Renkaan ierrätys

Recycling tyres - Finnish Tyre Recycling Ltd information magazine



INFO At Finnish Tyre Recycling's circular economy facility, the metals and fibres are first removed from the recycled tyres for reuse, after which the tyre material is shredded into pure granular or powdered recycled material. High-quality recycled material Production of renewable raw materials will start. is produced at very competitive prices from material with good and consistent availability. This brings added value and security of supply to the rubber and Size of the circular economy facility. plastics industry. Many companies have already expressed interest in the products of the circular economy Number of employees. Number of recycled tyres processed per year in the initial phase.

Renkaankierrätys

2/2022

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This is how the circular economy facility of Finnish Tyre Recycling Ltd works.

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Vesa Kärhä: Recycled materials are now The Thing.

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From 1 January 2023, we will be responsible for marketing the recycled materials we produce.



A new start ahead

WHEN THE KEY PLAYERS IN THE TYRE INDUSTRY DECIDED TO SET

up Finnish Tyre Recycling Ltd in 1995 to take care of the afteruse waste management of tyres, they probably did not think at the time how the operation would develop from a management company into a full-fledged circular economy company. From the first of January 2023, we will be responsible not only for the collection and treatment of end-of-life tyres but also for the marketing of the recycled materials we produce. From the very beginning, we have been keen to actively develop our operational activities and the wise use of tyres.

THE DRIVING FORCE BEHIND THIS CHANGE IS THE CIRCULAR

economy facility we are building in Loppi, where we will process tyres into domestic recycled raw materials for the rubber and plastics industries. It started in September 2019, when the Board of Directors of Finnish Tyre Recycling presented a plan to the Annual General Meeting to change the way the company operates. The plan was approved by the AGM in December 2019. Immediately after the approval, we started implementing the plan, which has unfortunately been slowed down by the COVID-19 pandemic and the war in Ukraine.

NOW WE ARE ON THE HOME STRETCH OF THE PROJECT AND

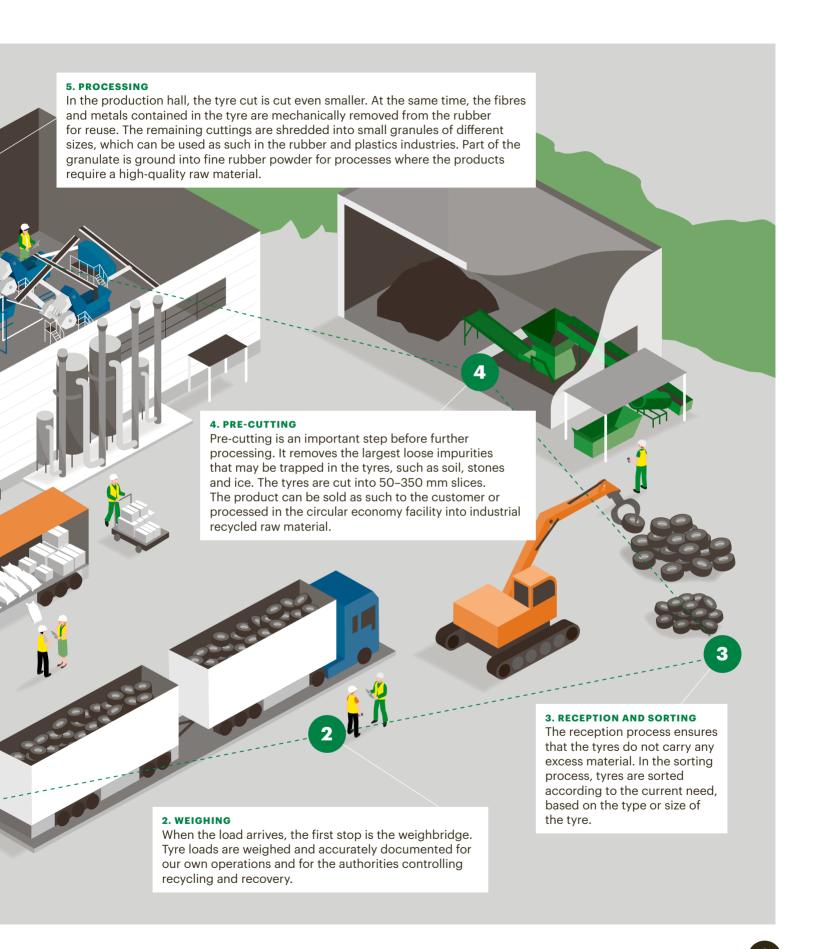
have reasons to smile. We have found great people for each new task. Despite the difficult times, the investment in our circular economy facility has been smooth, the equipment installation is in full swing, and the construction work is on schedule. We have a contract with Encore Environmental Services Ltd to operate the collection terminals and with several partners to manage the collection logistics. You can read more about all these themes in this magazine.

We will be ready on 1 January 2023.

Risto Tuominen

Editor-in-Chief

Finnish Tyre Recycling's contract partners transport tyres to Loppi from all over the country, either directly or via Encore Environmental Services Ltd's intermediate warehouses. Initially, approximately one-third of all tyres collected in Finland are processed in Loppi.



Casting, foaming or coating

Recycled raw material from tyre rubber is well suited to the most common production processes in the rubber and plastics industry and can replace around 25-75% of the materials needed for the finished product. For our customers, domestic recycled material allows them to reduce the environmental footprint of their operations and products.

TEXT: JUHO PAAVOLA, PHOTO: ESSI LYYTIKÄINEN

WHEN THE CIRCULAR ECONOMY FACILITY STARTS

operations in Loppi in 2023, it will process around 20,000 tonnes of car tyres a year into recycled materials for the rubber and plastics industry. The carbon footprint of the recycled rubber powder will be less than one-tenth of the carbon footprint of virgin fossil raw materials, i.e. those processed for the first time.

"It is an opportunity for industrial operators who want to curb their emissions and take care of the earth's carrying capacity," says Thomas Söderström, Sales and Marketing Manager at Finnish Tyre Recycling.

When a tyre is given a new life at the Loppi circular economy facility, it is literally given the best possible life. Around one-fifth of the weight of the tyre is made up of steel support structures, which are separated into secondary raw materials for the metal industry.

"From an environmental point of view, the most important principle is that everything is used. At the same time, the separation of valuable steel also provides good economic support for our business."

At Loppi, tyre rubber is ground into granules of a few millimetres, ready for use as such or into rubber powder suitable for industrial processes. Domestic recycled raw materials are competitively priced and readily available.

For the rubber and plastics industry, renewable raw materials allow the production to divert the use of virgin raw materials to product groups where they cannot vet be substituted.

"We can adjust our production according to what our customers needs and we are happy to help create suitable recipes."

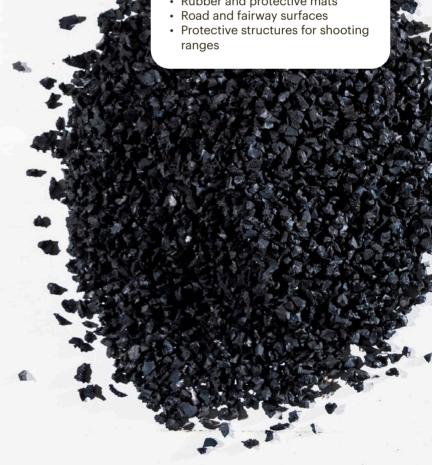
GRANULATE

MATERIAL PROPERTIES

Some of the tyre material entering the circular plant is ground into rubber granules or rubber powder. The size of the granules produced varies from about 1 to 4 millimetres, depending on the customer's requirements. The granulate is a good substitute for virgin raw material in simple rubber and plastic products where flexibility is required, and the recycled material can be used as such. The strengths of domestic granulate include its versatility in a wide range of applications.

FOR WHICH PRODUCTS IS **GRANULATE SUITABLE?***

- · Surface and resilient structures for football pitches
- Structures for equestrian arenas
- Flexible safety platforms
- Rubber and protective mats



RUBBER POWDER

MATERIAL PROPERTIES

Rubber powder produced in the circular economy facility is designed to replace virgin raw materials in demanding rubber and plastic industry products. Before industrial use, the extremely fine rubber powder can be compounded. This means that the rubber powder can be mixed with other raw materials to form granules that are suitable for use in factory automation processes. Depending on the product, recycled rubber powder can replace about 25-75% of the raw material needed for the finished product. In addition, rubber powder suitable for casting, foaming and coating can be used, for example, to increase the impact resistance and shape recovery of the finished product.

FOR WHICH PRODUCTS IS RUBBER POWDER SUITABLE?*

- For ship fenders and other boating products
- For discs, balls and other sports equipment
- Load platforms
- Waste bins
- · Engine covers
- · Insulation for civil engineering
- · Shoe soles
- Pipes

INFO

Benefits of renewable raw materials for businesses

Environment

The carbon footprint of renewable raw materials is only about 10% compared to virgin raw materials.

Security of supply

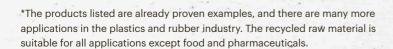
Around 65,000 tonnes of tyres are recycled every year, creating the basis for a secure and stable supply of recycled raw material.

Price

The steady availability of virgin raw materials means that the risk of significant price fluctuations is very low.

Image and competitive advantages

Initially, the use of domestic secondary raw materials creates a positive brand and image for the company. As the customer and regulatory requirements become more stringent, a timely switch to recycled raw materials can give a company an operational competitive advantage.



Rim strips from old tyres

TEXT AND PHOTO JUHO PAAVOLA

HERRMANS BIKE COMPONENTS. A SUPPLIER of parts and equipment to top bicycle factories, is constantly looking for new ways to make its products more environmentally

friendly.

"We want future generations to have a planet to cycle on. That is why we are constantly looking for new recycled raw materials for our production, for example," says Jerry Renlund, a manager involved in the development of production.

THE COMPANY STARTED IN 1959 IN BERN-

hard Herrman's kitchen and first produced rim strips to protect the interior rubber from surface endings and punctures. Since then, Herrmans, which manufactures cycling equipment for the export market, has diversified its product category, but rim strips are still an important product.

Herrmans is now starting a pilot project. It is investigating whether some of the PVC plastic needed for the rim strips could be replaced by recycled raw material from car tyres processed by Finnish Tyre Recycling.

"If we want to remain the market leader, we need to constantly innovate. Some of our customers are already demanding the use of recycled raw materials, and soon so will the legislators. We want to learn about their potential ourselves and be at the forefront of these issues," explains Jani Saarimaa, foreman.

HERRMANS PRODUCES SEVERAL MILLION OF

the 30-40 gram strips a year. That means hundreds of thousands of kilograms of plastic.

"It will have a big impact if even 10-20% of that amount can be replaced with recycled raw material to start with. Later on, perhaps strips made entirely from recycled raw materials can form its own product family, and the same material can be tested in our other products," says Renlund.

Jani Saarimaa (left) and Jerry Renlund of Herrmans Bike Components want to be pioneers in the use of recycled raw materials.



THE FRONT LINE IN THE CIRCULAR ECONOMY

The Finnish Tyre Recycling powerhouse team keeps the wheels turning, the sites running, and the emails flowing. It's time to introduce the circular economy professionals who are giving our old tyres a new life as recycled materials.

TEXT AND PHOTO: JUHO PAAVOLA

Risto Tuominen Managing Director

Risto has a modest role: he's in charge of everything. Risto likes to remind all of us that the tyre contains so much product

development and valuable raw materials that it is our duty to use it more wisely. A new generation circular economy facility is a great start to unlocking the value invested in the tyre.

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Thomas SöderströmSales and Marketing Manager

During Thomas' long career, the circular economy has developed at a furious pace, and recycled materials can replace up to



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Vesa Mäenpää Project Manager

Vesa has been responsible for the construction of the Loppi facility and has taken a firm but gentle approach to ensuring

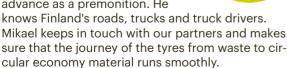
that dreams of a cleaner world are turned into clean granules at the circular economy facility. Vesa says the circular economy is vital for the future of the planet. He is right.

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Mikael Stavén Transport Manager

If the highway is closed, others read about it in the traffic bulletin, but Mikael knows it in advance as a premonition. He



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Niina Korpi Assistant

Sometimes we ask about contracts, sometimes we order pick-up. What all these calls have in common is that Niina answers the phone in a friendly manner and always gets things done. She is responsible for our day-to-d

things done. She is responsible for our day-to-day bureaucracy and proofreads even the smallest typos in our communication materials.

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Sammy (left) and Patrik Asplund have been running their family business, Vantaan Tuotekuljetus, for almost 17 years.

garage door opens behind Helsinki
Airport. The two men welcome the
visitor.

"We both have the same surname
as we're cousins," Patrik and Sammy
Asplund say smiling.

These cousins have been running Vantaan Tuotekuljetus for almost 17 years. The company, which operates a fleet of nine different vehicles, is one of the transport companies that will start collecting and transporting tyres for recycling from the beginning of 2023 as contract partners of Finnish Tyre Recycling Ltd.

The name of the family company gives an indication of the area of activity. Vantaan Tuotekuljetus will focus on tyre transport in Southern Finland.

"We deliver where the customer asks and where the tyres are needed. We mainly drive within the Hanko-Tampere-Kotka triangle," says Sammy Asplund, Managing Director.

ASPLUND'S TRUCKS GO WHERE THERE IS THE MOST

to be collected in relation to the area and, usually, the traffic jams are the worst. Around a quarter of all tyres in Finland are collected in the Helsinki metropolitan area. The special characteristics of the region are clearly reflected in the driving. The cars of Vantaan Tuotekuljetus use the same fuel-intensive and driver-intensive urban traffic routes as the residents of the area.

"In an urban area, our typical driving distance is less than 50 kilometres and the average speed of our cars is around 35 kilometres per hour," says Patrik Asplund, Chairman of the Board.



The density of the metropolitan area is also reflected in the tyre shops where tyres are collected. Because there is no extra space, instead of long full-trailer combination trucks, a lot of operations are carried out with a single tractor unit, sometimes with more agile vehicles.

"We also use a van. In Helsinki's inner city, many customers work in parking garages, which we can only fit into with a van. And we pick up the biggest city SUV tyres from there," says Patrik Asplund.

FROM THE BEGINNING OF 2023, THE ENTIRE TRANS-port and logistics system of Finnish Tyre Recycling Ltd will be renewed. Instead of a turnkey model with a single operator, the transport system will be changed to one in which different transport compa-

nies work directly with Finnish Tyre Recycling.

"The entire recycling and recovery of tyres is now undergoing a major overhaul with the completion of the circular economy facility in Loppi. Our transport and logistics system has been built primarily around "Our transport and logistics system has been built primarily around the material needs of Loppi circular economy facility," says Mikael Stavén.

the material needs of Loppi," says **Mikael Stavén**, Transport Manager at Finnish Tyre Recycling.

The main aim of transport is efficient material routing. In the initial phase, the Loppi circular economy facility will be able to recover about a third of the 65,000 tonnes of tyres collected annually in Finland. A significant proportion of the remaining tyres will be used on infrastructural sites, where the lightness of the tyre material will allow large structures to be built on soft ground.

Part of the tyre is temporarily stored in Encore Environmental Services Ltd terminals. However, the principle is to be able to divert as much of the tyre material as possible to the nearest possible destination without unnecessary detours or stops.

"The less we have to transport, the less CO2 we emit, which is a very natural goal for a circular economy organisation. At the same time, efficient transport management helps us to manage our partners' fuel costs, a need that has become even more important this year," Stavén explains.

IN NORTHERN FINLAND. THERE IS NO NEED FOR VANS.

When a TKH Logistics combination truck heads out of a tyre shop yard, there is often just an empty road ahead. The company, based in Oulu, is responsible for the transport of Finland's tyre recycling business roughly north of the Kalajoki–Iisalmi–Nurmes line.

The area is large but sparsely populated. The collection volumes are, therefore, also small. TKH Logistics' area is almost half the size of Finland but only collects about 20-25% of the country's tyres.

"The large area requires careful scheduling. When you leave Oulu to pick up a load in Ivalo, we aim to empty even the emptier collection trays on the way to fill the load. We don't want to drive to the same village twice in vain," says TKH Logistics' Managing Director Jukka Haanpää.

Long distances require vehicles that can carry a lot of goods. As a transport product, the tyre is grateful because it is not susceptible to damage. The downside is that a tyre takes up a lot of space. TKH Logistics has ordered two over 30-metre, 180-cubic-metre semi-trailer combinations from Volvo to transport the tyres.

"We transport a lot of containers as well as timber elements, both of which are cyclical. Transporting tyres is a new and important source of support for us, which has also enabled us to invest in new equipment," says Haanpää.

WITH RUSSIA'S WAR IN UKRAINE, TRANSPORT

companies are hitting the road in a difficult situation. The increased price of fuel is directly reflected in the profits. Companies have some control over the impact of fuel on their bottom line.

"The fuller the trucks we drive, the fewer kilometres we drive," sums up Jukka Haanpää.

Alongside driving planning, the driver plays an important role. By driving economically, it is easy to save a few per cent in fuel consumption.

"When you drive hundreds of thousands of kilometres a year, you're already talking about significant savings," says Sammy Asplund.

Jukka Haanpää also repeatedly refers to the professionalism of the driver. The driver is the part of the recycling system that visits the customers. He is the walking business card of not only the transport company but also of Finnish Tyre Recycling.

"The professionalism of the driver is reflected in how well he fills the vehicle. If you take your time to place small tyres underneath and the biggest ones on top, you can fit a lot of stuff in," says Haanpää.

In Vantaa, Patrik and Sammy Asplund list the same qualities of a good driver almost word for word as their colleague from Oulu. Efficient tyre transport requires professional skills and local expertise.

"Here, too, you can see how large Finland is as a country. If the boys from the north came here with their trucks, they'd be completely lost, and we'd be just as lost out there on the outskirts of Lapland," laughs Patrik Asplund.



From the beginning of 2023, customers will be able to order a tyre pick-up via the digital ZeroWaste app, by email or by phone.

EASY PICK-UP ORDERING WITH THE ZEROWASTE APP

From the beginning of 2023, Finnish Tyre Recycling will introduce a digital ZeroWaste ordering system for ordering tyre pick-ups.

"When the collection point starts to fill up, the pick-up can be easily ordered directly with a phone application. The system can also be used on a computer," says Mikael Stavén, Transport Manager at Finnish Tyre Recycling.

Pick-up orders can still be placed by email or phone. ZeroWaste's main advantage is its ease of use and documentability. Both features make the work of tyre shops easier during the busy season.

It also makes it easier to manage information and plan your own operations. The system collects reports and builds up statistics on the collection history of the branch.

"Ordering becomes easier, and at the same time, different employees can check whether a pick-up order has already been placed. Using a smartphone, you can also attach a picture of the tyre bag if you need help estimating the needed space for transport."

ZeroWaste user IDs can be ordered from Finnish Tyre Recycling.

Intermediate warehouses nearby

Encore Environmental Services is the new terminal operator of Finnish Tyre Recycling.

TEXT: JUHO PAAVOLA

ncore Environmental Services Ltd's service manager Jari Tallbacka at the extraction site, where things are coming together. Blast mats made of tyres dampen the blasting on the site.

The excavation is being carried out as Encore Environmental Services is currently building a new terminal in Lieto, Southwest Finland, to store tyres that are no longer in use.

At the beginning of 2023, Encore Environmental Services will become the operator of Finnish Tyre Recycling. The company will be responsible for the intermediate storage of tyres before their recovery.

"In addition to the Lieto terminal, we will use our existing terminal network and municipal waste management services that have previously stored tyres," says Tallbacka.

Encore has a long experience in the logistics and storage of circular economy materials. In addition to Finnish Tyre Recycling Ltd, Encore's customers among the producer associations regulated by the law include Suomen Kuitukierrätys, which collects cardboard, and Elker, which collects electronic waste.

"What the producer responsibility sectors have in common is that we cannot take the service as a ready-made package, but it must always be tailored to the customer's needs."

In tyre storage, Encore's role is clear. Finnish Tyre Recycling transport partners drive some of the tyres they collect to Encore's terminals to await further processing for recycling.

"The tyre is easy to store as the pits can be left outside, and the tyre does not emit any emissions to the environment. Adequate space is a challenge, as inevitably a lot of air is transported and stored with the tyre."

To put it bluntly, storing tyres is not rocket science. But while the basic job is simple, it can be done well, or even a little better," Mr Tallbacka says. At the terminals, the differences come down to how the loads are unloaded and how the pits – or, in the ugliest terms, the tyre piles – are formed.

"We optimise terminal locations according to demand. We support beneficial use by seeking out customers in our network who can use materials made from recycled tyres."



Recycling is efficient when the tyre is stored as close as possible to its next use as a recycled material. It reduces the costs and emissions of unnecessary transport.







The recycling of vehicle tyres is financed by a recycling fee levied on the purchase of new tyres. The recycling fee is based on the size of the tyres.

Tyre collection service for contracted partners, call:

+358 8000 6886

or by email:

rengas@kuusakoski.com nouto@rengaskierratys.com

online:

https://eService.kuusakoski.com

Category		VAT 0 %	VAT 24%	
101	Moped, scooter and motorcycle tyres	≥ 10.0"	1.26	1.56
102	Car tyres		1.40	1.74
103	Van and delivery truck tyres	< 17.5"	1.40	1.74
104	Truck and bus tyres	≥ 15.0"	6.89	8.54
105	Industrial tyres	≥ 15.0"	6.89	8.54
106	Tractor front tyres, tractor trailer tyres, small equipment, ATVs and industrial tyres (excluding tyres < 10" for mowers and pushcarts)	< 15.0"	1.79	2.22
107	Agricultural tyres	< 20.0"	3.83	4.75
108	Agricultural tyres	≥ 20.0"	8.64	10.71
109	Working machinery and forestry machinery tyres	< 300 kg	13.73	17.03
110	Working machinery and forestry machinery tyres	≥ 300 kg	64.08	79.46
111	Retreaded truck tyres		2.07	2.57
112	Retreaded car tyres		0.00	0.00
113	Large working machinery tyres	> 2000 kg	500.00	620.00



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