

Innovative 100% recyclable wheelie bin wheel reduces rubber waste

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The 100% recyclable plastic wheel for municipal wheelie bins was developed by Mpact Plastic Containers in 2019 and commercial production commenced in 2020. This means that the traditional rubber wheel was replaced with a 100% recyclable wheel.



This new development forms part of Mpact Plastic Containers diversion of an estimated 24,000 tonnes of plastic from going to landfill over the past five years, by converting waste into new, reusable products.

The recyclable Wheelie Bin project emerged from the global concept of having a circular approach to products, components, and materials in the economy whereby recycled material is used to manufacture new products.

“Rubber from the old end-of-life rubber wheels went to our already overflowing landfill sites. Millions of end-of-life tyres are currently either being disposed of or illegally dumped, with only small amounts being recycled. It was important therefore to create an alternative to the rubber wheel to overcome this challenge,” says Lance Kallis, environmental manager of Mpact Plastic Containers.

According to research, there was a time when rubber waste was collected and recycled in South Africa, but this is no longer economically viable. Rubber takes between 50 to 80 years to decompose. As the population increases, and we use more products, we need to ask ourselves, is our planet equipped to handle the increasing amount of rubber waste?

Municipalities are large consumers of goods and are therefore well-placed to drive circularity at scale. They are able to procure in a responsible manner, thereby meeting their constitutional mandate by purchasing products that are made of recycled materials. By procuring recyclable products, these metros are able to divert waste from landfills, develop end-

markets for plastic recyclers, secure offtakes to their own bin waste and create sustainable employment.

Many municipalities have adopted these new 100% recyclable bins and have received positive feedback.

The circular process begins with new plastic wheels being manufactured locally at Mpact Plastic Containers. Once complete, the bins are then assessed by the quality department, and delivered to the customer for use. When the bin reaches end-of-life, it can also be returned and recycled into new products. In this way, both the bins and wheels are turned into new products.

Mpact Plastic Containers have succeeded in creating a closed loop system through this innovative solution. The business collects damaged and condemned bins, then exchanges these for new bins. The condemned bins have to be identifiable as locally manufactured from HDPE and free of oil and waste.

The 240-litre Wheelie Bin is designed for industrial, household and hospitality use. It features a specially designed rim flange for mechanical lifting and decanting; and can withstand the rigours of this handling. The bin is designed to be shock-absorbent, resistant to chemical attack and will withstand the extreme and frequent temperature variations experienced in South Africa.

“In the past few years, South Africa has seen huge growth in the circular economy,” advises Kallis. “Continuous engagement and ongoing extended producer responsibility regulation conversations are essential, as it allows engagement between producers and end-users who are predominantly linear in their approach.”

By closing resource loops, and working towards reducing waste, cities can significantly contribute to the circular economy. This model serves as a catalyst for innovation, entrepreneurial opportunities and sustainable job creation.

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