

IMPLEMENTING SUSTAINABLE PRODUCT PACKAGING

BBB Industries, LLC



Case Study



Sustainability has been a megatrend for years. Manufacturers are often searching for ways to reduce waste and contribute to the circular economy.

Several product engineers in the BBB steering department face the problem of the significant cost of purchasing cardboard inserts that are placed into product boxes to absorb shock and movement through the delivery process. With millions of parts being produced by this department each year, the cost of small cardboard inserts can add up quickly.

When a customer has a broken steering pump, they will get it replaced. The broken pump will be removed and a new one installed. Then the worn or broken pump will be placed in the same cardboard box the replacement was shipped in and shipped to BBB Industries where it will be remanufactured.

Once that “core” is received in the cardboard box, the part will be sustainably manufactured into a component that can go into another vehicle. The cardboard box can then be sent off to be recycled.

But this is where the story begins. Those boxes don’t have to be sent off to be recycled. A product engineer walking through the steering plant recently noticed all the boxes stacked up in piles and had an idea.

Arturo, a process engineer, began engaging his co-workers and managers to create a way to use the cardboard as a replacement for the previous cardboard inserts purchased as new. The team invented a process to run the returned cardboard pieces through the perforating machine that allows the material to become bendable, flexible, and absorb shock. After perforating, this cardboard is rolled up in a way that keeps the product secured through shipment.

It’s a sustainable solution. The process finds a secondary use for post-shipment cardboard and keeps that material out of the waste stream, while preventing new cardboard purchases and ultimately saving trees. This initiative will save 330,000 pounds of cardboard each year and avoid over 230 Metric Tons of CO₂ from less cardboard manufacturing. This is equivalent to the same carbon removed out of the atmosphere at 273 acres of forests in a year.

The steering team hopes to share their success across other BBB Industries departments and to inspire cardboard reutilization in all BBB processes.



References

The cradle-to-grave carbon footprint of cardboard is 1.53 kgCO₂/kg ([Consumer Ecology](#)).

Total kilograms of cardboard kept from waste: 304,305kg (670,320 Pounds)

Total emissions kept from the atmosphere due to less production of cardboard:

230.36 Metric Tons of CO₂

Equivalent trees to make the same emissions reduction: 273 Acres of Forests ([US EPA](#))