

SUSTAINABLE AND CIRCULAR

Product life time extension is sustainable





Introduction

The most essential goal of sustainability in logistics is to gain a complete view of the processes affecting the **environmental, social, and economic aspects of the supply chain elements**. It means much more than just being environmentally friendly. It is a way of managing a business that combines **operational efficiency with minimizing waste** in labor, processes, energy, and raw materials. This approach has a significant impact on reducing waste and environmental footprint, as well as improving working conditions and the health and safety of employees.

Why is analyzing logistics and human interference with natural, financial, and social resources necessary? Well, supply chains worldwide are closely interconnected and still have a lot of room for improvement to meet sustainability goals. According to a McKinsey report¹, the supply chain of a typical consumer company generates far higher social and environmental costs than the business itself. **The impact of supply logistics is responsible for more than 80% of global greenhouse gas emissions and more than 90% of the impact on air, land, water, biodiversity, and geological resources.**



Climate warming, the COVID-19 pandemic, broken supply chains, inflation, and the growing challenges we face show that sustainability is becoming not so much a marketing trend as the only possible way the logistics industry will evolve.

In November 2021, the United Nations Climate Change Conference (COP26) took place in Glasgow², shedding even more light on the challenges of climate change and identifying more initiatives to address it. Why is this so important? According to Deutsche Post DHL Group CEO Dr. Frank Appel,

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"There is no way around sustainable logistics in the future. We are deciding today what kind of world we and our children will live in 30 years from now. And our aspiration is to make a substantial contribution to ensure this will be an even better world."³

¹ <https://www.mckinsey.com>

² <https://www.saloodo.com>

³ <https://www.linkedin.com>



Doing business with sustainability as a priority for action impacts positive brand perception, performance, and financial results. CDP 2022⁴, shows that **corporations that actively manage and plan for change with sustainability in mind have an 18% higher return on investment** than companies that do not.

Business sustainability is crucial due to the key role of logistic carriers in supply chains and the volume of media produced. At any given time, there are millions of pallets in circulation - supporting supply chain logistics around the world. Companies are responsible for developing sustainable solutions for these supply chains. If the way packaging is managed is aligned with this, then logistics carriers can minimize or offset the negative impact of an organization's supply chains.

Why extending the life of load carriers is essential

About 500 million new pallets are produced each year. In the U.S. and EU countries alone, there are about 2 billion and 280 million pallets, mostly made of wood, circulating⁵. Despite the fact that most wooden pallets can be reused or recycled, lost and broken pallets are responsible for an increasing amount of landfill waste. As companies strive to achieve sustainability goals, there is a growing need for environmental assessment and improved packaging management operations.

Repair and maintenance of packaging **postpone the recycling of final disposal**. Damaged packaging does not always have to be replaced. Very often, it **can be repaired and served for a long time** before it has to be finally disposed of.

With today's fluctuating wood and energy prices, reusing repaired pallets is **financially viable for companies**. Above all, however, it is **beneficial for the climate and the environment** as it can save many trees and reduce energy consumption by avoiding the production of new pallets.

Logistic carriers repair and maintenance is one of the best ways to extend the life of metal, wood and plastic packaging. It is beneficial in many ways. Below we will discuss aspects highlighting the value of load carriers repair from 3 perspectives: social, operational, and environmental.

➔ Repair and maintenance improve worker safety

Damaged logistics carriers can cause major problems in any supply chain. They are also dangerous for workers. If a pallet is damaged or broken, it can potentially be a safety hazard for anyone working on it. There is also the possibility of an accident or tipping of the load on the pallet due to a broken board. Additionally, product damage is risky due to a nail or part of a broken board sticking out of the pallet.

The situation is similar with metal carriers, such as Gitterboxes or roll containers. Handling them requires knowledge and caution, while faulty parts of these carriers may threaten the health and life of those who operate them. Corporate sustainability means taking into account the social aspects of business, including the well-being of employees.

⁴ <https://www.cdp.net>

⁵ <https://core.ac.uk>



In such a situation, regular maintenance of the logistic carriers is an essential operational task. Regular checking of their condition and early repair (preferably at the first sign of damage) will prolong their life and ensure the safety of employees who work with them daily.

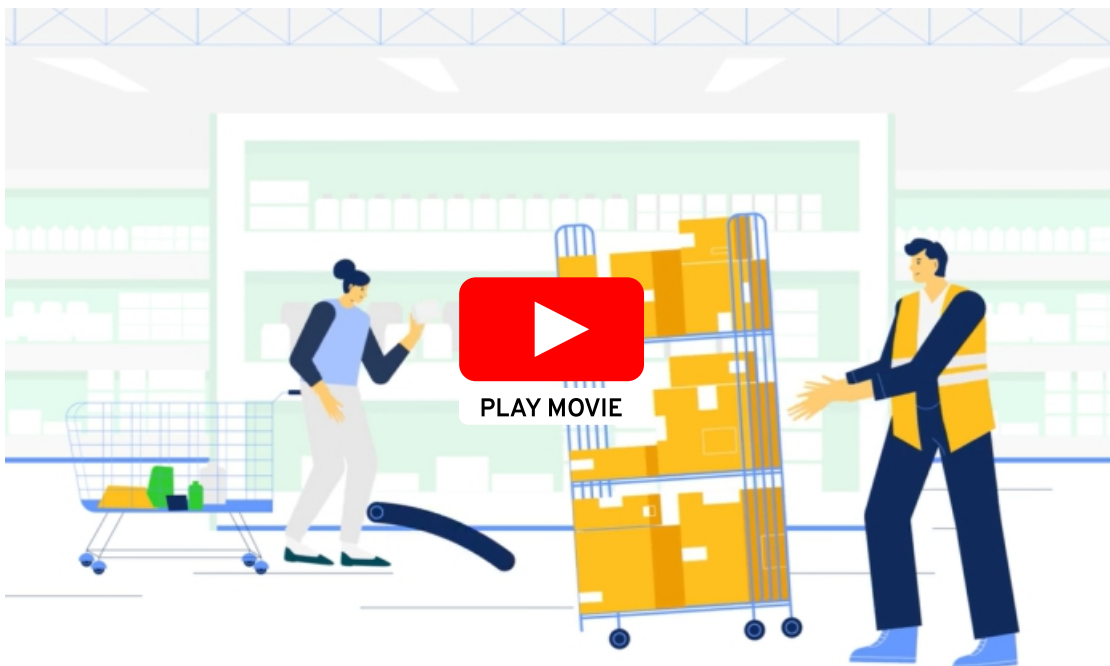
➔ Regular load carriers repairs save costs and keep operations running smoothly

Damaged packaging leads to financial losses. Above all, they are a frequent source of damage to products during transport to the customer. They also contribute to operational delays. For example, load carriers may appear to be in working order and in stock, but if it's unusable, time and resources must be spent ordering and purchasing new ones. It adversely affects the smoothness of operations. Therefore, **regular repair and maintenance ensures that every logistic carrier is in working order and, therefore, available and deliveries are not compromised.**

Repairing is also a big money saver. The cost of constantly buying new pallets can add up quickly. As a result, the more new wooden pallets you have to purchase, the more expensive it can become for your business. Carriers' repair, on the other hand, **reduces costs and allows you to use the media you originally purchased for a long time.**

Pallets are also valuable assets in shipping operations. If **certified and experienced companies repair pallets, they can last much longer, contributing to real savings.**

Let's watch the short movie below to see the load carriers repair benefits.





→ Saving raw materials in environmental terms

Repairing existing load carriers, e.g., pallets, instead of buying new ones, is a much more environmentally friendly option - **saving water, energy, new trees, and reducing waste**. Reusing or repairing pallets helps to save trees used for collecting material for pallets and saves energy during pallet production.

It is crucial when we consider the latest data. A 2021 *Science Direct report*⁶ assessed the environmental impact of the wood pallet industry. There, researchers analyzed the impact of pallet production and concluded that the **electricity used for heat treatment was the main environmental factor**, and the use of steel nails accounted for a large part of the impact on electricity consumption during pallet production. It clearly shows that **pallet remanufacturing is an essential step in the supply chain that extends the packaging life by reducing energy**.



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This aspect of a repair and maintenance program can be extremely useful in helping organisations achieve their carbon neutrality goals⁷. It is also a win-win for companies looking to achieve environmental benefits and promote themselves as "green" businesses.

Sustainability is the best response to logistical disruption

Current economic and political conditions affect possible disruptions in supply chains. We will now consider some of them.

→ Inflation - rising packaging costs

Record high inflation in the Eurozone is the result of many factors, including pandemics, rising energy and fuel prices, the war in Ukraine, and other disruptions. Therefore, if companies want to remain competitive and resilient to shocks in today's turbulent economy, they must look for ways to reduce overall operating costs and mitigate the effects of inflation. High costs are incurred by constantly purchasing new carriers, transportation, or disposal and recycling.

A good start is to reduce the expense of buying new carriers and focus on keeping those already in circulation in the best possible condition.

→ Lack of load carriers in the market due to logistical disruptions

When delivery times for new media get longer, manufacturers face shortages of key components such as packaging and look for opportunities to use and recover those media that are in circulation. With rational use and repair of logistic items, deliveries can continue despite the disruption.

⁶ <https://www.sciencedirect.com>

⁷ <https://www.eco-business.com>



When energy resources are scarce, and possible blackouts threaten companies, it is necessary to use them even more rationally to become more resilient. This applies, for example, to the production of logistics carriers, which is becoming more and more expensive due to inflation but is an essential link in supply chains. It is worth focusing on alternative ways of using load carriers, using those already working, rather than buying new ones.

Ways to extend the life of different types of load carriers

➔ Repair and maintenance of returnable transport items

At Rotom, we use recovered packaging, which means that almost every recovered load carrier is inspected and maintained before it is put back into circulation. Our employees, in dedicated repair lines, check pallets for reusability. Our program includes collecting, repairing, and reconditioning used and damaged pallets and turning them back into usable pallets. Repairs may involve replacing one or more components or completely disassembling the pallet to recover components that are still usable. Our team collects pallets of all sizes, quantities, and types.

Defective elements specialists replace with functioning ones, usually from other damaged pallets. After this type of recycling, a fully functional product is created, which can be sent for further use. The significant advantage is that there is no need to always use fresh raw materials for pallet repair, which is highly beneficial for the environment.



What is included in the pallet repair we do at Rotom?

- ➔ Replacement of damaged or missing boards and blocks
- ➔ Improved fixing of loose parts and additional nails
- ➔ Checking that the pallet surfaces are appropriately aligned
- ➔ Recycling of unusable items

When repairing wooden pallets, we also take into account the requirements of ISPM-15. If the pallet is to be used for exporting goods outside the EU, then re-fumigation of the replaced elements is necessary.

Rotom has a special license, confirmed by a certificate, which authorizes the repair of Euro pallets according to EPAL standards. Each repaired pallet has a unique nail with a number on it, confirming that a certified company has repaired the pallet. Thanks to the special EPAL pallet repair lines, customers can be sure that repaired euro pallets are suitable for further safe use.

The EPAL license also entitles Rotom to repair Gitterbox metal bins, ensuring that the repaired containers are to their original specification. We make sure that every carrier is 100% reusable after repair - it has its structural geometry restored, the mobility of both flaps and locks restored, and the floor renewed. Undoubtedly, the repair is more cost-effective than purchasing new Gitterboxes.

At Rotom, we also repair metal carriers working in circulation, including roll containers. Maintaining a fleet of roll containers is important not only because of their productivity. It is also vital to ensure safe operation for the operators, which significantly impacts the pace and quality of work. In our warehouses, we regularly replace castors, select the right type of wheels for the surface, check the geometry of the base and walls or clean the roll containers of old labels and film residues.



➔ Infrastructure

Rotom has specialized in the maintenance of logistic carriers for over 40 years. It already has over 26 depots in 10 countries in Europe equipped with pallet repair facilities. For many companies, this is a practical solution because we have the flexibility to service or maintain your packaging at the location closest to you. We also carry out some repairs on-site at our customers' sites. This will make the repair quicker and cheaper.

We encourage our customers to take care of their load carriers fleet by repairing and reusing or recycling all or part of it instead of buying new ones all the time. Our automatic and semi-automatic EPAL pallet repair lines guarantee the highest quality of service. You will be sure that the repaired load carriers are suitable for further safe use.

➔ Repairing "disposable" carriers and the possibility of turning them into reusable packaging

Often, logistic carriers such as wooden pallets are left to the end user after a single use because they are no longer needed. However, Rotom encourages the return of such pallets and their reuse. With the proper logistics and IT tools, we can organize the collection of these pallets. We then inspect the pallets for quality and repair them if necessary to get them back to where they can be reused.

➔ Maintenance of specially designed packaging

Entrepreneurs in various industries often use custom-designed pallets, as this saves money and stress in the long run due to damaged goods, unnecessary transportation costs, and space-consuming cargo. If the pallets have unusual dimensions, they can also be reused.

In this situation, we can offer recovery of these packages so that they can function again in the customer's supply chain. After using these pallets, we ensure they are checked for quality and repaired so that they can be put back into circulation in the just-in-time system. Regular maintenance of the packaging means that you can postpone the cost of buying new carriers and focus on other logistics processes.





Load carriers repair cases at customers in various industries - impact on the liquidity of their operations

SITUATION #1 EPAL pallet repair

Industry: Drinks-Breweries

Customer

The client is one of the leading manufacturers in the brewing industry in Poland with a long history. It has a diversified product portfolio on the market and is a leader in innovation in its field, taking care of its products' regional development. The client's processing plants are located in five places in Poland. The company's constant development is the reason why it is the only brewer listed on the Warsaw Stock Exchange.

What was the collaboration like?

Rotom has several locations in Poland and therefore was able to service the Client's production facilities in five cities effectively. The cooperation with the Client lasted for about two years within the scope of sales, repair of Euro pallets (mainly second category), and purchase of pallet scrap. The central buying office on the Customer's side took care of a sufficient number of pallets in the plants' stock.

We often repaired the damage in the range of three pallet elements. More damaged carriers were stored in a separate location and purchased as pallet scrap.

During the pallet service, Rotom provided transportation. We carried it out in two ways:

- collecting the pallets, repairing them in Rotom's warehouses, and then shipping them back to the customer
- When a client could not afford to reduce the number of pallets in circulation and needed pallets immediately, then Rotom, collecting pallets for service, delivered good pallets by the same transport (FTL).



Results

Rotom has a track record of providing clients with a comprehensive range of services - from sales to repair and redemption of carriers. We have repaired 120,000 pallets (60,000 per year) for the client over the two years 2020-2021. The uniqueness of this project is that the Customer is relieved from dealing with pallet handlings, such as sorting and repair, and their business has become more sustainable. Thanks to the pallet repairs, the Customer recovers its carriers regularly, and the average price of a repaired pallet does not exceed 25-35% of the purchase price of a new one, which results in significant business savings.



SITUATION #2 EPAL pallet repair

Industry: Packaging

Customer

The customer has been in the packaging business since the 1930s. It is an international supplier of corrugated board packaging. Its production plants operate from Norway to France and from Ireland to Poland. The Client's Capital Group is very active in sustainable development, e.g., by reducing and decarbonising energy consumption through systematic conversion to biomass, co-generation, and effective use of waste heat in plants. Moreover, it is committed to technology development, e.g., the packaging division produces high-quality recycled paper and constantly innovates in terms of sustainable production methods.

What was the collaboration like?

We have worked with the Client for over ten years in pallet handling. At the Customer's sites, some employees sort the return flow of pallets they receive from their customers. Once the pallets are sorted, they load them into empty trucks. The trucks are positioned near the place where the pallets are loaded to reduce lead times. The fully loaded trucks are then transported to Hamme, one of Rotom's depots in Belgium, where the pallets are repaired.

After the repair, we bring the pallets back to the customer's premises to unload them. Then the cycle starts again - we get back a fully loaded truck with pallets ready for repair. In addition, we also serve the customer as a backup logistics carrier warehouse.



Results

Many years of cooperation with our Client certainly shows satisfaction with Rotom's services. We currently repair around 12000-15000 pallet pieces each year for our client. The uniqueness of this project is that it complements the Client's existing business. A good understanding of the role of sustainability and cooperation on many levels enables smooth collaboration from both sides. Thanks to regular repairs and maintenance of the carriers, the Client recovers its pallets regularly, and the **average price of a repaired pallet does not exceed 35% of the purchase of a new one**, thus saving funds for other expenses.



SITUATION #3 Repair of bespoke wooden pallets

Industry: Construction

Customer

The Customer's history in the construction industry dates back to 1909, and today it is the world's leading manufacturer of mineral wool-based solutions. The client is best known for its wide range of high-quality products for the construction sector, but its branches in Poland also supply products for the horticultural industry and noise and vibration minimization solutions for the transport sector. The client's insulation products are used in iconic buildings worldwide, from the Empire State Building in New York to the Bolshoi Theatre in Moscow, the Eiffel Tower in Paris, and the Olympic Stadium in London.

What was the collaboration like?

Rotom has been its client's leading supplier of pallets for many years. As sustainability was our common goal, an agreement was reached to recover the pallets put on the market by our client and deliver them back to the warehouse where they could start again. This recovery was impossible without quality control and proper repair of the pallets designed specifically for our Client.



Results

Rotom has experience repairing pallets specifically designed for the supply chain of various industries. We currently repair around 20,000 pallets per year for our client. The uniqueness of this project is that it complements the client's existing business. With a focus on sustainability, the client recovers their pallets regularly, and the **average price of a repaired pallet does not exceed 30% of a new pallet purchase**, resulting in a large saving in business.

SITUATION #4 Repair of metal Gitterboxes (under EPAL license)

Industry: Automotive

Customer

The customer is one of the largest automotive parts manufacturers in the United States. It manufactures original equipment emission and rides control systems, first assembly, and aftermarket components. Since 1999, the Client has been listed on the American stock exchange New York Stock Exchange (symbol TEN). The company's dynamic revenue growth can be seen in the fact that in 2011 the company recorded revenues of \$7.4 billion.

What was the collaboration like?

The automotive industry uses Gitterboxes as a standard for storing its components. During their intensive use, they require regular maintenance. One of Rotom's customers has been using Rotom's Gitterbox repair service for three years, and we have repaired more than 2600 Gitterboxes during that period. Rotom specialists often repair the carrier's wooden floor and metal bars. Sometimes we also straighten the structure of the whole basket to avoid replacing individual elements.

The customer submits another batch of Gitterboxes for repair and sends it to Rotom. He is responsible for inbound and outbound transport. In the beginning, we assess the condition of the brought bins and determine the average price of the repair. This is because if there is too much work to repair a bin, we inform the customer that it is a waste. Once we have verified that it makes sense to repair the bins, we repair the Gitterbox bins to EPAL license to meet all standards.



Results

Through periodic repair and maintenance, our customer's supply chain is based on proven and safe logistics carriers. The high standards that apply in the automotive industry are maintained. The packaging and, what is more important, the transported products of our Customer are safe during transport and storage. Not less important is also the economic aspect - **the price of a repaired container is 25% of the purchase price of a new one**, so it is a very beneficial solution for the Customer.

SITUATION #5 Repair of specialized roll-off containers

Industry: Postal, Packaging

Customer

The client is a German parcel and logistics company operating in the international courier segment. It has existed since 1969, initially transporting shipments from the continental United States to Hawaii, and today it has a worldwide reach. The company currently delivers more than 1.6 billion shipments each year.

What was the collaboration like?

Roll containers in the mail and shipping industry work intensively non-stop. This influences the need for regular maintenance of these carriers. One customer who has been working with Rotom for years has commissioned a repair service for specially designed small and large roll containers. Each month he has 30 to 50 units repaired. **The price of a repaired roll container is 30-50% of the purchase price of a new one, which is very profitable for him financially.**



Results

Rotom runs the customer's entire repair department on site, allowing the customer to concentrate fully on its core business, with Rotom providing and maintaining its logistical resources. After taking over the customer's repair depot, Rotom optimally equipped its staff and workplace to carry out repairs better and more efficiently. This close and therefore, **very efficient cooperation brought significant benefits to both Rotom and the customer.** Additional transport and several other unnecessary processes that could have been avoided were saved.



SITUATION #6 Repair of standard roll containers

Industry: DIY

Customer

Rotom's client is the Dutch owner of two chains of DIY (do-it-yourself) hardware stores. It has existed since the 1970s, and today, with almost 400 DIY stores in the Netherlands and Belgium, it is the undisputed number one in the DIY market. Moreover, it is one of the 15 largest suppliers of DIY equipment in Europe.

What was the collaboration like?

Rotom has been the preferred supplier of customer roll containers for many years. We have been cooperating for years on a container repair and maintenance project. Each month we repair an average of 200-300 pieces of nested, 3-sided roll containers.



Results

By repairing and maintaining the containers in the customer's supply chain, the losses due to damaged containers are virtually zero. Almost the entire pool of containers is constantly in use and available for safe operation. It is worth adding that the **average price of repairing one container is less than 20% of the cost of buying a new one.**



Work with an experienced partner to repair and maintain your logistics carriers

Why opt for a logistic carriers repair and maintenance service from Rotom? Here are the arguments you should consider when choosing a logistics partner:

→ Comprehensive repair

Repair of wood, metal, and plastic carriers - from pallets to metal containers to plastic bins - if you need a flexible approach to your carriers, you get a partner who takes care of everything.

→ Location flexibility

Repairs can be carried out at one of Rotom's depots or a location designated by the customer; we adapt to the customer's needs.

→ Transparency of the repair process

At Rotom, we have the necessary knowledge and experience backed by international certifications that may be required to repair specific carriers. We always record the work carried out, and the repairs are carried out transparently to the recipient. After each operation, customers receive a full report of what was done and which media was repaired or replaced.

→ Keeping Load carriers in proper condition in customer's supply chain

Regular repair and maintenance ensure consistent quality of packaging; this affects smooth and safe operation. We help in the faster execution of logistics activities.

→ Sustainable repairs

We recover parts from permanently damaged items, using them to repair another ones. We do everything possible to keep the product in circulation as long as possible and to minimise the need to purchase new packaging.

→ Experience

We have the relevant **certifications required to repair EPAL-licensed packaging** and over 40 years of experience in the industry.

→ Integrated recycling process

We replace damaged components with functioning ones, usually from other damaged pallets. However, we perform the final recycling if nothing can be recovered.





Summary

When predicting unexpected increases or decreases in orders is difficult; many industries are looking for savings. Considering that the cost of purchasing load carriers is very high, you can often avoid or postpone it by taking care of the excellent condition of your load carriers.

Our experience in repairing load carriers for customers from all over Europe shows that the cost of repairing the logistic carriers is only 25-50% of the price of new packaging.

Thanks to regular maintenance of wooden pallets, roll containers, Gitterboxes, or other logistic carriers, we ensure that they last longer and are safe for their operators.

This is also in line with the idea of sustainable development, which will reduce the direct impact of packaging on the environment.

Through our services, we strive to raise awareness among companies that a lot of logistic carriers can be reused. Together with our customers, we simulate their supply chain based on reusable transport items. On this basis, we propose possible solutions and estimate the resulting savings. We try to ensure that the repair and maintenance of logistic carriers postpone recycling to the final disposal. We are committed to extending the life cycle of packaging. Damaged load carriers does not always have to be replaced. Very often, it can be repaired and used for a long time before it is finally disposed of.

How can Rotom extend the life of your load carriers?

Developing, implementing, and maintaining a sustainable supply chain program can be a challenge, especially if your business doesn't have the resources at its disposal in this regard. Fortunately, that's where Rotom comes in. From design to sourcing, maintenance, and management, our teams simplify the complex world of sustainable logistics. Our clients can focus more on the benefits of reusing the media they have and less on the day-to-day aspects of managing it.

Contact us today to learn how we can support you at every step in your quest to streamline your logistic operations.



Do not miss other editions of our White Papers:



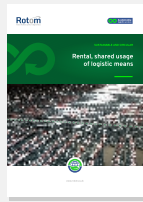
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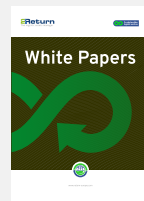
Pooling

Available soon



Returnable transport items instead of one way packaging

Available soon



Sustainable & ergonomic product design

Available soon



Recycling and re-usage of materials

Available soon



Track & Trace

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