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Trelleborg's Environmental Report

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The core of Trelleborg's strategy is to grow while simultaneously ensuring that profitability keeps pace. The Group has favorable growth prospects. An examination of other companies operating in comparable industries shows that we have successfully met the challenge of combining growth with profitability. However, growth is not an end in itself. We will only achieve financially sustainable growth when we combine growth with the ability to integrate and structure our operations.

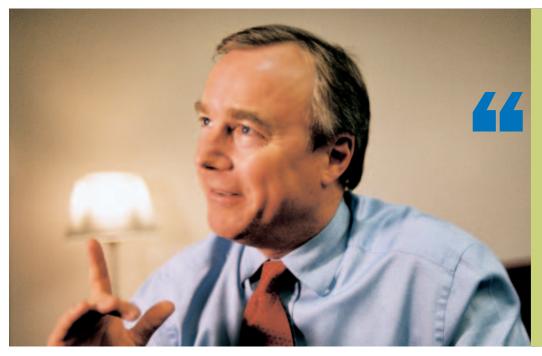
Healthy financial results within the Group also create the right conditions for long-term efforts in other areas. By focusing on research and development, we can develop products with new characteristics. Customers are constantly demanding more in terms of environment-related product performance, quality and special characteristics, which requires that we invest substantial resources in product development. We also note increased demands from society, particularly in the environment area, but also in regard to companies' social responsibilities. Terms such as "sustainable development" and "corporate citizenship" are used with increasing frequency and we receive many inquiries about how Trelleborg deals with these issues. In the environment area, we have been working for a number of years on reducing the environmental impact of the Group's processes and products. Our aim is to be transparent and report both successes and setbacks in the environment area. This year's environmental report, the fourth in successive years, provides clear proof of our openness.

## Profitable a

In last year's environmental report, under the heading "Holistic approach and continuous improvement," I stated that the use of polymers is increasing and that the availability of information and the effectiveness of monitoring concerning environmental issues are constantly improving. It will be clear from this year's environmental report that our efforts to make continuous improvements have yielded results and that the environmental impact at a number of plants has been reduced. The environmental management systems that have been introduced on a broad front within the Group during the past few years provide the basis for an objective analysis of the current situation and a means of identifying those areas where further improvements are needed. The number of Group units holding ISO 14001 certificates is growing constantly and we currently have 33 certified plants. It is especially pleasing to note that certification work has gathered pace in the US, and we anticipate a significant number of new certificates during next year. At the same time, we note that the Group's total environmental impact, in absolute figures, is increasing. This primarily reflects the fact that the Group acquired a significant number of industrial plants during 2001.

The uncertainty in the world during 2001 affected society as a whole, individuals and companies. Industrial production stagnated in North America and parts of Asia. Car production, the most important market for us, declined, particularly in North America. It is pleasing to note that, despite the downturn in the economy, Trelleborg succeeded in maintaining earnings levels during the year. The events on September 11 caused many people to pause and reflect on the state of the world. Increased attention has been focused not only on security issues, but also on a sustainable social system.

Trelleborg is one of many major companies that are active in the global arena. Accordingly, in common with other such companies, we are a power factor in the economic area. The same applies to developments in the environmen-



We note increased demands from society, particularly in the environmental and social areas

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# nd sustainable growth

tal and social areas in the countries where we are active. In the social area, the Group has been implementing measures for many years to look after employees' health, safety and personal development. Many of our plants are also engaged in community activities at the local level. This may, for example, involve contacts with schools, sports associations and other organizations. I have felt that there is a need to structure Trelleborg's social commitment. I believe that, in the same way as in the environment area, we should be transparent and report on the situation within the Group. Accordingly, the Environmental Report describes the Code of Conduct and related policies that are to be formulated and refined during the year. We have also refined the system for collecting data relating to health, safety and socially oriented activities, as the report shows.

Now we have a new year before us and our growth target remains unchanged. However, the prerequisite for financial growth is a long-term commitment to issues affecting Group development. In this regard, I wish to emphasize capital structure, research and development work, environmental issues and the social issues that are important components for a company that is currently in a phase of profitable and sustainable development. I hope that both employees and external stakeholders will enjoy reading the report.

Trelleborg, March 2002

Fredrik Arp
President and CEO

#### **Business concept**

Trelleborg develops, produces and markets function-oriented products, systems and services, with its expertise in polymer technology, and its markets and customers, as a base.

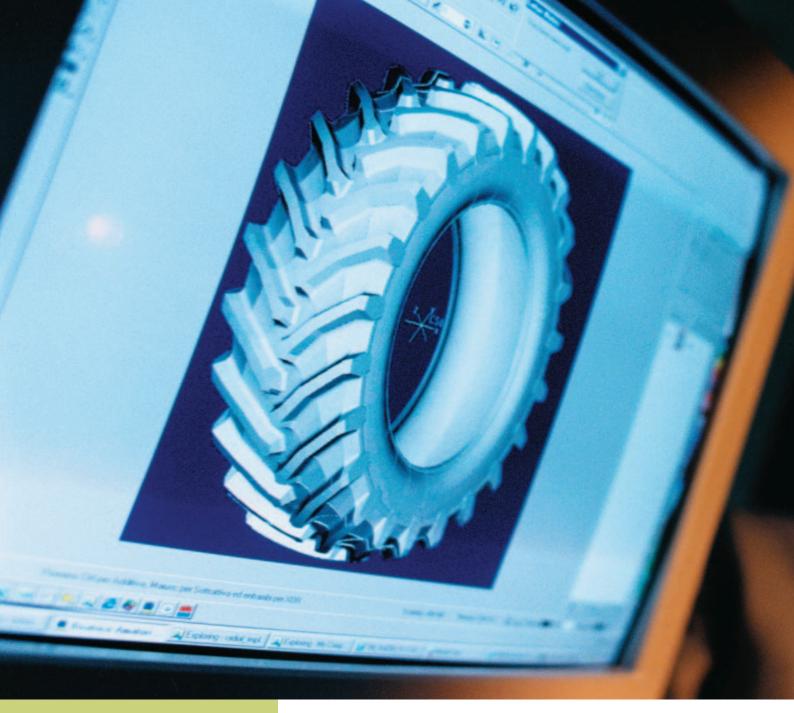
#### Vision

Trelleborg's vision is to be a leading global engineering company in the polymer area, by offering:

- customers the best value of products and services,
- employees a challenging and developing work environment,
- shareholders a healthy return long-term.

#### **Overall objectives and growth targets**

Trelleborg's objective is to capture leading positions and establish financial advantages of scale in research and development, production, marketing and service.



#### **Our values**

- We believe in measurable and unequivocal goals at all levels of the Group.
- We believe in a decentralized organization, and the extensive delegation of decision-making and responsibility.
- We believe in a target-oriented management combined with the training of competent and motivated employees instead of detailed instructions and constant supervision.
- We believe in open and honest communication between employees at all levels.
- We believe in the continuous improvement of our internal and external environments through the constant evaluation of materials and production methods.
- We believe in cost-awareness in all areas of our operations as a means of improving our competitiveness.

# People and the

## Code of conduct and related policies

Work on the production of a Code of Conduct is in progress and will be completed during 2002. Trelleborg's Code of Conduct will include statements concerning:

- How we create added value not only for the Company's shareholders but also for society in general.
- How we assume responsibility for our actions, undertakings and products.

- Sustainable development and healthy work environments.
- Respect for cultural diversity and human rights.

The Code of Conduct is underpinned by a number of key policies. The Environmental Policy was introduced in 1998, and the Work Environment Policy and the Policy for Relations with Suppliers are currently being prepared. Accordingly, the work in progress on the Code of Conduct and related policies that





will be presented during 2002 is described in the Environmental Report. We have been collecting data for several years, and in the section "Sustainable development and social issues" we describe the Group's activities in this area.

#### Work environment policy

Trelleborg's fundamental principle is that we respect our employees and their human rights. The future policy will describe the Group's approach to cultural, national and ethnic issues and matters relating to work-

places, training, remuneration and working hours, among other areas.

#### Policy for relations with suppliers

Trelleborg's aim is to cooperate with reputable suppliers who comply with our quality requirements and business principles. The future policy will describe the Group's approach to certification and matters relating to quality, the environment and social issues, among other areas.



#### **Environmental Policy**

In our approach to environmental issues, we subscribe to national and international undertakings to strive toward a sustainable society. Our objective is that the activities of the Trelleborg Group shall not harm the environment or have a negative effect on human health. The environmental aspects shall be integrated in the day-to-day operations of the Group.

- We shall economize on energy, water and other natural resources.
- The environmental aspects shall be taken into account when we choose raw materials, chemical products and distribution systems.
- We shall minimize waste amounts and emissions from our production plants and other operations.
- We shall have safe and sound workplaces and ensure that our personnel training programs prepare our employees to perform their work in the best possible way.
- In our research and development operations, we shall strive for environmentally sound technologies, products and packaging.
- Whenever we change processes, plants and products, we shall use the opportunity to make environmental adaptations.
- We shall maintain sound emergency preparedness by systematically evaluating the risk of accidents, fires and uncontrolled emissions to the environment.
- We shall inform customers, suppliers and contractors about our environmental work and, in cooperation with them, strive to achieve mutual improvements.
- We shall provide open and objective information about our environmental work to our employees, the general public and the authorities.
- We shall comply with current environmental legislation and develop long-term plans related to national and international legislation in the areas of the environment, health and safety.
- We shall comply with the requirements of ISO 14001 at our production plants.
- Tasks and responsibilities within the framework of the environmental management system shall be clarified. Environmental objectives and action plans shall be prepared at every plant.
- We shall evaluate environmental performance by monitoring emissions and through frequent environmental audits. We will continually strive to improve our environmental performance.

## The Trelleborg Group

## Trelleborg AB – a global industrial Group

At year-end 2001, Trelleborg had sales of approximately SEK 19 billion, with an average of some 16,200 employees in 40 countries. The Trelleborg Group is organized in four business areas: Trelleborg Automotive, Trelleborg Wheel Systems, Trelleborg Engineered Systems and Trelleborg Building Systems.

A number of significant acquisitions were made during the fiscal year. At the beginning of 2001, the vehicle component operations (LAC) of the Laird Group in the UK – with more than 3,000 employees at 16 production units in six countries, mainly in Europe – were acquired. As a result of the acquisition, Trelleborg strengthened its world-leading position in the area of antivibration products for the automotive industry. Other acquisitions during 2001 included Fentek and Hercules Rubber, with production units in Singapore, Australia, Germany and the UK, and Phönix Tag in Denmark.

Key figures					
Per-share data	2001	2000	1999	1998	1997
Earnings after full tax, SEK	5.35	7.30	8.60	4.20	17.40
Earnings after full tax, excluding noncomparable items, SEK	7.45	6.50	6.35	4.05	7.65
Earnings after full tax and full conversion, SEK	9.00	7.35	7.25	4.90	8.20
Earnings after full conversion, SEK	5.20	7.05	8.30	4.20	_
Shareholders' equity per share, SEK	88.70	84.60	78.50	93.55	94.20
Dividend, SEK 3.75	4.00	3.75	3.25	2.00	3.50
Direct return, %	5.0	5.5	4.2	3	3.5
Share price, Series B share, at Dec. 31, sek	80.50	68.00	76.50	66.00	100.00
P/E ratio, excluding non- comparable items	11	10	12	16	13

Group Center
Trelleborg Automotive
Trelleborg Wheel Systems
Trelleborg Engineered Systems
Trelleborg Building Systems



The Trelleborg Group worldwide

Other European countries

#### **Trelleborg Automotive**

Trelleborg Automotive is a leading supplier of noise-suppression and antivibration systems for automotive and industrial applications. The business area is divided into three main segments: Automotive AVS (Antivibration Systems), Automotive Components and Acoustics and Fluid Systems. Within Automotive AVS, Trelleborg develops, manufactures and markets components and systems to reduce vibrations in vehicles, primarily cars. Production is global and Trelleborg is a world leader within this product area for light vehicles, with a 20-percent market share. Automotive Components and Acoustics manufactures a number of different products for the suppression of noise and vibrations in various application areas. Trelleborg Automotive is the market leader in the industrial AVS market. The "Laminates" product area supplies noise-damping brake shims to the world's automotive producers, plus a number of noise-suppression products under the DuruLam brand name.

#### **Trelleborg Wheel Systems**

Trelleborg Wheel Systems develops, manufactures and markets tires and complete wheel systems for forest and farm machines, trucks and other materials-handling equipment. There are three market segments within Trelleborg Wheel Systems: Industrial tires, Forest and Farm tires and Technical material. Within the Industrial tires segment, Trelleborg is the world leader for solid industrial tires, which comprises complete wheel solutions for materials-handling vehicles and related industries, including various types of transport vehicles at airports and harbors. In Forest and Farm tires, Trelleborg is one of the world's leading designers, manufacturers and distributors of wheel systems for machines and vehicles used in farming and forestry operations. Forest and Farm tires develops, manufactures, markets and distributes tires and wheel systems for machines and vehicles used in forest and farming operations. Within the farm tires segment, Trelleborg is the third-largest manufacturer in Europe, with the Pirelli and Trelleborg brand names particularly well-positioned in the quality segment and large tires. The Technical Materials segment develops, manufactures and sells polymer compounds, special wheel rims, sealing rings, rubber components for milking machines and rubber-coated sheeting.

#### **Trelleborg Engineered Systems**

Trelleborg Engineered Systems develops, manufactures, markets and distributes flow-control systems and engineered solutions in polymer materials, all with a high engineering content, to leading customers in global markets. There are two primary market segments: Industrial Fluid Systems and Engineered Solutions. Industrial Fluid Systems is responsible for about half of the business area's sales and develops, manufactures, markets and distributes industrial hose and industrial hose systems in polymer materials. Trelleborg positions its operations toward products with a high technology and value content for demanding customers and environments. Operations are focused on Europe and North America, which each have about the same volume of sales. Trelleborg is the market leader in Europe and ranks third in the US. Engineered Solutions develops, manufactures and markets products and product systems for sealing, protection and comfort based on polymer materials. Operations are aimed at advanced application areas, with a high value content. Sales are global, with the principal markets in Europe, Asia and the Middle East. Trelleborg is the world leader for marina fender systems, tunnel sealants, dredging systems and protective suits.

#### **Trelleborg Building Systems**

Trelleborg Building Systems is a leading supplier of polymers and bitumen-based building products for sealing andwaterproofing applications in the industrial and Do-It-Yourself (DIY) markets. Within the business area, there are two market segments that are essentially the same size: Sealing Profiles and Waterproofing Systems. Both operate in the newbuild market and the aftermarket. Sealing Profiles develops, manufactures and markets sealing profiles and sealing strips for windows, doors, façade units and other features. Operations are concentrated to Europe. The Nordic region, Germany and the UK are the most important market areas in which Trelleborg has local production. Trelleborg is the market leader in Europe and the only pan-European supplier. Trelleborg is Europe's leading manufacturer of rubber membranes for water storage facilities and one of the three largest manufacturers of sealing systems for roofs. Waterproofing Systems also includes the production of bitumen sealing sheet for roofs, an area in which Trelleborg is the leading supplier in Sweden and has a strong position in Denmark, Finland and Poland.











The extraction of raw materials and the production processes used in the polymer industry impact on the environment in a number of different ways. A certain amount of environmental impact occurs at Trelleborg's plants, while other impacts occur during production of raw materials, transports and disposal of the waste that occurs in various places. The environmental impact, in a life-cycle perspective, of the most important raw materials and processes is described below. The following groups of substances are of particular interest:

Substance group	Application area
Natural rubber, synthetic rubber	Polymers that are the most important constituents in rubber products.
Fillers	Carbon black and silica are often used as fillers in rubber.
Vulcanizing agents and aging inhibitors	Sulfur and other substances are used in the vulcanizing process to control the properties of the rubber. Vulcanizing speed is affected by accelerators such as zinc oxide. Various types of substances, such as antidegradation agents, may be added to increase the lifespan of products.
Softeners	Softeners are added to control product hardness and simplify processing. Aromatic oils (HA oils) are used in many products.
Special ingredients	Pigments are used to add color. Antistatic agents reduce static electricity. Expanding agents are used to create a cell structure. Flame retardants increase fire resistance. The strength of products can be increased by reinforcing them with, for example, textile fabrics, steel wire or glass fibers.

#### **Natural rubber**

The rubber tree (Hevea brasiliensis) requires a tropical climate. Today, more than 90 percent of all natural rubber comes from Southeast Asia, although there are also plantations in South America and Africa. Nearly 70 percent of natural rubber production is used in the tire industry. About 80 percent of naturalrubber production derives from small-scale operations conducted by local growers. Typically, an area of rain forest is cleared and rubber trees are planted. As a result of such methods, the original tree species disappear and are replaced by a monoculture of rubber trees. However, other types of plants gradually regenerate to a certain extent. A rubber plantation usually has a density of 200 to 500 trees per hectare. It normally takes from four

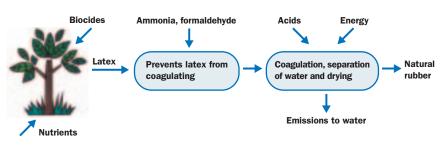
to seven years before tapping of the trees for their sap (latex) can begin. One tree produces approximately 2 kg of latex each year over a period of 25-35 years. The yield is affected to a considerable degree by cultivation techniques, soil conditions, use of biocides and the addition of nutrients. The chief byproduct from the rubber plantations is timber from the trees, which is mainly used as firewood, but has also been exported during recent years for use in the manufacture of furniture and flooring.

Latex consists of water, rubber polymers (about 33%) and a number of other substances, including proteins. Around the rubber polymers is a layer of proteins that prevents the latex from forming clumps. Latex must be processed to preserve and concen-

trate it. Ammonia and formaldehyde are added to prevent premature coagulation. After this processing stage, the raw material is usually transported to a plant, where acetic acid or formic acid is added to make the latex coagulate. The latex is then dewatered and the solid product is dried. An overview of the production process for natural rubber shows that the environmental impact derives from clearing of forest, the use of energy, chemicals, nutrients and biocides, and from emissions to water. Trelleborg has no rubber plantations of its own.

#### Synthetic rubber

About 60% of world production of synthetic rubber is used for tire manufacture. Trelleborg's products contain approximately 60% synthetic rubber, the remainder being natural rubber. Synthetic rubber is a product of the petroleum industry. Styrene-butadiene rubber (SBR) is the most common type of synthetic rubber and has similar characteristics to natural rubber. Trelleborg uses a large number of synthetic rubber polymers. The environmental impact from the production of synthetic



A life-cycle persp



rubber derives primarily from energy consumption, emissions to air and water, and waste products.

#### **Carbon black**

Carbon black is produced through pyrolysis or combustion processes in furnaces. The furnace-black process consumes approximately 1.6 tons of aromatic extracts and 0.2 tons of natural gas to produce one ton of carbon black. Carbon black is a black powder with highly polluting characteristics. Other environmental effects include energy consumption, emissions to air and waste from the production processes. In a number of countries, Trelleborg cooperates with carbon black suppliers who produce the substance in a process involving energy recovery and provide bulk delivery based on reusable containers.

#### **Accelerators and antidegradants**

In rubber-industry processes, accelerators and antidegradants make up approximately 1-1.5% of the weight of the rubber mix. Substances such as 6-PPD and CBS are hazard-

ous to health and highly toxic to aquatic organisms. Since accelerators and antidegradants are produced in the chemical industry in relatively closed processes, they are not emitted to the external environment. However, fairly significant emissions of various hydrocarbons to air and water have been reported.

#### **Sulfur**

Sulfur is produced mainly as a by-product in refineries that process crude oil and natural gas. In the process, elementary sulfur is formed from hydrogen sulfide. Environmental impact is in the form of energy consumption, emissions to air and water, and waste products.

#### Zinc oxide

Roughly half of world production of zinc oxide is used in the rubber industry. A number of different methods are used to produce zinc oxide. Previously, zinc oxide was produced mainly from zinc ores extracted from zinc mines, but today recovered metallic zinc is an important source. Production of zinc oxide causes environmental impacts resulting from

mining operations, emissions to air, energy consumption and waste generation. Zinc oxide is toxic to aquatic organisms.

#### **Aromatic extracts**

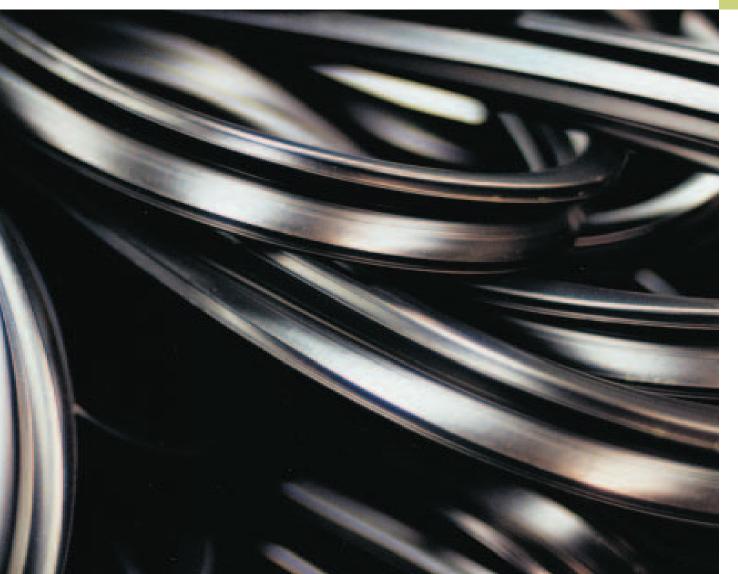
The aromatic extracts used in the rubber industry derive mainly from the production of lubricating oils. Since the aromatic carbon compounds contained in the crude oil do not have good lubricating properties, they are extracted during processing. The solvent furfural is normally used as the extraction agent in the process. The aromatic extract can be viewed as a by-product of the petroleum industry that has come into extensive use in the rubber industry. Aromatic extracts are toxic and classified as carcinogens due to their content of polyaromatic hydrocarbons (PAH). The aromatic oils are often reffered to as HA oils (see pages 20-21) Environmental impact from the production of aromatic extracts is primarily in the form of energy consumption, emissions to air, and waste products.



#### **Processes**

A large number of polymeric materials are produced and processed within the Trelleborg Group. While rubber is the dominant product, substantial production of polyurethane, PVC, polyethylene and other plastics also takes place. The table below gives examples of some of the most important processes in the production of rubber and plastic products. Typical environment-related aspects of the production processes include energy and water consumption, emissions of odorous substances and solvents to air, noise in the immediate vicinity, waste, work-environment hazards and the environmental impact of transports.

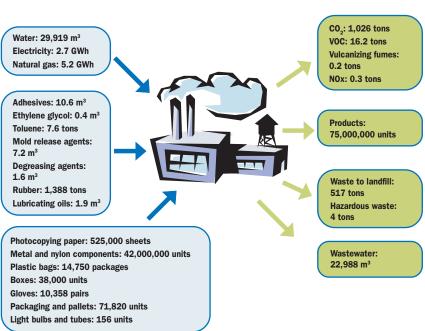
Process	Application area
Extrusion (hot extrusion)	Production of long, narrow rubber and plastic products, such as sealing strips and hoses. When the strand has left the machine, it is cooled in a water bath, then vulcanized in an autoclave.
Continuous vulcanization	The rubber is cooled after extrusion, then heated up in a microwave oven or a warm salt bath.
Coating technique	Rubber that has been dissolved in a suitable solvent is applied to a fabric base. After the solvent has evaporated, a rubber film has formed on the fabric.
Calendering	Calendering takes place in a rolling mill, where the warm rubber mix is pressed into a thin layer by the rotary movement of the rollers. Calendering is used in the production of conveyor belts, rubber sheeting and carpeting.
Compression molding	In compression molding, the rubber mix fills the hollow space in a mold and the product is vulcanized directly by heating up the rubber in the mold. Shock absorbers and seals are produced in this manner.
Injection molding	In injection molding, the mix is injected into a closed mold, aided by a screw. Advantages of this method are that it can be automated and – since the rubber is injected into a closed mold – flash formation (waste) is greatly reduced. The same technique is commonly used for plastic products.
Bonding of rubber and metal	The metal stiffens the structure, thereby facilitating assembly, while the rubber has a shock-absorbing and insulating function. The adhesive solution is applied before molding and vulcanization and allowed to dry and, in some cases, harden. The metal-and-rubber product is then molded and vulcanized.





## Environmental aspects of an individual plant

The Trelleborg Group has more than 75 production units throughout the world. Since the plants vary in size and specialize in different processes and products, it is not possible to provide a single overall picture of the Group's environmental impact. In conjunction with the introduction of ISO 14001, we are performing detailed analyses of the current environmental situation. An overall mass balance is included in the analysis, and in many cases the analysis and the mass balance clarify conditions that were previously not entirely clear. The illustration below is taken from a relatively small plant (approximately 100 employees) in the US. The analysis resulted in an intensified focus on emissions of solvents to air, waste issues, and the handling of packaging materials.



Environmental aspect	Priority level	Examples of possible health and environmental impacts	Threats and opportunities
Localization		Disturbance due to noise, transports and unpleasant odors.	For historical reasons, several of the Group's plants are centrally located in towns or cities. There can be complaints from neighbors and the authorities. Possibilities of expansion are restricted in some places.
Soil and groundwater		Historic or ongoing contamination of soil and groundwater.	There is contamination at a number of plants. Soil decontamination is expensive.
Consumption of natural resources (raw materials)		Environmental impact from rubber planta- tions during production of natural rubber. Utilization of nonrenewable resources dur- ing production of synthetic rubbers and other polymers.	The price of raw materials is important, since rubber competes with other materials. Through the more efficient use of raw materials the Group can both save money and reduce the environmental impact.
Consumption of natural resources (water, energy)		Utilization of nonrenewable resources (oil, natural gas). Clean water is a scarce resource in many countries.	In a very long-term perspective a transition to renewable energy sources can be anticipated. In the shorter term energy prices and taxes are significant for production costs. The potential for saving energy has not been fully exploited in the Group. The same applies in the case of water.
Use of chemical products		Environmental and health risks of toxic and persistent chemicals.	Hazardous substances are common in the rubber industry. Demands from the authorities and society for investigation and reporting of environmental and health risks are growing. Substitutions can be expensive.
Emissions to air	•	Carbon dioxide from the Group's energy plants contributes to the greenhouse effect. Solvent emissions cause local formation of photochemical oxidants, among other effects. Dust, vulcanizing fumes and odors may have a local environmental impact.	Carbon dioxide taxes and trading in emissions rights have been introduced in some countries. Measures of this kind are expected to generate future costs for the Group. Legislation to reduce emissions to air is becoming increasingly strict. Process modifications or air-cleaning equipment will have to be introduced at some of the Group's plants in due course.
Noise (outdoors)		Neighbors may be disturbed.	Noise-abatement measures are expensive in many cases.
Emissions to water		Municipal treatment plants and watercourses may be affected by chemical products and other emissions.	Emissions to water from the Trelleborg Group's plants are usually limited. However, at some plants, investments in improved wastewater treatment may be required.
Waste	•	Wastage of natural resources. Landfill ca- pacity has already been exceeded in some countries. Incineration can produce emis- sions of air pollutants. Storage and trans- port of hazardous waste can lead to health-related and environmental risks.	Waste issues have high priority in many countries already, and it is expected that this will come to apply worldwide. For the Group this means not only increased costs, but also demands for waste reduction and the development of better methods for the recycling or reuse of residual products.
Spills, fires and unforeseen situations		Serious injury to people in the vicinity can result from fires and uncontrolled emissions.	In recent years the Group has been spared spills and fires giving rise to serious injury. There have, however, been some significant fires. Work on preventive risk reduction is becoming increasingly important.
Products	•	Products whose useful life is over generate waste. The products contain chemical substances that can spread in the environment. However, many of the Group's products contribute to a better environment (reduced noise and vibration, energy saving, etc.).	Customer requirements for information on products' environmental and health properties are increasing, particularly in the automotive and building industries, creating a demand for studies and documentation. The Group should utilize the opportunity to describe the positive environmental properties of its products. This too requires studies and documentation.
Packaging		Packaging generates waste at customer premises.	Well-planned packaging solutions increase customer satisfaction and are likely to reduce environmental impact.
Transports		Use of nonrenewable natural resources (fossil fuels). Emissions of greenhouse gases and air pollutants.	Some good initiatives have been taken to reduce the environmental impact of transports. Continued efforts are required to survey the effects of transports.
Work environment risks (working with chemicals)		Exposure to chemicals in the rubber industry can lead to allergies, respiratory illnesses and other health problems.	Demands from the authorities, employees and trade unions for a safe work environment continue to be high. Many improvements have been made, but more work and investments are needed to minimize exposure to chemical substances in the work environment. Ventilation measures are often expensive.
Work environment risks (accidents)		Crushing injuries, cuts and other occup- ational injuries are common in the rubber industry.	The injury rate is high within the Group. Rigorous demands for a safe work environment continue to be made by the authorities, employees and trade unions. Risk analyses and modifications to equipment are often expensive.
Work environment risks (ergonomics, noise)	•	Heavy lifting and repetitive tasks can lead to strain-related injuries. Noise can result in hearing impairment.	See above.

## The Group's significant environmental aspects

From the preceding chapter it is clear that the use of raw materials and several of the production stages may have environmental or health impacts. To this can be added the indirect effects of transports, localization and

other factors. In the environmental report, we examine the environmental aspects of the Group and individual plants by describing a number of key environmental, health and social parameters. An overview of the prioritized environmental and health aspects is given in the table above. The table also contains a brief

analysis of threats and opportunities from a Group perspective.



## Trelle borg's environmental organization

#### Many new plants

The Trelleborg Group changed in many ways during the late 1990s. Many companies were sold, and even more were acquired. During the past few years alone, more than 40 industrial plants have been incorporated into the Group. Naturally, detailed environmental surveys are undertaken in conjunction with acquisitions (see Environmental Report 2000), but extensive efforts are also needed to reach a common perspective on both environmental and other issues. A precondition for integration of the new units is direction, control and guidance at Group level, but there is also significant responsibility at the local level. Accordingly, environment-related activities within the Trelleborg Group are decentralized in many respects, and based on the individual operations of the different plants. Formal responsibility for environmental, health and safety issues resides within the various line organizations, with delegation starting at the level of business-area president. Much of the responsibility rests on the site managers, who are required to manage their operations in accordance with:

- Trelleborg's Code of Conduct, policies and overall targets,
- legal and other requirements (e.g. requirements of customers and neighbors),

- directives and guidelines issued by the Trelleborg Group (e.g. environmental policy, environmental management manual, environmental standards and position papers,
- requirements of ISO 14001.

#### **Environmental Affairs**

The Group's Environmental Affairs staff coordinates environmental and work-environment issues within Trelleborg. The Environment Director reports directly to the Group President. Environmental Affairs adopts overall policies and standards, and follows up the line organization's environmental work by means of audits and the gathering of environment-related data. A key task for Environmental Affairs is to create the conditions for internal networking and information/instruction with regard to environmental issues. Environmental Affairs is also a member of various external networks, and maintains regular contacts with specialists, universities and the wider community.

#### **Environmental coordinators**

There are environmental managers or coordinators at most Trelleborg plants. At some of the smallest plants, there is a contact person for environmental issues, while at the largest there may be an environmental staff consist-

ing of various specialists. At business-area level, there may also, in particular cases, be persons with specialist expertise in the environmental area. The most important tasks of an environmental coordinator are to:

- · assist the site manager with relevant expertise,
- manage contacts with the environmental authorities,
- coordinate measurement programs and compile data,
- · take the initiative for and implement training,
- implement and maintain the provisions of ISO 14001.

## The Group's environmental management system

Trelleborg's environmental management system is based on each of its plants introducing and maintaining a system that meets the requirements of ISO 14001. At Group level there are a substantial number of documents and training programs that facilitate the process of introducing ISO 14001 at individual plants. Further, there are a number of in-house directives stipulating how the Group looks at issues concerned with the environment, health and safety. Such documents make up parts of the environmental management systems of the individual units. An overview of current documents is provided below.

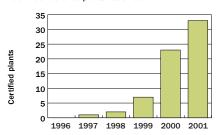
#### ISO 14001

During the years 1998-2001, Trelleborg undertook many activities in order to introduce ISO 14001. Many personnel participated in training and auditing exercises, support documents were produced, and introductory environmental surveys were performed. This is why it is heartening to report there is an ever increasing number of certified plants. Many of the "original" plants in the Trelleborg Group have now been certified. In the case of newly acquired units it usually takes 1-2 years to prepare for certification. This means that there are currently many organizations that will complete their work during 2002. Since the ISO 14000 program was started, a total of 43 organizations have obtained certification. Restructuring and sale of plants, however, have meant that there are currently 33 Trelleborg organizations with ISO 14001 certifications. Most are in Europe, but certification activities have also gathered pace in the US, Southeast Asia and South America.

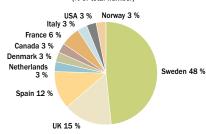
#### **Environmental audits**

The Group has many specialists who are either personally qualified as environmental auditors pursuant to ISO 14012 or have equivalent qualifications. A number of personnel have undergone both internal and external environmental audit training. When an individual plant is approaching the time for thirdparty certification, preliminary audits of the environmental management system are normally performed. Such audits are usually performed by Group environmental staff alongside internal environmental auditors from the various plants. During the year, audits were performed in Sweden, Italy, Spain and the US. Also during the year, in order to investigate potential environmental hazards in companies that the Group intends to acquire, many environmental due diligence audits were performed. Australia, the UK, Singapore, the US, Spain and Belgium are among the countries where such audits were performed.

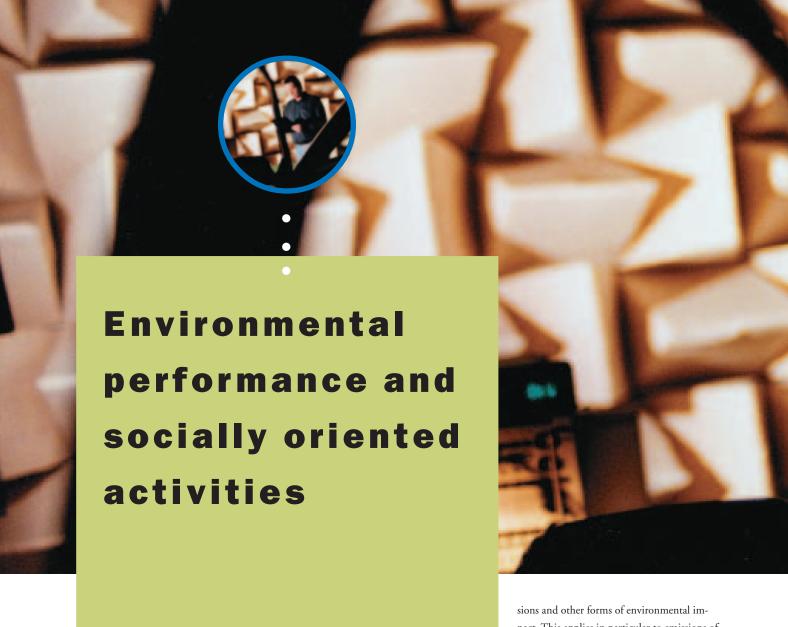
ISO 14001 certified plants 1996-2001



Distribution of ISO 14001 certificates by country (% of total number)



Type of document	Document name	Comments
General	Vision/Business concept/Goals.  Our values.  Code of Conduct*.	These documents specify the Group's business concept, goals and values, and also perspectives on the Group's role as a responsible corporate citizen.
Policy	<ul> <li>Environmental Policy, TEA 98-06.</li> <li>Workplace Policy*.</li> <li>Supplier Relationship Policy*.</li> </ul>	The Environmental Policy describes Trelleborg's visions in the environmental area. Each plant produces a locally adapted version of the Environmental Policy. The Workplace Policy specifies the Group's perspectives on human rights and social responsibility. The Supplier Relationship Policy explains how the Group relates to its suppliers.
Manual	Environmental Management System Manual, TEA 98-07.	The manual describes Trelleborg's Group-wide environment management system. Each plant produces locally adapted manuals based on the requirements stated in ISO 14001.
Standard	Environmental due diligence audit, TEA 98-04.     Environmental reporting standard, TEA 98-12.	The standards specified here are to be followed by all plants within the Group.
Position Paper	<ul> <li>Environmental crisis management, TEA 98-14.</li> <li>Preparation for the initial environmental review, TEA 98-41.</li> <li>Emergency preparedness, TEA 00-11.</li> <li>Prevention and clean-up of soil and groundwater pollution, TEA 00-12.</li> <li>Internal communication of environmental, health and safety accidents, TEA 00-13.</li> <li>Area classification, TEA 00-14.</li> <li>Work permit, TEA 00-15.</li> <li>Good housekeeping, TEA 00-16.</li> <li>Waste management, TEA 00-17.</li> <li>Environmental, health and safety aspects of research and development, TEA 00-18.</li> <li>Site security, TEA 00-19.</li> <li>Delegation of environmental and safety work, TEA 00-20.</li> <li>Personal protektion equipment, TEA 00-47</li> <li>Environmental labelling, TEA 01-19.</li> <li>Environmental assessment of suppliers, TEA 01-36.</li> <li>Lockout/tagout of machinery and equipment, TEA 01-40.</li> <li>Safe operation of forklift trucks, TEA 01-41.</li> <li>Hearing protection, TEA 01-42.</li> <li>Blood borne pathogens, TEA 01-43.</li> <li>Environmental, health and safety training of new employees, TEA 01-44.</li> <li>Hot work, TEA 01-45</li> <li>Fire extinguisher maintenance program, TEA 01-46</li> <li>Assessment of new chemicals, TEA 01-47</li> <li>Safety/Environmental committee, TEA 01-48</li> </ul>	Position papers shall be regarded as stating the recommendations of the Group, and must be followed by all plants. Normally, the documents are adapted to the local conditions at each individual plant.



#### Four years in brief

The Trelleborg Group's first environmental report was published in 1999 and covered 47 production units. Last year's report described the environmental situation at 63 organizations in 16 countries. For this year's report, we gathered data from 77 plants in 21 countries. The focus of the Group's operations has changed substantially due to the acquisition of many operations in the polymer industry and the divestment of other kinds of industrial operations. For this reason, it is difficult to present developments and trends in the environmental area by means of simple key ratios and summary diagrams. This section reports on a variety of parameters not only at Group level, but also at business-area level and for some specific plants. This makes it possible to follow trends at different organizational levels. In many cases improved direction and control of environmental issues and reduced environmental impact are evident.

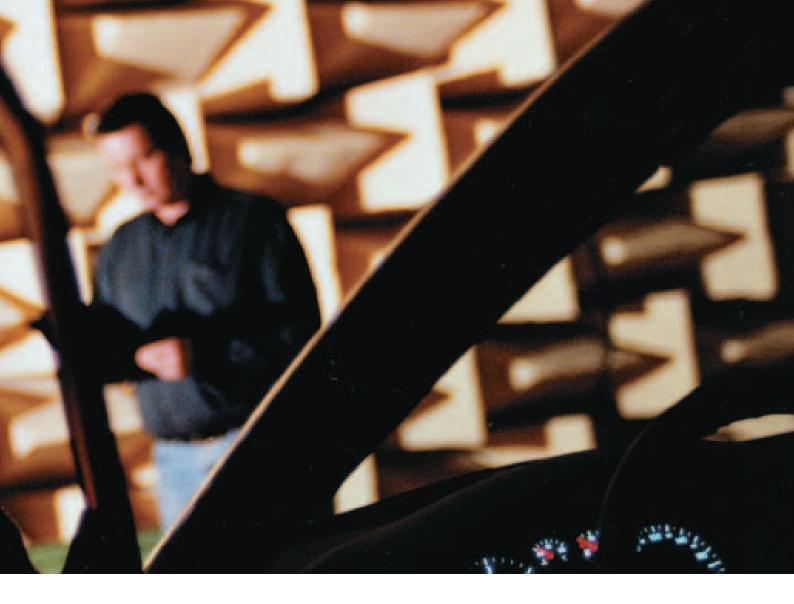
An overview of the Trelleborg Group as a whole shows that figures for parameters such as energy consumption, atmospheric emissions and waste quantities have increased. This results not only from the inclusion of a greater number of operations in the report, but also from the fact that many of the newly acquired operations cause substantial emis-

sions and other forms of environmental impact. This applies in particular to emissions of solvents (VOCs) and greenhouse gases (carbon dioxide) to the atmosphere. At some plants, routines for measuring and monitoring emissions and waste have been improved, which usually leads to increases in the amounts reported. At the same time, it can be said that the environmental impact per employee fell somewhat during 2001.

## Legal requirements and conditions

The Group has about 77 production units in Europe, Asia, and North and South America. The majority of plants require permits according to national law, and are subject to regular inspections. Some smaller units, how-

Year	Energy co	Energy consumption Carbon dioxide emissions				emissions	Waste quantity		
	GWh e	GWh/ mployee	Tons er	Tons/ mployee	Tons	Tons/ employee	Tons er	Tons/ mployee	
1998	623	0.04	85,000	6.1	516	0.04	25,500	1.8	
1999	760	0.06	101,400	8.0	505	0.04	31,700	2.5	
2000	1,012	0.08	129,200	10.5	1,189	0.1	33,000	2.7	
2001	1,135	0.07	146,360	9.0	1,390	0.09	43,390	2.7	



ever, are not classed as requiring permits pursuant to national legislation. In Sweden, the Group has ten plants that operate under licensing and reporting regulations. The required permits apply to the scale of production and specify conditions for emissions to air and water, and waste amounts. Each year the Swedish plants supply emissions data and report on compliance with the stipulated conditions in separate environmental reports that have to be approved by the relevant supervisory authority. Similar reporting to the authorities takes place in a number of other countries. Operations at the Trelleborg Group's plants primarily impact on the external environment through:

- utilization of natural resources (energy, water, raw materials and chemical products),
- emissions to air (solvents, vulcanizing fumes, dust, odorous substances),
- noise,
- solid and liquid waste.

Most of the Group's other production plants have permits dating back to the late 1990s. Fifteen or so plants are planning to renew or update their existing permits during 2002. The permit application for the plant in Höganäs in Sweden is still being processed. Infringements of specific permit conditions have occurred at individual plants in the US (wastewater, work environment) Sweden (odors, late environmental reporting), the UK (wastewater), Italy (noise, hazardous waste), Spain (work environment, waste, storage of hazardous substances), China (noise, wastewater), France (odors, noise), and the Netherlands (noise, odors, storage of hazardous substances, inadequate fire protection). None of these infringements prompted significant sanctions on the part of the authorities concerned. Surveys and cleanup of contaminated soil are in progress at about fifteen plants.

#### **Environmental objectives**

Group-wide environmental objectives for 2001 were to create more efficient environmental reporting, to produce a number of standards and control documents in the environmental area, to create networks and implement training and education, and to contribute to certification of the Group's plants pur-

suant to ISO 14001. The target for 2001 was for Trelleborg to have 35 certified units. We achieved a total of 36 certificates, but following the divestment or closure of three plants, the final total was 33 ISO 14001 certificates. For 2002 we plan to obtain certification for at least 15 units.

The various plants define their own short-term and long-term environmental targets and action plans. These are followed up not only at the local level but also through the Group's environmental reporting system. Examples of the most common objectives for 2002 are:

- introduction of ISO 14001,
- training and education in environmental and safety issues,
- · measures to achieve energy and water savings,
- reduced waste quantities and increased reuse of rubber waste,
- improved work environment and fewer work-related accidents,
- reduced atmospheric emissions, e.g. through the introduction of water-based technologies instead of solvent-based paints and adhesives.

Plant	Type of contaminant	Status  Extensive ourselve and decentemination				
Trelleborg I, Sweden	Heavy metals, solvents.	Extensive surveys and decontamination performed 1995-2000. Results of solvent decontamination being monitored via regular sampling. Small quantities of heavy metals remain in the area. Decontamination to be completed within 5 years.				
Trelleborg Trebolit, Sweden	Creosote contamination, probably dating from the beginning of the 20th century. Trelleborg AB took over operations in 1998.	Comprehensive surveys conducted during 2000, the results of which were communicated to the authorities. Decontamination methods, costs and financing currently being investigated. No industrial operations currently conducted at the plant.				
Rydaholm, Sweden	Oil and chemicals.	Cleanup implemented during 2001.				
Bor, Sweden	Oil.	No measures planned.				
Ridderkerk, Netherlands	Oil and solvents.	Decontamination initiated in 1992. Supplementary soil surveys in progress.				
Ede, Netherlands	Oil.	Two subterranean tanks removed, and decontamination initiated.				
Vejen, Denmark	Tar products in soil and groundwater.	The contamination in question occurred more than 30 years ago. Detailed surveys have been performed. Pilot trials using biological treatment techniques have proved successful. Installation of full-scale treatment equipment being discussed with the environmental authorities.				
Breuberg, Germany	Chlorinated solvents.	Decontamination initiated in 1989. Groundwater is pumped up and filtered.				
Hoogezand, Netherlands	Oil.	Decontamination in progress since 1998. Estimated completion in 2003.				
Herentals, Belgium	Chlorinated and non-chlorinated solvents. Contamination the result of previous operations on the site.	Decontamination initiated using techniques approved by the Belgian environmental authorities. Cleanup being financed by the previous owners of the plant. The plant has been divested by the Trelleborg Group.				
Evergem, Belgium	Oil.	Decontamination using the "pump and treat" method initiated. Estimated to be completed in 2003.				
Izarra, Spain	Hydrocarbons.	Remedial measures not yet planned.				
Santander, Spain	Zinc.	Remedial measures not yet planned.				
Carquefou (Polyspace, Soratech, Modyn), France	Oil, hydrocarbons and trichlor- ethylene.	Limited cleanup of oil. Decontamination performed in 2001. Measures concerning the other contaminants not yet determined.				
Carquefou (Prodyn), France	Solvents and oil.	Cleanup estimated to be completed during 2002.				
Tivoli, Italy	Chlorinated and non-chlorinated solvents in groundwater. Contamination due to previous operations on the site. Likely to be leaking subterranean tanks.	Highly detailed surveys conducted during 1998-2000. Decontamination initiated us- ing "pump and treat" method. Leaking tanks were removed.				
Asti, Italy	Chlorinated solvents.	Decontamination initiated.				
Hartville, OH, USA	Oil contamination discovered in a sampling borehole.	Measures not yet determined.				
Sandusky, MI, USA	Chlorinated solvents (1,1,1-trichloroethane).	Decontamination by means of "pump and treat" method in progress since 1987.				
South Haven, MI, USA	Solvents (xylene, ethylbenzene, chlorinated solvents).	Initial cleanup completed. Further decontamination measures planned for 2000-2005.				
Dawson, GA, USA	Chlorinated solvents (trichlorethylene).	Surveys performed. Decontamination not yet initiated.				
Toluca, Mexico	Oil.	Decontamination completed during 2001.				

## Utilization of natural resources

#### Soil-related issues

Contamination of soil and groundwater can threaten people, animals and vegetation. Pollution of drinking water can result in the water no longer being usable for either irrigation or drinking. Contaminated industrial sites can interfere with town planning and prevent the utilization of previously industrial areas for other purposes. In many countries, therefore, the environmental authorities are taking measures to survey and clean up contaminated industrial land. Examples of such countries include Sweden, the Netherlands, Belgium and the US. Stricter legislation, high decontamination costs and increasing environmental awareness mean that many companies are taking preventive measures to counteract soil contamination. Trelleborg, for example, surveys the soil and groundwater situation in conjunction with the acquisition of companies.

The soil situation has been examined at many of Trelleborg's plants, and various types of soil and groundwater contamination have been identified in a number of cases. Contaminants such as heavy metals, oils and solvents reflect the long history of the rubber industry, and cleanup measures have been either initiated or already completed at many plants. The table below provides an overview of the current situation. Plants that are not on the list can be regarded either as fully cleaned up or as not yet examined for contamination. Decontamination costs are reported in the "Environment and Finance" section of this environmental report.

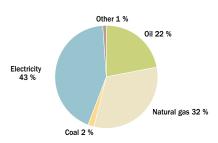
#### **Energy use**

Energy consumption is relatively high in the rubber industry, which often entails the use of nonrenewable resources such as coal, fuel oil and natural gas. Within Trelleborg, a variety of energy sources are used for heating, ventilation, cooling, processing, running equipment, and transportation. The Trelleborg Group's total energy consumption during the year (transports not included) came to 1,135 GWh (1,012), of which oil accounted for 247 GWh (213), electricity 485 GWh (415), natural gas 370 GWh (354), and other sources 34 GWh (30). Compared with the preceding year, consumption was about 15% higher in 2001. The increase in energy con-

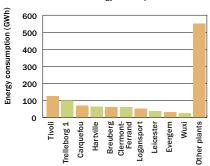
sumption is due to increased production and a number of acquisitions of polymer-based operations. The share of energy use attributable to natural gas fell somewhat, while that of oil increased. Coal utilization increased due to the acquisition of plants in China and Australia. The share attributable to renewable energy sources is virtually non-existent. Studies and measures designed to enhance energy efficiency were implemented at several installations.

Electricity is purchased from energy companies in the countries where Trelleborg operates. An overall survey of how electrical energy is produced shows that fossil fuels predominate in countries such as the UK, the US and Singapore, nuclear power in France, and hydroelectric power in Sri Lanka and Mexico. The proportion of renewable sources, such as wind power and biofuels, is very low in the countries where Trelleborg has production plants.

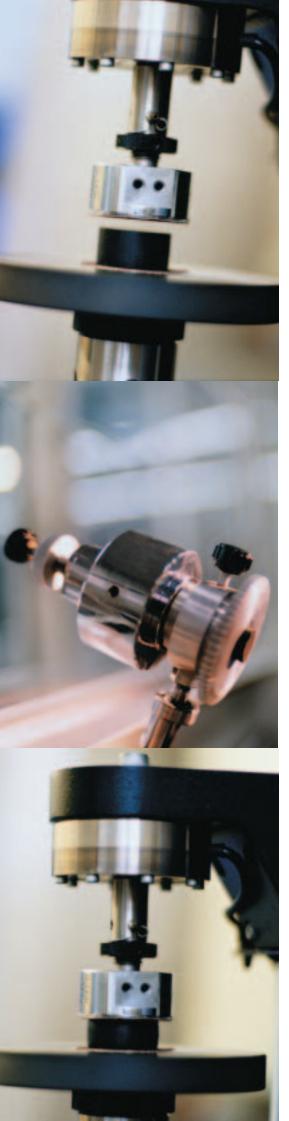
#### Energy consumption distributed by energy source



Plants with substantial energy consumption



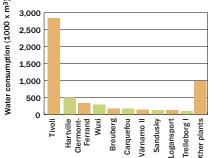




#### **Water consumption**

Water is employed at Trelleborg's plants for cooling, cleaning, degreasing metals (phosphatizing), and sanitation. During 2001, the Group's plants consumed 5.7 million m³ (5.4) of water. Some water is purchased from municipalities or cities, but approximately 95% is pumped from the Group's own wells or watercourses in the vicinity of the plants. Consumption has been reduced at some plants by installing cooling-water recirculation systems and closed phosphatizing equipment, but is still very high at other plants, such as Tivoli (Italy) and Hartville (US).





## Raw materials and chemical products

The production of rubber and other polymers entails the use of a wide range of raw materials and chemical products. Some of these can cause harm to both people and the environment. Within Trelleborg the following raw materials and chemical products predominate (approximate use in 2001):

- Natural rubber 47,200 tons
- Various types of synthetic rubber 66,400 tons
- Plastics 14,000 tons
- Softeners 11,600 tons
- Solvents 1,500 tons
- Paints, glues and adhesives 1,300 tons
- Zinc oxide 3,000 tons
- Diisocyanates 190 tons
- Recovered materials used as raw materials (rubber, plastics) – 5,600 tons

In the "A life-cycle perspective on rubber" section of this report we provide an overall perspective on the environmental impacts of

the most important raw materials. With regard to metals, it can be stated that, apart from steel, zinc is the metal used in the largest quantities in the rubber industry. In the form of zinc oxide and other compounds, zinc appears in most rubber products. Among other problems, zinc is toxic to aquatic organisms, and the authorities have drawn attention to the spread of the substance in nature via tire wear on roads. The possibilities for replacing zinc in rubber products are currently regarded as limited. Lead used to be commonly used, but its use has declined. However, some types of rubber hoses are still vulcanized using heated lead in closed systems. Cadmium, copper, chromium and other heavy metals are used in certain applications.

Organic substances are employed in the vulcanization process in the rubber industry in order to give products the desired properties. Examples of the substance groups in question are accelerators, softeners, antioxidants and flame-retardant materials. Many of the substances have characteristics that are potentially harmful to health and the environment, and can be categorized as "organic environmental toxins." The table on the next page provides an overview of some of these substance groups and their properties.

By wholly phasing out certain chemicals, or by only using them in limited quantities within closed systems, the risks to people and the environment are reduced. Examples of substances used to a decreasing extent at Trelleborg include heavy metals, chlorinated solvents, and certain antioxidants and accelerators. Sometimes, it is difficult to effect desired changes, since product attributes may significantly deteriorate when replacement substances are used. However, examples of areas where good results have been achieved are reduction of the zinc oxide concentration in certain rubber mixes, the use of HA oils (softeners) with a low PAH concentration in some products, and the introduction of nitrosaminefree vulcanizing systems.

The most widely discussed application area for HA oils is their use in car tires. Studies have shown that tire wear on road surfaces spreads rubber particles. Trelleborg does not manufacture car tires, and the spread of wear residues from the tires of tractors and forest machines is not regarded as being so extensive. We also use HA oils in products such as

rubber sheeting, where the risk of substances spreading to people and the environment is regarded as limited. Trelleborg uses HA oils at approximately 25 of the Group's 80 or so plants. In total, we use about 11,600 tons of oils as softeners. Of these, approximately 54% are of the old type, with high concentrations of polyaromatic hydrocarbons. A number of plants have switched to so-called "environmental oils," which are HA oils with a low aromatic content. About half of the oils have been replaced, and substitutions have been effected in products such as the treads of tractor tires, window seals, and rubber garments. The trend at many of the Group's plants is for the use of environmentally compatible oils to increase. A few years ago they comprised only a small proportion of total use, but increased environmental awareness, demands from customers and stricter legislation have resulted in increased use of environmentally compatible softeners by Trelleborg.

Since 1997 Trelleborg, together with ten other companies and organizations, has participated in the Thematics Network. This is an EU project, the aims of which are to spread information and reduce chemical-related health risks in the rubber industry. A dozen or so areas have been considered in the project, such as:

- Chemicals that are prohibited or may come to be prohibited. Threat or opportunity for the rubber industry?
- How to avoid the formation of nitrosamines.
- Replacement of HA oils.
- Dust, aerosoles and odors generated by rubber
- How to reduce the use of solvents in rubbermetal bonding.
- · Waste reduction through recovery and reuse.
- · Latex allergies.

In most of the areas studied, the Thematics project has been able to demonstrate that there are excellent prospects for reducing the hazards in the work environment and the external environment by modifying mixes or through other measures. In some areas, such as the introduction of nitrosamine-free vulcanizing systems, considerable progress has already been made.



Function category	Substance group (example of substance in brackets)	General assessment of environ- mental and health properties				
Accelerators	Dithiocarbamates (Ziram)	<ul> <li>May be toxic for aquatic organisms.</li> <li>May form carcinogenic nitrosamines.</li> <li>May be allergenic.</li> </ul>				
	Thiazoles (MTB)	<ul> <li>May form carcinogenic nitrosamines.</li> <li>May be allergenic.</li> <li>May be toxic for aquatic organisms.</li> <li>May be persistent in the environment.</li> </ul>				
	Thiocarbamides (ETU)	<ul> <li>May be toxic.</li> <li>Suspected as carcinogenic, and having teratogenic and reproduction-toxic properties.</li> <li>May be allergenic.</li> <li>May be persistent in the environment.</li> </ul>				
	Thiramsulfides (TMTD)	<ul> <li>Toxic for aquatic organisms.</li> <li>May form carcinogenic nitrosamines.</li> <li>May be persistent in the environment.</li> </ul>				
Antioxidants	p-phenylenediamines (6PPD)	<ul><li> Highly toxic for aquatic organisms.</li><li> May be persistent in the environment.</li></ul>				
	Butylphenols (BHT)	<ul> <li>Highly toxic for aquatic organisms.</li> <li>May be persistent in the environment.</li> <li>May have high potential to bioaccumulate.</li> </ul>				
Flame-retardant materials	Chlorinated paraffins	<ul> <li>Persistent, bioaccumulable.</li> <li>Create environmentally hazardous transformation products.</li> <li>Toxic for aquatic organisms.</li> </ul>				
Softeners	Phthalates (DEHP)	Suspected of having reproduction- and hormone-disturbing properties.     Some may bioaccumulate.     May be toxic.				
	HA oils	Contain carcinogenic PAHs. May be persistent. May have the potential to bioaccumulate. May be toxic.				

## **Emissions** to air and water

#### **Emissions to air**

For historical reasons, a substantial proportion of the Group's plants are centrally located in urban areas, with residential buildings in the near vicinity. Examples include the rubber plants in Trelleborg and Värnamo (Sweden), Tivoli and Asti (Italy), Leicester (UK), and Logansport (USA). As a result, the rubber industry contributes to the pollution of urban air through emissions of vulcanizing fumes, solvents, dust, nitrogen oxides, sulfur oxide and other odorous substances. It is not uncommon for neighbors and the authorities to give their opinions on emissions from a rubber plant. Concentrations of health-hazardous substances in the immediate surroundings are generally regarded as low, but many people are disturbed by the characteristic odor of rubber fumes. The authorities have paid special attention to the composition of vulcanizing fumes and their impact on people and the environment. Vulcanizing fumes from the rubber industry contain both benzene and other air pollutants. In view of the fact that the fumes contain a large number of substances that are hazardous to the environment and health (albeit in low concentrations), the principle of prudence has been employed and companies have increasingly been required to install air-cleaning equipment. Air-cleaning equipment is now installed at many of the Group's plants, and during 2001 a substantial investment was made in an air-cleaning installation at Technical Composites in Trelleborg.

Total atmospheric emissions of solvents (VOCs) within the Group during 2001 amounted to about 1,390 tons (1,189), which represents an increase compared with 2000.

Total emissions of chlorinated solvents during 2001 amounted to 233 tons (122). The increase in the use and emissions of solvents was due to the fact that many of the operations acquired by Trelleborg Automotive employ them for rubberto-metal applications. At several plants, development efforts are being made to replace organic with water-based solvents. Many plants are now reporting reduced solvent consumption.

Emissions of the greenhouse gas carbon dioxide are caused primarily by the combustion of oil, coal and natural gas in the Group's energy plants, and transports by car, truck, aircraft and diesel-powered train. Total carbon dioxide emissions arising from energy use during 2001 were 146,400 tons (129,200). Although some of our plants have surveyed atmospheric emissions from transports, we do not currently have a full picture of the situation in this regard. Estimates indicate that carbon dioxide emissions from transports may be just as large as they are from energy use. During 2001, emissions of sulfur dioxide and nitrogen oxides (NOx) from energy production amounted to 455 tons (373)and 162 tons (136) respectively.

During the year, odorous substances prompted complaints from neighbors of the plant in Trelleborg. Following a comprehensive inquiry, we were able to establish that processes in the so-called "Hot-Stretch" plant were the principal source of odors. A program of measures presented to the authorities shows that changes of input chemicals combined with improvements to existing aircleaning equipment should reduce the odor nuisance. Use of ozone-depleting substances, such as CFCs and HCFCs, is relatively limited in the Group's production plants. The quantity installed amounts to a few tons.

Losses to the atmosphere amounted to less than 100kg during 2001.

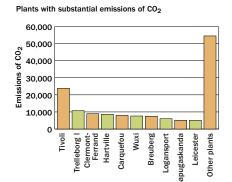
#### **Emissions to water**

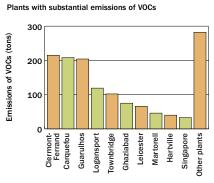
Measurements are taken at about 25 plants to monitor various wastewater parameters, usually including chemical oxygen demand (COD), nutrients (phosphorus and nitrogen) and metals (such as zinc, nickel and iron) are monitored. During the year, COD emissions came to approximately 475 tons. Total emissions of metals amount to a few tons a year. In many cases the plants are connected to municipal wastewater treatment plants. Internal wastewater treatment plants are installed at a number of Trelleborg's installations, such as Breuberg (Germany), Wuxi (China) Guarulhos (Brazil), Hartville (USA) and Martorell (Spain). No substantial problems relating to treatment plants or recipients were reported.

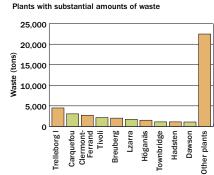
#### **Waste**

Annual world consumption of rubber is in the order of 15 million tons, of which natural rubber accounts for 38% and synthetic rubber for 62% About half of all rubber is used for the manufacture of car tires, while the remainder is used in a wide range of products. About 2 million tires are scrapped in Europe each year, and approximately 2.8 million in the US. Other rubber products also subsequently become waste, and the quantity of rubber waste worldwide is substantial.

Incineration of rubber waste is common in many countries. By using rubber as an auxiliary fuel in cement plants and heating plants, the fuel value of the waste is utilized. However, large quantities of rubber waste still end up as landfill. Recycling methods that are ap-







plied to some extent to tire and production waste include the reuse of scrap rubber in the form of a finely ground powder in various rubber materials, and the mixing of rubber waste into asphalt. To a limited extent, chemical recovery methods are employed. Examples of such methods include pyrolysis, devulcanization and the production of reclaimed rubber. The problem, however, is that vulcanization is an irreversible process, which hinders both the reuse of rubber material and the recycling of output material. Demands for technical solutions to deal with rubber waste will increase, since (within the EU) a ban has been imposed on depositing unsorted burnable waste in landfills. Since both non-vulcanized and vulcanized rubber belong to this waste category, the rubber industry can expect waste-management difficulties in a number of countries. The costs for waste management are also rising dramatically in some countries. From both a cost and an environmental perspective, waste issues are very important for Trelleborg and other polymer producers.

The total waste quantities within Trelleborg are substantial, and a large proportion goes to landfill. Some of Trelleborg's plants, however, have agreements with destruction installations where the rubber is burned and the energy it contains is recovered. In Sweden, worn-out agricultural tires are collected by a centralized collection system (Svensk Däckåtervinning). Packaging waste is collected in a similar manner in several countries in Europe. Trelleborg is affiliated to such systems in Sweden, Belgium and the UK.

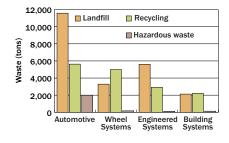
The Group's total waste during 2001 amounted to 43,400 tons (33,000), of which 22,600 tons (20,000) were disposed of as landfill. About 16,000 tons (11,100) were

source-sorted and either recycled or used for energy recovery. At the plants where metals are processed (e.g. Hadsten and Sävsjö), a significant amount of scrap metal was collected for recycling. Hazardous waste is managed via destruction at approved installations in the various countries where Trelleborg operates. During 2001, the total quantity of hazardous waste came to 2,400 tons (1,367).

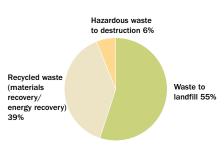
Waste issues have become highly topical. At most of the Group's plants efforts are being made to establish the composition of waste and to reduce quantities. There are also trials in progress of various methods for the reuse or recycling of rubber waste. Of the approximately 15,300 tons of rubber waste that were generated during 2001, 55% went to landfill. The proportion of waste that was recycled into new products within Trelleborg was small (3%), but about a quarter of the Group's rubber waste was acquired by outside companies for various kinds of reuse. At plants whose production is predominantly based on plastic products, waste quantities are significantly smaller. At some plants, recycled material is a substantial component of new products. At Rechlin, fenders are manufactured from recycled polyethylene plastic. At Fillite (Runcorn) the raw material consists entirely of material that can be regarded as a waste product - in this case, fly ash from coal-fired power stations, which is acquired by Fillite and transformed into so-called "cenospheres" for use, among other applications, as a filler in the cement industry.



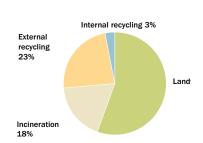
#### Waste categories in different business areas



#### Waste-management methods



#### Managing rubber waste



#### Sustainable development and social issues

Sustainable development has been defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Sustainable development can be regarded as involving a balance between economics, social factors and the environment. At many places in this environmental report we show how the Group endeavors to reduce the environmental impacts of our significant environmental aspects.

In a similar way many activities are being undertaken in the social arena. The concept of "social sustainability" is concerned with contributing to a better quality of life for all members of society. Many companies are now global and economically powerful, and can therefore have a substantial influence on environmental and social development in a particular region or country. In order to act in a manner befitting a "good corporate citizen," Trelleborg and other companies must understand the expectations and demands of society. At the same time, we must take account of the requirements of our customers, shareholders and employees. We report below on a number of our activities in the social area. Key social aspects for Trelleborg are:

- The health and safety of employees.
- Employees' personal development and participation.
- That the company is involved in a positive manner in the social development of the countries in which we operate. This may, for example, involve participation in networks, open relations with neighbors and local residents, financial support to various organizations, and collaboration with schools and universities.

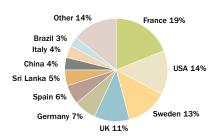
During 2001, Trelleborg continued to work on issues concerned with the links between economics, ecology and social issues. We also reviewed the Group's objectives and values so that these are adapted to the company's new profile and international orientation. Accordingly, prior to preparing this year's environmental report, we gathered the information needed to be able to analyze our activities in the social and ethical areas. The aim is to present the group's Code of Conduct and key policies on sustainable development and social responsibility during 2002.

#### Many changes in recent years

During 2000 Trelleborg had around 9,000 employees. Due to substantial acquisitions within Trelleborg Automotive the number of employees rose to around 12,300 during 2001, and the figure has now reached 16,200. The company now operates in more than 40 countries, and approximately 87% of its employees work outside Sweden. The proportion of women employees in the Group is 23%. The proportion of women in senior and middle management positions ranges between 0% and approximately 40%. At 30 plants the proportion of women in senior positions is less than 10%.

Continent	Employees 2001	Employees 2000
Europe	10,844	7,344
North America	2,587	2,728
South and Cer America	ntral 753	710
Asia	1,759	1,569
Other	236	46
Total	16,179	12,397

Geographic distribution of employees by country



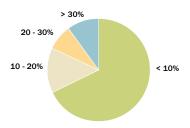
Fluctuations in business conditions, combined with company acquisitions and divestments can mean that a company increases or decreases its number of employees. During 2001, Trelleborg grew through substantial corporate acquisitions, but it was also forced to reduce its workforce at some units. During the year a number of production plants were closed and production of certain products was geographically redistributed. In conjunction with processes of change it is important that the people affected, both positively and negatively, receive satisfactory information about the changes in question. Many people find it easier to accept new circumstances if they understand why the changes are taking place. Accordingly, Trelleborg has placed great emphasis on healthy internal dialog with employees and trade-union representatives.

Personnel turnover (redundancies not included) ranges from 0% to more than 60% at the various plants. Most units show a personnel turnover of less than 10%.





#### Personnel turnover at plants



#### **Internal focus**

To maintain stability and expertise within an organization that is expanding and changing its operations requires not only information and training but also the recruitment of suitable people to senior positions. The Group's goal is to recruit at least 75% of all persons in senior positions internally. Each year, therefore, the Group's and business areas' senior executives survey the backgrounds, competencies and development prospects of various candidates. Suitable people can be offered the chance to broaden their experience by working in different parts of the Group.

#### **Training**

The Trelleborg International Management Program offers managerial training courses designed to enhance participants' skills and experience. The Trelleborg Academy provides a training package aimed at all employees. The package is web-based and interactive. It can be accessed from the Group's intranet, Trellnet2.

Specific courses of training in the work-environment and environmental areas are held at the Group's plants on a regular basis. During 2001 the number of training hours per employee averaged 4.3 (3.9). At the plants working on the introduction of ISO 14001, a substantial part of the training was devoted to the design and functioning of the environmental management system. Trelleborg Environmental Affairs runs courses in environmental management and environmental auditing and more than 100 specialists have taken part in the training programs. Following a written examination, they have been approved as internal environmental auditors.

#### **Universities and colleges**

Trelleborg has established well-functioning collaboration with universities and colleges in Sweden and other countries. During the year an international trainee program was arranged, during which six recent graduates in engineering and business administration worked within the Group. Collaboration with universities also encompasses research projects, disserta-

tional seminars and conferences during 2001. Among other activities, Trelleborg provided instruction in environmental management and auditing at various universities. During 2001 we sent several delegates to the Seventh European Roundtable on Cleaner Production in Lund. One of Trelleborg's presentations concerned a development project implemented at the plant in Tivoli in Italy.





## Examensarbeten och rapporter

- The rubber industry and extended producer's responsibility framework. LUMES, Lund University.
- Energy use and energi management in tyre manufacturing: The Trelleborg 1 Case. LUMES, Lund University.
- Labelling agricultural tyres at Trelleborg company: possibilities and constraints, LUMES. Lund University.

#### 2001

- Can the grey men go green? A study
  of the expectation gap between financial
  analysts and Trelleborg AB with regard to
  environmental reporting. Department of
  Economics, Lund University.
- Environmental reporting. Trelleborg AB as case study. LUMES, Lund University.
- Health and environmental risks from chemicals in the rubber industry

   a collection of examples. Ecological Department. Lund University.
- Energy survey at Trelleborg Agri. Malmö University.
- Activation of rubber crumb. ENEA Research Institute, Italy.

tions, study visits and instruction. A list of current scientific projects is presented below. Cooperation with the International Institute for Industrial Environmental Economics at Lund University has been intensified over the years. Several of Trelleborg's plants act as reference plants for students, and the Group's Vice President Environmental Affairs holds a professorship at the institute.

Over the past five years Trelleborg has contributed to the involvement in environmental issues of more than 100,000 secondary-school pupils in Sweden through its sponsorship of educational materials. The results of Trelleborg's environmental work were presented at a number of national and interna-

## Global Environmental and Ethical Partnership

Together with some 25 companies and other organizations, Trelleborg is participating in the newly initiated Global Environmental and Ethical Partnership (GEEP). GEEP provides a forum for companies and local-government and other organizations to collaborate with the university world and other suppliers of knowledge, with sustainable development in focus. The aims of GEEP are to create dialog and spread knowledge and research aimed at promoting innovative thinking and to develop new strategies in response to the challenges surrounding the concept of corporate citizenship.

#### Social responsibility

Within the Group, a variety of activities are being pursued in which both employees and the community become involved in environmental and social issues. Here are some examples:

- During the year many plants arranged open-house activities and participated in various networks in the environmental and other areas. We also hosted a number of study visits from schools and universities.
- Equality programs operate at the plants in Sweden.
- Trelleborg is co-owner of a company in the USA (Dawson) whose principal owner belongs to an ethnic minority.
- During the year surveys of work, satisfaction in the workplace and other work-environment issues were performed at 17 units, including Singapore, Sapugaskanda, Kalmar and Vejen.
- A number of plants participated in or sponsored specific projects; examples include Ghaziabad (an AIDS project), Vihti (ambulance helicopters) and Trelleborg Automotive USA (Red Cross).

#### **Responsible Care**

Trelleborg is affiliated with the chemical industry's international environmental program, Responsible Care. The Group submitted environmental data during the year to the chemical industry's joint environmental reporting organization for Sweden. We also take part in various networks within the framework of Responsible Care.



## Industry associations and networks

Through its involvement in industry associations in various countries, Trelleborg cooperates with other industrial concerns in a range of environmental activities. Examples of the associations and networks in which Trelleborg is represented include the environment committee of the Swedish Rubber Industry Association (SGI), the health and environment committee of the Association of European Rubber Manufacturers (BLIC), the environment committee of the Association of Swedish Chemical Industries, GEEP, and Environmental Auditors in Sweden. A number of industry associations conduct extensive research and development projects in the environmental area and function as reference groups for new legislation and other development work in the health and environment area.

## Work environment aspects

Working with rubber and other polymers entails exposure to work environments that can give rise to both injuries and illnesses. Work environment aspects of special interest are:

- Exposure to chemicals, solvents and vulcanizing (rubber) fumes.
- Heavy lifting and repetitive tasks.
- Noise.
- High temperatures in work premises and burns from hot equipment.
- Cuts and crushing injuries.

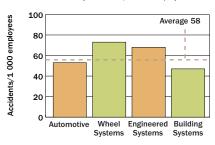
Ways of reporting occupational injuries and diseases are often governed by the legislation that applies in different countries, and global definitions of work-related accidents and diseases are not universally applied. Within Trelleborg we produce work-related injury statistics by clearly defining which absences can be regarded as work-related. We also employ reporting parameters that can be translated from the reporting systems in the various countries in which we operate. Nevertheless, it has to be admitted that it is extremely difficult to provide fully reliable statistics on occupational injuries and illnesses.

#### **Accidents**

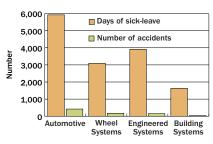
During 2001, 769 (597) employees suffered work-related accidents that resulted in more than one day's absence from work. Total reported absence caused by work-related accidents amounted to around 15,000 (22,400)

days. The number of work-related accidents leading to more than one day's absence from work per 1,000 employees came to an average of 58 (54). Seventy outside contract workers and temporary employees suffered accidents while working at Trelleborg's plants. The accident rate varies between business areas. Wheel Systems has the highest rate, with 73 accidents resulting in absence per 1,000 employees. However, the accident rate in Wheel Systems fell during the year by approximately 30%. Building Systems has the lowest number of accidents.

Accidents with >1 day sick-leave/1 000 employees



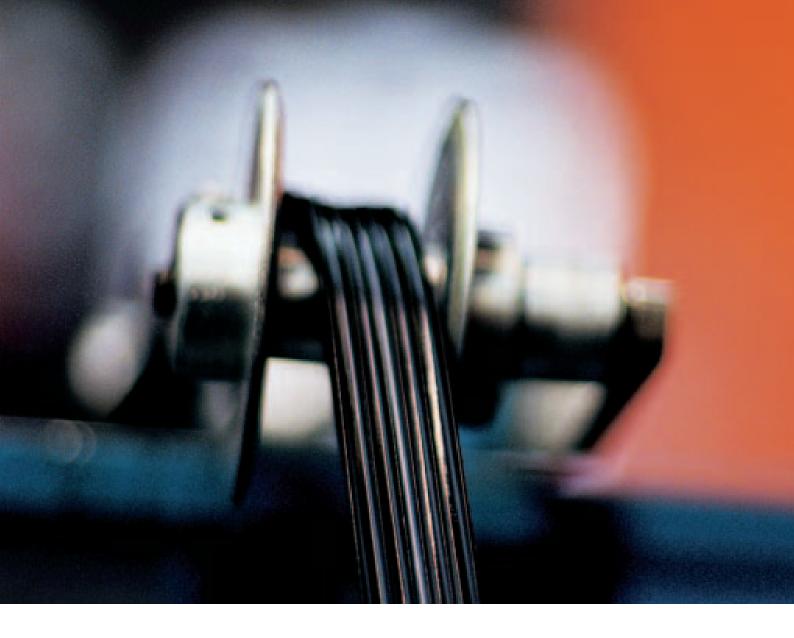
Numbers of accidents and days of sick-leave



Two very serious accidents occurred during the year. One was at the Norregård plant (Värnamo II), where a woman employee became trapped in a machine. The emergency procedures functioned as planned, and rescue and crisis management were handled in an exemplary manner. The employee in question has now partially recovered, and the prognosis is good. As a result of the accident, a comprehensive risk-analysis program, covering all items of equipment, is currently being implemented. At the plant in Tivoli a contractor fell 12 meters though a roof skylight. He was seriously injured, but his condition is now improving.

Fortunately, most work-related accidents are not serious. In many cases they occur during manual work, and consist of cuts, burns and crushing injuries. Causes of accidents include incorrect use of tools and equipment, neglect of safety instructions, defective machine safe-





guards, and inadequate securing of equipment during maintenance and repair. A number of accidents have been caused by internal transports, such as fork-lift trucks. In all business areas, efforts are being made to reduce the number of work-related accidents. There are safety committees at around 95% of the Group's production plants.

#### **Work-related illnesses**

During 2001, 203 (211) cases of work-related illness were reported within the Group. The majority of these related to the locomotive organs and resulted from strain-related injuries. Some illnesses were caused by exposure to chemical products, and involved, for example, allergies and other reactions due to oversensitivity. Cases of impaired hearing and other medical conditions were also reported.

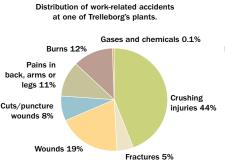
#### Health hazards in the rubber industry

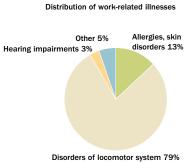
Attention was first drawn to the link between health risks and working in the rubber industry many years ago. The incidence of certain cancers aroused special interest among researchers and companies in the industry, and resulted in many countermeasures being taken to reduce the risks. Examples of such measures include improved ventilation, the replacement of some hazardous substances, and the increased use of personal safety equipment. Despite all the measures and major research efforts, there are still a number of important unresolved issues concerning possible connections between certain illnesses and the work environment in

the rubber industry. Despite the 50 or so

epidemiological studies that have been performed since the 1970s, it has not been possible to identify the chemicals that have given rise to the increased cancer rate in the rubber industry. One of the problems is that so many different substances occur in the work environment that it is difficult to gain an overview of exposure to these substances.

Over the years, Trelleborg's plants have participated in a variety of scientific studies of the work environment. The Institute of Occupational and Environmental Medicine at Lund University is currently conducting research







into morbidity in the rubber industry in Sweden. The research project has been in progress for about a year and is focusing on the following areas:

- The use of advanced analysis techniques to investigate exposure and exposure paths relating to chemical substances in the work environment. In this area, in collaboration with Dutch researchers, a variety of biological markers have been investigated (such as phthalates, aniline and nitrosamines). Both air measurements and analyses of urine samples from exposed persons have been performed.
- Epidemiological surveys to study tumorrelated illness and deaths from heart, vascular, lung and nervous conditions. A database has been set up covering around 17,000 people who work or have worked in the rubber industry, and this database has been cross-referenced with databases recording tumors and causes of death. Within the framework of an EU project, exposure data is being gathered from five countries to enable researchers to estimate exposure conditions in the past (retrospective exposure assessment).
- Studies of effects on reproduction, and certain respiratory diseases. During the spring of 2002, a total of around 150 people will be examined. Among other areas, studies will focus on exposure to specific substances in the work environment (such as benzene, carbon disulfide and aromatic amines), work conditions, smoking habits, allergies, lung function, illnesses and work-related symptoms
- Investigations of illnesses caused by heavy lifting and other sources of strain. A total of around 70 people working in the mixing department have been investigated by means of interviews and questionnaires, and also through clinical examinations of the neck, shoulders, elbows and hands. Direct measurements of physical workload have been performed on ten people, each during an entire shift.

Results of the studies will be reported in future environmental reports as they become available.

## Products and the environment

Demands from Trelleborg's customers for information concerning the environmental and health properties of products have increased. This applies primarily to the automotive industry, but also to the construction industry. Companies like Ford, GM and Toyota now require information on the content in polymers of substances that are hazardous to health and the environment. Accordingly, a large number of Trelleborg's plants produce environment-related product information, or supply information via the customer's net-based data-collection system. In the case of certain specific chemical products, Trelleborg provides product-safety sheets.

#### **Environmental products**

Trelleborg manufactures a number of products that have favorable properties from an environmental perspective. Noise and vibration are well-known problems in cars and other vehicles. Trelleborg Automotive produces a number of products that reduce vibration and noise. Examples of such applications include:

- Shims that prevent squeal from disk brakes on cars. Trelleborg is the world leader in this area.
- Suspensions and antivibration systems for cars and trains.
- A new product Durolam that is acoustically virtually "dead." By combining rubber and steel in a sandwich structure, it is possible to manufacture camshaft covers and oil sumps that dramatically reduce engine noise.
- Other new products include the antivibration systems manufactured by Novibra, which are used in Danish wind turbines.

Trelleborg Building Systems manufactures rubber and plastic sealing strips for windows and doors that yield environmental gains in the form of energy savings and noise reduction. The positive characteristics of rubber sheeting include its ability to provide a durable membrane that is impermeable to both air and water. Accordingly, rubber membranes are used to create artificial ponds for drinking water and also as sealing layers to cover waste tips. Bitumen-based roofing felt is manufactured in Vejen and Höganäs. All of these products have been progressively made more environmentally compatible through resource savings in terms of both raw-materials consumption and transport requirements.

For many years Trelleborg Wheel Systems has manufactured low-pressure tires for use on forest and agricultural machines. The low air pressure reduces the risk of compacting the soil layer under the weight of the machine, which is advantageous from a soil-conservation perspective. Trelleborg also manufactures chemical- and fire-resistant clothing that protects rescue personnel during fire-fighting operations and when dealing with chemical accidents. Sorbothane in Kent manufactures special gloves and other equipment to provide protection against vibration when using hand-held power tools.

#### **Producer responsibility**

Since producer responsibility applies to tires in several countries, Trelleborg pays fees to systems for the collection and proper disposal of worn-out tractor tires. In Sweden, more than 90% of all tires are disposed of through such a system. Producer responsibility for packagings applies within the EU, and the Group's various companies pay charges to the organizations that gather used packaging materials, such as REPA in Sweden, Val-I-Pak in Belgium, and Valpak in the UK.

## **Transports and the environment**

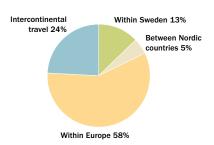
Road transport is the most common method of transporting raw materials and finished products, both outside and inside the Trelleborg Group. In the case of many of the Group's plants, more than 90% of transports are effected by truck. A limited quantity of goods is transported by rail, sea or air. A series

of measures have been taken to reduce the environmental impact of transports, and a number of plants now require transport companies to have a documented environmental program or environmental management system. Some plants in Sweden have estimated their transport-related carbon dioxide and nitrogen oxide emissions. Emissions generated by transports from these plants were of the same magnitude as those from energy consumption.

#### **Business travel**

Analysis of the journeys procured by the Swedish purchasing organization shows that air travel predominates within the Group (accounting for around 96% of costs). Trains, boats and car rentals are used only to a limited extent (4%). The major portion of flights are within Europe (58%), while 24% relate to journeys between Europe and other continents.

Geographic distribution of air travel



## **Suppliers and the environment**

Interaction between supplier and customer is very important with regard to quality and environmental issues. The environmental performance of the raw materials, products and services procured by Trelleborg impacts indirectly on the entire Group's own environmental performance. Examples of products and services of special interest are natural and synthetic rubber, chemicals, energy, and transports. Naturally, we are also interested in the work environments and social conditions at our suppliers' plants. Various activities relating to the interaction between Trelleborg and its suppliers are under way:

- ISO 14000 is now in effect at a substantial number of Trelleborg's plants. One requirement of the environmental management system is that environmental issues be considered when goods and services are procured. This is often coordinated with the assessments of suppliers made as part of quality-related work. At approximately 30% of the Group's plants, environmental matters are considered in contracts with suppliers. Around 26% of the plants appraise their suppliers by means of questionnaires or environmental audits.
- We take account of environmental aspects in the procurement process for goods shipments and business trips (in Sweden).
- As part of the Group's work on chemical safety issues, assessments are made of the chemicals' health-related and environmental properties. Chemicals giving rise to special hazards are phased out, or detailed information and safety requirements are imposed on suppliers.

## When things did not go as planned

During 2001, a total of 63 (33) fires, spillages or other uncontrolled emissions to the envi-



ronment were reported. All the incidents were restricted in scope, and impacts on people or the environment were negligible. A number of minor fires could be extinguished on site by production-process personnel. At the production units, 65 (42) complaints were received during 2001 from neighboring residents or other persons inconvenienced by our plants. The complaints primarily concerned odors (50 complaints) and noise (11 complaints). At Trelleborg I, located centrally in the community of Trelleborg, there were 45 complaints concerning offensive odors. The odors were primarily associated with the so-called "hotstretch" process and odor-reducing measures are to be taken during 2002.

## Environment and finance

During 2001, costs and investments related to the external environment and the work environment amounted to a total of approximately SEK 131 M. Costs for energy and water amounted to approximately SEK 373 M, and costs for soil and groundwater decontamination to about SEK 6 M. No substantial provisions for environmental measures were allocated during the fiscal year.

Costs and investments	SEK M
Environment-related costs	70.4
Environment-related investments	60.8
Costs for energy and water	373.0

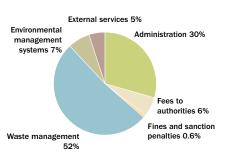
#### **Environment-related costs**

The administrative costs for environmental work amounted to SEK 70.4 M, which corresponds to around 2% of the costs for sales, administration and research (SAR). Administrative costs include expenses for environmental departments, permit applications, fees paid to authorities, costs for the introduction and maintenance of environmental management systems, and purchased consulting services. During the year, the Group paid out around SEK 36.2 M for the handling, transportation and disposal of waste.

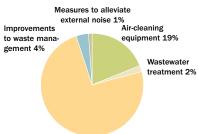
#### **Environment-related investments**

Total environment-related investments during 2001, including treatment plants, preventive measures and work-environment improvements, came to SEK 60.8 M, which corresponds to around 6% of the Group's total investments. Major investment expenditures were made in the plants at Loganport (water treatment); Trelleborg I and Morganfield II (air purification); Benton Harbor, Hemse, Tivoli, Trelleborg I, Örebro, Rethel and Clermont-Ferrand (work environment); and Hartville and Bor (waste management).

Distribution of environment-related costs



#### Distribution of environment-related investments



Improvements to work environment 74%

#### Savings

Savings are often one of the results of the introduction of ISO 14000 – for example due to the more efficient utilization of energy and water, reduced quantities of waste and the reuse of recovered materials. Savings during 2001 amounted to around SEK 8 M.



Trelleborg Automotive is the Group's largest business area, and had approximately 9,300 employees at year-end 2001. Trelleborg has manufacturing plants in Sweden (Kalmar, Sjöbo), the UK (West Thurrock, Admiral, Leicester, Coventry, Trowbridge), Germany (Breuberg, Nastätten), Spain (Barcelona, Burgos, Pamplona, Cascante), France (Chemaudin, Carquefou, Witry Les Reims, Rethel), Italy (Asti), Turkey (Cerkezhöy), the US (Kent, Peru, Logansport, South Haven, Benton Harbor, Sandusky, Dawson, Carmi, Morganfield, Salisbury), Mexico (Toluca), Brazil (Guarulhos), India (Ghaziabad), and China (Wuxi). There are research and development centers in Germany, France and the US.



# Environmental organization and environmental management systems

Each of the various plants has an environmental coordinator. Within Automotive USA there are specialists with overall responsibility for permits, work environment and safety issues. The business area has ten plants that are certified in accordance with ISO 14001. During the year Prodyn (Carequefou, France), Morganfield (USA), Martorell (Spain) and Sjöbo (Sweden) all obtained certification. Two certificates ceased to apply during the year due to closure of the units in Neumünster (Germany) and Peterborough (UK). The automotive industry in both Europe and the US is now demanding that suppliers be environmentally certified in accordance with ISO 14001. For this reason, work on introducing environmental management systems has been given high priority. Four plants are planning to obtain certification within 6 months, six within 6-12 months, and four within 12-18 months.

#### **Environmental performance**

Trelleborg Automotive has about 40 producing units, a number of which are large. Thirteen plants have more than 250 employees,

and five have more than 400. Energy consumption and emissions of greenhouse gases (CO<sub>2</sub>) are therefore considerable. The business area also predominates within the Group in terms of atmospheric emissions of solvents and waste quantities. The accident rate is below the Group average.

#### Important events during the year

At the plant in Kalmar (Rubore) energy consumption per m² of produced materials fell by about 3%. In Sjöbo there was a reduction in heavy lifting in the work environment, and also reduced energy consumption. Prodyn obtained an award from the city of Carquefou for its environmental work, and the Leicester plant earned recognition from the British Safety Council for its safety work. Trichloro-

ethylene use was reduced in Trowbridge,
Leicester and Ghaziabad. Solvent emissions
were reduced in Coventry, Morganfield and
Carmi. At the units in Cascante, Carquefou,
Guarulhos, Benton Harbor, Salisbury, Peru
and Toluca, measures were taken to improve
safety in the workplace. The Pamplona plant
improved its waste management, took energysaving measures, and phased out hazardous
chemicals. At the Wuxi plant, all employees
were given health examinations. Waste-related
projects were implemented at many plants,
including Martorell, Cerkezhöy, Kalmar,
Witry Les Reims, Rethel and Carquefou.

#### Key figures

Energy consumption
Water consumption

Emissions of VOCs to air

Recycled waste

Landfilled waste

Accident rate
ISO 14001 certificates

530 GWh (47% of Group total)

1,288,670 m<sup>3</sup> (22% of Group total)

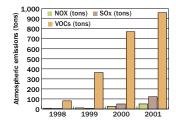
960 tons (69% of Group total)

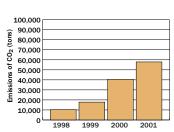
5,630 tons (36% of Group total)

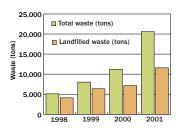
11,600 tons (51% of Group total)

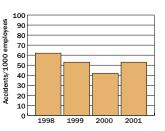
53/1,000 employees (Group average: 58/1,000)

10 (30% of Group certifications)









#### **Environmental data 1999-2001 for Trelleborg Automotive**

Plant	Num	ber of empl	oyees		Energy (GW	'h)		Water (m³)		١	VOCs (tons)			CO, (tons)	
	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999
Kalmar	87	80	65	5,4	5,9	5,5	620	570	540	21,5	19,5	8.0	902	1017	928
Sjöbo	83	112	96	13.9	15.4	16,3	3840	2610	8350	17.0	17,0	17,5	1461	1571	1721
Triton 1)	75		-	11,5	10,4	10,0	11200	2010	-	0	17,0	17,0	1260	1071	1/21
Admiral 1)	200	_	_	10,5	_	_	18300	_	_	10.1	_	_	1470	_	_
Leicester	314	402	363	35,8	30.4	34,5	33700	93200	93900	65,5	63,9	69.4	5081	3998	4798
Coventry	231	208	-	11.5	18.9	-	23900	83200	-	3.1	4,4	-	757	1974	-7750
Trowbridge	300	273	310	13.4	12.7	17.8	32200	33130	44370	102	127	68.4	7	790	1006
Breuberg	621	630	-	59,9	52.2	-	170170	161090	-	6.0	6.0	-	7447	6499	_
Nastätten	75	75	_	2,6	2,4	_	1020	1030	_	0	0	_	277	0	_
Martorell	180	178	169	6.0	5.9	5.7	4030	7000	9000	46.3	50.7	48.3	3	52	110
Burgos	66	66	67	3,4	3.6	3.6	1960	1780	1630	0	0	0	156	221	212
Cascante	92	-	-	4,6	-	-	2070		_	0	_	_	34		
Pamplona	259	_	_	9.1	_	_	26400	_	_	0	_	_	0	_	_
Chemaudin	162	_	_	10.3	_	_	16960	_	_	4.4	_	_	522	_	_
Modvn 2)	414	_	_	3,8	_	_	13300	_	_	211	_	_	0	_	_
Soratech 2)	483	_	_	50.6	_	_	152100	_	_	1.6	_	_	7996	_	_
Polyspace 2)	195	_	_	9,2	_	_	2250	_	_	0	_	_	0	_	_
Prodvn 2)	72	_	_	4.0	_	_	2270	_	_	Ö	_	_	0	_	_
Witry Les Reims	256	_	_	9,3	_	_	6230	_	_	6.0	_	_	104	_	_
Rethel	164	_	_	4,3	_	_	800	_	_	1.0	_	_	157	_	_
Poix Terron	80	_	_	5,8	_	_	4420	_	_	_,-	_	_	_	_	_
Asti	92	_	_	3,0	_	_	1100	_	_	0	_	_	1235	_	_
Cerkezhöy	140	_	_	9,6	_	_	20700	_	_	0	_	_	1537	_	_
Kent	67	22	_	1,4	0.4	_	510	0	_	1.0	1,0	_	149	14	_
Peru	290	297	-	22,6	24,5	-	10900	29360	_	4,7	31,5	-	1615	1586	-
Logansport	434	520	_	51,9	59.1	_	119050	117700	_	119	198	_	6016	7157	_
South Haven	125	137	119	4,3	4.1	3,8	11260	4400	5800	0.1	0,8	0	263	253	252
Benton Harbor	121	120	120	15,0	8.0	5,7	5440	8780	18400	0,2	0,2	0,2	989	416	512
Sandusky	306	342	332	24,9	30,8	27,5	130100	124480	153800	18,3	24,0	19,2	2928	3925	3394
Dawson	164	195	190	10,8	10.7	11,2	22980	50220	86300	0,8	1,7	8,3	853	857	1027
Carmi I 3)	68	60	56	10,7	11.8	11,0	5780	5630	6100	0	O	0	523	710	760
Carmi II	135	148	142	7,1	9.4	8,7	31840	29640	36800	7.7	18,5	16,5	1021	1212	1008
Morganfield I	273	180	183	15,9	16.7	16,1	42370	46290	47669	2,4	5.1	17,3	1324	1499	1434
Morganfield II 4)	81	_	_	5,5	_	_	610	_	_	20,0	-	-	3264	_	-
Salibury	33	-	-	1,5	-	_	680	_	-	0	-	-	9	-	_
Toluca	161	140	115	5,2	4,2	3,3	6140	4460	5260	9,3	4,4	1,9	0	0	0
Guarulhos	385	466	_	13,7	13.9	_	66300	69120	_	204	118,0	-	195	200	_
Ghaziabad	127	_	_	4,1	_	_	6030	_	_	75,2	_	_	795	_	-
Wuxi	649	703	-	25,8	19,0	_	283250	125000	-	5,3	0,9	-	7639	6110	-
				,,,,	-,-					,,,,	-,-				

Plant	Total waste (tons)			Hazardous waste (tons)			Landfilled waste (tons)				Accidents/ 00 employed	es	Uncontrolled emissions, spillages, fires			
	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999	
Kalmar	614	551	455	3,6	3	4	46	68	174	11	38	31	0	0	0	
Sjöbo	345	407	316	0	0	0	17	23	23	84	188	52	0	1	0	
Triton	433	-	-	0	-	-	214	-	-	67	-	-	0	-	-	
Admiral	652	-	-	2	-	-	650	-	-	75	-	-	2	-	-	
Leicester	466	584	886	76	84	117	390	500	769	73	47	83	6	12	0	
Coventry	268	63	-	4,2	2	-	250	60	-	35	10	-	0	0	-	
Trowbridge	1099	661	200	138	103	42	711	558	137	57	26	700	4	5	0	
Breuberg	2013	1363	-	396	231	-	146	263	-	51	33	-	7	0	-	
Nastätten	26	0	-	0	0	-	0	0	-	93	53	-	0	0	-	
Martorell	288	288	211	37,6	45	55	200	227	101	150	158	89	0	0	0	
Burgos	269	189	337	0,8	0	0	256	184	322	88	91	100	0	0	0	
Cascante	506	-	-	12	-	-	483	-	-	141	-	-	0	-	-	
Pamplona	674	-	-	31,3	-	-	554	-	-	99	-	-	0	-	-	
Chemaudin	468	-	-	123	-	-	13	-	-	167	-	-	0	-	-	
Modyn	1220	-	-	89	-	-	0	-	-	46	-	-	1	-	-	
Soratech	1277	-	-	97	-	-	350	-	-	54	-	-	1	-	-	
Polyspace	824	-	-	3	-	-	370	-	-	30	-	-	2	-	-	
Prodyn	114	-	-	0	-	-	76	-	-	82	-	-	0	-	-	
Witry Les Reims	816	-	-	12	-	-	405	-	-	43	-	-	2	-	-	
Rethel	324	-	-	1	-	-	99	-	-	24	-	-	0	-	-	
Poix Terron	370	-	-	365	-	-	2	-	-	150	-	-	0	-	-	
Asti	252	-	-	10,5	-	-	212	-	-	11	-	-	0	-	-	
Cerkezhöy	150	-	-	0	-	-	0	-	-	14	-	-	1	-	-	
Kent	301	51	-	0,1	1	-	280	50	-	28	0	-	0	0	1	
Peru	863	385	-	41	31	-	399	354	-	86	0	-	0	0	-	
Logansport	679	195	-	84	63	-	213	132	-	41	21	-	0	0	-	
South Haven	43	36	12	0	0	0	29	24	6	0	15	0	0	0	0	
Benton Harbor	612	710	946	0,2	24	22	612	650	847	49	25	8	0	0	0	
Sandusky	404	490	532	3	5	6	308	284	354	49	47	36	3	0	0	
Dawson	1069	1108	1179	0	38	28	959	932	1006	12	56	58	0	0	1	
Carmi I	553	557	419	1	1	1	472	495	372	36	0	241	0	0	0	
Carmi II	602	621	567	2	2	5	600	600	550	44	54	30	0	0	1	
Morganfield I	785	661	736	3	3	13	682	650	716	29	61	49	0	0	1	
Morganfield II	217	-	-	60	-	-	144	-	-	160	-	-	9	0		
Salisbury	52	-	-	0	-	-	37	-	-	30	-	-	0	-	-	
Toluca	420	297	183	0	32	0	353	265	144	68	50	87	0	0	0	
Guarulhos	512	483	-	114	69	-	303	378	-	29	52	-	2	2	-	
Ghaziabad	147	-	-	0	-	-	13	-	-	31	-	-	0	-	-	
Wuxi	452	695	-	0	-	-	450	250	-	3	1	-	2	0	-	

Plant	Certificates	Plant	Certificates	Plant	Certificates
Kalmar Sjöbo Triton Admiral Leicester Coventry Trowbridge Breuberg Nastätten Martorell Burgos Cascante Pamplona	ISO 14001, ISO 9001, QS 9000 ISO 14001, ISO 9001, QS 9000 ISO 14001, QS 9000 ISO 14001, QS 9000 ISO 14001, QS 9000 ISO 9001 ISO 14001, ISO 9001, QS 9000 ISO TS 16949, FORD Q1 ISO TS 16949 ISO 14001, ISO 9001, QS 9000 ISO 4001, ISO 9001, QS 9000 ISO 9001, QS 9000 ISO 9001, QS 9000 ISO 9000, QS 9000	Chemaudin Modyn Soratech Polyspace Prodyn Witry Les Reims Rethel Poix Terron Asti Cerkezköy Kent Peru Logansport	ISO TS 16949 ISO 14001, QS 9000 ISO 9000 ISO TS 16949 ISO 14001, ISO 9000, QS 9000 ISO 9000 ISO 9000, QS 9000 ISO 9001, QS 9000 ISO 9001, QS 9000 ISO TS 16949 ISO 9002 - QS 9000 QS 9000	South Haven Benton Harbor Sandusky Dawson Carmi I Carmi II Morganfield I Morganfield I Salisbury Toluca Guarulhos Ghaziabad Wuxi	QS 9000 ISO 9001, QS 9000 QS 9000 QS 9000 ISO 9002 QS 9000 ISO 14001, QS 9000 - - QS 9000 QS 9000 QS 9000 QS 9000 QS 9000 ISO 9001, QS 9000

<sup>1)</sup> West Thurrock

<sup>2)</sup> Carquefou

<sup>3)</sup> Carmi mixing plant

<sup>4)</sup> Dawson plant

# Trelleborg Wheel Systems

Trelleborg Wheel Systems has about 2,600 employees and manufactures wheels and wheel rims for forest and agricultural machines, as well as forklift trucks and other materials-handling equipment. The business area has manufacturing plants in Sweden (Trelleborg, Sävsjö), Denmark (Hadsten), Belgium (Evergem), the Netherlands (Hoogezand), Spain (Santander), Italy (Tivoli), the US (Hartville) and Sri Lanka (Walgama, Sapugaskanda). There is a research and development center in Italy (Tivoli).



#### **Environmental organization and** environmental management systems

There are environmental coordinators at all plants within Wheel Systems. Within the business area's Q-SHE Council, representatives of the units in Sweden, Belgium, Italy and the US collaborate and exchange knowledge and expertise with regard to ISO 14001, environmental performance, work-environment issues, and preventive safety work. Four plants within Wheel Systems are certified in accordance with ISO 14001. The units in Tivoli (Italy) and Hadsten (Denmark) obtained certification during 2001. Three plants are planning to obtain certification during 2002, and a further three within 12-18 months.

#### **Environmental performance**

The manufacture of tractor tires and other types of tires gives rise to substantial water and energy consumption, atmospheric emissions and waste. Wheel Systems is a relatively heavy user of chlorinated solvents. At two plants, scrap metal from machining processes is recycled, resulting in the business area showing the highest proportion of recycled materials of all Trelleborg's business areas. Work-related accidents are common, and the accident rate is the highest within the Group. Three of the plants have more than 400 employees.

#### Important events during the year

The plant in Trelleborg received a substantial number of complaints from neighbors concerning disturbing odors. Emissions of ammonia from the "hot-stretch" plant were suspected to be the main source of odors, and reducing the ammonia content in the mix should reduce the odor nuisance. Emissions of the solvent heptane were also reduced, from 2.4 kg to 1.6 kg per tire. An extensive program of risk analyses of machines and items of equipment was also performed. In Sävjö, noise-abatement measures were implemented. In Evergem, a cleanup of contaminated soil was initiated, and closure of the mixing section reduced energy consumption at the plant. In Hoogezand, energy consumption and the use of chemicals for water treatment were reduced. Measures to replace HA oils were initiated. A program is under way at the Hartville plant to reduce waste quantities, as a result of which the proportion of waste deposited in landfills has been reduced by about 40%. In Tivoli, emissions of solvents declined due to the use of water-based technology. Asbestos and PCBs were removed. Ventilation and safety measures improved the work environment. The proportion of waste deposited in landfills declined significantly at the Tivoli plant. At the Sri Lanka plant, nitrosamine-forming substances (MBS) were removed from the production process, and use of HA oils was reduced. A new mixing section was installed, resulting in an improved work environment and reduced dust emissions.

#### Key figures

Energy consumption Water consumption

Emissions of VOCs to air

Recycled waste Landfilled waste

Accident rate

ISO 14001 certificates

336 GWh (29% of Group total)

3,467,500 m<sup>3</sup> (60% of Group total)

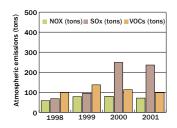
98 tons (7% of Group total)

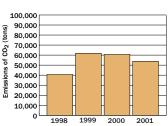
4,990 tons (32% of Group total)

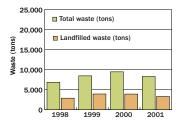
3.290 tons (14% of Group total)

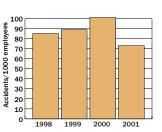
73/1,000 employees (Group average: 58/1,000)

4 (12% of Group certifications)









#### **Environmental data 1998-2000 for Trelleborg Wheel Systems**

Plant	Number of employees		Energy (GWh)			Water (m³)			VOCs (tons)			CO <sub>2</sub> (tons)			
	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999
Trelleborg I	499	497	507	50,0	45,8	61,6	25156	25180	63200	13,9	19,0	14,7	4939	4615	7010
Sävsjö	43	43	38	2,9	2,9	2,5	1100	1200	1050	0	0	0	182	185	124
Hadsten	100	110	110	3,4	3,6	3,8	2100	2980	2500	0	0	0	424	407	237
Evergem	172	167	270	29,8	33,7	36,2	17900	20010	14700	20,5	19,4	32,0	4876	5386	5523
Hoogezand	74	94	100	18,7	19,8	22,5	6700	13000	13000	0	0	0	2754	3752	3333
Tivoli	537	530	496	124,3	125,7	123,0	2832000	2723000	2450000	19,2	24,0	34,0	23852	24268	28739
Santander	33	41	40	2,1	1,7	1,6	800	800	1300	0,2	0	0,3	299	2230	190
Hartville	230	251	248	62,7	72,9	68,5	490100	526300	400300	40	56,4	49,0	8608	10034	9339
Walgama	228	248	252	14,6	13,0	14,6	40000	60000	58900	0	0	0	2309	1928	2652
Sapugaskanda	452	450	420	27,7	35,5	21,7	51600	29900	46000	4,1	7,0	7,1	5629	7841	4706

Plant	Total waste (tons)			Hazardous waste (tons)			Landfilled waste (ton)				Accidents/ 00 employe	es	Uncontrolled emissions, spillages, fires		
	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999
Trelleborg I	2047	2153	2071	23,3	152	109	1096	734	680	37	56	16	0	4	1
Sävsjö	573	680	20	23	15	9	0	0	11	23	0	0	0	0	1
Hadsten	1099	1556	1377	9,5	30	0	23	28	30	50	155	36	0	0	0
Evergem	550	720	787	0,8	28	33	313	129	445	58	30	51	3	0	3
Hoogezand	500	381	527	15	10	15	263	235	251	13	11	30	2	0	0
Tivoli	2150	1652	1652	90	46	90	392	1080	982	136	174	153	0	0	0
Santander	96	78	85	0	1	0	95	77	85	91	98	0	0	1	0
Hartville	880	1923	1814	5,7	8	10	789	1316	1275	61	60	93	0	0	0
Walgama	171	134	50	0	0	0	161	134	50	110	187	143	0	0	0
Sapugaskanda	195	157	125	0	0	0	155	157	100	60	82	123	1	0	0

Plant	Certificates
Trelleborg I	ISO 14001, ISO 9001 (Mixing, Agri), ISO 9001 (F&F)
Sävsjö	ISO 9001
Hadsten	ISO 14001, ISO 9001
Evergem	ISO 9001
Hoogezand	ISO 9001
Tivoli	ISO 14001, ISO 9001
Santander	ISO 9002
Hartville	ISO 9001
Walgama	ISO 9001
Sapugaskanda	ISO 9002

## **Engineered Systems**

Trelleborg Engineered Systems has about 2,900 employees, and manufactures industrial hoses, polymers for infrastructural projects, rubber membranes, rubber flooring, roadmarking tape, and safety equipment. The business area has manufacturing plants in Sweden (Trelleborg, Ystad, Hemse, Örebro), Norway (Mjöndalen), the Netherlands (Ridderkerk, Ede), the UK (Hull, Runcorn, Scunthorpe), Spain (Izarra), France (Clermont-Ferrand), Canada (Collingwood), Singapore, Australia (Brisbane), and Germany (Rechlin).



#### **Environmental organization and** environmental management systems

Each of the various plants has an environmental coordinator. At the Trelleborg plant there is a specialist Environmental Technology organization to support Engineered Systems and other on-site organizations. In Izarra there is an environmental specialist who works in part with Group-wide issues. Introduction of environmental management systems has high priority within the business area, and twelve plants are certified in accordance with ISO 14001. During 2001, Protective Products in Ystad (Sweden) obtained certification, and the plant in Ede has been recommended for certification. One certified plant was divested during the year. Two units plan to obtain certification within 6-12 months, and two additional units are expected to be ready for certification within 12-18 months.

#### **Environmental performance**

Most of the units within Engineered Systems have 50-150 employees. The plants in Singapore, Izarra and Clermont-Ferrand are the largest, with approximately 200-630 employees. Engineered Systems' energy consumption and carbon dioxide emissions are moderate from a Group perspective, but several acquisitions during the year increased emissions to the atmosphere and also waste quantities. The plant in Clermont-Ferrand emits large quantities of solvents and shows substantial energy consumption. The accident rate is above the Group average.

#### Important events during the year

Noise-abatement measures were taken at the Ystad plant. At the plant in Ridderkerk, surveys of soil contaminants, and also an energysaving project, are in progress. During the year the Hull plant started to use solvent-free adhesives. Runcorn is working on the reduction of dust concentrations in the work environment. In Clermont-Ferrand an impressive installation for source-sorting and storage of

waste was completed. Programs are also under way to reduce amounts of health-hazardous chemicals. In Singapore, activities are being undertaken within the framework of a so-called "5S" program; the work environment was improved by installing new safety equipment, for example. In Collingwood, a large number of environmental projects were implemented. A machine-safety project was implemented in Örebro. Waste-management projects were performed in Izarra, with the aim of reusing rubber waste. This enabled the reuse of more than 145 tons of rubber, while about 60 tons of plastic waste were sold for recycling. Technical Composites in Trelleborg made a major investment in air-cleaning equipment to combat vulcanizing fumes. Improved workplace ventilation was installed in Mjöndalen. Energysaving measures were taken in Ede.

#### Key figures

Energy consumption Water consumption

Emissions of VOCs to air

Recycled waste Landfilled waste

Accident rate

ISO 14001 certificates

191 GWh (16% of Group total)

587,600 m<sup>3</sup> (10% of Group total)

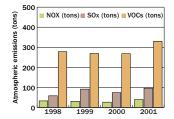
330 tons (23% of Group total)

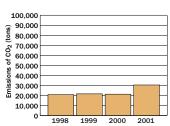
2,950 tons (19% of Group total)

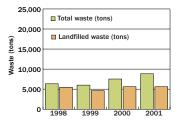
5,605 tons (25% of Group total)

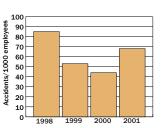
68/1,000 employees (Group average: 58/1,000)

12 (36% of Group certifications)









#### **Environmental data 1998-2000 for Trelleborg Engineered Systems**

Plant	Num	ber of empl	oyees		Energy (GW	h)		Water (m³)	)	١	OCs (tons)			CO <sub>2</sub> (tons)	
	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999
Trelleborg I	131	170	60	13,4	14,6	0,9	6630	6800	1500	10,0	11,3	14,6	5791	1950	80
Trelleborg II	70	217	236	18,6	26,6	26,0	27130	40480	34000	0,7	3,5	3,8	2630	3500	3500
Ystad	95	100	104	3,0	2,8	3,1	1000	1000	2500	3,5	5,7	4,7	403	363	416
Hemse	85	96	90	4,2	4,2	4,8	2200	2400	2360	0	0	0	65	44	91
Örebro	110	110	105	4,5	4,5	4,7	3600	3900	4600	1,5	1,5	1,5	0	0	0
Mjöndalen	222	217	265	17,9	17,4	19,4	66000	70680	73500	6,0	9,7	15,1	55	0	1057
Ridderkerk	100	103	105	9,7	8,9	8,7	6800	6200	6460	4,5	4,5	6,2	1659	1376	1442
Ede	68	65	65	3,1	4,2	3,9	11600	6500	6580	2,4	1,6	1,8	536	716	674
Hull	50	50	30	1,5	1,6	1,2	1300	1320	1260	0,3	0,3	-	1	1	1
Izarra	285	281	282	23,5	22,3	22,1	33100	15000	12400	26,0	24,5	8,7	3729	2930	3328
Rechlin	13	-	-	0,2	-	-	230	-	-	3,0	-	-	0	-	-
Scunthorpe	12	-	-	-	-	-	-	-	-	0	-	-	0	-	-
Runcorn	26	30	30	12,8	10,3	9,9	1200	1200	680	0	0	0	2197	1694	1674
Clermont- Ferrand	630	590	579	58,6	55,3	51,8	330500	323700	293300	215	210	213	8944	8010	7720
Collingwood	40	50	45	4,2	4,7	4,3	74000	89300	85700	20,3	29,2	0	584	677	581
Singapore	199	-	-	10,6	-	-	23000	-	-	32,8	-	-	1916	-	-
Brisbane	73	-	-	4,2	-	-	4400	-	-	5,0	-	-	1730	-	-

Plant	Total waste (tons)		ons)	Hazardous waste (tons)			Landfilled waste (tons)				Accidents/ 00 employe	es	uncontrolled emissions, spillages, fires		
	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999
Trelleborg I	1323	416	35	4,8	14	10	1075	160	12	38	12	0	0	1	0
Trelleborg II	403	763	896	0	18	6	363	100	250	57	9	16		0	7
Ystad	77	76	74	3,3	4	3	64	62	60	43	0	0	0	0	0
Hemse	125	149	115	6,1	9	4	61	59	66	12	21	22	0	0	0
Örebro	114	99	84	1	1	1	50	53	60	36	18	17	1	0	1
Mjöndalen	676	468	861	3	3	27	328	378	598	76	23	41	1	0	0
Ridderkerk	287	307	145	4,8	20	5	0	0	0	50	58	28	0	2	0
Ede	96	77	97	1	0	0	72	60	77	58	46	31	2	0	0
Hull	32	33	55	1	1	0	29	30	55	20	20	0	0	0	0
Izarra	1722	1250	1463	48	30	10	1390	1200	1345	225	142	131	4	0	2
Rechlin	3	-	-	0	-	-	0	-	-	0	-	-	0	-	-
Scunthorpe	-	-	-	-	-	-	-	-	-	0	-	-	0	-	-
Runcorn	440	408	464	0	0	0	440	408	464	38	33	0	0	0	0
Clermont- Ferrand	2719	2152	1622	44	43	42	1586	1835	1553	43	53	73	0	1	7
Collingwood	76	104	104	2	5	1	70	86	103	0	40	44	2	0	0
Singapore	682	-	-	0	-	-	0	-	-	60	-	-	0	-	-
Brisbane	84	-	-	-	-	-	84	-	-	14	-	-	0	-	-

Plant	Certificates
Trelleborg I	ISO 14001, ISO 9001
Trelleborg II	ISO 14001, ISO 9001
Ystad	ISO 14001, ISO 9001
Hemse	ISO 14001, ISO 9002
Örebro	ISO 14001, ISO 9002
Mjöndalen	ISO 14001, ISO 9001, QS 9000
Ridderkerk	ISO 14001, ISO 9001
Ede	-
Hull	ISO 14001, ISO 9001
Izarra	ISO 14001, ISO 9000 (2 certificates)
Rechlin	-
Scunthorpe	ISO 9002
Runcorn	ISO 9002
Clermont-Ferrand	ISO 9001
Collingwood	ISO 14001, ISO 9002
Singapore	ISO 9001
Brisbane	ISO 9001

# **Building Systems**

Trelleborg Building Systems has about 1,200 employees and manufactures rubber sheeting for roofs and sealing landfills, bitumen-based sealing layers for roofs, bridge membranes and sealing strips. The business area has manufacturing plants in Sweden (Värnamo, Bor, Rydaholm, Österbymo, Höganäs), Germany (Mosbach, Papenburg), Denmark (Vejen), Finland (Vihti), and the UK (Minworth).



# Environmental organization and environmental management systems

Each of the various plants has an environmental coordinator. At the production units in the Värnamo district in Sweden there is substantial collaboration between the environmental coordinators on matters concerning the environment and health. For example, environmental audits are performed on a reciprocal basis. Seven units within the business area are certified in accordance with ISO 14001. During the year, Bor (Sweden), the central plant in Värnamo (Värnamo I, Sweden) and Minworth (UK) obtained certification. It is planned that two further plants will obtain certification within approximately 12 months. Three plants currently have no plans for certification.

#### **Environmental performance**

The production units within Building Systems are relatively small (average of 80 employees), and there is only one mixing section within the business area. This means that en-

vironmental impacts in terms of energy and water consumption are relatively small. Emissions of solvents to the atmosphere are very limited, but the quantity of waste deposited in landfills is relatively high. The accident rate within Building Systems is below the average for the Trelleborg Group.

#### Important events during the year

Within the business area, a number of projects were implemented during the year to reduce the use of chemicals that present a hazard to health or the environment. For example, MBS was phased out at Värnamo II. Facilities for the safe storage of oils and peroxides were installed at the Bor plant. A few mi-

nor fire incidents occurred at the plants, but without harming either personnel or the environment. A system for the recycling of heat and cooling water is to be installed at Värnamo II during 2002. The system will substantially reduce water and energy consumption. At the plant in Höganäs, measures were taken to reduce noise and odors, and to reduce waste quantities.

#### Key figures

Energy consumption
Water consumption

Emissions of VOCs to air

Recycled waste
Landfilled waste

Accident rate

ISO 14001 certificates

84 GWh (7% of Group total)

394,600 m<sup>3</sup> (7% of Group total)

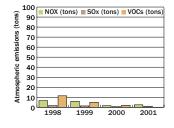
0.1 tons (0% of total Group emissions)

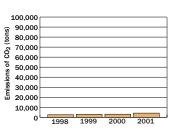
2,210 tons (14% of Group total)

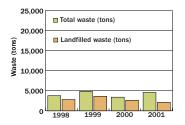
2,125 tons (9% of Group total)

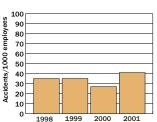
47/1,000 employees (Group average: 58/1,000)

7 (21% of Group certifications)









#### Environmental data 1998-2000 for Trelleborg Building Systems

Plant	Num	ber of empl	oyees		Energy (GW	Energy (GWh)			)	١	/OCs (tons)		CO <sub>2</sub> (tons)		
	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999
Värnamo I <sup>1)</sup>	145	145	142	18,5	14,4	10,7	24000	24000	28000	0	0	0	62	28	23
Värnamo II <sup>2)</sup>	160	151	161	15,6	15,5	16,1	146900	161800	122000	0	0	0	687	600	825
Bor	66	62	81	8,0	8,5	9,1	72700	73940	78370	0	0	2,5	457	432	571
Rydaholm	94	98	104	5,8	6,0	6,7	1800	1700	2130	0	0	0	0	0	0
Höganäs	83	90	70	14,2	12,5	10,6	6200	4900	3580	0	2,0	2,5	1128	1012	880
Österbymo	27	-	-	0,6	-	-	-	-	-	0,1	-	-	0	-	-
Vejen	43	-	-	5,3	-	-	79300	-	-	0	-	-	732	-	-
Vihti	13	-	-	0,3	-	-	1200		-	0	-	-	44	-	-
Mosbach	90	82	73	7,0	6.5	7,4	32500	32680	40450	0	0	0	568	486	651
Papenburg	74	71	40	1,7	1,8	-	870	590	-	0	0	-	62	70	-
Minworth	83	97	-	6,8	6,9	-	29110	40940	-	0	-	-	470	486	

Plant	Total waste (tons)			Hazardous waste (tons)			Landfilled waste (tons)				Accidents/ 00 employe	es	Uncontrolled emissions, spillages, fires		
	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999	2001	2000	1999
Värnamo I	124	123	44	54	45	39	5	4	4	55	14	42	0	0	0
Värnamo II	617	614	615	39,8	50	36	184	334	319	81	27	62	3	3	0
Bor	575	477	2094	5,0	2	22	49	388	1600	28	32	25	0	1	1
Rydaholm	300	285	327	29,6	27	63	4,8	63	58	0	20	10	1	0	1
Höganäs	1507	1854	1405	1	1	5	1500	1822	1400	24	0	14	0	0	0
Österbymo	15	-	-	0	-	-	0	-	-	0	-	-	0	-	-
Vejen	405	-	-	0	-	-	62	-	-	23	-	-	2	-	-
Vihti	12	-	-	0	-	-	12	-	-	0	-	-	0	-	-
Mosbach	784	-	368	0	-	0	308	-	247	44	98	14	1	1	0
Papenburg	42	42	-	0	0	-	0	0	-	67	25	-	0	0	-
Minworth	187	-	-	0	-	-	-	-	-	72	21	-	1	1	-

Plant	Certificates
Värnamo I	ISO 14001, ISO 9001
Värnamo II	ISO 14001, ISO 9001 (2 certificates)
Bor	ISO 14001, ISO 9001
Rydaholm	ISO 14001, ISO 9001
Höganäs	ISO 14001, ISO 9001
Österbymo	-
Vihti	-
Vejen	ISO 9001
Mosbach	-
Papenburg	ISO 9000
Minworth	ISO 14001, ISO 9001

<sup>1)</sup> Central plant

<sup>2)</sup> Norregård plant

## **Accounting principles**

#### **Contents of environmental report**

The Trelleborg Group's Environmental Report for 2001 covers aspects relating to the environment, health, safety and social issues. Trelleborg's ambition is that the report, together with supplementary information, will provide employees and external stakeholders with a clear picture of the Group's activities in these areas and their business-related consequences. While our intention is that each annual environmental report should be readable as an autonomous document, each report contains certain sections that go into greater detail. Accordingly, interested readers are recommended to refer to previous reports. An overview of the contents of the environmental reports for the years 1998-2001 is presented on the penultimate page of this year's report. We hope that the report will be of interest to various categories of stakeholders, and we welcome their opinions and suggestions for future improvements. The current report is due for publication in April 2002. Together with the Group's Annual Report, it is available on Trelleborg's website: www.Trelleborg.com. Both reports are published in Swedish and English, and can be ordered from the Group's Corporate Communications Department.

In accordance with standard accounting practice, Trelleborg AB also reports on any significant events that have occurred between the close of the fiscal year and the completion of the environmental report.

# Division of environmental information between Annual Report and Environmental Report

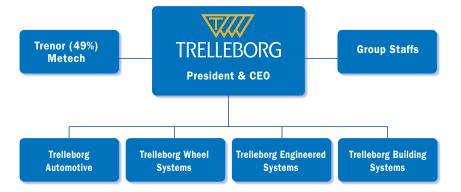
The Trelleborg Group's Annual Report for 2001 provides general information about the company's environmental situation to the extent required by Swedish legislation regarding environmental information in the Administration Report. Compared with the Annual Report, the Environmental Report contains supplementary and more detailed information. In addition, a global perspective on environmental issues is adopted in the Environmental Report, while the information in the Annual Report focuses on Swedish operations, in accordance with Swedish legislation.

#### **Ownership and organization**

The Trelleborg Group comprises Group Management, four business areas, the Metech company (USA), and a minority interest in Trenor (Trelleborg's former distribution sector). In this Environmental Report, "Trelleborg" refers to the Group's four business areas. Trenor and Metech are not included in the report.

## Scope of the Environmental Report

The Environmental Report covers performance at production and research units worldwide. Operations that belonged to the Group during the entire fiscal year are reported. No information is provided on operations that were closed down or divested dur-





ing 2001. This means that the Group's Environmental Report does not cover the plants in Neumünster (Germany), Herentals (Belgium), Peterborough (UK), Santiago Tianguistenco (Mexico), or the Trelleborg Rolls plant (Trelleborg II).

Each unit and each business area is reported separately. The Group's overall performance in respect of a number of key parameters is reported. A total of 82 organizations at 77 plants throughout the world contributed to the report.

#### Reporting principles

Trelleborg's Environmental Report is not based on any particular international guidelines for environmental reporting. However, the choice of the parameters reported and the method of reporting are partly based on the Global Reporting Initiative (GRI, 2000),

Deloitte & Touche's Checklist 2000 and the Dow Jones Sustainability Index.

Each plant supplies its own data in accordance with the Group's standard for environmental reporting, and each plant manager is responsible for the quality of the data provided. Data are compared with those from the previous year, and are then verified - via random sampling - against the plants' environmental reports to the authorities and data supplied in conjunction with the environmental reviews conducted in preparation for the introduction of ISO 14001. The information in the present report refers to the year 2001. Where appropriate, plant data are reported for the most recent three years. In the case of newly acquired operations, data are generally provided only for the period during which they have belonged to the Group. Key figures are presented in text, tables and diagrams. Where applicable, figures

for 2000 are provided in parentheses following the information for 2001.

This year's Environmental Report can be regarded as a further development of the reports from previous years. The same reporting principles apply in the case of parameters reported in previous years. In the case of carbon dioxide, sulfur oxide and nitrogen oxide emissions resulting from the burning of fossil fuels, conversion factors based on energy content and the quality of the fuel used are employed. Emissions of VOCs (solvents) are based on measurements at the plants where they occur, but in most cases are based on mass-balance estimates. A number of new parameters, primarily in the social area, have been added in this year's report.

#### **Terms and definitions**

#### Environment-related costs

These are costs related to measures for preventing, reducing or repairing environmental damage directly associated with operations, including equivalent measures taken with regard to health and safety in the workplace. They include, among other items, administration and external-consulting expenses, fees to the authorities, costs for introducing and maintaining environmental management systems, and charges for external inspections and audits.

#### Environment-related investments

These are investments related to measures for preventing, reducing or repairing environmental damage directly associated with operations, including equivalent measures taken with regard to health and safety in the workplace.

#### Environment-related provisions

These are financial provisions to cover liabilities and allocations for known commitments, and for essential measures to prevent, reduce or repair environmental damage directly associated with operations.



### Glossary

**Accelerator** Speed up the chemical reactions during the vulcanization process.

**Antidegradant** Additive to prevent the aging of rubber.

**Antioxidant** Prevents rubber from deteriorating due to the effects of oxidation.

**Bitumen** An asphalt product of complex composition used for the manufacture of sealing layers for roofs, bridges and other applications.

**BLIC** The Association of European Rubber Manufacturers. Trelleborg participates in the work of the Health & Environment Committee, among other activities.

**Carbon dioxide (CO<sub>2</sub>)** CO<sub>2</sub> is formed in all carbon combustion processes. It is released in substantial amounts when petroleum products are used. It is likely that atmospheric emissions of carbon dioxide increase global warming (greenhouse effect).

**CFCs and HCFCs** Substances that destroy the atmospheric ozone layer.

They are used, for example, in air-conditioning plants.

**Corporate citizenship** The company as a member of the community with social responsibilities.

**Emissions** Discharges of foreign substances to the surrounding environment. In the broadest sense, emissions can be waterborne, airborne, liquid or solid.

**Environmental aspects** The parts of an organization's activities, products or services that interact with the environment. An overview of the Trelleborg Group's key environmental aspects is included in the present report.

#### **Environmental management system**

The part of the overall management system that includes the organizational



structure, planning, activities, distribution of responsibility, practices, procedures and resources for developing, implementing, performing, reviewing and maintaining the organization's environmental policy. ISO 14001 is used as the environmental management standard within the Trelleborg Group.

**Epidemiology** The study of morbidity and mortality in a defined population group, or among people working within a particular industry.

**ETU** Ethylene thiourea substance – accelerator harmful to human health that is used to speed up the vulcanization process.

**Global Compact** A UN initiative exhorting companies to subscribe to a compact, with common values, that could help to give the global market a human face.

**Global Reporting Initiative (GRI)** GRI is an organization working toward a method for collective reporting and assessment of an operation, including social and environment-related perspectives as well as financial aspects.

**GWh** Gigawatt hour, 1 billion watt-hours.

**HA oil** Plasticizer containing a high concentration (>3%) of carcinogenic polyaromatic hydrocarbons (PAHs).

Hazardous waste Waste requiring special handling. Different countries have varying definitions and regulations, and national standards are frequently changed, making it more difficult to report on hazardous waste. Within the EU, hazardous waste is classified in accordance with the European Waste Code (EWC).

Work-related accident A work-related accident is a sudden event related to work that gives rise to a wound or other physical injury. A typical injury in the rubber industry is a minor cut or crushing injury. Trelleborg reports the number of work-related injuries that give rise to one or more days of absence, called Lost Work Cases (LWCs). The injury rate is then normed by stating the number of such injuries per 1,000 employees (LWC/1,000).

**Work-related illness** A work-related illness is one caused by long-term expo-



sure to a particular factor in the work environment. Such factors can include repetitive lifting or being exposed every day to solvent fumes.

ISO (International Organization for Standardization) An international organization that has produced an extensive range of standards, including the ISO 9000 and ISO 14000 series. The standards are applied throughout the world for quality and environment work. More than 80 countries are members of ISO.

ISO 9000 A series of international standards for quality assurance adopted in 1987. Many of Trelleborg's plants are certified in accordance with ISO 9000. Within Trelleborg Automotive, many producing units have obtained certification in accordance with QS 9000, which is a standard specially adapted to subcontractors to the automotive industry.

ISO 14000 A series of international standards for environmental management systems (ISO 14001), life cycle assessments, environmental audits, environmental labeling, environmental performance evaluation and environmental terms and definitions. Many plants within the Trelleborg Group are certified in accordance with ISO 14001.

**LCA** (Life Cycle Assessment) A management tool for assessing and quantifying the total environmental impact of products and activities over their entire lifetime, based on an analysis of the entire life cycle of a particular material, process, product, technology, service or activity. LCA methodology is described in ISO 14040.

**Nitrosamines** Substances that are carcinogenic to animals and humans. Formed during certain vulcanization processes.

NO<sub>x</sub> (nitrogen oxides) Gaseous oxides formed during combustion processes through the oxidation of nitrogen. Harmful to human health and the environment. Cause acid rain and eutrophication.

PAH Polyaromatic hydrocarbons. Some are carcinogenic. PAHs are released to the atmosphere from exhaust fumes, small-scale wood-fueled heating, and in conjunction with vulcanization processes in the rubber industry. PAHs also occur in extremely low concentrations in conjunction with bitumen use within Trelleborg Building Systems.

**Polyurethane** Group of polymers with structures linked by urethane bridges.

At Trelleborg, polyurethane is used for coating rollers and for solid tires. Various diisocyanates, such as TDI or MDI, are used in the production process.

**SGI** Swedish Rubber Industry Association (Svenska gummiindustriföreningen).

Trelleborg AB participates in SIG's Environment Committee, among other activities.

**SO<sub>2</sub> (sulfur dioxide)** Sulfur dioxide is formed when petroleum products are burned. SO<sub>2</sub> contributes to the acidification of lakes, streams and soil and causes coniferous trees to shed their needles.
Large concentrations in the environment are harmful to human health.

Sustainable development Sustainable development has been defined as economic activity that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. Sustainable development can be seen in terms of achieving a balance between economics, social factors and the environment

#### **VOC (Volatile Organic Compounds)**

The VOCs reported in this environmental report comprise unchlorinated and chlorinated solvents. VOC emissions contribute to local atmospheric environmental effects, including the formation of ground-level ozone. Many VOCs constitute a direct health risk.

#### **Further reading**

The Trelleborg Group's environmental reports are aimed at both external stakeholders and our own employees. In addition to environmental data, the environmental reports for the years 1998-2001 contain articles of a more in-depth nature on various topics. The reports can be ordered from our corporate communications department or accessed on Trelleborg's Internet website. The following are examples of specialized articles in the reports:

- Environmental Report 1998: Trelleborg AB's most important environmental aspects. Chemicals in the rubber industry.
- Environmental Report 1999: From plantations to test tubes. Environmental review in connection with ISO 14001.
- Environmental Report 2000: Production processes in the rubber industry. Environmental issues relating to acquisitions. Work environment aspects.
- Environmental Report 2001: A life-cycle perspective on rubber. Health and environmental characteristics of chemical products in the rubber industry. Social and ethical issues.

# RHR Reklambyrå AB, Malmö, Sweden

#### **More information about Trelleborg**



## Trelleborg AB will provide the following financial information in financial year 2002:

Interim report, January-March
Interim report, January-June
Interim report, January-September
Interim report, January-June
Interim report, January-March
Interim report, January-June
Interim report, January-June
Interim report, January-June
Interim report, January-June
Interim report, January-September
Interim report, January-Se



Trelleborg's stakeholders' magazine T-TIME is published four times per year.

Order via phone: +46 410 670 09, or via e-mail: info@trelleborg.com



#### Internet

You are welcome to study the latest information about Trelleborg and its operations on the Group website at: www.trelleborg.com

