

**Prepared By:** Wine Packagers of Australia

**Date of Issue:** 1 June 2016

This WPA Guideline contains information for the manufacture and supply of corrugated and preprinted fiberboard cartons to third party contract packagers.

Where bottling customers are supplying their own corrugated and preprinted fiberboard cartons, they should contact their contract packager to discuss whether this Guideline is sufficient for them or whether they have their own Specifications.

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## 1. Guidance

All queries regarding this information should be discussed with the bottling customer's contract packager.

A contract packager may request trials prior to bottling to confirm a carton's ability for mechanical application on their automated lines.

## 2. Responsibility

Customers must ensure that corrugated and preprint fiberboard cartons supplied to their contract packager are manufactured with reference to the information contained in this Guideline and conform to the requirements of AS 3537-2006.

## 3. Requirements

Technical drawings and application specifications should be supplied in PDF format to your contract packager at least 28 days before the scheduled bottling date.

The manufacturer/supplier shall maintain pest control and a quality management system within their production facility.

Where customers require extra text to be printed on the carton at the time of bottling, they should check with their contract packager to confirm the following design limitations:

- Two lines of text at 32 characters per line
- Print cannot be applied lower than 30mm up from the base of the carton

In order to ensure ink jet printing can be applied to the cartons, a varnish and ink free section suitable for the imprint must be left on the printed area.

Customer should also check whether their contract packager has the ability to apply text to ends or sides in any combination (i.e. both ends, both sides or one side and one end).

## 4. Criteria and Tolerances

**Quality Levels:** **Critical Class A non-conformance AQL 0.5%**  
**Class B non-conformance AQL 1.5%**  
**Class C non-conformance AQL 4.0%**

Specification	Non-Conformance Classification
<b>Dimensions (Refer Appendix 2)</b>	
Panel sizes of $\pm 1$ mm with no more than 3mm accumulated.	A
Slotting position $\pm 3$ mm from the centre of crease and clean cut slots.	B
Under/oversize slotting $\pm 2$ mm unless specified.	B
Height $\pm 2$ mm.	A
Centre of slot to line up (same plane).	B
No evidence of torn edges of board as the result of blunt cutter blades.	B
Gap measurements on assembled carton 4mm with $\pm 3$ mm tolerance.	B
<b>Board Material</b> - The flute grade is to be specified at the time of purchase and conform to:	
Flute B thickness 2.4mm to 3.2mm.	C
Flute C thickness 3.4mm to 4.2mm.	C
Laydown cartons to be formed using a "C" flute board grade.	C
Board materials in excess of this specification must undergo a trial to ensure they can be assembled on automated bottling lines.	
<b>Crush</b> - Caliper retention shall be a maximum crush from start of finishing machine to finished product.	
Overall non-print area - 0.08mm.	C
Printed area - 0.2mm.	C
Pull straps, folding belts - 0.25mm.	C
<b>Delamination</b>	
Not more than 1 in 10 flute tips shall be un-bonded.	C
Fibre tear is to be present on separation of liner.	C
A maximum of 6mm is allowable for edge delamination.	C
Misalignment of papers is a maximum of 6mm for the inside liner and 0mm for the outside liner.	C

<b>Creasing</b>	
All creases (including corrugator scores) are to be straight and well defined.	B
There shall be no evidence of cracking on the outside liner.	B
Pre-print scores may have minimal cracking, but should not peel.	B
Corrugator scores are to show no signs of cracking when folded 90 degrees.	B
Internal corrugator scores and die cut creases shall have no more than 50% of creases with cracks and no more than half any crease having signs of cracking.	C
<b>Print Quality</b>	
Print detail and colours to be the same as the approved proof. The print colours shall be matched as close as the flexographic process allows to Standard PMS colour charts. Supplier shall apply a standard colour range.	B
Print registration $\pm 2$ mm for each colour.	B
$\pm 3$ mm registration print to each box.	B
Pre-print to die cut register $\pm 3$ mm.	B
Pre-print colour to colour register $\pm 1$ mm.	B
Belt marks and smudging of print will be minimised.	B
No block print on 'C' flute cartons.	A
<b>Pre-Print/Lithographic Carton Design</b>	
Product code, bottle and divider information, and supplier logo with date and shift stamp, to be on the inside base of all cartons unless otherwise specified.	A
Recycle logo to be on the top flap of all cartons unless otherwise specified.	A
Contract packagers' require that the contents be printed both ends i.e. 12x750ml with the glass and arrow pointed upwards.	A
Gloss varnish as specified by the customer; however there shall be no gloss finish or ink on the internal flaps or glue sealing surfaces to compromise carton sealing.	A
<b>Glue Flap</b>	
Cartons must be cut with the glue flap to the left of the largest panel with print leading left to right.	A
Cartons stuck together preventing cartons from being formed in Contract packagers' carton erectors is classified as a major defect.	A
Application of the glue to be 70% width of glue flap and 90% length of glue flap when compressed.	A
Correct type of glue to be used to ensure bonding. Paper tear must be evident when box is pulled apart to ensure carton is suitable for use.	B
Fishtailing – there shall be no more than 3mm variation between top and bottom of	B

glue flap gap (Refer Figure 2 Appendix 2)	
Glue gaps B and C flute 6mm $\pm$ 3mm	B
Width of glue flap (minimum) 28mm	B
Top and bottom long flaps are to have a 4mm gap when closed $\pm$ 2mm.	B
<b>Carton Blank Warp (refer Appendix 1)</b>	
The maximum allowable warp of the die cut carton blank is 2% of the length (or width). The warp is defined by the relationship $U/L \times 100$ , where U is the arch height and L is the length of the blank.	B
<b>Presentation (Refer Appendix 3)</b>	
Refer Appendix 3 for presentation requirement for mechanical use at your contract packager check whether they have left or right hand presentation requirement	A
Each carton to be presented in the same direction and side up in the bundles.	A
Cartons to be supplied in bundles of 25 unless otherwise specified.	B
Bundles to be strapped together using correct tension to not deform or damage cartons.	A
Bundles must not be wrapped or packed into cartons as this will incur extra costs.	A
<b>Handling and Storage</b>	
Handle in such a manner that no damage occurs.	B
Pack and store horizontally on pallets ensuring protection (using scrap cardboard) top and bottom of pallet.	A
Use pallet types as specified in agreement with your contract packager.	A
Pallets are to be neatly and squarely packed. There may be slight overhang depending upon carton design and pallet pattern. Adequate protection must be provided where overhang exists.	B
A display tag representative of the production run and a ticket corresponding to the job shall be visible on fork lift entry.	B
Protect cartons from strapping by using scrap cardboard under corners to ensure no damage or denting to cartons.	B
Strapping to be made from recyclable material and closed using heat seal method.	B

## **5. Packing and Delivery**

Detailed information on the packing and delivery of dry goods is contained in WPA\_09 Dry Good Packaging and Delivery Requirements.

## **6. Recycled Material and Packaging**

Each contract packager has their own sustainability objectives. Where practical all dry goods should be made using recyclable or recycled materials, packed using recyclable materials and all packaging materials minimised.

## **7. References**

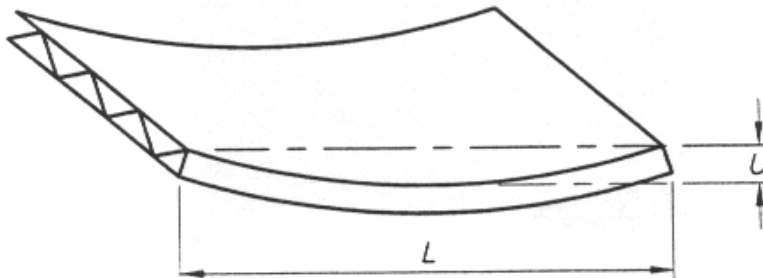
AS 3537 – 2006 Specification for general purpose corrugated fiberboard cartons and blanks

AS 1199.0 – 2003 Sampling procedures and tables for inspection and attributes

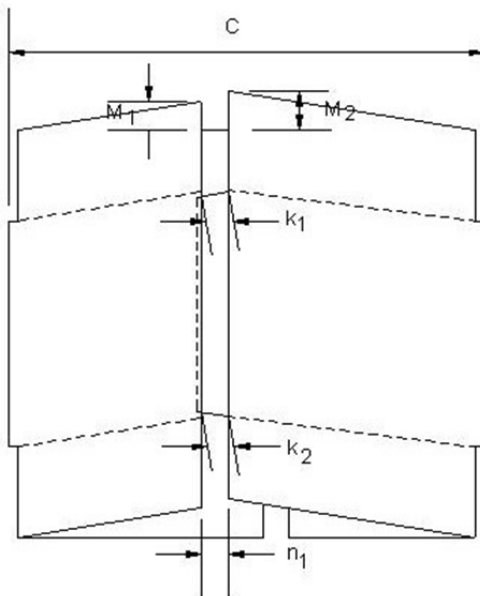
Winemakers Federation of Australia – Wine Packaging Guidelines November 2012

[www.wfa.com.au](http://www.wfa.com.au)

## Appendix 1 – Allowable Warp of Die Cut Carton



## Appendix 2 - Measurement of Slotted Cartons



**LEGEND:**

**C** = length of knocked-down box

**k<sub>1</sub> and k<sub>2</sub>** = gap at manufacturer's joint at score lines

**k<sub>1</sub> - k<sub>2</sub>** = fishtailing

**Difference between m<sub>1</sub> and m<sub>2</sub>** = misalignment (out of squareness)

**n<sub>1</sub>** = minimum gap at flap extreme.

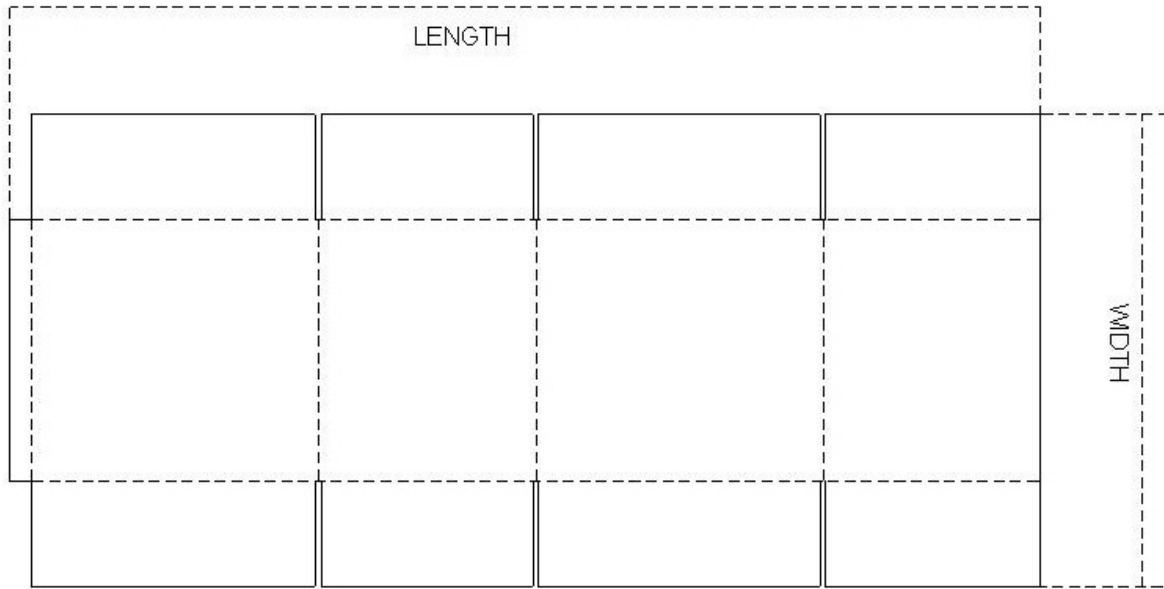


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# Corrugated and Preprinted Fiberboard Cartons - Guideline

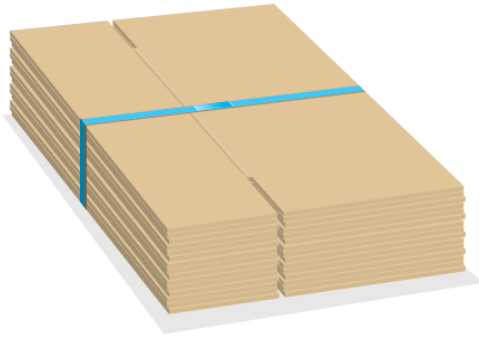
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## Appendix 3 – Carton Presentation



Key Scores -----

## Carton Bundle Delivery Requirements



One strip of packaging tape across cartons.  
This is the **correct** and only way we want  
cartons packed for delivery to us.



Multiple straps over the top of paper.  
This is the **incorrect** way we want cartons  
packed for delivery to us.

