



ENVIRONMENTAL STATEMENT 2018

EMAS Environmental Statement of Rich. KLINGER Dichtungstechnik – Complete edition for the period 2017

A look behind the environmental statement – This is what motivates us!



EMAS is a voluntary environmental management system aimed at improving the environmental performance of organisations. The publication of environmentally relevant data in an environmental statement is an important instrument for meeting environmental objectives.

Our motivation behind our voluntary participation in an environmental management system and hence the publication of an environmental statement can be summed up in a single sentence: “We wish to leave this world a little better than we found it.” It is easy for anyone to imagine what it would mean for our shared living space should we fail to adhere to this simple guiding principle with regard to our environmental impact. We are fully transparent in the implementation of this principle, which we demonstrate by publishing an environmental statement.

The revised standard – Changing to the ISO 14001 : 2015

New “Rules of the Game” for the environmental management
History page 2

Change is the only constant

Our new and old officers for all eventualities
Policy page 6 and 7

Energy on the screen

Our activities for energy monitoring
Resources page 9

In this way, we ensure that already the thought of the next environmental statement will motivate us, namely to aim to present even better figures, projects and activities, which will naturally result in continuous improvement. The incentive to doing something conscientiously is even greater when everybody is watching. We therefore decided to present the contents of this environmental statement in an easy-to-read newspaper format for your convenience. We normally associate reading a newspaper with a relaxed atmosphere, such as during a long breakfast, a quiet break, while enjoying some me time in a coffee house, etc. Hence, we wish that you will have such a pleasant and informative moment when reading our environmental statement!

Stephan Piringner, Managing Director under the Industrial Code

The new management of Rich. KLINGER Dichtungstechnik



New challenges – new team

f. l. t. r.
Ernst Schäfer – Technical Director,
Stephan Piringner – Managing Director under the Industrial Code,
Barbara Köfinger – Company Officer with Statutory Authority,
Gerhard Pawlek – Company Officer with Statutory Authority,
Michael Sautter – Commercial Director

Index:

- History* Page 2
- Policy* Page 5
- Resources* Page 8
- Processes* Page 11
- Emissions* Page 14
- Waste* Page 18
- Comic* Page 18
- Indicators* Page 20
- Products* Page 22
- Crossword puzzle* ... Page 23



The Rich. KLINGER Dichtungstechnik at a glance

Introducing an Austrian company with a long tradition spanning over more than 130 years.

A subsidiary of the worldwide operating KLINGER Group, Rich. KLINGER Dichtungstechnik has specialised in the research, development and production of high-quality static industrial gaskets for more than 125 years. Our company is run as a family business in the fifth generation and is still headquartered in Gumpoldskirchen, approx. 20 kilometres south of Vienna. As a competence centre for the 50 independent KLINGER companies and 60 production, sales and service partners worldwide, which form the KLINGER Group, KLINGER Dichtungstechnik fulfils two important main tasks: On the one hand, we are the innovation hub for the development of sealing materials and sealing solutions, while on the other hand, we are committed to offering our decade-long experience and our certified, high quality services and products to the benefit of all our partners and customers. Our product portfolio comprises flat gasket materials based on calandered elastomer-bonded fibres (KLINGERSIL®), PTFE (KLINGER®top-chem), graphite (KLINGER®graphite laminate) and Mica (KLINGER®Milam). These are used in numerous industries, such as oil & gas,

energy, the industrial sector, chemical sector or the transport industry. Our products are complemented by services, such as, for example, software for selecting the right gasket,

assembly information, product approvals, mobile training and application advice.

» MISSION

We create customer value through the manufacturing of innovative sealing materials.

The products we provide offer our customers the highest level of safety for their operations. Our know-how is based on our decades-spanning production competency, continuous development as well as on a broad spectrum of technical services, which we deliver as the leading company in the field of gaskets.

» VISION

We want to

- ... be the benchmark for technologically excellent and top-quality soft sealing materials, both as a manufacturer and as a developer.
- ... continue to safeguard and further enhance our global market and brand leadership position.
- ... assume social responsibility for the present and future generations as a flagship enterprise.
- ... be a fair, safe and excellent employer.

» VALUES

Our values determine our responsible actions towards our partners, customers, employees and towards the environment in which we live.



BUSINESS EXCELLENCE

We set the standard in the production of technologically excellent and top-quality sealing materials.



CUSTOMER VALUE

Our customers come first. We do not limit ourselves to products. Instead, we provide tailored solutions in order to master their respective challenges.



GLOBAL REGIONALITY

We manufacture our products on the basis of internationally approved, certified quality and environmental standards. Due to the global presence of the KLINGER Group, we are represented all over the world. As a consequence, we are also absolutely familiar with the corresponding local conditions at each customer location.



SUSTAINABILITY

Our entrepreneurial activities firmly take environmental protection into account. This is also proven by our quality and environmental standards, which we maintain in order to also offer future generations a world worth living in.



INNOVATIVE EDGE

Developing both our company and our products further is a constant process. Our power of innovation, which continuously leads to new solutions, is based on more than 130 years of experience across all industries.



PEOPLE SPIRIT

We create optimal working conditions for our employees. An open culture of communication, a good and fair working atmosphere as well as advanced training opportunities form the basis of our shared success.

Even standards can become outdated

Standards are not chiselled in stone for eternity. To account for current trends and changes, the ISO 14001 (environmental management systems) was revised in 2015. KLINGER Dichtungstechnik was successfully certified to the new revision.

The revision follows the so-called "high level structure". Its aim is to guarantee an identical structure for all management systems as well as the uniform use of core texts and terms. The standards are thus easier to understand and, based on the improved uniformity, can be combined more easily into one integrated management system (e.g. quality and environment). Important new aspects include, for instance, the

incorporation of current and future environmental matters that have an influence on the company. In addition, the needs and expectations of interested stakeholders (also including, for example, neighbours, customers, suppliers, KLINGER Holding, etc.) must be considered. For implementing the new aspects and for a certification according to the new revision, a small project team was established that convened at periodic intervals and worked hard on the practical implementation. Finally, the adapted management system (quality and environment) was successfully audited by the TÜV and was assessed as compliant with the revised standard.



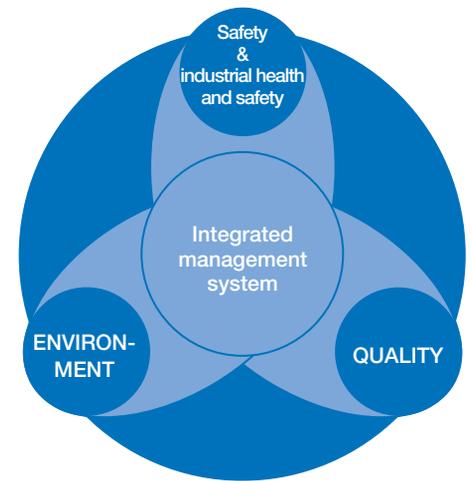
One for everything

Whether it is the environment, quality or industrial safety – the applied management systems use very similar structures. They pursue the same basic objectives, such as for example structured continuous improvement, or the collection, planning, assessment and accomplishment of targets, expectations and obligations.

When four colleagues wish to get to the same place by car, they will naturally form a car pool and use a single vehicle to get to their destination. When applied to our integrated management system, this means that environment, quality and industrial safety sit together in one car to arrive at their destination. Our integrated management system combines the systems according to ISO 9001, ISO 14001 and the EMAS III Regulation thus creating the prerequisites for ensuring quality and environmental soundness of our products and processes under optimal economic basic conditions and in observance of

the requirements of occupational safety and health at the company. The environmental goals are derived from the environmental policy, on the one hand, and from the expectations of interested stakeholders or relevant general topics, on the other hand. The tasks, competences, responsibilities and sequences of environmentally relevant processes, such as the agreement of environmental objectives and the definition of measures at operational and administrative level are described in the management documentation. Organising environmental protection involves, among others, the responsible officers in their areas as well as legally compliant processes. We use the legal compliance database "LexTool" to make sure that we fulfil all the requirements defined by the consolidated administrative decision and observe all pertinent laws, thus giving us the required legal certainty. The emergency management minimises risks and reduces the extent of damage in the event of any deviations. In order to improve our

emergency management system on a continuous basis, we regularly carry out drills and talk personally to our staff members. Safety and risk inspections provide additional input for improving emergency and hazard planning. Internal and external experts assess the management systems in terms of compliance and goal achievement at periodic intervals.



1892–1930

- 1892 Richard Klinger purchases premises for the founding of the Gumpoldskirchner Maschinen- und Metallwarenfabrik.
- 1898 Patent issued for "Klingerit", the first gasket made of rubber and asbestos.
- 1901 Richard Klinger sets up an acetylene plant and starts producing the gas for public lighting of the municipality of Gumpoldskirchen.
- 1923 Richard Klinger invests in the public lighting infrastructure of Gumpoldskirchen.



1931–1983

- 1931 The company is converted into a joint stock company.
- 1947 New products are developed: "Linobest", "Linokat" and "Terakett"
- 1960 Klingerit 1000, a high-pressure gasket comprising a steel wire mesh, is developed for petrochemical applications.
- 1970 The number of staff increases to 1,000
- 1980 KLINGERSIL®, the world's first high-pressure jointing sheet based on synthetic and mineral fibres bonded with rubber, is developed.



1984–2003

- 1984 Dr. Thomas Klinger-Lohr becomes CEO of the KLINGER Group.
- 1990 KLINGER receives a special award for its European approach.
- 1995 Rich. KLINGER Dichtungstechnik GmbH & Co KG is founded as the successor to KLINGER AG.
- 1996 The production of KLINGER®top-chem is launched
- 1998 The company applies the EMAS Environmental Management System for the first time.



2004–2018

- 2004 Celebration of the 111th anniversary and inauguration of the new office building.
- 2009 Production for the North American market is relocated to Gumpoldskirchen.
- 2011 Investments in the plant at Gumpoldskirchen: new boiler and raw materials depot
- 2015 Dr. Christoph Klinger-Lohr takes over responsibility for local business.
- 2017 New tank farm is constructed.
- 2018 Finished products warehouse is constructed; part of the production is relocated from Australia to Gumpoldskirchen



Environmental objectives 2015–2018

Year/Brief Description	Measures	Status	Comment
2015			
1. Reduction of the reject rate of SIL from 5.3 % to 4.5%	> Training measures > Targeted measures for quality improvement	Not accomplished	ACTUAL SIL = 5.2 %
2. Reduction of the reject rate of TC to < 8 %	> Training measures > Targeted measures for quality improvement	Accomplished	
3. Acquisition of new customers for automotive India and China	> Collaboration with local sales partner	Partially accomplished	
2016			
1. Reduction of the reject rate of SIL to < 5 %	> Training measures > Targeted measures for quality improvement	Not accomplished	ACTUAL SIL = 5.9 %
2. Reduction of the reject rate of TC to < 5 %	> Training measures > Targeted measures for quality improvement > Technical measures for reducing contaminants	Accomplished	
3. Acquisition of new customers for automotive India and China	> Preparation of a market-specific product portfolio	Accomplished	Foundation of KLINGER Shanghai
2017			
1. Reduction of the reject rate of SIL to < 4 %	> Training measures > Targeted measures for quality improvement	Accomplished	
2. Reduction of the reject rate of TC to < 1.5 %	> Training measures > Targeted measures for quality improvement	Not accomplished	Impurities in the mass due to the mixing process, problems with raw material in 2016
3. 20 MWh energy recovery per modified calendar	> Improvement of system control > Use of evaluation software	Accomplished	Topchem area implemented
2018			
1. Keep reject rate for SIL at below 4 %	> Training measures > Targeted measures for quality improvement	Dec.	
2. Reduction of the reject rate of TC to 1.5 %	> Training measures > Targeted measures for quality improvement	Dec.	
3. 20 MWh energy recovery per modified calendar	> Improvement of system control > Use of evaluation software	June	
4. Increase of the regenerate quota	> Increasing awareness of customers for this topic and € value > Exploitation of 1–2 additional sources	June	

Abbreviations: SIL = KLINGERSIL®
TC = KLINGER®top-chem



Brief & concise: Our new quality and environmental policy

True to our motto “trusted.worldwide”, our quality and environmental policy has been revised.

Our goal was to develop a new policy that should be catchy and concise to define the guiding principles on how we approach quality and the environ-

ment. We therefore decided to keep it brief and clearly structured:



To us, our motto „trusted.worldwide.“ means:

Reliability in our products, processes and services.

» WE ARE COMMITTED TO:



Ernst Schäfer

Michael Sautter

IN BRIEF

Toxic chemicals – A tricky issue

Substances with toxic ingredients are required for waste water analysis. When handling these toxic chemicals, a number of issues must be observed.

Substances with toxic ingredients are required for waste water analysis. When handling these toxic chemicals, a number of issues must be observed. A toxic chemicals user permit is required for the use of toxic substances at a company. Our employee Mr Neumann-Hartmann has completed a comprehensive training to acquire the necessary expertise. Following the successful application for the permit at the competent District Administration, he was appointed as our new Toxic Chemicals License Holder in March 2018.

He painstakingly records all purchases of toxic chemicals, the quantities used, the purpose of use as well as their final disposal. In addition, an annual report must be prepared and submitted to the authorities. All records must be archived for seven years to guarantee long-term traceability of used toxic substances.

Stakeholders – Who are they and what do they want?

Every company must know who its stakeholders are as these might exercise a great influence. A comprehensive stakeholder analysis is vital in this regard.

Both the new ISO 9001 : 2015 and the new ISO 14001 : 2015 require an analysis of all interested parties as well as an assessment of the resulting opportunities and risks. Rich. KLINGER Dichtungstechnik performed this analysis for the first time in 2017 and has since then reviewed it once per year to ensure that it is still up-to-date. First, internal and external stakeholders are distinguished. Next, their influence

on the integrated management system is taken into account, their demands and expectations are analysed and the resulting opportunities and risks are weighed. In a subsequent ranking, the critical stakeholders for the management system are determined: Customers, employees, competitors, authorities and the auxiliary fire brigade of Gumpoldskirchen. Subsequently, these stakeholder groups are especially considered in the environmental program.

Change is the only constant in life

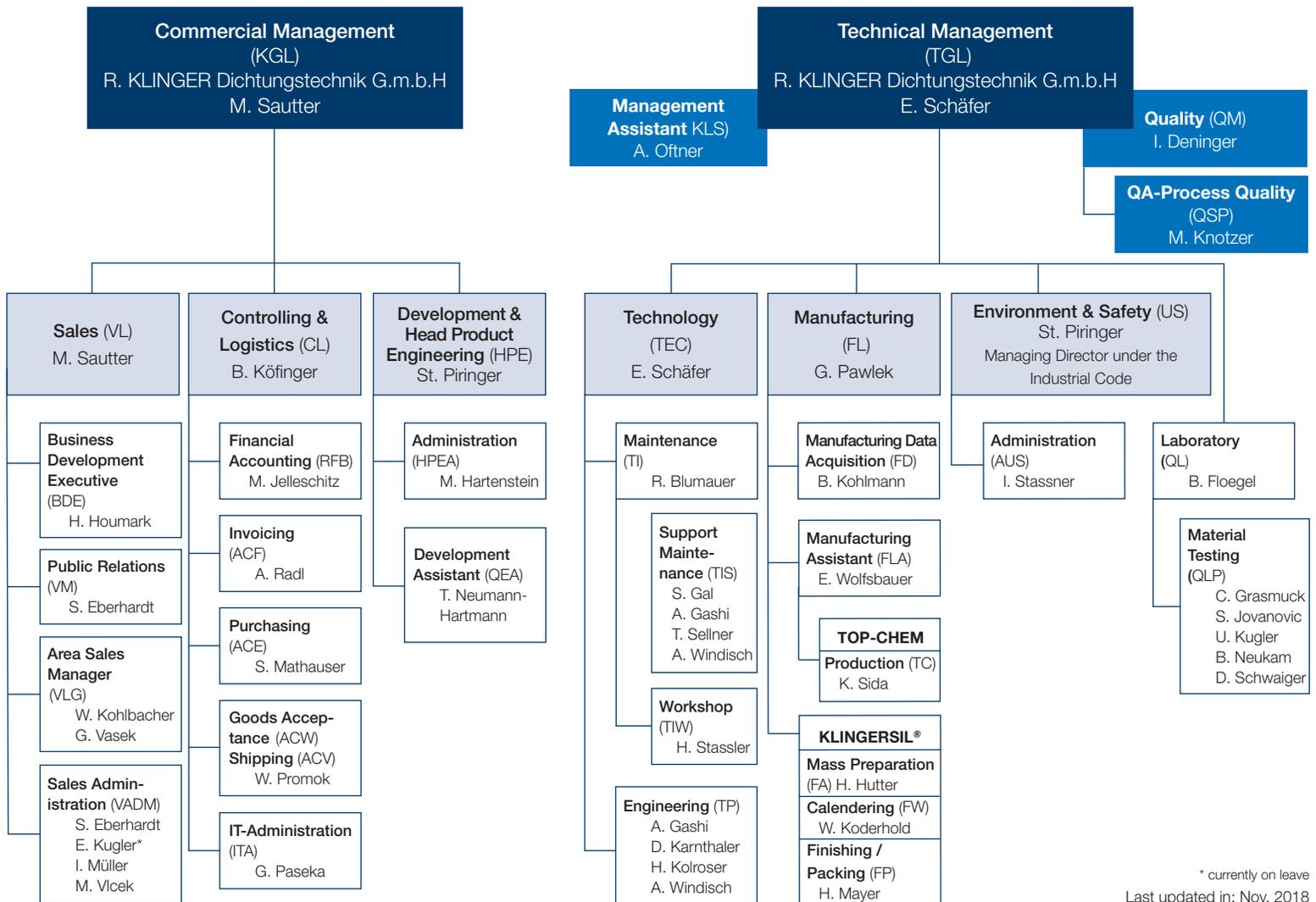
... this is also true for the organisational structure of Rich. KLINGER Dichtungstechnik.

In 2015, Reinhard Rödel transferred the responsibility as Managing Director under the Commercial Code to Christoph Klinger-Lohr. In 2018, the latter became a member of the Group Management, and Ernst Schäfer (Technical Director) and Michael Sautter (Commercial Director) assumed the management responsibility under the commercial code. Already in 2017, Stephan Piringer was appointed as the new Managing Director under the Industrial Code of Rich. KLINGER Dichtungstechnik and consequently holds the combined position of Environmental Officer and Safety Officer. Other functions with a close environmental relevance include Ingo Deninger as Hazardous Goods Officer, Rene Blumauer as Waste Water Treatment Plant Officer, Harald Stassler and Hannes Kolroser as Fire Prevention Officers, Till Neumann-Hartmann as Toxic Chemicals License Holder and Ingrid Stassner as Waste Officer.

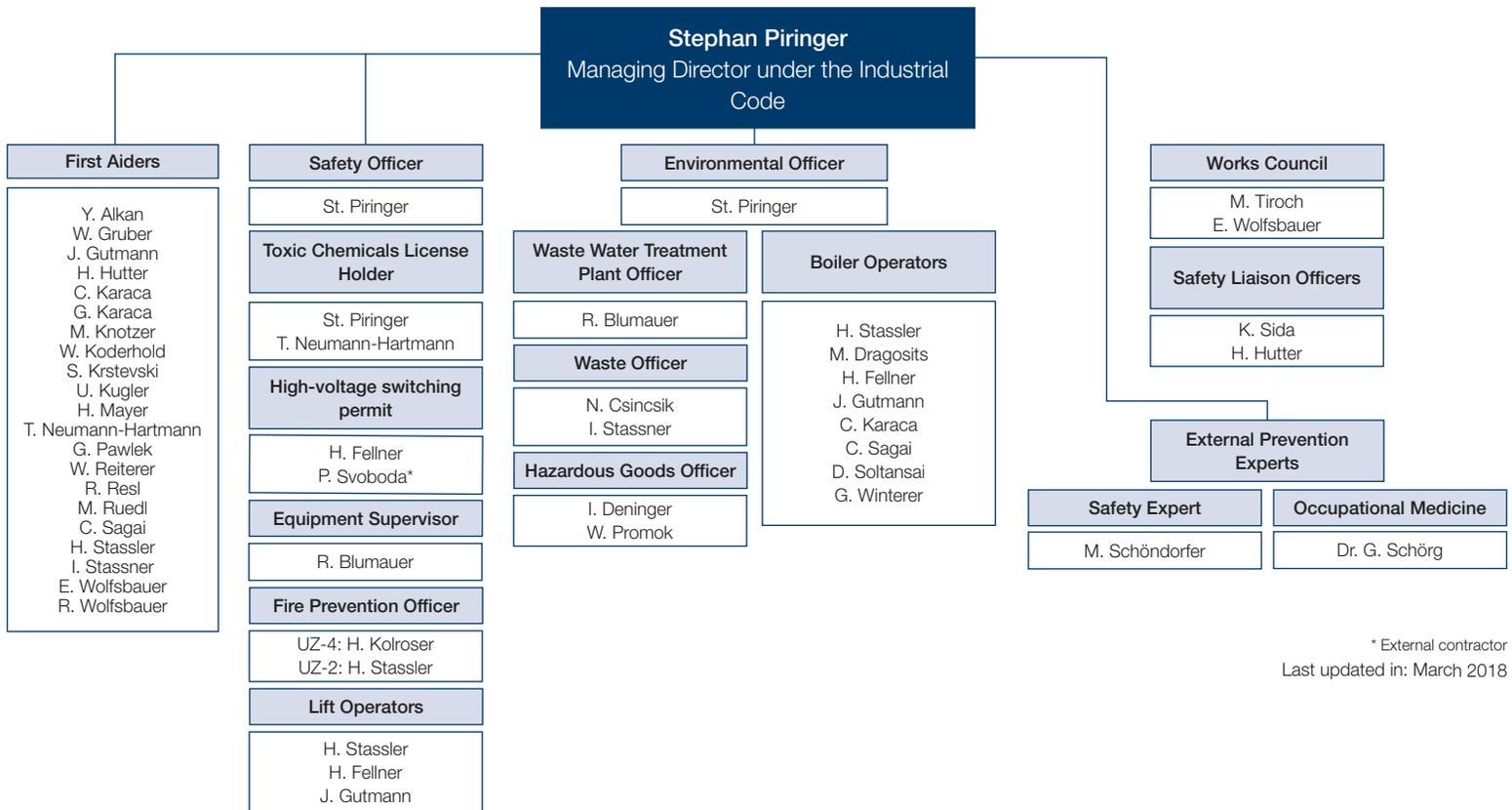


f.l.t.r.: W. Promok, N. Csincsik, I. Deninger, I. Stassner, St. Piringer, H. Stassler, R. Blumauer, H. Kolroser

Organisation chart



Environmental organisation chart



* External contractor
Last updated in: March 2018

Trust is good – control is better

In spite of our unwavering confidence in the competences of our own organisation, an evaluation by external experts provides valuable input to continuous improvement.

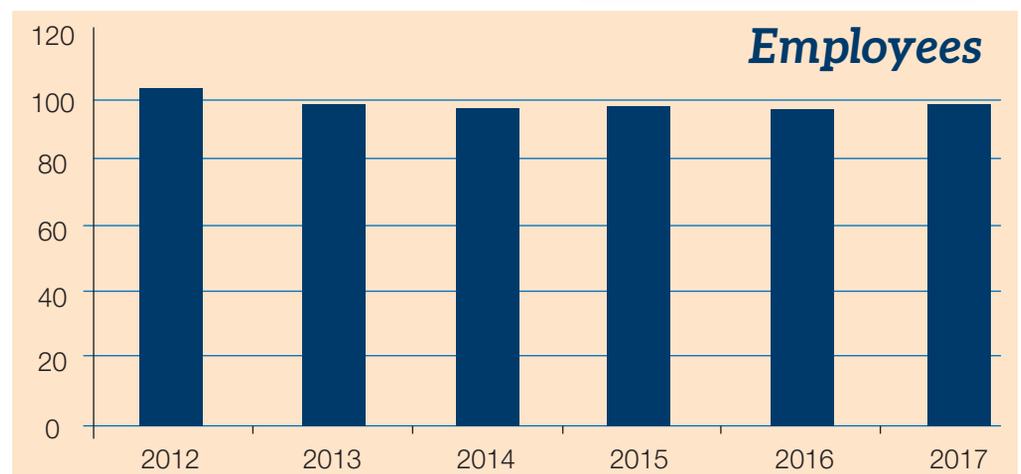
Both in the private and the professional environment, the number of regulations to be observed has increased exponentially. For several years, KLINGER Dichtungstechnik has used an electronic legal register to manage both content and timelines for the systematic organisation of the large number of legal obligations. In order to ensure in this legal maze that KLINGER knows and complies with all legal regulations concerning environmental protection and industrial safety, we contracted the services of an external inspection body that conducted a Legal Compliance Audit. The audit was conducted in October 2017 and involved inspections of the company, the corresponding review of legally

relevant documents and discussions with the employees.

An environmental audit is the basic requisite for the EMAS revalidation. The latter was also performed by an external body in 2018.

The results of both the Legal Compliance Audit and the Environmental Audit were fully satisfactory confirming

the high standard of our environmental management system.



Save paper – protect resources

In February 2018, the management launched an initiative under the motto “Save paper to protect the environment”, which has since then made a contribution to support environmental protection.

It is very important for KLINGER Dichtungstechnik to operate as eco-

nomically as possible, to save cost and to become increasingly environmentally friendly in accordance with the continuous improvement process. The management therefore appealed to all staff in February 2018 to make an effort to save paper. Printing on both sides, only print when really required and reusing paper – use waste paper as notepads

– are some purposeful measures that every employee can implement easily and thus make a valuable contribution to the protection of resources. In early 2019, the annual paper consumption will be compared against that of previous years. We cannot wait to see the result and hope that significant savings of paper could be accomplished.

Turning offcuts into raw material

A jointing sheet used for cutting gaskets can never be utilised 100 percent. However, it is possible to reintroduce offcuts into the manufacturing process.

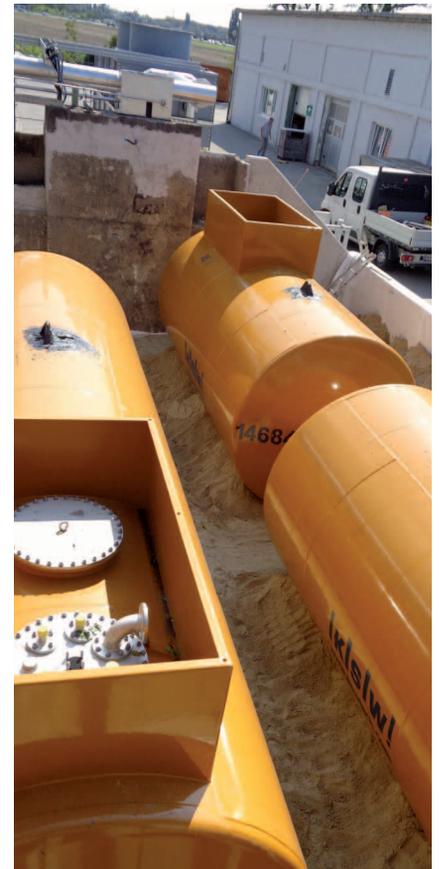
When cutting gaskets, it is unfortunately impossible to process the complete jointing sheet into gaskets. In spite of optimisations that can be achieved by the use of software-based planning tools, the maximum utilisation is only around 80 percent of the jointing sheet surface. However, provided they are carefully separated and cleaned, the resulting offcuts can be used as regenerates for the production of new gaskets. KLINGER Dichtungstechnik strives to convince additional customers (die cutting firms) of the benefits of collecting offcuts. This could reduce both waste and the requirement for new raw materials. Our efforts in this regard continue.



Renewal of the tank farm

Organic solvents are used on site for the jointing sheet manufacturing process. These are stored in underground tank farms. This plant was renewed recently as preventive measure.

Organic solvents are necessary in-process fluids for the production of the jointing sheets. At the plant, these are almost exclusively used in a closed cycle. The tank farm is the beginning and also the end of this cycle. As it had been outdated, the complete system was replaced by a new plant as hazard prevention measure. This very extensive project included the design of the new tank farm to the state of the art and in compliance with the requirements of the Ordinance on Flammable Liquids. Following thorough and extensive preparations on the part of all parties involved, the system was successfully approved by the authorities.



Energy monitoring/energy management project

A sophisticated energy monitoring system permits optimal energy management and thus also energy savings.

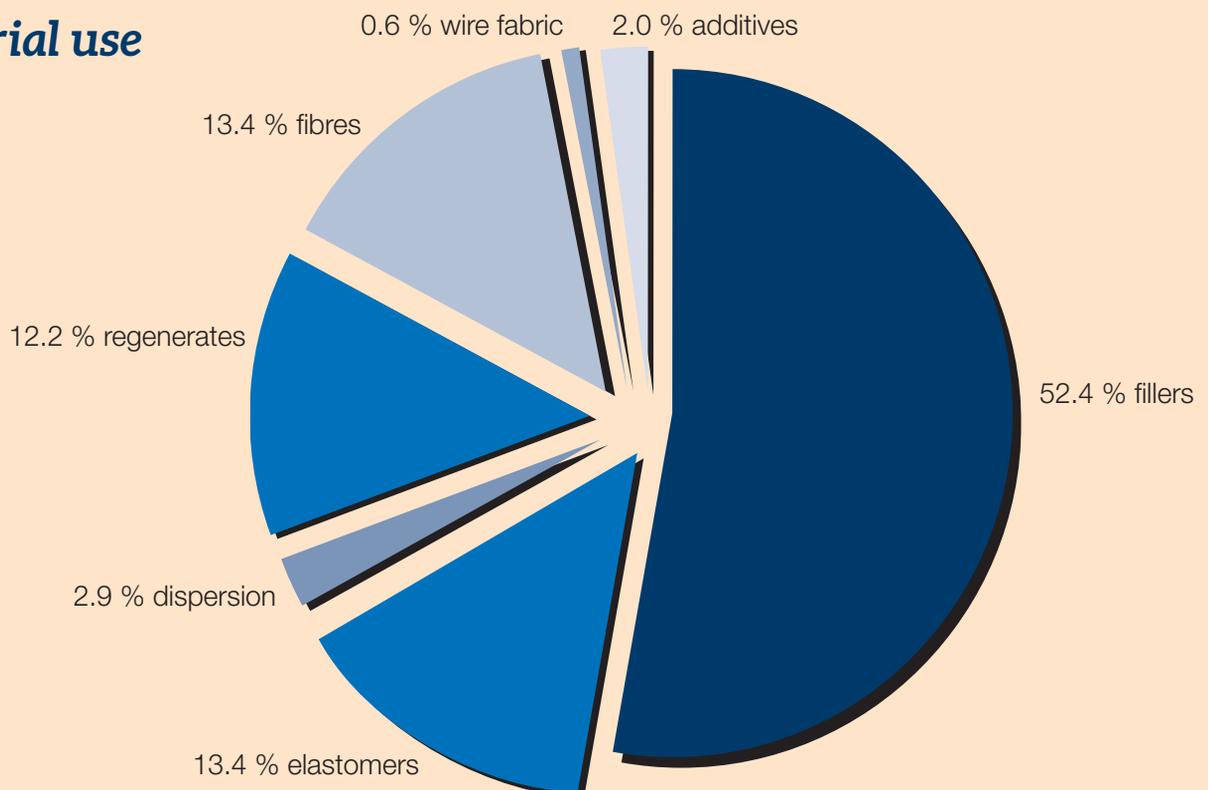
To gain a better overview of the actual energy requirement of production machines and the associated auxiliary processes (steam processing, compressed air supply, etc.), an energy monitoring system was introduced at Rich. KLINGER Dichtungstechnik in late 2018. This system is to ensure

detailed future records of the energy consumption for every machine and, at a later stage, even for every jointing sheet produced. Based on the collected data, the manufacture is to be optimised in terms of economic efficiency and environmental protection. This will allow the identification and, if necessary, adaptation of those auxiliary processes that require especially large amounts of energy. In addition, the grid quality is to be monitored and, where excessive variations

are detected, automatic alarms will be forwarded to the responsible employee. Electrical installations can thus be used in an optimised manner while their wear and tear can be reduced to a minimum. One of the first measures implemented included the automatic recording of monthly meter values, combined with an energy report, as additional support for future energy savings potentials.

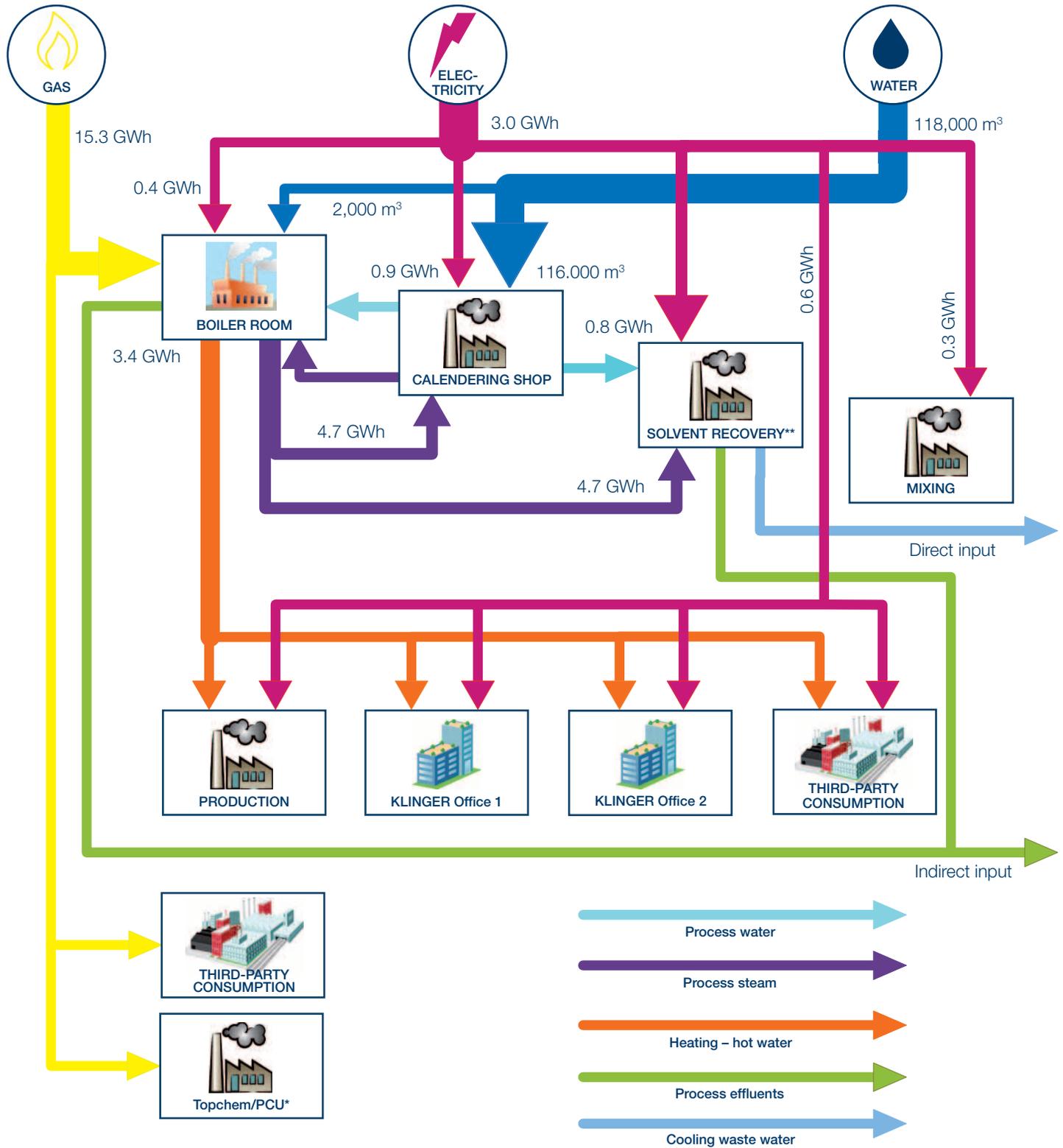


Raw material use





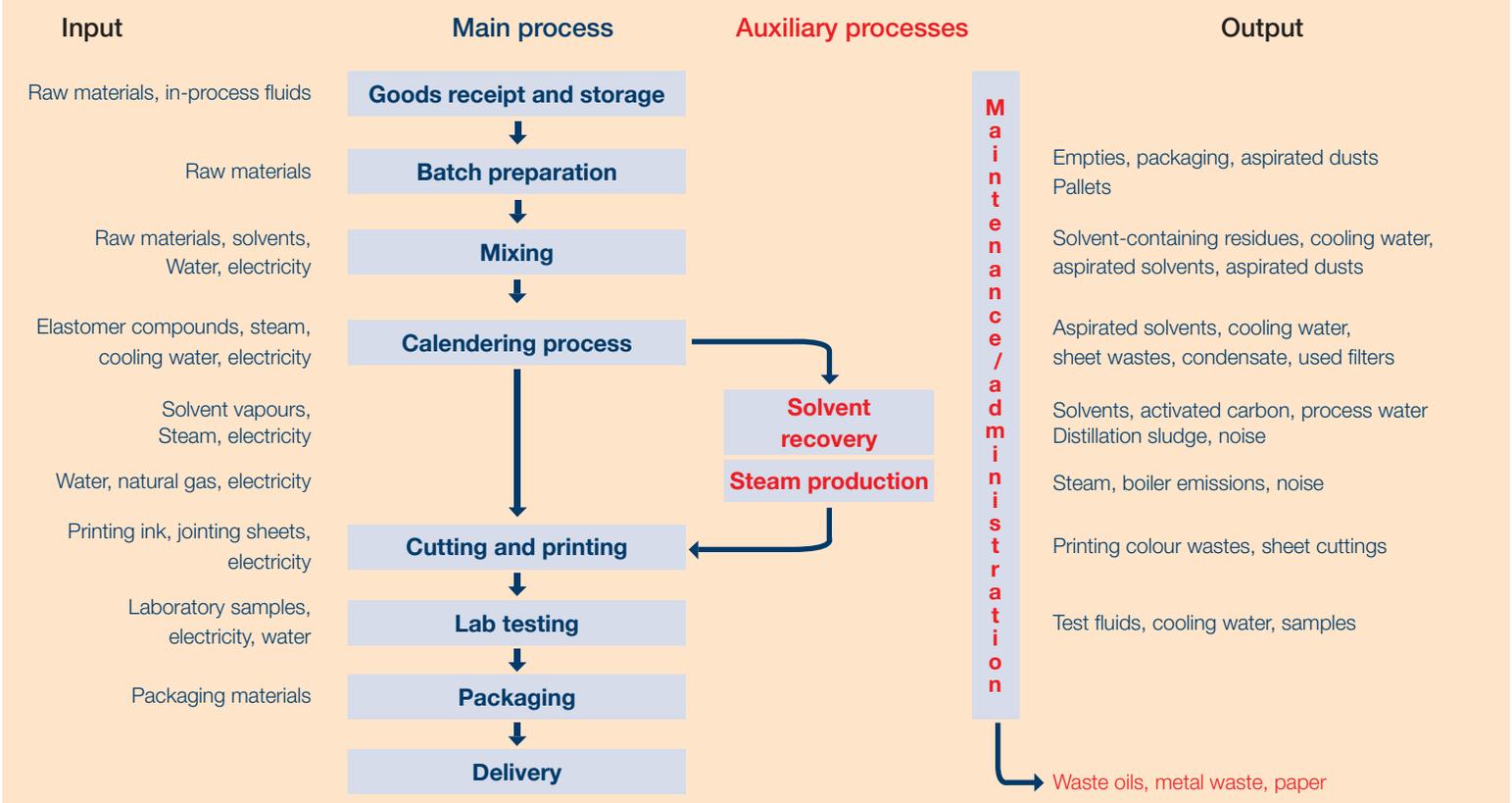
Energy flows



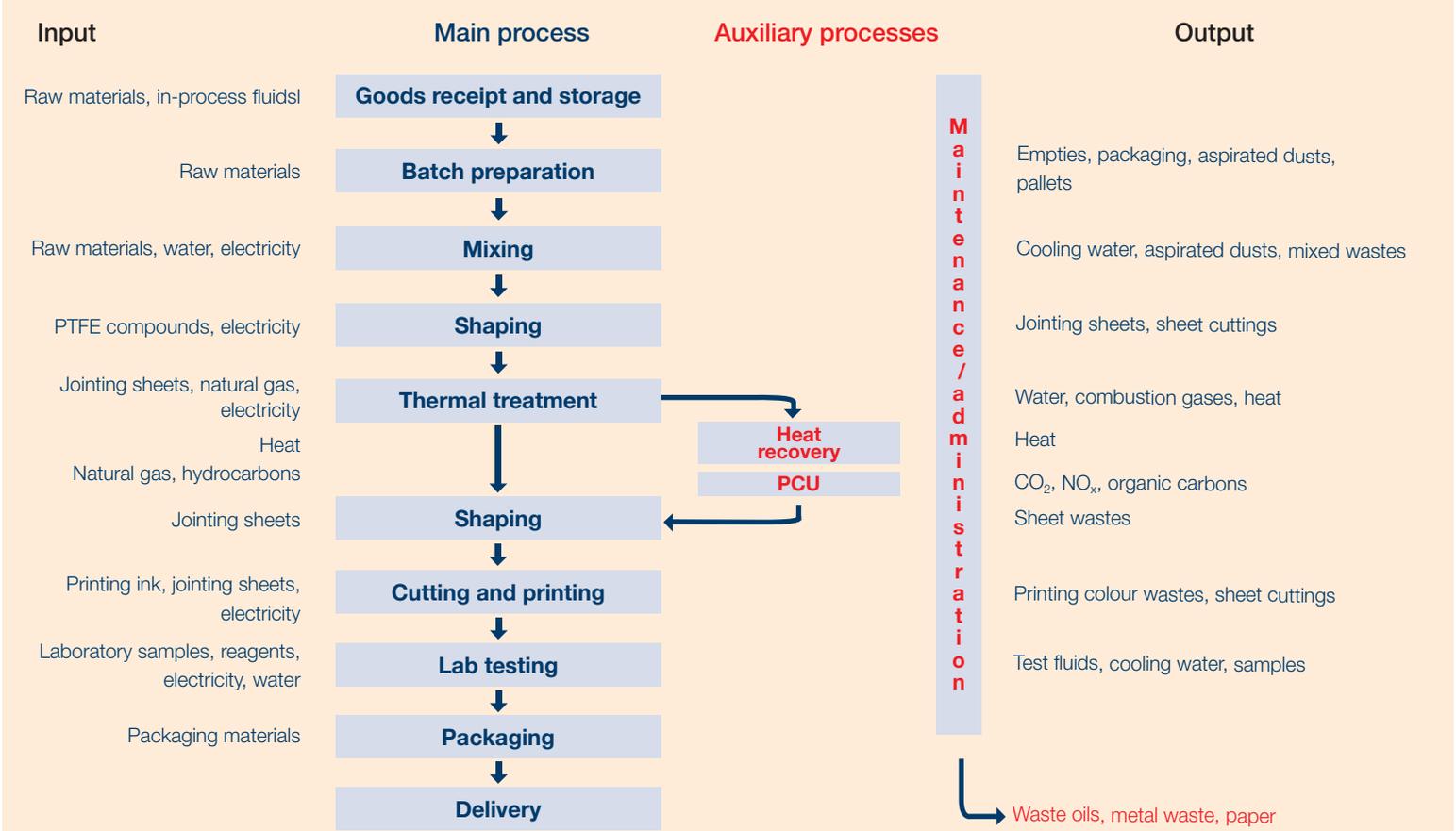
* Post combustion unit/** Recovery plant



Waste-relevant process chart KLINGERSIL®



Waste-relevant process flow chart KLINGER®top-chem



Our significant environmental aspects and their impact on the environment

The identification of the significant environmental aspects and their environmental impact is one of the most important analyses for a functioning environmental management system.

In view of the fact that the analysis of the significant environmental aspects and their impact are indispensable for an efficient environmental management system, the environmental team of Rich. KLINGER Dichtungstechnik worked painstakingly to prepare it in great detail. As a starting point, they assumed a normal operation (a separate analysis of the

impact of malfunctions was carried out using FMEA) and made a distinction between environmental engineering, environmental system and other processes. The work processes were reviewed in terms of direct and indirect environmental aspects and were rated with regard to their environmental impact on a scale from 1 to 5 (1 for minor, 5 for significant). In doing so, the entire product service life was taken into account. It was thus possible to identify the processes with significant direct and indirect environmental aspects and their environmental impact.

Areas/ plants	Significant direct environmental aspects														Sum of direct environmental aspects
	Public	Hazardous waste	Non-hazardous waste	Air	Water	Soil	Noise	Odour	Soil consumption	Environmental risk	Energy efficiency	Material efficiency – raw materials	Material efficiency	Water consumption efficiency	
Calendering SIL	-	4	5	2	5	-	-	1	3	5	5	5	3	5	43
Mixing SIL	-	5	-	2	-	1	-	1	2	3	3	5	4	-	26
Solvents ethanol recovery	-	-	1	3	2	-	-	1	-	5	5	-	4	3	24
Steam production	-	-	-	5	3	-	2	1	1	3	5	-	-	3	23
Solvents toluene recovery	-	-	1	3	-	-	-	1	-	5	5	-	4	2	21
Cooling water circuit	2	-	-	-	5	-	3	-	-	4	-	-	-	5	19

Direct environmental aspects in connection with laws, vibrations, visual appearance and regional aspects were analysed and found to be not applicable.

IN BRIEF Hazardous goods – transport of dangerous cargo

The safe handling of dangerous goods on the premises and on the road affects all of us.

The transport of dangerous goods on the road and on the premises is important for all parties involved. The rules and regulations to be observed in the

process are specified in the so-called ADR, among others. In January 2018, the entire staff of Rich. KLINGER Dichtungstechnik as well as employees of the partner companies attended an ADR training conducted by the Hazardous Goods Officer. On four dates, 92 people were successfully

trained. This exceeds the Dangerous Goods Transportation Act and the requirements of the ADR. According to the Annual Report on Dangerous Goods 2017, no discrepancies were found during the internal and external controls. The active participation of our colleagues makes our roads safer.

Areas/ plants	Significant indirect environmental aspects													Sum of indirect environmental aspects
	Raw materials sustainability	Transport	Environmental aspects product: Storage/packaging	Environmental aspects product: Transport/shipping	Umweltaspekte Produkt: Nutzungsphase	Environmental aspects product: Use phase	Capital investment	Insurance services	New markets	Selection and composition of services	Administration and planning decisions	Composition of the product offer (TA Air 75 %)	Environmental performance of (sub)contractors/(sub)suppliers	
Purchasing	3	4	3	3	-	-	-	-	-	4	-	-	4	21
Sales	-	-	1	2	3	2	-	-	2	-	1	4	-	15
Product development	4	-	-	-	4	3	-	-	-	-	-	3	-	14
Product testing	-	-	-	-	5	-	-	-	-	-	1	1	-	7
Controlling	-	-	-	-	-	-	3	1	-	-	2	-	-	6

Indirect environmental aspects in connection with energy sources/sustainability as well as mobility/employees were analysed and found to be not applicable.

Learning from mistakes is good – Preventing mistakes from happening in the first place is even better!

We use FMEA to analyse possible failures within our environmentally relevant processes and thus efficiently prevent possible malfunctions.

sequent step, the respective environmental impact, the potential of detection and the likelihood of occurrence were rated on a scale from 1 to 10. Based on the resulting risk figures, it

was possible to rank the risks. The corresponding findings were then incorporated into the environmental program.

The implementation of an FMEA (short for “Failure Mode and Effects Analysis”) serves to prevent faults and increase technical reliability. The new environmental team of Rich. KLINGER Dichtungstechnik conducted it for the first time in 2017 and reviews it on an annual basis to ensure it is still up-to-date. Both the environmental engineering and the environmental system processes were analysed. Each process was scrutinised with regard to any possible faults and their root causes and consequences. In a sub-



Solvent balance 2017

	Definition	kg/a	%	Data bases
I	Amount of solvents used (Determination on basis of formulations)	1,615,498	100.0	Calculation on basis of mix designs
I/1	Amount of organic solvents bought	84,495	5.2	Purchases
I/2	Amount of recovered solvents	1,531,004	94.8	$I/2 = I - I/1$
O/1	Solvent emissions in exhaust gas	4,012	0.2	Determined on basis of calender operating hours and MAPAG audit report of 10 January 2013
O/2	Solvent emissions in waste water	0	0.0	Process-related
O/3	Solvents residues in product	0	0.0	Process-related
O/4	Diffuse emissions	39,749	2.5	Determined on basis of calender operating hours and MAPAG audit report of 10 January 2013
O/5	Solvent resulting from chemical or physical reactions	0	0.0	Process-related
O/6	Solvent in residues (disposed)	40,733	2.5	Disposal records (solvent content calculated on basis of material composition)
O/7	Solvent sold	0	0.0	Process-related
O/8	Amount of solvent recovered, but not reused	0	0.0	Process-related
O/9	Solvent released through routes not accounted for by other categories	0	0,0	Process-related
	Total O/1 through O/9	84,494	5.2	Calculation
C	Solvent consumption = $I/1 - O/8$	84,494	5.2	Calculation
F	Diffuse emissions = $I/1 - O/1 - O/5 - O/6 - O/7 - O/8$	39,749	2.5	Calculation
E	Total emission = $F + O/1$	43,761	2.7	Calculation

AREA USED IN 2017*

Built-up areas	15,360 m ²
Transport areas	15,320 m ²

*) Transport areas are calculated on the basis of a defined key.
Non-built-up areas are not under the control of Rich. KLINGER Dichtungstechnik GmbH & Co KG.





Not only money requires balancing

Certain plant operators using organic solvents must report the emissions of these volatile substances to the authorities in the form of a solvent balance.

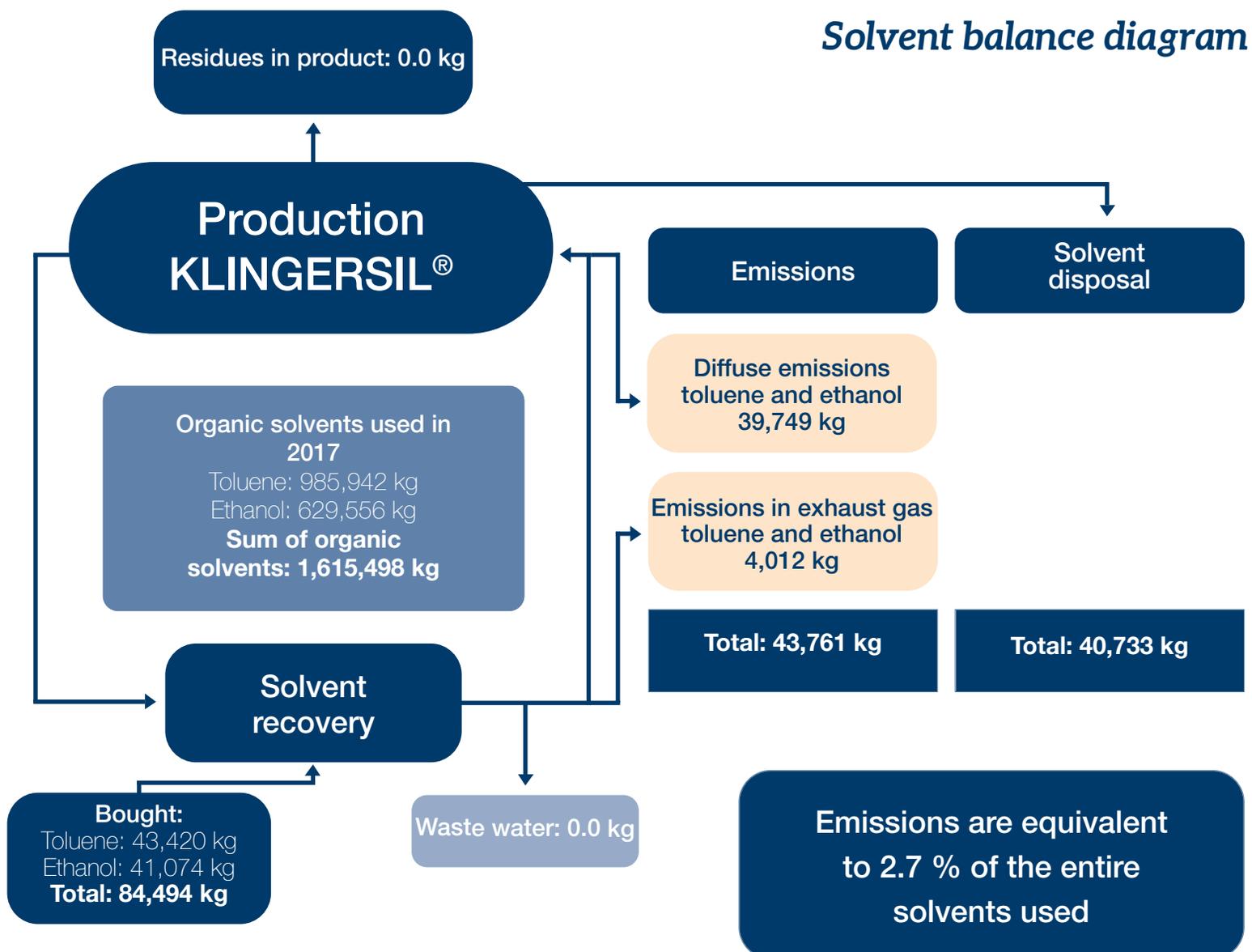
Certain plant operators using organic solvents must report the emissions of these volatile substances to the authorities in the form of a solvent balance.

Organic solvents are used in the production of KLINGERSIL® joining sheets. The emissions of these substances must be reduced to a minimum under the aspects of environmental impact, industrial safety, explosion protection and economic efficiency. Therefore, we extract and recover the solvents used in our production process at the rolls of the calender. Consequently, they circulate in an almost completely closed

circuit. These amounts and flows are presented in the solvent balance and are annually reviewed by an expert.



Solvent balance diagram



Waste water treatment – environmental protection

Rich. KLINGER Dichtungstechnik regards the correct handling of unavoidable waste water as highly important.

In spring 2018, René Blumauer, MSc (Head of Maintenance Department) took over the function of Waste Water Officer in consideration of his relevant technical training in the areas plant engineering and waste water treatment procedures.

The correct handling and the treatment of process waste waters require compliance with several factors and indica-

tors as well as official regulations. The compliance with these requirements is reviewed and documented by an accredited testing and inspection body on a yearly basis. The internal waste water treatment is subject to our continuous improvement processes. Since 2018, for example, the internal inspection intervals for process waste waters purified using activated carbon have been doubled to twice per month to allow us to respond to any changes in the water as quickly as possible. “The tight network of newly implemented measures and controls guar-

antees the safe introduction into the public sewage system and the necessary environmental protection,” as Waste Water Officer René Blumauer explains.



IN BRIEF

A hot issue – Fire drill with the auxiliary fire brigade

Regular fire drills carried out in as realistic as possible conditions are of particular importance for fire prevention at the company. In this regard, we receive great support from the Gumpoldskirchen auxiliary fire brigade.

A particularly spectacular drill took place on our premises on 22 May 2017. For the drill, it was assumed that an ASP container filled with solvent-containing waste as well as other containers caught fire. Initially, our two fire prevention officers controlled the fire using the first fire extinguishing means (mobile and portable fire extinguishers). Next, the auxiliary fire brigade was confronted with an even greater challenge: a similar fire load as before, but in an accordingly greater quantity. After the flames had spread for approximately ten minutes, which corresponds to the realistic call-out time of the fire brigade, the fire was controlled using fire extinguishing foam kept on the premises and was then extinguished. The joint fire drill was thus a full success.



IN BRIEF

EMAS pioneer

For 20 years, KLINGER Dichtungstechnik has successfully applied EMAS – sufficient reason to be honoured by the highest authority.

Already the EMAS registration number of Rich. KLINGER Dichtungstechnik “AT-000096” (of currently approx. 720), issued in 1998, proves the relatively early registration of our company.

In fact, there are currently only 20 actively registered companies in Austria whose initial registration was completed prior to that of Rich. KLINGER Dichtungstechnik. This makes us EMAS pioneers, and the company was officially honoured by Federal Minister Ms Elisabeth Köstinger. As representative of the company, Stephan Piringer accepted the honour and the certificate at an awards ceremony. We wish to take this opportunity to sincerely thank all parties involved in the past 20 years for their dedication as pioneers!





1. TCA 764 – Supersorbon adsorber unit*

	Max. output	Measured value
Gas volume treated:	35,000 m ³ /h	18,000 m ³ /h

2. TCA 4509 – Sorboblock adsorber unit*

	Max. output	Measured value
Gas volume treated:	30,000 m ³ /h	18.000 m ³ /h

Values common to 1 + 2:

	Limit value	Measured value
	–	38,0 °C
Charged air/freight: org. solvents	1/2 LEL* \triangleq 23 g/m ³	12 g/m ³
Waste air:	Limit levels acc. to admin. decision	MDW2-A2-041:
Solvents	< 100 mg/m ³	Safely below limit values
Total organics C	< 150 mg/m ³	Safely below limit values

3. Boiler room**

Boiler 3	Limit value	Measured value
CO	80 mg/m ³	5 mg/m ³
NO _x	100 mg/m ³	94 mg/m ³
Boiler 4		
CO	80 mg/m ³	11 mg/m ³
NO _x	100 mg/m ³	96 mg/m ³

4. Post combustion unit (PCU)***

1. TNV	Limit value	Measured value
NO _x	100 mg/m ³	96 mg/m ³
CO	50 mg/m ³	5 mg/m ³
C	20 mg/m ³	2 mg/m ³
O ₂		17 Vol.-%
2. TNV		
NO _x	100 mg/m ³	35 mg/m ³
CO	100 mg/m ³	26 mg/m ³
C	20 mg/m ³	< 2 mg/m ³
O ₂		17.8 Vol.-%



* Measurements taken by company MAPAG on 23.12.2015
 ** Measurements taken by company MAPAG on 24.01.2017
 *** Measurements taken by company MAPAG on 17.01.2017 and 27.02.2017

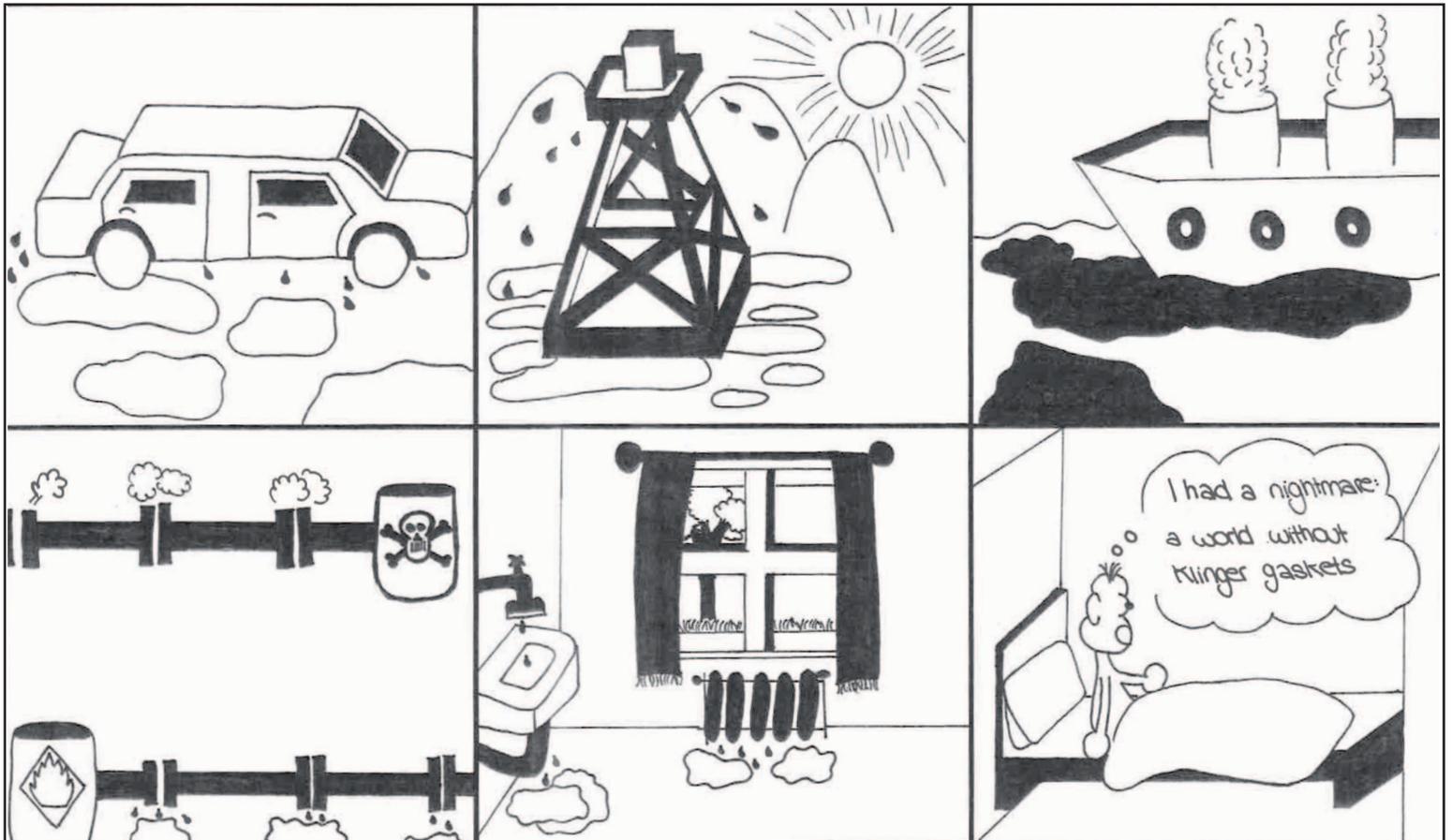


A concept for waste

An efficient environmental management system also requires a functioning waste management. This protects the environment and the health of the people

Our waste management concept follows the principles of the so-called waste hierarchy: Where waste cannot be avoided in line with protection of resources, we make use of the services of our specialised waste management partner for recycling or energetic reuse. Non-hazardous waste is mainly composed of secondary raw materials, such as wooden packaging material, plastic foils, iron and steel scrap and waste paper. Jointing sheet cut-offs from production and waste similar to municipal waste are treated identically and therefore disposed of in accordance with the applicable laws and in coordination with our waste management partner. The volume of waste equivalent to municipal waste is calculated by a conversion factor. Solvent-containing in-process fluids without halogenated organic compounds account for the major part of the hazardous wastes. These are safely collected in ASP containers. We do not foresee any signifi-

cant changes in the volumes and composition of our wastes for the next three years. Organisational measures for ensuring the compliance with waste management laws have been incorporated and described in the ISO-14001 documentation. In addition, our waste officers offer advice and active support in all waste-related matters.



drawing by Isabella Müller (Sales)

Waste management

Type of waste	Waste code number ÖNORM S 2100	2013 in t	2014 in t	2015 in t	2016 in t	2017 in t
Non-hazardous waste						
Wooden packaging material	17201	40.60	62.00	63.00	40.30	51.16
Plastic foils	57119	19.56	19.71	17.85	16.73	17.88
Iron and steel scrap	35103	11.18	21.14	35.54	19.57	34.59
Waste paper	18718	59.81	49.21	39.47	40.48	42.89
Rubber (jointing sheet cut-offs)	57501	94.15	63.50	82.27	131.45	86.96
Municipal waste and similar commercial waste*	91101	18.79	17.98	19.87	20.73	19.48
Total volume of non-hazardous waste		244.09	233.54	258.00	269.26	252.96
Hazardous waste						
Filtration and absorption materials used	31435	7.20	7.32	0.00	5.02	4.96
Halogen-free solvent mixtures	55370	0.24	0.00	2.36	1.31	3.02
In-process fluids containing solvents	55404	137.70	134.92	127.06	111.72	99.08
Waste oils	54102	1.18	0.74	1.60	1.40	1.34
Lab wastes and chemical residues	59305	0.01	0.13	0.00	0.01	0.00
Total volume of hazardous waste		146.33	143.11	131.02	119.46	108.39
Total annual waste volume		390.42	376.65	389.02	388.72	361.35
Rel. waste volume** (%)		12.68	12.42	13.93	15.97	13.81

* Determined by conversion

** Indicator referred to sealing sheets sold

IN BRIEF

It's the fire alarm system speaking – please call back

Newly installed telephone module of the fire alarm system

As part of the requirements and improvements in the area of emergency planning, a telephone module was added to the existing fire alarm system. In the event of an alarm, specific stored telephone numbers are called and text messages are sent to mobile phones. This measure ensures that all parties responsible (e.g. fire prevention officers, safety officers, equipment supervisors, etc.) are reliably and directly notified. As part of the annually performed evacuation drill, the function was tested positively.





The core indicators – our environmental performance in figures

Only what is measurable can be managed. In the following, relevant core indicators provide details on the environmentally relevant inputs/outputs of our organisation.

Only what is measurable can be managed. In the following, relevant core indicators provide details on the environmentally relevant inputs/outputs of our organisation. The most important consumers of electricity, water and gas and their respective share of the total requirement in 2017 have been summarized in the form of a table. In

addition, the total energy consumption (natural gas and electricity) and the CO₂ emissions are represented. The bar charts show the core indicators over the past five years. In each case, the absolute value and the consumption relative to the overall output volume of jointing sheets are shown. The required surface area under the aspects of biodiversity has not been represented, as it has not changed since it was initially determined at 30,680 m²; no additional soil sealing was implemented until 2018. Non-built-up areas are not under the control of Rich.

KLINGER Dichtungstechnik. None of the core indicators shows any tendency of a disproportionate negative environmental performance that would require the implementation of countermeasures.



ELECTRICITY CONSUMPTION IN 2017

kWh	%	
10,957	0.36	Purchasing/storage
29,904	0.98	Laboratory
40,151	1.31	Personnel management
7,815	0.26	Maintenance
219,560	7.17	Pressurized air
352,096	11.50	Boiler room
4,261	0.14	Pilot plant
278,557	9.10	Mixing
850,443	27.77	Calendering
14,841	0.48	Finishing
39,400	1.29	Ethanol recovery
722,232	23.59	Toluene recovery
20,390	0.67	Mixing Topchem
299,524	9.78	Calendering Topchem
130,578	4.26	Furnaces Topchem
11,844	0.39	Management
29,693	0.97	Packing
3,062,246	100.00	Total consumption

WATER CONSUMPTION IN 2017

m ³	%	
1,991	1.69	Boiler room
116	0.10	KM mixing
115,638	98.01	Calendering
239	0.20	Ethanol recovery*
1	0.00	Toluene recovery*
117,985	100.00	Total consumption

GAS CONSUMPTION 2017

Nm ³	%	
1,359,855	89.41	Boiler room
159,094	10.46	Topchem
1,919	0.13	Third-party consumption
1,520,868	100.00	Total consumption

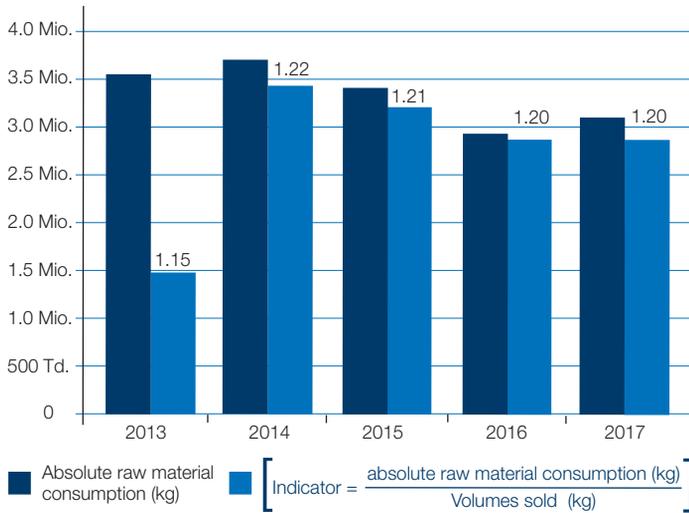
	2013	2014	2015	2016	2017
Raw materials input (t)	3,545	3,698	3,384	2,912	3,141
Water consumption (m ³)	160,792	151,708	138,083	111,709	117,985
Natural gas (MWh)	17,697	16,980	16,796	14,021	15,311
CO ₂ emission from natural gas (t) ¹⁾	3,560	3,626	3,580	3,332	3,645
Electrical energy (MWh)	2,993	3,050	3,105	2,933	3,062
CO ₂ emission from electricity generation (t)	0	0	0	0	404
Total energy (MWh)²⁾	20,690	20,030	19,901	16,954	18,373

	CO ₂ equivalent	CO ₂ emission	Share of renewable energy
Natural gas¹⁾	2.4 kg/Nm ³	3,645 t	not applicable
Electrical energy³⁾	0.132 kg/kWh	404 t	60 %

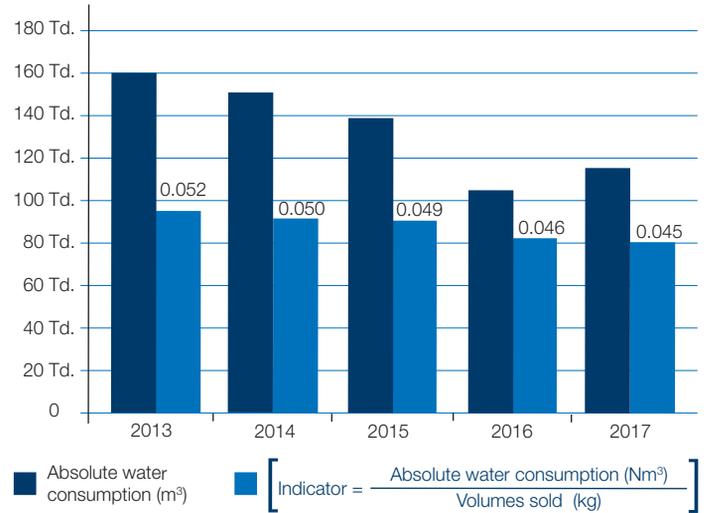
1) Data provided by Federal Environment Agency (as in 2017)
 2) Sum of natural gas and electricity
 3) Data provided by energy suppliers



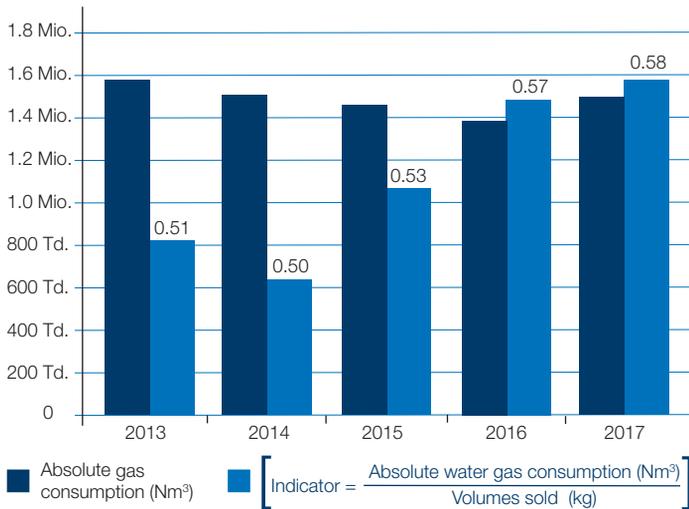
Raw materials (kg)



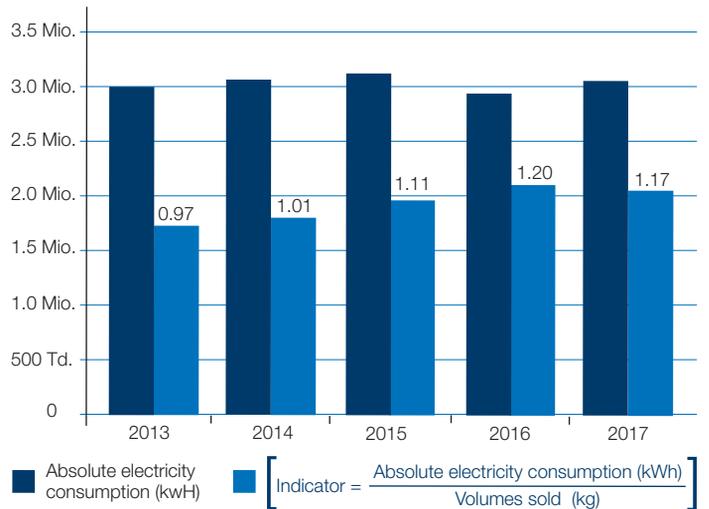
Water (m³)



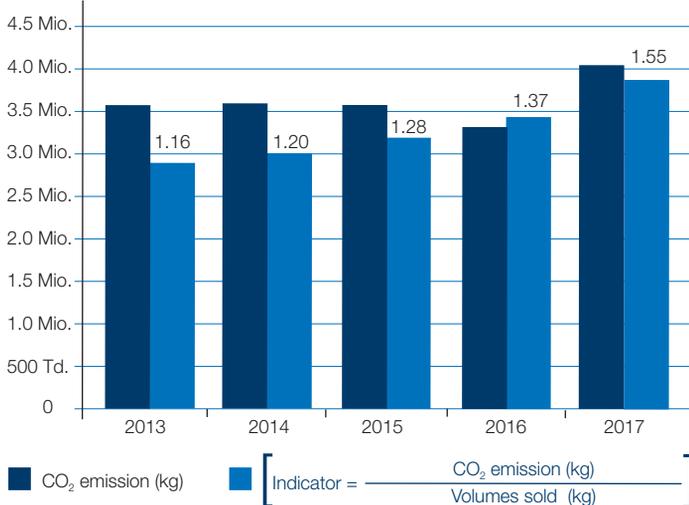
Gas (Nm³)



Electricity (kWh)



CO₂ emission (kg)



Waste (kg)



Reducing emissions – for the sake of the environment

Our horizon does not end at our premises.

Rich. KLINGER Dichtungstechnik produces sealing materials of the highest quality at its plant in Gumpoldskirchen. These superior sealing materials make a significant contribution to the reduction of volatile emissions in a wide variety of applications. Before it is delivered to the respective customer, we test each individual batch in our material test laboratory for compliance with the specific requirements. On the one hand, this ensures that our customers always receive perfect high-performance gaskets with a maximum service life, while on the other hand, volatile emissions are reduced to a minimum. In this manner, we make an important contribution to the protection of our environment. Accordingly, this is not restricted to our

company premises, but goes far beyond these – through to the end user and through to the installed gasket all over the world.

We always strive to improve our products and services on a continuous basis to reduce emissions even further and to be able to offer our customers a maximum of safety, reliability and cost efficiency, today and in future.

The measurement data and indicators determined in the material test lab support us in optimising production processes and in the mixing design of

raw materials to produce jointing sheets that meet the highest safety, quality and environmental standards and always comply with the state of the art. This is proven by a large number of environmental and quality management certificates.



KLINGER®expert Gasket calculation program

The calculated approach makes a valuable contribution to environmental protection.

The free KLINGER®expert software can be used for easy gasket calculation. It calculates not only the right sealing material, but also indicates the impact of different tightening methods. It can thus be demonstrated that the correct assembly greatly influences the service life and tightness of the flange connection. Only the combination of the right high-quality gasket and its professional installation can guarantee minimal emissions at the sealing point.

KLINGER®expert is increasingly popular among our customers and has more than 5,000 active users worldwide.



IN BRIEF

Welcome to the new website of Rich. KLINGER Dichtungstechnik

Not only our environmental statement – but also our website has received a new and fresh look.

As an environmentally friendly approach will always be important to our company, we took this aspect into account when designing our new website. Next to the download area where you can access our environmen-

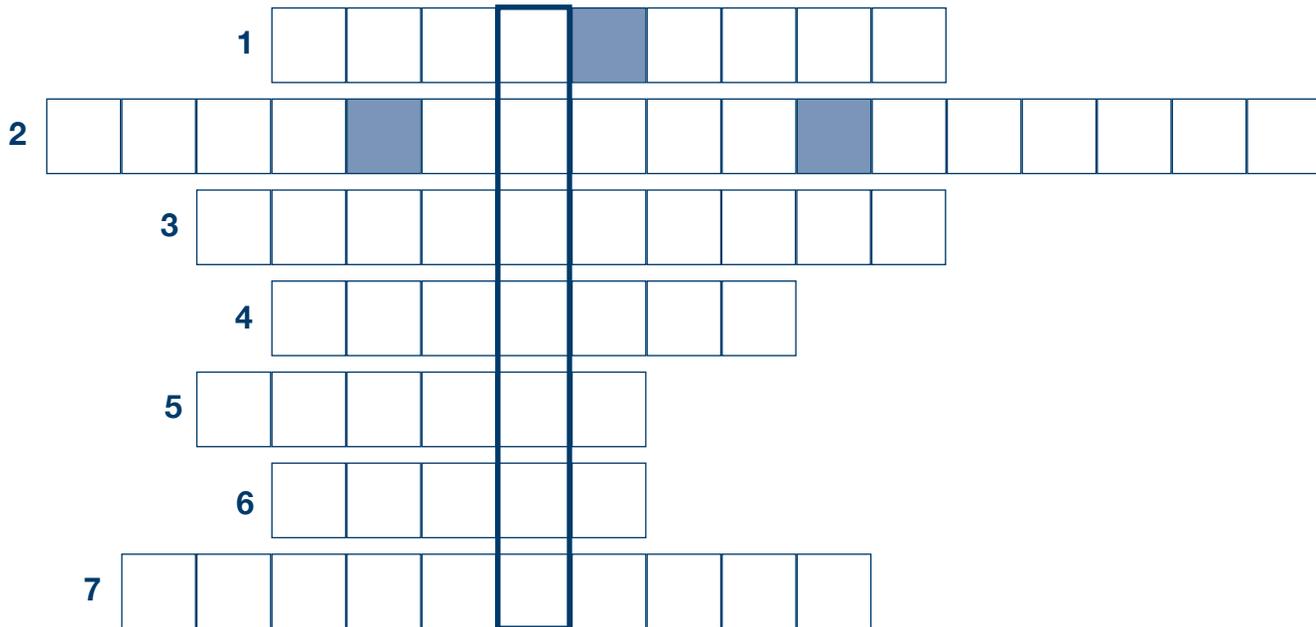
tally relevant certificates (ISO 14001 and the EMAS registration document), you can also obtain important information on the correct use of gaskets to reduce emission as far as possible. Visit us now: <http://www.klinger.co.at>





Crossword puzzle

- 1.) This plant at Dichtungstechnik was completely renewed in 2017
- 2.) This system can now also make phone calls
- 3.) We are committed to c... improvement
- 4.) Having applied EMAS for 20 years, we are now a ...
- 5.) Ch... is the only constant in life
- 6.) You can print on both sides of this
- 7.) We operate an i... management system



Publication details

Media owner and publisher:

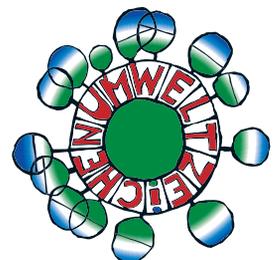
Rich. KLINGER Dichtungstechnik GmbH & CO KG
Environment and Safety Department
Am Kanal 8-10; 2352 Gumpoldskirchen
Commercial Register Number 138090z Wr. Neustadt Regional Court

Design: Doris Karasek

Printing: Johann Sandler GesmbH & Co KG, Marbach

Translation: Technical Translation Agency GmbH, Laa/Thaya

Download: www.klinger.co.at



Printed according to the Austrian Ecolabel criteria for printed matter
Druckerei Sandler, UW 750



VERIFIER'S STATEMENT

Dipl.-Ing. Dr. Kurt Kefer,
chief EMAS environmental verifier and authorised signatory
of the environmental verifier organisation

TÜV SÜD Landesgesellschaft Österreich GmbH,
Franz-Grill-Straße 1, 1030 Wien
[registration number AT-V-0003]

declares to have verified whether the site(s) or the entire organisation as indicated in the environmental statement
of the organisation

Rich. KLINGER Dichtungstechnik GmbH & Co KG
Am Kanal 8–10, 2352 Gumpoldskirchen
with registration number AT-000096

meet all requirements of Regulation [EC] No 1221/2009 of the European Parliament and of the Council
of 25 November 2009 on the voluntary participation by organisations in a Community
eco-management and audit scheme [EMAS], as amended by Regulation [EC] No 2017/1505,
of 28 August 2017.

By signing this declaration, I declare that

- the verification and validation have been carried out in full compliance with the requirements of Regulation [EC] No 1221/2009, as amended by Regulation [EC] No 2017/1505,
- the outcome of the verification and validation confirms that there is no evidence of non-compliance with applicable legal requirements relating to the environment,
- the data and information of the environmental statement of the organisation reflect a reliable, credible and correct image of all the organisation's activities within the scope of the environmental statement

The environmental verifier organisation **TÜV SÜD Landesgesellschaft Österreich GmbH** has been accredited for NACE code 23.99 by decision of the Federal Ministry of Sustainability and Tourism.

Done at Gumpoldskirchen on 19. 12. 2018



Landesgesellschaft
Österreich

Chief environmental verifier and authorised signatory
of TÜV SÜD Landesgesellschaft Österreich GmbH
Franz-Grill-Straße 1, 1030 Vienna



The environmental statement will next be validated in 2019.