### Corrugated in Brief

The Canadian corrugated industry has been providing cost-efficient packaging solutions for over 100 years. We begin with renewable materials (*details over the page*). These are produced using almost 60% renewable energy (mostly wood residue and biomass which have reduced greenhouse gas emissions by a whopping 44% since 1990). Our products have an average 82% recycled content, and are the most widely recovered of all packaging materials (both from industry and from households). Most corrugated boxes are recyclable and/or compostable.

Each package is specifically engineered to maximize performance and merchandising impact throughout its supply chain, while minimizing the amount of material used and its carbon footprint. Almost 100 box and sheet plants convert containerboard into corrugated boxes, sourcing most of their material from the 13 Canadian mill facilities, thus promoting continuous innovation and competition locally. The industry also provides a safe work environment and competitive wages to its workers; supports community recycling programs; and provides social benefits through volunteers and direct donations in the many communities it serves.

The lightweight, strong corrugated box is used to contain and protect a host of products during the distribution cycle. The average consumer will see corrugated boxes carrying large and small appliances, automobile parts, agricultural products, beer, and as point-of-purchase displays, to name just a few applications.
**Corrugated is Environmentally Responsible**

**Made from a Renewable:**

Despite broad public misconceptions, only a tiny amount of Canada’s forestlands is actually harvested by the forest products industry every year (less than half of one percent), according to the latest federal government report (The State of Canada’s Forests).

Forest fires burned 11% more, and insects and beetles defoliated an incredible 19 times more!

By law, all forests harvested on crown land (93% of Canada’s forest land is publicly-owned) must be successfully regenerated. About 72% is currently regenerated through tree planting and direct seeding, while the remainder is regenerated naturally.¹

Indeed, Canada has embraced, and leads the world in, the adoption of sustainable forest management systems. Almost 90% of Canada’s managed forests are now third-party certified to internationally recognized sustainable forest management standards: Canadian Standards Association (CSA); Forest Stewardship Council (FSC); or Sustainable Forestry Initiative (SFI).

Notwithstanding this stellar example of stewardship, the “tree” component of packaging materials in Canada is actually minimal. In fact, on average, it comprises just over 10% freshly-cut tree.

The balance comes from recycled paper and board, or woodchips, shavings and sawdust left over from logging and sawmilling operations whose primary purpose is supplying lumber for houses, hospitals and universities and so on.²

**Using Renewable Energy:**

Almost 60% of the energy needs of the major forest product companies in Canada are being met by renewable resources, mostly through wood residue and other biomass from certified forests, and cogeneration, which means that some mills, in fact, have the potential to be net energy producers. This strategy of substituting biomass for fossil fuels and using less emissions-intensive natural gas has seen pulp and paper mills reduce their aggregate greenhouse gas emissions by a whopping 44% since 1990.³

**Focused on Source Reduction:**

Corrugated converters have always operated on the basis of reducing their production costs and persuading their various clients that their particular option will save the customer more money.

Some ways to achieve reduction include eliminating or reducing layers, introducing “high performance” board or kraft paper (making it lighter), reconfiguring box flaps, and removing air space between the product and its packaging. One celebrated example of reduction at source was PPEC persuading the Railways Association of Canada to change its rules on corrugated containers shipped by rail, slashing the amount of paper fibre needed by 100,000 tonnes (permanently).⁴

**Greenhouse gas emissions have been slashed by a whopping 44% since 1990**

<table>
<thead>
<tr>
<th>Less than half of 1% of renewable resource actually gets harvested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Million hectares</td>
</tr>
<tr>
<td>Canada’s forestlands</td>
</tr>
<tr>
<td>Destroyed by insects/beetles</td>
</tr>
<tr>
<td>Burned by forest fires</td>
</tr>
<tr>
<td>Harvested for pulp, paper, lumber</td>
</tr>
</tbody>
</table>

Almost 90% of Canada’s managed forests are now third-party certified to internationally recognized sustainable forest management standards

Most boxes not made from freshly-cut trees

Source: PPEC

![Graph showing percentage of different materials used in corrugated packaging](chart.png)

- Freshly cut trees: 11%
- Leftover wood chips, shavings, sawdust: 77%
- Recycled paper and board: 12%
**Designed for Recycling:**

While boxboard cartons and paper grocery bags are sometimes used again for similar or other purposes, it is the re-useable corrugated container (or retripper as it is known in the industry) that is most widely re-used. Some 14% of all corrugated boxes were re-used in 1996, according to a national packaging survey commissioned by Canada’s environment ministers.⁵

**Designed for Recycling:**

Corrugated is by far the most widely recovered packaging material in Canada with a national recovery rate estimated in the 80% range (up from 69% in 1996).⁶ Residential recovery of old corrugated containers (OCC) has also increased significantly over the years, with Ontario reporting an amazing 92% recovery rate in 2009.

The average recycled content of corrugated shipped domestically has also jumped: from 45% in 1988 to 82% in 2010. Some 65% of Canadian packaging mills now manufacture board from 100% recycled materials.⁷

**Designed for Composting:**

The cellulose (or carbon source) in corrugated makes it ideal for composting where (mostly for geographic reasons) box recycling is not feasible or economic. PPEC pioneered the composting of waxed corrugated boxes through McGill University in the early 1990s, proving that a more preferable environmental solution to disposal was indeed available.⁸

---

**Corrugated is Economically Viable**

- Corrugated packaging is a $3 billion industry, contributing to Canada’s economy and enabling manufacturers and service industries to ship goods and products across Canada and worldwide for over 100 years.
- Made in Canada by almost 100 box and sheet plants, the corrugated industry provides jobs and benefits to over 15,000 employees and their families.⁹
- Corrugated packaging is vital to distribution systems in Canada. It is sourced by businesses locally and is the most frequently used shipping material because it is cost-effective, lightweight, functional and versatile. Its use contributes to more cost and fuel-efficient packaging of products from the point of origin to point of sale and end use.
- Corrugated is custom designed for each product it protects, allowing the use of minimized materials and the most efficient space utilization possible by reducing “head space” within the package and maximizing cube efficiency in trucks.

---

**Average recycled content an impressive 82%**

![Recycled Content Chart]

**Very high packaging recovery rate in residential stream**

![Recovery Rate Chart]
Corrugated is Socially Desirable

- Corrugated is produced by an industry that maintains high standards for worker safety.
- It is produced by companies that give back to local communities through sponsorships and charitable contributions.
- The International Corrugated Packaging Foundation/Canada financially supports and has provided equipment to excellent career training programs at Mohawk College in Brantford, Ontario and to the Quebec Institute of Graphic Communications, Montreal.  
- Corrugated manufacturers help communities support recycling efforts and educate their residents through school programs, public outreach, collection programs and more.

References:
2. PPEC analysis of packaging grades based on data collected in 2008/2010 recycled content and furnish surveys.
4. See PPEC factsheet: *Making do with less* www.ppec-paper.com
6. The 80% is a PPEC estimate for 2009. The 69% figure is from the National Packaging Monitoring System Results noted above (Table 1). The Ontario residential number is from Stewardship Ontario for 2009.
7. Analysis of packaging grades based on PPEC surveys.
8. PPEC Factsheet: *The composting alternative* www.ppec-paper.com
9. PPEC estimates based on various sources including Statistics Canada, Paper Packaging Canada and AICC Canada.
10. ICPF/Canada supporters include Paper Packaging Canada and the Association of Independent Corrugated Converters (AICC) Region 11.

Resource Links:
- **FPAC (Forest Products Association of Canada) for Sustainability Reports:** www.fpac.ca
- **PPEC (Paper & Paperboard Packaging Environmental Council) for comprehensive environmental information on paper packaging:** www.ppec-paper.com

---

Paper and Paperboard Packaging Environmental Council (PPEC)
3-1995 Clark Blvd., Brampton, Ontario L6T 4W1

T. 905.458.0087  F. 905.458.2052  E. ppec@ppec-paper.com
www.ppec-paper.com