

Hydropac

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Comparison Test Hydropac Luxury Cuisine Shipper and Grey (Industrial) Foam Box

Test Number: PICOTEST19052006
Test Start Date: May 2006

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1.0 Contact details

Customer

Company: _____

Contact: _____

Address: _____

Telephone: _____

Fax: _____

Product Supplier

Company: Hydropac Ltd.

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2.0 Test approval

Hydropac Ltd.

Test Manager

Michael Adams
QA Manager
Hydropac Ltd.

_____ signed

_____ date

Report approval

Adam Hart
Sales Manager
Hydropac Ltd.

_____ signed

_____ date

Customer.

Customer approval

[Name]
[Company]

_____ signed

_____ date

3.0 Requirements of the test

A comparison was required between Hydropac's Luxury Cuisine Shipper, produced from white food grade LDPE foam, and a rival insulating foam box produced from an industrial grey material.

Both boxes had the same internal dimensions and consisted of a 2 piece foam liner and an outer carton box. The two boxes were each packed with 10 ready meals and 4 of Hydropac's Duration Ice Packs.

All of the cooling mediums should maintain the meat products at a temperature below 0°C (zero) for more than 30 hours at an ambient air temperature of positive 20°C.

It is believed that Hydropac's Luxury Cuisine Shipper will match the performance of its most established industrial counterpart.

4.0 Products tested

	Hydropac Luxury Cuisine Shipper	Rival Insulating Box (Industrial Grey Material)
Insulated container	Small Game Box (CUIS006)	Industrial grey foam box with the same dimensions as Hydropac's Small Game Box
Product load	10 x 250gms ready meals	10 x 250gms ready meals
Product conditioning	Stored at -20°C for 24 hours prior to the start of the test. Packed straight from the freezer at -20°C.	Stored at -20°C for 24 hours prior to the start of the test. Packed straight from the freezer at -20°C.
Cooling media	Hydropac Duration Ice Packs 660gms in a 2 pocket configuration.	Hydropac Duration Ice Packs 660gms in a 2 pocket configuration
Quantity of cool charges	4 units per box	4 units per box
Cooling media conditioning	Frozen at -25°C for 72 hours prior to the start of the test.	Frozen at -25°C for 72 hours prior to the start of the test.

5.0 Equipment used

- Data logging device (8 channels) supplied by Pico Technologies, model TC-08, for recording product and air temperatures.
- In house Hydropac computer, serial number 00043-518-805-240, to control the temperature logging interface.
- Temperature data recorded through Pico Technologies software; Pico-Log Recorder version 5.11.6.
- The test was conducted inside Hydropac's environmental test chamber; a Unitemp Thermotron SM16-SLE, ID no. 0783.

6.0 Test methodology

To ensure a fair a test, the 2 insulated containers were packed with the same products in exactly the same positions inside the box.

The cooling mediums and temperature probes were also placed in identical positions inside each of the insulated containers.

Each container was packed with 2 cool charges in the base, followed by a layer of bubble wrap to separate them from the food products. A total of 10 ready meals were then packed into each of the insulated containers, in identical positions inside each box.

A temperature recording probe was attached to the top ready meal in each of the insulated containers to record the product temperature experienced during the test.

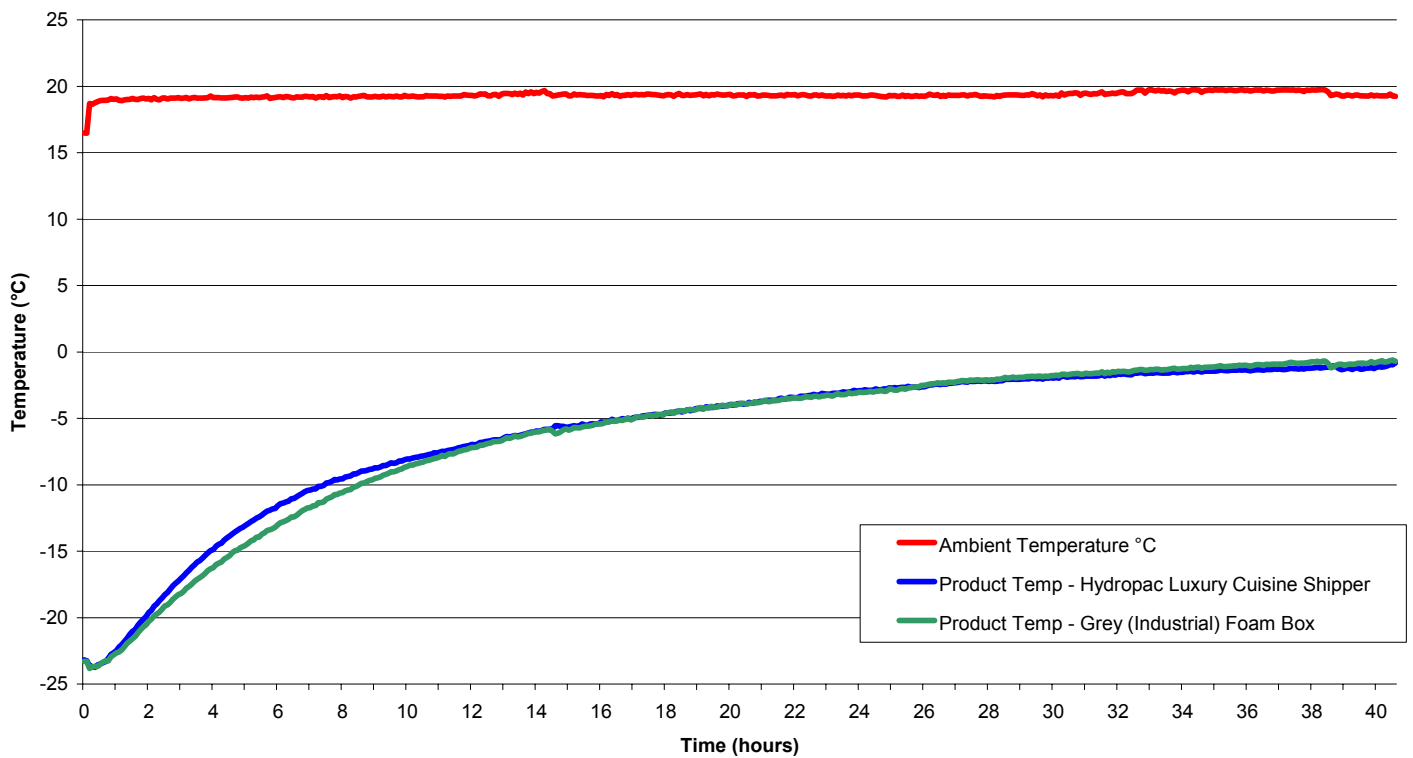
A second layer of bubble wrap was placed on top of the ready meals and a further 2 cool charges were placed in the top of each of the insulated containers. The insulated containers were sealed with clear vinyl parcel tape and placed into the environmental test chamber at a constant 20°C for the duration of the test.

As this test was designed to compare the insulation offered by Hydropac's Luxury Cuisine Shipper to a rival product produced from an industrial grey foam material, it was decided that the test would run for 36 hours or until the products reached a temperature of 0°C.

7.0 Test results

	Hydropac Luxury Cuisine Shipper	Rival Insulating Box (Industrial Grey Material)
Meal temperature at 12 hours	-6.97	-7.19
Meal temperature at 24 hours	-2.92	-3.01
Meal temperature at 36 hours	-1.37	-1.02

Hydropac Luxury Cuisine Shipper -v- Grey (Industrial) Foam Box



8.0 Conclusion

From this test it can be concluded that the grey insulated box, produced from an industrial form of LDPE, does not offer any noticeable performance gain over Hydropac's Luxury Cuisine Shipper, which is produced from white food grade LDPE.