CHEP A Brambles Company   **Cabka**

CASE STUDY: Designing a Next-Generation Foldable Large Container for Supply Chain Efficiency and Sustainability

Background & Challenge

CHEP, a global leader in supply chain pooling, sought to develop a new generation of foldable large containers that would outperform existing reusable transport packaging in volume capacity, foldability, durability, and environmental impact. Their previous RTP options faced limitations in internal storage space, load capacity, supply chain efficiency, and end-of-life recyclability. To meet modern logistics needs, CHEP needed a circular, modular, and repairable container that maximized warehouse and transport efficiency, protected product integrity, and aligned with growing sustainability commitments. CHEP partnered with Cabka to co-create a solution that would streamline operations, reduce handling effort, improve return logistics, and be produced from recycled content while remaining fully recyclable at the end of its service life.

Solution & Results

CHEP and Cabka worked collaboratively for over two years, combining supply chain data, material engineering, and customer feedback to develop the Zirconic® Foldable Large Container—a modular, IoT-ready, and highly durable container made from post-consumer recycled plastic. The Zirconic® container achieved a larger internal volume, increased load capacity, improved foldability for warehouse and transport space savings, and enhanced security features to protect product integrity. Its modular components allow simple repair and extended life, while embedded tracking technology provides real-time supply chain visibility. Early adopters have reported at least a 10% reduction in reverse logistics costs, increased transport efficiency due to greater load volume per container, and measurable reductions in CO$_2$ emissions compared to previous RTP solutions and single-use packaging.

Market(s):

Supply Chain / Logistics

Solutions:

Co-developed a modular, foldable, IoT-enabled reusable container engineered from post-consumer recycled plastic to increase transport efficiency and reduce environmental impact.

Key Outcomes:

- Increased internal volume and load capacity allow more goods to be transported using fewer resources
- Improved foldability delivers measurable warehouse and reverse logistics space savings
- Modular design extends product lifespan and allows low-cost component replacement
- Made from post-consumer recycled plastic and fully recyclable, significantly reducing environmental footprint
- IoT-ready container technology provides enhanced tracking and supply chain visibility

Reusable Packaging ASSOCIATION