

Wilkhahn

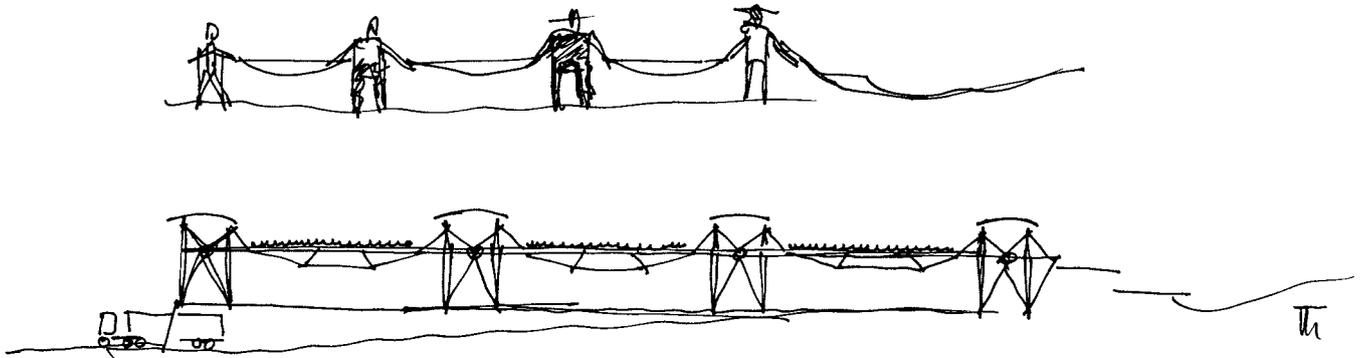
2012

Environmental Statement

Update of the Consolidated
Environmental Statement 2011



Based on Thomas Herzog's eco-friendly design,
the production facilities exemplify Wilkhahn's sense
of responsibility for the future



"At Wilkhahn, no bricks are to be laid before it's clear whether the building is a sound economical prospect, aesthetically durable and eco-friendly. It must also help make the world of work better for people".
Fritz Hahne's thinking on new buildings in the future 1984

"The new buildings display aspects typical for Wilkhahn. They offer top quality work spaces, integrated ecological characteristics, flexibility in production processes and adopt a similar attitude to the architecture and design".
Thomas Herzog, after completion in 1992.

Since the beginning of the 1980s, Wilkhahn's ecological awareness has become increasingly rooted in its business practices. In 1989, this process culminated in a remarkable decision taken by the Wilkhahn administrative board. The board ruled that in future, ecological considerations were to take priority over making quick profits.

Particularly regarding construction, responsibility for the future was considered a long-term aspiration – economically, socially, ecologically and aesthetically. As a result, architect and academic Thomas Herzog was appointed to create a master plan to develop the company's land and the extensions to the buildings planned for Wilkhahn at the time. Herzog was considered a pioneer in ecologically responsible construction. However, large-scale industrial and production facilities were to be built for the first time explicitly along ecological lines. Between 1989 and 1992 production halls were constructed in close co-operation with entrepreneur Fritz Hahne. These were to become perceptible examples of

the ecological change at Wilkhahn. Some of these innovations included green roofs, timber construction and the use of daylight. The buildings were also created using distinctive, modern design principles, innovative photovoltaics and by designing translucent façades.

At the same time the new architecture became a symbol of the change in organisational structures in production processes. Various production processes take place in the three large halls, while office and admin space is integrated in the four vault-shaped buildings. Visual contact and short distances between administrative and production areas provide the conditions required (in terms of space) for the project-gearred organisational structure of highly flexible order-driven manufacturing. – And a useful by-product has been that the level of transparency has assuaged traditional feelings of mutual antipathy between white- and blue-collar workers. Consequently, from a corporate culture standpoint, the architecture played a key role in encouraging people to get on better with one another.

Sustainability is a core feature of the architecture and very much a part of it today. Architects like Thomas Herzog and buildings like the production halls have an enormous impact at Wilkhahn. Over the past 20 years, the combination of efficient production, a working environment with a humane face, ecological benefits and sensational aesthetics have fascinated over 1,500 visitors annually. – That is also a way of making a difference and improving the status quo.

Happy 20th birthday.

Heat from biogas and solar power complement Wilkhahn's energy mix

Since the beginning, Wilkhahn's Environmental Management Team has endeavoured to protect the climate by using renewable energies. Wilkhahn has been generating electricity from solar power since back in 1992. In 2007 it decided to build its own combined heat and power plant, powered by vegetable oils, in the interests of efficient energy generation. Wilkhahn has also been using two further eco-friendly energy technologies since 2011.

Solar thermal power

Two solar-thermal plants help to cover the heating requirements for water required for sanitation purposes. Local use of solar heat also ensures that no fossil fuels are used for heating, or for operating the circulation pumps in the autumn and winter months. The energy generated by solar thermal power is about 30 MWh annually. This figure is equivalent to 3000 m³ of heating oil and helps to avoid 10 tonnes of carbon dioxide (CO₂).



Well prepared – in future Wilkhahn will use climate-neutral biogas district heating.

District heating

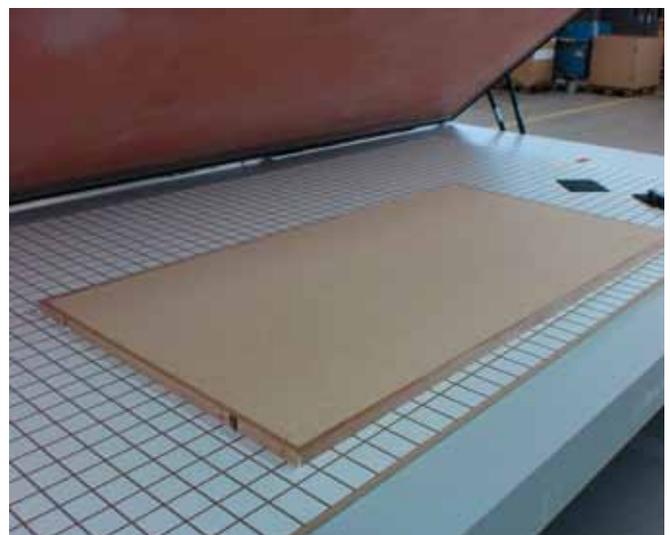
Since August 2011, Wilkhahn has been obtaining energy for heating in Eimbeckhausen via a 500-kilowatt-capacity district heating pipeline from a biogas plant in the neighbouring district of Beber. As a result, the company has four heat-generating systems: two boilers, the combined heat and power plant and district heating. The heat-generating systems are co-ordinated from the energy control room. A multi-boiler-control system was built in the summer of 2011 to ensure that the most ecological and efficient method of heat supply is chosen to match energy demand. The advantages are much lower consumption of energy for heating, heat supply according to needs and a cut in the electricity consumption for operating the various systems. A heat exchanger was also installed. This prevents district heating water from Beber mixing with the Wilkhahn heating water. As a result, should a leakage in the district heating grid occur, no Wilkhahn heating water can leak out. In 2011 all the necessary steps were taken to permanently obtain climate-friendly heating energy.

By introducing solar thermal power and purchasing district heating, Wilkhahn has laid two cornerstones to boost the proportion of renewable energies in the long term to at least 66 per cent. Thanks to its versatility, Wilkhahn energy management is on solid foundations. This is still the case, even if the positive effect on the climate from the biogas district heating was not achieved in 2011 due to the delayed commissioning of the neighbouring biogas plant.

Innovative vacuum pressing procedure reduces material and energy consumption

Since November 2011, Wilkhahn has been applying the innovative technology offered by a vacuum membrane press to its tabletop manufacturing. In the medium term, this device will reduce the amount of work, material and energy required to adhere solid wood edges.

In comparison with the high-frequency pressing method, used since the 1980s, where an electromagnetic field supplies the heat to cure the adhesive, pressing at negative pressure cuts energy. The negative pressure in the press ensures that the adhesive cures very quickly at room temperature and therefore reduces the processing time. All tabletop edges are pressed in one go, including the inside edges of cut-out sections on boards. As well as saving time and energy, this innovative method is also an ecological bonus. Because the solid-wood edges no longer have to be milled off after pressing, this valuable natural resource can be used even more efficiently. At the same time, no corners are cut in terms of Wilkhahn's high-quality standard of production.



Quality and ecology rolled into one: pressure in the press of over 9 tonnes/m² enables fast and secure bonding at room temperature already.

Environmental programme 2011–2013: goals and measures.

No.	Goal	Step	Status	Date
1	Material efficiency: to reduce paper consumption at the Bad Münden site in relation to sales by 20%.	To replace paper by IT-based archiving in accounts department from 2012.	 started	2012
2	Efficient energy usage: to cut consumption of electricity in relation to sales by 5% by 2013.	In order to glue genuine wood edges in an energy-efficient way, the high-frequency press will be replaced by a membrane press.	 completed	2011
3		Further subdivision of the compressed air system into separately controllable sub-sections.	 started	2013
4	Responsible energy mix in the long term: meet at least 66% of total energy requirements by using renewable energy sources.	Convert the Energiezentrale Nord for connection to a bio gas plant, for CO ₂ neutral heat usage from 06/2011.	 completed	2011
5		To use solar-thermal plants for generating CO ₂ -neutral hot water.	 completed	2012
6	Biodiversity: to develop the natural value at headquarters by planting trees.	A mixed fruit orchard will be planted to upgrade the existing biotopes.	 started	2013
7	Emissions: to keep airborne pollutants at a permanently low level.	To invest in a new varnishing roller to enable constant usage of solvent-free primer varnishes, also in closed-pore table surfaces in special sizes.	 in planning	2013
8	To keep health and safety and environmental protection at a high level at headquarters and internationally.	To set up emergency devices to protect water pipes in the Eimbeckhausen stream.	 started	2012
9		To maintain offerings for boosting health outside the company.	 started	2013
10		To continue regular auditing of the most important suppliers as regards quality, health and safety and environmental protection.	 started	2013
11	Environmental information: systematic extension of the data base and the availability of the information assessed and looked at.	Create ISO 14067 life cycle analyses (LCAs) for selected products.	 started	2013
12		To expand the key performance indicator system "Corporate responsibility" (CSR) following GRI standards.	 started	2012
13		To develop and provide internal training modules on health and safety, environmental protection, quality.	 started	2012

EMAS core indicators.

EMAS core indicators		2009	2010	2011
Total value creation ¹ (€ millions)		16.4	20.3	25.5
Material efficiency	Total consumption of raw materials/consumables/supplies (t/€ millions)	131.5	144.3	131.3
	Total waste (t/€ millions)	21.4	29.0	22.5
	Hazardous waste (t/€ millions)	1.1	0.5	0.8
Energy efficiency	Electricity and heat consumption (MWh/€ millions)	495.3	433.0	330.6
	Energy from renewable sources (MWh/€ millions)	329.0	197.6	61.9
Emissions	CO ₂ emissions from production and admin (t/€ millions)	14.1	66.6	104.0
Biodiversity	Area used (m ² /€ millions)	1,159.0	936.0	744.0
	Change of sealed area compared with previous year (%)	0.0	0.0	0.0
Water	Total consumption (m ³ /€ million)	258.5	169.3	141.2

¹Total value creation was calculated as the sum of the revenue minus costs for material, depreciation and amortisation and other advance costs.

Material and energy flows: input/output.

Input	2008	2009	2010	2011
Material efficiency – raw materials, consumables and supplies	(t)	(t)	(t)	(t)
Ferrous metals	544.9	634.0	753.0	766.4
Aluminium	333.7	492.0	793.0	958.0
Wood	459.8	385.6	385.8	396.5
Plastics	427.3	385.8	561.8	796.9
Fabrics for covers	46.6	22.5	30.2	68.1
– percentage of natural fibres (wool)	N/S	N/S	20.4	11.8
Leather	20.8	31.3	32.5	46.7
Paper/cardboard (packaging)	96.8	170.7	294.7	116.0
Plastics (packaging)	32.6	21.4	53.2	54.2
Powder varnishes	9.1	1.9	4.3	6.3
Energy efficiency (production + admin)	(MWh)	(MWh)	(MWh)	(MWh)
Heat	7,188	6,267	6,495	6,120
Electricity	2,538	1,865	2,296	2,321
Total consumption	9,726	8,132	8,791	8,441
Share of energy consumption from renewable sources	(%)	(%)	(%)	(%)
Heat (vegetable oils + biogas)	24	40	31	16
Electricity (vegetable oils + photovoltaics)	74	153	86	25
Share in overall consumption	37	66	46	19
Water	(m³)	(m³)	(m³)	(m³)
Water (total)	4,717	4,239	3,436	3,606
– for sanitation	4,173	4,127	3,386	3,556
– for processing water	544	112	50	50
Output	2008	2009	2010	2011
Waste	(t)	(t)	(t)	(t)
Mixed municipal waste	220.8	95.9	143.0	112.6
Paper/cardboard	159.0	97.9	150.7	145.8
Wood and sawdust	122.0	108.7	202.7	230.8
Ferrous metals	34.5	30.1	28.0	25.0
Leather	10.8	6.5	9.3	11.5
Packaging film	8.7	7.1	9.0	9.7
Aluminium	6.9	3.5	8.5	6.9
Textiles/fabrics	3.7	3.5	2.3	4.6
Solvents and solvent mixtures	13.0	14.7	2.7	1.1
Paint and varnishing waste ¹	2.2	1.3	0	2.0
Aqueous waste, halogen-free treatment emulsions	32.5	12.6	23.4	9.0
Batteries	1.1	0	1.0	1.5
Others	11	10.5	8.6	7.1
Total amount	626.2	392.22	589.1	573.9
Total of hazardous wastes	27.3	18.8	27.6²	20.7
Emissions	(t)	(t)	(t)	(t)
Volatile Organic Compounds (VOCs)				
– from varnishes and dilutions	4.7	4.5	4.9	4.9
– from bonded coatings	4.3	4.3	3.3	1.7
Dusts (PM)	0.01	<0.01	<0.01	<0.01
Nitrogen oxides (NO _x)	0.4	0.3	0.3	0.4
Carbon dioxide (CO ₂)	1,743	231	1,356	2,657
Biological diversity	(m³)	(m³)	(m³)	(m³)
Area built on	19,000	19,000	19,000	19,000

¹ By investing in a modern varnishing area, no hazardous sludge has occurred at the Bad Münden site since 2010.

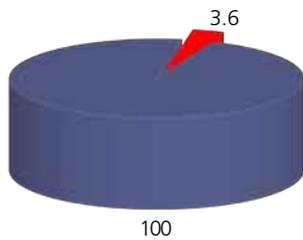
² The figure stated in the 2011 environmental statement (10.1 t) was revised to 27.6 t.

Waste management

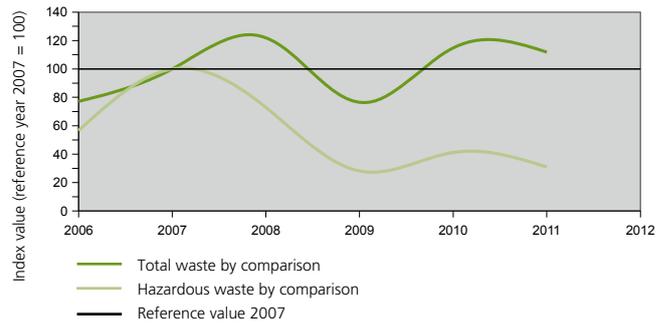
In 2011, 12 per cent more waste was generated at Wilkhahn's Bad Mnder site than five years before. The increase was primarily due to the share of wood and cardboard waste (a direct result of the strong swivel chair sales of the ON range).

On the other hand, by practising consistent waste management, hazardous waste has been cut drastically. In 2011, at 20.7 t, it accounted for less than five per cent of the total waste produced for the third year in succession. In 2011, the proportion of materials usable due to recycling was 98 per cent.

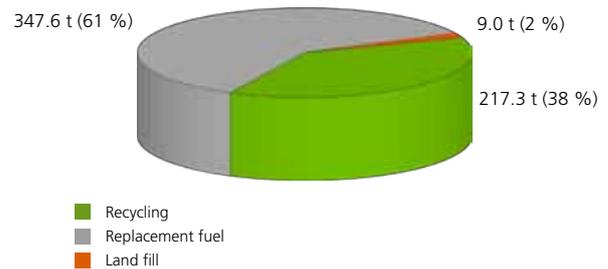
Waste management 2011 – Share of hazardous waste [%]



Development of waste quantities 2007-2012



Waste management 2011 – recycling



Energy management 2011

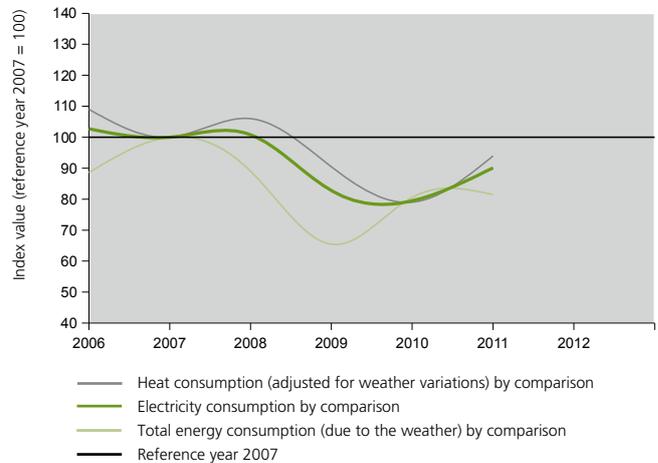
Over the past few years energy efficiency at the Bad Mnder site has improved. In 2011, ten per cent less energy was consumed.

At the same time, at six per cent in 2011, heat consumption (adjusted for weather variations) stayed under the 2007 reference figure.

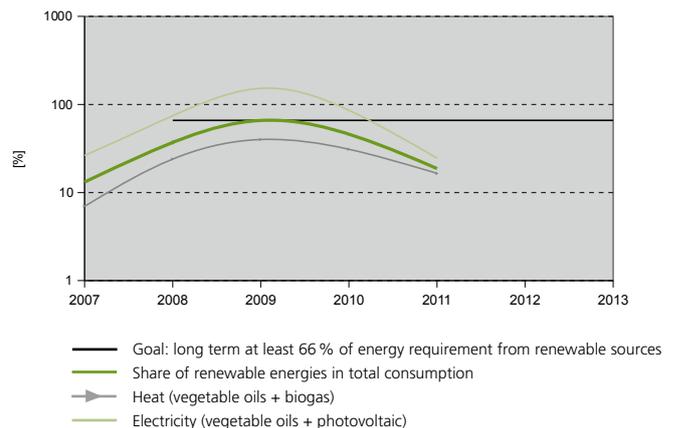
At a figure of about 2,300 MWh, electricity consumption in 2011 was at the previous year's level. Compared with 2007, electricity consumption dropped by 19 per cent, above all due to investments in efficient wood processing machinery and energy-saving hall lighting. This level could be a result of the efficiency measures taken. On the other hand, the lowest figure on the graphic in 2009 reflects the atypical conditions due to a four-day week because of short-time working.

From 2009 to 2011 the proportion of renewable energies in the energy mix dropped to its current figure of 19 per cent. Because vegetable oil prices have risen so drastically, Wilkhahn has had to reduce the climate-friendly energy generation from the CHP. Nevertheless, Wilkhahn is still adhering to its goal to provide an energy mix. In the long term, at least 66 per cent of energy used at the Bad Mnder site will come from renewable sources. The lion's share will come from climate-neutral heat generated from biogas. In 2011, several measures were successfully implemented (biogas district heating pipeline, multi-boiler control system, as well as two solar power installations). From 2012, these will lead to a strong rise in the energy mix from renewable sources. At the same time, in 2011 the CO₂ emissions at the Bad Mnder site decreased significantly, reaching 2007 levels.

Energy efficiency (production + admin)



A responsible energy mix: share of energy from renewable sources



Architecture



Today, the oldest section of the building is still integrated in the old boiler house. As part of the conversion of the old factory into an admin building in the early 1990s, it was redeveloped and turned into a communications centre.



The admin building (1959) by Herbert Hirche is inspired by Bauhaus and was designed as a concrete structure with a clinker brick façade.

A business with a human face

1907: the company is founded by brother-in-laws Christian Wilkening and Friedrich Hahne as one of over 100 firms in Deister-Sünteltal, at that time a hub of the German chair industry to the south west of Hanover.



Fritz Hahne and Adolf Wilkening define and adopt a new strategy for the company.

Co-operative management (along the 1960s Bad Harzburg model) and profit-sharing for the workforce are rolled out.

Wilkahn launches corporate social responsibility initiatives: a company pension plan and low-cost company loans to employees are introduced.

Wilkahn's green approach

Start of the partnership with Ulm University of Design along the following principle: "The goal is to develop durable products, increase their utility value and reduce waste."

1907

1950

1960

Product design



Solid wood chairs are produced in different styles for mainstream, middle-class tastes.



Wilkahn develops into a pioneering company for modern furniture design. New materials like steel and plastic become more popular. Renowned architects and designers develop product ranges.



The sixties: The business segment is created that offers furnishings for waiting areas and objects destined for environments where people traditionally convene or come together.



1961: laminated wood range 400 – a lightweight, flexible and indestructible multi-purpose chair by Wilhelm Ritz.

Markets

From 1907: in the early years products are sold regionally.



From the 1950s: products are sold nationwide in Germany and international business operations are launched (e.g. US, the Netherlands).

1960: the export department is founded.

1969: the showroom and the boiler house are built (today called the "lab").

Manufacturing halls are constructed (brick with a bonded wood design).

1984: "At Wilkhahn, no bricks are to be laid before it's clear whether the building is a sound economical prospect, aesthetically durable and eco-friendly. It must also help make the world of work better for people". (Fritz Hahne)



More people-friendly working environment: in 1985, Frei Otto's pavilions became a deliberate embodiment of corporate culture and an integrated understanding of product design, social partnership and responsibility for the environment.



1969: the company's ideas management scheme is launched.

Employees are involved in the design of the new production pavilions (e.g. the sewing department with underfloor heating).



The ability to repair Wilkhahn furniture ensures long product lives.

In 1989 the administrative board voted to make ecological change an official part of the company's manifesto – a pioneering step by the company.

1970

1980



1965: Hans Peter Piehl's stackable slatted chair is born.



Product development concentrates on designing ergonomic office chairs.



1976: Delta-Design's 238 product range is way ahead of its times.



1980: the FS office chair line is launched and aims to take the complexity out of seating. Today it's a modern classic. The synchro-adjustment creates a new benchmark for healthy seating.

1982: innovation: sitting on mesh (O-Line by Herbert Ohl).

The company's consistent goal is to develop high-quality office chairs and conference furnishings in the premium segment.



1988: Wilkhahn taps into the conference furnishings segment.



1968: production facilities are set up in Castellón with a sales office in Madrid, Spain.



1973: subsidiary is founded in France.



1974: subsidiary is founded in the Netherlands.

1980: the company adopts a more international approach. Foreign business is a declared strategy.



1983: Wilkhahn Switzerland is founded.

1985: the Wilkhahn design department is turned into a subsidiary called wiege.

From 1985: markets in the Middle East are developed.



1989: Wilkhahn UK is founded.



1992: the Herzog halls are built as evidence of ecological responsibility.

“Projects drive the company”: group- and project-work are new forms of work (1994).

The ISO 9001 quality management system is established.

The company health management system is initiated in partnership with German healthcare insurer AOK: a pilot project offering bonuses to companies who can demonstrate a good health management system.

An environmental controlling and waste management concept is implemented.



1996: Wilkhahn is awarded with the German Environmental Prize by the German Environmental Foundation for its corporate responsibility concept.

1990



1992: the Picto swivel chair range is launched as the first office chair worldwide to consistently integrate ecological criteria in its design concept.



1992: leaning aid Stitz is an ergonomic milestone.



1994: the Modus office chair range becomes a blueprint for the 21st century.



1994: Confair creates a global benchmark for conference rooms.



1999: interactive conference furniture, such as InteracTable®, InterWall® and CommBoard®, is developed with digital equipment integrated into walls and tables.

1990s: markets in north, east, south and south-east Europe are opened up and expanded.



1991: Wilkhahn Austria and Wilkhahn Belgium are founded.



1995: a licensing partnership is signed in Japan.



In 1998, Wilkhahn Asia-Pacific is founded in Sydney. It is to be a sales and manufacturing site to tap into new markets in Australia, New Zealand, Singapore, Hong Kong and China.



2008: a high-tech combined heat and power station based on renewable raw materials is built.

A showcase as part of the world exhibition Expo 2000: "The future of work in the conflict between people, nature, technology and market".

2004: a new version of the company pension plan is drawn up.

2002 / 2008: a contract to safeguard jobs and the German site as a manufacturing hub is signed.

A Good Practice Award in Safety and Health is presented by the European Commission.

2007: The "Responsible furniture for a professional life" core statement is established.



2007: the company's 100th anniversary is celebrated with "100+" as its slogan.

2007: Wilkhahn gets into shape for the future and starts the "Wilkhahn 2017" strategy development process (involving employees worldwide).



2008: Wilkhahn becomes a member of "UN Global Compact".



2009: an international framework agreement is signed with German trades union IG Metal on compliance with minimum working conditions across the globe.



2001: the EMAS European Environmental Management System is launched.



2001: a new powder-coating machine is installed with a closed processing water cycle and power recovery.



2009: a new wood surface treatment with heat recovery is created.

2011: hot water is now produced by solar collectors in the whole of the old building and the four pavilions.

2000

2010



Timetable: in 2000 the transportable table with swivel tabletop complements the conference business sector.



2004: Aline, a light and transparent multi-purpose chair, is born.



2006: the offering for informal communication areas is expanded.



Dynamic seating: in 2009 ON revolutionises the market for office swivel chairs with its three-dimensional range of movement.



2010: automotive progress meets chair design – multi-purpose chair Chassis.



2005: Wilkhahn Middle East is founded in Dubai. The sales company also looks after the southern Mediterranean.

2005: foresee becomes an independent subsidiary.



2008: Wilkhahn Inc. is founded in New York City. Today the company is present on all continents.

2008: Wilkhahn Energie GmbH becomes an independent company.

2009: the sales network in North Africa and Israel is shored up.

In March 2012, Wilkhahn launched a new conference chair. In terms of design, comfort and durability it is a new benchmark in the industry. Here is a brief summary of the environmental product information regarding the material.

To find the full environmental product information go to http://www.wilkhahn.com/6_green/3592.htm.



Materials

Socio-ecological assessment of obtaining raw materials, the procurement process, the material used and its characteristics.

Production

Socio-ecological assessment of the production and assembly processes by environmental management and social audit systems.

Product utility

Socio-ecological assessment of the product utility phase regarding design, ergonomics, durability, customer service, availability of spare parts.

End of the product life-cycle

Socio-ecological assessment of the product after the end of its useful life: disassembling capabilities, recycling, disposal and return of product.

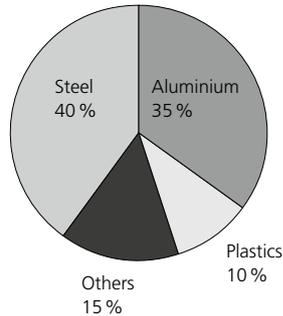


Materials.

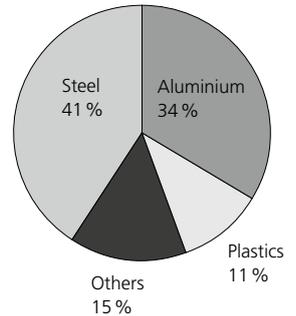
Composition.

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	kg	in %	kg	in %
Metals				
Steel	6.9	40	7.4	41
Aluminium	6.0	35	6.0	34
Others	0.6	3	0.6	3
Plastics				
Polyamide (PA)	0.3	2	0.3	2
Polyurethane (PUR)	1.5	8	1.6	9
Others				
Leather	1.9	11	1.9	11
Wood	0.1	1	0.2	1
Total weight	17.1	100	17.9	100
Recycling proportion	8.6	50	8.8	49
Recycling capability	15.6	91	16.3	91

301/5



302/5



The materials used in Graph chairs are subject to stringent controls. As part of an ABC analysis, the materials used in the chairs are checked to ensure they are environmentally friendly and not harmful to health. Prohibited chemicals are not used in the product at all. All raw materials, consumables and supplies are listed in a hazardous materials register which is the basis for continuing to minimise or substitute potential problem materials.

A trendsetting form, innovative comfort and impressive details: the Graph conference chair.

As regards the Graph range (2012), Stuttgart designers jehs + laub created a conference chair that sets benchmarks in form and function. The graphical appeal of the chair stands out for its fascinating interaction of a fluid and streamlined form, closed and transparent surfaces, harmony and contrast. The pioneering visual quality is reiterated by the extremely comfortable slim upholstery. The steel frames feature wave springs, padding and additional cushioning that fulfil the highest of demands in terms of usage. Quite exceptional in a conference chair of this class is a leaf spring in the seat's three-point support that ensures innovative three-dimensional flexibility to keep body and mind active. So it virtually goes without saying that no nuts and bolts are visible on the armrests. Or that frame-forms and frame-surfaces have been superbly well moulded and crafted. And that the seams on the sophisticated covers precisely mirror the elegant, streamlined shape.



Wilkhahn

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With its EMAS-validated and ISO 14011 certified environmental management system, Wilkhahn is taking responsibility for sustainably protecting our environment. Every three years Wilkhahn publishes a consolidated environmental statement on the key environmental aspects and on Wilkhahn's environmental performance. This 32-page brochure is available in German and English in print and as a PDF to download from the website.

Each year Wilkhahn also informs the public briefly on its current environmental performance. This updated environmental statement was drawn up in March 2012. The next version will be published in March 2013.

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