



# Lightweight corrugated panels

## *A technology worth replicating*

### Fast facts

Technology: **Lightweight corrugated panels**

Replicability: **Moderate potential**

Capital cost: **\$6 to 10 million**

Output: **Bio-based corrugated fluting used in the fabrication of lightweight panels that could be a substitute for structural or non-structural boards**

### Advantages of lightweight corrugated panels<sup>1</sup>

- Reduced ecological footprint
- Decreased use of wood materials, reduced product weight and transportation costs
- Reuse of reject wood material from veneer and plywood industries
- Flexible and customizable product design

### How it works

Reject veneer (poplar, pine) is laminated with either paper or fiberglass and a formaldehyde-free resin, then pressed, corrugated and cured under controlled conditions.

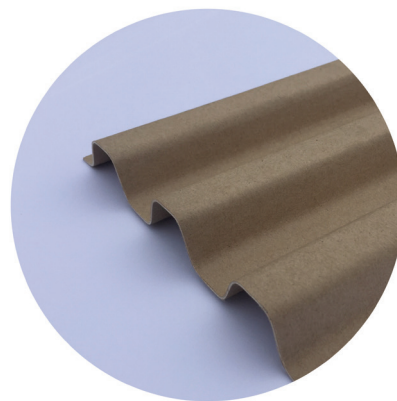
The resulting fluting material can then be used as is, either for packaging protection or as a support material in other applications. It can also be used to manufacture other products, such as structural products like concrete formwork panels or be sandwiched between two panels (typically 3 mm plywood) and shaped to the customer's end product requirements.



### Success story

**Corruven** has developed a laminated fluting system, using wood and reject veneer fiberglass, for manufacturing **lightweight composite boards** as strong as standard plywood or particleboard, but with only 25% of the weight.

The technology being deployed by Corruven will bring production to a commercial scale while improving product quality and will open new markets for this innovative product.



### Need funding?

Access the Canadian Business Network database of government grants, loans and financing options at [canadabusiness.ca/eng/program/search/](http://canadabusiness.ca/eng/program/search/) for opportunities in your region.

<sup>1</sup> KSH Consulting

## Technology maturity (high)

### Has the technology been commercialized outside Canada?

- This technology is the first of its kind in the world. It has been in operation at a limited commercial scale for a few years, and its process only requires the use of commercially available equipment.

## Ease of implementation (high)

### How easily can the technology be replicated, with regard to process complexity, capital costs or intellectual property issues?

- All of the process components of the Corruven production line are commercially available, proven technologies. However, a significant amount of customization is required. The Corruven organization is the only entity with the necessary knowledge, which is protected by patents.

## Potential for replicability (moderate)

### Are there multiple sites available with the potential to facilitate such a project?

- The replication potential is limited by the product standards applicable to its use. Several markets have been targeted by this technology, and the level of market penetration will dictate the relevance of replicating this technology at other locations via technology licensing.

## Market opportunities (moderate)

### Is the relative market size targeted by this technology accessible?

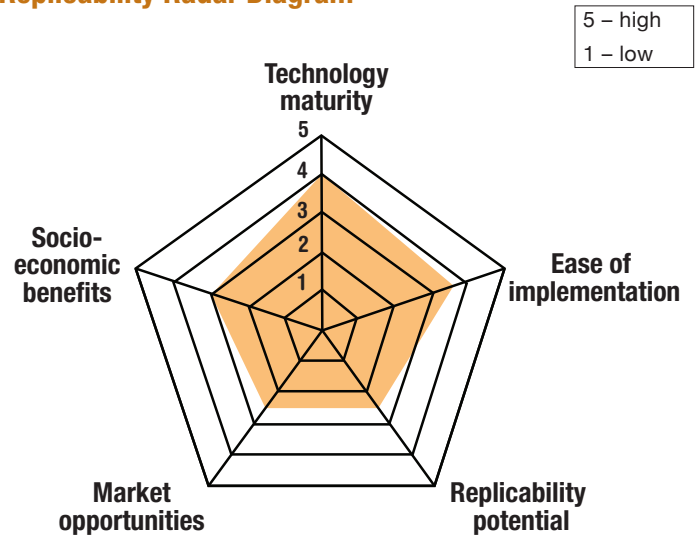
- Demand for decorative panels and ready-to-assemble (RTA) furniture is growing, with lightweight products potentially providing an advantage.
- Protective packaging and concrete formwork panels.
- The cost and usability of the product, especially in the RTA furniture market, could hinder market acceptance.

## Socio-economic benefits (moderate)

### Would the project lead to job creation opportunities, environmental benefits and the potential to transform the industry?

- Each stand-alone facility would create approximately 20 full-time manufacturing jobs, with an additional 5 jobs in administration and sales.
- The Corruven product, when used to manufacture panels, uses 75% less raw material than particleboard, thus saving on the use of biomass and the associated transportation costs, which also leads to reduced GHG emissions.

## Replicability Radar Diagram



*Disclaimer: This replication analysis is based on the technology implemented under the project funded by IFIT. The IFIT program does not endorse any specific technology provider and has produced this brief analysis for the benefit of those considering implementing this type of project.*

## Is it suitable for you?

- The main process requirement is access to reject veneer, ideally acquired locally.
- The primary component of the panels is Canadian wood in the form of veneer and plywood.
- The technology required for this process is similar to traditional corrugation/panel manufacturing technologies, though significant customization is required.