

dialog

Information from SCHÄFER WERKE and EMW for customers and employees

October 2022 edition

SCHÄFER WERKE Group

Innovations and investments for the future



Container Systems

New hospitality concept

EMW

Transition to green steel production

Perforated Metal

Modern communal garages in listed ensembles

IT-Systems

Creating sustainable data centres



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<p>TRAIDEFAIRS 2023</p> <p>South Siegerland Vocational Training Fair 15.02.2023, Neunkirchen</p>	<p>METALFORUM Exhibition for the metal working industry Poznan / PL, 30.05. - 02.06.2023</p>
<p>The UK's biggest beer & brewing trade event Liverpool / GB, March 2023</p>	<p>Blechexpo, International trade fair for sheet metal working Stuttgart, 07.11. - 10.11.2023</p>
<p>Siegen Chamber of Commerce (IHK) Vocational Training Fair Siegen, May 2023</p>	<p>BrauBeviale –Capital goods exhibition for the beverage industry 28. – 30.11.2023, Nuremberg</p>



Management
 SCHÄFER WERKE Group (l. to r.):
 Michael Mockenhaupt,
 Guido Klinkhammer and
 Marcus Düber

Innovations and investments for the future

Dear Readers,

The last few months have been a challenging time for all of us. Besides the extreme development in the steel price and high energy costs, material shortages have brought supply chains to a standstill. In some cases, the weather has affected inland shipping and led to further bottlenecks in the already strained logistics business. And unfortunately, there is as yet no end to the international crisis in sight.

This makes it all the more important not to bury one's head in the sand, but to plan for tomorrow today and be proactive. Our response to current trends, such as digitalisation, new work and sustainability, is to make significant investments and to develop innovations in all business areas.

This is precisely what this issue of dialog is about. With innovations and investments, we are putting ourselves on the right course to be able to fulfil customer wishes even faster, more effectively and in a resource-saving manner.

We are thinking, planning and acting for the long term and intend to continue growing in the future, but not at any price. Social responsibility and environmentally conscious action are important to us and are where we want to place our focus. In our leadership workshop „Fit for the Future“, the relevance of shaping the future positively and strategically was clearly elaborated.

We look forward to mastering the upcoming challenges together with you as our customer, supplier or partner and hope you enjoy reading this issue of dialog.

Your management



Michael Mockenhaupt

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Modern communal garages in listed ensembles

Perforated sheet facades meet diverse architectural requirements in function and design, especially in open garages and large-scale parking facilities.

In Berlin's culturally historic Stadtgut Marzahn-Hellersdorf and Reinickendorf districts, Johannes Bau – general contractor for commercial and industrial structures – has built two modern split-level car parks, with 7 levels and a total of 1052 parking spaces. Using individual faced elements from SCHÄFER Perforated Metal, all city-planning conditions with regard to ensemble protection for the adjacent "plattenbau" apartment blocks could be fully complied with. The façade's function is combined with a design concept that harmonises with the overall context of its surrounding environment.

The project requirements were very diverse. The façade design needed to be coordinated in detail with the responsible authorities, not only due to cultural and historical heritage protection regulations, but also

because the overall appearance had to be embedded into the tight construction location of the new residential development with its around 1,500 apartments.

Advice, quality, reliable delivery

"As a rule, the parking facilities we build are classified as large-scale open-plan garages. Building regulations stipulate that their façades require free clearance of at least a third for ventilation. Our aspiration is to develop individual solutions for our customers, while remaining economically attractive by ensuring our products are manufactured with a high level of automation. For this, perforated sheet has proven its value as a long-lasting, low-maintenance construction element. The decisive criteria for choosing to collaborate with SCHÄFER Perforated Metal were their technical con-

sulting, quality and reliable delivery," says Matthias Millow, the expert for parking facility construction at Willy Johannes Bau and spokesperson for the PARK»RAUM cooperation group.

The cladding on the communal garages was entirely made up of powder-coated perforated sheets in aluminium. The sheets were attached directly onto the buildings steel girders, eliminating the need for an additional, complex substructure. The perforated sheet façade is self-supporting.

"For the 3725 sq. m of façade, SCHÄFER Perforated Metal supplied at total of 1286 customized elements made of powder-coated perforated aluminium sheets in stone grey and blue grey; all ready for installation and delivered on time", says Thomas Nassen, the responsible project manager in technical sales at SCHÄFER Perforated Metal.



Fully compliant with heritage protection requirements

The perforated sheet elements are chamfered at the top for water drainage and at the bottom for the drip edge. Each element has



a trapezoidal cross-section in the middle for reinforcement. The elements, which measure up to four square metres, were bolted together at the four corners as well as in the trapezoidal support. On each of the seven parking decks, at the level of the car headlights, the self-supporting perforated sheet façade incorporates staggered round perforations to provide almost 33 percent free cross-section. This limits the light emission to the outside. Nevertheless, the parking spaces are provided with adequate ventilation and natural lighting during daylight hours, thanks to perforated sheet elements with a 63 percent free cross-section, which are installed in the upper sections of each parking deck.

All in all, the result is an inviting façade with a homogeneous external appearance that fully complies with heritage protection requirements and blends in with the residential buildings. Perforated sheets can be used as an adaptive, light-looking outer shell for parking structures. In open garages and parking facilities, they help to dissipate car exhaust gases and moisture as well as serving as a safety barrier. In many cases, a perforated sheet façade makes a technical ventilation system unnecessary. //



Find more facade solutions here

Fresh air for tractor engines

SCHÄFER Perforated Metal supplies characteristic radiator grilles for Fendt's special Vario tractors.

Together with the agricultural machinery manufacturer Fendt, SCHÄFER Perforated Metal has been designing the characteristic bonnet ventilation grilles for Fendt Vario tractor models since 2017, most recently for the special tractors in the Fendt 200 V/F/P Vario series. These eye-catching perforated sheet metal grilles at the front of the bonnets supply the engine with air, while protecting the attachments and the engine itself from unwanted external influences. The ventilation grilles, manufactured in Neunkirchen, North Rhine-Westphalia, are delivered just-in-time and ready for installation to Fendt's cab factory in Asbach-Bäumenheim.

The front end is one of the main visible surfaces on vehicles and this also applies to tractors. The air entering the engine compartment is guided through so-called beading, the strengthening and shaping strips on an engine bonnet. The Fendt 200 Vario combines function and design in a very special way. The shape and direction of these strips, which are crucial for ventilation, reflect the agricultural machinery manufacturer's corporate design and gives the radiator grille additional stability.

In order to achieve both the necessary functions and the brand-specific design, the radiator grilles are made of four embossed perforated sheets. Prior being formed in a



The characteristic radiator grille for the Fendt 200 V/F/P Vario special tractor series is supplied ready for installation by SCHÄFER Perforated Metal.

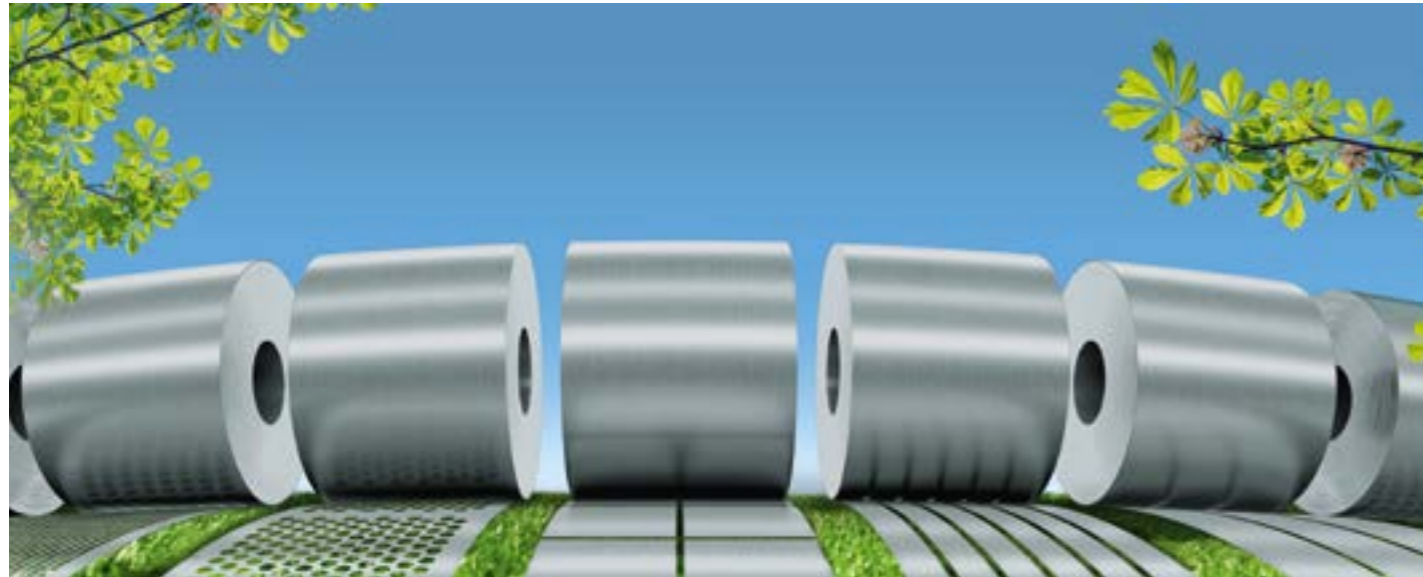
deep drawing process, the perforated sheet with rounded-edge hexagonal perforations is produced from 1.0 millimetre thick deep-drawing steel of grade DC06.

Besides the mechanical finishing, the coating on the ventilation grilles is also something

special. They are dip-coated and then provided with a final powder coating. In this way, the finished radiator grilles can easily withstand the extreme conditions of the DIN EN ISO 9227 compliant salt spray test. //

The transition to green steel production

EMW supplies available grades and surface coatings for CO₂ reduced steels.



There's no escaping the fact that the steel industry is responsible for almost 10 percent of global greenhouse gas emissions. The reason is that iron ore must first be heated in blast furnaces, using huge amounts of energy, in order to obtain the basic material for steel production - pure iron. For this purpose, coal is used extensively.

The chemical reaction in the blast furnace releases CO₂. Research into new production methods is being carried out at full speed and with some success. Initial results for

the replacement of coal with hydrogen are promising, as this would only release water vapour instead of CO₂. There are already concrete plans for the construction and creation of the necessary technical facilities and infrastructure.

But that doesn't mean there's no reason to start saving CO₂ now. Manufacturers are already reducing coal consumption significantly by using alternative technical solutions or by increasing their use of steel scrap. The first steel grades produced in CO₂-reduced processes are already

available on the market. As an independent steel service centre, EMW maintains long-standing business relationships with manufacturers in the steel industry, some of which have existed for decades. EMW can therefore supply its customers with almost all available grades and surface coatings for CO₂-reduced steel. It can purchase these steel products precisely tailored to the respective order, thus ensuring that the required CO₂ reduction is correctly allocated to the right customers. //

Metalforum trade fair in Poland

Thanks to our more than 15 years of activity in Poland, we not only have loyal customers, but now also many friends visiting us at our stand. There were also lots of people who came for the first time and we enjoyed stimulating conversations," reports Michal Ulman from EMW's field service for Poland. In addition to their interest in EMW products, a topic that concerned many visitors was also the difficult overall economic situation on the steel market and the challenges that this involves. //

Michal Ulman (L., EMW Field Service for Poland) and Andreas Sluga (EMW Sales) at the Metalforum in Poznan, Poland, at the end of May 22.



EMW invests in innovative materials testing machine

Proof of material quality increases customer benefit and is compulsory at EMW.

An elementary business process at the EMW Steel Service Centre is the optional incoming goods inspection of all thin sheets for processing. To deal with the volume of orders, the company needed an additional material testing machine from ZWICK/ROELL, which was linked up to the SAP merchandise management system. The machine guarantees the highest level of safety for users, as well as reliability for test results, sample material and test system.

One of EMW's company guidelines states that no material may be released for further processing until DIN-compliant material tests have been carried out and the expected material quality has been confirmed. In other words: no testing, no production; an operational principle that is strictly adhered to. In this respect, the incoming goods inspection is a vital pillar in EMW's value-added process.

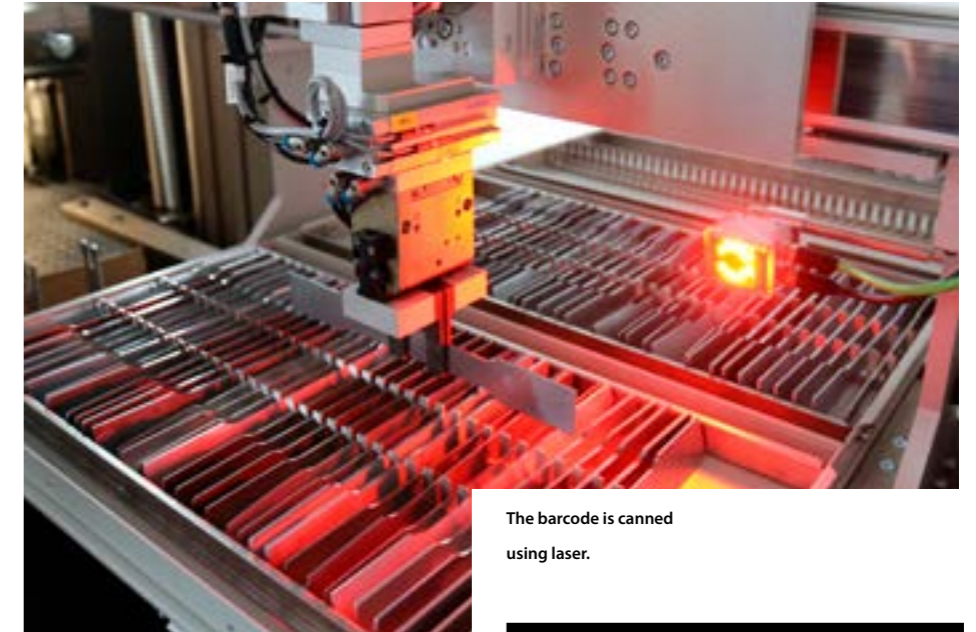
The new inspection system further increases both the reliability and quality of inspections. Furthermore, it cuts out the need to involve external material testing laboratories, especially as the increase in goods throughput means that incoming orders can be processed more quickly. This has a positive effect on delivery times for the products ordered and on customer satisfaction.

Shifts for incoming goods inspection

Material testing at EMW is a round-the-clock operation, enabling up to 600 tensile tests per day to be carried out on the new testing facility. The procedure used is fully compliant with the DIN ISO EN 6892 standard and allows tensile testing of thin sheets with a material thickness of up to six millimetres at room and elevated temperature.

For material testing, a test piece is cut from each sheet coil and registered in the inventory control system. Then four material samples are punched out of the test piece: two lengthwise and two crosswise to the rolling direction.

The destructive material test up to the point of break, which includes data logging, runs



The barcode is scanned using laser.

automatically as soon as the material sample is inserted into the testing system.

Automated tensile test

The tensile test is used to determine how a material reacts to the tensile force applied. Properties that are measured directly during the tensile test are yield strength, tensile strength, maximum elongation and necking, as well as deformation and strain hardening properties.

The data obtained in the test are recorded in a diagram to create a stress/strain curve. By means of the characteristic values obtained from this procedure, the material properties of the tested batch can be verified.

Investment with a guaranteed future

The modular design means the recently acquired testing system can be converted and upgraded at any time. This provides the guarantee that changing customer requirements can also be met in the future. //



New campaign to recruit skilled employees at our location in Treuen.

SCHÄFER Container Systems paves the way for new hospitality concepts

Mobile dispensing unit for professional use in breweries, wineries and hospitality businesses.

The unique feature of this mobile draft2go dispensing system is maximum flexibility, as it can operate independently of both power and dispensing gas. The beer is dispensed sustainably from a reusable KEG with a standard flat fitting. All this makes draft2go a genuine alternative to fixed, stationary dispensing equipment, because its professional use is completely free from restrictions caused by energy supply, time or location. It is this independence that opens up new opportunities for beer sales, especially in the outdoor catering and events sector or for private functions and parties.

A 10-litre KEG with a stainless steel liner and integrated CO₂ supply operating on the proven dual-chamber principle forms the core of the draft2go unit. This food-safe, sustainable and reusable container thus guarantees perfect hygiene. A highly efficient beer flow of up to 90 litres per hour is also possible.

„The perfect solution for breweries and wine business that would like to extend their range and offer their guests a wide choice of beverages in premium quality, in the smallest of space, completely independent of power and CO₂ supplies.“, says Tobias Wirth, Business Unit Sales Director, SCHÄFER Container Systems KEG.

A complete dispensing system

A 3-part EPP insulator jacket with a range of possibilities for individual branding shields the KEG from thermal influences: at an ambient temperature of 25 °C and a beer temperature of 3 °C, draft2go will keep the beer chilled for at least eight hours (max. 8 °C). Once the KEG is opened, the beer

quality is maintained for up to 30 days. The KEG can be filled both manually as well as mechanically on existing filling lines, by attaching an adapter. In addition, the draft2go-KEG can be drained of its contents in conventional dispensing systems. Rounding off the mobile unit is a dishwasher-safe drip tray and stainless steel drip tray grille.

NEW: draft2go+ with the steel dispense head

draft2go+ is compatible with all conven-

tional fitting systems: flat fitting, Grundy fitting, basket fitting and draft fitting. The dispense heads are stainless steel and have an integrated compensator. With this latter device, the flow rate can be regulated, allowing the foam on the dispensed beverage to be adapted, something which is often desired for beer in particular.

“draft2go+ is an innovative solution that’s unique on the market in the product segment for mobile dispensing systems. We’re primarily targeting breweries and wineries that want to provide their customers not

only with a mobile, but also a self-sufficient dispensing system. This opens up new sales channels for beverage producers and restaurant owners. In contrast to other self-sufficient systems, it avoids waste and its reusability for over 30 years makes a positive contribution to the CO₂ balance,” says Tobias Wirth, Sales Director for KEGs at SCHÄFER Container Systems. //



Highlights



Sustainability



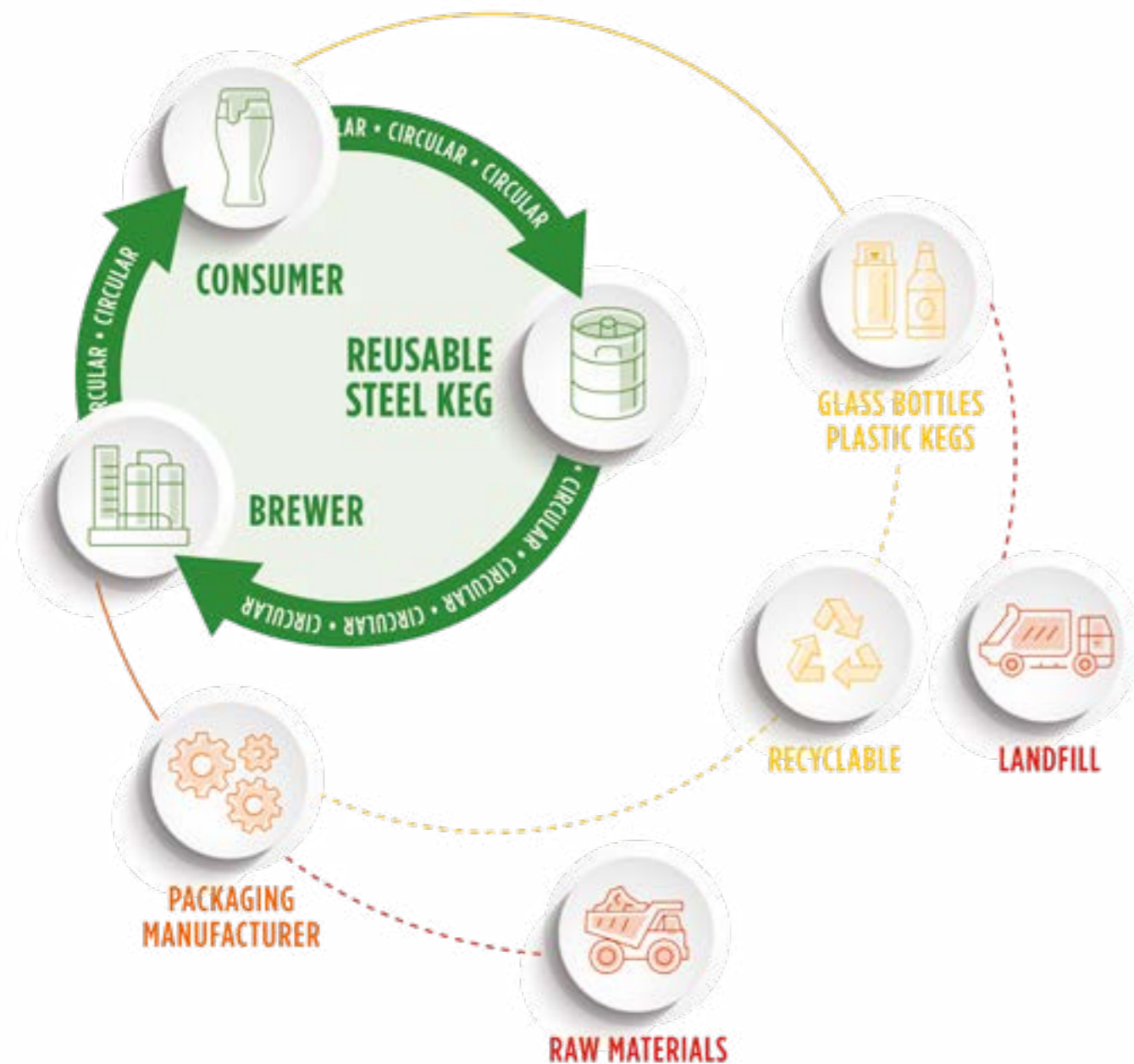
Mobile dispensing



Design insulator jacket

Market leaders set up international non-profit organisation

SCHÄFER Container Systems takes up the banner of sustainability in the beverage industry as a founder member of the Steel Keg Association.



The mission of the Steel Keg Association is the global promotion of reusable stainless steel KEGs in the brewing and beverage industry and, consequently, the support of efficient recycling management. As a worldwide interest group, it represents the needs and interests of the

players in the global keg supply chain to the beverage industry and catering sector. Stainless steel kegs are a decisive competitive advantage for the specialised trade as well as the catering industry. Their ecological footprint is small: decades of multiple use, transport safety, consistently

high quality standards, branding possibilities as well as sustainability through complete recycling at the end of their life cycle are the features which make them stand apart. For economic reasons, too, these containers have become indispensable in the marketing of beer, wine, spirits and soft drinks.



www.SteelKegAssociation.org



The Steel Keg Association's information and awareness campaigns will initially focus on the US market, before being extended to Great Britain and Western Europe in the course of 2022. Among other things, their marketing programmes are based on a recent ISO-14040 life cycle analysis by consultancy firm Deloitte. „Compared to disposable containers, stainless steel KEGs save more than 400,000 tonnes of greenhouse gases in the US and prevent around 500,000 tonnes of packaging from ending up in landfills each year,” explains Kyle Tanger, leader of Deloitte's

environmental sustainability practice. Similar reports come from other markets. „We are very excited to join forces with leading companies in the KEG supply chain to jointly represent our interests to the beverage industry and consumers. In addition, by founding the new Steel Keg Association, of which we are a founding member, we can communicate the many advantages of stainless steel KEGs more intensively worldwide,” explains Tobias Wirth, Sales Director at SCHÄFER Container Systems, KEG. //

Participation in AustroVin a great success

The AustroVin in Tulln is Austria's leading agriculture and viticulture trade fair and hosted a comprehensive programme of events as well as the complete range of products for viticulture, fruit growing, cellar technology and marketing. On 18,000 square metres of space, 240 exhibitors from 14 nations with 450 brands will be presenting the entire value creation chain for wine and fruit growing.

Leading global companies and specialist dealers were on site to present their product innovations and offer the best first-hand advice. So too SCHÄFER Container Systems, who took the opportunity as exhibitors to present their extensive product range of container systems to visitors and customers. Reusable stainless steel KEGs are not only sustainable, but also the best quality option for wines in the catering and hospitality industries. Through airtight filling and gas dispensing, they keep drinks fresh for a long period of time, ensuring the beverage's quality remains as it was at the time of filling. At the same time, the capacity of KEGs is many times that of glass bottles and leads to greater efficiency when it comes to logistics. //



Logistics and product innovations made to measure

New UN approval for frameless IBC reusable stainless steel container with industrial pallet dimensions.

SCHÄFER Container Systems, manufacturers of beverage container systems, as well as stainless steel IBCs and special containers, is expanding its range of frameless containers with dangerous goods approval for land and sea transport. A special feature of the 1,000-litre stackable IBC reusable container for liquids is its basic dimensions of 1,200 x 1,000 mm. This industrial pallet size guarantees efficient use of space during transport and storage.



26 containers fit on the loading area of a standard truck trailer. Due to their efficient design, up to 50 of SCHÄFER's new containers can be stacked and transported in each load. For sea transport, 38 of the new Schaefer containers can be loaded into a 40ft high cube. A similarly efficient utilization of shelf storage, which is designed to pallet dimensions, can also be achieved.

„The container's frameless design reduces the overall height to 1,270 mm. But the new container is still stackable. By using industrial pallet dimensions, we have developed one of the most efficient IBC solutions

in terms of space utilisation," explains Tobias Fuchs from IBC Technical Sales at Schäfer Container Systems.

In addition, the container's emptying process is optimised by the low dead space outlet design. This can be produced in accordance with Regulation (EC) No. 1935/2004 for liquids and paste-like substances and is certified in accordance with UN dangerous goods legislation (ADR/UN 31 A/Y) up to a filling density of 2.0 kilograms per litre. Approval for filling volumes of 500 to 1,000 litres was granted by the Federal Office for Materials Research and Testing (BAM) in Berlin. The new lightweight container is suitable for the

storage and transport of goods such as those produced by the pharmaceutical, chemical, food, mineral oil, paint and lacquer industries.

„We've had inquiries about this particular format again and again and now we can actually deliver on them. The best characteristics of stainless steel containers are their enormous durability, safety and sustainability. And besides, the basic dimensions of 1,200 x 1,000 mm mean there'll be a much smoother transition when it comes to replacing plastic containers," says Christof Ermert, Sales Manager of SCHÄFER Container Systems, IBC. //



ACHEMA 2022

SCHÄFER Container Systems presented recyclable reusable stainless steel IBC solutions at Achema.

Achema is the world forum for the process industry for chemical engineering, process engineering and biotechnology. One of the trade fair's focal points is packaging technology. That's why SCHÄFER Container Systems, manufacturer of stainless steel container systems for beverages, as well as IBCs and special containers, was among the exhibitors in Frankfurt in August 2022. Under the guideline „metal recycles forever“, the company presented its portfolio of stainless steel IBCs for applications in the petrochemical, chemical, pharmaceutical and food industries at stand B3 in hall 3.0.

One product highlight is the frameless and lightweight SCHÄFER Cube, a reusable container made of stainless steel. Thanks to its ergonomic design and weight-saving structure, this IBC is suitable for almost all requirements in the industries mentioned. The SCHÄFER Cube has ADR certification and is approved under UN 31 A/Y for the transport of hazardous goods up to 2.0 kg/litre. The low dead-space design of the container's draining outlet enables optimum residual emptying and its low construction means up to 44 Cubes can be accommodated in a standard truck trailer.

Constant reuse over decades gives stainless steel IBCs a low ecological footprint and their transport safety, consistently high quality standards and recyclability at the end of their product life cycle are extremely impressive features. //

New website



The new website of our Container Systems subsidiary in the Czech Republic is online as of now. Better customer contact, more information, product overview and direct contact – all with a single click!
www.https://ibc.schaefer-container-systems.cz/cz/

What is „metal recycles forever“?



The „metal recycles forever“ initiative was launched by the European umbrella organisation Metal Packaging Europe and bundles the recycling strengths of metal packaging. SCHÄFER WERKE supports this initiative.

What is special about stainless steel re-usable packaging?

Metals are natural elements that retain their physical properties infinitely. If metal enters the material-to-material cycle, where it is recycled again and again, it will always be available to future generations. This means that metal is a permanent material. Stainless steel KEGs and IBCs have a small ecological footprint due to decades of multiple use. On top of this comes transport safety, consistently high quality standards, branding opportunities and sustainability due to full recycling at the end of their life cycle. As a packaging material, metal achieves a recycling rate of 82.5% in Europe as a whole, and over 90% in Germany, thus supporting a sustainable circular economy.

It is, however, clear that for many companies the challenge of improving the recyclability of packaging in general will take a lot of time and money, whereas metal packaging already meets European and national requirements: metal recycles forever. //

Creating sustainable and energy-efficient data centres – the Blue Angel for Edge Computing

Increasing digitalisation is changing business models – more and more devices are interconnected in complex systems and generate large amounts of data that need to be dealt with and processed. Even for highly professionally equipped data centres, this is a challenge.

A solution to this is provided by edge computing - an infrastructure or network architecture concept that enables the collection and processing of data at the point of origin. This solution is generally not new, but is gaining importance in times of Big Data and expanding central cloud solutions. Setting up a decentralised solution is complex and depends on many individual circumstances. The F-Gas directive and normative requirements from EN50600 and ISO 22237 as well as ISO 27001 must be taken into account. Here, legislation is forcing the elimination of synthetic refrigerants. This has consequences for reliability and thus availability of data centres, because the Europe-wide refrigerant

regulation has resulted in wide-ranging obligations for data centre operators:

- Reduction of energy consumption and CO₂ emissions
- Reduction of partially fluorinated hydrocarbons to less than 21 %.
- Ban on split air-conditioning systems with Global Warming Potential (GWP) above 750 as of 2030

Regulations in force since January 2022

The German Federal Environment Agency has been offering „Blue Angel“ certification for data centre services and energy-efficient data centre operation since 2011. To ensure a uniform standard, the „Blue Angel“ sets binding minimum requirements.

But acceptance on the market has been slow and only a few data centres have been certified so far. For future-proof, sustainable new facilities, however, it makes sense to plan them according to „Blue Angel“ requirements. From 2027, data centres in Germany must be geared towards ecological sustainability and climate protection, by using waste heat, for example. Operation of new data centres must then be climate-neutral.

Challenge accepted

SCHÄFER IT-Systems, specialists in IT infrastructure solutions, have developed a concept for a cooling system that uses 100 % natural refrigerants. To further reduce energy costs, the company is also a driver of innovation with its environmentally friendly, water-based cooling systems in free cooling and waste heat utilisation. The goal of the project is to attain certification in compliance with „Blue Angel“ specifications for a cooling solution which is operated 100 % with water. Together with cooperation partner Efficient Energy, a cooling system made up of typical data centre components for edge computing was set up and tested as a closed-loop concept. The solution was designed as a closed system for edge computing with four racks and cold and hot zone separation.

The test

The heated water flows from the rack system via a pipe network to the eChiller cooling unit. Depending on the outside temperature, the warm water is cooled down via the free cooler or the eChiller's integrated compressor, before it is fed back to the consumer, i.e. the edge row, in the circulation system.



Mission accomplished

The PUE and APF values determined are decisive. In an ideal system, the PUE value is 1. The maximum value for „Blue Angel“ conformity is 1.3. The system tested achieved a value of **1.12**. „Blue Angel“ criteria stipulate that the annual performance factor (APF) must be greater than 8. For the test system, an APF of **8.7** was recorded.

SCHÄFER IT-Systems was thus issued with the certificate of conformity for meeting the „Blue Angel“ requirements for refrigeration systems for DE-UZ 161 and DE-UZ 214 data centres.

„We assume that the requirements at further performance levels will also be fulfilled. Compared to previously widespread



cooling systems using classical refrigerants, our new air-conditioning solution reduces electricity consumption by two thirds, based on one year covering all four seasons. This also reduces the annual carbon dioxide footprint by almost 70 per cent. Compared to a traditional system, the investment pays for itself within three years of operation,” explains Thomas Wermke, Business Unit Sales Director at SCHÄFER IT-Systems. „With this,” Wermke continues, “SCHÄFER IT-Systems, as a specialist for rack-based air conditioning solutions, has proven that both energy efficiency and sustainability are possible, even for data centres with an output of less than 40 kW.” //

Follow us!

We are now regularly expanding our social media presence to provide you with the most important information on all channels. Of course, we can also be found on LinkedIn and will regularly inform you there about all our current projects, trade fairs, events and product innovations! Social networks thrive on interaction, which is why we would like to invite you to join up with our approx. 900 followers, comment regularly, like posts and share content.



With concentrated expertise, three experienced partner companies Datwyler IT Infra, Efficient Energy and SCHÄFER IT-Systems launched their first seminar series, „My Green Data Centre“, in autumn 2022. Experts from the IT sector benefited from the know-how of these professionals and learned everything about compliance with standards and guidelines, as well as about the economic aspects and innovative systems on the road to creating the „green data centre“. There were presentations given on the following topics:

- GREEN IT for Edge Computing
- Operating modern infrastructures sustainably
- Future-proof planning for chilled water systems in data centres



Into the future - intelligently networked



The seminar series will be continued in 2023. We will provide information on further dates at: <https://www.rechenzentrum-der-zukunft.de/>



Blue^{zero} Data: The Edge Computing solution with 100 % water-cooling

Edge computing solutions are decentralised infrastructure and network architecture concepts that extend central cloud solutions and enable data to be collected and processed at the point of origin. Edge computing is not new, but is gaining importance in the age of Big Data. An important aspect of edge data centre solutions is their enormous energy-saving potential, as these decentralised, compact solutions optimise computing loads and reduce energy needs.

In addition to rising energy costs, data centre operators are faced with the challenges of planning or retrofitting climate-friendly, but at the same time, high-performance data centres. They also have to comply with environmental and energy efficiency regulations.

The solution
Edge data computing with climate-friendly data processing in compliance with Blue Angel requirements. Bluezero Data builds on these requirements: a complete high-performance and energy-efficient edge data centre solution with environmentally friendly and sustainable cooling, which already fulfils "Blue Angel". The environmentally friendly Bluezero Data solution consists of an edge row or edge rack solution from SCHÄFER IT-Systems and the climate-neutral eChiller45 cooling unit from Efficient Energy, which uses 100 % water as its natural refrigerant.

endly and sustainable cooling, which already fulfils "Blue Angel". The environmentally friendly Bluezero Data solution consists of an edge row or edge rack solution from SCHÄFER IT-Systems and the climate-neutral eChiller45 cooling unit from Efficient Energy, which uses 100 % water as its natural refrigerant.

The components of Blue^{zero} Data



eChiller45 from Efficient Energy

- Coolant: 100 % water
- Cooling capacity: 45 kW
- Recirculation: dry
- High efficiency at part load due to four operating modes

- ← **Edge Rack / Edge Row from SCHÄFER IT-Systems**
Plug-and-play complete edge solution with predefined components consisting of racks, cooling, power, monitoring, security and service

Blue^{zero} Data – the climate-friendly cooling concept

This complete solution is climate-friendly, energy-saving and meets the „Blue Angel“ cooling system requirements for IT cooling of DE-ZU 161 and DE-UZ 214 data centres with the following values:

- Partial Power Usage Effectiveness (pPUE) 1.12
- Annual performance factor (APF) 8.7
- Water as natural coolant

The heated water flows from the rack system via a pipe network to the eChiller cooling unit. Depending on the outside temperature, the warm water is cooled down via the free cooler or the eChiller's integrated compressor, before it is fed back to the consumer, i.e. the edge row, in the circulation system.



The benefits



Climate friendliness

- 100 % water as a natural coolant
- 0 % direct CO₂ emissions
- Climate-neutral cooling unit



Energy efficiency

- Infinitely variable partial load control
- No start-up currents
- Energy-optimised cooling water recirculation control



Operational safety

- Water neither flammable nor toxic
- Low maintenance requirements
- No restrictions on installation site
- Quiet and vibration-free



Economic efficiency

- Low coolant costs
- Guaranteed availability
- Amortisation < 3 years
- BAFA funding up to 30 % of the investment sum incl. planning costs



Planning and investment security

- No F-gas directive, coolant with 0 % GWP
- No DIN EN378, thus no refrigeration regulations
- No safety training necessary

The data centre of tomorrow at the Data Centre World

Data Centre World Germany is the largest expert conference for the data centre sector in Germany. 300+ top speakers gave inspirational lectures to thousands of colleagues from the industry.

SCHÄFER IT-Systems, the specialist for data centre infrastructure, data centre cooling solutions and network technology, presented its brand new concept for a cooling system operated by 100% natural coolants for the first time on 11th and 12th. May 2022.

Aiming to cut energy expenditure, the company is also a driver of innovation with its environmentally friendly, water-based cooling systems in free cooling and waste heat utilisation.

„The value of a trade fair cannot be assessed on the basis of leads and new projects alone. Rather, it is the stimulating experiences, the interesting conversations and the deepening of cooperations with partners, such as EDC Datacenter GmbH, ConSysTech GmbH, Efficient Energy GmbH and Cloud&Head Technologies GmbH that makes a trade fair really successful,“ says Thomas Wermke, Business Unit Sales Director at SCHÄFER IT-Systems. //



Fully automatic large-scale sheet metal processing machine

Flexible manufacturing for new markets and industries

SCHÄFER WERKE Group invests in production facilities to boost availability, efficiency and sustainability.

After completing the modernisation of their component production, the SCHÄFER WERKE Group is now looking to the future with great optimism. This investment will boost the effectiveness and profitability of value-adding and customer-oriented processes. The long-term securing and increasing of modern jobs fulfil sustainability criteria from an ecological, economic and social point of view.

Within the framework of a works development plan, new production facilities have been installed and modern industrial jobs created over the past two years at the Betzdorf site in the federal state of Rhineland Palatinate. With the commissioning of a digitally networked large-scale system for automatic sheet metal processing and a state-of-the-art powder recovery machine to allow environmentally friendly powder coating, the new investments in component production for

the two business units SCHÄFER IT-Systems and SCHÄFER Interior Systems have reached their conclusion for the time being.

„Our group of companies is taking action in many areas to improve its ecological balance sheet in the long term. For example, we use green electricity at all our German sites and operate our own combined heat and power plants. We have also been able to significantly reduce our energy consumption in recent years.



Plant manager Jan Roth, partner Beate Schäfer-Henrichs and managing director Guido Klinkhammer after a demonstration of the new powder recovery machine.

The new investments and the resulting conversion of the production processes now put our Betzdorf site right at the cutting edge, too. Higher throughput, more flexibility and increased availability mean we can offer new products for new markets and industries sustainably and quickly,“ explains Guido Klinkhammer, Managing Director of SCHÄFER Werke GmbH.

As a family business with over one thousand employees in diversified business areas, the SCHÄFER WERKE Group has stood for expertise and innovation in steel processing since 1937. At the Betzdorf site, SCHÄFER IT-Systems produces integrated solutions for data centres based on its iQdata product portfolio. SCHÄFER Interior Systems develops and produces office furniture, cupboard and shelving systems as well as workbenches for industrial and trade use. //

We are fit for the future

Megatrends with relevance to all business units.



Actively shaping the future and developing positively in the ebb and flow of world events requires clear goals and suitable strategies. That is why SCHÄFER WERKE organised a two-day team event in Bad Marienberg in May this year to get fit for the future. The participating managers came from all business units and from all company locations.

Courage to change

In the first workshop in 2021, current megatrends were identified and examined in cooperation with the Frankfurt Zukunftsinstitut (zukunftsinstitut.de). From this complex of topics, three that are highly relevant for the SCHÄFER WERKE Group in terms of strategically shaping the future were identified and singled out.

1. Sustainability – as a principle of action for the ecological conservation of resources, as well as economically safeguarding the company's future and the shaping of social relationships with employees and society.

2. Connectivity and digitalisation – for the technological optimisation of current and future products, as well as the efficient use of processes and systems - but also for the technological support of internal and external communication.

3. New Work – for shaping modern working environments, working conditions and processes into modern, innovative and future-oriented communities for success.

In changing groups and with different methods, all team members worked constructively and purposefully on possible measures for the required further development of the Group of companies.

In an open and constructive working atmosphere, numerous good results were achieved in the context of sustainability, connectivity and new work, such as improving our carbon footprint, more budget and target transparency and closer networking between business units. Following the team event, all participants have since

been working intensively on implementing these objectives.

New management position for sustainability and energy

The requirement for this is professional, competent management. That is why SCHÄFER WERKE has created a new management position to actively pursue sustainability criteria. The tasks of the energy/sustainability manager are many and varied.

They start with the further development of sustainability strategy in cooperation with the management, the staff functions and the specialist departments. They also cover the identification of optimisation potential through renovation and modernisation measures based on data collection, analysis and evaluation of measurement and energy data, and go right up to sustainability topics relating to transport, production, energy and buildings. This all adds up to an area of responsibility which is both exciting, and yet equally complex.

The work force as a factor for success
For example, over the last three years, as part of the SCHÄFER WERKE Group's health management policy, all employees have had the opportunity to lease a bicycle, following the slogan „A bike for everyone“. This way, the Group not only contributes to the health of its employees, but also to easing the burden on the environment, either through less exhaust fumes or reducing traffic noise. A cause for celebration is that just in time for the 2022 peak cycling season, the 500th e-bike has now been leased. As a gesture on behalf of all SCHÄFER employees, Managing Director Marcus Düber and Human Resources Manager Stefan Homrighausen marked the occasion by giving the lucky lessee a present. //

SCHÄFER Group in the "Maschinenraum"

SCHÄFER WERKE, SSI SCHÄFER and SCHÄFER SHOP have become part of an alliance known as the „Maschinenraum“ (maschinenraum.io), a name meaning "Engine Room". The association consists of around 50 SMEs, partner universities as well as other innovators. The joint work also aims at driving the digital transformation of German SMEs in particular.

Seeing digital transformation as an opportunity to break new ground

With the increasing complexity and speed of new realities, even the most innovative and successful companies today are struggling to continuously understand technological, environmental and societal challenges and adapt to them by finding the right solutions. "Maschinenraum" aims to help German SMEs understand and boldly shape the future. To this end, it unites the power of German medium-sized and family-owned companies to jointly create a future which is desirable and worth living in for coming generations.

The SCHÄFER Group wants to use the exchange with other members of "Maschinenraum" to share ideas on how to deal with the challenges involved, for example, in recruiting, cultural change and sustainability.

SCHÄFER Group conference at Bad Marienberg

Sustainability aiming for balanced climate neutrality by 2030



In July 22, a conference was held, at which participants from the family, the shareholders, and the management of SSI SCHÄFER, SCHÄFER SHOP and SCHÄFER WERKE meet regularly. This year, the topic of „sustainability“ was the main focus. The aim is to reconcile economic success and growth with environmentally conscious actions and social responsibility. For this reason, the SCHÄFER Group has set itself the goal of achieving climate neutrality by 2030 in order to actively shape the future. A number of measures have already been implemented. All new investments at all locations are geared towards sustainabi-

lity and resource conservation. Sustainability is a socially, ecologically and economically challenging task that is now being driven forward. During the exchange with the entire group, strategies were discussed and important impulses were given for coping with current and future challenges. The participants exchanged views about which measures have already been effective and where further measures could be introduced. Various talks and presentations, such as the contribution by futurologist Tristan Horx, provided an interesting insight into this complex topic. //

SCHÄFER BA – The digital BAsement of the SCHÄFER companies

This year, a new organisation was founded. The name „SCHÄFER BA“ was chosen to unite the past and the future. The idea behind the organisation is to promote communication, cooperation and collaboration between the SCHÄFER companies and to create economic sustainability. A further aim is to pass on specialist skills and knowledge about methods, in order to sensitise employees more strongly to digital issues of the future: in other words, to encourage the creation of a digital mindset for implementing and shaping the digital transformation. The concept includes the establishment of group-wide communities and networks in order to promote innovation and the exchange of ideas with experts. //

Shaping the future for and with young people

This year, seventeen trainees take their first steps to a future career at SCHÄFER WERKE.



The new apprentices of the first year of training with Managing Director Marcus Düber (left) and partner Beate Schäfer Henrichs (right) as well as the training managers Wolfgang Weber and Ralf Braun.

Young people need future prospects and successful companies need motivated young professionals. That is why in 2022 the management and the industrial and commercial training instructors once again welcomed a total of sixteen new apprentices at the headquarters in Neunkirchen. Seven commercial and nine industrial trainees as well as one cooperative degree student have begun a new phase in their lives together with SCHÄFER WERKE. The young professionals will be trained as (m/f/d) industrial clerks, office communication clerks, IT specialists, industrial, engineering, cutting and forming technicians, specialist warehouse clerks, machinery and plant operators as well as industrial or energy plant electronics engineers. In cooperation with the THM (Technische Hochschule Mittelhessen), the cooperative degree student will be given practical training as part of the business administration course.

Training quality and individual support are outstanding

One reason for young people's interest in learning a career at SCHÄFER WERKE is the high quality of the vocational training, which is well-known throughout the region. The slogan „Discovering and promoting talents“ reveals the intention of strengthening the personality and general education of each individual. The training of these young people is accompanied by a range of additional measures. SCHÄFER WERKE organises so-called apprentice rallies for all new trainees. This gives the young professionals an insight into the various divisions and departments in the Group's different companies. In addition, there are trips and seminars for all the trainees together. In the company's own training workshop, the industrial-technical trainees learn basic practical skills and are prepared intensively for their examinations as well as

for the assignments in the various working fields. The training portfolio is supplemented by a wide range of courses, lessons, exam preparation courses and internal workshop instruction. For years, apprentices at SCHÄFER WERKE have been achieving above-average exam results, which guarantee them a self-determined start into their professional careers as young adults.

Re-certification with „Gütesiegel Ausbildung Südwestfalen“

The high quality of training was again confirmed by the Siegen Chamber of Industry and Commerce (IHK) during the course of this year in the context of a re-certification. As a public corporation, the IHK offers companies in the region the opportunity to undergo an objective and standardised assessment. SCHÄFER WERKE successfully came through this external quality audit for the second time and has now been certified for a further five years.

The award ceremony for the certificate „Gütesiegel Ausbildung Südwestfalen“ (South Westphalia Seal of Approval for Vocational Training) took place in a festive setting during the Siegen vocational training fair in the Siegerlandhalle.

On the two days of the fair, everything revolved around „career orientation“. Interested young people were able to find out more about job profiles, qualifications and prospects from over 130 companies, educational establishments and institutions in the region. Providing young people with vocational training is a matter close to our hearts. This is not only shown by our re-certification, but especially in the valuable work of Ralf Braun and Wolfgang Richard Weber. These two dedicated training instructors individually accompany and support SCHÄFER WERKE trainees on their career path throughout the entire course of their training.



Wiesensee meeting with the trainees and the Managing Directors SCHÄFER WERKE

The campaign „ES IST DEIN WERK“ (IT'S YOUR WORK)

Despite SCHÄFER WERKE's first-class training and high regional profile, advertising is essential. That is why the Group has addressed young people with a desire for sound vocational training with a targeted campaign. The slogan „IT'S YOUR WORK“ was aimed to appeal to all motivated young people and encourage them to apply for one of the coveted apprenticeship places.

The sincere commitment of the SCHÄFER WERKE Group to a future worth living for coming generations can also be seen in the actions it constantly dedicates to environmental protection and sustainability, and how seriously these issues are taken. Recently, for example, the so-called „Wiesensee Conference“ was held, at which the Group's managing directors and shareholders regularly meet. Each conference has its own focus. This time, the focus was on „sustainability“.

Creating a sustainable future

It was an exciting exchange with numerous impulses for the time ahead. Particularly interesting were the project presentations by the young professionals who had already dealt intensively with various aspects of the subject in the run-up to the conference. In a relaxed atmosphere, management, shareholders and trainees were able to exchange views on resource conservation and environmental protection measures on an equal footing. On the one hand, these are tasks for society as a whole that affect everyone; on the other hand, they are also issues that need to be taken

seriously by each individual person. SCHÄFER trainees are setting a good example. In addition to their everyday tasks in their respective departments and at the vocational college, they have invested time and commitment to develop various sustainability projects: e-bus transfers for the workforce, green roofing wherever possible, strict waste separation and recycling, intensive use of solar energy and reforestation on the Pfannenberg hill.

From brainstorming to planning and presenting them to the management, the projects were carried out independently by the trainees themselves. The various approaches have been recorded in a short film. While doing all this, the youngsters were also able to develop a feeling for project management by independently working out what the topic involves and overcoming the hurdles.

The two training instructors Wolfgang Richard Weber and Ralf Braun in particular assisted the trainees as moderators. After the successful presentation of the measures they had developed, the trainees were presented with an award in recognition of their ideas and the commitment they had shown. And what's more, it's all down to their own initiative that they are actively promoting sustainability within SCHÄFER WERKE, raising employees' awareness and showing them quite clearly the urgency of sustainable environmental protection.

The shareholders and managing directors of the SCHÄFER WERKE Group would like to thank all those involved, and in particular all the trainees, for their enduring commitment. //



Our locations



Head office and production site at Neunkirchen (D)



Plant Betzdorf (D)



Plant Treuen (D)



Plant Ledeč nad Sázavou (CZ)

SCHÄFER WERKE

SCHÄFER WERKE is a family-led group of companies based in Neunkirchen/Siegerland and consists of four business divisions; SCHÄFER Container Systems, SCHÄFER Perforated Metal, SCHÄFER Interior Systems and the EMW Steel Service Centre. The work of all these divisions is based on high-quality fine steel sheet. The processing of this material is one of the core competencies of this enterprise.

EMW Steel Service Centre

As one of the largest independent steel service centres, EMW supplies coils, slit-strip, cut-to-size blanks and circular blanks to the manufacturing industry. The company, which in 2022 is celebrating the 70th anniversary of its founding, combines decades of experience and expertise in steel services with the very latest in logistics. In over 45,000 m² of storage space, EMW has over 220,000 tons of thin steel sheet in almost all current market grades permanently in stock.

