesigned applications technology premises and find out about the department.

Packaging technology safely and in style
Switchgear cabinets to suit every taste

Packaging technology safely and stylishly, that's Rittal's mission. The company has been serving its international customer base with precision-fit switchgear cabinets for fifty years.

As one of the world's leading system suppliers in the spheres of switchgear cabinets, power distribution, air-conditioning, IT infrastructure and software and service, this manufacturer offers solutions for just about every industry anywhere in the world. To do this, the member company of the Friedhelm Loh Group, one of the biggest users of steel plate after the automotive industry, places its trust in tailor-made split strip and plate from its sister company Stahlo. The high-grade input material for the complex packaging comes from ThyssenKrupp Steel Europe.

Switchgear cabinets are everywhere: whether on a small scale as fuse boxes in buildings, or in large formats for industrial use. What is amazing is the wide variety of such products on display at the Herborn-based company's large, bright showroom: shiny stainless models reminiscent of rows of contemporary cabinet walls. There are models with filigree mesh doors to let air through perfectly, or with complete air-conditioning systems which heat or cool cabinets and their valuable contents.

"Energy efficiency is very important to us here," stresses Dr. Thomas Steffen, Rittal's research and development director. What this means is, enclosures are there primarily to protect what's inside, such as electronic controls for machinery and equipment, for example. "Switchgear cabinets must keep liquids out, stop dust settling and be corrosion-proof," he continues. And the company has met these demands since 1961. The key to its success was the idea of making switchgear cabinets in series production instead of on an individual made-to-measure basis as

With a staff of 10,000, Rittal is the largest company in the Friedhelm Loh Group and one of the world's leading system suppliers in switchgear cabinets, electricity distribution, air-conditioning, IT infrastructure and software & service. Rittal has a global presence, with 63 subsidiaries, 10 production plants and 40 agents worldwide, so it can be close to its customers locally with a unique range of services.

before. This idea soon established itself universally, after leading German carmakers declared Rittal's switchgear cabinets as the standard in 1971. Today, the company makes 16,000 units a day. "Standardizing was our breakthrough," Steffen says. "Frames, sections, dimensions – everything is standardized." That changed the industry and helped Rittal design its processes more efficiently. Rittal has registered more than 1,500 patents in its 50-year history. "With us, a switchgear cabinet is a switchgear cabinet, anywhere in the world," is how he describes the constant high quality of Rittal's products. "We are also a sought-after partner for system solutions in industry and information technology (IT). As well as low-voltage switchgear systems, we also design and build complex IT infrastructure solutions for computer centers."

Its strength in innovation, which has won it many awards in the past, means Rittal has set many norms and standards – and aims to keep on doing so, too. The company sees many opportunities for new materials in surface finishing, for example, although they cannot be used to their full potential as yet. "The UL norms in the US market are making things difficult for us, for example. They specify minimum material thicknesses for steel plate that prevent us using innovative materials, for example," the director explains. Which is something his company and his supply partner ThyssenKrupp Steel Europe very much regret. "We could be much more innovative in the market with our material solutions," confirms Bodo Hämmerling of Technical Customer Support at the Duisburg steel company. Even so, they work closely together. "We rely on the Duisburg company's specialist know-how," is how Steffen describes the development partnership the two companies enjoy. "ThyssenKrupp Steel Europe gives us some good ideas, which we check out to see if they can be used."

More than 40,000 t of sheet go to Rittal in Herborn in the federal state of Hesse every year. The steel service center occupies a sandwich position as the third link in the successful supply chain. "We complete the chain," is how Stahlo's director Karl Standera puts it. "Our job is to take steel plate from Duisburg and process it for Rittal." They cut coils to size as required and deliver them to the switchgear cabinet maker as split strip or cut sections. "We process 400,000 t of steel a year, of which Rittal takes around 25%," Standera says; and Stahlo takes another 10,000 t from ThyssenKrupp for completely different final applications.
Where input materials are bought depends, as so often, on price, availability and the technical characteristics of the strip purchased: and ThyssenKrupp Steel Europe supplies many of them. Standera sees clear benefits, however: "The materials they supply are of high quality, plus they're not far away and can respond fast if need be. We can turn to the hot strip works in the Ruhr area nearby, even the Siegerland works for hot-dip galvanized products. Which gives us synergies," is how he stresses the main points.

And what makes Stahlo as a steel service center so unique amongst so many? "We stand out for service, flexibility, speed and know-how," says Standera. "Development and technical applications consultancy are fundamental success factors here." As Hämmerling describes what happens here: "If Rittal has new requirements on materials, we work closely with Stahlo shoulder to shoulder, with the clear task of giving the customer what they want." Standera nods to Hämmerling in agreement, and adds, "The people involved have known one another for so long, and that makes for strong links between our companies." That's another key to a promising joint future in which switchgear cabinets play the lead role and continue to be found as safe, stylish packaging in the industry of the future as well.

Johanna Flöter, Christiane Hoch-Baumann

Top Rittal's director Dr. Thomas Steffen (l.) shows Bodo Hämmerling of ThyssenKrupp Steel Europe, his supplier, how input materials are turned into switchgear cabinets in the Herborn company's state of the art showroom.
Bottom Filigree mesh steel plate ensures air can get all round a switchgear cabinet perfectly and so stop its valuable contents overheating.

Contact: **Bodo Hämmerling,** Technical Customer Support Industry, tel. +49 203 52-44274, eMail: bodo.haemmerling@thyssenkrupp.com

Common sense
Rasselstein saves energy

ThyssenKrupp Rasselstein sets the standard when it comes to using energy and resources efficiently. Its energy saving management system was certified by TÜV Rheinland officially last December. The way is now open to a greener and more economic future. The Board, energy managers and staff of the Rheinland-Pfalz company are playing a major role here.

Tin cans are one of the most environmentally friendly forms of packaging there is: the material's recycling rate is 93.8%. Now making them saves energy too.

Peter Müllers (left) is energy manager at ThyssenKrupp Rasselstein. He knows energy management is often simply a matter of common sense. Which is why the tinplate maker is making its staff and management aware of the issue.

"One of our modern units uses just as much energy as an old one," Peter Müllers used to grumble some years ago when he was working in production at ThyssenKrupp Rasselstein. The power such units used at that time, taken over a year, would have been enough for around 4,500 families, and they needed a lot of natural gas and steam as well. Today, Müllers is the tinplate maker's energy manager. His career has been more or less a metaphor for the company's great success in saving on energy and resources.

Müllers' idea of improving the company's energy management and getting it down to a standard level soon became systematized. The first step was to record how much energy they consumed. Since then, there have been meters on the main units at both production plants at Andernach and Neuwied measuring current consumption and energy levels precisely at all times. Step two was to analyze the data obtained: specially developed software helps calculate consumption and indicate potential sources of error promptly ever since. Or in a word: energy controlling. The Federal State of Rheinland-Pfalz honored ThyssenKrupp Rasselstein's working to increase efficiency with its environmental prize as far back as 2008. TÜV Rheinland-Pfalz's certification audit followed in December last year: the tinplate specialist's energy management system was certified to test standard DIN EN 16001:2009. He may have a piece of paper showing they've reached the standard, but as Müllers knows, "That's just the beginning. Now we need to live the system and continue with a process of continuous improvement."

His colleagues on site have been a great support here. Together, they are still working intensively on being even greener than before: how can we design processes to be more efficient and above all more economical? Everyone was keen to be involved, right from the start. But, despite all the instruments installed and data collected, Müllers stresses, "Energy management is often simply a matter of common sense. It was and still is important to make people at the company aware of this." ThyssenKrupp Rasselstein's Executive Board Chairman Dr. Ulrich Roeske is encouraged by the culture of improvement which has permeated the management team: "We need good ideas in all areas to take us in the right direction." That's motivation in itself.

So now it's not just in production that there are major savings, in continuous gluing, for example, but also in the everyday life of the company.

"It's the small things that have a big effect as a whole. Like switching the lights and screens off when you're not at your desk," the energy manager explains, and sets a good example here. Developments in recent years show the company's energy management is on the right track: it was around 5% more efficient last financial year (in terms of energy used per tonne of finished product) than it was in 2006. And its recently certified energy management system doesn't just bring unlimited transparency and financial benefits with it. Above all, every bit of consumption saved helps protect resources and the environment. The actions for which it won the environmental prize in 2008 alone are estimated to have saved more than 11,000 t CO2. Technology director Karl Ernst Friedrich emphasizes, "For us as a ThyssenKrupp company, doing business sustainably is top priority. And using energy responsibly is a key part of this." And anyone can join in: "The software is so easy to use, more and more staff are clicking in," says Müllers, pleased. Maybe they're then just a click away from having an even greater effect in future.

Johanna Flöter, Christiane Hoch-Baumann

www.thyssenkrupp-rasselstein.com

Contact: **Volker Lauterjung,** ThyssenKrupp Rasselstein, tel. +49 2632 3097-2875 eMail: volker.lauterjung@thyssenkrupp.com

Hoesch Planeel® Siding facade system
All-rounder scores on new buildings and refurbishments

"ThyssenKrupp Steel Europe is constantly developing innovative solutions that surprise," says Ralf Petersen of PETERSEN ARCHITEKTEN, pointing to Hoesch Planeel® Siding: because this is an innovative facade system suited to both new buildings and refurbishments. The architect, whose roots are in the Ruhr area, has been working with the Color/Construction business unit's steel sections for over a decade now. For their latest project in the capital – the Hotel Berlin Airport adjacent to the new Berlin Brandenburg International airport (BBI) – his architectural office opted for around 4,000 m^2 of Hoesch Planeel® Siding facade in unique "matt-de-luxe" matte finish.

For the Airport Hotel, PETERSEN ARCHITEKTEN's designers in Berlin, working with the client, developed an unusual (color) design: strips of twelve different colors encircling the whole building. "To ensure this design works as precisely as possible, we decided on Hoesch Planeel® Siding in the matte finish," explains Petersen, and immediately adds, enthusiastically: "'Matt-de-luxe' is new and eliminates all ambient reflections from the environment. So we always see the colors as they truly are. The steel facade ensures the design will last. "Even the material samples overwhelmed us." The five-storey hotel, with its 156 rooms and integrated shopping zone opened at the beginning of April, and catches the eye from near and far. "The concealed fastening system also ensures a harmonious look," as Rainer Kulwatz, director of Kunkel Metallbau und Montage, which was the certified system partner for assembling the facade system, knows. "Thanks to the substructure, we could assemble the panels flush with the masonry on the walls and equalize the tolerances. Fast and simple."

Overcoming major construction tolerances without any great expense – that was also the challenge a refurbishment project in Wülfrath in the Bergische Land region. For specialist plant constructor Respecta, business is good, very good, even. The 22-strong company bought a building from the 1970s so they could keep on growing. The aim was an impressive, state of the art headquarters – with 700 m^2 of the high-grade Hoesch Planeel® Siding facade system.

"As mechanical engineers ourselves, we work with steel, and wanted this material for our facade as well," explains Katja Passagre, Respecta's managing director. A good choice, because the facade of the around 40 year old building presented a challenge. "It was made of precast concrete sections with very large structural tolerances. The windows were irregularly arranged," says Walter Schmidt, architect and structural engineer at the company, who designed the refurbishment plans. "But the system's new fine plate substrate evened out the irregularities immediately," says Dietmar Detig, who as the director of certified system partner DEA Systembau was in charge of the installation. Energy efficiency is paramount at Respecta, so the new facade is well insulated and wind-sealed. The substrate reduces the usual heat bridges. The aim was to modernize the headquarters

building, not just in energy terms, but visually too. Having seen the wide range of products ThyssenKrupp Steel Europe offered, they decided on the 'matt-de-luxe' coating. "The product impressed us," Passagre says. "The matte coating reflects light impinging on it evenly and always leaves the facade looking good – in sun, rain or snow." And the two shades of gray – borrowing the colors from Respecta's corporate logo – fit in well too.

In the Schloss Holte-Stukenbrock municipality, the Glasprofi24 company wanted to combine refurbishment with high-quality aesthetics and maximum thermal insulation. "Our building, which houses both production plant and head offices, is around 25 years old, and has limestone walls 24 cm thick – without any heat insulation whatsoever," says director Wolfgang Kreyer. "We were determined to make it absolutely state of the art, both in energy terms and visually." Kreyer turned to Paderborn professor of art Joan Sofron, who suggested the Kamelio JS deco facade he had designed specially for ThyssenKrupp Steel Europe, combined with the Hoesch Planeel® Siding system. The name Kamelio JS stands for an unusual design of strips of different colors. "We decided on a combination of black and anthracite – our corporate design colors," explains Kreyer, who was swept off his feet straight away by the unique top quality pinstripe look. The facade system was quickly installed by DWS Systembau of Mülheim, who had already been involved in a number of projects for ThyssenKrupp Steel Europe in industrial and commercial construction. "Hoesch Planeel® Siding also allowed us to insert 20 cm of mineral wool insulation between the beams and substructure on the whole building, including the roof area," adds Jürgen Zutt, managing director of DWS Systembau. "Planeel can be installed any way you like – horizontally, vertically or diagonally – so that wasn't a problem for us. We're used to ThyssenKrupp Steel Europe's products making things easy."

The feedback: "We cut our heating costs by more than half last winter," says Kreyer. "And we're now one of the architectural highlights of the region." The staff like being unique – and so do the citizens of the area in Eastern Westphalia. Whether newbuilds or refurbishments, matt-de-luxe or Kamelio JS, the Duisburg steel company's solutions are guaranteed to be long-lasting: ThyssenKrupp Steel Europe's zinc-magnesium alloy ensures lasting corrosion protection, and special plastic paints protect against light, the weather and emissions. So there aren't any unpleasant surprises

Daria Szygalski

Left Work on building the new Berlin Brandenburg International Airport, the most modern in Europe, is still in progress; but the Hotel Berlin Airport next door is already gleaming, with its extravagant facade design. Architects PETERSENARCHITEKTEN chose the Hoesch Planeel® Siding system in twelve matte colors, three of which were actually developed specially for this project in the German capital.

Center After around 25 years, the Glasprofi24 company wanted to refurbish its building, containing production works and offices, all round. For the walls and roof, they chose Hoesch Planeel® Siding, Kamelio JS version. Art professor Joan Sofron designed this decorative facade specially for ThyssenKrupp Steel Europe, and for Glasprofi24, he suggested a color combination of anthracite and black – the company's corporate design colors. And adding heat insulation cut heating costs enormously.

Right The Respecta company had its new headquarters building in Wülfrath refurbished in both energy terms and visually, with 700 m^2 of Hoesch Planeel® Siding. For the final coating, the mechanical engineers opted for the unique "matt-de-luxe" matte effect paint in shades of gray – reflecting one of the colors in the company's logo.

Contact: **Simon Rümmele,** Hoesch Bausysteme, tel. +43 1 6154640-136 eMail: ruemmele@hoesch.at

Light as steel

Maximum performance and strength, minimum weight. From high-strength and ultrahigh-strength lightweight steels to sandwich materials to innovative steels for hot stamping – ThyssenKrupp Steel Europe's expertise offers cost-efficient solutions for weight reduction in automotive engineering and other industries.

ThyssenKrupp Steel Europe – materials for your ideas.

ThyssenKrupp Steel Europe
Thinking the future of steel

ThyssenKrupp