

10 choices to build a more **sustainable box**

Recycling re-made into sustainable packaging

We're constantly innovating and investing to find better ways to rethink waste, redesign supply chains, and to re-manufacture packaging from materials that are recycled and recyclable.

These guidelines are designed to assist you take sustainability into consideration — without compromising functionality — when making your fibre-based packaging choices.

Your Visy representative can discuss these options with you to help you meet your sustainability targets while ensuring your packaging meets your specific needs. Together, we can all be part of better.



Less
pollution



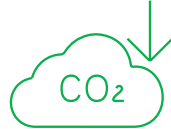
Less
landfill



Less
energy



Less reliance
on natural
resources



Less carbon
emissions



1 Choose your fibre

Fibre-based packaging can be manufactured using virgin fibre, recycled fibre or a mixture anywhere in-between.

Kraft paper uses virgin fibre from trees, whilst recycled paper uses reclaimed fibre from commercial and household kerbside collections, reducing the reliance on natural resources. Kraft paper is generally more energy intensive than recycled due to the additional process steps required to produce kraft pulp from wood.^[1]

Choosing a recycled paper allows fibre to be re-used and kept in the circular economy, rather than going to landfill which generates greenhouse gas emissions.

Whilst using paper with a high recycled content may not be comparable to virgin fibre in certain applications (e.g. high humidity environments), this can often be simply offset by using a higher gsm recycled paper for your packaging.

If you choose recycled paper, check with your Visy representative if you can use Visy's Re+ logo – it provides a clear indication to your end consumer that they're buying a better, more sustainable box.

^[1] On average, virgin fibre requires 3.0GJ/tonne compared to recycled fibre, which requires 1.5GJ/tonne. See Design Smart Material Guide No.2 Australian Packaging Covenant Fibre Based packaging.

2 Make sure it's sustainably sourced

If you're using virgin fibre, ensure it is from a sustainably managed forest. Poorly managed forests can lead to deforestation, soil erosion, habitat destruction and biodiversity loss.

Visy is committed to sustainable fibre sourcing. The Kraft paper manufactured by Visy at our Tumut paper mill is sourced from sustainably managed Australian pine plantations and we use only FSC® certified bleached pulp in our quality white-top Kraft liners.

Visy is a member of Forest Stewardship Council® (FSC®) Australia and has FSC® Chain of Custody certification (SCS-COC-002636) at all fibre sites. FSC is the world's most trusted forest certification scheme with globally consistent standards that address important social, environmental and economic issues in the production of forest products.

Check with your Visy representative whether you can include the FSC Mix logo (FSC-C008345) on your packaging. Eligible products, including our 100% recycled boxes, will have the claim "FSC Mix 70%". Your consumer can be confident choosing your product that your packaging with the FSC logo is made from responsibly sourced fibre.

3 Does it need to be white?

Consider whether your fibre packaging needs to be white. Additional process steps are required to obtain a white colour, meaning additional energy and waste compared to brown.

If you require white, consider using a Visy 'recycled white'. Visy recycled white is not as bright as Kraft white paper, and uses a de-inking process rather than bleaching, reducing the environmental impact of your packaging.



Case study: Paper LCA results

We commissioned a carbon Life Cycle Assessment (LCA) for our Kraft and recycled paper grades based on Visy's FY21 production data. The LCA was conducted in accordance with ISO standards *ISO14040* and *ISO14044: Life Cycle Analysis* to provide information about the emissions intensity of our paper products. The analysis took a "cradle to grave" approach and identified that different paper grades had different emissions intensities based on the manufacturing processes and materials used.

The LCA showed:

- on average, Visy's Kraft brown paper was approximately 21% less emissions intensive

when compared with Visy's Kraft white paper²; and

- on average, Visy's brown recycled paper was approximately 15% less emissions intensive when compared with Visy's recycled white paper.

This is because our Kraft white paper includes an additional bleaching process when compared to brown paper. Our recycled white paper uses white copy paper as a fibre source and includes an additional de-inking process compared to brown recycled paper. Both whitening processes also use different chemicals and additives in the process compared to brown.

² Visy does not manufacture the Kraft white pulp which goes into our Kraft white paper. The LCA uses external emissions factors for Kraft white pulp.

4 What goes around, comes around

To support the circular economy, consider the recyclability of your packaging. Not all fibre packaging is recyclable and any fibre packaging that can't be recycled may end up in landfill, generating greenhouse gas emissions.

Waxes and coatings, such as those which increase wet strength, may inhibit or slow down the pulping process during recycling. Fibre which doesn't break down is a contaminant and, when removed from the process, also takes good fibre with it. This reduces the amount of fibre recycled and increases the amount of material going to landfill.

Metals, gloss, foils and plastic components, including plastic windows or plastic labels, on your fibre packaging also impact its recyclability. Talk to your Visy representative to find out if there are alternatives or if these components can be easily separated by consumers before recycling.

5 Design smart to minimise your box weight

Reducing the weight of your packaging reduces the quantity of raw materials required. Smart design that optimises the flute and board design can reduce material weight, whilst maintaining the strength and functionality required for packaging your product.

Flute design can have significant impact on board strength, stacking strength and palletisation. For example:

- **Could you choose Visy's R flute board, which maintains board strength whilst being able to down-gauge compared to a commonly used B flute?**

A pallet of flat packed R flute cartons can hold approximately 25% more within the same height as B flute. This means less pallet movements, reducing transport miles.

- **Could you switch from a double-walled box to a single-walled box using Visy high performance papers in combination with a different flute option?**

If this meets your packaging's structural requirements, it will use less material without compromising the integrity of your packaging contents.

6 Optimise your box shape and design

By optimising your box dimensions, flap size and flap orientation, you can fulfill the strength and functional requirements of your packaging, while minimising the quantity of materials used. Here are just a few areas we consider when we help you design better boxes that use less material:

- **Head space:** This is the clearance between the top of the box and the contents inside. If the head space is too great, it reduces stacking strength which then needs to be offset with a stronger board grade. No head space is best.
- **Self-Support:** If primary packaging is self-supporting like glass, lighter weight recycled papers should be considered.
- **Box dimensions:** Aligning with standard board sizes can reduce trim and other wastage. Talk to your Visy representative about how to optimise box dimensions.

7 Less is more

Minimising the amount of print on your packaging and considering using water-based inks supports sustainability performance. Using fewer ink colours, and having flexibility with colour ranges, reduces the waste associated with ink change-outs and washing stations.

Reducing the amount of print and ink used also minimises environmental impact through less consumption of raw materials.

By reducing the coverage of inks, especially dark colours and metallic inks, the recyclability of the fibre is also improved.

Inks may be solvent or oil-based and made with petroleum. Visy primarily uses water or UV based inks which contain fewer volatile organic compounds (VOCs) reducing health and environmental impacts.



Looking to improve the sustainability performance of your box?

Ask your Visy representative for help using Dynexus™, our online simulation tool that can predict top load strength, base sag and other performance characteristics. It analyses board options, palletisation pattern, loading conditions... all in a simulated environment reducing time to market and allows you to find the best and most sustainable packaging solution.

Your Visy representative can share with you the Visy standard colour range for water-based inks.

8 The final touches on your packaging

Carefully assessing the need for packaging supplies – things like tape, labels and adhesives – can have an impact on the sustainability of your box. Here's three points for starters:

- Excessive tape or plastic labels may limit the recyclability of your packaging.
- If you choose an adhesive instead of tape, it is faster to apply, more effective and improves recyclability.
- Consider direct print labels, or paper labels that are compatible with the recycling process. Liner free labelling options mean no label backing waste goes to landfill. Avoid plastic labels that cannot be recycled.

10 Keep it local



9 Get your product to the finish line

Your packaging is made, your product packed and you're ready to move your goods. There are simple ways you can reduce the environmental impacts and transport miles associated with transporting your products.



Optimise stacking formats to industry standards. For example, we can help you adopt Intercol formats, as endorsed by major retailers. Unlike other stacking formats, Intercol maintains stability whilst retaining stacking strength. As a result, more material efficient board grades can be used.



Consider the ability to fully utilise the space in trucks and shipping containers by determining the optimum workable pallet height. For example, working to double stack pallets to the height of the truck instead of single stacking pallets increases the amount of product that can be moved per trip.

Looking for sustainable shelf ready packaging?

Ask your Visy representative for help using Selectify™, our online tool designed specifically to help optimise shelf ready products for maximum performance and sustainability.



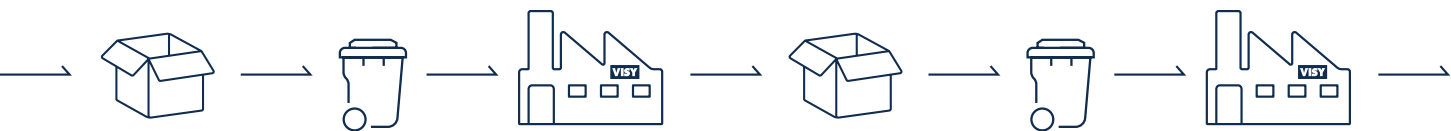
Can you minimise the tertiary packaging components needed to secure your loading pallets? Sustainable options may include down gauging stretch wrap, or just using strapping to secure your products.

Locally recycled

Visy collects and sorts paper and cardboard from commercial and industry business and households across the region, maximising recyclable content to be re-manufactured into packaging right here. Our unique closed loop system supports local manufacturing and contributes to diverting waste from Australia and New Zealand's landfills.

Locally manufactured

Visy's manufacturing footprint spans Australia and New Zealand. Our local footprint means that our paper and board are all manufactured locally, reducing the transport miles of your packaging.



Why choose Visy?

Our unique closed loop systems help turn recyclable materials back into resources, powering the circular economy. We collect, receive and sort materials from households and businesses, maximising the recyclable content to be re-manufactured into valuable sustainable packaging. And we do this again and again, at scale, reducing both reliance on natural resources and waste going to landfill.

And when you're talking fibre-based packaging, we're the industry pioneers. We make 2.6 billion boxes every year. Which means we have decades of deep insights and experience across all sectors... we know where to look to implement true value for you.

Our fibre-packaging know-how is strengthened by our broader view of your value chain and the circular economy. This enables us to identify needs and emerging trends from retailers and end consumers, and to feed these insights back into new ideas and solutions for you. We also know logistics and we know recycling — it's a unique skill set that allows us to help you unlock value and make sustainability gains.



FOR A BETTER WORLD

Visy has taken reasonable care to ensure the information contained in this document is accurate at the time of writing however, does not provide any warranty as to its accuracy or completeness. This is intended as general information only and should not be relied upon to make environmental claims. This document does not alter Visy's standard terms and conditions of packaging supply and/or such other bespoke agreement with a customer, and should not be reproduced, distributed or otherwise relied upon without the prior written consent of Visy.

