



Corrugated Packaging - An Extraordinary Recycling Success Story

Corrugated packaging is an increasingly noticeable part of daily life, especially in today's new age of e-commerce. 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®



Corrugated packaging is an increasingly noticeable part of daily life, especially in today's new age of e-commerce. Online shopping has shifted the distribution of products (and corrugated boxes) so that more is being delivered to consumers' homes – and less to retail stores. Even so, the majority of products supplied to businesses, retailers and consumers has always been shipped in corrugated boxes.

There's good reason for that. 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.

In 2018, **96 percent** of all corrugated was successfully recovered for recycling in the US, and 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 that should be viewed as an example to improve recycling rates for other packaging materials.

Why Recycle?

Recycling corrugated helps decrease solid waste disposal in landfills. It also provides fiber that is reused to make new corrugated, using less new, raw material in the process. Recycling corrugated even earns revenue

for the end-user, because OCC is valuable to paper mills and manufacturers of new corrugated.

Impact of E-Commerce

Since the waning days of the 20th century, e-commerce has experienced double-digit growth rates. The industry, which now exceeds \$400 billion per year, is heavily reliant on corrugated boxes for secure delivery to consumers. Shopping habits are now quickly changing with less brick and mortar store shopping and more online. Credit Suisse, a major global financial services company, predicted 25% of U.S. malls remaining in 2017 could close by 2022. Retail has been hit hard with nearly 6,000 store closings in 2018 and already, retailers have announced closures of more than 8,600 in 2019, according to Business Insider.

The implications for the corrugated industry could be quite profound. Retail has provided a readily available and high-quality source of OCC and is the backbone of the industry's supply base. However, as store fronts decline there's an ongoing shift of OCC to e-commerce distribution centers (DCs) and households. While the recovery rate of OCC from the commercial stream is close to 100%, the recovery of OCC from residences is below 40%. That means the CPG companies and retailers shipping products to consumers have an opportunity, and a responsibility, to help their customers understand that the boxes can and should be recycled.

What Happens to the Recovered Boxes?

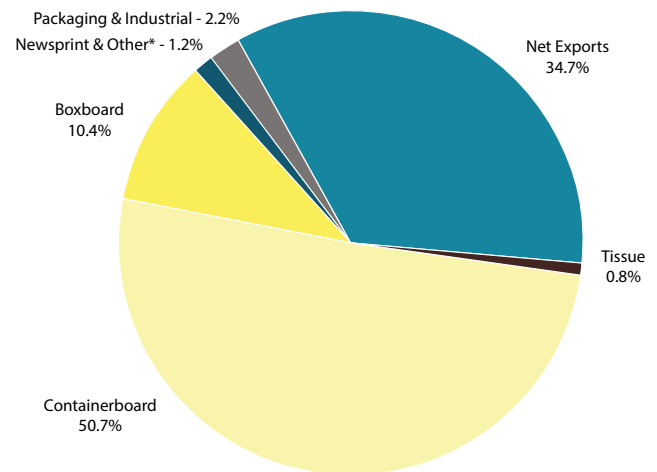
The percentage of corrugated recovered for recycling has been climbing steadily since the adoption of the corrugated recycles symbol in 1993, and the recovery rate for old corrugated containers/unbleached Kraft papers hit a record high of 96.4 percent in 2018. The 2018 increase was driven by a nearly 30 percent surge in net exports of OCC. Domestic mill consumption of OCC increased 2.8 percent in 2018. Given the recent volatility in OCC markets, it is instructive to consider that the three-year average recovery rate for OCC (2016-18) works out to 92.7 percent, as reported in the American Forest & Paper Association (AF&PA) annual report on US paper recovery. More statistics are available at www.paperrecycles.org/statistics.

The corrugated industry's prolonged effort has produced impressive results over time. Even back in 1993, when recycling efforts first began in earnest, 54 percent of corrugated was being recovered – a significant achievement already, considering [91% of plastic ever created has not been recycled, and a massive amount has become litter](#).

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 OCC is valuable and is in high demand by both domestic and foreign manufacturers.

Most OCC is used to make new paper products. More than 50 percent of OCC recovered in 2018 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.



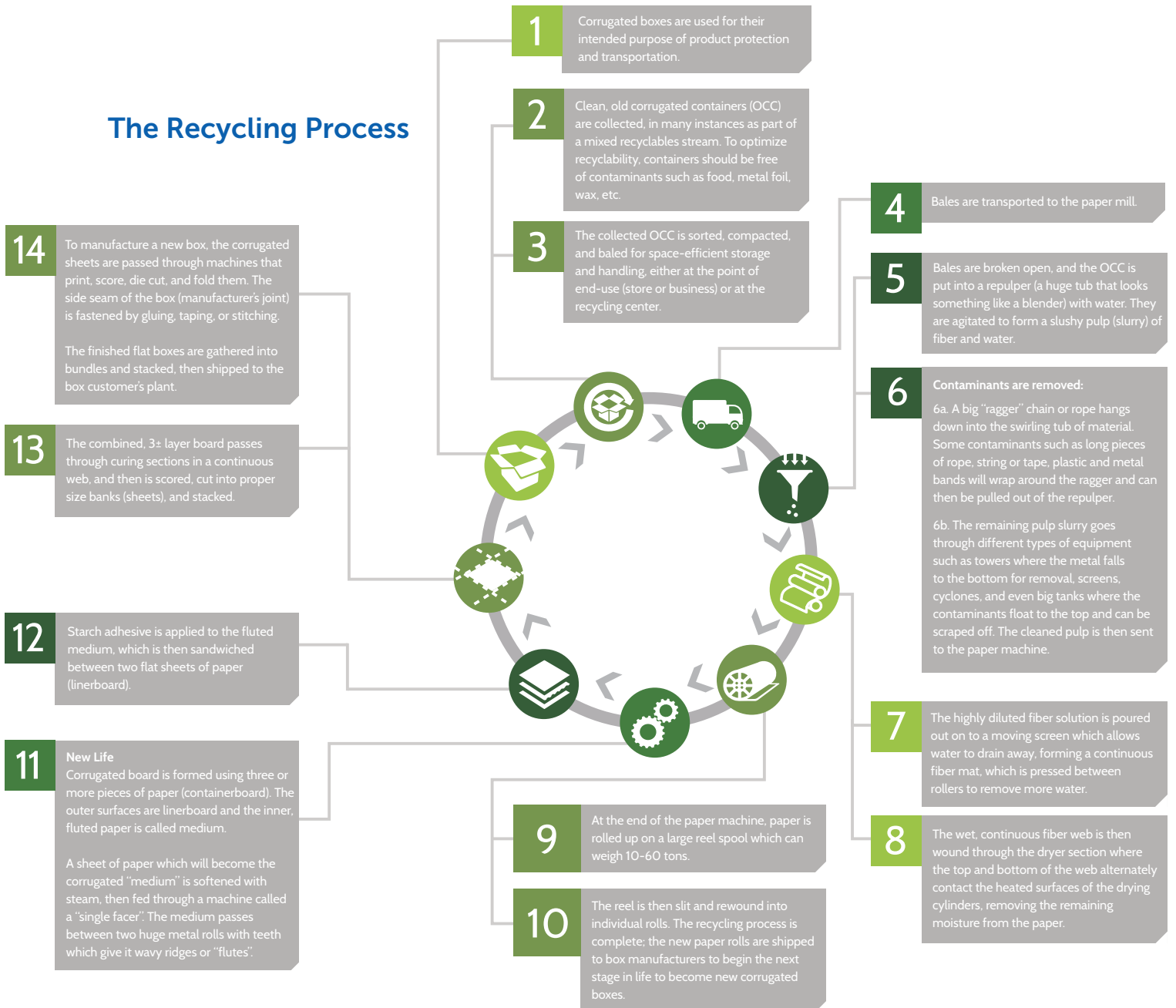
www.paperrecycles.org/statistics/where-recovered-paper-goes

How Does Corrugated Recycling Work?

Businesses, retailers and consumers at home collect and return their used corrugated containers to be recycled into new ones. While almost everyone contributes to corrugated packaging's recycling success, fewer people may know where those boxes go from the collection point, or how they are processed to produce new corrugated material. See how corrugated is recycled on the next page (downloadable graphic available [here](#)).



The Recycling Process



Sustainable Packaging

An extraordinary recovery rate is a fine example of the environmental benefits of corrugated packaging. But that's not all – corrugated packaging is sustainable across the board – renewable, economical, effective – a responsible packaging choice.

According to the US Environmental Protection Agency (EPA), "Sustainability is based on a simple principle. Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the

conditions under which humans and nature can exist in productive harmony that permit fulfilling the social, economic and other requirements of present and future generations."

In current business practice, sustainability is understood to encompass responsible management of environmental, economic and social resources and impacts. Sustainability 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 profound implications in packaging, which is subject to intense scrutiny and innovation. 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 implications in the environment. 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 today 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, with daily, disturbing images appearing on social media.

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 nearly 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 has 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, by purchasing boxes that are right-sized for optimal material use, and using recyclable packing materials like fiber chips. 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.

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 about corrugated recycling, visit www.corrugated.org, and follow us on Twitter (@fibreboxassn and @corrugatedpkg) at <https://twitter.com/fibreboxassn> and <https://twitter.com/corrugatedpkg>.



CORRUGATED PACKAGING RECYCLING SUCCESS

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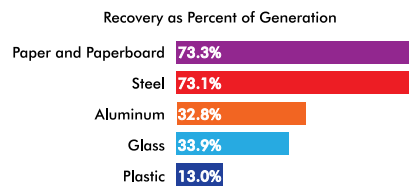
96 PERCENT RECOVERY RATE

In 2018, the recovery rate for old corrugated containers (OCC) was 96 percent, up from 54 percent in 1993.



MOST RECOVERED MATERIAL

More corrugated packaging is recovered for recycling than any other packaging material.



Source: 2017 EPA "Advancing Sustainable Materials Management: 2017 Fact Sheet"



RECOVERED OCC MAKES MORE BOXES

Nearly all old corrugated containers (OCC) are used to make new paper products. The average corrugated box contains 50 percent recycled content.

RECYCLING PROGRAMS ARE EVERYWHERE

96 percent of Americans have access to community curbside or drop-off corrugated recycling programs.



Source: 2014 AF&PA Community Access Survey. Louis Berger, February 2015

INVESTING IN EDUCATION

The corrugated box industry has made significant investments to educate retailers and consumers on the benefits of recycling corrugated materials.

In 1970, a corrugated company introduced the world to the familiar "chasing arrows" universally recognized as a recycling symbol today.



In 1994, the "Corrugated Recycles" symbol was introduced in the U.S., and today the symbol is present on a majority of corrugated packaging.



For the most up-to-date corrugated industry statistics and information, visit www.corrugated.org. For more information on what makes boxes extraordinary, visit www.boxesareextraordinary.com.