DISRUPTIVE
PACKAGING

Replacement for Styrene Salmon Hog's

Disruptive Packaging Brief

The Aim of this Trial was to assess the performance, strength, stability, load and temperature of UNIQCOR® packaging through the cold chain around Australia whilst shipping up to 23kg or 50lb of Whole Salmon Hog's. The areas to be addressed are reviewed are;

- Thermal performance relative to temperature in the cold chain
- Thermal performance when taken out of the cold chain
- Pallet and volume utilisation / transport improvement
- Packaging strength through extended supply chains

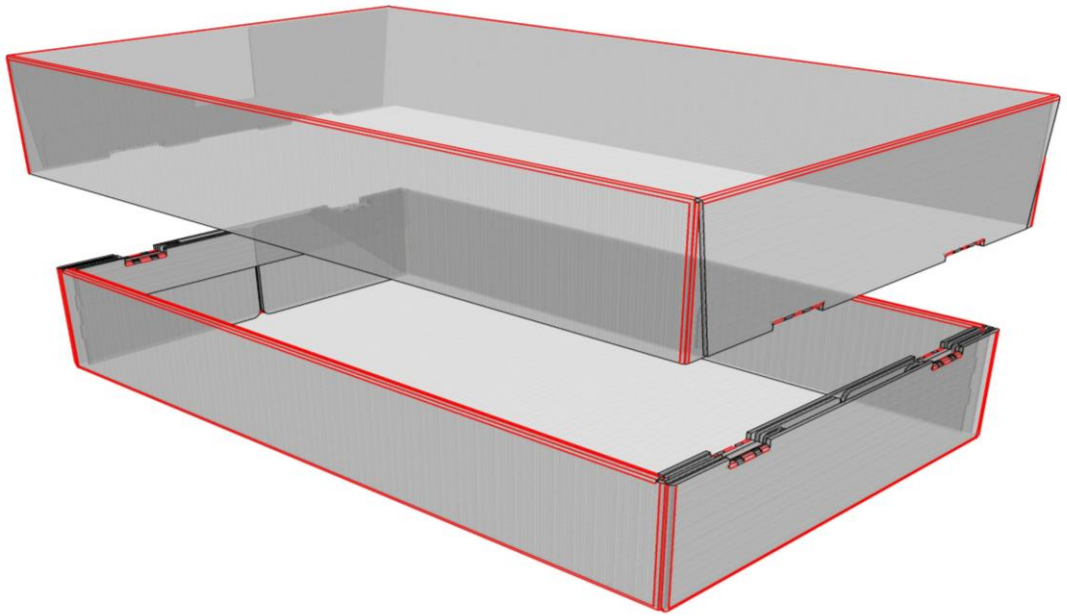
Process

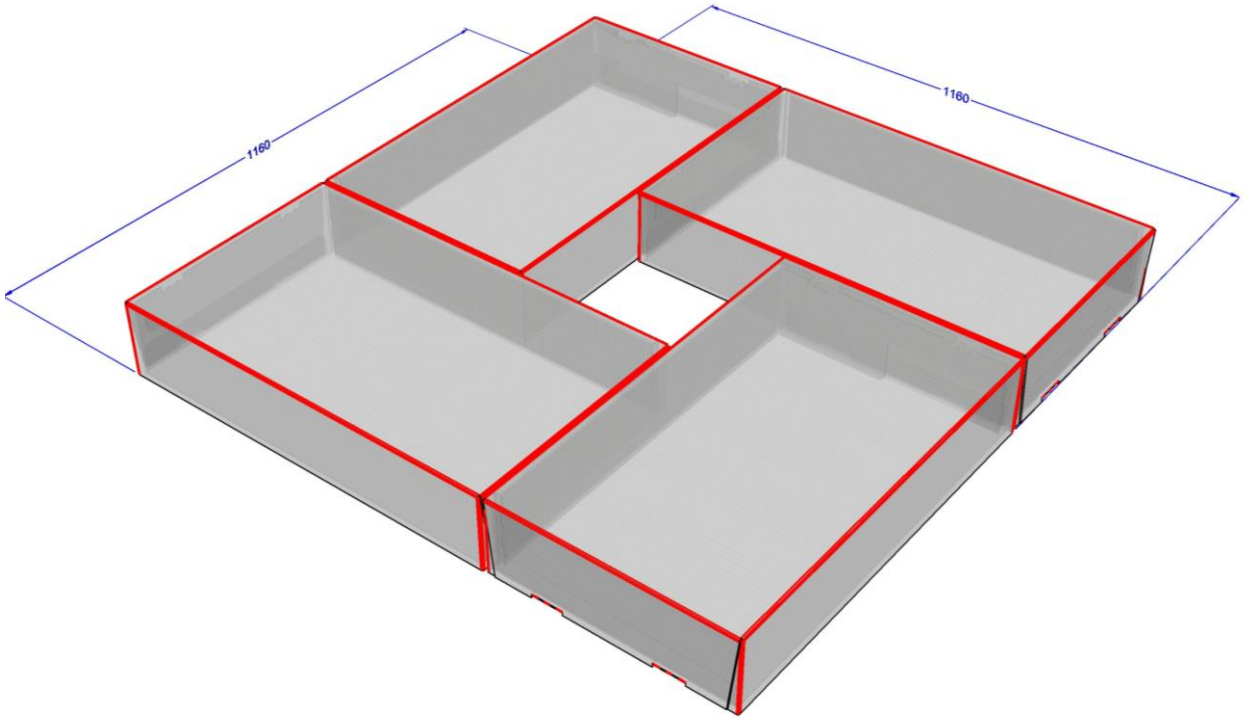
Product was packed from the processing plant in Tasmania and shipped around Australia. Product was shipped to NSW / QLD / WA and VIC. Product was packed in the volumes that would normally be packed onto a EPS Expanded Polystyrene Box. This include the volume of fish (circa 23kg / 50lb) Hog as well as the grams of Ice used to keep the Salmon at the highest quality.

Product was packed 4 boxes per layer 6 layers high. This configuration is already 20% more product on a pallet and represents a potential reduction in freight costs of 20%.

Packaging Design

The UNIQCOR® Box was designed to be a leakproof Hand erect or Machine Erectable base. Likewise the lid is Hand Erect or machine erectable lid.

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HOG Carton Replacement Trials Summary

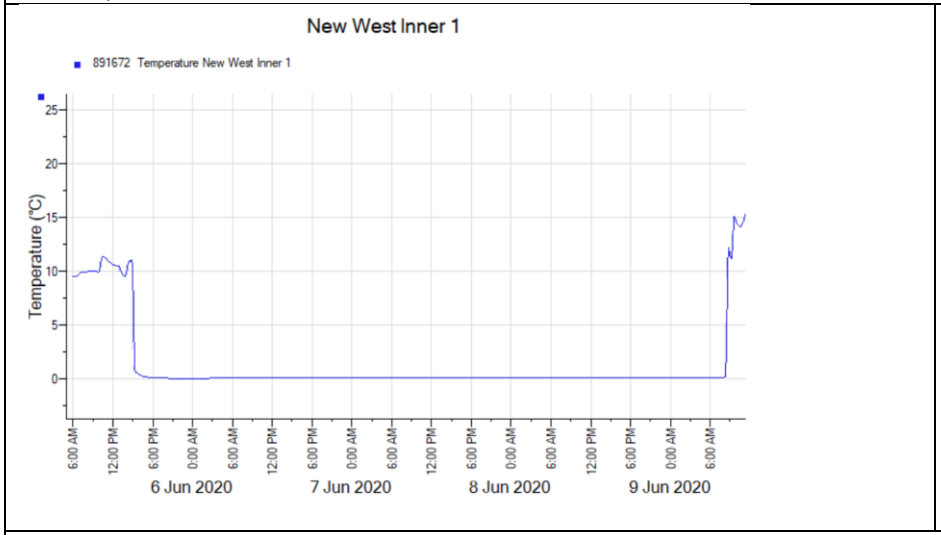
XXXX Customer in WA sent one shipment of the Disruptive Packaging box.

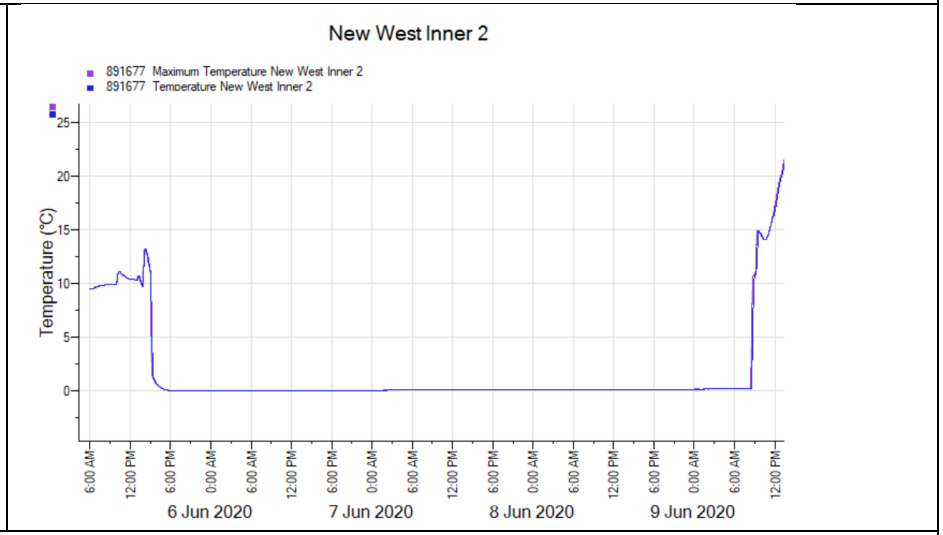
Delivery 9th of June 2020

Mixed pallet of trial cartons and poly boxes	Comparison of the ice remaining in the trial carton vs a poly from the same delivery	Signs of ice melt in the bottom of the carton – this was contained in the UNIQCOR® box as it would in a poly.

Temperature Logs

Delivery 9th of June





Temperature logs do not highlight any temperature abuse during shipment and storage prior to opening.

Comments from Customer were also speculative not based on any corroborating evidence.

"The perception of the customer is that the shelf life of the fish that was transported in the trial boxes were similar to that of the fish transported in our regular eskies. Customer kept one box aside and cut fish on Wednesday 10th June.

According to customer, fish filleted out of trial boxes upon arrival seemed more prone to gaping and softer than fish that were in our regular eskies.

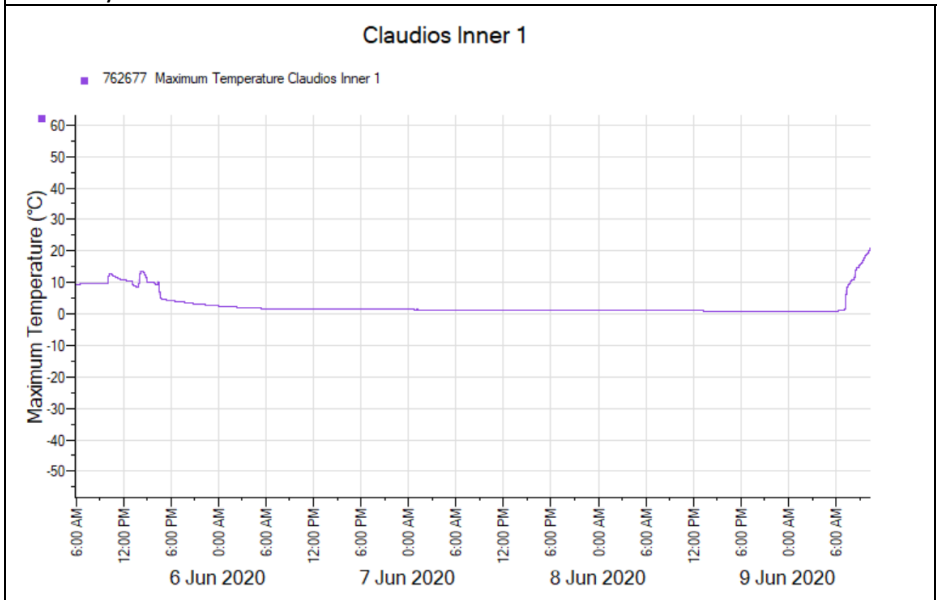
Apart from one box being slightly unfolded at one of the ends, all boxes maintained their integrity. Customer sentiment was that if all of the pallet would be of the trial boxes that the boxes would have performed.

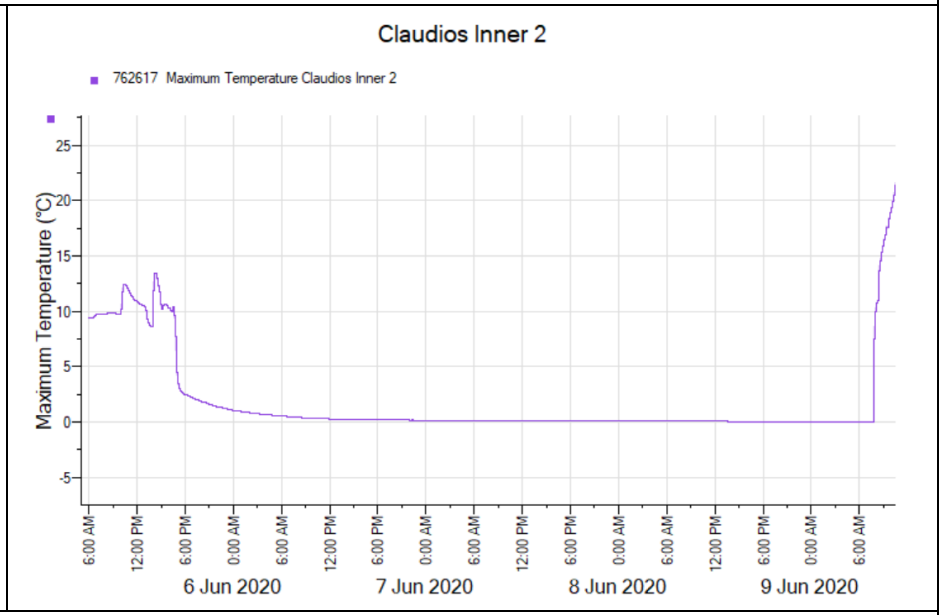
NSW Company were sent one shipment of the Disruptive Packaging box.

Delivery 9th of June	
	 
Pallet of boxes on arrival, no signs of any crush damage. Packaging performance met the rigours of the supply chain	There was an acceptable amount of Ice remaining in the trial boxes after opening on arrival

NSW Temperature Logs

Delivery 9th of June





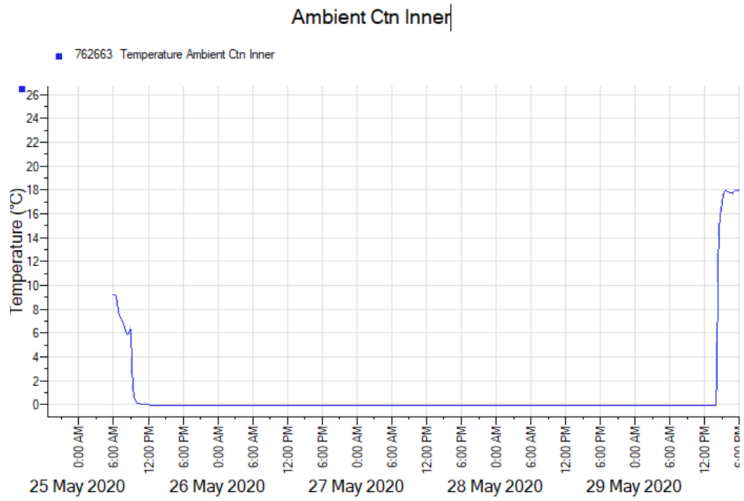
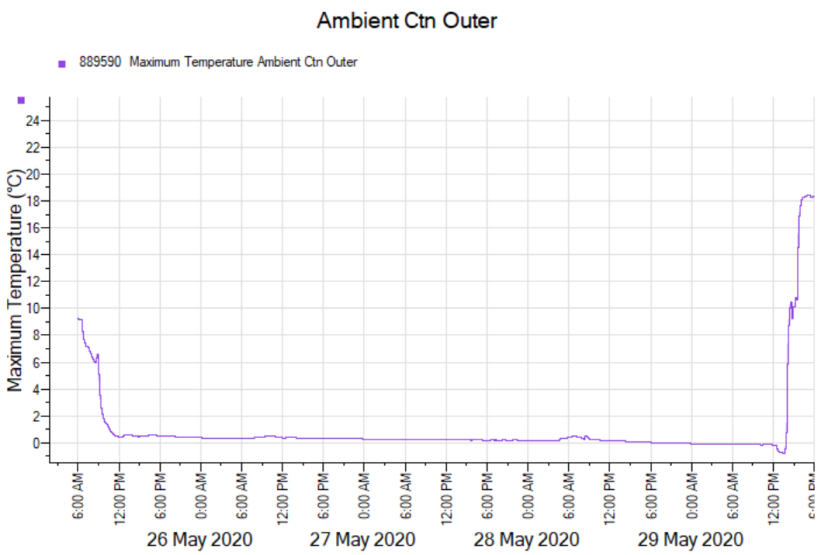
Temperature logs do not highlight any temperature abuse during shipment and storage prior to opening.

NSW Trial were generally complimentary of the UNIQCOR® box noting that there was no discernible difference between the poly boxes and the trial cartons. They went as far as sending a box to their customer who similarly could not see any difference between the trail box and poly's.

"Comments provided by end user via NSW.

1. Salmon boxes were received at approx 9:30am on Tuesday 9th June, 2020.
2. Carton was in good condition with no cracks or signs of tearing. A box was opened upon receiving and had plenty of ice and a small amount of water.
3. The fish temp was upon opening was 1.9 degrees. The fish was firm and undamaged. A photo (see below) was sent in first email with a picture of the fish filleted and they had no signs of flesh damage. "

Temperature log of trial cartons held at QLD

Delivery 9th of June	
	
Temperature logs for both inside and outside of the carton while it was held in the PMC main chiller. Both remained close to zero for the duration.	

Comments related to the first trial conducted at QLD to compare the UNIQCOR® and a poly box.

The outcome of the original trial of the boxes on site was over 4 days. It consisted of a trial UNIQCOR® box and a control poly box loaded with approximately the same weight of fish, the same weight of ice and fish of the same size and initial temperature.

Both boxes were stored in the chiller for the majority of the trial period with the exception of a two-hour period each day where both boxes were moved into the ambient despatch room.

Loggers were placed into both boxes to record the external temperature as well as the fish temperature. Unfortunately, the logger inside the trial box was faulty and did not record any results. Anecdotally the trial box when opened at the end of the trial had no ice left on the fish, the fish were quite slimy and had a slight fishy odour. While the fish were at the correct temperature at the completion of the trial I assumed this was due to the box being taken straight from the chiller. Conversely the control poly box still had the majority of the ice still intact.

From the anecdotal evidence the conclusion supports the concern that any time out side of the cold chain will cause the ice to melt. While this is not an issue for short duration shipments it will have an effect on longer shipments particularly where the boxes spend any time out of the cold chain. For longer shipping a product such as UNIQCOOL® would be preferrable however where the product stays in the cold chain UNIQOR® delivered a suitable response to the conditions.

Summary:

Disruptive Cartons.

Comments were complimentary particularly from NSW & QLD and their end customer.

The cartons replicated the surrounding ambient temperature for the duration of the trials. A number of comments related to ice melt were made. This can be attributed to the lack of insulation properties for both trial boxes. Any exposure to ambient temperatures over 1 degree will cause the ice to start to melt.

While there was some commentary from the customers related to poly's being better at holding temperature this was not substantiated during the trials. The challenge for both trial cartons is where the boxes are exposed to higher ambient temperatures, without the benefit of the same level of insulation as poly's, both formats of the trial boxes will see a faster deterioration of ice (more melt water) and a rapid increase (or decrease) in fish temperatures.