

Solidus



Your circular packaging partner

Product portfolio for meat & poultry



Meat & Poultry

Trusted partner in circular paper-based packaging and solid board

Our purpose is to transform recycled natural resources into circular value propositions which contribute to a cleaner world with less waste. With smart product design, we fulfil our customers' needs. We produce standard and customisable packaging, solid board, cores & tubes, edge protectors and partitions. As a leading producer, we cover the full production process from recovered paper to a wide range of paper-based products.

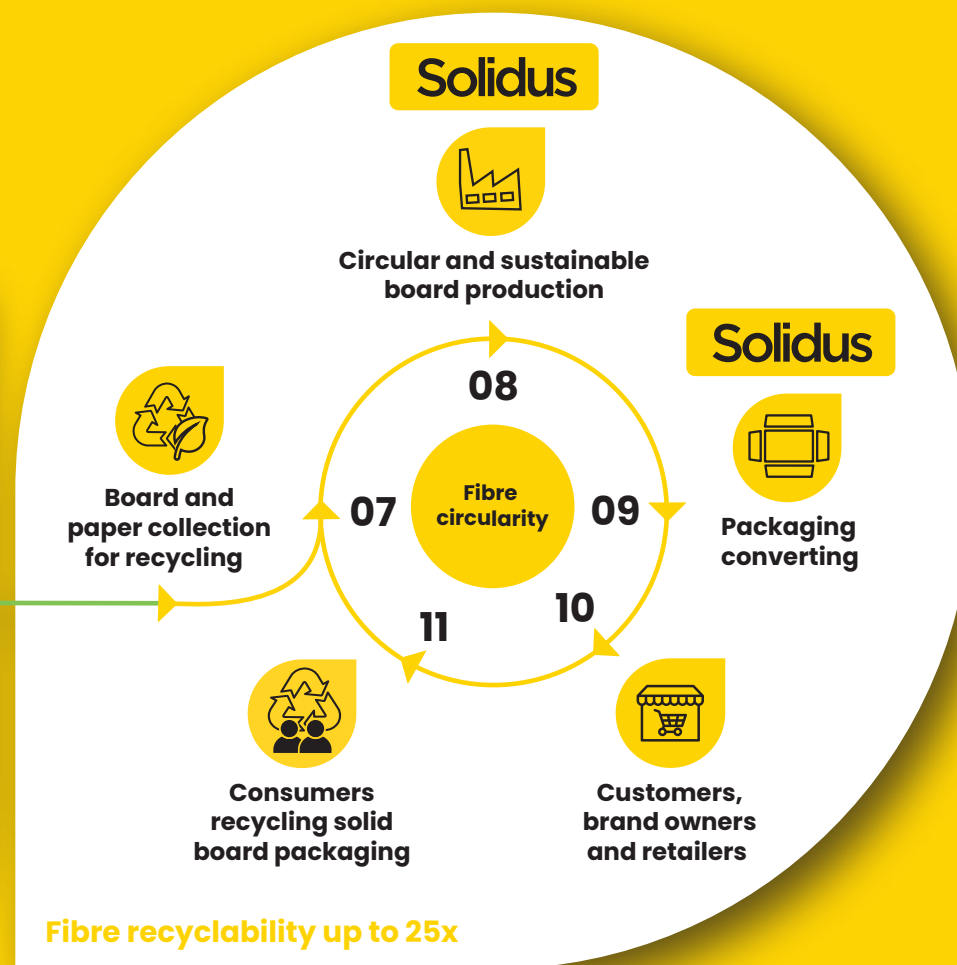
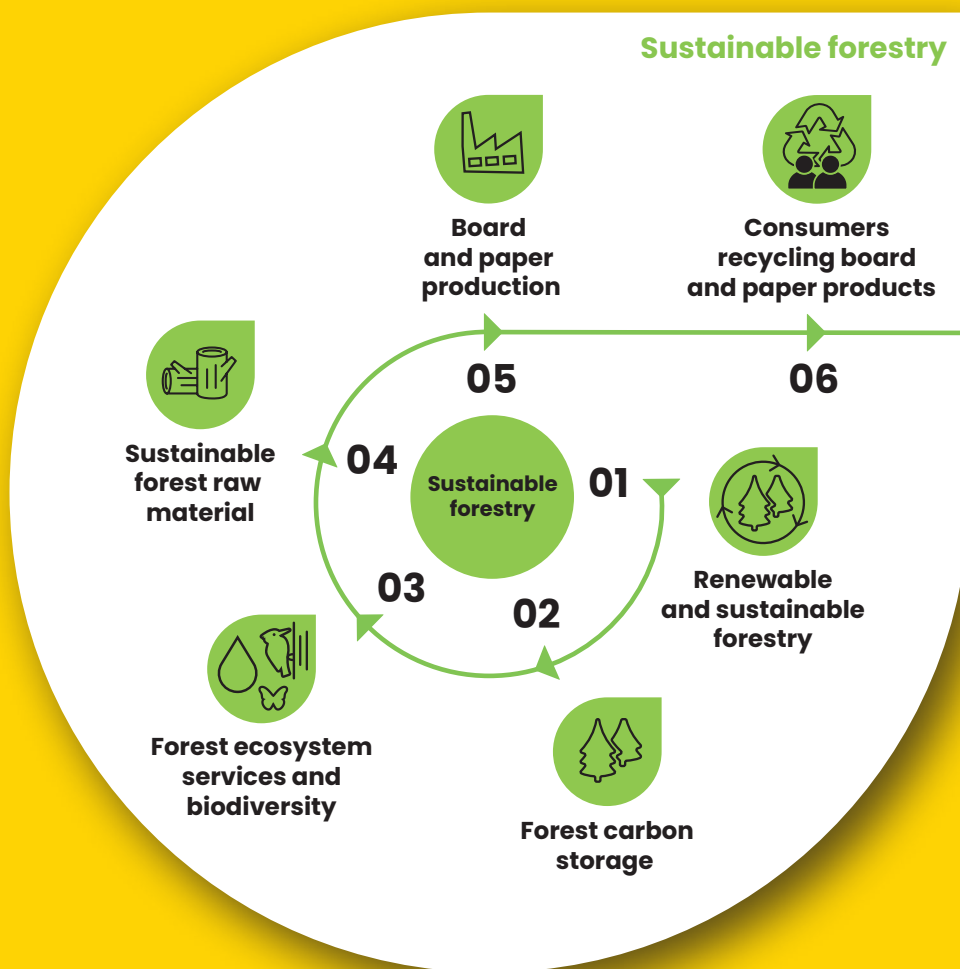
Over 1,400 highly specialised people operate in our board mills, product converters and sales offices across Europe. We continuously invest in further growth with future-oriented production methods, innovative machinery and sustainable processes. Every day, we provide our expertise, products and services to major brands and companies in all industries. Our loyal customers count on our reliable high-quality, excellent service and innovative mindset.

Your circular packaging partner



Our circular value proposition

We use our solid board expertise to support our customers' need for sustainable and circular packaging products and services.



Most of our paper-based packaging products are made from PEFC and FSC® certified fibres. By using PEFC and FSC® certified products we offer packaging that is made of renewable wood fibres from sustainable and certified sources. Ask for our PEFC and FSC® certified products.



Solidus offers unique qualities

Your premium products deserve our premium packaging

In the food industry freshness is everything. That's why our solid board products and services are a trusted choice for packaging high-quality perishable products fresh beef, chicken, other poultry and frozen meat. Every product is designed with sustainability and ease of use in mind.



Logistical performance

Our solid board packaging takes up less space than wooden, plastic and corrugated boxes, minimising shipping costs and logistic movements and reducing use of your storage space. We opt for the best palletising solution possible, preferably with inter-stackable formats.



Moisture resistant

Our packaging retains its strength, shape and volume in humid and wet conditions. In extremely wet conditions, our Sapino-treated solid board with PE (optional) coating offers the required water resistance for packaging your ice chilled products.





Fast freezing

Our solid board packaging is suitable for frozen products. The minimal thickness of the board results in shorter freezing times, also providing more efficient use of energy consumption. Solid board is well suited to storage and transport in cold stores and freezers.



Food safe

At Solidus, food safety is always a top priority. We ensure our operation is in full compliance with the continuously evolving industry standards.



High quality printing

Our boxes are beautiful the way they are, but we also offer the highest quality offset printing. We can print with your unique colour code, and we will advise you on the optimal production, lamination and finishing possibilities for your requirements.



Recyclability

Raw material recycling has a long tradition in the manufacturing of solid board. Today, solid board packaging is produced to nearly 100% by recovered waste paper which is collected in commerce, industry, administration and private households. Used packaging and other paper and board products are collected after use and the fibres are recovered as part of the standard paper recycling process. Fibre-based packaging material can be recycled at least 25 times without losing its mechanical or structural integrity.



Your best packaging choice

A solid alternative for returnable plastic crates

**7-10 times less
space in transport
and storage**

More goods per pallet

**Reduction in fork
truck movements**

Fully recyclable

For transportation of fresh meat, we supply solid board boxes which are a first-class alternative for returnable plastic crates (RPC). The boxes are for one time use only, which means optimal hygienic safety and no extra costs for cleaning and return freight. After use the boxes can be flattened for disposal.

Our solid board packaging takes up to seven times less space than RPC, minimising shipping costs and reducing use of your storage space. We opt for the best palletizing solution possible, preferably with inter-stackable formats.



Plastic box 25 – 30 kg

- Exterior 60 x 40 x 20 cm
- Interior 57 x 37 x 19,5 cm
- Volume 40 L



Solid board box 25 – 30 kg

- Exterior 58 x 38 x 15 cm
- Volume 40 L



Flat solid board box

- Height shrinks to 20 mm



Advantages wholesaler

- Reduce transport volume
- Reduce storage volume



Advantages customer

- Reduce waste in stores or restaurants
- Easy waste disposal (standard waste paper basket) that creates fully recyclability
- Be in line with all the standards of food safety



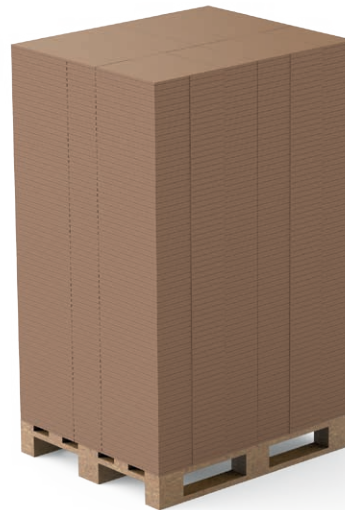
Advantages public image

- Be a trendsetter in the market to provide a sustainable alternative to polystyrene and plastic crates
- Adopt a sustainable packaging approach with the customer



Plastic box

- Expanded on industry pallet 1,000 x 1,200 mm
- Circa 36 pieces on a pallet



Corrugated box

- Flat on industry pallet
- Circa 500 pieces on a pallet



Solid board box

- Flat in bundles on industry pallet
- Circa 1,000 pieces

Our wealth of expertise started in 1870

01

Forward-thinking development

We go to great lengths to understand the daily needs of our customers and to develop solutions. If our standard portfolio of products doesn't meet your requirements, we have the right team of experts, engineers and product designers to create a perfect proposition for you.



- Standard portfolio with lead time and cost optimised products
- Customise your packaging with the help of our experts

02

Circular production of solid board

Our mills produce environmentally friendly solid board and graphic board, using recovered paper. These paper fibres can be reused up to 25 times in the production of board. All our board is manufactured with precision in grammage and thickness.



- Sustainable pulping
- Customised production of greyboard
- Laminating

Benefit from our 100% integrated process

03

High-quality conversion to a full range of products

Pre-cut board sheets are converted into packaging and other industrial paper-based products on our specified production lines. Various cutting machines per location prepare the board for construction. Our converters print, cut, fold and glue the board and stack it for shipping.



- Printing
- Die-cutting
- Folding
- Glueing

04

Recyclable end products

Brand owners and their packers use our packaging and other end products to pack their products, which will then reach the consumers via retail and other distributions channels. Used packaging and other paper and board products are collected after use and the fibres are recovered as part of the standard paper recycling process. Where needed, we assist our customers with the recycling of products to support a higher degree of end-of-life collection rate.



- End products for brand owners, packers, retailers and consumers
- Fibre circularity
- Support in recycling and collection



We offer a wide variety of specific packaging to suit your needs

Our longstanding experience with the meat and poultry market made us experts in the daily needs and requirements to package fresh meat. We know exactly which box type is the best to keep your products safe on their way from your plant to your customer.

Standard portfolio

Top products for all your requirements

We are experts at meeting the needs of our customers. Our standard portfolio of products is available in dimensions that fit all common pallets and as these boxes are unprinted, they are available with minimal lead times. Find out more about our standard products on the next pages of this brochure.



Always in stock

We make sure our most in-demand products are always available.



Small order quantities

Flexibility - order a small quantity and convince yourself of the quality.



Best lead time

With products in stock, we can minimise delivery times.



Price-conscious

No extra features - no extra price.

Customised portfolio

Individualise your packaging

For a little extra to our top products, we offer various printing techniques like offset, flexo and pre-print. Upon request, hand holes and ventilation holes can be added to certain product types. Your packaging becomes much more customized at a good price.



Wide range of print quality

Select offset, flexo or pre-print to get the best printing results.



Options available

We add hand holes or ventilation holes on demand.



Short lead time

Custom-made boxes are also delivered quickly and reliably.

Special solution

A special solution just for you

If you are looking for individual product types or you want your own customized packaging, we will create your box tailored to your request. That means individual shape, dimensions, features and even board grades.



Individual product types

We design your box together with you to suit your product.



Individual dimensions

Get the professional portfolio box in your individual size and dimension.



Tailored boards & liners

Pick an individual paper combination from our portfolio or have your own.



Wide range of print quality

Select offset, flexo or pre-print to get the best printing results.



Our standard packaging portfolio

Meat and poultry are packaged chilled or frozen and often in humid environment. A solid board box is robust and compact and retains its maximum strength even under humid conditions. Your product also freezes much faster when packed in paper-based board. Solid board packaging supplied with a PE liner is suitable for direct food contact, at the same time it meets all the requirements regarding hygiene and food safety. Our boxes are designed to meet up to meet all physical requirements of the supply chain to ensure your product arrives in optimal condition.

The packaging will be fully fitted to your logistics process, whether it is manual or (semi-)automatic, or whether it involves loose products or products packed in primary packaging, cooled or frozen.

If you can't find the right solution in the standard portfolio, you can customise it to create your ideal box.



4-point box

This paper-based board box is very suitable for packing in moist and chilled situations. It is easily opened and filled by hand or filled on an automatic filling line. In addition, the box type is extremely cost-efficient throughout the entire logistics chain.



4-point reinforced corner box

For higher demands in stackability and maximum weight on pallet, we have designed the reinforced corner base. Three layers of our solid board make the corners extra strong in a very material efficient way. This box is designed for stable stacking.



4-point DLS box

DLS stands for Double Long Side. The box comes with double material enforcement for extra stability. It enables longer transport and keeps your goods safe even in shaky environments like ships and trucks. It is suitable for both meat and poultry.



Leakproof box

The leakproof box comes in our food safe PE coated board which is perfect for direct food contact. Meat or poultry can be filled in humid conditions (up to 95%), yet the box stays solid. Due to the approved corner construction, all liquids are kept inside.



6-point box

With the 6-point box, you will only need one product instead of one lid and one base - no more mixing up! This paper-based board box is suitable for both meat and poultry and is fitted to your transport bases. Still, it works in a supermarket store as a great POS product.

Meat

Meat packaging must be safe and durable. Hygiene is a very sensitive factor during the slaughter and cutting of the meat. A constant temperature of maximum 4°C during the packing process is crucial to avoid nucleation. Paper-based board has high freezing qualities. Due to the fact that there is no trapped air within the board, there is no insulating effect which speeds up the freezing process. Depending on a customer's situation of packaging and the freezing tunnel, the freezing time can be reduced by 30-50%.



Short lead time



Small order quantities



Easy erection



Packweight	Up to 10 kg	Up to 12 kg	Up to 15 kg	Up to 20 kg	Up to 20 kg
Dimension	50 x 34 x 10 cm	40 x 30 x 15 cm	40 x 30 x 15 cm	60 x 40 x 11 cm	60 x 40 x 11 cm
Condition	Frozen	Frozen	Frozen	Fresh (vacuum)	Frozen
Box type	4-point reinforced box	4-point glued box	6-point box	4-point DLS box	Leakproof box
Direct food contact					✓



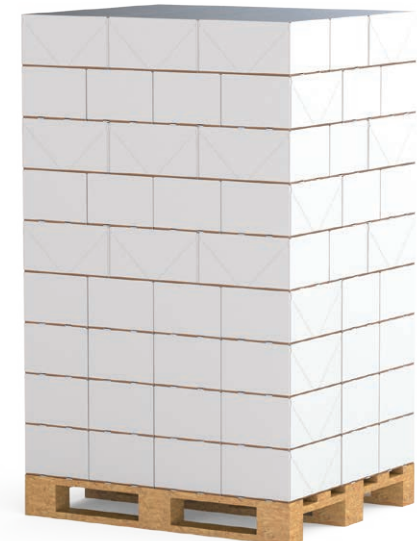
We support your logistical performance

When you purchase a Solidus box, we provide you with options for best stackability for Euro pallets (800 x 1,200 mm) or Industry pallets (1,000 x 1,200 mm) and in regards to your preferred shipping logistic as a free service.

Packweight	20 to 25 kg	20 to 25 kg	20 to 25 kg	20 to 25 kg
Dimension	60 x 40 x 15 cm	60 x 40 x 15 cm	60 x 40 x 15 cm	60 x 40 x 15 cm
Condition	Fresh (vacuum)	Frozen	Frozen	Fresh (vacuum)
Box type	4-point glued box	4-point glued box	Leakproof box	4-point glued box, strong
Direct food contact	✓			



Packweight	20 to 25 kg	20 to 25 kg	20 to 25 kg	20 to 25 kg
Dimension	60 x 40 x 15 cm	60 x 40 x 15 cm	60 x 40 x 15 cm	60 x 40 x 15 cm
Condition	Frozen	Fresh (vacuum)	Frozen	Frozen
Box type	4-point glued box, strong	4-point DLS box	Leakproof box	Leakproof box, strong
Direct food contact			✓	✓



Poultry

Poultry packaging is typically packed in conditions with high moisture and low temperature, so its packaging must be strong and durable. Our poultry packaging provides optimum moisture control, using either leak proof base or a carefully designed pattern of holes. This way, the products will arrive at their destination in perfect condition. We provide PE coated and uncoated boxes for direct and indirect food contact. The PE coated boxes provide the advantage of being able to directly freeze products inside them, without any need for additional bags. This is a more sustainable solution, saves time and money and there is no risk of poultry sticking to the box.



4-point boxes

Our 4-point glued boxes, consisting of a solid board base and lid, offer maximum protection for your vulnerable products during transport and can be used both in automated and manual production lines. The bottoms and lids are delivered in flat packs, keeping the transport and storage volume to a minimum. As a result, paper-based packaging is a very cost-efficient solution whilst still providing the option of high-quality printing techniques and striking presentation.



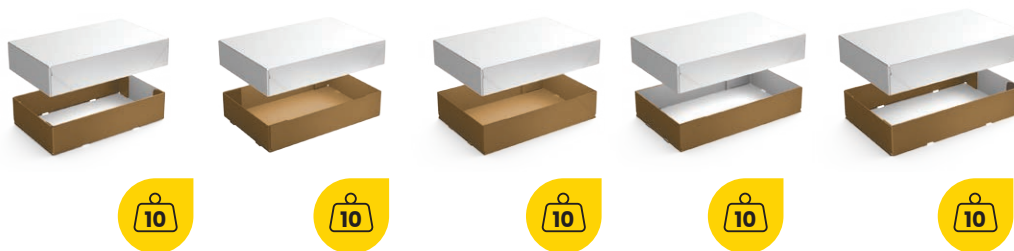
Short lead time



Small order quantities



Easy erection



Packweight	Up to 10 kg	Up to 10 kg	Up to 10 kg	Up to 10 kg	Up to 10 kg
Dimension	50 x 30 x 11 cm	50 x 34 x 10 cm	50 x 34 x 10 cm	50 x 34 x 10 cm	50 x 34 x 10 cm
Condition	Frozen	Frozen	Frozen	Frozen	Fresh
Box type	4-point DLS box	4-point DLS box	4-point glued box	4-point glued box	4-point DLS box
Direct food contact					

Constructed for a long ride

If you will send your goods on a long journey, feel safe with the 4-point DLS box. Due to double constructed walls, less grammage for the same performance is needed.

Leakproof means safety

Our leakproof boxes are special in two ways: the special corner construction without holes keeps everything inside the box. They also cannot be harmed by any kind of liquids due to the PE coating which is also food safe.



Packweight	Up to 15 kg	Up to 15 kg	Up to 15 kg	Up to 15 kg
Dimension	40 x 30 x 15 cm	55 x 40 x 13.5 cm	60 x 40 x 11 cm	60 x 40 x 11 cm
Condition	Frozen	Frozen	Frozen	Frozen
Box type	6-point box	4-point box	4-point box	Leakproof box
Direct food contact				✓

Our retail ready packaging portfolio

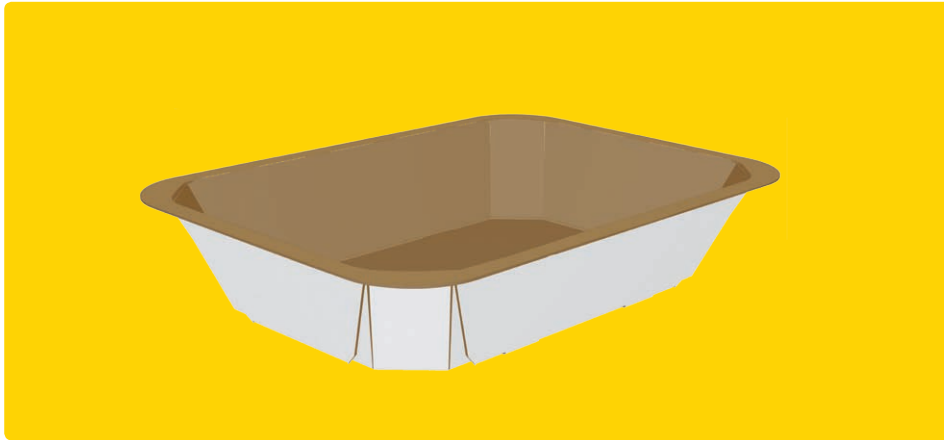
More and more consumers are choosing products made from sustainable, renewable resources that will protect our planet and its precious eco-systems. That's why we created Futurline®, a range of circular packaging products for retail and foodservice.

Solidus' Futurline® products are fully recyclable and reduce plastic content by at least 80% and have a significantly lower CO₂ footprint. Made from solid board, the packaging is circular by design, as recovered fibres can be reused up to 25x producing solid board, resulting in a significant reduction of packaging waste. These products therefore provide circular alternatives to existing retail packaging of which today only a very small part allows for reuse of materials.

With Futurline®, consumers can now enjoy both convenience and sustainable packaging, while at the same time brand owners can exploit the excellent solid board printing features to customise and differentiate their products based on seasonality or consumer preference.

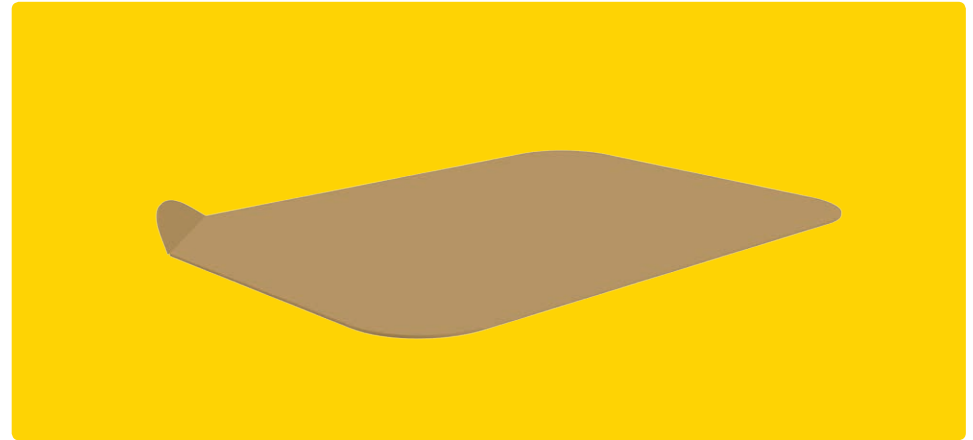


Futurline®



Modified Atmosphere Packaging (MAP)

MAP is a long established method to extend the shelf life of fresh food like fresh or processed meat, fish, fruit or salads. Solidus' Modified Atmosphere Packaging (MAP) solution offers a solid board alternative to wholesalers and retailers to replace plastic trays. The technology substitutes the air inside a package with a protective gas mix.



Skin packaging

Whether meat, fish or other fresh foods - this vacuum packaging solution will emphasize each of your products at retail. Our skin packaging is suitable for a wide range of product segments. With skin packaging a product is placed on a substrate material which in our case is solid board. Heated plastic film is draped over the product and the substrate, and a vacuum draws the film down tightly to the board and around the product to make a safe package.



Modified Atmosphere Packaging (MAP)

Our Modified Atmosphere Packaging (MAP), one of our Futurline® products, offers a sustainable alternative to wholesalers and retailers to replace plastic trays. Solidus MAP uses an FSC® and PEFC certified barrier-lined solid board made from sustainable fibres. The board is fully recyclable and reduces at least 80% of the plastic content vs other packaging products. We offer higher cardboard grammage possibilities in regards to other fibre-based MAP producers. By performing this, we offer solutions for an extensive range of (heavier) products including fresh or processed meat, fish, ready-made products, cheese, fruit and frozen foods. Due to our higher board grammages, our MAP solutions also match the shelf life afforded by traditional plastic MAP trays.



Extended shelf life

MAP is a long established method to extend the shelf life of fresh food like fresh or processed meat. The technology substitutes the air inside a package with a protective gas mix.



Circular and sustainable

MAP uses an FSC® and PEFC certified solid board made from renewable fibres. It reduces at least 80% of the plastic content vs existing plastic solutions.



Separate disposal possibilities

The solid board MAP trays feature a transparent barrier film to seal the tray. After taking out the product, the layer is easily removed from the solid board to allow for separate disposal.



High quality print options

High quality offset print options available to give your product the perfect in-store presentation.



Identical operational requirements

Solidus MAP can be produced on the same packaging machines that today produce the existing packaging products. And thus, lowering the hurdle for packers and brand owners to transfer to our paper-based packaging solution.



VAN DER ZEE
SMOKED SALMON

*Handig koken
niet een mis*

Skin packaging

Our skin packaging, another Futurline® product, has benefits for you as a brand owner, retailer or consumer and is suitable for a wide range of product segments. It improves the presentation of the product by using sustainable and recycled materials. Made with recycled solid board, this packaging solution uses up to 80% less plastic in regards to the existing non-recycled plastic solutions and thus contributing to the demand for circular packaging solutions. This vacuum packaging solution uses an FSC® and PEFC certified solid board carrier made from renewable fibres. After taking out the product, the thin transparent vacuum layer is easily removed from the solid board to allow for separate disposal and recycling. The development of this food tray solution supports our company sustainability commitment to expand and improve recyclable packaging solutions for our customers while reducing the impact on the environment.



Vertical presentation

A transparent barrier skin film fixates the product directly onto the solid board carrier, which allows for perfect vertical presentation.



Circular and sustainable

Skin packaging uses an FSC® and PEFC certified solid board made from renewable fibres. It reduces at least 80% of the plastic content vs existing plastic solutions.



Separate disposal possibilities

The solid board trays features a transparent barrier film to seal the tray. After taking out the product, the layer is easily removed from the solid board to allow for separate disposal



High quality print options

Our skin packaging offers the opportunity to print your branding on the in- and outside of solid board carrier. High quality offset print options available to give your product the perfect in-store presentation.



Simplified opening

Specific peel tab options simplify the opening of the skin packaging for the consumer.



Success story

Jan Veal packaging

Vandrie group offers ready-to-use veal products to the highest Quality and convenience. Solidus performed a packaging solution for one of their brands called, Jan'.

Why did you choose Solidus as a development partner and what were the most important benefits of your tight cooperation?

Patricia van Krieken, marketing manager of stichting promotie kalfsvlees:

"We thought it was especially important that Solidus had 3 knowledgeable people who knew, in their own field of expertise, how to further develop the brand and the look and feel based on the discussions we had with our advertising agency. This differs completely from a standard procedure to request a cutting knife design or the production of standard packaging material. We are extremely happy with the way Solidus handles these, yet for the JAN package we developed the whole concept from the very beginning and also considered the pros and cons regarding the look and feel of the brand and the packaging. It is great to discuss these things with people from Solidus who are experts on board and packaging designs and are more than willing to share their knowledge."

Jan Huls, sales manager of Solidus: “It was really helpful that Solidus was invited to help with the design so early during the process. We had a lot of meetings with VanDrie and the advertising agency during which we could share our packaging expertise. During these meetings we always had the development of the JAN concept in mind, for an improved production process both for the client and ourselves.”

Patricia van Krieken:

“It is really exceptional to enter such a collaboration process and see the final result.”

Patricia van Krieken: “It is great that we have been able to design one concept that can be used for various markets and products.”

Why did you choose to pack the products in solid board?

Patricia van Krieken: “We also work with another supplier who provides us with packaging material made of folding board. We could have consulted this other supplier for the JAN packaging, but we were confident that our collaboration with Solidus would be fruitful. Their solid board has the required strength and the company has lots of experience in producing special packaging material for meat products in cold rooms and freezer rooms.

Our product does suffer a bit during the whole transporting process, and we feel it is very important that the packaging material supports the product. And solid board does exactly that. Our choice for solid board was therefore a conscious one.”

Why did you choose this special type of packaging and how does it support in the selling process of your product?

Patricia van Krieken: “We aimed for packaging that is different from the usual box with an image of a tasty dish. We also chose not to use an image as we supply to different cultures: for example, Italians may eat a hamburger as a snack while the Dutch eat it for supper. Therefore, we also had to use different languages and translations, as we wanted to tell our customers the story of JAN in different languages and in an appropriate manner.

We decided to tell this story during the pre-buying process, thus avoiding the fact that the consumer would find the story after opening the box. This explains why the flap is such a wonderful solution to show the information in the correct language. In addition, we opted to put stickers on the boxes to show which product (e.g. spareribs, goulash, veal cheeks) is in the box. This means we don't have to develop a specific print for each and every product.”



A snapshot of our business

Approximately 90% of the fibres we procure are recovered paper from mainly municipalities, retail customers and recovered paper plants, whilst the other 10% procured is certified virgin fibre from sustainable managed forests. We strive to source most of our fibre near our mills, to ensure local production and minimise our logistic carbon footprint.

The manufacturing and operations part of our business consists of: solid board sheets and reels which are produced in our mills and packaging, cores, tubes, edge protectors and partitions which are produced in our converting plants.

Our mills and converters are located in the Netherlands, Spain, Belgium, UK, Germany, Poland and Portugal. With four mills, eleven converters and sales offices across Europe, we are an integrated provider of a full range of fibre-based packaging products and services.

Our headquarters is located in Groningen, the Netherlands. We also have two Customer Experience Centres, located in Spain and Belgium, where Solidus engages directly with customers and partners to accelerate innovation projects.

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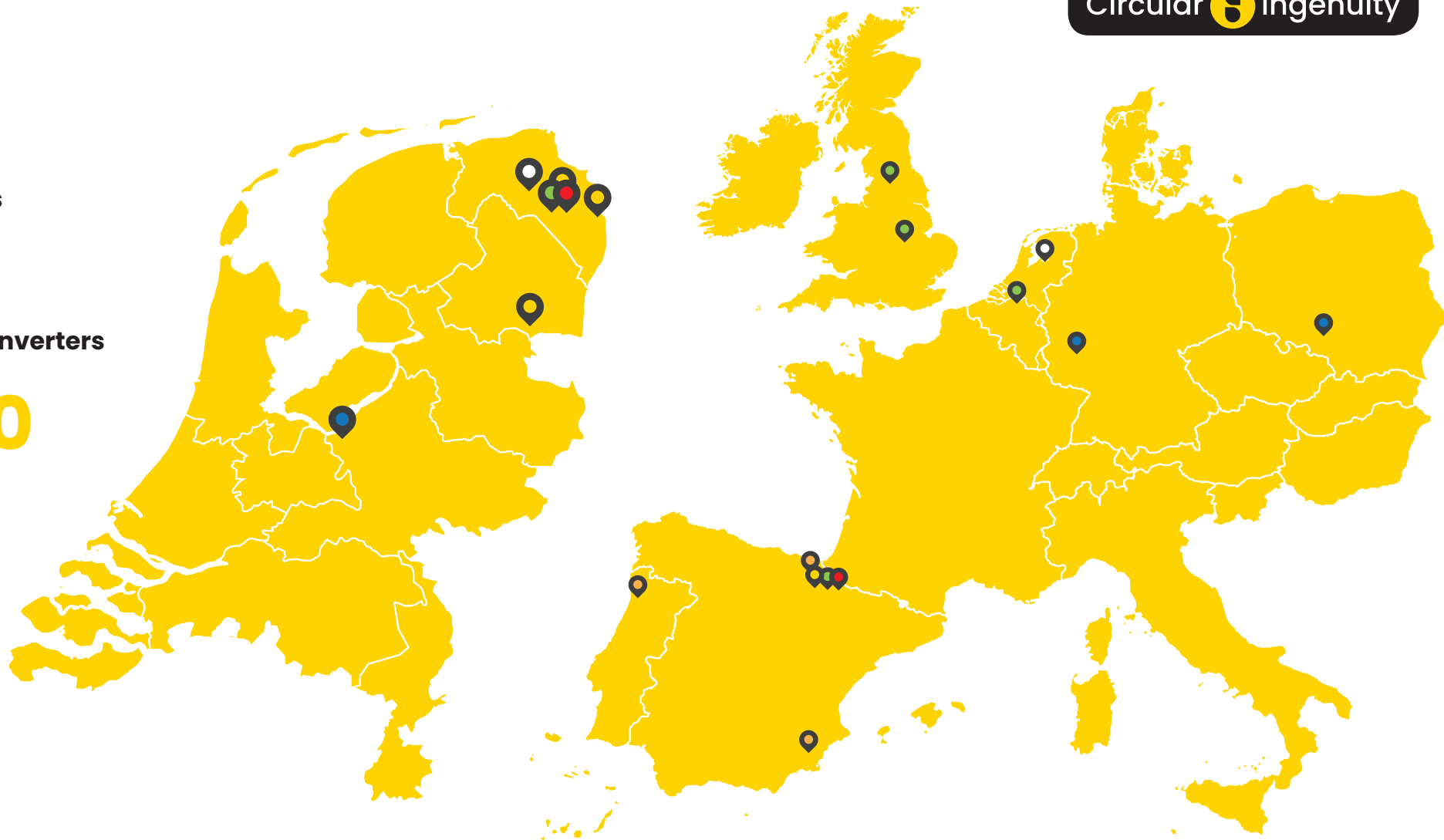
board mills

11

product converters

1400

employees

**Head office**

Groningen NL

**Techno Centres**

Oude Pekela NL, Ibiricu-Egüés ES

**Board mills**

Oude Pekela NL, Bad Nieuweschans NL, Coevorden NL, San Andrés Villava ES

**Product converters • packaging**

Oude Pekela NL, Hoogstraten BE, Corby UK, Skipton UK, Ibiricu-Egüés ES

**Product converters • cores and tubes**

Berrobi-Guipúzcoa ES, Cox-Alicante ES, Trofa PT

**Product converters • partitions**

Nijkerk NL, Kastellaun DE, Gliwice PL



Food



Flowers & Plants



Construction



Chemical



Health & Beauty



**Multimedia &
Entertainment**



**Advertisement &
Promotion**



Books



Beverage



**Textile, Paper
& Plastic**



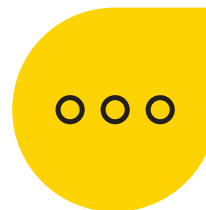
**Appliances &
Furniture**



Stationery



**Puzzles &
Board Games**



Others

Your circular packaging partner

We have support available for all industries we serve.

Contact us on +31503033000 or info@solidus.com to connect with your Solidus expert.



Solidus

Your circular packaging partner

Solidus