nora® floorcoverings made of rubber – leading worldwide

Environmental Declaration for 2003

updated version for 2005

Freudenberg Bausysteme KG
D–69465 Weinheim, Germany

nora®

Freudenberg

Certificate of Registration

EMAS

VERIFIED
ENVIRONMENTAL
MANAGEMENT

Freudenberg Bausysteme KG
Höhnerweg 2-4

69465 Weinheim

Registration-No.: D-153-00016

Date of first registration 7th March 1997

This organisation has established an environmental management system according to EU-Regulation Nr. 761/2001 to promote the continual improvement of environmental performance, publishes an environmental statement, has the environmental management system verified and the environmental statement validated by a verifier, is registered under EMAS and therefore is entitled to use the EMAS-Logo.

IHK Industrie- und Handelskammer Rhein-Neckar

Mannheim, 19th November 2001

Dipl.-Ing. Hubert Eirich
President

Prof. Dr. Franz J. Luzius
Chief Executive Officer

CERTIFICATE

DQS GmbH

Deutsche Gesellschaft zur Zertifizierung von Managementsystemen

hereby certifies that the company

Freudenberg

Freudenberg Bausysteme KG

Höhnerweg 2-4
69465 Weinheim-Germany

for the scope

Manufacture, sales and marketing of floor covering systems, shoe components and table mats made of rubber

has implemented and maintains an

Environmental Management System.

An audit, documented in a report, has verified that this environmental management system fulfills the requirements of the following standard:

DIN EN ISO 14001
October 1996 edition

This certificate is valid until	2006-03-06
Certificate Registration No.:	053195 UM
Frankfurt am Main, Berlin	2003-03-07

Dr.-Ing. K. Petrick

Dipl.-Ing. S. Heinloth

MANAGING DIRECTORS

D-60433 Frankfurt am Main, August-Schanz-Straße 21
D-10787 Berlin, Burggrafenstraße 6

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Besides validation according to EU-Regulation 761/2001 Freudenberg Bausysteme KG was also certified under the international DIN EN ISO 14001 standard (Eco-management system).

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Foreword from the company management

Dear readers,

In December 1996, Freudenberg Bausysteme KG was for the first time audited under the rules of Directive No. 1836/93 (EEC), usually known as the EC's Eco-Management and Audit Scheme or EMAS. The environmental declaration submitted was validated by an approved environmental assessor. It was then entered in the register of audited facilities, through the Rhine-Neckar Chamber of Industry and Commerce, under Register Number D-153-00016.

In addition, we arranged for our eco-management systems to be certified in 1999 under the international DIN EN ISO 14001 standard.

This environmental declaration reports on the continuous and progressing development of our eco-management system, our corporate environmental protection program, the recording and analysis of our environmental impacts, and the implementation of our environmental goals.

If you have any further questions, please get in touch with us directly (see also Page 20).

Weinheim, March 2nd, 2005

Hans-Joachim Schlitt
Managing Director
Sales & Administration

Dr. Rüdiger Fischer
Managing Director
Manufacturing & R&D

Company portrait

Freudenberg Bausysteme KG was established on 1 July 1995 as an autonomous enterprise, in succession to the Building System and Shoe Components Division of the Carl Freudenberg company. Today, we are a subsidiary of the globally operating Freudenberg Group. In some countries, we cooperate with autonomous sales companies, which together with Freudenberg Bausysteme KG form the Building Systems Subgroup. The corporate structure involved is depicted below.

Freudenberg & Co.			
Business Area Seals and Vibration Control Technology	Business Area Nonwovens	Business Area Household Products	Business Area Specialities and Others
Business Groups	**Business Groups**	**Business Group**	**Business Groups**
■ Seals and Vibration Control Technology Europe ■ Seals and Vibration Control Technology America ■ Vibracoustic Europe	■ Nonwovens ■ Freudenberg Politex Nonwovens	■ Household Products	■ Specialty Lubricants ■ Building Systems ■ IT Services **Divisions** ■ Systems and Tool Engineering ■ Research Services ■ Service

Table 1: The organization of the Freudenberg Group

Business Group Building Systems					
Freudenberg Bausysteme KG, Weinheim, Deutschland	Freudenberg Building Systems Oy, Tampere, Finnland	FBS Bouwsystemen BV, Kaatsheuvel, Niederlande	Freudenberg Building Systems UK Ltd. Lutterworth, Großbritannien	Freudenberg Sistemi di Costruzione S.r.l. Mailand, Italien	Freudenberg Building Systems Inc., Lawrence (MA), USA

Table 2: Subgroup Freudenberg Building Systems

Freudenberg Bausysteme KG is a company specializing in high-quality floorcovering systems and shoe components. With a production output of more than 6 million square meters a year, Freudenberg Bausysteme KG is the world's market leader for resilient rubber-based floorcoverings. The noraplan roll goods are vulcanized in an endless web on automatic continuous lines, while the norament tiles are produced in multiplaten presses. The materials for shoe components and the expanded-material sheets for orthopedic applications are likewise manufactured in presses.

Freudenberg Bausysteme KG currently employs 840 people in Germany, about 500 of them in the production operation. Annual turnover exceeds 145 million euros. Development, production, administration and sales are concentrated at the facility in Weinheim. Sales abroad are all handled by local sales organizations, with another 110 staff worldwide.

The "Zwischen Dämmen" site (Weinheim Industrial Estate) is used not only by Freudenberg Bausysteme KG, but by other Freudenberg companies and outside firms as well. The production lines and administrative buildings of Freudenberg Bausysteme KG are essentially located in the south-west corner, where the "Alte Weschnitz" river arm forms the area's southern boundary. The buildings are rented from Freudenberg Service KG.

Weinheim is conveniently situated in the Rhine valley, on the edge of the Odenwald Forest, in the vicinity of Mannheim and Heidelberg. The autobahn is only a few kilometers away. Railway tracks lead all the way into the site.

On terms of European economic classification, the facility is assigned NACE Code 25.13.

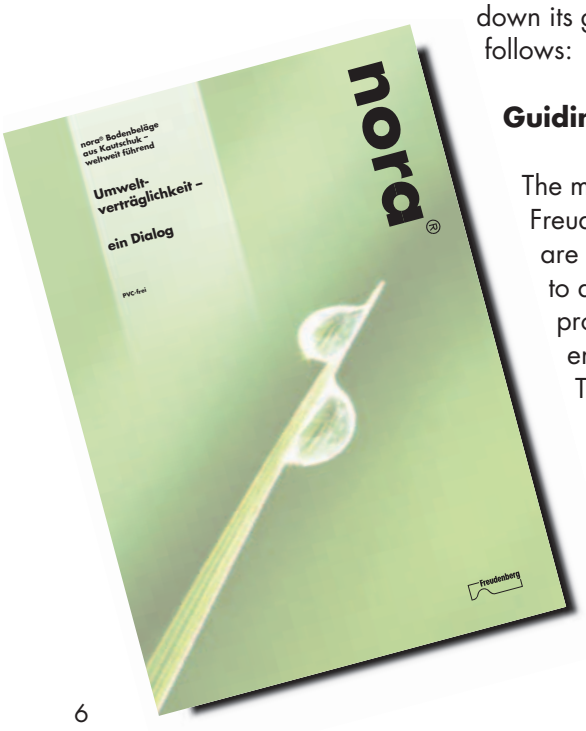
Environmental policy

Freudenberg Bausysteme KG is fully conscious of its responsibilities to the natural environment. Environmental protection enjoys equal priority with other important corporate goals.

Environmental protection is handled at boardroom level in Freudenberg Bausysteme KG. The goals of supporting and fostering eco-awareness among our staff, and continuously improving corporate environmental protection with the best available technology which is also financially viable, are an integral constituent of corporate policy-making in our company.

Freudenberg Bausysteme KG develops, makes and sells products which are as eco-compatible as possible in terms of their manufacture, utilization and disposal.

For the Freudenberg Group, back in February 1993 the Management Board had already approved guiding principles and guidelines for environmental protection and occupational safety. Due to the restructuring of the Carl Freudenberg company, the guiding principles were amended (in the wording on Page 22 of this environmental declaration). The altered version has been in force since 1 January 1996. Within this framework, Freudenberg Bausysteme KG lays down its guiding principles as follows:



Guiding principles

The management and staff of Freudenberg Bausysteme KG are working systematically to assure continuous improvement of corporate environmental protection. The aim is to use the best available technology, provided this can be reconciled with adequate cost-efficiency.

We focus on long-term goals: economical husbandry of all resources, utilization of a cooling water circuit, and the use of secondary raw materials show that ecology and economy are by no means mutually exclusive.

We practice preventive environmental protection: compliance with environmental legislation is a sine qua non, and is not restricted to the statutory minimum. Above and beyond the legal requirements, internal guidelines are enacted and appropriate action is taken to ensure our continuous improvement in terms of corporate environmental protection.

We regularly monitor the success of our environmental protection initiatives by means of internal and external audits, measurements and analyses, together with mutual feedback in internal working groups and on external bodies. Sustained success is possible only by involving all staff in line with their qualifications and responsibilities. Environmental protection is therefore an essential constituent of training and information.

We keep our customers informed about the eco-responsible production and utilization of our long-lived products, and provide guidelines on how they can be recycled after the end of their useful lifetimes. One defined objective of our processes is to minimize the impact on human beings and the natural environment.

We involve our business associates in implementing our environmental policies. Raw and process materials, plus packing materials, are also selected and used in line with environmental criteria.

We keep the public informed of our eco-relevant activities, and also of improvements and goals already achieved or currently planned in our company, through this environmental declaration and through further publications on the subject of environmental protection.

Eco-management

Overall responsibility for environmental protection at Freudenberg Bausysteme KG is vested in Dr. Rüdiger Fischer, the Vice-President in charge of Engineering and Development. He is simultaneously the company's eco-management officer. The body entrusted with formulating environmental protection goals and action plans is the Environmental Protection Committee. Environmental policies and the eco-programs are implemented on all levels of the line organization.

Special remits in terms of environmental protection are handled by the following functions:

- The Head of Development is responsible for the substances used in our products.
- The Head of Engineering is responsible for planning, installation and maintenance of lines and equipment.
- The Plant Officer for Environmental Protection coordinates and monitors all environmental protection activities.
- The Hazardous Goods Officer is an employee of Freudenberg Service KG appointed by contractual agreement.
- The fellow subsidiary Freudenberg Service KG operates the Industrial Estate in Weinheim. Many of the environmentally relevant tasks are handled there under contractual arrangements on behalf of Freudenberg Bausysteme KG:
  - full-time plant fire brigade for emergencies
  - processing the outside disposal arrangements
  - supplying energy and water
  - updating the catalog of currently valid statutory regulations
  - checking compliance with the relevant statutory regulations by Freudenberg Bausysteme KG as part of the environmental protection and occupational safety checks conducted annually

A detailed description of how corporate environmental protection has been organized is provided in an Eco-Management Manual, which is written and updated by the Plant Officer for Environmental Protection.

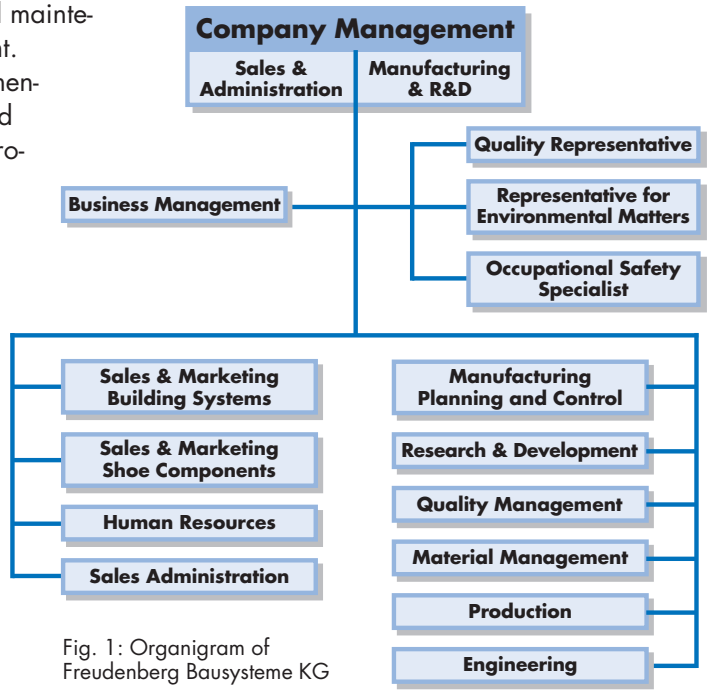


Fig. 1: Organigram of Freudenberg Bausysteme KG

Figure 2: Composition of the Environmental Protection Committee

The eco-management system is regularly monitored by internal and external auditors. This ensures that all elements of the Directive (EC) 761/2001 (EMAS) are being appropriately complied with. Any deviations from the rules discovered are discussed in the Environmental Protection Committee, and eliminated by appropriate measures taken in consultative coordination with the board.

Environmental impacts/ Substance and energy utilization

The diagram below shows in simplified form the process used for manufacturing floorcoverings from rubber.

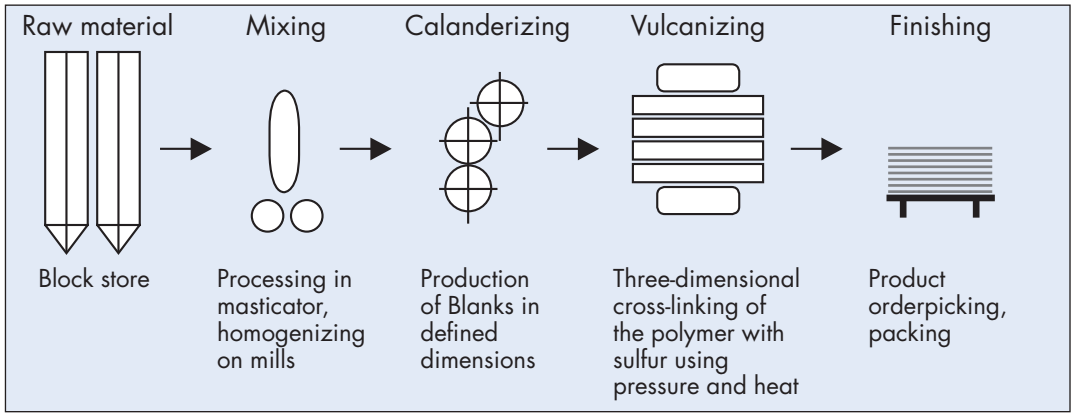


Figure 3: Process diagram for floorcovering manufacture

On the basis of a recommendation by the European Commission (2001/680 EC), the environmental impacts attributable to Freudenberg Bausysteme KG have been determined. The results are summarized in the table below.

Assessing environmental impacts		
STAGES OF THE ECONOMIC CYCLE		
Activities	Nature of environmental impacts	Influencing options
Procurement Purchase of starting materials for processing, distribution and marketing		
Purchasing of raw materials for the production process	Exhaustion of non-renewable raw materials Exploitation of raw material resources Energy consumption for raw material production and transport	Purchase renewable raw materials Use geogenic fillers Be alert for renaturation options Purchase recyclable materials Minimize the quantity of hazardous substances and hazardous goods Minimize transportation distances
Purchasing of process materials like paper, cardboard and other packing material	Wood consumption, water pollution	Re-usability Low pollutant content
Development Product development		
Development of new products/design enhancement of existing ones	Indirect effects: raw material selection, product design	Minimize the use of hazardous substances, re-usability/disposability
Production Product manufacture		
Storage of raw and process materials	Pollution of the environment with chemicals Fire risk with emissions of conflagration gases	Avoid discharging unwanted substances into the environment
Mixing the raw rubber mixture	Pollution of the air by emissions Disposal of waste mixtures (defective batsches, cleaning rubber) Removal of groundwater for cooling purposes	Dust arrestance units Minimize the cleaning cycles and multiple use Avoid preparation errors Ensure waste is recovered

Production Product manufacture		
Calanderizing blank rolls	Disposal of waste mixtures Removal of groundwater for cooling purposes	Minimize start-up and shut-down losses Ensure waste is recovered Reduce amount of groundwater removed for cooling purposes
Vulcanization in presses	Emissions into the air Disposal of edge trim waste Removal of groundwater for cooling purposes	Minimize lateral waste Ensure waste is recovered Reduce amount of groundwater removed for cooling purposes
Vulcanization on continuous machines	Emissions into the air Disposal of waste, start-up and shut-down losses, grinding dust Removal of groundwater for cooling purposes	Minimize start-up and shut-down losses Ensure waste is recovered Reduce amount of groundwater removed for cooling purposes
Painting tiles	Disposal of waste (faulty painting)	Ensure waste is recovered
Finishing (punching, grinding)	Disposal of waste (punching waste, grinding dust) Removal of groundwater for cooling purposes	Ensure waste is recovered Reduce amount of groundwater removed for cooling purposes
Order-picking	Disposal of waste (sorting losses)	Ensure waste is recovered
Marketing and administration Sales promotion and marketing of pruducts and services		
Informing customers about our products	Reduction in amount of waste entering the environment	Communicate appropriate information on installation, cleaning, disposal
Office activities involving use of energy, paper and office equipment	Reduction in amount of waste entering the environment	Separate the waste collected in the offices
Distribution Road and air transportation of products from their place of manufacture to wholesalers and customers		
Use of cardboard and films for transport packing	Reduction in amount of waste entering the environment Reduced consumption of materials	Use PE films, cardboard and wood Take back packing material
Road and air traffic	Global warming and local air pollution; exhaustion of mineral oil reserves; traffic jams and noise pollution	Use sea freight Optimize freight quantities per transportation trip
Disposal		
Waste disposal by the company	Possible waste entering the environment	Ensure that as much as possible is recovered
Disposal of product packaging and installation residues by client	Increased amount of commercial waste	Use packaging made of recyclable material and recoverable substances
Disposal of removed floorcoverings	Waste entering the environment	Offer to take back products after removal

Table 3: Environmental impacts

Environmental impacts within the specific meaning of the EMAS Directive cover not only the consumption of energy and natural environmental goods like raw materials, but also the emissions into air and water, waste and noise, insofar as their impacts extend beyond the site's boundaries. They are quantified and explained in the sections below.

The figures given below are from time-series covering several years. Compared with the presentation in the Environmental Declaration for 2000, the time-period involved has once again been considerably extended. The data given are relative data, since they are always referenced to the quantity mixed of the year concerned. Experience has shown that this is essential if the annual figures are to be meaningfully compared. The quantity mixed is the total masses of all raw and process materials made into raw mixtures in the masticator.

Water and wastewater

Water consumption per ton of quantity mixed

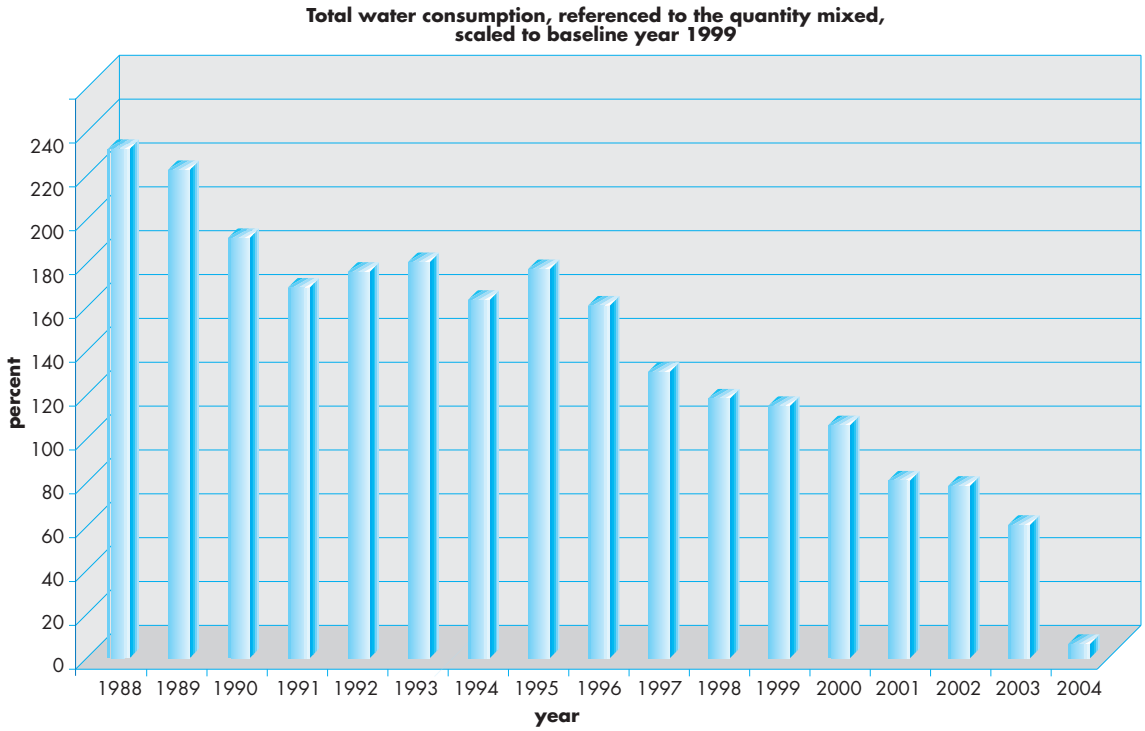


Figure 4: Water consumption

The total water quantity is composed of several different water qualities. The breakdown of water categories for 2004, for instance, was:

Well water (cooling water)	55,6%
Municipal water (drinking, sanitary water)	30,4%
Demineralized water	13,9%

The municipal water from the public supply is used as drinking water and in the sanitary facilities; the resultant wastewater corresponds to domestic wastewater in terms of its composition.

The well water provided by Freudenberg Service KG at the "Zwischen Dämmen" site is used for cooling purposes. Internally, we run a cooling water circuit operated at a constant temperature. Only if this temperature is exceeded will it be topped up with cold fresh water. In recent years, cooling towers have additionally been installed for recooling, thus drastically reducing the amount of cooling water involved.

Demineralized water is used in processes and machines only where deposits of salts dissolved in water absolutely have to be avoided.

All the wastewater produced, essentially consisting of sanitary wastewater and cooling water, is purified in the sewage plant, which is operated by Freudenberg Service KG, and features the very latest state-of-the-art engineering. The four-stage process used also eliminates nitrogen compounds, which may contribute towards eutrophication of the surface water.

Dirty water and rainwater (surface drainage) on the site are passed into separate drainage systems. The rainwater is discharged into the River Weschnitz.

Energy

The time-series diagrams below provide a visualized depiction of our energy consumption. As a reminder: due to the targeted comparability, the data are referenced to the quantity mixed. The baseline year (100 %) is 1999, since all quantifiable environmental goals for 2000 (see the eco-program below) are referenced to this.

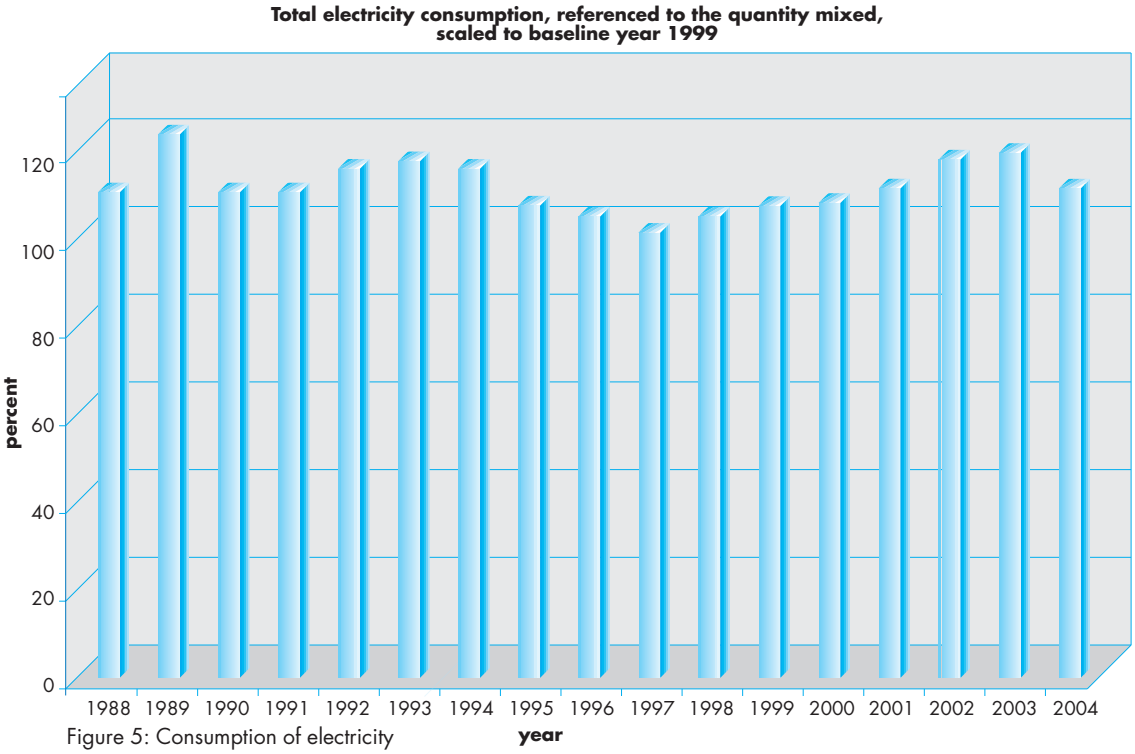


Figure 5: Consumption of electricity

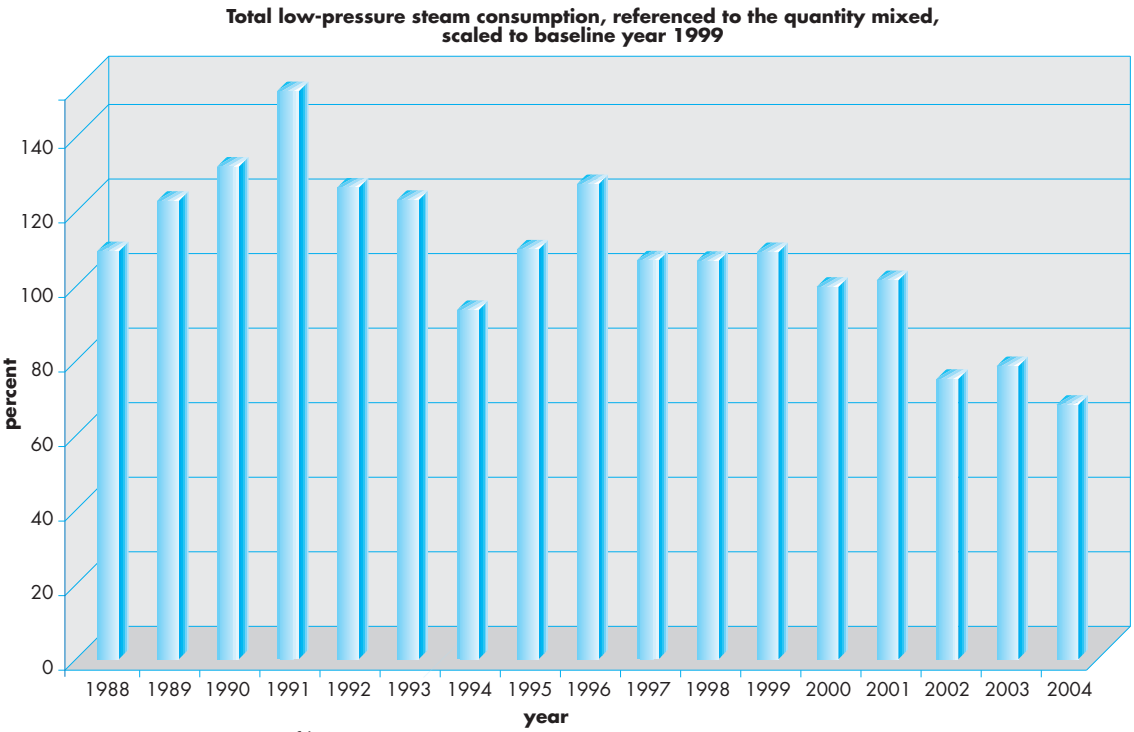


Figure 6: Consumption of low-pressure steam

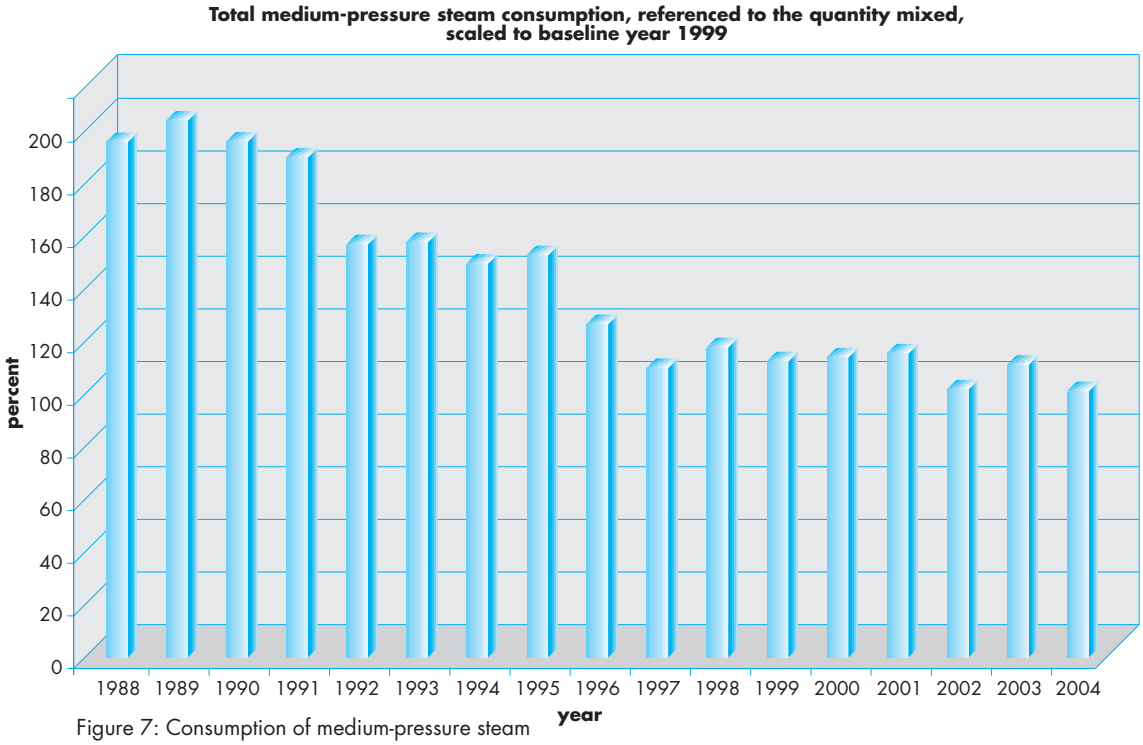


Figure 7: Consumption of medium-pressure steam

Freudenberg Bausysteme KG is supplied with all forms of energy by the Energy Department of Freudenberg Service KG. Electricity and medium-pressure steam as the principal energy carriers for the processes are generated in the group's own cogeneration power plant at high efficiencies, for maximized eco-compatibility. Part of the electricity requirement is covered by external procurement.

The low-pressure steam consumed is utilized for heating production halls and offices.

The slight increase in consumption figures for electricity, unwanted though it is from an environmental viewpoint, is attributable firstly to the larger proportion of more complex products in the assortment: the number of process steps increases with reference to the quantity mixed. Additional machines require electricity. Secondly, the operation of additional cooling units in the production operation, for example (to save on cooling water) and in office rooms (to improve the working conditions) entails increased consumption of electricity. The decrease in the year 2004 can bei explained by an improved machine efficiency, which is based on larger quantities of mixed material and optimized processes.

Emissions

Exhaust air loading per hour of production time:
volatile substances,
as total carbon 4 kg/h
corresponds to 0.7 kg
per ton of quantity mixed

About half the total figure stated for overall emissions is accounted for by measured emissions (guided air flows) and the other half by diffuse emissions (estimated from solvent consumption).

The emissions originating at the lines are measured regularly at approx. three-year intervals, even though this is not mandatory under statute law, and presented in the form of an emissions register. The volatile proportion of the raw and process materials emitted into the air, as calculated from the emission data available, is less than one thousandth of the total quantity. The next measurements are scheduled for the end of 2005.

Noise emissions are regularly recorded in a noise register (most recently in 2002) and supplemented by feedback from measuring points outside the company's premises. Within the production operation, there are noise areas designated in accordance with the occupational safety guidelines. An action plan for reducing the noise levels in these areas is in place. Substantial successes have been achieved by replacing loud machines and by technical measures such as enclosures.

Recovery and disposal

Internal recovery of production waste

The residues from the production process in the form of web flashes are, following long years of intensive development work, fed back almost entirely into the production process as design-creating decorative granules. Production of the granules requires several process steps, like collecting the residues sorted by color and type before comminution and sieving, which are performed in a separate area of the production zone, reserved for recyclables processing. Since the quantities obtained from intra-plant return flows are not sufficient for producing the granules, these are additionally produced as tile goods.

Grinding dusts are separated by color before being collected, and after a sieving process are admixed to appropriate products as a high-quality filler.

For special applications (e.g. installation in golf club buildings, large-animal clinics and indoor rifle ranges), we produce norament tiles which in addition to a top layer of new material exhibit a thick underlay of recycled materials (up to 50 %).

Disposal

The latest waste analysis for 2004 shows the distribution of waste categories in the total volume.

Waste analysis for the period: January 2004 to December 2004

AVV	AVV-designation	Internal designation	Pcs.	Weight (t)	R	D	M	Sp.M.
070204	Other organic solvents, washing liquid and mother liquor	Sludges with a solvent content, not halogenated		5,2	●			●
070208	Other reaction and distillation residues	Production residues from drums		15,7		●		●
070208	Other reaction and distillation residues	resin residue, not yet hardened		0,7		●		●
070299	Waste not specified elsewhere	rubber, mixed		9,1	●			
070299	Waste not specified elsewhere	rubber, mixed (BS)		3.541	●			
070299	Waste not specified elsewhere	rubber, unvulcanized		372	●			
070299	Waste not specified elsewhere	rubber-granules		525	●			
070299	Waste not specified elsewhere	PS-rubber waste		240		●	●	
070299	Waste not specified elsewhere	PS-rubber waste (thermal recovery)		217	●			
070299	Waste not specified elsewhere	Sanding dust (recovery)		244	●			
070299	Waste not specified elsewhere	Sanding dust (thermal recovery)		3.017	●			
130110	Non-chlorinated hydraulic oils on a mineral-oil basis	Hydraulic oils		2,6	●			●
130205	Non-chlorinated machine, gear and lube oils on a mineral-oil basis	Machine and turbine oils		12,0	●			●
150101	Packaging made of paper and cardboard	Cartons, paper		84,3	●			
150101	Packaging made of paper and cardboard	Paper general cargo in kg		1,0	●			
150101	Packaging made of paper and cardboard	Paper cores in kg		0,3	●			
150102	Packaging made of plastic	Ciba-drums (16 Pcs.)	16		●			
150102	Packaging made of plastic	Films, plastic bands		0,4	●			
150102	Packaging made of plastic	Filmrolls		90,9	●			
150102	Packaging made of plastic	Plastic drums (60–200 l)	172		●			
150102	Packaging made of plastic	Plastic canister (5–50 l)	51		●			
150102	Packaging made of plastic	Polystryrene		0,2	●			
150103	Packaging made of wood	Wood		485	●			
150103	Packaging made of wood	Wood H2		0,6	●			
150103	Packaging made of wood	Wood general cargo in kg		11,2	●			
150104	Packaging made of metal	Sheet-metal buckets	173		●			
150104	Packaging made of metal	Sheet-metal drums	81		●			
150110	Packages which contain residues of hazardous substances or which have been contaminated by hazardous substances	Iron-metal containers with harmful residual contents		0,9	●			●
150110	Packages which contain residues of hazardous substances or which have been contaminated by hazardous substances	Plastic containers with harmful residual contents		0,1		●		●
150202	Mop-up and filter materials (including oil filters not specified elsewhere), wiping cloths and protective clothing contaminated by hazardous substances	Solid materials soiled with grease and oil (cleaning cloths)		10,6	●			●
150202	Mop-up and filter materials (including oil filters not specified elsewhere), wiping cloths and protective clothing contaminated by hazardous substances	means of production with a solvent content without halogenated organic solvents		0,9		●		●
160211	Used devices, with halogenated fluorohydrocarbons	refridgerators		1	●			●

R: Recovery D: Disposal M: monitored waste Sp.M.: Specially monitored waste

Table 4: Waste analysis

AVV	AVV-Bezeichnung	Interne Bezeichnung	Stück	Gewicht (t)	V	B	ü	bes. ü.
160213	Used devices containing hazardous constituents, with the exception of those which fall under 160209 to 160212	Monitors	5		●			●
160214	Used devices containing hazardous constituents, with the exception of those which fall under 160209 to 160212	EDV equipment	13		●			
160216	Constituents removed from used devices, with the exception of those which fall under 160215	Electronic scrap		0,5	●			
160504	Gases containing hazardous substances in pressurized containers (including halons)	Gases in cartridges (spray cans)		0,08		●		●
200101	Paper and cardboard	Anti-adhesive paper		648	●			
200121	Fluorescent tubes and other waste containing mercury	Fluorescent tubes	830		●			●
200139	Plastics	Plastic waste		0,3	●			
200140	Metals	Scrap		81,4	●			

R: Recovery D: Disposal M: monitored waste Sp.M.: Specially monitored waste

Table 4: Waste analysis

The data given above contain the quantities leaving the company for recovery and disposal. The waste recovery rate is meanwhile running at 97%. Internally processed substances are not waste, and are therefore not included in this figure.

The largest single-category quantity involved of non-recyclable residues is the grinding dust created when the floorcovering's installation side is ground. For this substance, incineration in cement plants is the suitable method of disposal: the combustion heat of the entire organic material is utilized for burning the cement clinker. The inorganic ash remaining from the fillers is an ideal raw material for Portland cement, so that not only heat, but also a useful substance is recovered.

Grinding dusts suitable as filler material and for other purposes are also passed to outside processing companies.

Rubber waste created in subsequent production steps is incinerated almost entirely. Re-use and further use of paper and cardboard is meanwhile routine. The wood used as packaging for raw materials is, after being comminuted, either used again in the chipboard industry, or also incinerated.

The small quantity of specially monitored waste (special waste) consists predominantly of cleaning cloths soiled with oil and grease, which are incinerated.

Only approx. 240 t in all of waste material (production-specific waste and non-recyclable residues) are still being dumped on the group's own landfill each year. The proportion of waste being landfilled has continued to fall steadily. The group's own landfill, operated by Freudenberg Service KG, has been approved for our non-recyclable production residues.

A time-series can be constructed for the quantities of waste disposed of, at least approximately, since 1997, since the change in waste code numbers means that the waste categories are not always directly comparable. Data are given from calendar year 1999 (waste analyses); similar waste categories have been appropriately accumulated.

Summary of waste analyses for 1999–2004

	1999	1999	2000	2000	2001	2001	2002	2002	2003	2003	2004	2004
Waste designation	**Pcs.**	**Weight (t)**	**Pcs.**	**Weight (t)**	**Pcs.**	**Weight (t)**	**Pcs.**	**Weight (t)**	**Pcs.**	**Weight (t)**	**Pcs.**	**Weight (t)**
Other reaction and distillation residues		24.6		17.7		16.3		12.4		14.4		16,4
Waste not specified elsewhere		6150		7744		7891		7233		7470		7926
Metals		116.1		84.5		83.7		77.7		118.0		81,4
Processing emulsion, halogen-free		0.9										
Exclusively mineral hydraulic oils				1.4		0.4		1.0		0.2		2,6
Non-chlorinated machine, gear and lube oils		10.3		7.0		10.5		9.6		9.6		12,0
Sludges or solid waste not containing any halogenated solvents		5.7		6.6		6.4		4.6		5.2		5,2
Plastic (packaging)		128		123		151		108		101		91,5
Wood (from packaging)		442		513		537		463		542		497
Metal packaging	250		371		283		182		197		254	
Laminated packaging	56		48		9		11		5			
Packaging with harmful contaminants		0.6		0.6		0.6		1.0		1.0		1,0
Mop-up and filter materials, wiping cloths and protective clothing with harmful contaminants		13.6		13.8		13.4		12.1		10.7		11,6
Electronic scrap		0.4		0.3		0.3		0.1		0.6		0,5
EDP equipment	6		11		45		13		34		18	
Industrial aerosols		0.06		0.03		0.05		0.07		0.03		0,08
Paper and cardboard (separately collected fractions)		802		904		698		697		671		734
Other plastics (separately collected fractions)		0.15				0.3		2.1		4.1		0,3
Fluorescent tubes and other waste with a mercury content	1697		1756		1020		1870		1710		830	
Production-specific waste		612		675		582		509		253		240

Table 5: Summary of waste reports

The data show that in quantitative terms the amount of waste constitutes the largest environmental impact from the company. However, it is precisely the high-volume waste that is increasingly being recovered, so that the net quantity of substances discharged into the environment by landfilling has been steadily reduced. This is obvious in particular by comparing the production-specific waste of the years 2002 and 2003. Waste from the office areas are not listed in the above stated summary. They are centrally disposed by the Freudenberg Service KG.

Substances used

The following substance quantities have been processed into rubber mixtures in the past few years.

Year	Rubber (t)	Fillers (t)	Process materials Cross-linking chemicals Pigments (t)
2000	12800	18500	5500
2001	11900	17300	5100
2002	11550	17500	4950
2003	11400	17200	4900
2004	12780	18000	4350

Table 6: Substance quantities since 2000

The alteration of the proportions of the substance quantities is substantiated by a commercial adjustment within the allocation of the goods groups.

Raw and process materials are stored in the newly built warehouse. We pay particular attention here to hazardous substances, particularly those which are a threat to water. Storage of water-hazardous substances has been audited by an approved assessor organization. Substances whose storage is governed by the new German Plant Safety Ordinance are kept in a formerly according to VbF approved (German Ordinance on Flammable Liquids) store until they are used.

Almost all raw materials used to produce the rubber mixtures are processed in the mixing shop. To save on packing material, the raw materials used in large quantities are stored in silos, and dosed into the process from there.

For packing our products, we take re-usable or recoverable materials like wooden pallets, PE films and cardboard. For the pallets, we offer a return scheme with a financial incentive.

Inherited pollution

The buildings used by Freudenberg Bausysteme KG for production, warehousing and administration are rented from Freudenberg Service KG.

On the basis of a historical and hydrogeological study on the entire "Zwischen Dämmen" site, the inherited pollution burdens were determined, and remedial action successfully carried out. No evidence has been found of inherited pollution created by the production operations of Freudenberg Bausysteme KG or the former Building Systems and Shoe Components Division of Carl Freudenberg.

Our eco-program for continuous improvement of 2000

The essential content of the EC Eco-Management and Audit Scheme is continuous improvement of corporate environmental protection. For the three-year interval up to revalidation at the beginning of 2003, we had set ourselves the following goals. After a phase of numerically major improvements, we began the fine-tuning work on our environmental protection goals. All figures given are referenced to the quantity mixed.

In order to achieve these goals, and implement the eco-program of 2000, a detailed action plan was drawn up in the Environmental Protection Committee, specifying the persons responsible and a time schedule. The program forms part of the documentation package for our eco-management system, and is handled in accordance with our specifications.

No.	Environmental goals	Improvement planned, with action required	Goal achieved by
1	Reduce the cooling water quantity by another approx. 10 %, referenced to the quantity mixed	■ Install cooling units ■ Optimize cooling water routing and control	**Mid-2002** responsible: Engineering
2	Reduce the quantity of compressed air by another approx. 10 %, referenced to the quantity mixed	■ Purposeful application of the compressed air monitoring plan ■ Design planned masticator with hydraulic rams	**End of 2002** responsible: Engineering, Production
3	Build a sound-absorbing wall at the silo conveyor system	■ Extend the existing wall ■ Check the result achieved	**Mid-2001** responsible: Engineering
4	Build a new warehouse for raw and process materials	■ Reduce the risk posed by water-hazardous chemicals	**End of 2003** 1st construction phase mid-2001

Table 7: Environmental goals of the eco-program of 2000

Implementation of the eco-program of 2000

Goal 1: **Reduce the quantity of cooling water** was more than achieved. At the end of 2002, we were consuming only about two-thirds of the quantity used in 1999. This is primarily attributable to the use of cooling towers, which, on the other hand, contribute their share to the power consumption level. Further initiatives will ensure that cooling water utilization will be drastically reduced in the near future.

Goal 2: **Reduce the quantity of compressed air by another approx. 10%, referenced to the quantity mixed** was not achieved during the targeted time-frame. Though after changing over the masticator ram control to hydraulics the quantity of air consumed there was reduced, contrary to our expectations the effect was more than offset by increased consumption at additional machines and increased consumption entailed by the cleaning operations required.

Goal 3: **Build a sound-absorbing wall at the silo conveyor system** was achieved according to plan. The sound-absorbing wall provides a good shielding effect by virtue of finishing flush against the adjacent building. Since the wall was completed, no noise-related complaints have been received from the local residents.

Goal 4: **Build a new warehouse for raw and process materials** was achieved. The warehouse features the latest state-of-the-art engineering. The entire building is safeguarded by sprinkler systems. All liquid/viscous substances are stored above safety troughs. After inauguration, the warehouse was acceptance-tested against VAwS (German Ordinance on Equipment for Filling and Transferring Water-Hazardous Substances) specifications by an approved assessor organization. Not only in technical terms, but visually as well, the warehouse has become a showpiece.

Discuss old environmental goals, find new ones

For the three-year interval up to revalidation, we have set ourselves the following goals.

The environmental goals are tackled using a proven approach of defining detailed steps. The monitoring body concerned is the Environmental Protection Committee.

The environmental goals 2, 3 and 4 with deadline 2004 are achieved. It was again possible to decrease the quantity of cooling water to 10% (by comparison to the quantity of 2002), far more than the planned reduction of 50%. Well water is only used to absorb peaks of water demand during summer season.

All preliminaries for building up additional block stores for raw materials are wrapped up (building permission, building up the rack). If needed, an additional block store can be installed in a little while.

The saving of film rolls (environmental goal 4) was also successful: in 2004 more than 15% less was used than 2002 (calculated by the disposed quantity).

No.	Environmental goals	Improvement planned, with action required	Goal achieved by
1	Reduce rubber waste by a total of 5%, distributed over the next 3 years	■ Reduce the waste quantity of unvulcanized material ■ Multiple use of cleaning rubbers ■ Reduce the number of faulty mixtures	**End of 2005** responsible: Head of Production
2	Reduce the cooling water quantity by another approx. 50%, referenced to the quantity mixed	■ Change over the machinery to cooling with cold water ■ Optimize cooling water control	**End of 2004** responsible: Engineering
3	Expansion of raw material provision in silos	■ Build new silo systems as required	**End of 2004** responsible: Engineering
4	Save on PE film material in the production operation	■ Try out separation of blanks by aqueous preparations ■ Replace the films wherever possible	**Mid-2004** responsible: Head of Production

Table 8: Environmental goals of the 2003 eco-program

Major changes up to 2002

The vulcanization line for producing floor coverings was expanded. A new line (dual press) was installed. It went into operation at the beginning of 2000. After this, the emission measurements mandatory under approval legislation to verify compliance with the limit values applying for this line (60 mg total carbon per Nm^3) were performed. The figures were significantly below all the stipulated levels.

The new line was also optimized in terms of its environmental aspects. For example, the entire energy generation arrangements are decentrally organized. Heating is provided by a natural-gas-fired boiler designed for low emissions and losses. The requisite compressed air is produced by compressors located directly on the spot.

Contact person

Our perceived responsibilities for the natural environment include a free and frank dialog with the public. If you have any queries, suggestions, or requests for further information, please get in touch with the representative for environmental matters.

Freudenberg
Bausysteme KG
D-69465 Weinheim

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Statement of validity

On the basis of the facility assessment conducted by myself as an independent environmental assessor, and following an examination of the data and information provided,

- I confirm that the environmental policies, the eco-program, the eco-management system, the environmental auditing procedure and the environmental declaration of Freudenberg Bausysteme KG, Weinheim Facility, meet the requirements of directive (EEC) 761/2001;

- I confirm that the statements in the environmental declaration for the Weinheim facility are reliable, and that the environmental issues relevant at this facility have been adequately addressed;

- I hereby validate the Environmental Declaration.

Weinheim, March 2nd, 2005

Dr. Bernd Frei
Environmental Assessor D – V – 0015
Hadäckerstr. 27
D-70597 Stuttgart

We shall be presenting our next validated Environmental Declaration in March 2006.

Weinheim, March 2nd, 2005

Environmental protection and occupational safety at Freudenberg

Guiding Principles and Guidelines (Version from January 1996)

1. **Long-term sustainable goals**
   Environmental protection, and protection of staff from job-related injuries and illnesses, are prioritized corporate goals. In corporate management, these will be given equal priority with social and economic considerations.
   Present action is geared to long-term sustainable goals.

2. **Do the achievable**
   Our responsibility to the natural environment, and the safety of our customers, staff and neighbors, must not be restricted to a barely adequate compliance with the relevant legislation.
   The effects of present action, and the success of our initiatives, must be regularly monitored, assessed, and continually improved in a systematized process.
   The goal is to utilize the best available technology compatible with adequate cost-efficiency.

3. **Preventive avoidance**
   The company sees its future in forward-looking solutions in ongoing problems. This applies to raw materials, processes, products and logistics.
   The goal is preventive avoidance of environmental impact and safety risks during normal operation and in the event of malfunctions, instead of effect limitation and damage repair.

4. **Holistic innovation**
   The raw materials and processes used, new products and logistics, shall be selected, conceived and developed so as to ensure risk-free and environment-friendly manufacture, together with safe utilization and disposal. As far as possible and expedient, waste production materials shall be recycled; otherwise they shall be disposed of in an appropriate manner.
   The goal is responsible stewardship of nature's resources in all areas.

5. **Information and consultancy for our customer**
   Environmental protection and workplace safety can provide needed impetus for long-term marketability of our products. The company wishes to make active use of this opportunity.
   Responsibly implemented environmental and safety precautions constitute a firm foundation for a dispassionate dialog, and supportive cooperation with customers, governmental authorities and the public.
   Customers will be informed and advised on safe and eco-friendly handling and disposal of our products.

6. **Staff training and motivation**
   To achieve our goals, it is necessary to ensure that employees are appropriately trained and motivated to do their jobs in awareness of their responsibility for implementing these guidelines.

7. **Global yardstick**
   These guidelines are the global yardstick for our actions.
   We aim to practise them in our dealings with customers and vendors as well.

Valid as from 01. 01. 1996
Resolution of the Board of Management passed on 24. 03. 1995

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