



2018 SUSTAINABLE PACKAGING DESIGN SPECIAL AWARD GOLD WINNER

ICEE Containers eeco6 EPLA Insulated Boxes



Key Outcomes and Measurement



98% air and 2% bioplastic



Member of United Nations Save Food Initiative



Replaces expanded polystyrene (EPS)



Flat packed for storage, increasing transport volume



Made from expanded polylactic acid (EPLA)



Thermal insulation



Industrially compostable
European standard EN 13432



Up to **70% more efficient**
to use and store



Company: ICEE Containers

Product: eeco6™ EPLA Insulated Boxes

Country: Australia

Based in Melbourne, Australia, ICEE Containers, provides technology and product designs to the particle foam industry. ICEE began life with an idea to create fold flat insulated boxes by putting hinges in expanded polystyrene (EPS).

The team developed a unique, globally patented process to create integrated hinge during the moulding cycle, removing unwanted bulk and reducing storage costs.

The winning entry builds on their original EPS design, popular for perishables such as fish, produce and pharmaceuticals, and upgrades the material to a biobased, expanded polylactic acid (EPLA) foam to make an industrially compostable fold flat insulated box.



- ICEE adapted their original, ground-breaking, fold-flat EPS box to the award-winning EPLA alternative box.
- Market demand drove the design, which delivers a new insulated packaging solution with lower environmental impacts and the future of Australia's end-of-life infrastructure in mind.
- The boxes, rebranded under eeco6™, re-launched in 2021.

What is sustainable packaging to you?

According to Hamish Hingston, designer of ICEE's eeco6™ folding box, sustainable packaging is *"where the full life cycle of the package and contents is considered and managed, along with the environment as a whole."* He is initially aiming the eeco6™ products at applications where customers require the high performance properties of EPS but want to lower their environmental impacts.

In the case of the winning entry, Hamish explains *"it is made of biobased content and is industrially compostable, taking care in the start and end of life, to create a highly sustainable product."* Furthermore, *"our eeco6™ boxes are very light, consisting of 98% air and only 2% bioplastic, which means that by design, they preserve valuable resources."*

What is the story behind the design?

After a business restructure, the ICEE team found themselves the 'proud' owners of a small polystyrene moulding plant and invented the world's first, fold flat EPS box.

Whilst the 'original' folding EPS box remains ground-breaking, it was the adaptation to EPLA that really attracted the attention of the PIDA judging committee.

The design of the new eeco6™ boxes was driven strongly by both consumer demand, and an objective to provide a more sustainable alternative to EPS, that can be composted at the end of life.

Hamish explained, *"After a lot of research and development, we created our biobased and compostable folding box."* EPLA, being a bioplastic, is vastly different to the traditional oil-based materials that were used by the industry.

Hamish explained, *"We had to develop many new techniques and adjust our equipment to make it happen."* ICEE has since branded the new boxes under their eeco6™ name, to emphasis the products' benefits.



ICEE CONTAINERS

Supply lessons

Since launching their eeco6™ folding boxes and winning the PIDA award, the team was hit with global market shortages of the raw material. Hamish explains: *“As PLA is a relatively new material and EPLA, even newer again, there are only a handful of suppliers who are at scale. As a bioplastic, it is also affected by crop yields and other agricultural factors.”* As a result, they were forced to pull back from marketing as they simply could not source enough raw material to match the market demand for the product.

Now, after completing a new supply agreement, ICEE is preparing to re-launch their eeco6™ folding boxes. Under their new agreement, Hamish said that *“we can now convert the PLA resin into an EPLA particle foam in our own facility in Melbourne, which gives us more flexibility in our supply chain and will allow us to launch a number of new products on to the global market.”*

Composting infrastructure

Another area of attention, says Hamish, is the need to ensure there is the infrastructure to capture food waste and compostable packaging in Australia.

Hamish believes that composting, a form of organic recycling, is a valid part of the solution to increase material recovery and divert valuable food waste and waste packaging from landfill.

The team

ICEE was fortunate to have the skills and capabilities to create their award-winning box in their Melbourne based facility. Hamish says, *“Our team believes that every step towards a more sustainable future is a step in the right direction.”*

What about the future?

Hamish believes the future of packaging is circular, and we all need to continue to invest in new technology and



infrastructure. *“The improved recycling and composting systems that are being developed around the world, can help Australia close the loop and capture these value materials at the end of life.”*

Hamish sees an exciting future for ICEE’s eeco6™ technology, *“we want to bring many more biobased and compostable products to life for our customers.”*

Hamish is also an advocate for more reuse and is currently working on new reusable, insulated packaging solutions. Hamish explains, *“We see reusable packaging as another effective tool for eliminating waste and saving valuable resources. We want to be a part of the movement towards circularity.”*



What does winning an Australasian Packaging Innovation & Design (PIDA) Award mean?

Hamish Hingston, Designer of ICEE's eeco6™ folding box says, *"It is great to be recognised in such a well-respected competition up against so many wonderful entries and ideas. The award also provided an increase in inquiries for the product as a lot of people keep an eye on an Australasian Packaging Innovation & Design (PIDA) Awards for new innovations."*

"We would highly recommend anyone, who has developed an innovative solution, to enter the Australasian Packaging Innovation & Design (PIDA) Awards. We hope to be a part of the awards again in the future."



ICEE Containers receives global recognition from the WorldStar Packaging Awards with a Certificate of Merit



**WORLDSTAR
MERIT 2019**

Following the win at the PIDA awards ICEE Containers was then awarded a Certificate of Merit in the 2019 WorldStar Packaging Awards. The Certificate of Merit provided global recognition and exposure for the design.



The Australasian Packaging Innovation & Design (PIDA) Awards are an Australia and New Zealand program that is coordinated by the Australian Institute of Packaging (AIP). The awards recognise companies and individuals who are making a significant difference in their field across Australia and New Zealand. The PIDA Awards are the exclusive entry point for Australia and New Zealand for the prestigious WorldStar Packaging Awards.

The Design Innovation of the Year company awards recognise organisations that have designed innovative packaging within each of these six manufacturing categories:

- Food
- Beverage
- Health, Beauty & Wellness
- Domestic & Household
- Labelling & Decoration
- Outside of the Box

There are four special awards available:

- Sustainable Packaging Design
- Accessible & Inclusive Packaging Design
- Save Food Packaging Design
- Marketing Award

The **Sustainable Packaging Design Special Award** is designed to recognise companies that have developed innovative packaging solutions that incorporate sustainability considerations. All entries are judged on Sustainable Packaging Design considerations such as social impact, material, source reduction, energy and recovery and what packaging changes the company is undertaking to meet the 2025 National Packaging Targets. This is also a WorldStar Packaging Awards category.



AUSTRALIAN INSTITUTE
OF PACKAGING

The Australian Institute of Packaging (AIP) is the peak professional body for packaging education and training in Australasia. The AIP helps shape the careers of generations of packaging professionals – from packaging technologists to international packaging business leaders along with a host of people in associated disciplines – sales and marketing, purchasing, production and environment.

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