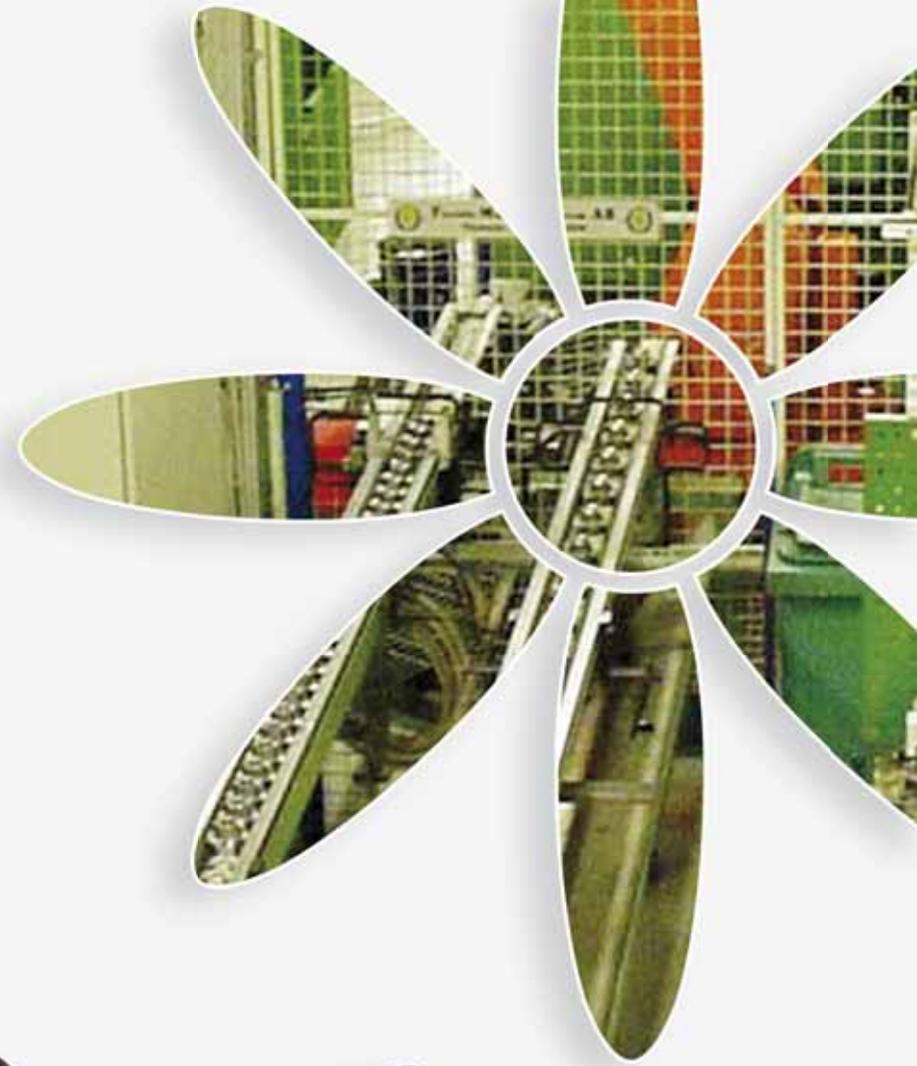


# COMPONENTA

Environmental Report 2005



Casting Future Solutions



## Responsibility plays a key role in sustainable business



As more and more companies adopt environmental systems, awareness of environmental issues continues to increase - also in terms of understanding the environmental effects of day-to-day business decisions. At Componenta, environmental issues are an inherent part of many business decisions, and our management systems have been designed to help guide our environmental efforts. In cooperation with our customers, we take environmental issues into account at the very first stages of planning. Choosing optimal materials and minimising the number of rejects help make production more environmentally sustainable. This way, no more materials or energy is consumed than is necessary.

Assessments of environmental effects serve to guide decision-making on many levels. We have, for example, begun to use mainly water-based paints and substituted harmful chemicals with more environmentally friendly ones.

At Componenta, environmental considerations are not just an aspect of internal activities - management systems, product design and production; they also concern suppliers and subcontractors. We continuously monitor and forecast changes in environmental legislation, and analyse their effect on our business. Clients and other interest groups continue to expect and demand more and more in terms of environmental friendliness and sustainable development.

In the long run, the Group's business will be developed with more and more attention to economic, social and environmental responsibility. Economic responsibility encompasses accountability for the enterprise's financial performance and competitiveness, enabling us to meet the expectations of our shareholders and other interest groups. Social responsibility means looking after the wellbeing and professional development of our personnel, and acting

responsibly when dealing with other stakeholders. Environmental responsibility refers to promoting environmentally sustainable production methods and processes, and to minimizing the environmental effects of our products throughout their life cycle - with an eye on the markets' expectations and international competitiveness.

The environmental effects of Componenta's foundry and forge businesses have been specified in official environmental permits. We regularly take measurements of our production process to ensure that the environmental loading remains within the accepted limits. In addition, we follow our own policies on environmental issues and quality, and aim at continuous improvement.

**Heikki Lehtonen**  
President and CEO



The main raw material used in Componenta's products is recycled steel. Energy is used in smelting the steel, and this is obtained from electricity and coke.

This is Componenta's third environmental report and it brings together information about production volumes at the Group's foundries, machine shops and forges in Finland, the Netherlands and Sweden, and about the raw materials used to make the products and the emissions and waste from production in the period 2002 – 2005.

The figures in the report have been obtained as a rule in accordance with the general instructions given in the Finnish Accounting Act for recording environmental issues. The figures given are unaudited.

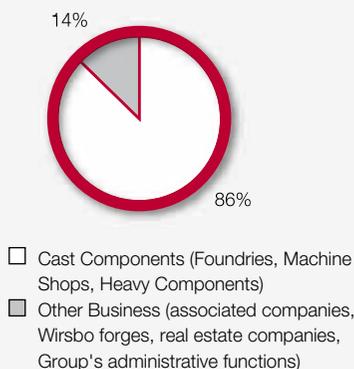
The environmental report is published in Finnish and English. In addition to the Internet report there is also a printable pdf version.

Componenta monitors and reports on the environmental impact of its operations regularly and publishes the figures once a year in the environmental report. The next report will be published in spring 2007.

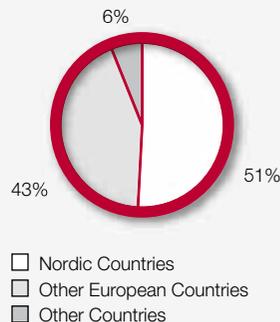
## Contents

Responsibility plays a key role in sustainable business .....	2
Componenta in brief .....	4
Group strategy .....	5
Environmental and quality policies .....	6
Componenta's production operations and the environmental load they impose .....	7
Environmental costs .....	8
Energy consumption .....	8
Use of raw materials.....	9
Dust and VOC emissions .....	10
Noise .....	11
Waste and recycling .....	12
Waste water .....	13
Transport .....	13
Packaging .....	13
High-risk situations.....	13
Stakeholders .....	14
Environmental permits.....	14
Environmental management systems .....	14
Glossary of this report .....	15

Sales by business group



Sales by market area



Indicators of economic responsibility 2002 – 2005

MEUR	2002	2003	IRFS 2004	IRFS 2005
Net sales	180.8	177.8	316.0	343.2
Operating profit	7.0	0.1	25.7	9.9
Operating profit excluding one-time items	2.8	8.1	12.5	6.6
Financial income and expenses	-9.1	-7.6	-7.9	-8.9
Result after financial items	-2.1	-7.5	17.9	1.0
Result after financial items excluding one-time items	-6.3	0.5	4.6	-2.4
Result for the financial year	1.0	-4.5	15.6	2.5
Earnings per share	0.11	-0.47	1.62	0.26
Dividend per share	0.10	0.00	0.50	0.00
Order book 31.12.	24.9	25.1	59.2	60.4
Share of exports and international operations, %	72.0	71.0	81.4	81.9
Net interest-bearing debt, including preferred capital notes in debt	145	125	142	145
Net interest-bearing debt, including preferred capital notes in equity	117	99	118	107
Equity ratio, %	18.2	17.8	20.6	18.1
Equity ratio, %, including preferred capital notes in equity	31.4	31.1	29.5	32.1
Wages and salaries	50.0	47.5	72.1	78.6
Personnel 31.12.	1 616	1 565	2 213	2 185
Gross investments excluding finance leasing investments	9.8	1.6	35.1	17.9

## Componenta in brief

Componenta is a metal sector group of companies with international operations, manufacturing ready-to-install cast, machined and surface-treated components and total solutions made up from these. The Group's customers are companies in the heavy truck, machine building and off-road, and power and transmission industries. Many of these customers operate in global markets and the components supplied by Componenta are often strategic parts of their products.

The Nordic countries account for 51% of the Group's sales, other European countries for 43% and other countries for 6%.

Componenta generates added value for its customers through close R&D partnership. The Group's specialized production units and efficient supply chains, production process management and logistics expertise enable JIT deliveries direct to the customer's assembly line.

Componenta's customer service has been concentrated at Customer Product Centers in Finland, Sweden and the Netherlands. These contain expertise in customer relations management, logistics, product project management and R&D.

The Group's production units – foundries, machine shops and forges – are located in Finland, the Netherlands and Sweden. The Group has a total of six foundries, with four in Finland: Componenta Karkkila, Componenta Pori, Componenta Pietarsaari and Componenta Suomivalimo

(in Iisalmi). In the Netherlands the Group has two foundries, Componenta Weert and Componenta Heerlen, which has two separate production lines: Componenta Heerlen Furan and Componenta Heerlen HWS. The Group has seven machine shops, four in Finland: Componenta Nisamo, Componenta Pori, Componenta Pietarsaari and Componenta Pistons; and three in Sweden: Componenta Albin, Componenta Främmestad and Componenta Åmål. Also in Sweden are the Group's three forges which operate under the name Componenta Wirsbo in Virsbo, Smedjebacken and Kolsva.

In November 2005 Componenta's production units were organized into three production divisions, namely Foundries, Machine Shops and Heavy Components. Together they form the Cast Components business group, which does not include the associated companies, the Wirsbo forges, real estate companies and the Group's administrative functions.

Componenta's head office is in Helsinki. Componenta had net sales in 2005 of EUR 343.2 million and employed about 2,200 people. Some 48% of personnel work in Finland, 25% in the Netherlands and 27% in Sweden.

Componenta's shares are quoted on the main list of the Helsinki Exchanges. At the end of 2005 Componenta had 1,516 shareholders.

## Group strategy

### *Componenta's mission is Casting Future Solutions*

We supply competitive, value-adding cast component solutions to European and North American customers in the heavy truck, power and transmission, machine building and off-road industries. Our operations are based on specialized production units and efficient supply chains.

Componenta's strategic goal is that by 2010 we are the market leader in advanced cast components in Europe.

### *We will achieve that goal when*

- We provide added value for our customers through
  - product development and advanced engineering
  - developing new applications and multi-functional solutions
  - supplying ready-to-install components
- We function as a specialized network of efficient business units and chains
  - with capable personnel with clear goals and responsibilities
  - with common processes and procedures
  - forming one Componenta with uniform operations
- We have improved our profitability and reduced the business cycle risks by balancing production capacity through
  - double tooling, so that we can cast components at two of our production units
  - effective sourcing

- We have effectively utilised growth opportunities primarily among our existing customer base and increased
  - net sales
  - profitability
  - added value
- We are market leader in Europe and supply customers globally

### *Componenta's financial objectives*

- Return on investment (ROI) 10 - 20% over the economic cycle
- Profitable organic growth, based on creating added value for customers by increasing the share of engineering and by supporting customers in outsourcing
- Equity ratio of around 40%
- Dividend of 30 - 50% of result

### *Values*

Componenta's values are **openness, honesty** and **human orientation**. These values are reflected in our daily operations in the following ways:

- We are open to new ideas and change and are willing to develop. Through this we look to continually improve our ways of working.
- We are honest with ourselves and each other. We do what we promise.
- Our work - with colleagues, superiors, subordinates, customers and other partners - is based on trust and mutual respect.

### *Corporate governance and management*

Componenta applies the Corporate Governance recommendations for public listed companies which came into force on 1 July 2004. The Group's Corporate Governance principles are given on its website at [www.componenta.com](http://www.componenta.com) and in the printed and website versions of the 2005 annual report.

Daily operations at Componenta are governed by set policies, such as the quality, environmental and human resources policies. We improve our operational and management processes through Continuous Improvement (CI).





The casting moulds are made from sand, which is recycled in the process. When this is no longer possible, some of the spent sand is utilised and some ends up as waste.

The cutting fluids used in machining are recycled and the machine chips are sent for recasting.

When the components supplied to customers reach the end of their life cycle, they are recycled and melted down again.

## Environmental and quality policies

We supply products that meet customer requirements just in time, without damaging the environment. Each Componenta employee is responsible for carrying out their daily activities to a high quality and with respect for the environment.

Each production unit defines its own quality and environmental policies that are in accordance with this corporate policy and with the requirements of the relevant standards. Each unit must have a quality management system certified by a third party. Depending on the customer's requirements, the quality management system must comply with either the ISO 9001 or the ISO/TS 16949 standard. The units must also have an approved environmental management system that complies with the ISO 14001 standard.

We promote awareness of both customer and legal requirements throughout the organization. We monitor customer satisfaction and work to continuously improve this.

We maintain a management system that encourages compliance with the instructions in the quality and environmental systems, the acceptance of responsibility, and

commitment to quality, environmental factors and continuous improvement.

We target continuous development activities to reduce variation in the manufacturing process and to adjust the process in line with individual product properties.

When setting and reviewing their goals, each production unit must take into account the following environmental factors:

- reducing consumption of energy and raw materials
- reducing particle and VOC emissions
- reducing ambient noise levels
- enhancing the sorting of waste and reducing the amount of non-recyclable waste

We ensure that the production units have sufficient resources to maintain their competitiveness and to develop their manufacturing processes. In capital expenditure we utilise the best and most practicable technology, taking into account financial and environmental considerations. One requirement for approving major investments is an environmental impact assessment.

## Componenta's production operations and the environmental load they impose

Production of cast components takes place in specialized foundries. The moulds that give the product its exterior shape are made from sand, as are the cores that go inside the mould. Moulding takes place on automatic moulding lines, and only the very largest moulds are made by hand. The molten metal, which has been melted in an electric or cupola furnace, is poured into the mould. The raw material for the molten metal is mainly recycled steel. After cooling and fettling, the product is ready for further processing.

In the foundries the environmental load arises from:

- the use of energy in the foundries to melt the recycled steel and pig iron
- the spent sand from the sand circulation system for casting moulds made with the one-time mould process
- dust waste extracted by the filtering equipment in the work phases that generate dust
- VOC (volatile organic compounds) emissions from the chemicals used in painting and in the manufacture of cores
- noise, for example in the handling of scrap

Machining takes place at modern machining centres, on CNC machines or with conventional machine tools. After machining, the items can be surface treated and part assembled as required by the customer. The operations of Componenta's machine shops are such that they do not impose a significant load on the environment.

At the machine shops environmental load arises from:

- oils and chemicals; the cutting fluids used in machining, and the resulting cutting fluid waste (other chemicals are also used incl. liquid gas)

Forged components are manufactured on largely automated production lines.

At the forges environmental load arises from:

- use of energy
- noise

Componenta has taken steps to protect the environment in its production process. For more details go to <http://www.componenta.com/environment>.

### Environmental balance sheet

	2002	2003	2004	2005
<b>PRODUCTION TONS</b>				
Foundries	58,000	55,422	126,142	125,514
Machine shops	24,621	27,603	32,708	30,759
Forges	17,172	17,422	19,789	19,592
<b>MAIN RAW-MATERIALS</b>				
Steel blanks, t (forges)	20,306	22,789	25,299	25,953
Metal scrap, t (foundries)	46,380	45,812	96,305	93,182
Pig iron, t (foundries)	12,196	11,746	32,470	37,209
Sand, t (foundries)	20,324	20,616	42,287	47,732
Cutting fluids, t (machineshops)	83	75	95	93
<b>ENERGY CONSUMPTION</b>				
Electricity, MWh	188,800	182,339	263,529	252,527
District heat, MWh	38,895	38,136	41,737	40,250
Cokes, t	-	-	6,137	7,794
Natural gas, m <sup>3</sup>	-	-	2,726,281	2,555,582
Oil, t	315	273	310	396
Liquid gas, t	947	870	981	1,032
<b>WATER CONSUMPTION, m<sup>3</sup></b>				
	154,936	151,679	226,821	224,927
<b>EMISSION INTO AIR</b>				
Particle emissions, t	56	45	68	44
VOC emissions (amines and solvents), t	208	155	299	290
<b>WASTE</b>				
Wastewater, m <sup>3</sup>	113,455	104,702	125,884	108,352
Waste dust, sludge etc., t	6,156	5,149	3,916	17,223
Sand, slag etc., t	27,486	27,618	71,573	63,657
Unsorted waste, t	687	589	1,385	1,519
Hazardous waste, t	928	938	1,066	2,788
Metal scrap, t	11,032	12,193	11,570	16,287
Waste wood, t	170	175	666	758
Waste paper, cardboard etc., t	262	522	306	146
Other sorted waste, t	345	239	640	1,474

## Environmental costs

Componenta Group's environmental costs in 2005 totalled EUR 3.2 million (EUR 3.1 million in 2004). Waste management was the biggest item, accounting for 68% (62%) of these costs. Other environmental protection activities, such as the company's own environmental management costs and waste taxes, were the second largest item, 13% (15%). Protection of the atmosphere, such as the running costs for filter equipment, accounted for 10% (12%) of environmental costs and waste water management for 8% (9%). Protection of the soil and groundwater, which includes ground water samples and absorbing materials, accounted for 1% (0.5%) of the Group's environmental costs, and protection of biological diversity and the landscape for 0% (2%).

Environmental investments in 2005 totalled EUR 1.2 (0.7) million. Investments were made mainly at the Främmestad machine shop and at the Karkkila and Heerlen foundries. Investments were made in surface treatment equipment, fire protection, dust treatment, drying processes for cores with water-based coating, optimizing water treatment in the smelting shop, heat recovery and ambient noise. Whenever the Group makes investments it takes into account their environmental implications.

### Energy consumption

Total energy consumption in 2005 rose 1%

from 2004, while output declined 1.5 %.

The foundries consume 85% of all the energy used by the Group. The smelting of the raw material in particular consumes much energy, since the temperature of the molten iron is raised to more than 1,500 degrees.

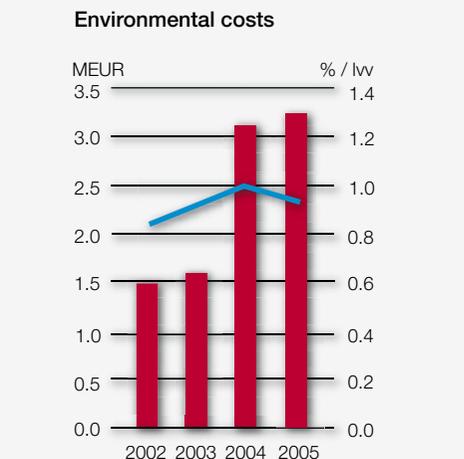
A considerable amount of energy is also spent on heating the incoming air in the dust extraction systems. The casting moulds into which the molten metal is poured are made from sand. The sand contains much fine-grained dust that has to be removed at different stages in the process via dust extraction plants.

Other places where energy is used at the foundries are the machines and equipment, heat treatment, heating, air conditioning, lighting and internal transportation.

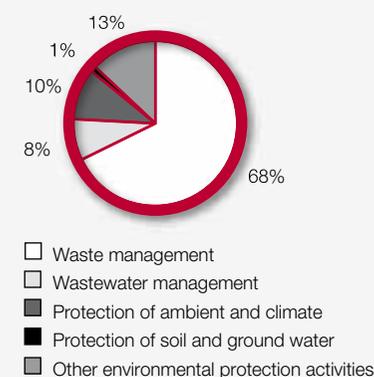
Most of the energy used by Componenta is obtained from electricity. Coke is used in smelting in the cupola furnace at the Heerlen foundry. Smelting at the other foundries takes place in electric furnaces. Liquid gas is mainly used for keeping casting equipment hot and for preheating. District heating is used to heat most of the Group's properties, while natural gas is used at the foundries in the Netherlands.

### Foundries

The combined energy consumption per tonne produced at the foundries was almost the same in 2005 as in 2004. Most of the foundries have succeeded in reduc-



Distribution of environmental costs in 2005

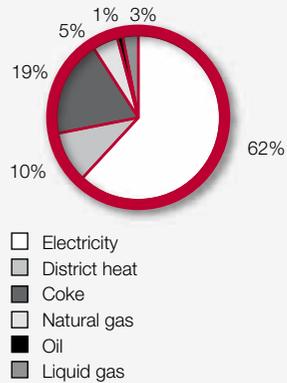


ing their energy consumption. The Heerlen Furan foundry switched from electric smelting to cupola furnace smelting, which increased energy consumption at the foundry since cupola furnace smelting uses more energy than electric smelting in terms of MWh. The Furan and HWS production lines share a common smelting plant. Energy efficiency at Karkkila improved due to the investment made in the smelting furnace in 2005. The Group's energy consumption per tonne produced was higher in 2002 and 2003, since the foundries in the Netherlands were not included in the Group's figures. The Dutch foundries are more energy efficient, due to differences in the casting systems. Their casting systems have a smaller proportion of runners and feeders, so a larger proportion of the molten metal goes straight to the end product

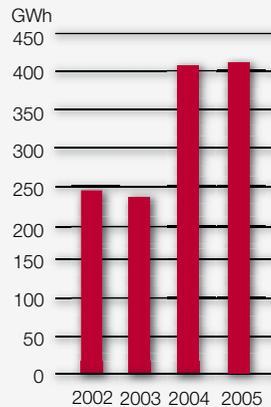
and the relative energy consumption is smaller. The difference in climate means that heating the foundries in the Netherlands and the incoming air for their dust extraction plants consumes less energy than similar operations in Finland. The Weert foundry in the Netherlands is the most energy efficient.

The energy analyses at Componenta Karkkila and Suomivalimo were completed during 2005. The energy analysis at the Pietarsaari machine shop was completed in January 2006. In addition, a compressed air survey was carried out at the Pori foundry in 2005. Energy reviews and analyses of existing energy flows based on these have now been carried out at all the foundry units in Finland and at some of the machine shops. The analyses have identified areas with savings potential and their

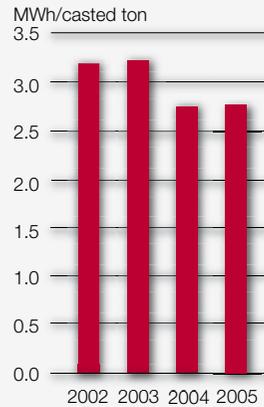
Distribution of energy consumption in 2005



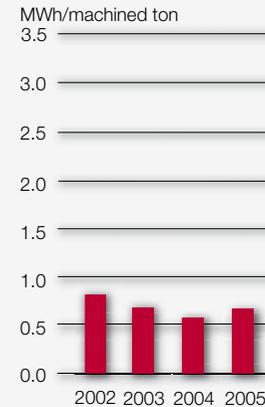
Total energy consumption in production



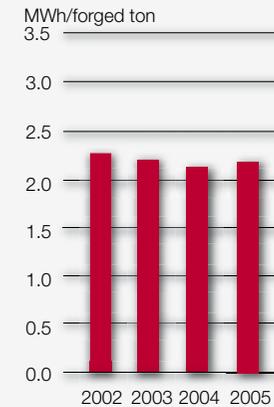
Energy consumption in foundries



Energy consumption in machine shops



Energy consumption in forges



results will be utilised when planning future investments. Most future energy saving action will focus on utilising process heat.

**Machine shops**

The machine shops account for 5% of Componenta’s energy consumption. Most of this energy is consumed by machine tools and in heating and air-conditioning for buildings.

Energy consumption per tonne of output at the machine shops increased 15% from 2004. The reasons for this increase were the construction work carried out in connection with the investments at Främme-stad and a slight decrease in output. One reason for the rise in energy consumption at Främme-stad is the extra production area, in which production levels have not yet

risen to what is planned, so the costs for heating buildings and other fixed energy costs were divided among lower production volumes. The increase in machining resulting from a change in Pistons’ product range has increased energy consumption per tonne of output.

**Forges**

The forges account for 10% of Componenta’s energy consumption. Most of their energy is consumed in heating the blanks to forging temperature.

Energy consumption per tonne of output rose 3% at the forges compared to 2004. This was due to problems with quality, with more products having to be rejected than in 2004.

**Use of raw materials**

Componenta’s foundries make efficient use of recycled raw materials. Most of the raw material used in smelting is sorted recycled steel from the engineering industry. Pig iron is added to obtain the right metallurgical properties. Various metal additives are also added (such as graphite, ferro silicon and copper) to adjust the chemical composition to the required level.

The foundries melt almost all the runners and feeders produced in their own processes. The runners and feeders guide the molten metal into the actual product in the mould. The runners and feeders are removed from the products in the finishing process and returned for smelting.

The proportion of nodular cast iron has increased. Sufficient quantities have not been available of the special grade recycled

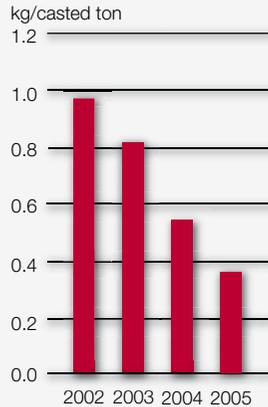
steel needed for making nodular cast iron in the electric furnace and it has been necessary to use more pig iron. Even so, more than 70% of the raw materials used at the foundries is recycled material.

The raw material used in the forges is steel blanks. The steel blanks are manufactured at steel works and supplied to the forges as bars.

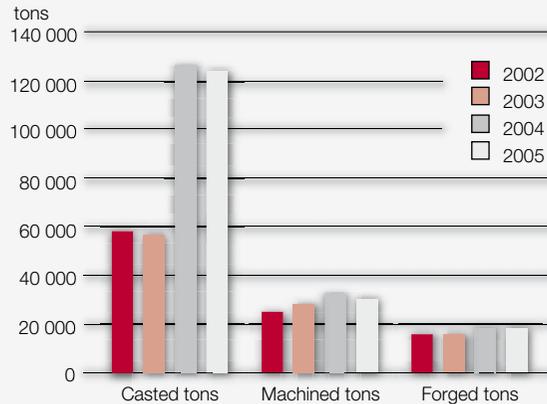
The number of steel blanks used in forging per tonne produced increased by 3% from 2004. This was due to problems with quality, with more rejects than in 2004.

The raw materials used in the machine shops are mainly components cast at the Group’s foundries.

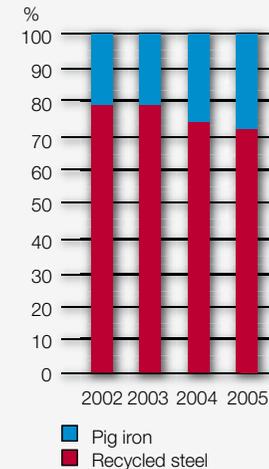
### Particle emissions in foundries



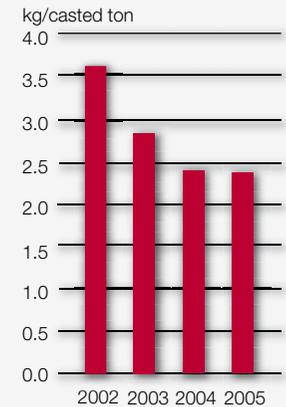
### Production tons



### Recycled steel and pig iron used in foundries



### Amines and solvents (VOCs)



### Dust and VOC emissions

The biggest emission from the casting process is dust. Moulds and cores made from sand are used in casting. The sand is recycled continuously in the process and its grain size gets smaller and smaller as the result of mechanical wear. The sand then gives off dust, which has to be extracted at several points in the process. The dust is fed to the dust extraction plant where it is separated from the air flow and the air is conducted outside. Even the most modern dust extraction plants are not able to remove the very finest dust and some of the dust escapes into the outside air. There are also differences in the separating capabilities of the dust extraction plants and methods in use.

The VOC (volatile organic compounds) emissions from the foundry process arise from the solvents used in painting products,

from the alcohol-based thinners used in coating moulds and cores, and from the amines used in hardening the cores. Componenta's production units have mainly switched to water-based paints, but some products still have to be coated with solvent-based paints because of the customer's production process.

Forging and machining do not cause significant dust and VOC emissions.

The amount of dust emissions per tonne produced declined at the foundries by 35% from 2004.

During 2004 and 2005 the wet dust extraction plants at the Iisalmi and Karkkila foundries have been replaced with modern dry dust extraction units. Installation of the Karkkila wet dust extraction unit, which was originally planned for 2004, was delayed and continued into 2005. Dust emissions from the new extraction plants

are only a fraction of those from the old wet plants.

The upgrading of production at Karkkila has reduced dust volumes, even though production has increased. Measurements have shown that particle emissions have been reduced to a fraction of the old level. A dispersion model has been made for VOC emissions since the upgraded foundry has been in operation and the results have been positive for the environment.

Towards the end of 2005 some deposits of metal particles occurred around the Heerlen foundry, and an investigation revealed that the cause was the chimney at the BMD dust extraction plant for the HWS production line. The separating wall in the chimney did not function properly and the damp gas coming from the cooling drum and the dry gas mixed with each other, forming metal alloy particles that

settled on the ground as rust-coloured stains. The cooling drum is also one of the biggest causes of odour nuisance. The drum's chimney is being replaced and the new chimney will be 30 metres high, 10 metres higher than the old one.

VOC emissions from the use of amines and solvents at the foundries declined 3% per tonne produced in 2005 from the previous year. Componenta has reduced VOC emissions by switching to water-based paints.

A new surface treatment plant was commissioned in August 2005 at the Främme- stad machine shop. In the plant, the cast and machined components are pretreated in zinc and manganese in a 12-phase process, which cleans the items in preparation for surface treatment. Customers can then choose to have the components primed with water-based paint or using the new

ED (electrodialysis) process. Priming with ED paint is a means of giving even items with complex geometric shapes a high quality painted surface. The components are dipped in an electrolyte bath which gives them a consistent, fault-free painted surface. To finish off, the components can be powder coated in the customer's specific colours.

The moulds for the furan production line at the Heerlen foundry and the moulds made from furan sand at the Componenta foundry in Iisalmi are coated before casting to obtain a sufficiently good surface quality and to prevent the metal from penetrating the sand. An alcohol solvent has to be used for coating since there is little time on the automated production line for it to dry. The alcohol evaporating from coating at the Heerlen foundry and in hand moulding at Iisalmi is burnt, and only some 30% of it is emitted as gas to the outside air.

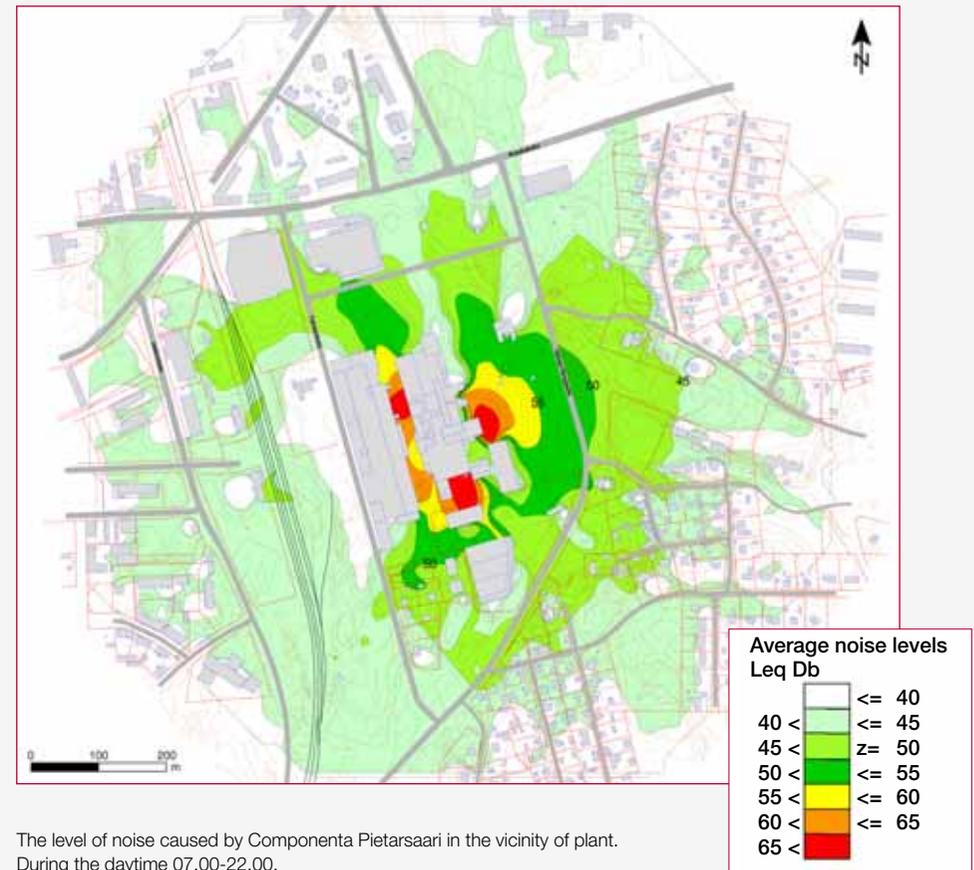
The amine gas used in the production of cores at the foundries in the Netherlands is fed to an acid treatment, which binds the amines to the acid, and only 5% is emitted as gas to the air. The acid amine solution used in the treatment is sent to a treatment plant in Germany where the acid and amine are separated for reuse.

Action is continuing to reduce the odour nuisance caused in its locality by the Heerlen foundry. A meeting was held with the authorities and local residents with open discussion about the foundry's operations and the odour nuisance. At the meeting the company also explained the action it was planning to take. The meeting was con-

structive and helped develop understanding on both sides and it is planned to hold similar meetings in future. In February 2006 the height of the extraction chimney on the cooling line for the HWS production line was raised by 10 metres to reduce the local odour nuisance. The extraction rate was also increased. During the summer shutdown, a filtering plant will be installed on the casting and cooling section of the Furan line, with a 30-metre extraction chimney. This will further reduce odour emissions and should have a noticeable impact by September. A project is also underway in Heerlen that aims to replace the binding agent used in making cores with a more environmentally benign one, and this will also be less of an odour nuisance. In another project, a new core sand is being tried out that is much cleaner and so requires less binding agent. If these projects are successful, they will further reduce the odour nuisance.

### Noise

Several Componenta production units are situated close to residential areas, so noise can be a problem for the local environment. These units pay particular attention to noise abatement. We monitor and measure the level of noise caused by our production units in the areas close to the plants, using both an external agent and for ourselves. We have increased the number of spot noise checks. The main causes of noise are the handling of raw materials at the foundries, the forging process at the forges, and air-conditioning. And, of course, trans-

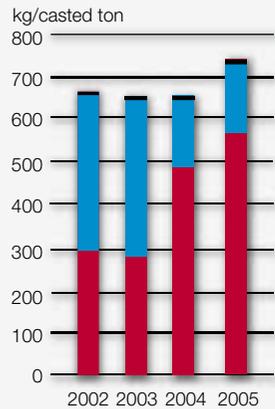
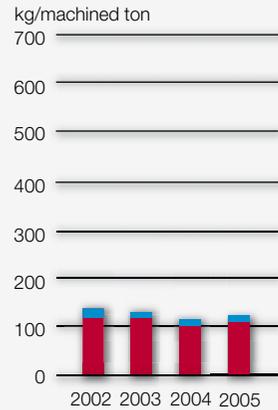
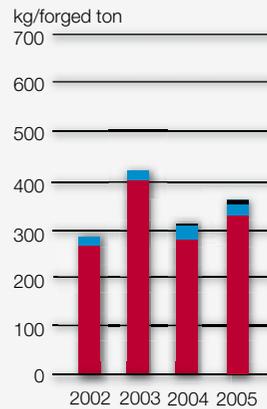


The level of noise caused by Componenta Pietarsaari in the vicinity of plant. During the daytime 07.00-22.00.

porting products and raw materials also causes noise.

We comply with the stipulations for noise levels in the terms of the operating permits.

Several production units have made reducing noise one of their environmental goals.

**Waste of the foundries****Waste of the machine shops****Waste of the forges**

■ Unsorted  
■ Sorted but not reused  
■ Sorted and reused

**Waste and recycling**

The biggest waste items at the foundries are spent sand and dust. Spent sand is the sand that needs to be removed from the sand process because fresh sand is added, to maintain the quality of the sand. Some 2% of new sand and binding agents are added to the sand that returns from the casting process, so 98% of the sand is continuously recycled. Even so, the process produces a large amount of spent sand.

The other major waste fraction is dust, which is separated at dust extraction plants from the air conducted from different points in the sand process. It is important to realize that an increase in the amount of dust waste means a decrease in the amount of dust emissions in the air.

Another waste item at the foundries is slag. Slag is impurities (sand etc.) that rise to the surface of the molten metal and are

removed before casting. The other waste at the foundries is normal industrial waste, and most of this is sorted for reuse. Hazardous waste is produced mainly from the lubrication oils, the painting process, the dust separated from smelting and from processing amine gases.

The machine shops produce normal industrial waste and machine chips. Hazardous waste is produced by the lubrication oils for machinery, by the cutting fluid used in machining and by the painting process.

The biggest waste item at the forges is burrs. Hazardous waste includes the oil used in forging and cooling emulsions.

**Foundries**

The total amount of waste per tonne produced at the Componenta foundries increased some 13% in 2005 compared to 2004. A major part of this increase was due

to the sand at Heerlen Furan. The thermal reprocessing of sand was replaced by a mechanical treatment which is not so effective. The reason for the change was the high sulphur dioxide content of the sand processing equipment and the resulting smell. The increased volume of sand waste is sent for reuse. The Weert foundry operates a reprocessing plant for the moulding sand. After processing the moulding sand can be used in the production of cores, which correspondingly reduces the need for new sand and the amount of spent sand.

Most of the sand and dust from the foundries is utilized. Most of the spent sand and dust from the Finnish foundries is utilised in the construction of waste landfill site. A separate landfill site for foundry sand and dust is in use in Karkkila and this will be closed in 2007. Studies continue into ways of reusing waste and this is likely to

increase.

Almost all the waste from the Dutch foundries is sent for reuse. The smelting plant's dust sludge separated from the cupola furnace, for example, is used in the production of concrete columns. Spent sand is used in concrete structures and civil engineering. Metal is separated from slag and the slag is then used in covering material mixtures. Only fire-resistant material and unsorted waste is sent to the landfill site.

**Machine shops**

The total amount of waste per tonne produced at the machine shops declined 13% in 2005 from 2004. The biggest waste item at the machine shops is machining chips. In 2005 some of these were sent to the smelting plants of steel manufacturers and some were melted in the Group's foundries. The machining shavings from the Pietarsaari machine shop are compressed to form briquettes which are melted at the Pietarsaari foundry. The briquetting process also separates the cutting fluid from the shavings and after cleaning this can also be reused in the Group's machining operations. Briquetting started at Pietarsaari in 2005. Almost all the machine shop waste is sorted.

**Forges**

The total amount of waste per tonne produced at the forges in 2005 increased 14% from 2004. This increase was due to problems with quality. The biggest waste item is forging burrs, which are sent for reuse to the smelting plants at steel works. Almost all forge waste is sorted.

### Waste water

Water is used for cooling at the foundries and forges, as an additive to sand at the foundries, and in the cutting fluids and painting processes at the machine shops.

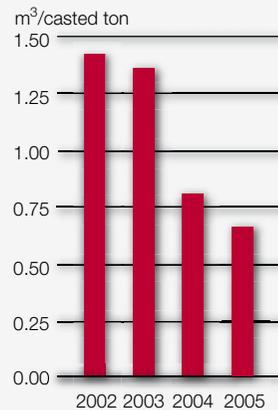
The amount of waste water at the foundries and machine shops declined in 2005 from 2004. The surface treatment plant at Främmestad has a closed water system. The Weert foundry and Heerlen HWS line, Karkkila foundry, Pori foundry and the Kolsva forge take the cooling water used in their processes from rivers. The water circulates in a closed system and is then returned at a slightly higher temperature to the river, so no waste water is produced. Much water is also used to dampen the sand at the foundries. This evaporates during the casting process and does not end up in the municipal sewage system.

### Transport

Ready products are supplied to customers mainly by transport companies chosen by the customer in accordance with their own contracts. Componenta arranges transport for some products. The transport companies we use have quality and environmental management systems. The required cost-efficiency also means the shortest routes possible. All the partners we work with are of such a size that they do not need to have empty vehicles on any journeys.

Some 50% of the raw material deliveries are of recycled steel. Deliveries of recycled steel to the foundries are always with a full load, eliminating excess traffic. Transport is

Water to the wastewater plant from foundries



arranged on a regional basis, eliminating the need for long distance deliveries.

The other major raw material transported is pig iron. This is transported to Finland in shiploads of 1000 – 4000 tonnes.

Other raw materials are brought in containers or by truck. We also aim at full loads of raw materials.

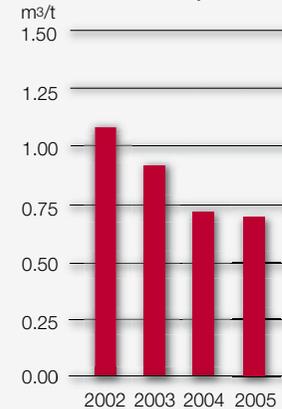
We do not normally use air transport, and rail is only used in special circumstances

### Packaging

The packaging material for products is recyclable pallets and pallet collars owned by the customer or metal racks. The Group's packaging material is recyclable EUR pallets and EUR pallet collars. These are also used in traffic between the Group's production units.

We purchase most of our raw materials as bulk goods, without packaging. For raw

Water to the wastewater plant from machine shops



materials that are packaged, we aim to use the largest possible size. Metal additives, for example, come in 1000 kg large sacks, and paints in 200 litre barrels or larger containers. We insist that raw material suppliers use EUR pallets.

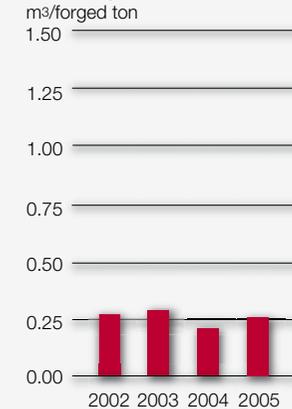
Componenta is a member of PYR Ltd, the environmental register of the packaging sector in Finland.

### High-risk situations

A few high-risk situations occurred in our production units in 2005 that could have had an impact on the environment. All were well controlled and they had no significant environmental impact.

In February 2005 a chemical leak occurred at the Heerlen foundry, with 300 – 400 litres of chemicals leaking from a 1,000 litre container. An outside company cleaned up the chemicals in the area of the leak. In September there were problems

Water to the wastewater plant from forges



with the cooling of the cupola furnace at Heerlen. The furnace had to be emptied and for safety reasons the fire service was called in.

An oil leak occurred at the premises of Ruukin Kiinteistöpalvelu, Componenta's real estate company, in September 2005. Oil seeped through a leaking valve onto the floor and then via the rainwater drain into the Karjaanjoki river. Some 100 - 200 litres of oil entered the river. The emergency services used peat to absorb the oil and remove it from the river. The oil leak did not pose a hazard to local residents.

One emission was noticed during the 2005 VOC measurements at the Pori foundry that had a high VOC content. The higher value could not be detected by the senses. No actual fault was found in the equipment. Maintenance measures were carried out early and in new measurements the VOC content was low.



A fire took place at the Weert foundry in November 2005, and the fire service had to be called. Feeder sleeves near the moulding machine had caught fire from molten metal that had splashed onto them. The damage caused was restricted to the burning of the feeder sleeves.

A fire took place at the Karkkila foundry in September 2005. The conveyor belts near the end of the foundry's moulding line caught fire, causing much smoke. No-one was injured in the fire. In autumn 2005 the holding furnace was overfilled in the smelting plant at the Karkkila foundry, but it was brought quickly under control and ultimately this was just a near thing. Foundry personnel were evacuated as a safety measure.

The transport ladle burst at the Pietarsaari foundry in February 2005. Since the event documentation has started to be kept of ladle maintenance. The event can be classified as a close thing, there was no major fire and no-one was injured.

Molten iron is continuously processed at the foundries. Liquid gas can be considered the highest-risk chemical at the foundries. Emergency plans are in place at all the foundries.

### Stakeholders

Componenta's stakeholders are not only the customers, personnel and shareholders but also suppliers, subcontractors, public authorities, the neighbours of the production units etc. The different stakeholder

groups have different expectations concerning environmental issues.

Many customers require us to have an environmental management system. The automotive industry maintains lists of 'black' and 'grey' chemicals. End products supplied to them must not contain any chemicals on the black list and it is necessary to look continuously for more environmentally friendly alternatives to using them in the production process. Use of substances on the grey list should also be avoided. We continually check that we meet the requirements of the black and grey lists. We have, for example, succeeded in meeting the strict requirements of the automotive industry concerning lead.

We primarily choose raw material suppliers that have environmental management systems in use.

People living close to the foundries have had a good opportunity to have a say especially now, when the foundries have renewed their environmental permits. Everyone has been entitled to make objections, which the environmental authorities have taken into account when making their decisions about environmental permits. Five objections were made relating to Karkkila foundry's environmental permit and two concerning the Suomivalimo permit. The objections were signed by several people. No objections were made concerning the permit for the heating plant for Componenta's real estate company Ruukin Kiinteistöpalvelu.

In Karkkila, the foundry held an information meeting for local residents concerning environmental issues. An information meeting was also held concerning the Heerlen foundry in the Netherlands, looking at the problems with smells and dust.

Regional authorities in the areas close to the foundries have also made statements during the process for renewing the permits, and these have also been taken into account when environmental authorities have made their decisions.

The Group's production units report the results of surveys and monitoring as defined in the environmental permits each year to the environmental authorities.

### Environmental permits

The operations of foundries and forges are such that they require an environmental permit. The Heerlen foundry obtained an environmental permit in January 2005. Suomivalimo obtained a new permit in October 2005 and the Karkkila foundry and heating plant in March 2006.

The environmental permit application for the Pori foundry conforming to the new Environmental Protection Act was submitted by the deadline of 31 December 2003. It is at present being considered and the decision is expected soon.

The permit proceedings for the Kohlsva forge are waiting for new legislation to be completed.

The environmental permits for the foundries are such that they govern develop-

ment relating to the environment. The new permits contain numerous requirements that develop environmental issues at the production units far into the future. These requirements focus for example on particle and VOC emissions.

The European Union has defined the best available techniques (BAT) for foundries. The BAT reference document for example defines the emissions limits that can be achieved with the best available techniques. Authorities take BAT requirements into account when granting new environmental permits for foundries.

### Environmental management systems

In accordance with the Group's environmental policy, each production unit should have an environmental management system conforming to ISO 14001 standards. Building of the systems continued during 2005 and the Åmål machine shop obtained ISO 14001 and ISO/TS 16949 certification at the end of 2005. The following production units have certified environmental management systems:

- Componenta Albin
- Componenta Åmål
- Componenta Främmestad
- Componenta Karkkila
- Componenta Pietarsaari
- Componenta Pori
- Componenta Suomivalimo

## Glossary of this report

Projects to build environmental management systems have started at Componenta Pistons and Componenta Nisamo. Quality and environmental management systems are being built simultaneously at both units. Work on the systems has not progressed according to the project plan, but the goal is for the systems to be ready by the end of 2006.

The joint environmental management system for the Dutch foundries is all but ready. The quality management system for the Dutch units supplying the automotive industry is being currently upgraded to meet the requirements of the automotive industry's ISO/TS 16949 standard and the system will be certified at the end of 2006.

The environmental management systems guide development at the units and help them identify the environmental impact of their production and correct the most important environmental aspects. The systems also highlight the responsibility of everyone in environmental matters and increase environmental awareness and commitment to environmental issues.

### ***Sand core***

A core made of sand and adhesives used for making hollow interior parts and complex shapes for castings. The core is put between the mould halves made from moulding sand and it disintegrates during casting and when the mould is compressed and mixes with the moulding sand.

### ***Moulding***

Stage in which a casting pattern is used to make a mould from moulding sand, into which the molten metal is poured.

### ***Scrap metal***

Left-over raw material from the manufacturing process, such as plate cutting waste, and end-of-life iron and steel products.

### ***Machining***

General name for various machine tool methods, such as drilling, milling, lathing and grinding.

### ***Machining centre***

Machine with several machine tool options, for example drilling, milling, lathing and grinding. Cutting fluid is used in machining to prevent the tool from getting hot from the friction. The cutting fluid is normally water-based.

### ***Holding furnace***

Electric furnace for holding molten metal. Typical size 30 tonnes.

### ***Primer and powder (coat finishing) coating***

Finishing / priming. Protects material from damage, such as corrosion.

### ***Mould***

Mould formed by moulding from moulding sand for casting a product. The moulding sand contains a hollow area that is the shape of the product, the runners needed to direct the molten metal and feeders to compensate for the shrinking of the molten metal.

### ***Coating***

Coating of the sand cores and moulds made from furan sand to obtain sufficiently high surface quality and to prevent the metal from penetrating the sand.

### ***Smelting furnace***

The furnace in which smelting takes place. Source of energy is electricity (= electric furnace) or coke (=cupola furnace). In the electric furnace smelting takes place in a single charge, meaning that the furnace is emptied completely or partially once a batch is ready. For example, it takes about one hour 20 minutes to melt 8 tonnes at a power of 4.3 MWh. The cupola furnace process is continuous, so molten metal is taken out and raw material added in a continuous process.

### ***Chip***

Metal chips, machining waste material.

### ***Remelting***

Melting in the smelting furnace of runners and feeders, burrs, reject castings or machining waste.

### ***Runners and feeders***

The runners and feeders full of molten metal that are removed when cleaning the cast item. These can account for anything from 30% to 70% of the total iron, depending on the product, grade of iron and casting system.

### ***Cast iron***

Ferrous metal which contains 2.0 -4.2 % carbon. The carbon is usually in the form of graphite. Ferrous metals are divided into grey cast iron (GJL), nodular cast iron (GJS) and white cast irons. Special cast iron such as wear-resistant ADI.

### ***VOC***

Volatile organic compounds.

# COMPONENTA

---

COMPONENTA CORPORATION

Panuntie 4, FI-00610 Helsinki, Finland

Telephone +358 10 403 00 • Telefax +358 10 403 2721

[www.componenta.com](http://www.componenta.com)