The customer magazine from ThyssenKrupp Steel Europe

compact

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2/2012

EuroBLECH 2012

ThyssenKrupp Steel Europe exhibits innovative steel portfolio

Berlin Steel Dialog

Climate protection starts with steel

Surface series

Rust detectives research basic principles

ThyssenKrupp Steel Europe
Thinking the future of steel

ThyssenKrupp

compact

Issue 40 – 2/2012

Cover picture:
From 23 to 27 October, ThyssenKrupp Steel Europe will be exhibiting its innovative steel portfolio at the EuroBLECH in Hanover. Special feature: the company is making the wide range of applications of its products the focus of its presentation, thus underscoring its expertise in various industries. For the construction industry, Steel Europe manufactures cable tray systems (as shown in the cover photograph), which were nominated for the 2012 Steel Innovation Prize. Other industry sectors and their exhibits include the automotive industry with GammaProtect®, the home appliance and furniture industries with PLADUR® and a wheelchair made of magnesium flat products. Definitely worth a visit!

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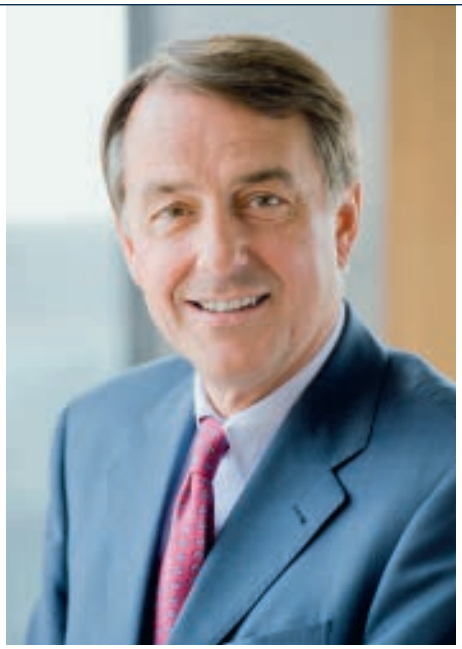

"Steel remains the material of choice for industry. It is used in so many small and large everyday products, and is simply essential for our modern lives."

Dear readers, valued customers,

The German steel industry is suffering as a result of the economic uncertainty caused by the euro crisis. There is plenty of concern about further drops in EU economies – crude steel production in June was down four percent over the previous month at 3.7 million tons. Over the first six months of the year, production fell by six percent as compared with the figures from last year at almost 22 million tons. The reason is that demand for steel has weakened noticeably since the spring. The increased level of economic uncertainty and the fears on the part of the national steel processing industry that it could face even more decline due to the euro crisis have led companies to minimize inventories and only cover their most urgent needs. Furthermore, in the current quarter, demand is lower than normal anyway for seasonal reasons.

What makes the situation even less tenable at the moment is the fact that it is very difficult to assess today how things will go in the future, and whether the bottom has already been reached. Concerns about a deeper recession and the lack of a recovery after the summer break are widespread. Nevertheless, steel remains the standard material used in industry. It is used in so many small and large everyday products, and is simply essential for our modern lives – vehicles, machines, plants, tools, electrical appliances and production equipment: steel is everywhere and you can see that for yourself in October at the EuroBLECH in Hanover. Our title story will prepare you for the largest exhibition in the world for the metalworking industry and hopefully arouse your curiosity about our new, user-focused exhibition image.

In Hanover, we will again demonstrate that ThyssenKrupp Steel Europe is synonymous with competency across all industries. That allows us to enhance the close, completely successful interrelationships between the added value chains. A wide range of industrial companies who process steel as a raw material today ensure that in Germany we are doing better than people in many other countries. There is no doubt that the manufacturing sector is responsible for Germany's recovery from the economic and financial crisis being much faster than other countries. This places the onus on politicians to create a framework for energy-intensive industries to ensure that companies in this country remain attractive and to encourage investment here.

There are a number of very important decisions to be taken this year, for example whether to continue the subsidies in energy tax and compensation for emission trade-based electricity costs. In addition we will soon be facing the start of the third trading period of European emissions trading. This means that subsidies to cover the additional costs caused by current energy policy are essential for maintaining the international competitiveness of the steel industry, for example. These are topics which were discussed at length at the Steel Dialog in Berlin in June – and you can read about views from there in this edition.

The fact is that steel must remain competitive. That will enable us, together with you, our customers, to remain at the forefront of research and development and prepare the way for strong innovations. We have described some of these to you in this edition, including a drive system for a new solar-powered vehicle developed by ThyssenKrupp Electrical Steel together with the University of Bochum. With our material expertise and your processing know-how, we can drive forward major technological challenges such as the energy revolution, starting from the ideal surface finishes developed in our laboratories to practical solar thermal systems for industrial and commercial buildings. Steel remains a valuable material. With this in mind, I hope you enjoy reading our new *compact*.

Yours,

Dr. Jost A. Massenberg
Member of the Executive Board responsible for sales
ThyssenKrupp Steel Europe

Deceptively real: Honeycomb nest made of hot-galvanized narrow strip steel

Even bees think they're great – the honeycombs of a sliding grille gate. In fact, the grille consists of unique narrow strips of steel: unlike standard models, the steel strip from ThyssenKrupp Steel Europe is hot-galvanized on all sides. The fact that even its edges are coated with zinc means that each strip provides high, durable resistance to corrosion. This narrow strip, produced at the Finnentrop site, also features excellent forming properties. Due to the excellent adhesion property of the zinc coating, it is also possible to coat it organically. The benefits of hot-galvanized strip steel not only make it ideal for use as a roller grille gate for nightly protection on shop windows, but also as the perfect material for accessories on garage doors, as raw material for gutter mountings, construction brackets and general building fittings. Other applications include shelving, pallets and automotive production, as lightning conductors or grounding straps, as strapping for the barrel industry and for profiles. Although the honeycombs are not dripping with sweet honey, the material they consist of makes them ideal for a wide range of uses that are weather resistant and do not require any extra care.

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EuroBLECH 2012 in Hanover

ThyssenKrupp Steel Europe offers innovative steel variety

ThyssenKrupp Steel Europe is traditionally represented at the leading international industry exhibition where it demonstrates its high level of innovative material competency in flat steel. Taking place in Hanover from 23 to 27 October, the special feature of the EuroBLECH is that the company is focusing on the wide range of applications for its products, thus underscoring its expertise in a range of different industries – and is presenting the whole thing on a newly designed exhibition stand.

Without steel there is nothing. Cars, excavator shovels, bathtubs and washing machines – all perfect examples of steel solutions. Nothing in plant and mechanical engineering would be possible without this high-tech material. And the energy revolution would be stopped in its tracks as well; it needs modern wind power systems and they need steel. High-quality steel solutions are just as necessary in the home appliance and furniture industries as in the packaging industry. In other words, steel has a massive range of applications with very specialized uses and is thus essential for a very wide range of industries. "This variety demands sophisticated expertise in research and development and in the production of flat carbon steel," says Josefine Sarfert, Manager Strategic Marketing/Support at ThyssenKrupp Steel Europe. "And that is exactly what we are emphasizing with a premiere at the EuroBLECH 2012. We are focusing on the main industries and demonstrating our wide range of application expertise."

The EuroBLECH is the leading industry event and is organized by the English promoter Mack Brooks. The slogan for the 2012 event is "Responsibility for the Future." This time, EuroBLECH will focus in particular on efficient technologies, green production processes and the conscious use of materials. Exhibition Director Nicola Hamann explains, "We regard ourselves as the main technological and economic trend indicator in the high-tech metalworking sector. This is receiving plenty of impetus at the moment from general trends such as environmental awareness, the economical use of resources, energy efficiency and mobile structures." The booking figures indicate that a certain amount of commercial recovery is occurring in the industry – "already more than 85,000 square meters of space have been booked, which represents a rise of six percent over 2010." Around 1,400 exhibitors from more than 37 countries will be represented. "We are once again expecting around 70,000 visitors from all over the world."

The visitors will not only see new content in ThyssenKrupp Steel Europe's presentation at the event. "In fact, the look and organization of our 525-square-meter booth, no. C26 in Hall 16, is completely new," says Achim Stolle, Team Leader for Strategic Marketing at ThyssenKrupp Steel Europe. Stolle does not want to give away too much in advance about this new concept and how it has been put into practice. But one thing he is prepared to say, "Our booth will have separate islands relating to each of the industries we serve. Each of these islands will feature very specific user-related exhibits, information, contacts and some interactive media. Overall, our new concept will create an extremely user-friendly exhibition."

There will be an industry island for the automotive industry, commercial vehicle industry, construction industry, home appliances/furniture industry, mechanical and plant engineering, renewable energy and sheet metalworking and processing. Adhering to the slogan, "Steel variety – all from a single source", the islands show at a glance what this actually means at ThyssenKrupp Steel Europe – "namely, high material competency and pioneering engineering for a very wide range of applications and solutions," explains marketing strategist Sarfert. The modern exhibition presentation also involves all the business units and subsidiaries of the ThyssenKrupp Steel Europe group, who will be represented at the booth for the first time – including ThyssenKrupp Electrical Steel, Hoesch Hohenlimburg, ThyssenKrupp Rasselstein, MgF Magnesium Flachprodukte and companies from the Materials Services business area. "No business unit will appear as an individual company any longer. That would contradict our presentation concept from the user and industry point of view," she emphasized.

The inter-industry competence in the steel group will be demonstrated by selected exhibits. For the automotive industry, for example, that means LITECOR® sandwich material and GammaProtect® – the innovative solution for cathodic corrosion protection for hot-stamped components. For the construction industry there will be the much-awaited new cable tray systems that were nominated for the 2012 Steel Innovation Prize. The home appliances and furniture industry will be presenting the innovative, optical and functional coatings from the PLADUR® brand family on its island. That island will also feature a wheel-

The EuroBLECH will take place from 23 to 27 October in Hanover. ThyssenKrupp Steel Europe will be there on Booth C26 in Hall 16 where it will be demonstrating its high innovative material competency in flat steel on its newly designed exhibition booth.

chair made of high-tech flat-rolled magnesium – an ultra-lightweight yet robust application.

The number of exhibits has consciously been reduced "to suit the clear look of the booth," explains Stolle. "Our design and our whole image will thus be more puristic." ThyssenKrupp Steel Europe is therefore adopting a thoroughly modern exhibition booth design. "The booth will be open and will not feature any barriers. Walkways and lines of sight will not be blocked by exhibits or walls. That makes the presentation much larger and generous. The focus will be on communication with customers and potential customers." Purism is the order of the day on modern exhibition booths in technical industries. In addition, modern exhibition booths increasingly work with innovative, green materials.

What does that mean exactly for the new booth at the EuroBLECH 2012? "I can't tell you that," says Stolle. "But in any event, what it really means is that less is more." But that certainly does not apply to the expertise available within the ThyssenKrupp Steel Europe group, which features a very wide range of products – from cars and excavator shovels to bathtubs and washing machines.

Ulrike Wirtz, freelance journalist

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Five questions for Jörg Paffrath and Thilo Lutz
“We accept responsibility for the future”

The world wants more: demography, urbanization and globalization are the current trends, and the global appetite for consumer goods and capital goods, infrastructure, energy and resources seems insatiable. In late October at EuroBLECH in Hanover, ThyssenKrupp Steel Europe will make an impressive showing demonstrating that this increased demand can be satisfied even better in the future. Sales Managers Jörg Paffrath, Industry, and Thilo Lutz, Auto, tell *compact* how they intend to keep up with the dynamic pace of the future.

More and better – this Group slogan has been adopted personally by Sales Managers Jörg Paffrath (left), Industry, and Thilo Lutz, Auto, which leads them to ask themselves: “How can we surpass ourselves with efficient technologies, green production processes and the conscious use of the materials of the future?” ThyssenKrupp Steel Europe has some impressive answers to this at the EuroBLECH.

Mr. Paffrath, Mr. Lutz, how significant is the EuroBLECH for ThyssenKrupp Steel Europe's sales?

Paffrath
It's massive. The EuroBLECH is one of two events where processors of flat steel meet regularly. Over the past several years, it has become entrenched in the market and has continued to grow steadily. This special event attracts lots of consumers, which is why so many of our national and increasingly, also international customers will be there. I am looking forward once again this year to holding close talks in a good atmosphere with our business partners.

Lutz
I've got to agree with that. Exhibitions are focal points at which innovations, ideas and customers come together – and that is certainly the case with the EuroBLECH. It is an important event not only in our industry, but also in the automotive industry, and is very important for the ever growing group of suppliers.

What will be the focal points you plan to make at this year's event?

Paffrath
With our new, industry-based exhibition booth we are actively approaching our customers – we are making a statement about our future collaboration with them. We anticipate what our customers will need tomorrow which enables us to look to the long term future. We accompany them with our extensive materials expertise and our engineering skills. This enables them to be innovation drivers in their own consumer markets and fields of application and therefore enjoy advantages over their competitors in the market. Naturally, that also has a positive effect on our performance. But we also fully and absolutely respect the wishes of our customers, and that is a particularly important point for me.

Lutz
Global customer benefit is also a central theme when it comes to Auto sales. That is why we supply uniform high quality and show our visitors innovative solutions in steel. We have a whole host of new ideas in lightweight construction and other important product features such as forming and wear resistance. First of all, this gives our customers major benefits in terms of energy and material efficiency as well as protecting precious resources. Secondly, our uniform top quality ensures that our customers enjoy valuable advantages in terms of their process reliability – which is a major criterion in global competition terms.

In other words, you are facing up to the dynamic challenges of the future together with your customers?

Paffrath
That's correct. We are increasingly segmenting our product portfolio to suit end customer markets to enable us to understand social trends better and to react properly to them. The main point in this is to identify as soon as possible the direction in which the market is moving. We are also in close dialog with our customers in this respect: we ask ourselves every day how we can surpass ourselves with efficient technologies, green production processes and the conscious use of the materials of the future. That is a process that never ends.

Lutz
We are supported in this, for example by our R&D department's innovation scouting – so that in addition to enhancing our products we can also make genuine leaps forward in identifying the requirements of the future and developing solutions. At the moment, for example, we are studying the functionality of finishes where there are plenty of interesting ideas to create additional customer benefits.

How do you implement these ideas in practice?

Lutz
Our latest product LITECOR® is a perfect example. We identified a while ago that our customers wanted even lighter steel solutions from us than previously. With the help of LITECOR® we managed to satisfy this requirement perfectly. To identify these trends in terms of quality, for example, every one of our customers has direct access to a production executive. There are regular and very effective exchanges between them. This has a good deal of potential and we intend to increase this system in the future.

Paffrath
There is a similar system in Industry Sales. For example, we offer our customers a wide range of workshops and this is helping us to expand on our development partnerships which are already working well. In this respect the perfect transfer of expertise provides the basis for success.

What are your objectives for the next EuroBLECH in two years' time?

Paffrath
In the future, we plan to use the successful automotive industry model even more for Industry Sales as we continue to move forward. We will actively offer our customers specialist material solutions. Our engineers will approach processors directly with their ideas and conduct sample tests with them as well as laboratory samples and tests at the development rolling mill to get their products ready for mass production – a process which is not only a great deal of fun but also ensures that our customers gain a lead over their competitors.

Lutz
Maintaining a lead over competitors is our objective, too. And to ensure this we are working on improving the areas which are of extreme importance to our customers. Logistics is one of the areas which has a major bearing on the competitiveness of Germany as a manufacturing location. In exactly the same way as product quality, company-wide improvements offer massive potential. We believe that there are opportunities in terms of our responsiveness, flexibility and inventory reduction. And these are all points that will strengthen our customers and therefore ThyssenKrupp Steel Europe further in the future.

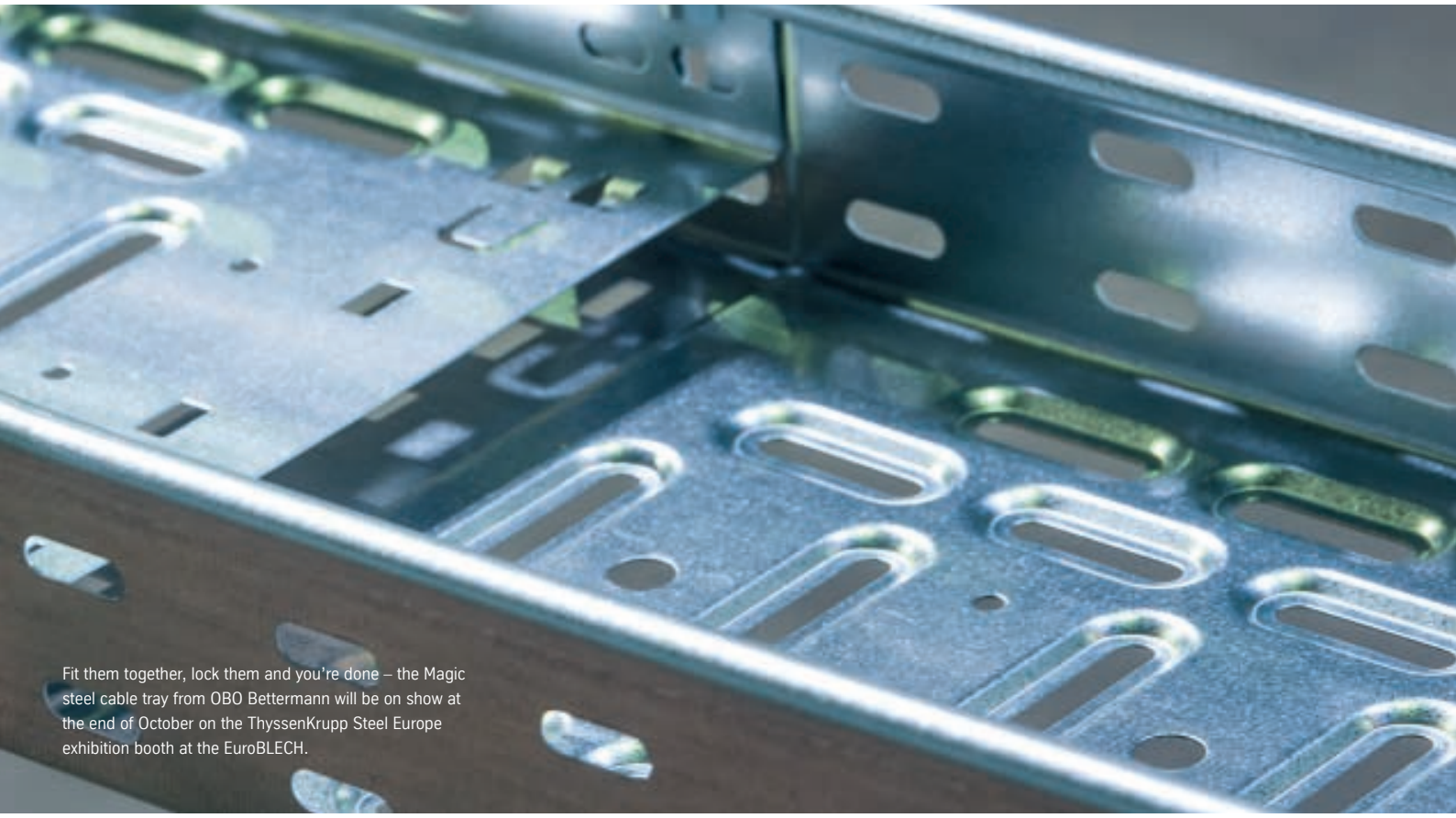
Interview conducted by Christiane Hoch-Baumann

Magic – the future of the cable tray
Electrical engineering infrastructure from a single source

The future is Magic, which makes it faster, safer and more economical. Gone are the days when fitters had to carry out exhausting work connecting kilometers of cable suspension systems overhead while working on platforms high up under the roof of a factory building. A simple click now eliminates the need for a ridiculously high number of nuts and bolts, and therefore eliminates unnecessary cost and labor. OBO – "ohne Bohren" = without drilling – Bettermann remains true to its corporate principle, making life easier for electrical contractors with its latest product.

Tradition and innovation are two sides of the same coin for OBO Bettermann: for 100 years, the family-owned company has been inventing new methods – while focusing firmly on the needs of its customers. "We like to explore new strategies to keep our customers happy. In fact, creating new products and continuing to refine and develop our systems is our main priority," says Innovation and Marketing Manager Matthias Gerstberger.

Raw material supplier ThyssenKrupp Steel Europe has been keeping pace with the company for 40 years. Sebastian Siebold from the Technical Customer Service within Industry Sales provides his perspective: "We are intensifying our traditional supply relationships and are currently taking them to a higher level so that together we can achieve even better results for our end customers." The company is planning regular workshops where the partners can collaborate to identify material suitable for top-of-the-line products. "The quality and possibilities of our raw material are the subject of constant development." Innovation strategist Gerstberger regards this as a major support: "We are currently conducting tests with ZM EcoProtect®

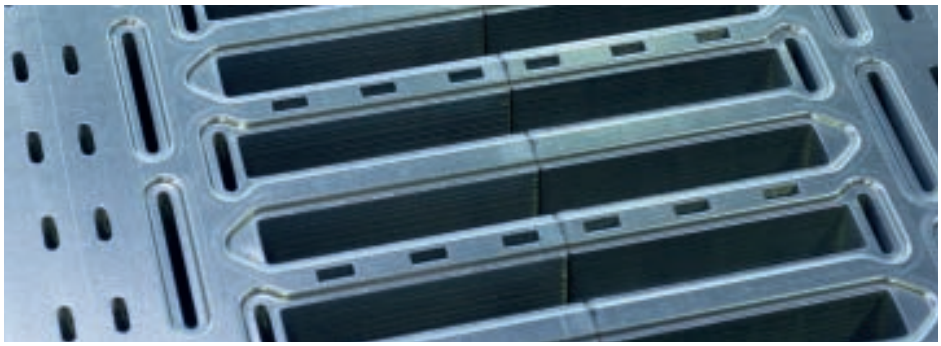


Fit them together, lock them and you're done – the Magic steel cable tray from OBO Bettermann will be on show at the end of October on the ThyssenKrupp Steel Europe exhibition booth at the EuroBLECH.

from ThyssenKrupp Steel Europe. We are testing the corrosion protection coatings and comparing them with conventionally surface-treated material." Siebold agrees and adds the finishing touch to the supply relationship: "Once again, we are providing our complex materials expertise and supplying the customer with advice and support."

OBO Bettermann has introduced around 30,000 products to the market during its corporate history. They are being used wherever electricity, data and energy flow in large volumes. The most recent result of the very active development partnership between ThyssenKrupp Steel Europe and OBO Bettermann is the Magic cable tray. "Fit them together, lock them and you're done," is how Technical Manager Torsten Schönhaus sums up the benefits of the innovative product. "From light, medium and heavy trays to the shaped part, it is the first cable-carrying system in the world that requires zero screws. The spring elements are integral components and cannot be lost." The lightweight Magic cable tray has been on the market since 2008. Thanks to a modern laser production process, the new generation today can hold heavier loads, saves scrap and reduces CO_2. "Not only have we improved the quality of our products, but the environment is also benefiting from them – we have reduced our CO_2 emissions by about 2,600 tons per year. 200,000 trees would be required to deal with that volume of emissions."

The prerequisite for fully automated high-tech production processes is ensuring uniform high quality raw materials. Gerstberger knows why. "The trademark features of products by ThyssenKrupp Steel Europe are their close tolerances in terms of strength and material thickness. They ensure that we can enjoy high process reliability and therefore manufacture the best possible end products." Schönhaus nods in agreement, "We can only produce high-quality goods with reliable automated processes if we have top quality raw materials." ThyssenKrupp Steel Europe supplies the Menden-based company with twelve different grades of hot strip, cold strip and galvanized strip steel. But the key criterion is quality. Every year, around 21 million meters of strip steel is used by OBO Bettermann – enough to reach halfway around the globe. "Our Magic cable tray meets a series of complex requirements for electronic infrastructure and will be used, for example, for building tunnels, airports, sports stadia and industrial buildings. With the help of this product, it will be possible to route enormous volumes of cables and complex electronic systems simply and economically on site," is how Schönhaus explains the magical top-selling product. Safety plays a leading role in this respect. "All Magic cable trays comply with the relevant German and European standards," he emphasizes.



Top The completely new base structure of the Magic cable tray ensures particularly good cable ventilation. It is also fire-proof and ensures perfect water drainage. The complex 3-D structure and the change to the material structure also mean that they can hold heavier loads.
Bottom Matthias Gerstberger (left) from OBO Bettermann, Sebastian Siebold (center) from ThyssenKrupp Steel Europe and Torsten Schönhaus from OBO Bettermann search for suitable raw materials for the perfect end product at regular workshops. Here they are personally checking the results of their development partnership at the warehouse in Menden.

The raw material supplier itself is also convinced of the quality and the product. Many kilometers of Magic cable tray weave their way around the modern parking garage at its headquarters in Essen, the ThyssenKrupp Quarter. Another 100 kilometers are currently being installed in a tunnel in Qatar, a power plant in Hamm and in the Audi plant in Hungary – the latter even features LED lamps, which could well be the trend of the future.

"We simply want to make life for craftsmen easier," says Schönhaus, looking ahead to the future, "and we want to do that worldwide." OBO Bettermann has a presence in more than 60 countries and a workforce of around 3,000 people, with an annual sales revenue of more than 450 million euros. The core of the family-owned company is definitely in Menden in Germany. However, current efforts are also aimed at establishing locations in Russia, China and India. "We must go to where our customers are. Wherever new markets are being created, that's where you will find us."

Christiane Hoch-Baumann

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Series: It's all about the surface
Innovative coatings for automobiles

A great deal has happened since metallic coatings on steel sheet became standard practice in automotive manufacturing. Winter salt, driving rain and fog have all lost their aura as corroding bodywork killers. But while rust is now a topic drivers hardly find worth mentioning, it continues to be a challenge for manufacturers. One solution is called GammaProtect® – which will be on show at the EuroBLECH to be held at the end of October in Hanover.

"I can remember that the first fully galvanized body was a sensation in its day. The subject of rust quickly disappeared more and more from the headlines once we put zinc on the metal. But for us steel producers the subject continues to be a concern. That's because the requirements of the automotive industry continue to develop." Dr. Christoph Filthaut, responsible for the development of new surface coatings at ThyssenKrupp Steel Europe, is talking about a product innovation which has just reached the stage where it is ready for widespread use.

The new metallic coating is called GammaProtect® and is designed to provide automotive manufacturers with a new solution. "We should first point out that several things have changed under the shiny paintwork surface that the driver can see", says Dr. Jörg Lewandowski, Product Launch Manager. In particular this means the use of new, high strength steel. The designers use them to reduce weight and also to meet the very stringent safety requirements. Automotive components such as the B-pillar or door sills are now made of very lightweight, but also very thin steel. So they simply cannot be allowed to rust. Unfortunately these components are usually in areas which are particularly suscep-

Dr. Christoph Filthaut (left), responsible for the development of new surface coatings at ThyssenKrupp Steel Europe, and his colleague Axel Schrooten are convinced by GammaProtect®. This product innovation has just reached the stage where it is ready for widespread use and is a significant addition to the range of coatings for steel materials.

tible to corrosion. "That is why we wanted the best of both worlds – cathodic corrosion protection on the metal which can be hot-stamped easily."

The new types of steel have in fact led to hot stamping becoming more and more popular. Unlike conventional grades these sheets must be formed at high temperatures. However, this was simply not possible if they had an anti-corrosion zinc coating without accepting some massive compromises. On the other hand aluminum-silicon-coated or hot-aluminum coated plates can be hot-stamped very easily but do not have active, or in other words cathodic corrosion protection. That is precisely why ThyssenKrupp Steel Europe decided to do something about the situation. Active protection is perfect for areas which are highly susceptible to corrosion. This concept actively influences the electrochemical processes which ultimately create rust. Filthaut continues, "You have to imagine allowing a less noble metal to be sacrificed for the sake of the nobler steel. The less noble zinc thus protects the steel – and as long as the coatings are not damaged the steel beneath will not suffer corrosion. This means that the component can last for decades."

"The second important aspect was to take account of the situation being faced by the component manufacturers. It must be possible to process a good product efficiently and easily, if possible using the same production systems and processes which are already in global use," continues Filthaut. For example GammaProtect® does unlike a hot-galvanized coating, is suitable for single-stage hot stamping, in which the components are formed and hardened in a single operation. Cathodic corrosion protection is retained in full and at the same time the surface prevents scaling. The fact that robust everyday production operations separate the wheat from the chaff is a universal truth. "Our material can withstand a good deal. Even if our sheet has to stay in the red-hot furnace for a few minutes longer due to a production stop, it will still retain its properties. Only GammaProtect® can offer this," says Lewandowski.

GammaProtect® is a significant addition to the range of surface finished steel materials supplied by ThyssenKrupp Steel Europe. And it is one that supplements other quality products but certainly does not replace them: "For us as a steel producer and developer more than ever it is true that we need the best solution in the right place. There is very little need for sophisticated corrosion protection in the interior or on the roof of a car. But on the other hand there are other aspects that the designers want there. That is why electrolytically or hot-galvanized sheet, or in the future also hot-dip coated zinc-magnesium surfaces will continue to play a role, and a major one in some cases."

ThyssenKrupp Steel Europe now has more than 20 finishing lines which cover the entire range of metallic and organic coatings for a very wide range of applications. GammaProtect® is produced using an electrolytic coating process. Effective quality management means that customers can look forward to excellent production and product quality which will satisfy even the most stringent international standards. Or as Lewandowski puts it very simply, "If you ask us, you will always be given the right answer." And you can see that for yourself at the end of October at the EuroBLECH in Hanover.

Wolfgang Kessler, freelance journalist

Our **new series** on surface coating will continue on pages 18-19 and in the next issue of *compact*.

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En route to volume production
Service center processes magnesium sheet

Lightweight, thin magnesium strip from MgF Magnesium Flachprodukte can also be slit.
This and other new products will be presented by the subsidiary of ThyssenKrupp Steel Europe at the EuroBLECH in Hanover.

Making magnesium sheet ready for production is the aim of MgF Magnesium Flachprodukte based in Freiberg, Saxony. This subsidiary of ThyssenKrupp Steel Europe has developed a special casting-rolling process for magnesium sheet in conjunction with the Technical University and Mining Academy of Freiberg, which can produce magnesium strip as thin as one millimeter. Also in Saxony, in Radebeul, it has now been demonstrated that the strip can also be slit – using a conventional system.

Magnesium is the lightest metallic engineering material and therefore ideal for reduced weight and CO_2-saving solutions, for example in the automotive industry. However, to date, the metal has mainly been used for castings, for example in the chassis and engine. Affordable magnesium sheet is required to make it available for large body parts such as roofs or hoods. This is MgF's objective for casting-rolling technology because it can use lower-cost raw material, requires fewer production steps and less energy than the processes used in the past. There is therefore plenty of interest from customers, and potential buyers are already testing MgF sheet in small production runs and prototypes.

However, industrial production not only requires sheet, but also processed products such as slit strip. A trial in Radebeul is therefore testing whether innovative magnesium strip will prove to be practical for this application as well. This is where the ThyssenKrupp Steel Service Center has a branch for processing and custom-tailored services for steel.

The steel service specialists have processed a ring 65 centimeters wide made of two millimeter thick magnesium strips. A roller slitter on which the cutters were mounted with a cutting gap of 0.05 millimeters cut the strip into three sections, two measuring 25 and one 13 centimeters wide. The roller slitter is state of the art and taking the low flash point of the material into consideration, there is no need for special equipment for processing the magnesium. The results of the test showed that the process was a success and the cut edges were in good to excellent quality.

Bernd Overmaat

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SteelOnline
Business at a click

Is the material ready for shipment? How far are you with production? Is the factory certificate available yet? Hectic everyday business means that questions like these are often vital for customers. ThyssenKrupp has created SteelOnline to provide fast, reliable answers. It is a customer portal to keep them up to date and has been providing excellent service for more than ten years. Now it has been improved even more – as the E-Business/EDI Team will also be demonstrating at the EuroBLECH in Hanover.

"Information must be informative. The customer should find out what he wants how he wants. And it should also be when and where he wants." That is how simply Matthias Maas from the Team E-Business/EDI Team explains the SteelOnline internet platform.

And he is delighted with the new functionalities that have just been implemented, including a real highlight – the e-mail subscription. If a customer decides to subscribe he will automatically be kept up to date about the status of his orders and will receive all the order-related information on a regular basis, including daily updated order data and ready-for-shipment and shipment details every two hours to keep him completely in the loop. To ensure that this data flow does not turn into a torrent, however, the function can be customized by a wide range of settings. One option is to subscribe only to the information whose status has changed. Just-in-time documents – from a laboratory analysis to invoices. In any event, the daily e-mail subscription will help to save paper.

Another important aspect is to ensure fast access times. Therefore a great deal of investment in hardware has been made at SteelOnline to ensure that nobody has to wait a second more than necessary, even if they only want to open old order documents from the archive. "Our guideline is to be as simple and clear as Amazon," is how Matthias Maas explains the team's motivation. One of the things that backs this is that there is an online auction every Wednesday at SteelOnline.

In fact the majority of customers now use this system in various regions around the world because SteelOnline is available in five languages. "Of course we always want to add more users. Ultimately it is extremely practical to switch the entire information chain to electronic communication because the paperless office is simply more efficient. Another aspect is universal availability – more and more contacts are now no longer tied to one location and want to remain fully informed whilst they are on the move." It is not just ThyssenKrupp Steel Europe that offers SteelOnline, the system is also available from three other suppliers.

So what will be next? "Nobody has asked us yet about an app," admits Maas with a wink, "but we're thinking about it anyway."

Wolfgang Kessler, freelance journalist

https://online.thyssenkrupp-steel.com/ecmlogin/login.do

SteelOnline, the customer portal to keep you informed has been made even better. Matthias Maas from the E-Business/EDI Team is delighted with the successfully implemented functionalities and will be demonstrating them in October at the EuroBLECH. "SteelOnline can keep you in the loop wherever you are in the world."

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Climate protection starts with steel

The industry is an essential partner for the energy revolution

ThyssenKrupp CEO Dr. Heinrich Hiesinger (right) and ThyssenKrupp Steel Europe CEO Edwin Eichler represented the steel interests of the Group at the Berlin Steel Dialog 2012.

"Climate protection starts with steel" was the subject of this year's Berlin Steel Dialog to which the Steel Industry Union invited representatives from industry, government, associations and media in mid-June. Company representatives and parliamentarians discussed the importance of the material for the energy revolution in front of more than 300 guests. And the outcome was clear – the steel industry is dependent on affordable energy more than any other to maintain its global competitiveness.

The energy revolution and climate protection signal the start of a new age – under the agreed plan the share of renewables in gross electricity consumption will rise to 35 percent by 2020, 50 percent by 2030 and 80 percent by 2050. At the same time the last nuclear power station in Germany will be decommissioned in 2022. The first signs of progress can already be seen as the share of renewables in electricity generation rose to 20 percent for the first time last year. And energy consumption also fell in 2011 despite the fact that the economy grew by more than five percent compared to the previous year. But the main question remains – how can a reliable, green energy supply be secured for industry in Germany at competitive prices?

For Hans Jürgen Kerkhoff, President of the Steel Industry Union, it is clear that the energy revolution will only be possible if industry remains innovative and efficient. Social acceptance for the massive investments must also be increased. "European and national energy and climate regulations mean that not only is the steel industry affected by the energy revolution, but that it is increasingly hitting the limits of what it can achieve as a result of rising energy prices and emissions trading."

For the German government Ernst Burgbacher, Parliamentary Secretary of State at the Industry Ministry, stated that affordable energy prices are essential for the continued existence of many manufacturing companies, particularly in industries which use a great deal of energy. "The steel industry is an essential partner for the energy revolution as a result of the importance of steel as a material in the complicated added value chain in modern industries." Burgbacher pointed to the fact that the German government, in compliance with a resolution agreed at EU level, wishes to take advantage of the possibility of compensating for the increased costs caused by emissions trading for energy-intensive industries who face global competition.

During the podium discussion Dr. Heinrich Hiesinger, Chairman of the Executive Board at ThyssenKrupp, commented on the energy revolution from the point of view of the steel industry. "Naturally we welcome the expansion of the special compensation regulations to relieve the burden on energy-intensive companies caused by Renewable Energy Law costs. But the interests of the companies must not be played out against the interests of

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other consumers. We still believe that we are paying the highest energy prices in our industry in the world."

The politicians at whom this was directed reacted immediately: "We cannot allow a steelworks in Germany to be dismantled and moved to India because of the energy revolution," said Hubertus Heil, the Deputy Chairman of the SPD Bundestag Party. The FDP Bundestag Party Chairman Rainer Brüdele added, "Industry needs affordable energy costs and we must impose market structures on pricing in the energy sector as soon as possible."

Hiesinger also criticized the lack of regulations for the monitoring process. "We need an actual and a desired value but if we do not know the desired value, nor even an approximation for what can be regarded as economical energy supply, the industry will be left in the dark – and that is simply not acceptable." He was backed in his views by Employers' Federation President Prof. Dr. Dieter Hundt. "Until the question of energy cost pricing has been answered that companies will be expected to pay, they will not be making any investments. Or they may consider not investing any more in Germany at all in energy-intensive industries."

The subject of the energy revolution and energy costs is also fiercely debated in the automobile industry. "The energy revolution affects the entire added value chain, including raw material extraction and processing. Steel makes up around 53 percent of the weight of a car which means that we cannot allow energy costs to rise without being checked if we wish to keep the automobile industry competitive," explained Matthias Wissmann, President of the Motor Industry Federation. Hiesinger agreed. "Industry is not putting a question mark against the energy revolution. We are interested in professional management which will enable the steel industry to remain competitive here in Germany and to continue to be able to supply processing industries with the most innovative material in the world to manufacture their products."

The fact that the steel industry is benefiting from the investments initiated by the energy revolution was underlined by Jürgen Trittin, Chairman of the Bündnis 90/Die Grünen Bundestag Party. Hans Jürgen Kerkhoff countered this by saying: "There is no future in dividing groups into winners and losers in the energy revolution – but we believe that there are more risks than opportunities at the moment."

The sides agreed that the market and system integration of renewables and their interaction with network expansion, conventional fuels and the demand side remains an enormous task which can only be solved if Germany retains a strong economy and industry and by achieving permanent consensus among all the various parties. "The energy revolution is like open heart surgery on an industrial society," summarized Hubertus Heil.

Dr. Bettina Wiess, financial journalist

www.stahl-online.de/english

Facts, data, figures

Germany has set itself some ambitious targets in terms of climate protection. These targets can only be achieved using high quality steel grades. Around 82 percent of wind turbines are made of steel, for example. Boilers, pipes and turbines in thermal power plants are also made of the material. Even solar cells are mounted on steel structures. 74 million tons of CO_2 emissions can be prevented every year simply by using pioneering steel applications. That constitutes around one-third of the total savings which the German government has set as a target. Every ton of innovative steel prevents six times as much CO_2 than its production creates.

Moderated by Roland Tichy, Editor-in-Chief of WirtschaftsWoche (center), the discussions involved (left to right): ThyssenKrupp CEO Dr. Heinrich Hiesinger, Prof. Dr. Dieter Hundt, President of the Federation of German Employers, Rainer Brüderle, FDP Party Chairman, Jürgen Trittin, Bündnis 90/Die Grünen Party Chairman, Matthias Wissmann, President of the Motor Industry Federation and Deputy SPD Party Chairman, Hubertus Heil.

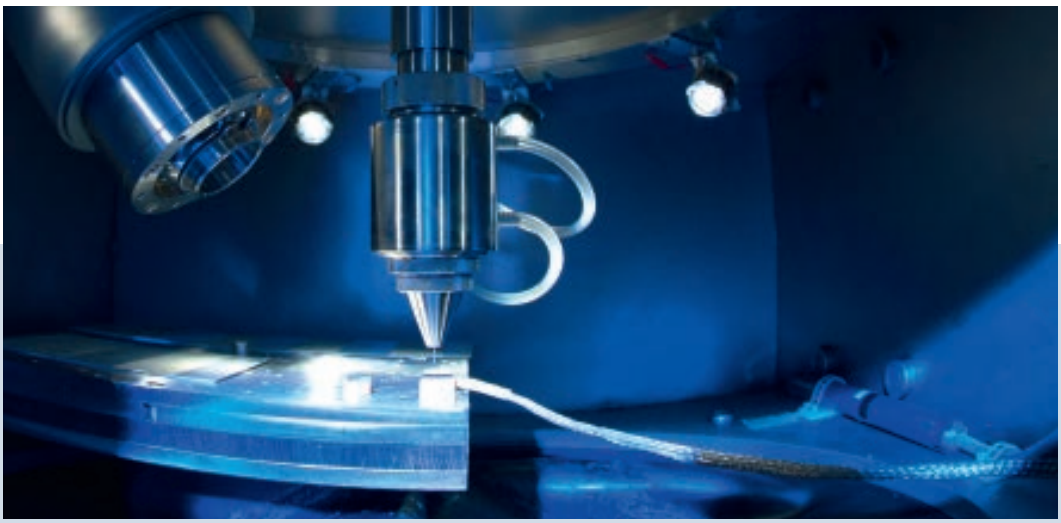
Series: It's all about the surface
First principles research – the rust detectives

Everybody knows the phenomenon. But what actually is rust? ThyssenKrupp Steel Europe naturally wants to clear up a question that is so vital to the company. After all, if you understand the processes better you can develop better precautions – such as new finishes that prevent corrosion right from the outset. One of the locations for internal research work is the Laboratory for Electrochemistry and Interfaces in Dortmund.

"What we do sounds pretty unusual to many people. However, one thing that we do know right from the start is that all corrosion is caused by electrons being exchanged between oxygen from the air and the metallic surface. In layman's terms, there is a current there. And we take advantage of that." For Dr. Reinhard Wormuth, Team Leader Corrosion and Electrochemistry, this latter point is one of the keys to success. "We now know a great deal about the processes that cause rust. We can do a great deal with electrochemistry now as well: namely, we can forecast very precisely and quickly what will encourage rust and what will inhibit it."

It is possible to use other methods to find how corrosion will develop on an alloy, a metallic surface or under an inorganic or organic coating. However, the typical series of tests such as those in a salt spray chamber generally take a good deal longer. Nevertheless corrosion research in an electrochemistry laboratory is similar to many other "forensic" work. It is painstaking detective work which is made up of lots of small steps. In fact the laboratory looks very similar to a lot of other highly specialized laboratories. The scale of the analysis equipment, the various pieces of equipment, instruments and test apparatus are only familiar to specialists – only the microscope on a laboratory bench is a familiar sight.

"One of our standard methods is called a current density potential measurement," explains Dr. Stefan Krebs, Coordinator of Electrochemistry, pointing to an unusually shaped glass flask with various openings. A probe is inserted, a material sample connected, current and electrical potential are measured inter-dependently using a so-called potentiostat. "In concrete terms, we now know how susceptible to corrosion a surface is. Step by step, we will test various compositions in the alloy and then select which direction to pursue," says Krebs.



The scanning Kelvin probe is a unique analysis instrument which ensures outstanding expertise. Researchers can look at corrosive processes which take place invisibly beneath a surface.

The team remains a little bit secretive when they demonstrate its scanning Kelvin probe. There is a certain amount of pride as well. Krebs continues: "This analysis equipment is almost never found at steel producers; in fact it is normally only found in university research institutes. This device is absolutely not a mass-produced item and often they are made by hand." A unique analysis instrument that provides rare insight – thanks to the high-tech apparatus the researchers can even find out more about corrosive processes which take place invisibly beneath a surface, e.g. a coating.

It is similar to thermography which displays problem zones on a monitor where the eye can only see a perfect shine. "This enables us to reconstruct what happens if the problems do not come to light until much later, in other words if the causes are unknown. The whole thing is fairly quick – in some cases, it takes just a few days," is how Coordinator Oliver Bendick explains the benefits of this technology. This proactive approach has already unmasked many culprits that would perhaps otherwise have remained unknown for many years.

And of course there are also everyday problems for automobiles. "Scratches in the paintwork can never be completely prevented. We now understand very well, however, how rust still manages to get under a surface that is still painted, and which one would expect to be fully protected." At the site of the damage an electrochemical process is initiated which then takes on a mutual approach with the metallic surface corroding at the exposed point, leading to the release of electrons, while oxygen is absorbed by the intact paintwork. This results in a local change in the pH value, which in turn weakens the adhesion of the paint to the metal. "The delamination process gives corrosion new energy. It is a process that is self-perpetuating," comments Wormuth. The team's unique expertise will of course pay off sooner or later for drivers because once these processes have been understood, the developers can create a truly sustainable solution.

Other highly demanding applications may also be possible one day with the help of electrochemistry. "Take a fuel cell, for example. If it were possible to insert robustly coated steel inside it, it would give the technology a major push forward. The graphite that is currently used is unfortunately rather sensitive and relatively voluminous." However, the surface would then have to be resistant to the aggressive conditions that prevail in a fuel cell, such as phosphoric acid. Electrochemistry will show whether this is possible in the first place, and it will then inevitably show how and when it can be achieved.

Wolfgang Kessler, freelance journalist

Our **new series** on coatings will continue in the next issue of *compact*

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Reference project for Solabs®2
Generating energy for heating and cooling using the facade

From the outside the facade of the Frank Seidler Werkzeughandel warehouse looks quite normal – high quality sandwich elements from ThyssenKrupp in anthracite gray. But this is no normal facade element but the new Solabs®2 development from ThyssenKrupp Steel Europe Color Unit – a solar active facade module for industrial and commercial buildings. And the first reference project with this unique product has now been completed at Frank Seidler Werkzeughandel in Stockelsdorf near Lübeck.

Satisfied with the reference project (left to right): Andreas Litzkow, Dr. Roman Glass and Frank Seidler.

Solabs®2 generates heat energy through the facade. Since to date there have been very few suppliers, solar thermals have not been widely used in industrial and commercial buildings.

When you enter the premises of the wholesaler and export dealer, the load-bearing construction made of light-colored laminated wooden beams immediately catches your eye. You immediately feel as though you have entered an office in Scandinavia. Swedish "dala" horses in various sizes are dotted around the rooms. Now for a confession: Frank Seidler was not just born in Lübeck, but he is also half-Danish and a real fan of Scandinavia who attaches a great deal of value to sustainability. He formed the four-person company in northern Germany three years ago. He initially rented premises where he could work. "But we really wanted our own office and storage facilities. It had to be a sustainable building where no combustion process takes place," explains the Managing Director, who specializes in exporting high-value products to Scandinavia. Furthermore, the building had to be square and practical – and made of sandwich elements. "We wanted the ones ThyssenKrupp manufacturers," Kaufmann added, who has a laid-back attitude that's infectious, and turns to Andreas Litzkow. The Manager for Quality and Development at ThyssenKrupp Bausysteme in Lübeck immediately thought of Solabs®2 and contacted project expert Dr. Roman Glass at ThyssenKrupp Steel Europe.

"Saving energy and using it efficiently are urgent topics that an increasing number of companies are focusing on," says Glass. "But in industrial and commercial construction, there has been very little use of solar thermal to date." One of the reasons for this is that there are very few suppliers who can meet customer-specific needs. But things are different with Solabs®2 from ThyssenKrupp Steel Europe – a development of a previously public project involving lots of European partners involving solar thermal. In a series of meetings, Seidler was won over by the innovation and in a joint process, the paper concept was turned into a functional facade element and fitted in the reference property. "We did not know exactly what we were looking at. The idea grew slowly and we were involved in all the development work," continues Seidler, and emphasizes the open and trusting working relationship with ThyssenKrupp Steel Europe and ThyssenKrupp Bausysteme. "For us, too, Seidler was an ideal partner and a very flexible developer," continues Litzkow, with Glass nodding in agreement.

The project in Schleswig-Holstein lasted around 18 months. A total of 360 square meters of continuously manufactured sandwich elements for the office building and 434 square meters of discontinuously manufactured material and 600 square meters of roof panels have now been installed. The heating and cooling system was commissioned in February. The pipework has now been installed in the 400 square meter warehouse with the system components located in one corner. On the facade, Solabs®2 generates solar heat energy. The facade module has the same structure as a standard sandwich and consists of an insulation core with quality coil-coated steel attached securely to both sides. The insulation core also features a pipeline system connected to the exterior of the facade to ensure that the solar radiation which strikes it can be used in the form of heat. The temperature in the office rooms and the warehouse where the inventory is moved 40 times per year is pleasant. "This is one of the benefits," says Seidler, who is delighted by the consistently cool temperature during the summer. "Most all, however, we notice the performance of Solabs®2 in terms of costs, which have fallen dramatically." Seidler's team can now work at full capacity and while business is booming, they can all keep a cool head and maintain control. The objective by the end of this calendar year is to achieve annual sales of around four million euros.

And at the ThyssenKrupp Steel Europe Color Unit, after the successful completion of this reference project, the objective is to continue to work on the future commercialization of Solabs®2. Glass adds one final comment. "We are planning the market launch within the next two years." To make even more customers' solar thermal wishes come true.

Daria Szygalski

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Solar-powered vehicle manufacturers of the future
On the road using the sun's power

One company is a solar-powered vehicle developer with over ten years of experience in building cars powered solely by the sun. The other is a global leader among material manufacturers of high-efficiency electric motors. Both based in Bochum, just a few kilometers from each other as the crow flies. They would make perfect partners, thought the University of Bochum and ThyssenKrupp Electrical Steel and decided to collaborate on developing a drive system for a new solar-powered vehicle.

More than 40 engineering and technical science students at the University of Bochum regularly work as solar mobile builders. The young engineers have already built six of these independently powered vehicles in interdisciplinary projects and have sent them to compete in solar mobile races around the world – with a good deal of success. The latest solar model, the SolarWorld GT is currently circling the globe and is expected to reach the starting point of its journey in Darwin, Australia in October. A completely new solar mobile is already being planned. This is due to be unveiled in May 2013. The University of Bochum works closely with ThyssenKrupp Electrical Steel on the drive system.

This company's products from its plants in Bochum and Gelsenkirchen include non-grain-oriented electrical steel which is used as the core material for electric motors. Because the motors in future electric cars will place particularly high demands on the material due to the high speeds involved, the electrical steel specialists continue to develop their material apace. Changes to the material alloy composition and the heat treatment and rolling processes are designed to help improve the efficiency of electric motors and minimize energy losses.

Developing a drive system for a new solar mobile with their teams – ThyssenKrupp Electrical Steel CEO Dr. Peter Biele (left) and Prof. Dr. Friedbert Pautzke, founder of the Solar Car Team and Professor of Electro-Mobility at the University of Bochum.

Solar mobiles are particularly dependent on a high energy yield in the drive system and therefore present a very interesting area of development for the engineers at ThyssenKrupp Electrical Steel. In addition to this, the University of Bochum is planning for the first time to build a solar car with a touring design with two seats, three doors and a trunk. The air coil motors which the Bochum students have used to date for their solar mobiles, which have been extremely sensitive to wind and can generally only be driven in a recumbent position, are simply not powerful enough for this. As a result of their higher power density there are now plans to use hub motors with an electrical steel core on all four wheels.

"This project is a great opportunity to demonstrate the benefits of highly efficient special steel in pioneering applications," explains Dr. Peter Biele, Chairman of the Executive Board at ThyssenKrupp Electrical Steel. Prof. Dr. Friedbert Pautzke, the founder of the Solar Car Team and Professor of Electro-Mobility at the University of Bochum continues: "The objective of making them suitable for everyday use has been dominating solar car development in Bochum for over ten years. The new model is intended to set new standards."

It has not yet been decided what to call the new car. However, it has been decided that it will enter the Solar Mobile World Championship in 2013 in Australia. If all goes well it will put its competitors firmly in the shade.

Bernd Overmaat

www.hochschule-bochum.de/en
www.tkes.com

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Customer survey for ThyssenKrupp Steel Europe

The results show that our partners are satisfied

What do you think of ThyssenKrupp Steel Europe? At the start of the year the Duisburg-based steel company asked its customers for their views – and they were rather positive. ThyssenKrupp Steel Europe is seen by the vast majority as trustworthy, credible and a good partner.

The customer survey was very positive for ThyssenKrupp Steel Europe – above all in terms of product quality, competency and technical advice.

The needs and views of customers are very important to the steel manufacturer – "respecting them and taking their views into account is a matter of course for us," says Josefine Sarfert, Manager Strategic Marketing/Support. "To enable us to get to know our customers better and provide them with better service we want to know about their satisfaction levels at regular intervals."

The latest customer survey was conducted online for the first time. "It was a comprehensive survey in several languages," says Frank Becker from the Sales Strategy/Planning Department. "We approached all our customers from the Auto and Industry Sales segments as well as the Heavy Plate and Color Units." In total mails were sent to 628 global customers with a return level of 66 percent and the reactions highlighted a good deal of positive feedback. "Those who completed the survey stated that they were very satisfied with ThyssenKrupp Steel Europe and that we were better than our competitors in many points. They particularly highlighted our product quality, competency and technical advice," says Josefine Sarfert, commenting on the pleasing results.

The survey also showed potential for improvements. Josefine Sarfert continues: "To meet the growing demands of the markets we are continuously working on improvements to our processes, products and services. In addition we will stay in close dialog with our customers." This also includes an improvement to the online survey itself which overall was received very positively but in future will go into more detail about customers' needs. To ensure continuous monitoring the next survey is already being planned for 2014.

Christiane Hoch-Baumann

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The state of the art
Millions invested in hot strip plants

ThyssenKrupp Steel Europe will continue to make competitive products in the next few decades and the hot strip plants in Bochum and Duisburg-Beeckerwerth have undergone massive modernization to ensure it. Hot Strip Plant 1 in Duisburg-Bruckhausen will start a major project comprising around 40 upgrades at the end of this year. Overall ThyssenKrupp Steel Europe is investing more than 500 million euros in the three plants with the aim of improving the efficiency of the lines and the quality of the steel products.

"The customer should receive a perfect product which meets his requirements 100 percent," says Ernst-Ulrich Becker who manages Hot Strip Plant 3 in Bochum. The graduate steelworks engineer has worked in "his" plant for 28 years. When you talk to him you immediately see his pride in the very modern plant which produces particularly hard steel types with flat sections. The extensive modernization work in Bochum started in 2007. For example a fourth additional walking beam furnace with low energy consumption has been built to make a significant increase in the output of the hot strip line. The company has also invested in a new roller control system which ensures that the strips run through the roughing train perfectly spaced. A new edging roll which is now flanged directly to the horizontal frame ensures a reduction in production time. Furthermore it allows the roughed strip width to be controlled better.

"It was also important to improve the rolling process. The hydraulic adjustment of all the stands has enabled us to increase the possible rolling forces," explains Becker. "And by adjusting the rollers and an additional roller bending system we can also generate sections using hard steel grades if that is what the customer needs." One good thing for the production of modern dual-phase steel types is that the downstream cooling section has been converted to a laminar cooling system. "That extends our production capacities for high and very high strength steel types." Overall Becker believes that his Bochum plant is well set for future products. "The modernization of the hot strip line and of the downstream systems enables us to achieve better and better thickness tolerances and widths and produce the required target sections with a perfectly flat finish."

Michael Bössler who manages Hot Strip Plant 2 in Duisburg-Beeckerwerth draws a similar conclusion. This plant mainly produces steel for the automotive industry, but also makes tubular strip which is used, for example, for building pipelines. Investments such as reinforcing the finishing line and installing an intensive cooling system has enabled the plant to expand its product range. Hot Strip Plant 2 is now able to produce tubular strip up to quality X80.

"The new automation of the finishing line is very significant", says Ulrich Mai who is Team Leader for Automation Engineering in Hot Strip Plant 2. "The new automation system enables us to control the process better and achieve closer tolerances, and that is particularly beneficial for our customers who place high demands on mechanical properties and strip geometry." All three hot strip plants operated by ThyssenKrupp Steel Europe are pursuing the objective of achieving minimal production tolerances and uniform mechanical properties over the entire strip length. "The modernization work has enabled us to further improve our product quality," explains Bössler. The fact that it has also been possible to extend the product range at Hot Strip Plant 2 in Duisburg-Beeckerwerth in terms of strip widths and thickness profiles is another benefit. Additional modernization work is planned in 2013 to keep up with the state of the art – for example the automation of the roughing train and coil discharge system which will further improve process stability and enhance strip edge quality. "We will make all the investments we have already planned which will enable us to meet our customers' requirements in full," says the Plant Manager confidently.

Quality is the priority for ThyssenKrupp Steel Europe. Its investments in three hot strip plants are aimed at achieving minimum tolerances and uniform mechanical properties over the entire length of the strip.

Just a few kilometers from hot strip plant 2 is hot strip plant 1 in the Bruckhausen part of Duisburg. The team headed by Plant Manager Heinz-Josef Engelskirchen is looking forward to the extensive modernization of the hot strip line which will comprise around 40 different upgrades. After a thorough period of planning and a global tender, the conversion of the furnaces and modernization of the rolling system has been started. The conversion of the roughing line and cooling section is planned for December, the finishing line and coil discharge system will follow in summer 2013. Already one of the features of Hot Strip Plant 1 is that it can use particularly high temperatures in its walking beam furnace. The conversion of the pusher-type furnaces will further protect the environment by reducing energy consumption and emissions of CO_2. "The priority criterion in our plant is process stability," says Engelskirchen, mainly considering the Transformers Product Sector. The plates required for this must be extremely flat. The completely new automation of the line will make a significant improvement to the process stability. In addition a condition monitoring system is to be introduced, a preventive process control system designed to identify errors in advance where possible. The entire production line is monitored by IT, cameras and sensors so that incorrect parameters can be identified early and adjusted.

Naturally all customers appreciate high surface quality, maximum flatness and homogeneous material properties. Plant Manager Engelskirchen looks one step further: "We want to retain our innovation and are investing heavily in the development of our line so that we can demonstrate our competitiveness in the production of LITECOR®, for example." High-tech made in Duisburg – and that's how it should stay.

Claudia Schneider, freelance journalist

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Lightweight car manufacture

Dual-phase steel types have attractive properties

The use of DP steel grades allows crash-relevant components such as side and cross members, sills, sections, bodywork reinforcements, chassis components, wheels and bumpers to be manufactured with lower weight.

The Germans' favorite toy must satisfy a whole series of requirements – it must meet stringent safety standards yet be lightweight, it should be as green as possible to drive, look good and also remain affordable. ThyssenKrupp Steel Europe is helping the auto industry to satisfy these requirements with its modern steel materials. DP-W® and DP-K® dual-phase steel types are just one example of this.

Steel grades with a sophisticated structure of ferrite and martensite have an attractive combination of properties – high strength, low yield point ratio, good cold forming capacity and suitability for welding. In addition, all dual-phase steel types have a high bake hardening potential after forming. For customers the use of modern multi-phase steels also presents a commercial benefit since lower strip thicknesses reduce the amount of material which has to be used. With cold and hot rolled versions and strengths of 500 Megapascal (MPa) to 1,000 MPa, ThyssenKrupp Steel Europe supplies a wide range of dual-phase steel products.

Dual-phase steels in the 600 and 800 MPa strength classes are by no means a rarity in vehicle manufacturing. The trend is moving towards grades with strengths up to around 1,000 MPa. Increasing pressure for weight reduction explains the growing demand for these products such as DP-K® 60/98, which has even greater lightweight potential than DP-K® 45/78, which already features particularly high strength.

Dr. Jörg Lewandowski, Manager Product Launch at ThyssenKrupp Steel Europe, believes that quality is the key. "All our dual-phase steels feature minimum production tolerances and uniform mechanical properties. This also applies to the very high strength version DP-K® 60/98 for which our customers have particularly high demands." The use of dual-phase steels allows crash-relevant components such as side and cross members, sills, sections, bodywork reinforcements, chassis components, wheels and bumpers to be manufactured with lower weight. Lewandowski's team responds quickly to customer requirements and helps to meet them with innovative materials and the help of their colleagues from Research and Development. New steel grades are generally developed in close cooperation with a pilot customer. Already it can be seen that customers for certain safety-relevant structural components in vehicle bodies will require even higher strength steels in the future. "We are working on it together," says Jörg Lewandowski. "Ultimately, we want to play a role in the automobile of the future."

Claudia Schneider, freelance journalist

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NewsFlash

Steel Europe Executive Board Member Jaroni says farewell

Retirement beckons. Dr. Ulrich Jaroni is leaving his position on the Executive Board of ThyssenKrupp Steel Europe after holding the office for ten years. Naturally, he is a bit nostalgic. "I can look back on some hectic years in which I managed to gather some incredible, wide-ranging and interesting experiences. It was not what I expected at the start of my career."
Jaroni was born in 1951 in Dorsten, Westphalia. After training as a technical draftsman, he initially studied nuclear engineering in Essen and acquired another academic title as a graduate in Mechanical/Power Engineering at the RWTH in Aachen. After earning his doctorate in 1985 and working at a series of universities, research facilities and in industry, the father of two children accepted a position as Plant Manager at Thyssen Industrie Umformtechnik in 1990. After a move to the Joining Technology Division at Thyssen Stahl in 1992, Jaroni was made Managing Director of Thyssen Fügetechnik in Duisburg just four years later, and then joined Thyssen Fügetechnik Nord in Wolfsburg in 1999. What is now ThyssenKrupp Tailored Blanks became the global market leader under his management and developed into the field of Tailored Products. This company plays a leading role in ensuring the continued development of bodywork and vehicle construction and has 13 sites around the world. It spans all product groups from intelligent material to ready-to-fit components. In 2002, Jaroni was then made a member of the Executive Board of ThyssenKrupp Steel. Since 2009 he has been responsible for the complete Engineering/R&D at ThyssenKrupp Steel Europe. Over the last six months, he was the Executive Board Member responsible for portfolio improvement projects.

Awards for steel innovations

The Steel Innovation Prize was awarded at the end of June. Thirteen winners received their awards at the Maritim Hotel in Düsseldorf from patrons Prof. Dr. Wolfgang Reitzle and Dr. Jost A. Massenberg in his capacity as Chairman of the Steel Information Center. The winning projects, which were from the sectors of architecture and construction, design, mechanical and plant engineering as well as science and automotive engineering, demonstrated the wide range of applications of steel according to the jury. This year saw around 660 projects entered into the competition. As a result, the event was one of the most important of its kind in Germany. For the last 23 years, it has focused on the possibilities and innovative power of this material.
http://stahl-info.de/stahlinnovationspreis/Stahlinnovationspreis_2012/stahlinnovationspreis_2012.asp

Corporate film premiere

This summer, the new corporate documentary about and by ThyssenKrupp Steel Europe will be premiered at the company's own visitor center. Running time is around nineteen minutes and consists of seven separate industry-based modules: automotive, home appliances, packaging, fuels, heavy machinery, environment and people within the company together with a trailer that summarizes the complete professional expertise of the steel manufacturer – from the hot through the cold phases. Each individual module is a stand-alone film and sketches an outline of the wide range of subjects relating to high-tech steel production with all its specialist services. The main character in most of the film sequences is the customer whose demands relating to steel are satisfied individually and professionally by ThyssenKrupp Steel Europe. Curious? The corporate film is not just used as a visitor film and shown at exhibitions and corporate presentations, but excerpts from it will also be available on the internet shortly and in the *compact* e-journal.

Transformer industry: Network established

High-end products and top quality – that is the claim that links the companies that have formed the TRANSFORM network. In addition to ThyssenKrupp Electrical Steel, the network currently has a total of nine other suppliers from the power transformer industry, all of them global leaders. The focal points of their joint work are establishing market trends through innovations and the exchange of expertise relating to sustainable developments. Against the background of their global network function, the partners prepare publications, attend exhibitions and organize joint congresses. These include the TRANSFORM Campus in Berlin, staged in June this year, at which young engineers were given an opportunity to meet renowned experts and exchange information with them.
http://www.transform.net

Future Symposium at ThyssenKrupp Rasselstein

A look at where the trend in steel packaging is heading will be provided on 6 September to around 150 customers of ThyssenKrupp Rasselstein at the world's largest production site for tinplate. After the successful initial event in 2009, the Andernach-based company will again be looking at future trends in the sector at this Future Symposium, together with partners from the steel packaging industry. "We are eagerly looking forward to interesting papers from experts and machine demonstrations," says ThyssenKrupp Rasselstein Chairman of the Executive Board Dr. Ulrich Roeske. The focus will be on the innovations, efficiency and sustainability of the modern, future-proof material of packaging steel. In addition to new developments, innovative machinery and process solutions, subjects such as can design and convenience, in other words convenient packaging for consumers, will also scrutinized. "Our customers particularly like the fact that they can get a concentrated overview of the future challenges facing the market from genuine experts," says Roeske in his summary of the value of the Future Symposium.
http://www.thyssenkrupp-rasselstein.com

LITECOR® is the new trend in lightweight construction

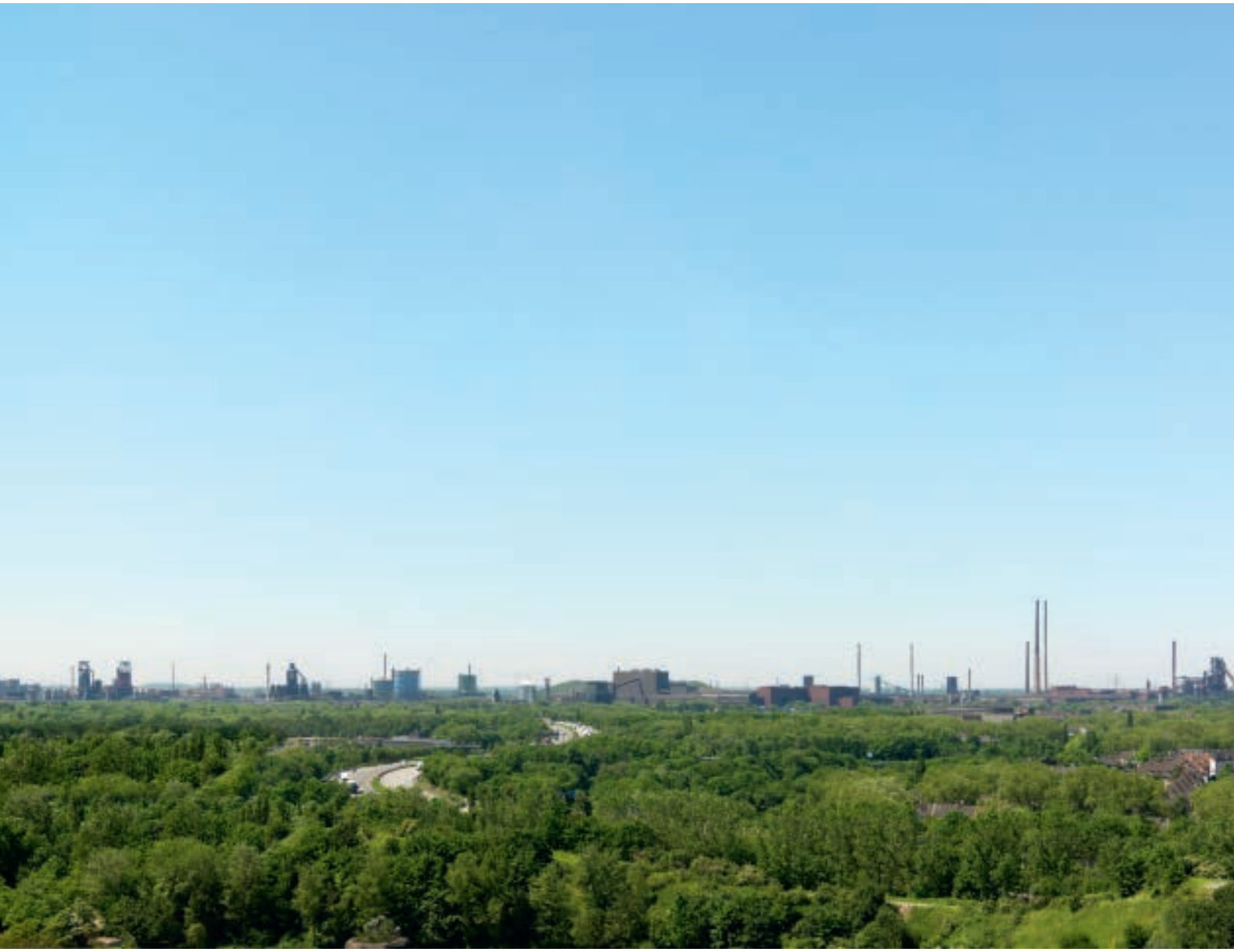
In the future ThyssenKrupp Steel Europe intends to market its weight-optimized steel sandwich materials using the trade name LITECOR®. Production at the first pilot plant has already commenced and the start of large scale production is planned for 2014. LITECOR® is a family of new sandwich materials made of extremely thin cover plates with a polymer core, which are securely connected and can be tailored individually to suit a whole range of requirements. The special feature of this is that the composite material combines the high strength of steel with the low weight of plastics. This produces new potential for lightweight construction for large area components which are primarily used in auto manufacturing but also for heating systems and for white goods. The outlook is that LITECOR® versions with an exterior skin quality suitable for the auto industry will be available from 2016.

Hot stamping: Book to be published in October

A new book entitled "Warmumformung im Automobilbau" (Hot stamping in the automotive industry) will be published in October this year. In it experts from ThyssenKrupp Steel Europe will provide insights into the latest developments in hot stamping for the auto industry. The book will describe the state of the art and future trends in a compact form. The book will be around 70 pages in length and will be the latest publication in the renowned series "Die Bibliothek der Technik" ("The Engineering Library") (volume 348) of the Southern German publishing house onpact. It will be available from book shops and on the internet at a price of EUR 8.60. ISBN 978-3-86236-041-3.

Heavy plate – German quality convinces Asian customers

ThyssenKrupp Steel Europe has recently opened a new warehouse in Taiwan. This means that from now on wear-resistant XAR® heavy plate will be available on a just-in-time basis throughout the whole of Asia and beyond. With its location in the second-largest city in the country with direct connections to the container port, the new warehouse will be able to take advantage of central, high speed delivery routes in Asia. Since the warehouse was opened, the made-in-Germany material has already become established. There are plans to include high strength special structural steel types N-A-XTRA® and XABO® in the sales range.



European pioneer
Steely energy management pays dividends

Since May, ThyssenKrupp Steel Europe has been in possession of a very special certificate: ISO 50001, an internationally renowned energy management system. No other steel company in Europe can match this feat. Now it is official – the Duisburg company uses energy very efficiently and thus helps to protect the environment. This certification underlines the energy guidelines put in place by the Executive Board who are very keen on energy efficiency.

The ISO 50001 certificate makes it official and fills the team with pride – ThyssenKrupp Steel Europe production is highly efficient. A joint project where every single employee can actively contribute to save more resources and use energy efficiently.

"I've just got to save the world" – an upcoming German singer took on this special mission recently in his hit. Impossible for an individual, but a declared goal with a great deal of potential change for society. At least that was the agreement reached in June by government representatives at the "Rio+20" sustainability conference in Brazil. The subjects of protecting resources and sustainability discussed on a global basis at the conference are already reality at ThyssenKrupp Steel Europe with the steel company having completed the ISO 50001 certification process in May for the international energy management system (EMS) conducted by TÜV Nord. "The audit confirmed our systematic energy management system. The EMS will enable us to make continuous improvements to our energy efficiency," explains Teresa Rygielski from the Energy Optimization/Studies Team (EOS) at ThyssenKrupp Steel Europe.

The responsibilities for energy matters have been clearly defined, current energy efficiency programs will be continued and new projects will be initiated. For example during the next financial year there are plans to use the waste heat from one of the walking beam furnaces in Duisburg. This will produce an additional 25,000 MWh per annum, which corresponds to the heating needs of around 1,700 homes. Fed into the Lower Rhine district heating system, ThyssenKrupp Steel Europe will supply heat to around 20,000 households and will thus become the largest industrial supplier of heat to the district heating system in the Ruhr area. But the company also uses the waste heat internally for production processes and to supply its own buildings. In addition the company is placing its trust in the latest technology. For example regenerative burners are helping to palpably reduce gas consumption in the pusher furnaces in the hot strip plants. These are able to store waste heat and then return the energy back to the combustion process. The result is the reduction of energy consumption levels and CO_2 emissions. To make its energy streams more transparent, the steel company is currently introducing a new software package in all its plants. "This will enable us to monitor and evaluate consumption levels at all our plants around the clock. In turn this will give us an opportunity to identify additional potential savings," is how Detlef Kleine-Kracht from the EOS Team summarizes the benefits of the modern system.

The company has been promoting energy efficiency for many years. And this permanent commitment has proved to be the key to its success since the management team were presented with the certificate within a very short time indeed. In fact it took just six months from registration to audit. "We are very proud of the fact that the introduction of the EMS was so quick and so successful. In fact it makes us the first steel company in Europe to have an energy management system which complies with ISO 50001," says EOS Team Leader Christian Weinrich, and continues: "This is clearly a great result for all of us. And the success was brought about not only by my team but also by a whole host of others. For example our colleagues from the Central Management Systems Team, the Energy Officers at the various plants and many others."

The EMS also enables ThyssenKrupp Steel Europe to maintain its awareness of costs. "Every kilowatt-hour saved is money in the bank and helps us to remain competitive," says Weinrich. Sustainable energy use is a matter of course for the largest steel producer in Germany. "We are making our contribution to protecting resources and acting efficiently," says overall Energy Manager, Jürgen Hoffmann. "To enable us to use energy more and more efficiently, we ensure constant development of innovative procedures – which among other things is also an important contribution to protecting jobs here."

In fact it is not possible for an individual to save the world, despite the crooner singing to the contrary. Instead it is a job for everybody. Every individual should play a role, however, and make suggestions to ensure that everybody can save more resources and use energy more efficiently. This attitude has become a very special mission at ThyssenKrupp Steel Europe.

Johanna Flöter

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MAN Diesel&Turbo
Colored steel enters play

The eye-catching buildings in various colors are situated right at the entrance to the MAN Diesel&Turbo plant in Oberhausen. They are the reason for a quick visit to the turbo machines and compressors manufacturer. The buildings feature shades of green like the meadows that grow on the company's site, and shades of blue like the sky. The buildings, which blend into the Ruhr area environment, are part of a high-tech production complex. And what appears so colorful at MAN Diesel&Turbo are in fact construction elements from ThyssenKrupp Steel Europe featuring colors from **Reflections**One®.

The mechanical engineering global leader's site contains three production building complexes. One of them consists of seven buildings and has been fully renovated – an example of developing existing buildings. The work involved the interior and exterior, energy efficiency and appearance. The reason is that the production of large compressors and gigantic turbines with a capacity of up to 160 MW for clients involved in the petrochemicals, chemicals and energy industries and others requires a good deal of space that was simply not available in the old buildings, which were around 60 years old.

So plans were drawn up and work was commenced. MAN Diesel&Turbo initially renovated only one production building and tackled the others later. The project consultant for the roof and facade, Mario Malavasi, supplied the design for one of the buildings, which involved raising and replacing the roofing and wall cladding for the site in Oberhausen, which was first opened more than 200 years earlier as GHH Gutehoffnungshütte. "Initially, only standard colors were required, gray and white for the exterior, and white for the interior," explained the consultant, who is now a joint shareholder in DWT Systembau based in Ratingen. With these specifications, the renovation work was started while production continued. However, Malavasi, who previously worked at ThyssenKrupp Steel Europe, gave some thought to the coloring that Friedrich Ernst von Garnier developed specially for the Duisburg-based steel producer, and contacted ThyssenKrupp Steel Europe. Shortly afterwards, Klaus Kottkamp, Manager for Corporate Architecture and Special Projects, and Thorsten Holtermann, Color Expert at ThyssenKrupp Steel Europe, showed the management team at MAN Diesel&Turbo and the developer MANGHH Immobilien the designs that **Reflections**One® designed for creating colorful buildings. "The industrial buildings created using unique color features quickly impressed and won everyone over," says Kottkamp. "Although the work was already underway, MAN Diesel&Turbo decided to design the production building in full using **Reflections**One®." Holtermann then created a design for the exterior and interior of all the buildings being renovated.

The way the colored buildings blend into the surrounding landscape makes you forget that the very latest high performance machines are manufactured inside them. The green-blue steel facade is deceptive. But it shows that the company has a thoroughly modern feel and approach. They wanted to get away from the standard gray of indus-

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trial buildings that stand out like a sore thumb in the landscape. “The green-blue is inviting and makes the large buildings appear to be friendly neighbors,” explains Holtermann.

The interior of the buildings also has a colorful design, with the walls finished in a bright shade of yellow. This color, rather than plain white, makes the room look lighter and more friendly. It is obvious that the buildings are kept extremely clean – and decorated with large format photographs by the production staff. “There is scientific evidence to show that color has an effect on the human psyche,” adds Kottkamp. Here in Oberhausen the newly designed interior appears to be motivating the employees to keep their working environment clean and tidy.
However, there is a soft beeping noise in one half of Hall 952, where there are nine-meter high cranes. This is where turbo machines and compressors undergo exhaustive testing. It takes three to four weeks to assemble them, and the testing process then takes another week. This generates high frequencies that are unpleasant to the human ear. To ensure that the workers in the next room can continue working without being disturbed. MAN Diesel&Turbo, which is part of the global MAN Group, is also using a sound insulation wall during the renovation work. “It is made of 3,500 square meters of Hoesch isorock® acoustic systems,” says Klaus Schneider, Regional Sales Manager at ThyssenKrupp Bausysteme. “The insulation reduces the noise by 34 decibels,” he added, and points out that ThyssenKrupp Steel Europe not only supplied an original and modern colorful design for this project, but also various other construction elements, including 37,000 square meters of Hoesch® trapezoidal sections, 15,000 square meters of Hoesch® paneling and Hoesch® trapezoidal section wall, as well as 6,000 square meters of Hoesch® thermal wall TL. But the project at MAN Diesel& Turbo is much more than just color and lots of construction elements. The project in Oberhausen shows the result of extensive and highly competent consultancy from a single source. And what a success it has been. The mechanical engineering company is extremely satisfied.

Daria Szygalski

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A braking success story
Drive safely with steel brake pistons

Erdrich Umformtechnik: Georg Erdrich, Managing Partner of Erdrich Umformtechnik, and son Nicolas ensure safe driving globally with their deep-drawn high-tech brake pistons.

Erdrich Umformtechnik is an innovation driver in deep-drawn front axle brake pistons for cars and other components. The family-owned company has now launched the three-piece lightweight brake piston EPB for rear axles that it builds using high-tech steel from Hoesch Hohenlimburg, a specialist in hot-rolled medium-wide strip and a subsidiary of ThyssenKrupp Steel Europe.

The numbers are as impressive as the innovation expertise – to date Erdrich Umformtechnik has manufactured 200 million front axle brake pistons for cars. The supplier develops its products itself and acts as a supporting partner to major customers and suppliers. "The same is true of our new deep-drawn lightweight EPB brake piston for the rear axle," says Georg Erdrich, Managing Partner at the metalworking business. Erdrich has already produced a whole range of generations of front brake pistons – "in total 21 types. Now we are using our expertise in modern safety to enhance the rear axles of cars as well."

Brake pistons made by Erdrich perform their good work on roads throughout the world, in particular through its main customer, the global player Continental. Erdrich is also a global player, however, with its own production plant in Krnov, in the Czech Republic having opened for business in 2006. It is currently building a new plant in the state of Georgia, USA. "We plan to start production there in 2014", says junior boss Nicolas Erdrich. "And by 2014 we also plan to have another production plant in China next to our branch office in Taicang City in the Province of Jiangsu." The plant in Taicang has been operating since 2010. "We are only assembling component there at the moment," he explains. His father Georg continues: "We are following our main customers." In addition to Continental, these include Bosch, for whom Erdrich manufactures control housings, Valeo based in France, which purchases components for wiper systems, and several German OEMs, for whom the Baden-based metal specialist builds axle components.

From Baden to the world. The company was formed in 1962 and has its head office in Renchen-Ulm, some 80 kilometers north of Freiburg. In 1992 it built its second German production plant in Sömmerda in the state of Thuringia. The firm has a global workforce of 1,300 and in 2011 its turnover exceeded 200 million euros – "And we continue to grow. We have 450 current products. Our main product is brake pistons for front and now also for rear axles. These are the products which will continue our success story," says Erdrich senior. And he points to the innovation prizes for both developments and the renowned Axia Award which is presented every year by Deloitte, the auditing company.

It was won this year by Erdrich in spring to mark its development to a system supplier with a rising level of global business, for clearly structured strategy processes and identifiably coordinated follow-up processes based on an integrated IT support system, as the laudation read. One of the factors behind the success is that the specialist supplier builds its own special tools for

Left Detailed view of the lightweight brake piston EPB: The latest product from Erdrich for rear axles requires complex forming and assembly processes, made possible by the special medium-wide strip from ThyssenKrupp Steel Europe company Hoesch Hohenlimburg.

Right This is where Erdrich builds its highly innovative products and supplies complete systems, all developed in-house. The company designs and builds its own specialist tools and systems for this purpose.

deep drawing, pressing and punching; in addition, its system for fully automatic production enables it not only to supply individual components but also complete systems.

It is also a system supplier of newly developed highly innovative three-piece rear axle lightweight brake pistons with integral electrical parking brakes, known for short as EPB pistons – made of steel by Hoesch Hohenlimburg in Hagen. Hoesch Hohenlimburg supplies the semi-finished product in precisely the form that Erdrich needs for its cold-formed brake pistons to minimize weight and maximize safety. "Our EPB consists of a deep-drawn steel sheet piston, shaped plate cam sleeve made of stainless spring steel and an interior section made of deep-drawn steel sheet," says Uwe Zeibig, Technical Director at Erdrich. The new feature in simple terms – "The piston is no longer a solid pressing but is made up of three individual components. This means that it weighs around 33 percent less and ultimately provides drastically higher comfort for the driver as well as reducing fuel consumption."

On the rear axle the conventional hydraulic foot brake and handbrake have been combined in a single system featuring combination calipers. Zeibig continues: "There is an electromechanical system in the EPB's caliper which is activated by the switch in the passenger cabin and therefore replaces the conventional handbrake lever." And the success story continues since "the deep-drawn design of the EPB piston is an important step towards exclusively electrically actuated rear wheel brakes on cars," explains Erdrich junior. In this case, however, design does not mean simply shaping cylinders. Zeibig explains: "In fact the medium-wide strip for the new EPB piston is shaped with various thick round sections and walls, with cams and shoulders. This is a very complex forming process for the three components. In addition they are then combined to form a single component by pressing in the interior section and inserting the plate cam sleeve which is positioned in the external piston by spring force."

The whole component was developed jointly by Erdrich and its customer Continental Automotive Systems CAS. The deep drawing expertise and fully automated production process comes exclusively from Erdrich, however. The main requirement for this is hot-rolled strip steel which allows the complicated forming process without having to accept lower rigidity and which withstands the subsequent processes perfectly – criteria satisfied by specialist supplier Hoesch Hohenlimburg. Erdrich and Hoesch Hohenlimburg have a mutually beneficial relationship. "Erdrich continues to drive us to achieve top technological performance. Today we supply a special version of our medium-wide strip which has been specially developed for brake pistons," says Carsten Schäfer, Manager Sales Automotive at Hoesch Hohenlimburg.

Werner Scholten, Technical Customer Service at Hoesch Hohenlimburg, goes further. "With Erdrich we worked on improving our rolling strategy using defined temperature conditions throughout the entire rolling process. This results in hot strip with very low thickness and profile tolerances and a special structure which is exactly what is required for the extreme forming requirements of brake piston production."

The new EPB piston is available in three types – with different outside diameters for various automobile categories. "The larger the piston diameter, the greater the braking effect," says Zeibig. And the manufacturer's sales target for them? "Ten million per annum." So what about the next objective for front axle pistons – after the 200 million? Erdrich senior and junior together, "300 million."

Ulrike Wirtz, freelance journalist

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A short process: supplier, service and customer
The added-value project

German cars enjoy global success – but the auto industry is also securing jobs and income in many other countries. One of the factors behind this success is the close, highly efficient collaboration between all the players in the process chain. A project by our partner the Schaeffler Group, the renowned manufacturer of clutch and gearbox systems, which uses the ThyssenKrupp Steel Service Center and ThyssenKrupp Steel Europe as a supplier of its raw materials, shows just how closely interwoven these processes have now become.

Steel in cars. The Schaeffler Group works closely with the ThyssenKrupp Steel Service Center and ThyssenKrupp Steel Europe for the production of clutch and gearbox systems.

"The dual-clutch gearbox certainly makes auto fans sit up and pay attention because it takes fast, convenient and energy-saving gearshifts to a new level," says Gerd Reit, Manager Central Purchasing Production Material Flat Products at the Schaeffler Group, by way of introduction to his company's range of services. "But it's not just for these star technical products that we need good quality materials. Put bluntly, components, modules and systems from Schaeffler are used in one out of every three automobiles in the world." It is easy to imagine that in view of these production figures, a massive volume of steel is required. The main plant in Bühl in Baden – where the clutch for the VW Beetle was created decades ago – purchases several hundred tons of flat steel every working day, equivalent on average to around 30 truckloads.

High-quality strip steel from ThyssenKrupp Steel Europe is needed for a wide range of applications. Reither: "We live the zero defects philosophy. That means that every single product we supply has precisely the defined quality that the automotive manufacturers demand from us. But that also means that our suppliers have exactly the same demands. We issue our own specifications that they must satisfy." But is not just for that reason that hot strip from Duisburg is in demand. One of the main quality criteria is also having a reliable supply chain. After all, not all steel is the same and everyday production requires a wide range of different grades and thicknesses. "Overall, we supply around 200 product versions to Schaeffler, including material thicknesses of up to 9 millimeters, which is unusual for hot strip. This full range has made us a partner who is providing more and more support for Schaeffler to pursue its successful formula," is how Guido Arimont, the Key Account Manager at the ThyssenKrupp Steel Service Center in Krefeld, describes the collaborative relationship that has been developing over a number of years.

Flexibility and fail-safe service are particularly in demand. The punching operation alone at Schaeffler LuK at the Bühl site covers an enormous production area of more than 21,000 square meters. And the production lines for punching and forming must operate efficiently and smoothly, since costs are an increasingly critical focal point, and the company has to ensure that it runs a competitive site. With this in mind, the partners are trying a new approach together. With the name "Vendor Managed Inventory", responsibility for material management has been shifted away somewhat from the manufacturer and onto the supplier. The focal point of this is a joint, SAP-based system that knows the demands of LuK production and tailors supplies precisely to them. "That means that we immediately know what is required, in what quantities and when. On the basis of a range of parameters, we fill our local warehouse of our own accord. LuK does not have to place a purchase order, but simply has to take what is needed," says David Christian Heck from the Sales Team at the Steel Service Center describes this individual service.

This consignment warehouse is stocked by our forwarding partner Hartmann and is located near Bühl. Thanks to this supply chain, LuK can use the warehousing space that is freed up for other purposes – a particular advantage because the company is expanding. Thomas Wölk, responsible for Business Development at the Steel Service Center explains: "The whole thing creates a clear picture of how our added-value services work. Simply by reducing stock volumes, we can reduce costs. We no longer need a certain buffer because the supplier and consignee normally make plans together to rule out the possibility of bottlenecks." At the raw material manufacturer, ThyssenKrupp Steel Europe in Duisburg, the improved processes have also been embraced. Technical Customer Adviser Carsten Jansen explains, "We also want to be able to plan and control our production as far ahead as possible. You have to remember that each type of steel must be produced in batches weighing 250 tons or more. That imposes limits on our flexibility. So, the sooner we know which type is required, the better for us." This has meant that the good relations between the long-term partners have improved even more. "From our point of view it is more than just a regional logistics concept. We need materials globally, in Europe as well as at our other sites around the world, for example. in South Africa and China. We need the materials to be supplied reliably and in the high uniform quality we require. And for an innovative company like ours, innovative expertise is always welcome. ThyssenKrupp Steel Europe knows its material and its development status better than others," continues Gerd Reither in describing the effects of the deepening customer ties.

There is one more thing that both partners are delighted with. "You could say it is a win-win situation," says Reither, "because what benefits the Schaeffler Group and its partners at ThyssenKrupp also benefits the environment. In fact, this concept saves enormous quantities of CO_2." In the past, the flexibility of truck freight was essential for ensuring continuous supplies, but now it is possible to use railway freight. Gerd Reither continues, "We are consciously switching traffic from road to rail."

Wolfgang Kessler, freelance journalist

www.thyssenkrupp-stahl-service-center.com/en
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Agenda

Alihankinta
September 18 – 20, 2012, Tampere, Finland
Around 900 exhibitors will meet at the exhibition and sport center at the largest industrial exhibition in Finland which is very popular with Scandinavian and Russian visitors. The exhibition covers an area of around 13,500 square meters, providing plenty of space for contacts with the supply industry in the Scandinavian and Baltic markets. ThyssenKrupp Steel Europe will be present in the form of its Heavy Plate Unit and its high-strength, wear-resistant steel as a co-exhibitor on the booth run by its long term business partner Flinkenberg.

Coiltech
September 28 – 29, 2012, Pordenone, Italy
Coiltech, the exhibition for coils, electric motors and transformers, will be opening its doors for the third time in Pordenone, Italy. The range of exhibits covers all types of materials, machines and services for the production of electric motors, generators and transformers. ThyssenKrupp Electrical Steel will be present at the event for the first time at Booth D7-E12.

Aluminum Industry Exhibition
October 9 – 11, 2012, Düsseldorf
After previously being held in Essen, this year the Aluminum Industry Exhibition will be held for the first time in Düsseldorf. This is the leading B2B platform for the aluminum industry and its main customer industries in the world. The event is attended by producers, processors and technology suppliers as well as end users. MgF Magnesium Flachprodukte will use the show to exhibit its unique process for the low cost production of magnesium sheet, which will also show off the wide-ranging material competency of ThyssenKrupp Steel Europe. In comparison with other ultra-lightweight materials, magnesium flat products can offer a range of technical benefits such as good strength to weight ratio and rigidity properties and great heat resistance. MgF will be present at Booth 10 I 145/05 where it will be exhibiting initial application examples for magnesium flat plate.

Chillventa – International exhibition for Refrigeration, Air Conditioning, Ventilation and Heat Pumps
October 9 – 11, 2012, Nuremberg
Chillventa will be opening its doors in Nuremberg for the third time. This event is the largest exhibition of its type involving refrigeration technology with extensive system solutions, components and applications. It is also a forum for product and system development in air-conditioning, heat pumps and ventilation equipment. ThyssenKrupp Steel Europe will once again be present this year: ThyssenKrupp Bausysteme and Isocab N.V. will be exhibiting their specialist products for cold and freezer store construction and for ventilation equipment on Booth 1-406 in Hall 1.

IZB – International Suppliers Fair
October 10 – 12, 2012, Wolfsburg
The International Suppliers Fair (IZB) is Europe's leading event for the automotive supply industry. A large number of national and international companies will take the opportunity to be present at Allerpark in Wolfsburg. They will be exhibiting the latest trends and innovations on the global market at the event. In addition to pioneering topics from the automotive added value chain, the focus of the exhibition will be on lightweight construction and electro-mobility. "Connecting Car Competence" is the slogan for this year's IZB. It offers both exhibitors and visitors an outstanding opportunity to exchange views relating to the subject of steel applications for the auto industry on three days on which it is open to trade visitors. The partner countries for the IZB 2012 with focal topics in the extensive program of accompanying events are Brazil and Argentina. ThyssenKrupp Steel Europe will be present in Hall 7, Booth 214 on a joint booth with the Business Area Components Technology.

EuroBLECH – the 22nd International Sheet Metal Working Technology Exhibition from
October 23 – 27, 2012, Hanover
Together with other Group companies, ThyssenKrupp Steel Europe will once again be present at Europe's largest sheet metal exhibition in Hall 16 (Booth C26) where it will be exhibiting innovative steel solutions for industrial sheet metalworking processes for a wide range of industries and applications. The EuroBLECH 2012 is the industry's leading event and is therefore a perfect meeting place for suppliers of metal-working technologies. With 1,460 exhibitors from 43 countries and around 61,500 visitors from 98 countries, it has been the first place to go for top quality technologies and practical expertise since 2010.

e-CarTec – 4th International Exhibition for Electromobility
October 23 – 25, 2012, Munich
The basic principles of technologies for electric drive systems, energy accumulators and network infrastructure have been developed. However, there is still a need for research, improvement and above all networking at a number of points in the added value chain. The e-CarTec and its events in the leading markets of Germany and France provides an ideal, wide basis for international exchanges. It is a partner event to the Materialica, the International Trade Fair for Materials Applications, Surface Technology and Product Engineering, and as such it covers the entire added value chain from materials and components to cells and batteries to full systems and their application. ThyssenKrupp Steel Europe will be exhibiting its lightweight steel solutions for electric vehicles alongside ThyssenKrupp Engineering with its Battery Plant Technologies and Hot Forming Solutions Business Units on a joint booth (Hall B1, Booth 328).

Stahltag
November 8 – 9, 2012, Düsseldorf
The Steel Information Center traditionally sends out invitations to its annual event at the CCD Congress Center in Düsseldorf. On this occasion the slogan for the event is "The future starts with steel". In various papers, speakers will look at various subjects including the energy revolution and the steel added value chain, life cycle assessments and resource efficiency as well as technical developments in plant and forming equipment. ThyssenKrupp Steel Europe will be present at the Stahltag in a small presentation area.

bauma CHINA
November 27 – 30, 2012, Shanghai, PR China
ThyssenKrupp Steel Europe will be present at the International Trade Fair for Construction Machinery, Building Material Machines, Construction Vehicles and Equipment with its Heavy Plate Business Unit. This steadily expanding trade fair will feature the exhibition of wear-resistant and high-strength steel types XAR®, N-A-XTRA® and XABO® as well as SECURE special steel (Hall E7, Booth E7.302).

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