



Corrugated Packaging - An Extraordinary Recycling Success Story

Corrugated packaging is an increasingly noticeable part of daily life, especially with recent, explosive growth of e-commerce and home delivery services. With a business philosophy dedicated to responsibility, the corrugated packaging industry's recycling track record is miles ahead of any other packaging material. This prolonged and focused effort on recovery and reuse is one of many things that makes corrugated cardboard boxes extraordinary, and why consumers should feel good about the boxes being delivered to their doorsteps.

A Fibre Box Association (FBA) White Paper



FIBRE BOX ASSOCIATION®



Why Recycle?

E-commerce has been growing dramatically for several years now, and the COVID-19 pandemic further accelerated its advancement. This trend is not expected to slow down anytime soon – shoppers have learned to expect and appreciate the option of purchasing whatever they want without leaving their homes.

The majority of products supplied to businesses, retailers and consumers have always been shipped in corrugated boxes. Corrugated is the most popular shipping container because it's economical, sturdy, and can be customized to fit and protect its contents. It's also the most environmentally-friendly packaging material available in the world today.

The more online shopping catches on, the more products (and corrugated boxes) are being delivered to consumers' homes – and less to retail stores. The question is, how can we make sure that those boxes, wherever they end up, get recycled?

Maintaining an Extraordinary Recycling Record

As consumers get more boxes delivered directly to their homes, they assume responsibility for what happens to the boxes once they are emptied. Recycling is the obvious choice, as it is available in most communities

across the U.S., is easy, and actually works, in the case of corrugated cardboard.

That's right: Boxes might look ordinary—but they're extraordinary when it comes to the role they play in recycling. In 2019, **92 percent** of all corrugated was successfully recovered for recycling in the US – that's more than 32 million total tons! Plus, the average corrugated box was made with 50 percent recycled content. That track record is miles ahead of any other packaging material's recovery and re-use rates, but it didn't happen overnight. It took a prolonged and focused effort the corrugated industry committed to over fifty years ago and has lived by ever since – that should be viewed as an example to improve recycling rates for other packaging materials.

Corrugated is one of few materials that can be recovered for recycling through an established, healthy market and never needs to go to waste. The fiber in old corrugated containers (OCC) is valuable and is in high demand both domestically and overseas.

Most OCC is used to make new paper products. More than 50 percent of OCC recovered in 2019 was used to make new containerboard for more corrugated boxes. An additional 10.4 percent was used to make boxboard (for primary packaging like cereal boxes), and more than 34 percent was exported. Global demand for OCC generated in the US has grown steadily as well, helping ensure a viable market for US recovered fiber.

Around the Loop

Recycling corrugated helps decrease solid waste disposal in landfills and earns revenue for the commercial end-user, because OCC is valuable to paper mills and manufacturers of new corrugated.

Old corrugated containers travel in a continuous loop.

Most everyone contributes to this recycling success - but many people don't understand where these boxes go or how new ones are made.

1. After being used for their intended purpose they're collected and compacted, transported to a paper mill, put into a repulper, agitated to form a slushy pulp, and cleaned of contaminants.
2. That clean fiber pulp is sent to the paper machine, poured onto a moving screen, and formed into a continuous fiber mat that's pressed between rollers to remove more water. It moves through the dryer section, is rolled onto a large spool, then slit and rewound into new paper rolls, which are shipped to box manufacturers.
3. The box's "new life" begins when the corrugated board is formed using 3 or more pieces of paper, sandwiched together with adhesive, cut into sheets, and passed through machines that make them into new boxes.

Impact of E-Commerce

The e-commerce boom was already going strong when the pandemic sparked radical growth in online shopping. According to the [Adobe Digital Economy Index](#), online grocery alone is up more than 230 percent of pre-pandemic levels, and [Nielsen](#) forecasts online grocery sales will reach \$94-109 billion in 2021.

Especially now, industry is heavily reliant on corrugated boxes for secure delivery to consumers. Shopping habits have changed with less in-person store visits and greater preference for online options, a trend that was already enjoying tremendous momentum even before retailers had to shut down or incorporate new restrictions to their brick-and-mortar operations.

In March 2020, as restaurants and stores shut down during the first month of COVID-19, corrugated box shipments grew 9% over March 2019 shipments. This surge was boosted by overstocking of household paper,



cleaning supplies and food. Shipments grew again year-over-year in June, July, and September, with October, November and December shipments hitting record highs and boosting industry shipments up 3.4% in 2020, the largest annual increase since 1994. The corrugated industry ended the year at 407 billion square feet (BSF) of product shipped, its highest level of shipments recorded, surpassing the previous high of 405 BSF in 1999.

Simply put, corrugated cardboard boxes were recognized as the backbone of the American supply chain and the fast-tracked shift to e-commerce has kept the industry on its toes, working with brand owners and consumer packaged goods (CPG) customers to adjust box sizes, enhance the consumer's in-home experience with high-quality graphics, and communicate brand values.

Sustainable Packaging

An extraordinary recovery rate is a fine example of the environmental benefits of corrugated packaging. In this day and age, it is important to understand corrugated packaging is sustainable across the board – renewable, economical, effective – a responsible packaging choice. People are more concerned about making choices and lifestyle changes that are healthy not just for themselves and families, but for the planet, too.

In business, sustainability is understood to encompass responsible management of environmental, economic and social resources and impacts. It has become a critical business marketing and survival strategy, driven by public opinion, government regulation, dramatic

changes in major retailers' purchasing criteria and increased consumer awareness.

The growing emphasis on sustainability has weighty implications in packaging. Some of the world's largest retailers now demand measurable improvements in packaging sustainability for the products they buy and sell to consumers. Not only that, as consumers receive more of their purchases directly into their homes, they see more of the packaging – and they are highly aware of its environmental impact. In a world where purchasing experiences are reviewed on e-tailer websites and social media, it isn't difficult to find consumers pushing back on suppliers that "over-package" their products. The need for sustainable packaging options is obvious.

Oceans of Concern



Consumers are justifiably alarmed about the amount of plastic that is ending up in our oceans and waterways. [National Geographic's](#) iconic – and startling – cover story in June, 2018 raised an unmistakable red flag, calling global attention to the plight of our planet due to plastic waste. Its impact on marine life is causing widespread concern and attention. The plastics industry and CPG companies are teaming up to work on finding new

solutions and develop more recyclable options in an ambitious effort to mitigate and slow down the damage. Meanwhile, paper-based packaging has always been a sustainable choice – safe for wildlife, degradable in the elements, nontoxic, and infinitely recyclable. (Actually, one box can be recycled on average 7 times.)

Renewable from the Start

As if corrugated's recycling story weren't amazing enough, it's important to remember that it is made from a completely renewable resource. Tree farms help clear the air, protecting our environment while helping ensure a sustainable future.

The US paper and wood products industry plays an important role in ensuring sustainable forest management. Today, one-third of the US is forested, and there are more trees than there were on the first Earth Day celebration over 50 years ago. And, a [2012 report from the U.S. Forest Service](#) indicates that more than [3.2 million trees are planted per day](#) in the United States.

Life Cycle Assessment (LCA), Recycling and Recycled Content

In addition to supplying vital stock for the manufacture of new paper products, steady increases in corrugated recycling help the industry continue to reduce its environmental footprint. The recycled content of corrugated boxes is tied to total system fiber usage and therefore is linked to many variables in a life cycle assessment (LCA). The amount of new virgin fiber required in the system is balanced by the recycled content which affects energy consumption and emissions at the mills. The use of nearly 50 percent recycled fiber in the average corrugated box contributes to a significant reduction in waste to landfills and subsequent methane generation – which reduces the industry's life-cycle impact on global warming potential (GWP).

The Corrugated Packaging Alliance publishes the corrugated industry's LCAs, including baseline assumptions and documented statistics. The latest studies can be viewed [here](#). The 2014 LCA revealed a 32 percent reduction in GWP had occurred since the first-ever corrugated industry LCA published in 2009, along with double-digit reductions in eutrophication, respiratory, and fossil fuel depletion indicators.

Get on board

CPG companies and retailers can do their part by providing products in recyclable corrugated boxes, and by purchasing boxes that are right-sized for optimal material use. Equally important, make sure that the boxes are marked with the Corrugated Recycles emblem and go the extra mile to encourage consumers to place the empty boxes into their recycling bins.



**Corrugated
Recycles**

To find out how the corrugated industry can help support your sustainability efforts, including programs to help you inform your consumers, contact the Fibre Box Association (www.fibrebox.org).

And remember: Corrugated Recycles.

For more information, visit www.boxesareextraordinary.com and follow us on [Twitter](#), [LinkedIn](#), [YouTube](#), [Facebook](#) and [Instagram](#).