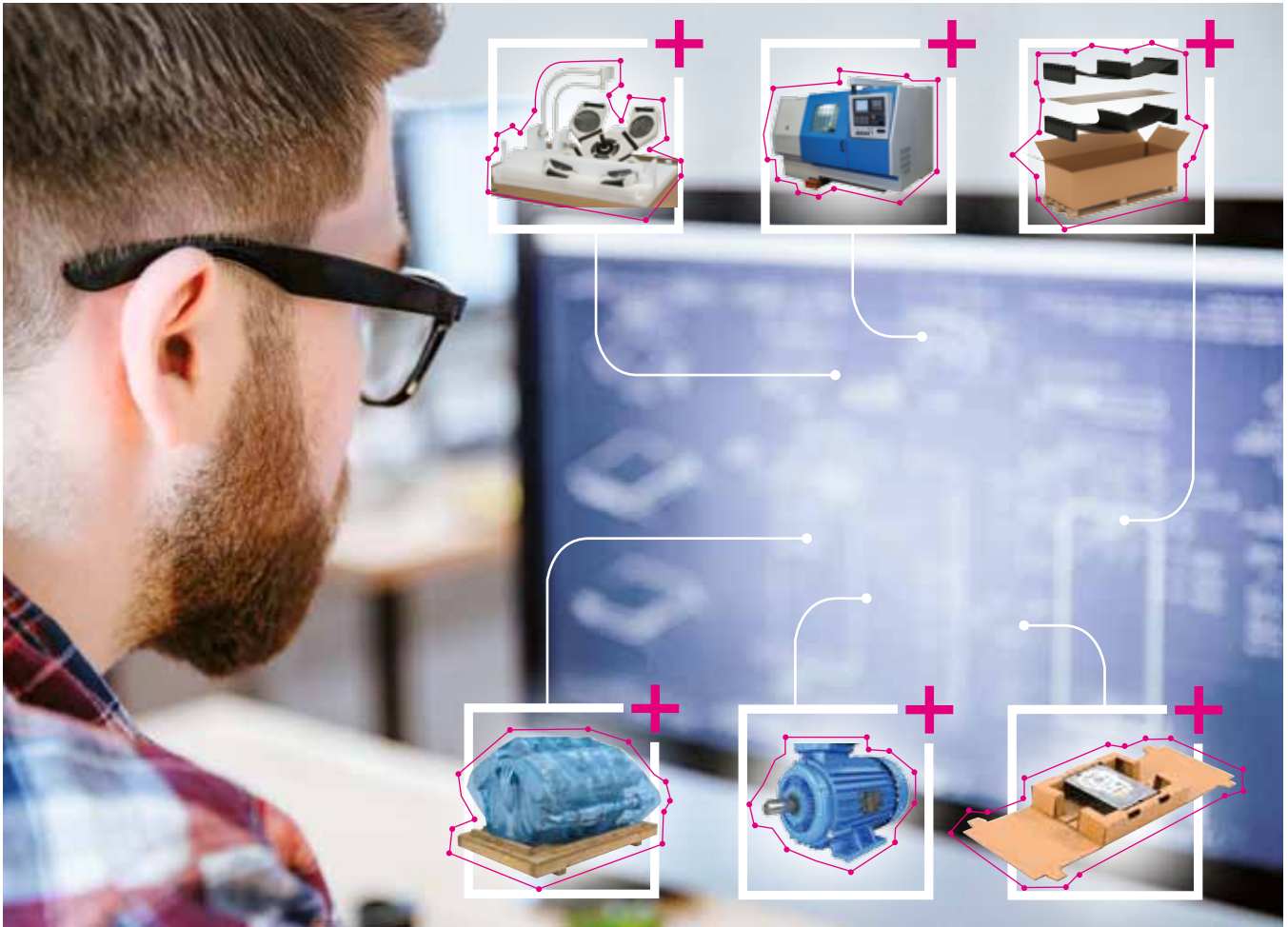


# antalis/INNOVATIVE PACKAGING

HIGH TECH SOLUTIONS FOR INDUSTRIALS



## TRENDS

PACKAGING  
REVOLUTIONISED  
BY INDUSTRY 4.0 **P.4**

## INDUSTRIAL CHALLENGES

INNOVATIVE BESPOKE  
SOLUTIONS **P.14**

**SMART  
PACKAGING  
SOLUTIONS**

[antalis.com](http://antalis.com)



antalis <sup>TM</sup>

# INSPIRING AND EFFICIENT PACKAGING SOLUTIONS

Striving to meet the challenges of everyone, whatever their industry, Antalis devotes all its expert knowledge to ensuring we can offer solutions to protect your industrial components when these need to be sent to another factory for assembly.

With an eye on the latest trends, we have selected the most inspiring innovations that will meet all your constraints, whether you specialise in automotive, electronics, or mechanical engineering...

## OUR EXPERTISE IS OUR STRENGTH

Because we know that the parts you need to protect are unique, and that you have your own industrial processes and certifications, Antalis develops bespoke packaging solutions to ensure all your challenges can be met: humidity, pressure, fragility, connectivity, space optimisation, reduced environmental footprint.

Browse through this magazine to discover the many ways in which we can help you optimise your daily life, making you more efficient than ever.

## ISO STANDARD AWARENESS

Whatever the constraints of your specifications, Antalis is aware of your challenges and integrates these standards into its projects.



# BECAUSE EVERY INDUSTRIAL CHALLENGE IS **UNIQUE...**

## TRENDS

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# PACKAGING REVOLUTIONISED BY INDUSTRY 4.0

**As manufacturing is transformed by Industry 4.0, packaging must also follow this digital revolution to increase its competitiveness when faced with pressure from today's fast-moving markets.**

This exciting evolution targets operational excellence through increasing overall equipment effectiveness (OEE), reducing the total cost of ownership (TCO) and enabling total productive maintenance (TPM). It uses big data, interconnectivity and automation to give greater control across all channels in the packing line.

Seamless integration of business systems that were once separate should see huge leaps in productivity, allowing high levels of customisation at lower cost. In fact, Industry 4.0 could add \$14.2 trillion to the global economy by 2030, according to a study from Accenture\*.

## Conquering current challenges

Packaging is both an important interface with customers and a vital

part of the value chain. However, innovation has given rise to diverse products with shorter life cycles, making packing efficiency more costly and complex at a time when the sector is trying to achieve the opposite.

Modern lines need to be flexible to produce customised packaging in a variety of formats that are readily available.

**“  
Industry 4.0 innovation  
helps solve these  
problems, enhancing  
functionality to best  
meet demand.  
”**

## What is smart packaging?

Industry 4.0 innovation helps solve these problems, enhancing functionality to best meet demand. How? Smart packaging uses digital sensors that track and record product details related to temperature, humidity, motion, pressure and usability. It detects changes and

communicates information to extend shelf life, verify freshness, confirm quality and improve safety. Depending on the context, smart packaging can also be adapted for other applications, such as compliance and traceability, or even inventory control.

From GPS trackers, scannable barcodes and anti-tampering labels to special films, liners or barriers, many solutions are already available for state-of-the-art packaging. But it won't stop there: smart packaging continues to become smarter as the Internet of Things (IoT) gets exponentially more advanced and secure.

At this rate, smart packaging is expected to unlock significant benefits to save both time and money for companies and customers alike, with global market value predicted to reach \$52 billion by 2025.

\* 2015 Accenture - Winning with the Industrial Internet of Things



### Big data builds better lines

To be equipped for 4.0 success, packaging systems must be connected, adaptable and modular. Available non-stop, new generation machines will diagnose and report information using technology to optimise real-time performance, promote smart energy consumption, monitor processes remotely, and predict maintenance.

Making the shift requires processes and materials throughout the packaging line to be revamped, with data analytics at the core of boosting efficiency. The strategy should include collecting automated data on OEE for better visibility regarding quality, performance and availability. To run smoothly, operations need to be consistent between all machines, and these numbers will help assess whether everything is in line to quickly prevent interruptions.

Analysis of TCO maximises value for future packaging lines with calculations based not only on the purchase price, but also on costs

linked to mass customisation, upgrades, production flexibility, and power consumption. It is anticipated that machinery for smart packaging will be easier to operate and maintain, and a study on Industry 4.0 by PwC\*\* shows 43% of companies expect to lower costs by more than 20% over the next 5 years.

“  
**A study on Industry 4.0 by PwC shows 43% of companies expect to lower costs by more than 20% over the next 5 years.**  
”

Additionally, the same report says 61% of companies will use big data analytics within 5 years for more efficient maintenance. Packaging with big data collected from sensors paired with direct online connectivity enables

TPM by setting proactive measures and auto-request maintenance actions. This is an important step to fulfilling the Industry 4.0 goal toward zero tolerance.

### Path to Packaging 4.0

New standards for excellence in packaging will be set with the upgrade to Industry 4.0. The expectation will be rapid mass personalisation and production with very few defects, accidents or breakdowns.

Many exciting developments lie ahead, and the benefits apply to all packaging companies, both small and large. Getting started doesn't have to be a complex matter, with patience an essential part of the process as incremental changes brings bigger advantages. Working in partnership, Antalis offers adaptable packaging solutions and expertise for finding the right path to transition productively towards 4.0.

\*\*2016 PwC - Industry 4.0: Building the digital enterprise

## KEY FIGURES

20%

INCREASE IN REVENUE  
FOR 43% OF COMPANIES  
IN LESS THAN 5 YEARS

61%

OF COMPANIES WILL USE BIG  
DATA ANALYTICS WITHIN  
5 YEARS FOR MAINTENANCE

14,2 TRILLION

ADDED TO THE GLOBAL  
ECONOMY BY 2030  
WITH INDUSTRY 4.0

# CSR CREATES NEW OPPORTUNITIES FOR PACKAGING

Natural resources are being depleted at a troubling speed, with rates of pollution and waste – especially plastic – climbing higher each year.

It is an urgent issue that involves all industries. In fact, Earth Overshoot Day, or the day annual human consumption of ecological resources outweighs the planet's capacity to regenerate them, was on 29th December in 1970. It jumped to 1st August in 2018 and, unless changes are made, the date will be as early as April by 2050.

This situation has upped the ante for the packaging industry and its commitment to corporate social responsibility (CSR). Businesses today have to take their impact on both the environment and the well-being of society very seriously.

## Competitive advantages of CSR

Packaging operations are held accountable for their use of energy and renewable materials, with global footprint a real concern.

Although change is an obligation, it can also be an opportunity. CSR puts the origin of packaging and the way it is produced under scrutiny, thereby introducing new levers for competitiveness.

Sustainability becomes an asset for attracting partnerships, increasing client loyalty, improving corporate branding, and retaining human resources. Less packaging means less energy, allowing green packaging processes to lead to reduced production and transportation

costs.

Another advantage includes risk management, as CSR helps ensure honest, reputable business procedures are being followed throughout the line.

These benefits are inciting action, with 86% of nearly 100 packaging sector players reporting specific goals or intentions to support concepts for sustainable packaging, according to the Sustainable Packaging Coalition.

“  
**86% of nearly 100  
packaging sector players  
reporting specific goals  
or intentions to support  
concepts for sustainable  
packaging**  
”

## FOCUS ON



A study\* reflects the importance of this issue with 91% of global consumers saying they expect companies to do more than just focus on profit, and to also operate responsibly by addressing social and environmental issues. On top of that, 90% would boycott a company if they learned it had irresponsible or deceptive practices.

\*2015 Cone Communications/Ebiquity Global CSR Study



## The Sustainability Agenda

- **Sourcing recyclable, renewable materials** to replace the use of fossil fuel resources and other non-sustainable matter in packaging, especially plastics. Resilience and safety are additional key criteria for selection. Examples such as reusable polypropylene, recycled corrugated cardboard, bio-based materials and eco-friendly inks are a few solutions that add quality and value while conserving resources. Also, examining how, when and where substances come from, as well as certifications to verify their authenticity, can define conscientious procurement practices that help avoid risk.

- **Optimising design** for smaller, lighter packaging that uses layers only where necessary and streamlines the use of extras. Over-packing and single-use packages are to be eliminated, and the entire life cycle of the package is carefully considered to increase longevity or reuse. The pros of green design lead to lower waste of raw

materials, water and energy, saving costs along the way.

- **Promoting reusability** by improving recovery and focusing on materials that are recyclable or compostable. This is crucial for plastic in particular, because of the ongoing ocean pollution crisis. Statistics state that as little as 14% of the world's plastic packaging is recycled. New innovations and protocols for reusability are essential for credible CSR, with reuse at the core of preventing waste. All combined, these efforts proactively address environmental responsibilities and minimise carbon footprint.

## Good for the planet and profit

The packaging sector must continuously evolve to keep pace with modern markets, technology and digitalisation. With various parameters to evaluate, global brands have targeted 2025 to implement sustainability changes. However, there

is no time to waste, and packaging leaders know that even small steps offer a positive effect.

Looking forward, packaging of the future will need to be both good for the planet, and for profit. It will be designed for functionality and safety, and made using renewable energy and durable, responsibly sourced materials that can be recycled or reused.

CSR priorities serve to improve sustainable packaging business models, preparing for greater opportunities and success as better values create a world worthy of doing business in.



# ERGONOMICS: WELL-DESIGNED WORKSTATIONS BOOST PRODUCTIVITY & SAVINGS



To recruit and retain talent in today's highly competitive packaging job market, an ergonomic workplace is a key point of attraction. Well-designed work environments not only improve employee well-being, but drive productivity, quality and savings.

## How can ergonomics be introduced to packaging?

The Kaizen method, a Japanese philosophy meaning "good change", is a useful tool for integrating ergonomics. It encourages staff to continuously review the processes they use for ongoing improvement.

Starting with a review of each activity, analysis should be made to identify changes that can save time and simplify tasks. Specifically, assess the layout of materials on the packing station and think of shortcuts that eliminate unnecessary handling.

“  
**Implementing these basic elements can increase productivity up to 25% more than with fixed workstations**  
”

## Increasing productivity with properly planned workstations

Properly planned workstations should accommodate 90% of operators with height-adjustable tables, footrests and equipment, plus flexible chairs and anti-fatigue floor mats. The most-used materials should be within easy reach, and staff should have the option of standing or sitting.

Implementing these basic elements can increase productivity up to 25% more than with fixed workstations, ergonomic experts say\*.

## Reducing risk with automation

Automation also offers ergonomic advantages by easing the burden of repetitive manual labour and reducing

the risk of workplace injuries which, according to the International Labour Organization\*\*, total nearly 340 million per year. For example, label scanners, robotics, and case sealers or erectors all speed output while helping reduce labour costs lost due to tendonitis, carpal tunnel or back pain.

## Into the future with ergonomics

Ergonomics will have a positive impact on the future of packaging. Adopting an ergonomic strategy that carefully considers the activity, the operator and the environment is the future for successful packaging lines that want to lead the way in employee safety and well-being – and now is the time to get started!

## FOCUS ON



In fact, an Antalis client in the agricultural machinery sector has decreased work-related illnesses and increased efficiency by 30% using our packaging optimisation solution. A lifting aid now elevates heavy batteries weighing 30 kg to 60 kg, lessening the strain on employees who previously had to lift the batteries by hand, and making the process safer.

\*Ergonomics at work - [www.bostontec.com](http://www.bostontec.com)

\*\*International Labour Organization - [www.ilo.org](http://www.ilo.org)



# HOW LEAN MANAGEMENT CREATES VALUE FOR PACKAGING

Packaging has always been an industry focused on optimisation, but applying lean management methodology takes it to the next level. Established by Toyota in the 1940s, lean manufacturing pin-points and removes processes that don't add value. It is a best practice that targets elimination of waste, delivery of quality, and continuous improvement.

From a packaging point of view, these principles promote successful production and support sustainability, which adds an important competitive advantage.

## What makes a packing line "lean"?

With a strategic role in optimising value, lean packaging integrates activities to create holistic, efficient operations that eradicate waste related to:

- **Overproduction** – good client/supplier communications and reliable delivery planning with shorter lead times help better determine what packages need to be produced, and when, to arrive just-in-time and avoid surplus losses.
- **Excess inventory** – the Kanban inventory system, which is part of lean manufacturing, aligns need with actual use to save space and money on supplies as well as cut back on damages that can happen in storage.
- **Unnecessary motion** – tools that are easily accessible and ergonomic assembly procedures minimise movement to reduce physical stress and speed up efficiency.
- **Defects** – durable, quality materials and intelligent processes make packaging more resistant and cut costs related to defects.
- **Overprocessing** – smart design applied to both the packaging and the production platform uses only what is needed to decrease material expenses and environmental impact.
- **Waiting** – streamlined work methods and designs that exclude adding various small components to the package serve to gain time and improve work flow.
- **Transport** – avoiding unneeded movements in the warehouse before final shipping saves money and protects packaging from damage.

## Better, innovative packaging

Lean thinking removes waste from start to finish, beginning at the sourcing of supplies through to manufacturing and finally handover to the customer. It sets a path for better, innovative packaging, while providing real benefits for businesses.

**Seizing these advantages means it is time to ask: how lean is your line?**

## FOCUS ON



Taiichi Ohno, founder of the TOYOTA production system, defined 3 family of waste:

- MUDA: task with no added value – but accepted
- MURI: task which is unnecessary, too difficult, impossible
- MURA: fluctuations, irregularities



# VCI PACKAGING: ACHIEVING OPTIMAL PROTECTION AGAINST CORROSION DURING TRANSPORT AND STORAGE

**Corrosion issues have serious consequences for organisations in the metalworking industry, such as suppliers of automotive components or manufacturers of heavy equipment: these can result in costly reworking and new production initiatives, and can seriously damage the corporate image of the company.**

Corrosion can be avoided by preventing the chemical reaction between metal, humidity and oxygen.

Anticorrosive packaging such as VCI offers effective protection.

VCI is the abbreviation of “Volatile Corrosion Inhibitors”: the substances are integrated into package carriers such as paper or film; they continuously evaporate and create an atmosphere within the packaging that protects against corrosion by reaching the surface of the metal and creating a protective layer. The process will prevent humidity reaching the surface of the components.

One of the key advantages of VCI packaging as an effective protection against corrosion is that no oil is needed to protect against rust, and metal parts are ready to use immediately after unpacking without any washing or cleaning required.

There are no DIN standard requirements for VCI packaging design. It is driven by valued experience that has proven reliability in practice.

**“Due to the complexity of the subject, the approach must consider the packaging process as a whole, and adapt the solution to the individual supply chain needs.”**

It is essential to create a closed, hermetic volume and maintain a measured distance between the VCI carrier and the surface to

be protected. The VCI substances have to circulate freely around the metal part(s).

Due to the complexity of the subject, the approach must consider the packaging process as a whole, and adapt the solution to the individual supply chain needs.

Antalis has extensive experience in the field and coordinates an expert network of partners to guarantee optimised, sustainable protection against corrosion solutions. Our expert teams will take an in-depth look at products, production, intralogistics and packaging processes, as well as the shipping details and the end user unpacking experience. Each individually designed packaging concept will therefore meet the requirements for mechanical protection and technical cleanliness. A perfect result from the packaging concept.

## OUR EXPERT TALKS ABOUT VCI PROTECTION



**Kerstin Lau**

Management of process and application technology for corrosion protection at Antalis Packaging GmbH

### WHICH CHALLENGES WOULD YOU RECOMMEND USING VCI PACKAGING TO TACKLE?

The current requirements for corrosion protection from a wide range of industry sectors vary – and are subject to the constant changing of process optimisation. When using new multi-metal components or specialised components for various e-mobility concepts, innovative VCI packaging provides optimum product protection. Efficient and flexible packaging is required to provide products with clean and dry protection against corrosion. Materials which are ideally suited for this are all metal components that should be further processed or installed straight out of the packaging. This is because simple and cost-effective VCI packaging reduces or eliminates additional work steps, such as de-oiling and cleaning.

Even complex, time-consuming export packaging made from aluminium compound film can be replaced with VCI packaging, making the process more cost-effective.

### FOR HOW LONG DO VCI APPLICATIONS PROVIDE PROTECTION?

This is one of the most frequently asked questions! Depending on the VCI material used, we offer protection periods ranging from six months to several years.

The overall packaging concept along with the storage and transport conditions have a significant impact on the protection period.

With our thorough overall analysis and on-site consulting, we develop long-term VCI packaging that can protect metal components for up to ten years.

“  
*VCI packaging reduces or eliminates additional work steps*  
”

### WHAT RESULTS ARE DELIVERED BY VCI APPLICATIONS?

Our focused 360-degree supply chain approach ensures safe and sustainable corrosion protection for a wide range of metal alloys. The easy handling allows for sleek efficiency in the packaging process.

### FOCUS ON



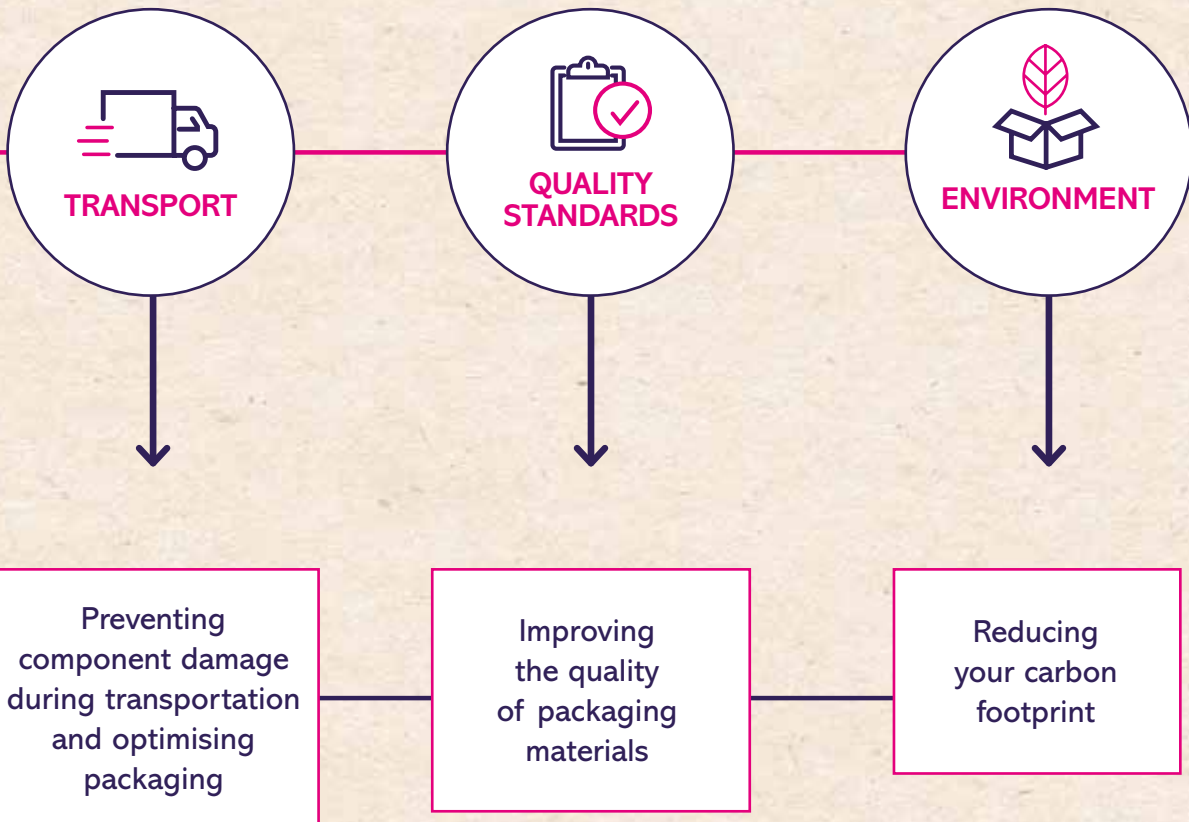
Using construction elements made from highly effective VCI corrugated cardboard means that significantly more active compounds are incorporated into the packaging. As a result, you can now forgo having polyethylene bags in individual containers. The outer packaging

that was originally required and was made from non-recyclable aluminium compound foil has been replaced with a simple LDPE bag. The overall packaging concept reduces annual material costs by 30% and is suitable for worldwide shipping.



# BECAUSE YOU FACE MULTIPLE CHALLENGES AND GOALS





Read our 6 case studies to discover how innovative bespoke solutions can help you meet your business challenges.

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AT THE HEART OF  
YOUR CHALLENGES

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**INNOVATIVE  
BESPOKE  
SOLUTIONS  
FOR INDUSTRIAL  
BUSINESS  
CHALLENGES**

Read our 6 case studies to discover how a global approach to packaging can help you meet your daily challenges, from storage optimisation, to increased productivity, to CSR.





**HOW TO OPTIMISE**  
COMPONENT STORAGE

P.16



**HOW TO ENSURE** OPTIMAL  
PACKAGING AND STORAGE FOR  
PRODUCTS OF DIFFERENT SIZES

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**HOW TO MAXIMISE** THE QUANTITY  
OF THE PRODUCTS TRANSPORTED

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**HOW TO REUSE** PACKAGING TO  
OPTIMISE COSTS AND REDUCE  
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**HOW TO PROTECT** COMPONENTS  
DURING STORAGE AND  
SHIPPING

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**HOW TO IMPROVE** THE PRODUCTION  
CHAIN BY INCREASING PRODUCTION  
CAPACITY IN A REDUCED SPACE

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# HOW TO OPTIMISE COMPONENT STORAGE

## THE CUSTOMER'S CHALLENGE



This high-precision lighting manufacturer wants to export its medical technologies. Its product: two types of high quality surgical lamps for worldwide export. The customer's process for handling the products is long and delicate, plus it has to ensure the security of all the product components and optimise storage during shipments.

The customer wants to reduce the long handling to optimise working time, protect the product to limit returns, and optimise storage for shipments and warehousing.

### ACTIVITY

Manufacturer of technical lighting.

### PROJECT TYPE

Creating better packaging for transport and manufacturing.

### PROJECT OBJECTIVE

Optimise the handling time and protect the product during transit.

## THE ANTALIS SOLUTION

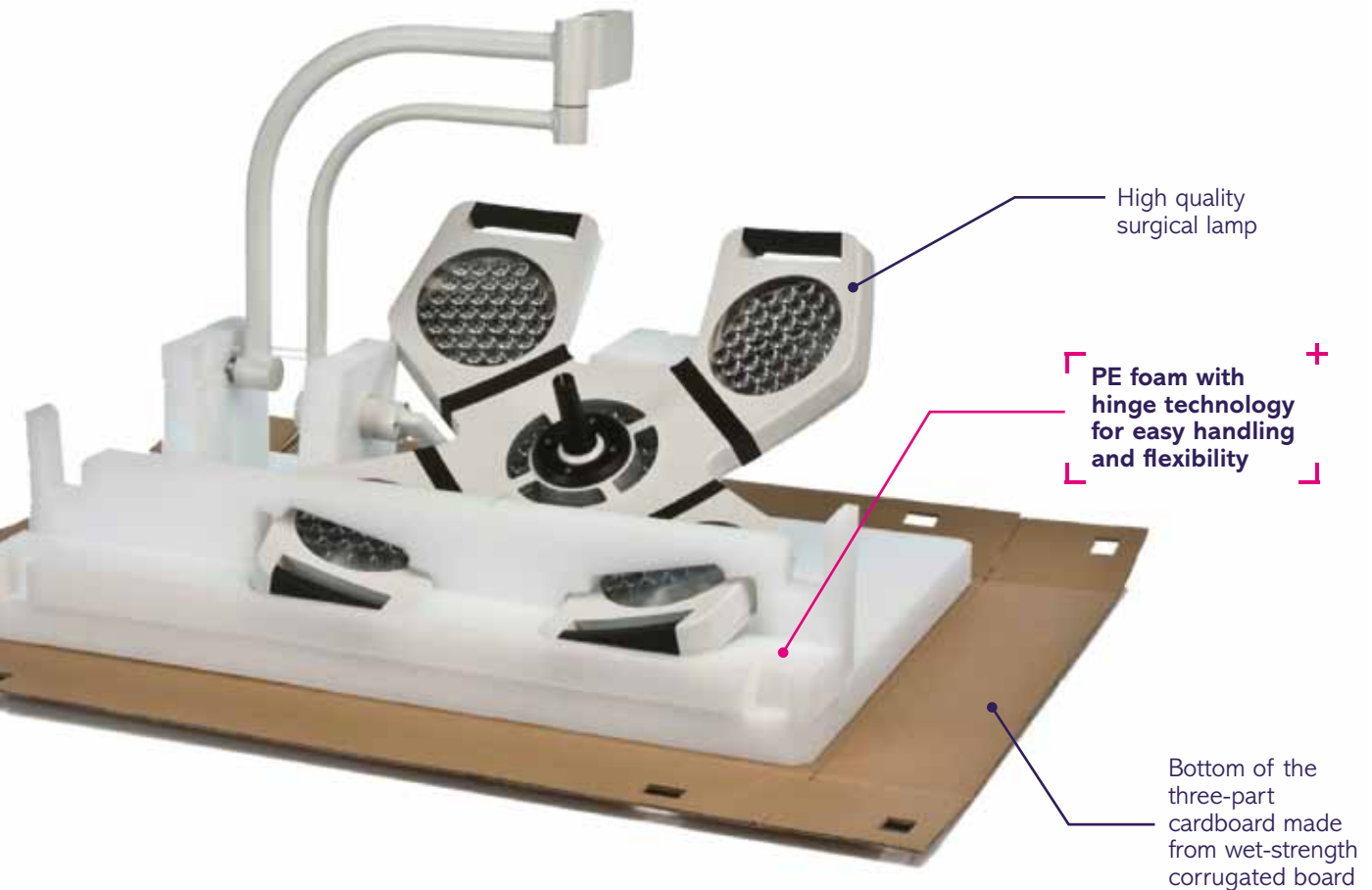
Packaging adapted to indoor and outdoor environments, moisture resistant, 100% protected and optimised to limit the time required for packing and unpacking parts with a storage solution for space optimisation.



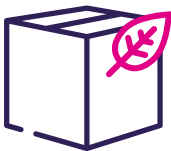
Clamp devices for quick closing

## THE PROCESS

- + Study of the **customer request**
- + Study of its **perimeter and the stakes**
- + Creation of a **prototype**
- + **Test of the time** for packaging and protection
- + **Solution validated** by the customer



### ADVANTAGES OF THE SOLUTION



#### Reusable

Solid and robust, the packaging can withstand several trips whilst retaining optimal protection



#### Lower prices

On transport and line packaging with corrugated tray and PE foam moulding



#### Optimization

of product packaging time



# HOW TO ENSURE OPTIMAL PACKAGING AND STORAGE FOR PRODUCTS OF DIFFERENT SIZES

## THE CUSTOMER'S CHALLENGE



A global leader in PC components, peripherals and accessories. It provides IT professionals with all the industry's key components.

ACTIVITY	Leading provider of IT components
PROJECT TYPE	Optimise packaging costs for different products
PROJECT OBJECTIVE	Develop a packaging solution for different product sizes

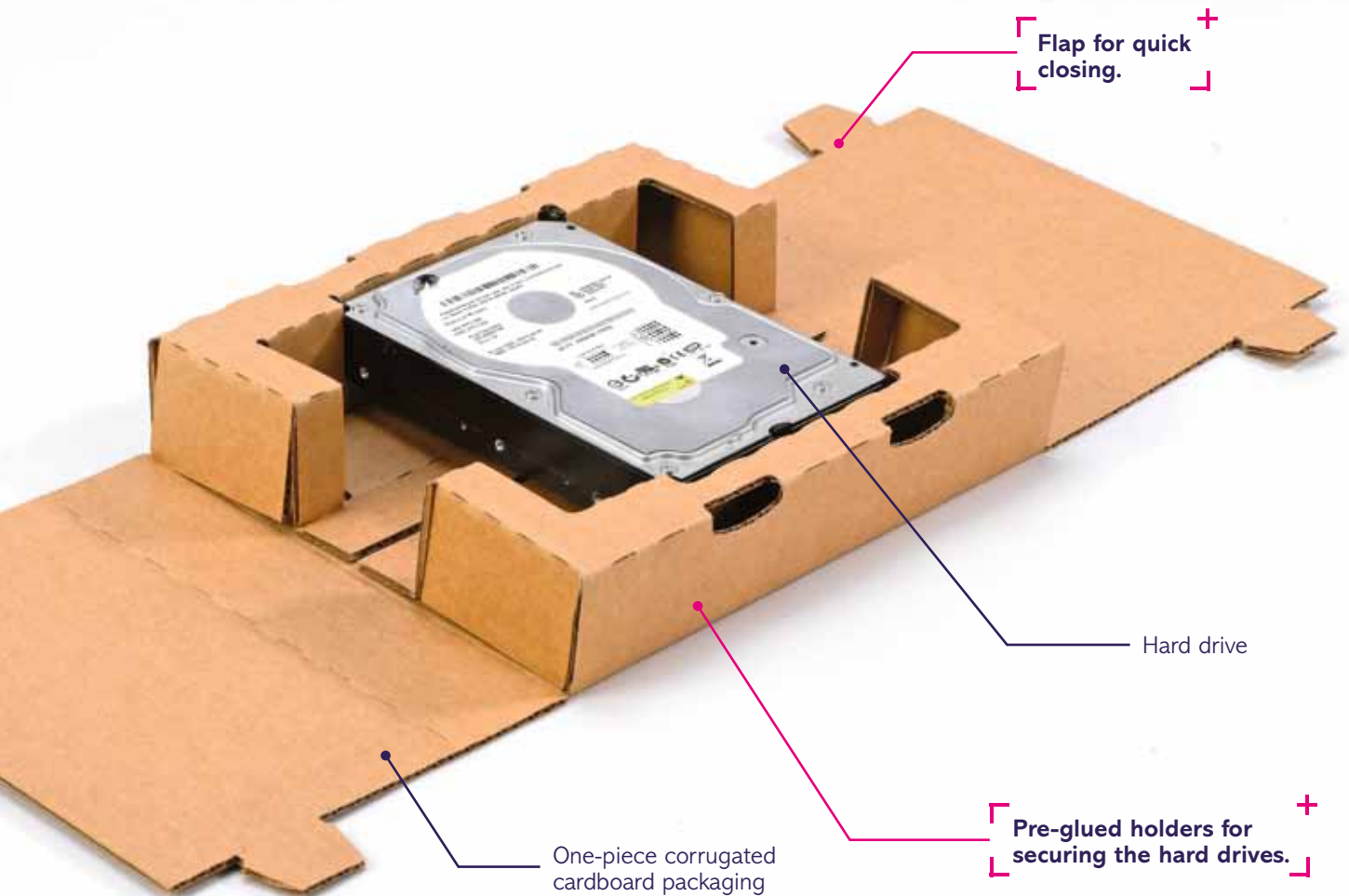
## THE ANTALIS SOLUTION

The one-piece corrugated cardboard solution is delivered flat-packed. With its advance bonding, it can be assembled in a single motion. The cuts on the long sides are positioned to accommodate all three sizes of hard drive.



## THE PROCESS

- + Analysis of the customer request
- + Analysis of the different products
- + Test in real conditions with products
- + Recommendation to the customer
- + Validation



## ADVANTAGES OF THE SOLUTION



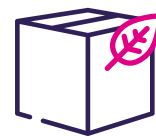
### Cost saving

Reduction of packaging costs thanks to the universal solution for all three product sizes



### Time saving

Lightning-quick packaging with pre-bonded solution that can be assembled in one easy step



### Reusable

Because the solution is made entirely of corrugated cardboard, it is recyclable and easy to dispose of

# HOW TO MAXIMISE THE QUANTITY OF THE PRODUCTS TRANSPORTED

## THE CUSTOMER'S CHALLENGE



The customer is a medium-sized, world leading company which develops and produces high-quality extruded aluminium profiles, mostly supplied to the mechanical engineering industry. The company must be able to send its bulky, sensitive products with special dimensions to different European countries, whilst ensuring shipping quality and optimising the packaging.

### ACTIVITY

Producer of high quality aluminium materials

### PROJECT TYPE

Develop and optimise the quality and quantity of shipments of products to different countries

### PROJECT OBJECTIVE

Export the products, ensuring the protection and quality of parts

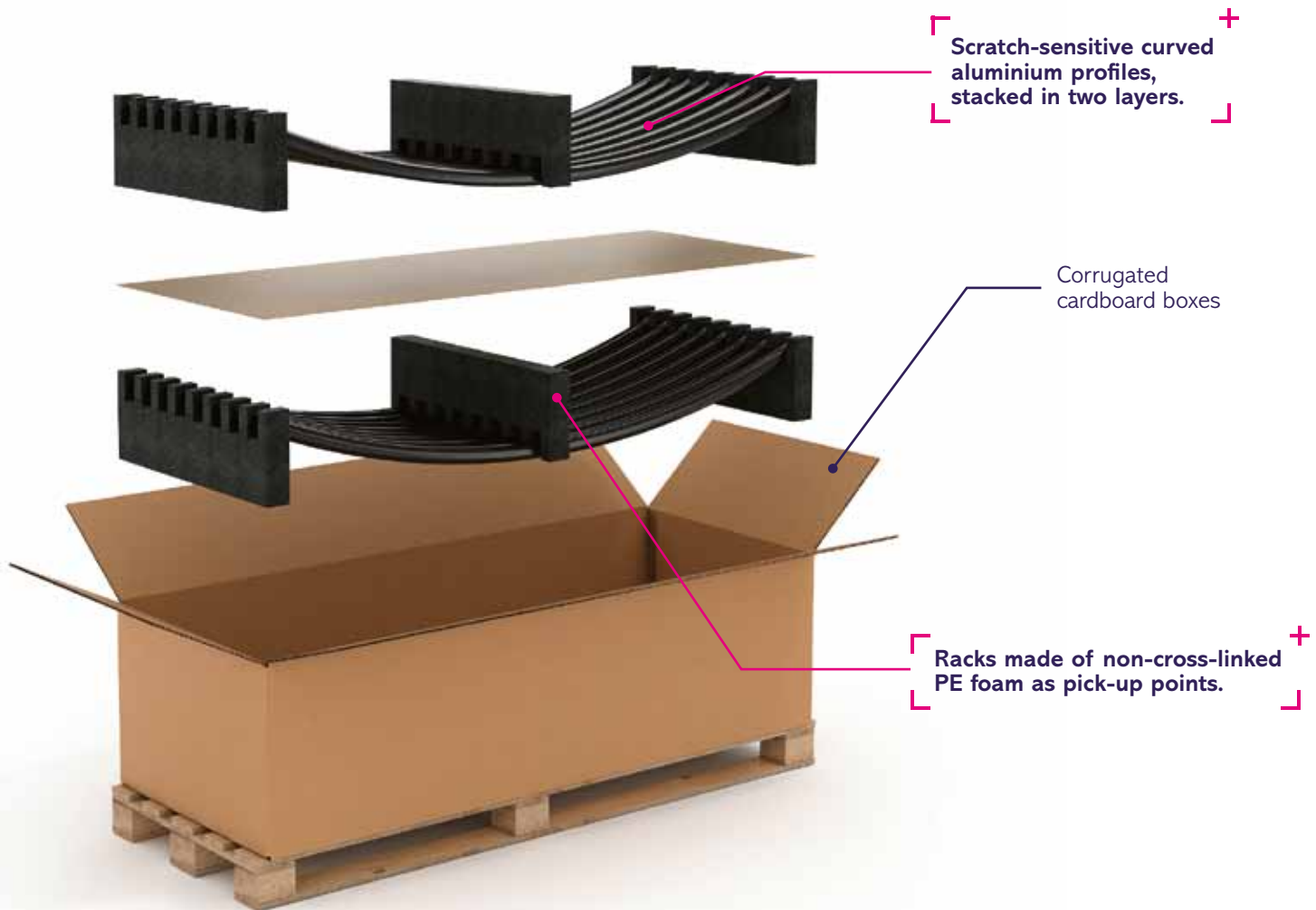
## THE ANTALIS SOLUTION

Racks in non-cross-linked PE foam rotated 180 degrees with toothed strips, adapted to fit the outer packaging

## THE PROCESS

- + Demand and needs analysis
- + Optimisation and ergonomics research on parts
- + Laboratory tests
- + Real-life tests
- + Validation





## ADVANTAGES OF THE SOLUTION



### Profitability

As small amounts of material are used, the unit cost is lower. In addition, there are no tooling costs.



### Profitability

The packaging volume is optimised and adaptable; two layers can be placed in the carton, thus reducing logistics costs.



### Simple

This product is composed of just one PE component and the packaging.

## HOW TO REUSE PACKAGING TO OPTIMISE COSTS AND REDUCE ENVIRONMENTAL IMPACT

### THE ANTALIS SOLUTION

For the solution, frame compartments and intermediate layers were constructed out of PROPWell. Intermediate layers made of VCI paper are used to protect against corrosion.

### THE CUSTOMER'S CHALLENGE

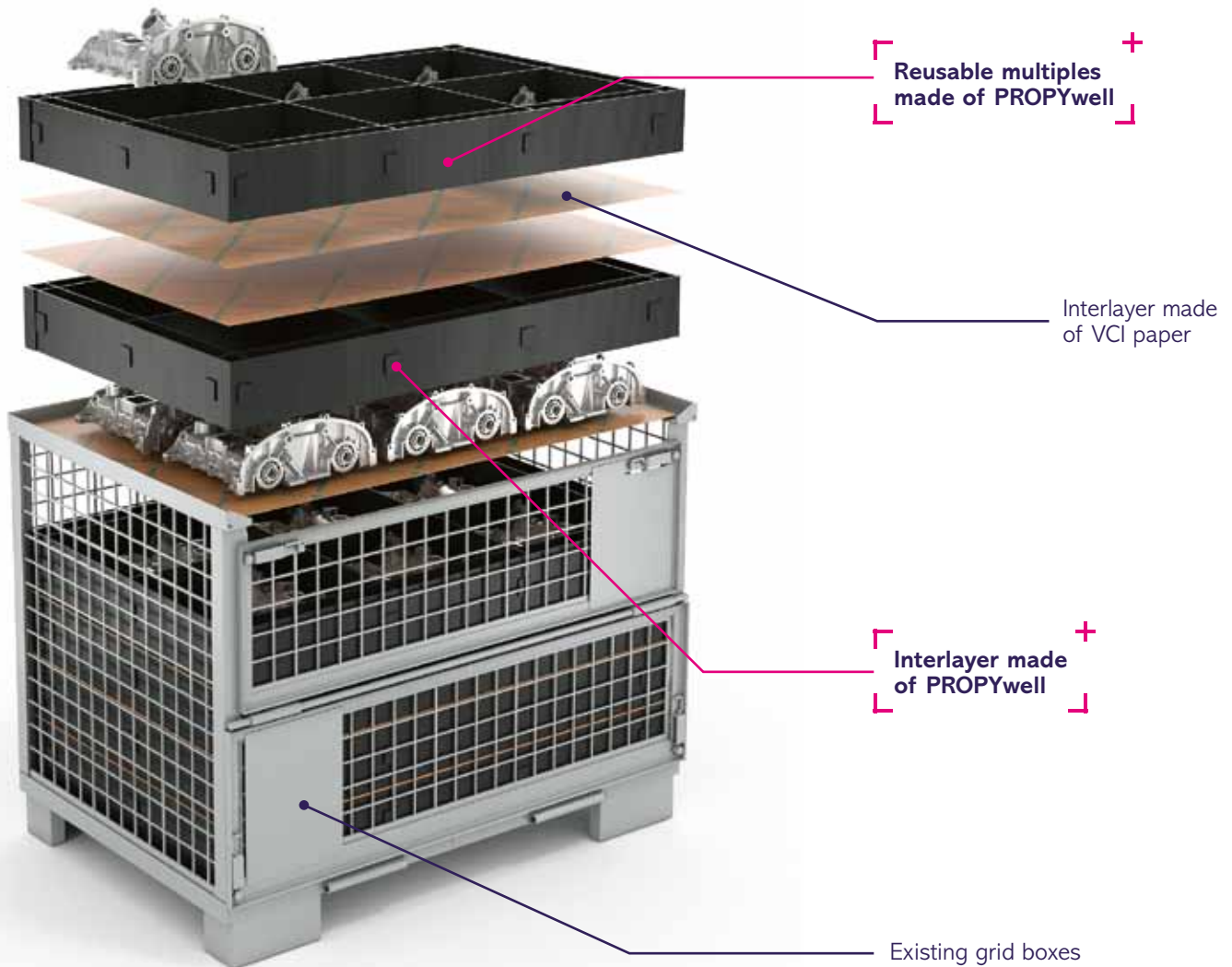


The German car manufacturer has relocated its production sites and wants to reuse packaging to send its driveshafts with the quickest turnaround.

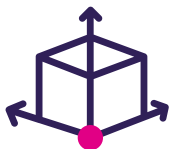
### THE PROCESS

- + Customer demand analysis
- + Material recommendation and optimising ergonomics
- + Calculating savings and optimising storage
- + Real-life testing
- + Customer validation

ACTIVITY	High-end car manufacturer
PROJECT TYPE	Transfer driveshafts from the production centre to the assembly centre
PROJECT OBJECTIVE	Optimise transportation and storage expenses for parts intended for assembly



## ADVANTAGES OF THE SOLUTION



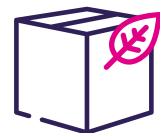
### Economy of space

Since all components of HKS constructions are flat and easy to store, storage and transportation costs are avoided.



### Clean

The hollow band plates of the chamber are easy to clean and are generally characterised by low dust formation. In addition, they offer excellent resistance to weather and chemicals.



### Reusable

PROPWell packaging is very durable and is recommended for reusable packaging. It reduces the amount of waste.

# HOW TO PROTECT THE COMPONENT DURING STORAGE AND SHIPPING

## THE CUSTOMER'S CHALLENGE



This manufacturer of diesel engines and complete drive systems observed the appearance of corrosive residue during product tests in the climate chamber. An oil protecting against corrosion is used to tackle this phenomenon in transit between production sites. The client was looking for a solution to eliminate this protective step before packing, with a high-performance process and solution that do not involve repacking.

### ACTIVITY

Manufacturer of diesel engines and complete drive systems

### PROJECT TYPE

Creating an anticorrosion packaging solution

### PROJECT OBJECTIVE

Using the packaging to protect the components in transit

## THE ANTALIS SOLUTION

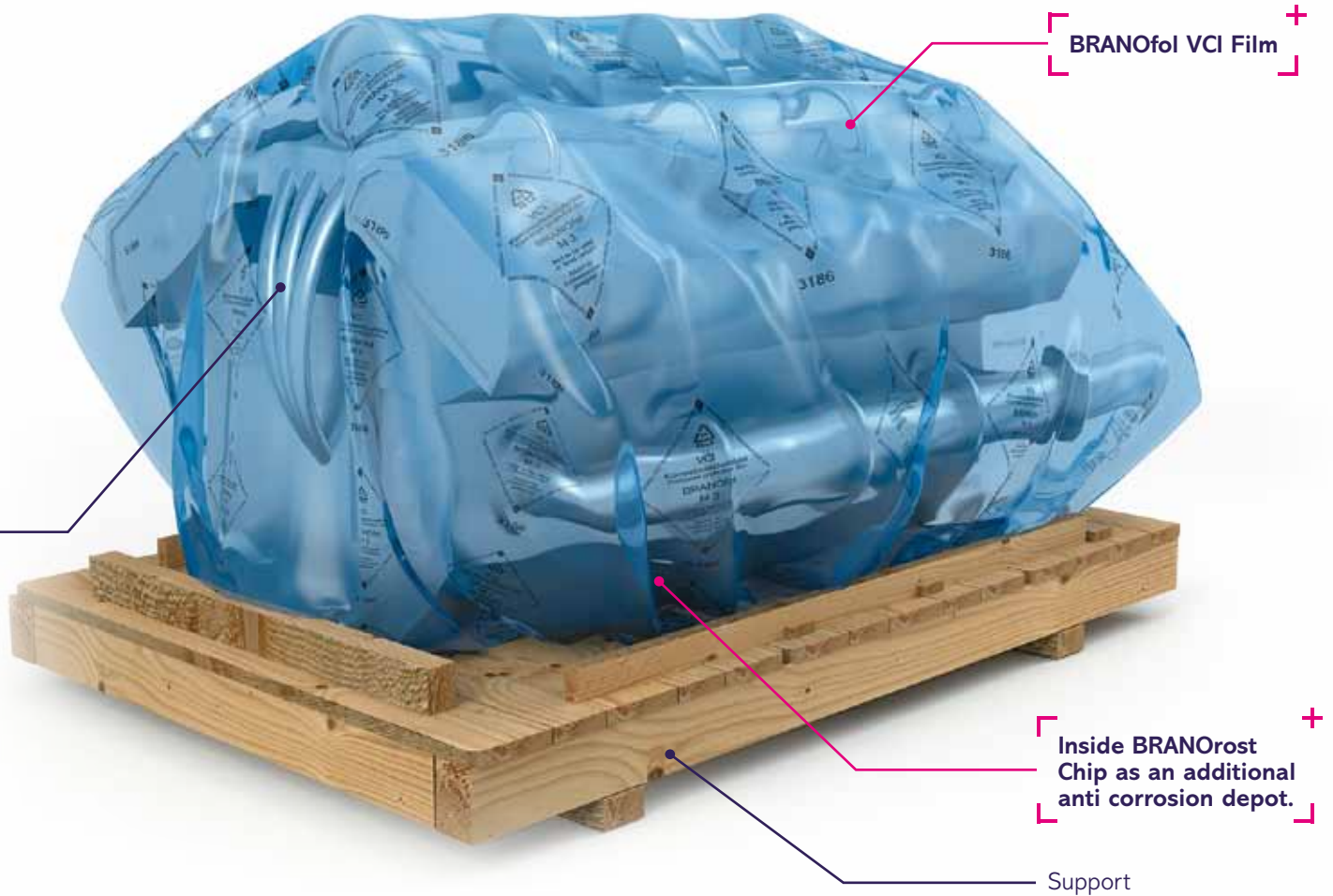
Antalis provided comprehensive support to review the entire production and logistics chain, from the cleaning process to packaging.

Part to be packed

## THE PROCESS

- + Customer requirements studied
- + Design and manufacture of the anticorrosion packaging structure
- + Process tested with the new secure package instructions
- + Check and analyses of components after cleaning
- + Units packed in a composite aluminium foil
- + Solution validated by the client





## ADVANTAGES OF THE SOLUTION



### Safe

Wrapped in components made from BRANOfol VCI film and a additional BRANOrust Chip depot. The Text for Time Saving and Cost-effectiveness fits perfectly.



### Time saving

The process was optimised to ensure components are clean, with no corrosive residue.



### Cost-effective

This solution makes the package moisture-proof.

# HOW TO IMPROVE THE PRODUCTION CHAIN BY INCREASING PRODUCTION CAPACITY IN A REDUCED SPACE

## THE CUSTOMER'S CHALLENGE



The customer, a manufacturer of equipment for the construction sector, must be able to ensure shipment of its products for assembly. It wants to double its production in a reduced space, whilst ensuring safety at the employee workstations.

<b>ACTIVITY</b>	A listed equipment manufacturer for the construction sector
<b>PROJECT TYPE</b>	Increase production and double shipments
<b>PROJECT OBJECTIVE</b>	Optimise production lines and ensure safety within the company

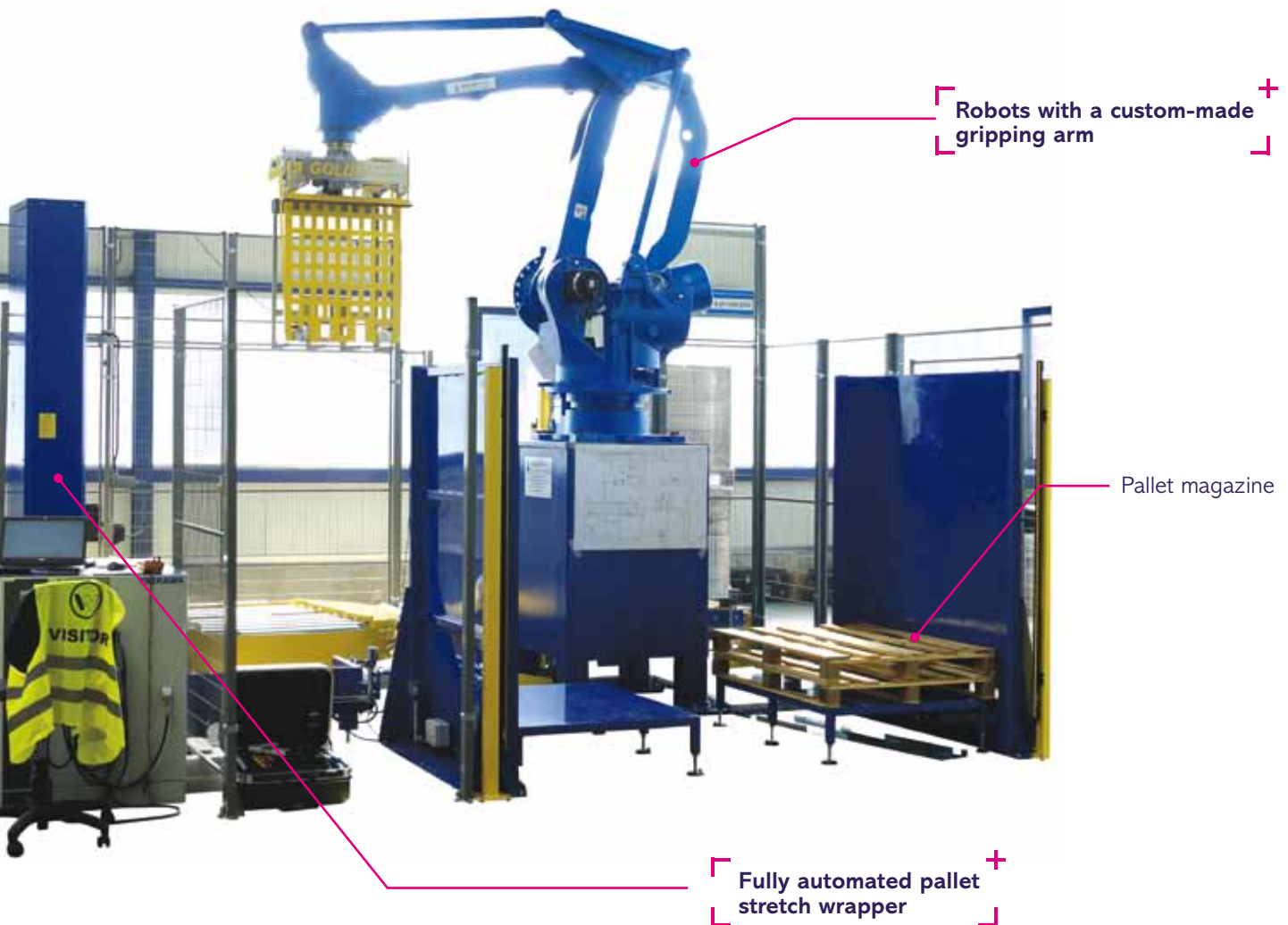
## THE ANTALIS SOLUTION

After an extensive on-site analysis, an automated packaging system was developed which takes up very little space: after the box is strapped to the product, it is transported to a robot using a driven conveyor system.



## THE PROCESS

- + Analysis of the request
- + Definition of the problem and the stakes
- + Analysis of the workstations and the allotted space
- + Proposal of optimisation of production line
- + Tests and development
- + Customer validation

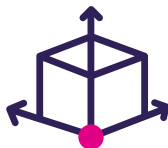


### ADVANTAGES OF THE SOLUTION



#### Effective

The packaging concept enabled the output to be doubled to a five-digit number.



#### Space saving

The despatch process was automated within a tiny footprint (5 x 7.4 m).



#### Future oriented

The new packing line is far from working at full capacity and can be used for additional products.

# ANTALIS, YOUR PARTNER FOR YOUR BESPOKE SOLUTIONS

Antalis has been working with the automotive, mechanical engineering and electronics industries for the last 30 years, and has developed more than 10,000 bespoke solutions for them with its team of 20 consultants and R&D engineers. Antalis offers global support, from consultancy and challenge analysis to final delivery of the packaging.



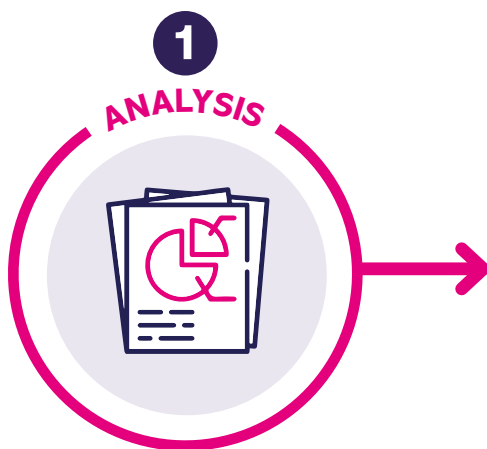


# A BESPOKE SOLUTION FOR EACH INDIVIDUAL CHALLENGE

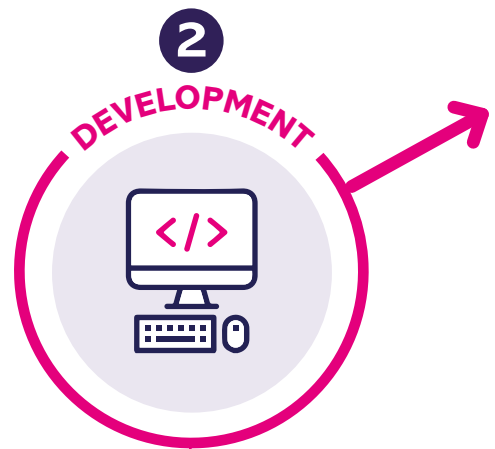


**TESTING**  
**DESIGN**  
 PROTOTYPING  
**STUDY**  
**PROTECTION**  
**ERGONOMICS**  
**SHIPPING**  
 TRANSPORTATION  
**BESPOKE**  
 COMPONENT

# METHODOLOGY: HOW TO DEVELOP THE RIGHT, EFFECTIVE BESPOKE SOLUTION



- Product protection requirements
- Analysis of packaging process
- Supply chain packaging specification



- Individual packaging concept and design
- Compact packaging solution for product, personnel, process and machine
- Independent selection of packaging technology and materials

## INTERVIEW



**Kai Kettler**

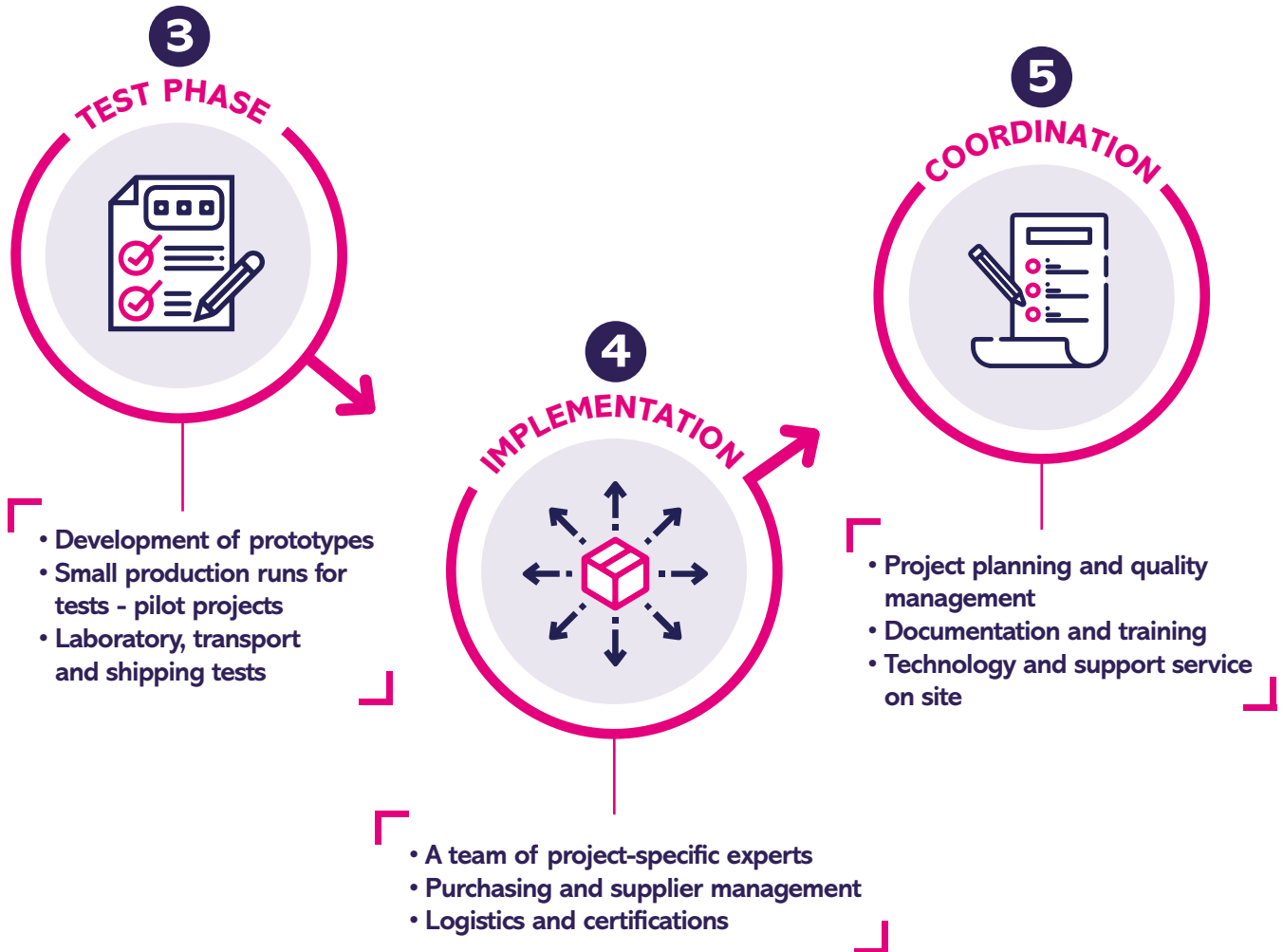
Senior consultant  
Protective packaging,  
Antalis Packaging GmbH



CONNECT TO  
[antalis.com/videos](https://antalis.com/videos)

## “ WHY DO WE NEED PACKAGING DEVELOPMENT?

It goes without saying that the first requirement of packaging is to provide optimum protection the product, including in transportation. However, beyond this, fluid processes in the supply chain are becoming increasingly important. Using comprehensive analysis and a holistic view of the process, our packaging



engineers develop individual concepts which are completely tailored to our customers' requirements.

#### HOW IS THIS PROCESS LINKED TO THE AREA OF SUSTAINABILITY?

We believe that sustainability means using resources in a more conscious manner. We have already started working

on this in packaging development with our “rethinking packaging” approach: (Re)3 = Reduce.Reuse.Recycle. There are a variety of ways in which sustainability is then ultimately reflected in projects: Whether that be by reducing volumes, using environmentally friendly materials, reusing packaging or reducing the range of packaging – there are no limitations.



# SMART PACKAGING DESIGN CENTRES



**Antalis Packaging Design Centres** can address a wide variety of needs, be it design solutions, product protection, packaging process optimisation, damage reduction during transportation & reverse logistics.

Faced with the difficult task of offering unrivalled customisation opportunities, Antalis Packaging Engineers across six design centres in Europe have risen to the challenge, creating over **10,000 bespoke packaging solutions**. Sustainability is an essential part of our strategic framework. Every day, we strive

towards reducing the environmental footprint through Smart Packaging Solutions.

Our Packaging Engineers working in our Packaging Design Centres are committed to designing packaging with the **least possible materials** without risking product protection. The 3Rs (Reduce, Reuse, Recycle) inspire our Engineers to provide our customers with more responsible products and sustainable packaging solutions.



# A DEDICATED TEAM OF ENGINEERS & DESIGNERS



## AN UNMATCHED BESPOKE EXPERIENCE

All of design centre's walls can be covered with designs for the customer in just three days thanks to the in-house printing facilities, offering a unique chance to see the finished product before it is ordered!

## A DEDICATED TEAM OF EXPERTS

Each design centre's team of experts are customer-driven and ready to help.

## FLEXIBILITY FOR EVERY CLIENT

The team are also familiar with working with all types of client, from small, family-run SMEs to large multinationals.

## THE LATEST CAD SOFTWARE

Our team of packaging engineers use the latest CAD software to design bespoke packaging solutions for you, no matter how unusual your product:

- Cost-cutting through short development times
- Batch production
- Fast prototype construction
- Designed to your specific measurements

## ENVIRONMENTAL FOOTPRINT

Each day, our talented Packaging Engineers create innovative and bespoke packaging solutions that meet our customers' specific challenges, dedicating their efforts to reducing the environmental footprint.



**Jürgen Haller**

Packaging development  
in Antalis Packaging  
Design Center in Landshut



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“

All our 3 design centres in Germany specialise in the automotive sector, and are equipped with the latest innovations. For example, our 3D design programs allow us to design a packaging solution even if no physical product exists. Furthermore, our huge range of 3D programs allows us to handle our customers' data, whatever the format, making the process much easier for them.

”

# TESTING LABORATORY

Make the most of our consulting and service offerings and invest in the optimisation of your packaging processes - with the added bonus of both optimising your product quality, and minimising your packaging costs!

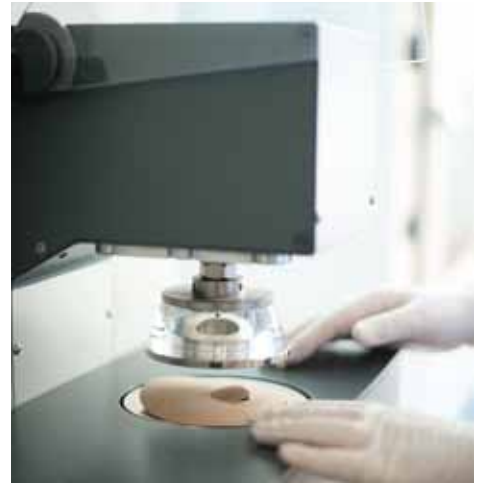


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**Antalis Packaging sets high standards** when it comes to the quality of its packaging products and solutions. This applies from the consultancy stage, right through to comprehensive product selection, delivery and service. Our laboratory allows us to carry out regular checks on our product range, and to test the suitability of your bespoke packaging solutions to ensure they are fit for

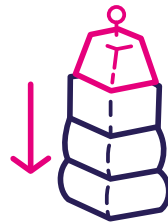
their intended purpose.

You will find these high quality standards documented in **Antalis Packaging's Quality Management System (QSM)**. In addition, we also hold specific certifications in the field of laboratory testing.

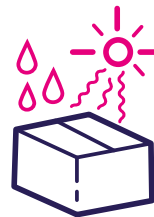


## OVERVIEW OF OUR **TEST** PROGRAMMES

- + Paper and board tests**  
e.g. tensile strength, water-resistance, etc.
- + Corrosion protection tests**  
e.g. climate tests
- + Film tests**  
e.g. thickness, tear resistance, etc.
- + Adhesive tape tests**  
e.g. total thickness, adhesive application, adhesive strength, etc.
- + Cardboard packaging tests**  
e.g. grading, grammage of individual layers, etc.



**COMPRESSION  
TESTS**



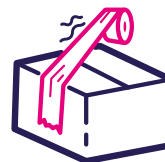
**CLIMATE  
TESTS**



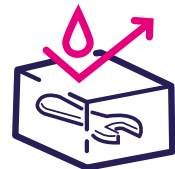
**CARDBOARD  
TESTS**



**DROP  
TESTS**



**ADHESIVE  
TESTS**



**CORROSION  
PROTECTION TESTS**

# BENEFIT FROM SMART SERVICES

## SMART CONSULT



We help you optimize your costs and packaging process efficiency.

## SMART TECH DESIGN



We create bespoke, high-tech solutions to meet any of your specific business challenges.



### Laboratory assistant

Doris S.

“

At our in-house test laboratories, we have extensive testing capabilities – from climate chambers to drop tests. All of this means that you can be sure that your product arrives at its destination with optimal protection.

”



Every day, our expertise and customer-centric approach drive us to conceive forward-thinking, smart solutions to each and every challenge our customers face, inspiring them to go further and exceed their own goals.

ANTALIS



**SMART**  
TESTING LAB

**SMART**  
MAINTENANCE



We carry out material assessments in our in-house laboratory to ensure you get the best packaging solutions.



We assist you from A to Z: consulting, machine delivery, assembly, training and maintenance.



**Head of IT**  
Michael B.

“ We believe that packaging is not only part of the product but is part of the whole process – from handling in manufacturing, and the entire logistics chain, through to the final customer's experience when unpacking the product. ”

# WE ARE A RESPONSIBLE COMPANY

Every day, we strive to reduce our environmental footprint, continuing to provide our customers with innovative packaging solutions and a high level of services.



## + PRODUCT DEVELOPMENT

Our packaging engineers working in our Product Design Centers are committed to using intelligent design.



## + SOURCING

Building strong partnerships with our strategic suppliers to bring innovative packaging products and equipment aligned with our vision.



## + CERTIFICATIONS

Quality Management Standards (ISO 9001)  
Environmental Management (ISO 14001)  
Energy Management (ISO 50001)



## + ANTRAK®

Our Antrak® platform enables in-depth sourcing control of our suppliers.



## + RESPONSIBLE TOOLS

We provide our customers with tools to empower them in their energy and environmental management:

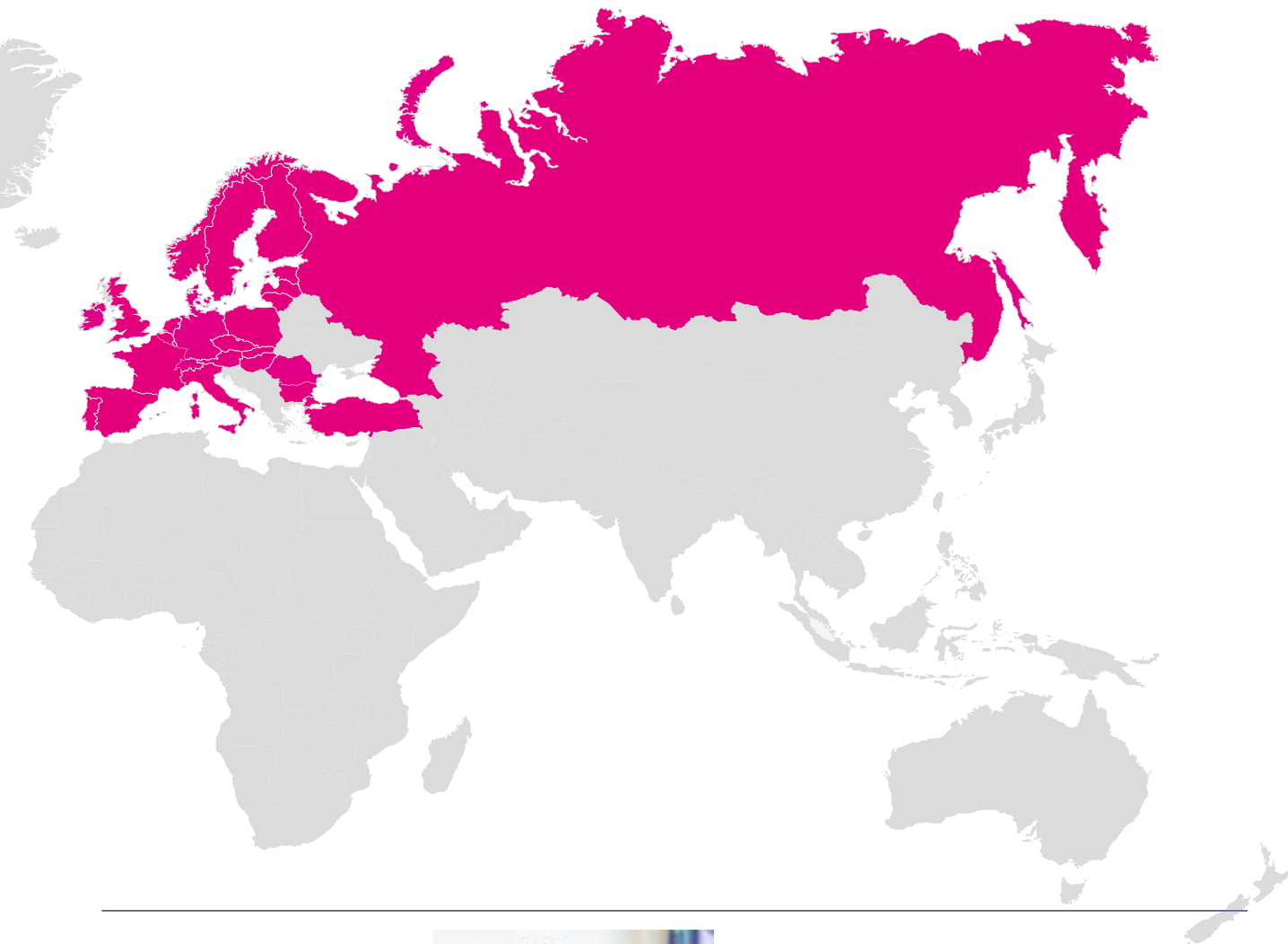
- Footprint calculator



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**Antalis, Europe's no.1** industrial packaging provider, has a presence in more than **28 countries** thanks to its **52 logistics centres**. Every day, Antalis supports its clients in their new challenges, and designs **smart**, optimised **packaging** solutions enabling them to take their business ever further. All the solutions developed come with a dedicated support service from Antalis experts.

WHEREVER YOU ARE, ANTALIS IS  
**ALWAYS THERE TO SUPPORT YOU**



## SMART FOOTPRINT



### FOOTPRINT OPTIMISATION AS A COMMON GOAL

We help you reduce your CO<sup>2</sup> emission at every stage: consulting, product selection and development.

**REUSE**  
**REDUCE**  
**RECYCLE**

The 3Rs (Reduce, Reuse, Recycle) inspire our engineers to provide our customers with more responsible and innovative packaging solutions.

# WE TAKE YOU FURTHER, HELPING YOU DESIGN THE RIGHT BESPOKE SOLUTIONS FOR YOU

10,000

BESPOKE SOLUTIONS

30,000

CLIENTS

120,000

TESTS PRODUCTS



SMART  
CONSULT

SMART  
TECH DESIGN

SMART  
TESTING LAB

SMART  
FOOTPRINT



All our solutions

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antaldis<sup>TM</sup>