nokicin Renkaat



ENVIRONMENT AND SAFETY

Safe company, safe tyres

Nokian Tyres follows the principles of responsible corporate citizenship and respect for the environment. In addition to fulfilling the requirements and norms set by society, we want to be a front-runner in terms of the environmental and safety issues related to products, manufacturing and logistics in every operating sector. This means taking care of the environment and our personnel as well as maintaining good relations with society and stakeholders. At Nokian Tyres, responsibility means safe and environmentally friendly products, the best production processes in the industry, a safe working environment and well-being of the personnel.

Environmental and safety management at Nokian Tyres encompasses environmental, personnel and property protection. The objective is to prevent accidents in all areas of operations, and thus secure the continuity of manufacturing operations. When developing its operations, the company aims to apply best practices and implement advanced solutions while taking human values and responsibility into consideration.

At Nokian Tyres, environmental and safety aspects are key factors in the development, manufacture and marketing of tyres. We focus on the entire lifecycle of products, from material selection planning to product disposal. Nokian Tyres aims to improve the management of environmental and safety issues in its own operations as well as those of subcontractors, service providers and partners. The company utilises risk management methods that include risk assessment, process and safety planning, instructions and training. Every year Nokian Tyres invests in new technology for process development in order to ensure that the company utilises the best available technology for safety management and for continuous improvement of the existing equipment. Nokian Tyres utilises a joint safety management system to direct its operations. The system at the Nokia plant has been certified in accordance with the European Union's EMAS (EcoManagement and Audit Scheme) regulations and the international ISO 14001 environmental standard. When company operations expanded this past year, safety and environmental guidelines and targets were developed for the whole group. Production at the Vsevolovzhsk plant adopted the same operating models as those used at the Nokia plant, with the goal of obtaining common quality and environmental certificates in 2006.

From targets to results

According to plans, Nokian Tyres took a number of significant development steps in the areas of safety and responsibility in 2005. Environmental indicators at the Nokia plant developed positively as planned and in accordance with the environmental permits. Replacement of harmful chemicals with safer alternatives has continued, and as a result our own production no longer uses any carcinogenic or toxic (T) chemicals. New uses for the waste rubber that is a by-product of manufacturing were found, which increased waste utilisation. A serious accident at the Vianor retreading plant in Nurmijärvi, Finland contributed to extensive co-operation with authorities and retreading industry to develop the safety of autoclaves used in retreading.





DEVELOPMENT IN OIL CONSUMPTION AS RAW MATERIAL



Oils are used in rubber compounds as plasticizers, which means that the use of oils affects, for example, the tyre's grip on the road. Oils can total as much as 20 per cent in rubber compounds. In addition to LA mineral oils, Nokian Tyres' products only contain plant-based oils; no oils classified as harmful are used.



In addition to rubber compounds, steel and textile - among other materials - are used as reinforcement in tyre manufacture. Small amounts of various chemicals, such as carbon black and sulphur, are used in rubber compounds. The raw materials are acquired from reliable international suppliers. As the first tyre manufacturer, Nokian Tyres completely abandoned the use of HA oils in its own production in 2005. According to EU-directive, other tyre manufacturers have to give up using HA oils until 2010, so Nokian Tyres has been a pioneer for this issue. For that reason Suomen itsenäisyyden juhlarahasto Sitra allowed Honourable Mention in European Business Awards for the Environment 2006 – competitions' product serie for Nokian Tyres. Furthermore, no chemicals classified as carcinogenic or toxic (T) are used in Nokian Tyres' own production.







The amount of waste in proportion to total production has decreased as a result of various waste reduction projects. Particular attention has been paid to reducing waste that cannot be reused. At the same time, utilisation of waste has been increased and there are still several ongoing projects aiming at, for example, reusing non-vulcanised scrap rubber. In the figures includes no rubberwaste from production, which can use again in production. The material, which is recycled inside the production is about 3 000 tons per year, so the utilisation percent would increase almost 10 % to 74 %.







WASTE DELIVERED FOR FURTHER UTILISATION



As the graph shows, the types of waste delivered for further utilisation vary greatly. The nationwide collection and utilisation channels for several types of waste facilitate the reuse process. The greatest challenge is to find usage targets for non-vulcanised scrap rubber, which is difficult to process. The further utilisation is mainly reuse of material; apart from energy waste, only a part of the wood waste is utilised as energy. Nokian Tyres handles the further utilisation of packaging materials in co-operation with the Environmental Register of Packaging PYR Ltd.







In 2005, the amount of hazardous waste totalled 260 tons. The amount of hazardous waste, oil-based waste in particular, has increased due to the increased production volumes. Furthermore, the stricter waste legislation continuously expands the number of waste types classified as hazardous. All hazardous waste is delivered to licensed hazardous waste processing plants.









Typically, the rubber industry uses solvents as glues to improve adhesion. Volatile organic compounds generate ozone in the lower atmosphere. Consequently, the EU has set goals for decreasing solvent emissions by the end of October 2007. In accordance with the so-called VOC directive, Nokian Tyres has so far managed to decrease its solvent emissions into the air by using an incineration plant and alternative materials instead of solvents. Nokian Tyres invested to the incineration plant already year 1997, before the regulations was set. Several projects are underway to help the company achieve the final goals.

OTHER AIR EMISSIONS, ODOUR AND NOISE

The most significant emissions into the air by Nokian Tyres comprise solvents, i.e. volatile organic compounds (VOC). As for other emissions into the air, the manufacture of rubber compounds generates dust and odour, and the curing of tyres generates odour. Nokian Tyres is continuously focusing on noise prevention and, according to the company's environmental licence, the noise level must remain below 55dB in the daytime and below 50 dB in old regions and 45 dB in new regions at night.





WATER AND WASTE WATER FLOWS

flow m3/h



Tyre plants use water for cooling, washing and as household water. Cooling water is taken from the Nokianvirta river and processed in the company's own water processing plant (in 2005 the consumption of river water totalled 6,831,749 m3, which is equal to 830 m3/h), and the consumed water is returned to the river from the closed cycle. Only machines that require quality higher than that of the river water – in terms of such factors as water temperature and humus concentration – use household water for cooling. When river water is used for washing, the wastewater is led to the municipal wastewater processing plant.



ENERGY COMSUMPTION







Despite the rapid growth of production volumes, energy efficiency has been enhanced by means of various energy saving projects. Nokian Tyres uses energy in the form of steam, industrial water and electricity in proportions of 32%, 23% and 45% respectively. All of the consumed electricity is generated in hydropower plants.



COLLECTION OF DISCARDED TYRES IN FINLAND

Approximately 2.6 million tyres, or 32,000 tons, are discarded in Finland every year. A group of tyre industry companies, including Nokian Tyres, established Suomen Rengaskierrätys Oy, a company that recycles discarded tyres for further utilisation on a centralised and nationwide basis. The recycling of discarded tyres is financed by a recycling fee added to the purchase price of new tyres, which means that it is covered by the actual tyre users.

TYRE UTILISATION IN FINLAND







In Finland, the tyre recycling rate is at a high level compared with other countries. In Finland, nearly 100% of tyres are recycled, whereas in Europe only 60% are recycled and the remaining amount becomes landfill waste. Most of the recycled tyres are used as material, i.e. they are crushed and granulated for earth construction purposes. In Finland, energy utilisation is at a low level compared with other European countries. If the tyre frame is intact, a passenger car tyre can be retreaded once, and bus and truck tyres as many as 2-4 times. For more information about tyre recycling, see the website of Suomen Rengaskierrätys Oy at www.rengaskierratys.com.

Recorded interruptions and feedback 2005:	Cause:
2 ignitions	Seresine container smoked because the warming system was overheated.
	Rubber compound was smoked in mixing machine because of overheating.
plant break	Catalytic incineration plant was passed 60 hours because of valve break.

Interruptions have to inform immediately to the Nokias' city, Pirkanmaan ympäristökeskus and ignitions also to the Turvatekniikan keskus.

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