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AUSTRALIA

TEST REPORT

DURABILITY TEST ON PANPAC 4 LITRE PLASTIC CONTAINERS

CLIENT:

PANPAC AUSTRALIA PTY LTD
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JOB NO: CT2
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Approved signatory:

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1. Objective

The objective of the test was to evaluate the durability of the flap hinge of the CHEP-blue plastic container under the normal opening and closing operations of the cover. The container was supplied by Panpac Pty Ltd.

2. Description of Plastic Container

The container is made of a rubber-modified polypropylene material compounded from polypropylene co-polymer and diene rubber. Technically it is referred to as an ethylene propylene diene monomer ("epdm"). This particular material (trade name "Epalex") was compounded by Polypacific Pty Ltd.

The CHEP-blue colour of the container is the result of a blue pigment containing the organic dye pthalocyanine. This material can increase crystallinity in the polypropylene, causing the material to become stiffer, more brittle and with poorer hinging properties, particularly at low temperatures.

3. Test Procedure

The test procedure simulated the extreme situation of intermittent but extended opening and closure. The container was frozen at -25°C at night. Opening and closing operations were then performed on the lid of the container during the day under the same freezing temperature. During each opening and closing operation, the lid was rotated 270° from the fully closed position to the fully opening position. The machine for carrying out the opening and closing operations was supplied by Panpac Pty Ltd. The machine is fully automatic and is driven by a 12 volt motor in a way similar to a vehicle wind screen wiper. The lid of the container is attached to a steel plate which is welded to a steel rod. The steel rod fits into an oversized slot of a steel plate which is attached to the turning arm of the machine. The whole set-up was placed inside a freezer which remained closed all the time during the test. The test lasted for eight days, with the last 48 hours having the continuous opening and closing operations without stopping. Thawing of the container occurred about 5 times lasting for approximately 3 hours each time.

4. Results

A total of 121,154 cycles of opening and closing operation were performed on the flap hinge which shows no sign of cracks or damage.

5. Conclusion

The container is undamaged after the flap hinge has undergone a total of 121,154 cycles of opening and closing operation.