



BACKGROUNDER / FAQ

UNDERSTANDING RECYCLED CONTENT

Prepared by the Paper and Paperboard Packaging Environmental Council
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How do we define recycled content?

Recycled content is generally defined in two ways: *pre-consumer* and *post-consumer*. Both are recognised by the International Standards Organisation (ISO) and by [Canada's "Guidelines" for environmental labelling](#).

PPEC does not distinguish between the two in its survey results because both divert used paper material for further recycling.

"Pre-consumer" recycled content includes the corrugated clippings or boxboard trim that is left over when converting board or paper into a box, bag, or carton. This leftover trim is sent from the converting facility (box plant) back to the mill for recycling. *"Post-consumer"* material, on the other hand, is the formed box, bag, or carton that is sent for recycling after use by industrial, commercial, institutional, or residential consumers.

Some argue that post-consumer material is environmentally superior to pre-consumer material. PPEC (and ISO) do not support this argument. The amount of trim or cuttings (pre-consumer material) at a box plant, for example, is relatively small, as maximizing the use of the whole board, which has already been paid for, is in the best interests of the plant and its customer.

The next customer will get some of this trim in the next piece of board purchased, and so on, in a continuous recycling loop. In PPEC's opinion, the brand owner or retailer should get credit for this recycled content; after all, it is the same board, just being sent to the mill from a different place.



There is a further argument for including some recognition of this trim or cuttings sent back to the mill from the box plant. Generally, a mill needs an additional 10 tonnes of used paper or board to produce 100 tonnes of recycled product shipped out the door. This is because paper fibres shrink in the pulping process. Even though a mill has paid a municipality, a processor, or a broker for 110 tonnes, and technically re-pulped 110 tonnes, it makes no claim for recycling more than 100 tonnes for recycled content purposes. It does not seem unreasonable in this light, to claim trim and cuttings as a trade-off for the shrinkage that is not claimed.



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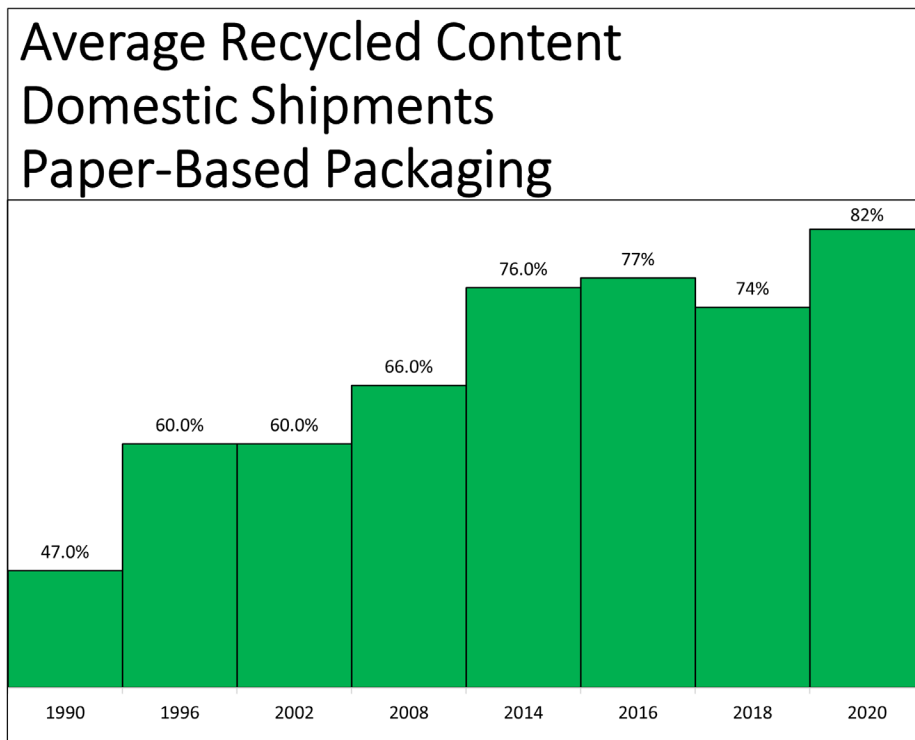
How is recycled content measured?

Recycled content is usually expressed as an average. This could be an average of a mill’s particular production run (so each customer can label the recycled content of its packaging), or an average over a longer period, normally 12 months. National average recycled content percentages are determined by dividing the number of tonnes shipped, by the number of tonnes of recycled paper or board used in those shipments. For example, in 2020, of the 3.37 million tonnes of paper packaging material made in Canada, some 2.36 million tonnes were comprised of recycled paper or board, giving an average recycled content of nearly 70%.

What is the average recycled content of paper packaging made in Canada?

The answer depends on how you define paper packaging and whether you include all shipments (or just domestic or export shipments). There are three major packaging grades: containerboard (used to make corrugated boxes); boxboard (used to make boxboard cartons); and kraft paper (used to make paper bags). Each of them has different technical requirements such as paper fibre length and strength which can have a bearing on whether recycled content is favoured or not. The overall recycled content produced by Canadian mills was nearly 70% in 2020; but it is a different story when you break it out by different packaging grade.

The average recycled content of domestic shipments for all three major packaging grades was 81.7% in 2020, up from 73.5% in 2018. The average has steadily increased from 47% back in 1990.



Source: PPEC 2020 Recycled Content Survey



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What is the average recycled content of the various packaging grades?

KRAFT PAPER



- *Kraft paper* represents only 9% of Canada’s paper packaging production. It is predominantly used to make multi-wall sacks and grocery bags, which require strong paper fibres – “kraft” is the German word for strong).
- Paper bags in Canada are made from woodchips and sawmill residues left over from lumber operations. Nothing is wasted. Even rotten, bent, or twisted saw logs are salvaged and used.
- Paper bags collected from household Blue Box recycling programs are normally recycled back into new corrugated boxes, rather than separated out and shipped back thousands of kilometres to the nearest kraft paper mill for recycling.
- It can be virgin material or 100% recycled content, or anywhere in between. However, recycled content data is unavailable for this grade as the mills that manufacture kraft paper in Canada use sawmill residues in their production.

BOXBOARD



- *Boxboard*, which is used to make cereal or shoe boxes, does not require the strong paper fibres that kraft paper bags do, and are mostly 100% recycled content when it leaves the mill. It is made from a mixture of old corrugated boxes, old newspapers, used printing and writing paper and old boxboard itself, the residential collection of which PPEC pioneered back in the early 1990s.
- Of the nine mills in Canada producing boxboard grades in 2020; seven used recycled content. One used a blend of deinked pulp and sawmill residues, and one used sawmill residues or virgin fibre and up to 25% recycled.
- Overall, the average recycled content for domestic shipments of boxboard is close to 80%, based on the 2020 Recycled Content Survey.

CONTAINERBOARD



- *Containerboard* is the major packaging grade in Canada and is used to make the corrugated boxes commonly used to ship heavier products. Its component parts (linerboard and corrugating medium) are mostly 100% recycled content.
- Of the 11 containerboard mills in the country in 2020, seven produced 100% recycled content, and the balance a blend of recycled and sawmill residues or virgin fibre.
- Overall, the average recycled content for domestic shipments of containerboard is close to 87%, based on the 2020 Recycled Content Survey.



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Does using recycled content mean that less virgin material will be consumed?

Yes. However, [the paper industry cannot exist without the introduction of virgin fibre at some point in the paper life cycle](#). It needs longer virgin fibres to replenish the shorter and thinner fibres that gradually wear out due to repeated recycling. Paper fibres can generally be recycled up to ten times. In other words, to keep the whole recycling loop going – and to produce recycled content in the first place – we must have trees or wood chips and sawmill residues somewhere in the system on a regular basis.

How is paper-based packaging made?

PPEC’s infographic illustrates how paper packaging is made, and continuously remade into new paper-based packaging, through recycling.

While most paper packaging made in Canada is made with recycled content, the paper fibres it was originally made from came from a tree. Less than half of one per cent of Canadian commercial forests are harvested for paper packaging. Every hectare that is harvested must be successfully regenerated, and more than 800 seedlings are planted in Canada every minute.

A mill produces the raw material used to make packaging, using mostly recycled content, and responsibly sourced wood chips and sawmill residues. It is then formed into big rolls of paper and sent to a converter, where it is made into packaging products. Once used by the customer, it is recycled, making its way back to the mill to start the process over again, as it is remade into new paper packaging products.



Paper Packaging:

One of Canada's Original Circular Economies





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What problems do setting minimum recycled content levels cause?

While it may seem like the “right” thing to do environmentally, the reality is that governments and companies tend to act in isolation, setting often unscientific and competing minimums that suit their individual needs. This results in widely divergent thresholds that bear no relationship to the global supply and demand for paper fibre (both virgin and recycled); driven by politics and public relations.

If the goal is to achieve a global balance in the use of the world’s forest resources, isn’t it better to allow countries that no longer have sustainable forests of their own (and there are many), to import their needed virgin material from countries (like Canada) that *do* have sustainable forests, to keep the whole global paper life cycle going? Some of the tools to do this are bans on illegal logging, and independent third-party certification of sustainably managed forests. PPEC is proud that there is no illegal logging in Canada, and that all our mill member companies have achieved [independent “chain-of-custody” certification](#), or responsible sourcing of raw materials, whether recycled or virgin.

PPEC also questions whether there is a *need* for recycled content minimums for paper packaging in Canada. The overall average is close to 82%, far higher than any other packaging material has achieved. And most of Canada’s packaging mills are *already* at 100% recycled content.

And then there are *imports* of packaging board and converted boxes, bags, and cartons. Almost half of the paper packaging that Canadians use is imported, either as raw material or as converted product. Any minimum recycled content levels would have to apply equally to imports to meet fair trade rules.

Another argument often advanced for setting minimum recycled content levels is that such “green procurement” grows or encourages markets for recycled materials. This is demonstrably untrue for used paper packaging in Canada.

The markets for old corrugated and boxboard are very mature. [Virtually all Canadians now have access to the recycling of these materials](#); and PPEC estimates the national recycling rate for corrugated boxes is estimated to be at least 85%. Setting higher recycled content levels than currently being achieved would mean that mills would *import more* used paper and board to meet the minimum thresholds. Capture in Canada itself would be unlikely to increase.

A more practical option is to ban recyclable paper materials from disposal. PPEC is calling on provinces to ban the disposal of old corrugated containers (used corrugated boxes) from private and public sector landfills. Environmentally, it is the right thing to do -- it will reduce methane and carbon dioxide emissions and extend the life of landfills. [No good box should go to the dump.](#)

