

Solidus



Your circular packaging partner

Product portfolio for fruit & vegetables



Fruit & Vegetables



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.

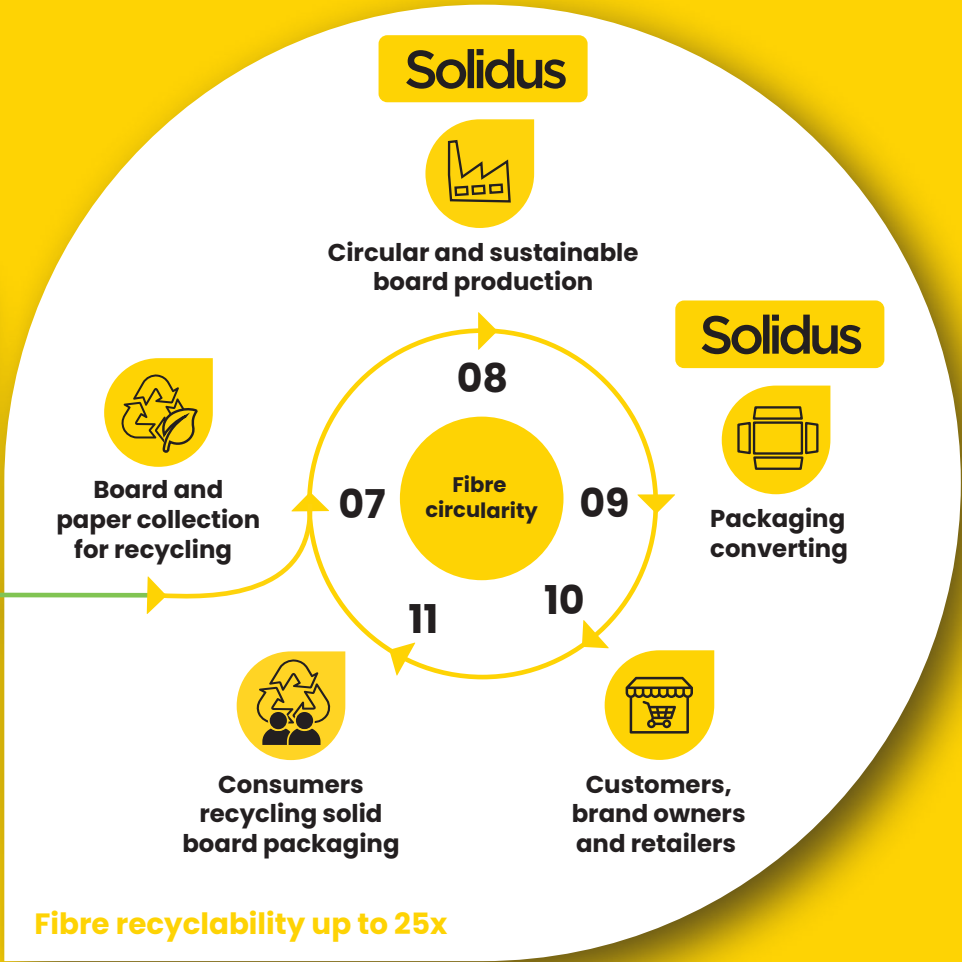
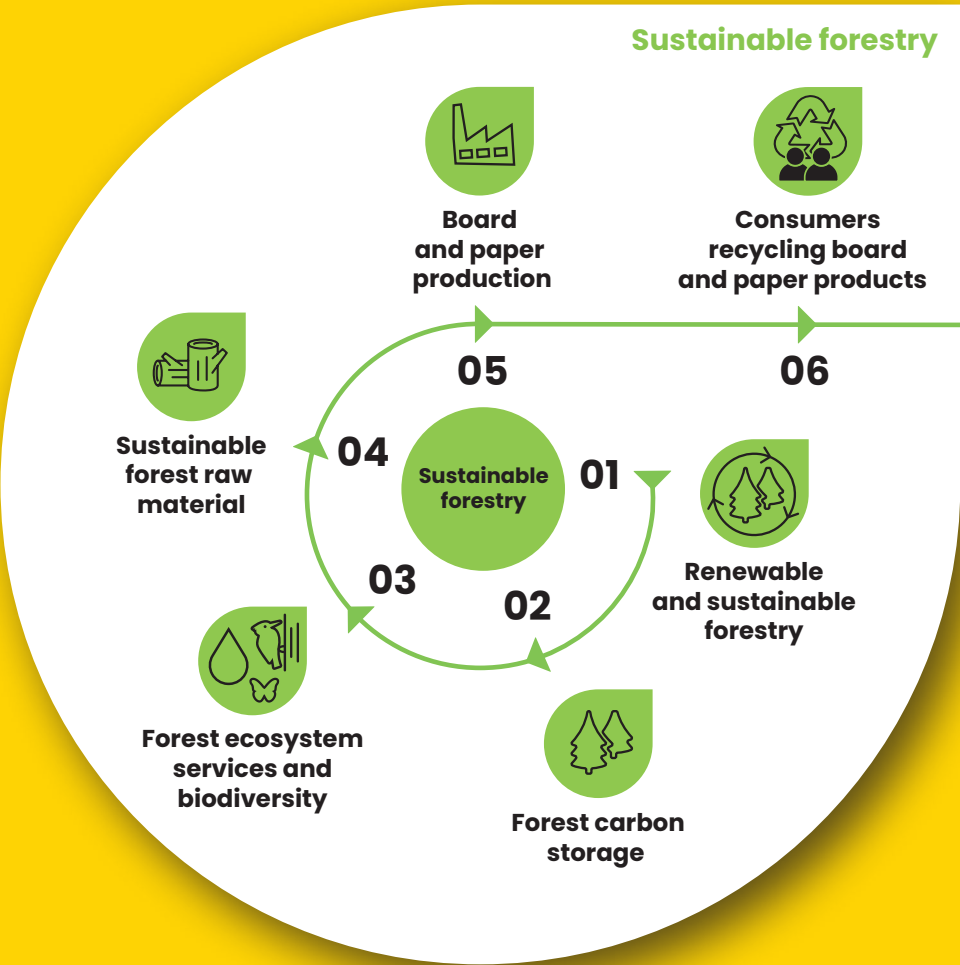
Over 1,400 highly specialised people operate in our board mills, product converters and sales offices across Europe. We continuously invest in further growth with future-oriented production methods, innovative machinery and sustainable processes. Every day, we provide our expertise, products and services 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 such as fruit and vegetables. 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.



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



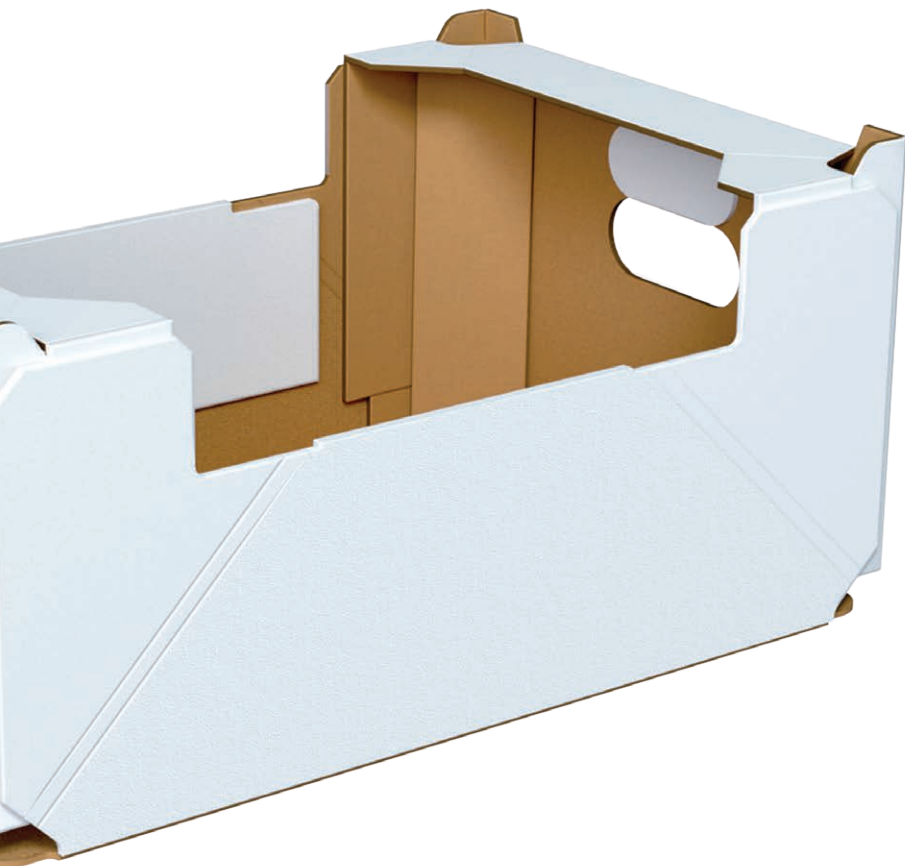
We offer a wide variety of specific packaging to suit your needs

Our longstanding experience within the fruit and vegetable market makes us experts in the daily needs and requirements to package fruit and vegetables. We know exactly which box type is 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.



Always in stock

We make sure our most on-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.



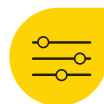
Short lead time

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

Our solid board is the ideal material to package and transport fresh fruit and vegetables. Our smart designs protect your products and the various printing options we offer, give your product a distinctive look and feel. Our solid board can be supplied with a moisture protective PE layer, ensuring moisture does not affect the integral strength of the boxes. Solid board packaging supplied with a PE liner is suitable for direct food contact and meets all the requirements regarding hygiene and food safety.

On the next page, you find the different product types for your requests. Each horticultural product and producer has its own supply chain process. Our packaging solutions will be fully fitted to your production process, whether it is manual or 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.



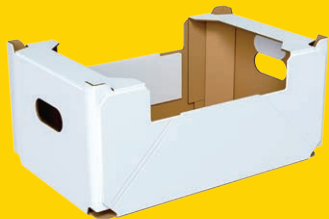
Our bestseller, the 4-point box

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.

Custom alternatives for special requirements

Hand erected tray

This extremely strong pop up tray is hand foldable with an innovative corner construction. No erecting machines are required and erecting can be carried out at any location. We deliver this tray flat folded to you which saves storage space.



Machine erected tray

This machine erected tray is ideal for quick packaging of large batches of fruit or vegetables. It is designed for fully automatic erection and can be used in standard automated filling and palletising lines.



Open-Close box

The Open-Close box system allows direct access to the product without having to remove the lid from the base. This type of packaging is ideal for products requiring light protection like chicory.



4-point box

Solidus offers various sizes of paper-based 4-point packaging, tailored to fit a large range of fruit and vegetable products. Our 4-point glued boxes 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, this type of packaging is a very cost-efficient solution whilst still providing the option of high-quality printing techniques and striking presentation.

Convenient flat pack design

Our 4-point solid board boxes are delivered flat folded to you. They take up less space in transport, storage and handling, resulting in a reduction in the total cost of packaging.



Strong

4-point boxes are very reliable when transported. As solid board is very strong, the boxes can be stacked high in a stable manner, which minimises product damage or loss.



Excellent printability

Our high-quality printing possibilities provide a striking presentation for your fruit or vegetable packaging.



Suitable for cold & humid environments

Fruit and vegetables remain fresh as it is possible to pack in refrigerated rooms containing mist and humidity.



Optimum moisture control

Our 4-point boxes are closed by a lid. In combination with the pattern of holes, optimum moisture control is achieved for your fruit or vegetables contained in the box.



Space saver

The solid board packaging takes up less space in transport, storage and handling, resulting in a reduction in the total cost of packaging.



MURPHY & SON
CUCUMBERS
HAND PICKED & PACKAGED

FOLLOW US ON
f t in i

Hand erected tray

Solidus offers the Vermak tray, a hand erected tray that can be used for a large range of products. It is a hand foldable pop up tray available in a variety of sizes.

No erecting machines are required and erecting can be done at every location. In addition, the tray has an innovative corner construction to give maximum strength during transport. We deliver this tray flat folded to you which saves space in your warehouse while being stocked. Our Vermak tray is a versatile packaging solution for different essential fruits and vegetables, which can be erected and used anywhere.



Logistical performance

Our hand erected trays are delivered glued & folded in flat packs and can be stored flat until the moment they are used. This keeps transport & storage volumes to a minimum, compared to other alternatives.



Water resistance

The tray is available in water resistant materials.



High protection

Four special corner inserts give the hand erected tray maximum strength, providing excellent protection during transport.



Excellent printability

Our high-quality printing possibilities provide a striking presentation for your fruit or vegetable packaging.

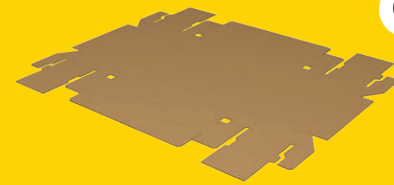


Machine erected tray

We also supply a complete range of machine erected trays. We offer all sizes and a wide variety of solid board qualities that give the characteristics which are needed for each specific product and supply chain.

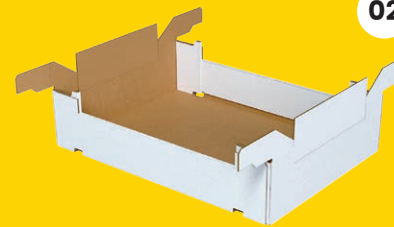
Full service automated process

For extra lean production, we also offer technical service for your erecting machines. These will be set up custom made for you to use with your Solidus machine erected trays. This option provides multiple benefits including lower staff costs and faster erection of your packaging.



01

Flat-packed trays are delivered and stored.



02

The tray is folded and glued on a standard, fully automated erecting machine.



03

The box is ready to be filled, either by hand or in an automatic filling line.

We also offer complete technical maintenance of your in-house erecting machines, year-round and wherever needed

Open-Close box

Solidus designed the Open-Close box as a solid board alternative for packing loose vegetables like chicory. The box has an efficient open-close mechanism on top of the lid to easily open the box with just one movement. The design provides protection during transport as well as the dark and air-restricted environment that light sensitive produce like chicory requires.



Easy open-close system

Our Open-Close box is fully closed with a lid, which can easily be opened by hand. The lid ensures the chicory stays white and yellow, in turn helping to avoid the product from being ruined.



Product protection

The box meets the vegetable's need for total darkness as the Open-Close principle gives maximum protection against air and light. This means the products stay fresh during the transport process.



Moisture resistant

The specially designed box retains its strength, shape and volume in humid and wet conditions.



High quality print options

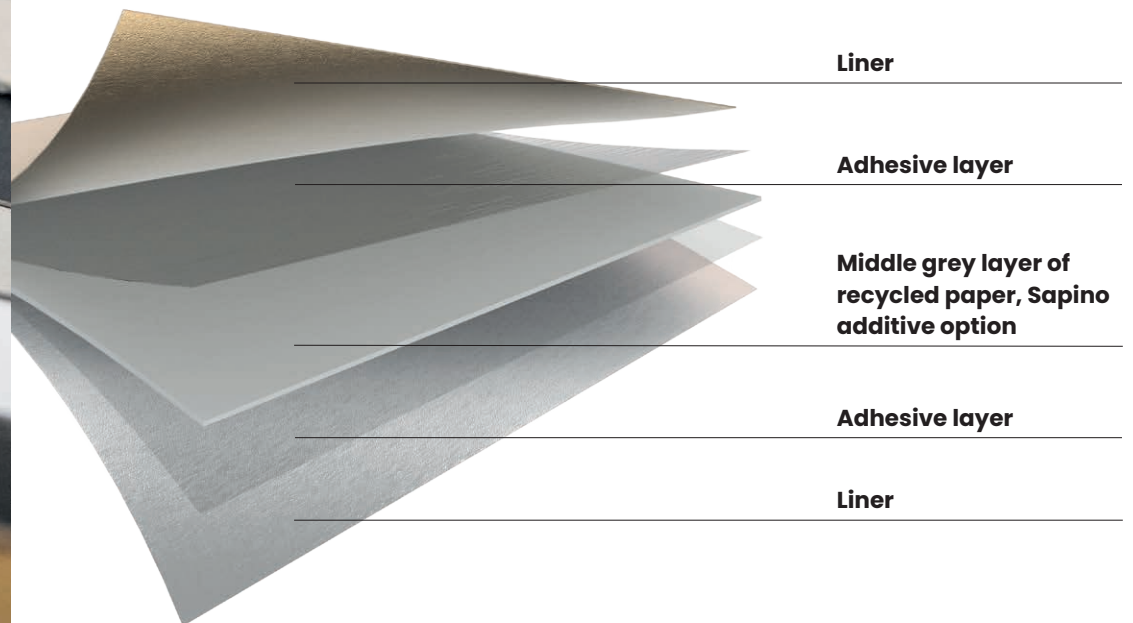
High quality offset print options available to give your product the perfect in-store presentation.



Composition of solid board

Solid board consists of a grey inner layer that has been made from recycled paper and cardboard. We are able to laminate our inner layer with several laminating papers and/or foils, depending on our customers' requirements.

To improve the moisture resistance of our packaging board, a PE coating can be applied. A water-resistant form of solid board is also available. An additive in the grey layer called Sapino prevents the board from absorbing water.



Our product matrix seasonal flexibility

	4-point box		Hand erected tray		Machine erected tray		Open-Close box	
	hidro	dry	hidro	dry	hidro	dry	hidro	dry
Apple		●			●			●
Artichoke						●		
Asparagus			●		●	●		
Avocado				●		●		
Cabbage			●		●			
Carrot	●	●	●		●		●	●
Cauliflower			●		●			
Cherry tomatoes								
Clementine			●		●			
Cucumber		●			●	●		●
Eggplant/ aubergine		●				●		●
Endive/ chicory		●						●
Fennel			●		●			
Garlic						●		
Green beans			●	●	●	●		
Green vegetables (broccoli/ cabbage/ celery/ kohlrabi)			●		●			
Herbs (coriander/ parsley/ cress)			●		●			
Kiwi		●				●		●
Leek			●		●			

	4-point box		Hand erected tray		Machine erected tray		Open-Close box	
	hidro	dry	hidro	dry	hidro	dry	hidro	dry
Lemon				•				
Lime				•		•		
Melon		•		•		•		•
Mushrooms		•	•		•	•		•
(Spring) onion			•		•	•		
Papaya				•				
Pear						•		
Peas			•					
Pepper						•		•
Pineapple					•			
Pomegranate						•		
(Sweet) potato		•				•		•
Pumpkin			•		•			
Radicchio			•		•			
Radish			•		•			
Rhubarb			•					
Salads	•	•	•		•		•	•
Soft fruits (apricot/ blueberries/ grapes/ peaches/ plum)			•	•	•	•		
Spinach			•		•			
Strawberries			•	•	•	•		
Tomato				•		•		
Turnip			•		•			
Zucchini/ courgettes		•	•	•	•	•		•



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.



Punnets

Paper-based punnets offer a recyclable alternative to polystyrene, plastic and wooden equivalents. Available in standard sizes, our punnets offer optimal protection for your products and will ensure your brand stands out at point of sale.

Modified Atmosphere Packaging (MAP)

MAP is a long established method to extend the shelf life of fresh food like fresh or processed fruit or salads, fish, meat. 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.



Fresh Pack

Fresh Pack is a sustainable packaging tray solution specifically designed for bundled meal boxes. The boxes consist of fresh ingredients such as vegetables, herbs and spices ready to prepare for a lunch or dinner for 2 to 6 people.



Small Portion Pack (SPP)

Small Portion Pack (SPP) was designed for the transport and sale of asparagus. It was designed to reduce costs in the supply chain, improving profitability whilst also improving the presentation of the produce on the shelves.



Punnets

Solidus provides punnets and small trays made from solid board that offer a sustainable alternative to plastic and wooden equivalents. Our solid board is fully recyclable and made from renewable resources, making it an environmentally choice to pack your product. Available in standard sizes, our moisture resistant punnets offer optimal protection for your products throughout the whole supply chain and will ensure that your brand stands out at point of sale.



Standard shapes

We have a standard range available of punnet shapes suitable for each type of product.



Variety of dimensions

We provide dimensions from a min. size of 5 x 5 x 2.5 cm to a max. size of 28.5 x 20 x 11 cm.



Tailored board & liners

We offer various solid board grades, including water resistant boards and other coatings.



Different ways of delivery

We assure the most secure and space effective ways of delivery.

Modified Atmosphere Packaging (MAP)

Our Modified Atmosphere Packaging (MAP) 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 fruit, ready-made products, frozen foods, cheese, fresh or processed fish and meat. 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 fish and seafood. 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.

Fresh Pack

Ready meals have seen a growth in popularity, driven by changes in consumers' wishes. At Solidus, we performed a packaging solution, Fresh Pack, specifically designed for bundled meal boxes. The boxes consist of fresh ingredients such as vegetables, herbs and spices ready to prepare for a lunch or dinner for 2 to 6 people. Our Fresh Pack tray design offers a sustainable, future-proof packaging design which enhances operational efficiency and meets the retailers' requirements for shelf ready packaging.



Logistical performance

Our Fresh Pack trays, available in different dimensions, are delivered glued & folded in flat packs and can be stored flat until the moment they are used. This keeps transport & storage volumes to a minimum, compared to other alternatives. Fresh Pack therefore takes up less space in transport, storage and handling, resulting in a reduction in the total cost of packaging.



Excellent printability

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



Food safe

Solidus ensures food contact compliance for its paper and board materials. We ensure our operation is in full compliance with the continuously evolving industry standards.



Suitable for cold & humid environments

The fresh ingredients like vegetables remain fresh as it is possible to pack in our Fresh Pack in refrigerated rooms containing mist and humidity.

Small Portion Pack

Solidus designed a new type of paper-based packaging for asparagus called Small Portion Pack (SPP), ideal for small quantities (1 - 2 persons). The efficient flat-pack design is optimised to provide protection during transport, good presentation in a retail environment and reduced supply chain costs. Protective and attractively designed food packaging, optimised for protection during transport and retail presentation. Suitable for cold and humid environments.



Small quantities

Our SPP holds up to 1,5 kg of asparagus and has dimensions of 395 x 275 mm (flat) and 250 x 150 x 100 mm (erected).



Retail ready

We offer various solid board grades, including water resistant boards and other coatings.



Product protection

There is sufficient space between the tip of the asparagus and the upper part of the box in order to protect the product during the transportation process.



Suitable for cold & humid environments

The asparagus remain fresh as it is possible to pack in refrigerated rooms containing mist and humidity.



Success story

By utilising our global capabilities and flexible solutions, we helped a major UK retailer reduce the weight of their soft fruit packaging

For several years Solidus has worked with this UK retailer to offer packing solutions for a variety of products. The properties of our solid board are perfect for fruit & vegetables packaging. This material performs superbly in wet conditions and gives fruits or vegetables the optimal protection throughout the supply chain.

The UK retailer faced the challenge of replacing a heavy MDF material being used to package strawberries and cherries, with something more lightweight that would keep the product safe in transit. Added to that, the supply chain is complex: the fruit is packed in two Spanish regions, packaged in wet conditions and then palletised 30 layers high in a container before being imported to the UK.



On arrival to a UK central depot, pallets are separated to be shipped to regional depots before arriving in store. For these products, the boxes are also taken home by the consumer so must remain in perfect condition from farm to fridge.



Solidus offered two box types. One for cherries which weighed 165g vs 220g for the MDF equivalent, and one for strawberries which weighed 183g vs 230g for the MDF used before. Both options created a packaging weight saving of over 20% whilst delivering the performance required to transport fruit perfectly from the Spanish growers to the UK public.



Further to the retailer's challenge, Solidus had to overcome the packing needs of the Spanish growers with a quick, efficient process for machine erected boxes. Through our global network of erecting stations, we were able to utilise machines at two locations close to the growers to make packing as efficient as possible. Prior to the season, flat die-cut blanks were delivered to each erecting station and a stock build followed, ready for packing from the moment the first strawberries and cherries were ready.



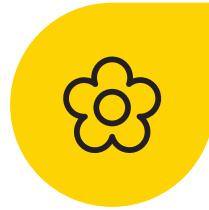
Over half a million boxes were packed that season and continue to be packed annually. In the last two years around 75 tons of packaging weight has been saved as a result and these savings have reduced energy and transport costs throughout the supply chain. Building on this success, Solidus was able to further expand this solution with two extra erecting locations for Spanish grape and clementine growers.

At a glance

- **Significant packaging weight saving of over 20%**
- **Replacing a heavy weight MDF by solid board which performed superbly in wet conditions**
- **Optimal protection throughout the supply chain**
- **Quick efficient process for machine erected boxes**



Food



Flowers & Plants



Construction



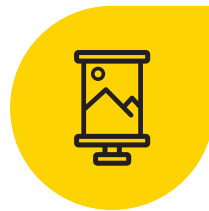
Chemical



Health & Beauty



**Multimedia &
Entertainment**



**Advertisement &
Promotion**



Books



Beverage



**Textile, Paper
& Plastic**



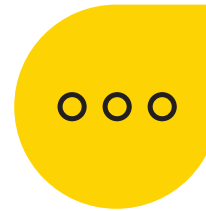
**Appliances &
Furniture**



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.



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