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CASE  
STUDY



# Bata PVC Gumboot Recycling Program

In this case study, we focus on the Bata Shoe Company of Australia PVC Gumboot Recycling Program. Founded in 2020, the Program aims to reduce the number of PVC gumboots sent to landfill. Following a circular economy approach, Bata gumboots are collected, sorted, granulated, processed and remanufactured locally, resulting a new pair of boots consisting of 50% recycled content, proudly made in Australia.

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## ABOUT THE PROGRAM

By now, it is no secret that Australia has a waste problem. According to the National Waste Report (2020), Australia is one of the highest per capita waste generators in the world, falling second to the United States. Plastic waste is an important part of the story. With a recovery rate of just 7 percent, the majority of plastics just go to landfill<sup>1</sup>. The need to find onshore solutions for plastic waste has been amplified in the context of waste export bans for materials including plastics.

As Australia works to increase resource recovery to 80% by 2030, the Product Stewardship Centre of Excellence aims to support businesses as they work to better manage the environmental impact of their products. One way to do this is through highlighting case studies of firm-level product stewardship innovations. In this case study, we focus on the Bata Shoe Company of Australia's PVC Gumboot Recycling Program.

Founded in 2020, the Bata PVC Gumboot Recycling Program aims to reduce the number of PVC gumboots being disposed of into landfill. It is one of a number of environmentally-friendly initiatives the brand is currently engaging with, all of which demonstrate that product stewardship can enable businesses to meet their economic and environmental sustainability goals.

## MANAGING PVC WASTE

Polyvinyl Chloride (PVC) is one of the most widely-used types of plastics in the world. The chemicals used to make PVC are increasingly banned in parts of the USA and the European Union due to their toxic nature, contaminating humans and the environment throughout its lifecycle. This has led some companies to eliminate PVC from their production altogether<sup>2</sup>.

The objective of the PVC Gumboot Recycling Program is to ultimately have zero worn PVC gumboots being disposed into landfill. Bata has embraced a circular mindset, whereby

used gumboots will be recycled and transformed back into new gumboots, closing a key production loop. This is something that is currently not done by most companies, further demonstrating Bata's corporate leadership in this space.

Bata has developed a five-stage recycling process for their PVC Gumboots:

1. **Collection:** Bata supports customers in the process of responsibly disposing of their used boots by providing collection bins for gumboots across Australia and New Zealand. For example, in New Zealand, Bata partnered with the dairy company Fonterra to have collection bins on worksites where employees could return their gumboots<sup>3</sup>.
2. **Sorting:** The used boots are then sorted into their PVC and non-PVC components. Bata recycling program requires salvaged PVC must be in 'the necessary' condition to be processed further.
3. **Granulation:** This stage of processing involves granulating the used PVC into small pellets.
4. **Processing:** The pellets are reprocessed with an added chemical agent (a plasticizer), creating a new compound made of 50% or more recycled content.
5. **Remanufacturing:** Last but not least, the recycled PVC is used to create brand new black gumboots<sup>4</sup>.

The results of the program speak for themselves: in 2020, the brand made 300,000 pairs of gumboots using 50% recycled PVC content. For each kilo of recycled PVC, Bata saves 2 kilos of CO<sub>2</sub> emissions<sup>5</sup>.

## DRIVERS

There are a range of environmental and economic incentives for engaging in PVC recycling. For instance, using recycled PVC compared to creating virgin PVC reduces energy consumption by 75%. And, recycling, rather than incinerating, PVC is estimated to

decrease CO2 emissions by 77%<sup>6</sup>.

However, not only is the Bata Gumboot Recycling Program good for the planet, it is good for business. Bata's Program saves the company money by reducing waste management costs, as PVC is redirected from more expensive disposal options like landfills. Over time, and as momentum grows, this may further reduce the costs of waste management.

The PVC Gumboot Recycle Program also supports local manufacturing jobs by ensuring the recycling processes are taking place in Australia. This is likely to give Bata a further competitive advantage, particularly in the Covid-era, where customers nationwide are increasingly likely to seek out and support Australian-made brands<sup>7</sup>.

It's also part of Bata's commitment to their hometown. As Jon Moore, Bata Company Manager told us "we operate from the beautiful Mornington Peninsula, and we are working diligently to minimise any negative impact our operations have on this special place, so future generations can continue to enjoy in the future, what we have around us today."

## LOOKING FORWARD

As this program continues, Bata is working to increase program uptake by making it easier for users to return their gumboots to the company. This will require finding solutions to overcome the financial and logistical challenges of shipping gumboots across the country.

More broadly, the experience of developing their PVC Gumboot Recycle Program is operating in tandem alongside a range of corporate sustainability initiatives.

According to Moore: "from domestic production to our recycling program to greener manufacturing initiatives, we're doing everything we can to reduce our carbon footprint. It's a commitment to our community and our dedication to providing products that families can feel good about wearing."

Initiatives include the use of recycle bottles to make shoelaces for children's school shoes and trialing pineapple and mushroom "leathers" as an alternative for upper non-PVC shoe material and sugar cane as an alternative for the sole of a shoe. By swapping the PVC components of a shoe with natural biodegradable materials, Bata is working to reduce a products lifetime in a landfill.

## REFERENCES

<sup>1</sup><https://www.environment.gov.au/system/files/pages/5a160ae2-d3a9-480e-9344-4eac42ef9001/files/national-waste-report-2020.pdf>

<sup>2</sup><https://www.environmentalleader.com/2007/1/1/target-to-reduce-pvc-use>

<sup>3</sup><https://www.fonterra.com/content/dam/fonterra-a-public-website/fonterra-new-zealand/documents/pdf/sustainability/2020/fonterra-sustainability-report-2020.pdf>

<sup>4</sup><https://www.bataindustrials.com.au/bata-pvc-recycling-program>

<sup>5</sup><https://www.bataindustrials.com.au/bata-pvc-recycling-program/>

<sup>6</sup><https://www.facebook.com/BataAus/videos/310905960127665/>

<sup>7</sup><https://www.abc.net.au/news/2021-05-11/aussie-made-products-flying-off-shelves/100128812>

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