



Citrus Cold Chain Forum

PACKAGING MATERIAL SPECIFICATIONS AND PALLETISATION PROTOCOLS FOR THE 2012 EXPORT CITRUS SEASON

citrus
academy

COMPILED BY THE  CITRUS COLD CHAIN FORUM

March 2012

**Packaging Workgroup
Packhouse and Handling Panel**

**Cold Chain Research Project
Exporters Technical Panel**

CONTENTS

1. CARTON SPECIFICATIONS

- 1.1 Specifications for the 146,160 and 170mm Open Display Cartons
- 1.2 Specification for the 220mm Open Display Carton
- 1.3 Specification for the E10D Open Display Carton
- 1.4 Specification for the A02D Open Display Carton
- 1.5 Specification for T64, 170mm Carton
- 1.6 Specification for T64, 215mm Carton
- 1.7 Specification for the Standard and the Supervent A15C Cartons

2. PALLET SPECIFICATION

Specification for the 1210x1010mm Pallet for Export Citrus

3. PALLETISATION PROTOCOLS

4. NEWLY DEVELOPED/EXPERIMENTAL CARTON TRIAL PROCEDURE

5. COMPLIANCE WITH SPECIFICATIONS – TESTING PROCEDURE FOR EXPORT CITRUS CARTONS

6. CARTON MANUFACTURERS

1. CARTON SPECIFICATIONS

1.1 Specifications for the 146,160 and 170mm Open Display Cartons

SPECIFICATIONS FOR THE CORRUGATED BOARD. 600 X 400 X 146,160 and 170MM OPEN DISPLAY CARTONS FOR EXPORT CITRUS

1. LINERS AND FLUTING

1.1 Liners

All 600 x 400 x 146,160 and 170mm open display export citrus cartons must be manufactured with Virgin Kraft Linerboard.

1.2 Fluting

All 600 x 400 x 146,160 and 170mm open display export citrus cartons must be manufactured with Semi – chemical or other approved Hi – performance fluting. The fluting shall be essentially free from abrasive constituents that may induce a high rate of wear of corrugating rolls, and shall be such that it does not crack during the corrugating process.

2. THE CARTON

2.1 Carton Design

Over the past couple of years some carton manufacturers have developed their own open display carton designs. Because of the confidentiality of the various designs it is therefore not possible to include all the designs/die drawings in this specification. Die drawings to be supplied by your carton manufacturer. Under certain conditions and circumstances the use of loose end pieces will be compulsory. For full details regarding the use of loose end pieces please see table below.

The use of Loose End Pieces

Carton type	Standard Containers/Conventional vessels	Hi-cube Containers
Hand erect carton	Compulsory	Compulsory
Machine erect carton	Consult with your carton supplier	Consult with your carton supplier

2.2 Corrugated Board

The board shall be double – wall corrugated board of “B” and “C” flute construction. Other corrugated board profiles eg. “B” and “E” flute and any other new designs to be approved by the packaging workgroup and export organisations first (see section 4 on page 34 – “Newly developed/experimental carton trial procedure”). Graphic designs to be supplied by the various exporters/export organisations. **For identification purposes a manufacturer’s code must be printed on the business end of the carton.** A batch number and date of manufacture must be printed on the bottom of each carton.

3. TABLE 1

PHYSICAL PROPERTIES OF CORRUGATED BOARD

<u>Property</u>	<u>Average</u>
Caliper unprinted board, mm, minimum – Combined board. (B and C Flute)	6,5
Difference between board calipers of printed and unprinted areas, % maximum	5,0
Ply adhesion (damp) N/metre of length of corrugation, minimum	400
Water absorption of outer/inner facings, g/m ² per 30 minutes, maximum	120

4. MASS LOAD AT FAILURE

In the past the basis mass of the linerboard and the fluting was specified. The carton manufacturers agreed that it is prescriptive and that it must no longer be specified. It was agreed by all the role players that in future, the mass load at failure must be specified.

Mass load at failure must be determined under the following conditions:

Conditioning atmosphere:-

- a) 32°C ± 1°C and 87% RH ± 1% RH for 24 hours.

Mass Load at Failure : 875 kg with a 5% tolerance.

1.2 Specification for the 220mm Open Display Carton

SPECIFICATION FOR THE CORRUGATED BOARD. 600 X 400 X 220MM OPEN DISPLAY CARTON FOR EXPORT CITRUS

1. LINERS AND FLUTING

1.1 Liners

All 600 x 400 x 220mm open display export citrus cartons must be manufactured with Virgin Kraft Linerboard.

1.2 Fluting

All 600 x 400 x 220mm open display export citrus cartons must be manufactured with Semi – chemical or other approved Hi – performance fluting. The fluting shall be essentially free from abrasive constituents that may induce a high rate of wear of corrugating rolls, and shall be such that it does not crack during the corrugating process.

2. THE CARTON

2.1 Carton Design

Over the past couple of years some carton manufacturers have developed their own open display carton designs. Because of the confidentiality of the various designs it is therefore not possible to include all the designs/die drawings in this specification. Die drawings to be supplied by your carton manufacturer. Under certain conditions and circumstances the use of loose end pieces will be compulsory. For full details regarding the use of loose end pieces please see table below.

The use of Loose End Pieces.

Carton type	Standard Containers/Conventional vessels	Hi-cube Containers
Hand erect carton	Compulsory	Compulsory
Machine erect carton	Consult with your carton supplier	Consult with your carton supplier

2.2 Corrugated Board

The board shall be double – wall corrugated board of “B” and “C” flute construction. Other corrugated board profiles eg. “B” and “E” flute and any other new designs to be approved by the packaging workgroup and export organisations first (see section 4 on page 34 – “Newly developed/experimental carton trial procedure”). Graphic designs to be supplied by the various exporters/export organisations. **For identification purposes a manufacturer’s code must be printed on the business end of each carton.** A batch number and date of manufacture must be printed on the bottom of each carton.

3. TABLE 1

PHYSICAL PROPERTIES OF CORRUGATED BOARD

<u>Property</u>	<u>Average</u>
Caliper unprinted board, mm, minimum – Combined board. (B and C Flute)	6,5
Difference between board calipers of printed and unprinted areas, % maximum	5,0
Ply adhesion (damp) N/metre of length of corrugation, minimum	400
Water absorption of outer/inner facings, g/m ² per 30 minutes, maximum	120

4. MASS LOAD AT FAILURE

In the past the basis mass of the linerboard and the fluting was specified. The carton manufacturers agreed that it is prescriptive and that it must no longer be specified. It was agreed by all the role players that in future, the mass load at failure must be specified.

Mass load at failure must be determined under the following conditions:

Conditioning atmosphere:-

- a) 32°C ± 1°C and 87% RH ± 1% RH for 24 hours.

Mass Load at Failure : 800 kg with a 5% tolerance.

1.3 Specification for the E10D Open Display Carton

SPECIFICATION FOR THE CORRUGATED BOARD. 500 X 300 X 170MM OPEN DISPLAY CARTON FOR EXPORT CITRUS

LINERS AND FLUTING

1.1 Liners

All 500 x 300 x 170mm open display export citrus cartons must be manufactured with Virgin Kraft Linerboard.

1.2 Fluting

All 500 x 300 x 170mm open display export citrus cartons must be manufactured with Semi – chemical or other approved Hi – performance fluting. The fluting shall be essentially free from abrasive constituents that may induce a high rate of wear of corrugating rolls, and shall be such that it does not crack during the corrugating process.

1. THE CARTON

2.1 Carton Design

Over the past couple of years some carton manufacturers have developed their own open display carton designs. Because of the confidentiality of the various designs it is therefore not possible to include all the designs/die drawings in this specification. Die drawings to be supplied by your carton manufacturer. Under certain conditions and circumstances the use of loose end pieces will be compulsory. For full details regarding the use of loose end pieces please see table below.

The use of Loose End Pieces

Carton type	Standard Containers/Conventional vessels	Hi-cube Containers
Hand erect carton	Compulsory	Compulsory
Machine erect carton	Consult with your carton supplier	Consult with your carton supplier

2.2 Corrugated Board

The board shall be double – wall corrugated board of “B” and “C” flute construction. Other corrugated board profiles eg. “B” and “E” flute and any other new designs to be approved by the packaging workgroup and export organisations first (see section 4 on page 34 – “Newly developed/experimental carton trial procedure”). Graphic designs to be supplied by the various exporters/export organisations. **For identification purposes a manufacturer's code must be printed on the business end of each carton.** A batch number and date of manufacture must be printed on the bottom of each carton.

2. TABLE 1

PHYSICAL PROPERTIES OF CORRUGATED BOARD

<u>Property</u>	<u>Average</u>
Caliper unprinted board, mm, minimum – Combined board. (B and C Flute)	6,5
Difference between board calipers of printed and unprinted areas, % maximum	5,0
Ply adhesion (damp) N/metre of length of corrugation, minimum	400
Water absorption of outer/inner facings, g/m ² per 30 minutes, maximum	120

3. MASS LOAD AT FAILURE

In the past the basis mass of the linerboard and the fluting was specified. The carton manufacturers agreed that it is prescriptive and that it must no longer be specified. It was agreed by all the role players that in future, the mass load at failure must be specified.

Mass load at failure must be determined under the following conditions:

Conditioning atmosphere:-

- a) 32°C ± 1°C and 87% RH ± 1% RH for 24 hours.

Mass Load at Failure : 750 kg with a 5% tolerance.

1.4 Specification for the A02D Open Display Carton.

SPECIFICATION FOR THE CORRUGATED BOARD **300 X 200 X 110MM OPEN DISPLAY CARTON FOR EXPORT CITRUS**

1. **LINERS AND FLUTING**

1.1 Liners

All 300 x 200 x 110mm open display export citrus cartons must be manufactured with Virgin Kraft Linerboard.

1.2 Fluting

All 300 x 200 x 110mm open display export citrus cartons must be manufactured with Semi – chemical or other approved Hi – performance fluting. The fluting shall be essentially free from abrasive constituents that may induce a high rate of wear of corrugating rolls, and shall be such that it does not crack during the corrugating process.

2. **THE CARTON**

2.1 Carton Design

In the case of the A02D (300x200x110mm) open display carton, the carton manufacturers have also developed their own designs.

Because of the confidentiality of the various designs it is therefore not possible to include all the designs/die drawings in this specification. Die drawings to be supplied by your carton manufacturer.

2.2 Corrugated Board

The board shall be double – wall corrugated board of “B” and “E” flute construction. Any other new designs to be approved by the packaging workgroup and export organisations first (see section 4 on page 34 – “Newly developed/experimental carton trial procedure”). Graphic designs to be supplied by the various exporters/export organisations. **For identification purposes a manufacturer’s code must be printed on the business end of each carton.** A batch number and date of manufacture must be printed on the bottom of each carton.

3. TABLE 1

PHYSICAL PROPERTIES OF CORRUGATED BOARD

<u>Property</u>	<u>Average</u>
Caliper unprinted board, mm, minimum – Combined board. (B and E Flute)	5,1
Difference between board calipers of printed and unprinted areas, % maximum	5,0
Ply adhesion (damp) N/metre of length of corrugation, minimum	400
Water absorption of outer/inner facings, g/m ² per 30 minutes, maximum	120

4. MASS LOAD AT FAILURE

In the past the basis mass of the linerboard and the fluting was specified. The carton manufacturers agreed that it is prescriptive and that it must no longer be specified. It was agreed by all the role players that in future, the mass load at failure must be specified.

Mass load at failure must be determined under the following conditions:

Conditioning atmosphere:-

- a) 32°C ± 1°C and 87% RH ± 1% RH for 24 hours.

Mass Load at Failure : 260 kg with a 5% tolerance.

1.5 Specification for the T64, 170mm Carton

SPECIFICATION FOR THE FULL TELESCOPIC 600 x 400 x 170mm CARTON FOR EXPORT CITRUS

1. LINERS AND FLUTING

1.1 Liners

All 600 x 400 x 170mm full telescopic export citrus cartons must be manufactured with Virgin Kraft Linerboard.

1.2 Fluting

All 600 x 400 x 170mm full telescopic export citrus cartons must be manufactured with Semi – chemical or other approved Hi – performance fluting. The fluting shall be essentially free from abrasive constituents that may induce a high rate of wear of corrugating rolls, and shall be such that it does not crack during the corrugating process.

2. OUTER COMPONENTS

2.1 Corrugated Board

The board shall be single – wall simplex board of “C” flute construction. For dimensions (die drawing) please consult with your carton supplier. **For identification purposes a manufacturer’s code must be printed on the business end of all outer components.** A batch number and date of manufacture must be printed on one of the outer top flaps.

3. INNER COMPONENTS

3.1 Corrugated Board

The board shall be double – wall corrugated board of “B” and “C” flute construction. Other corrugated board profiles eg. “B” and “E” flute and any other new designs to be approved by the packaging workgroup and export organisations first (see section 4 on page 34 – “Newly developed/experimental carton trial procedure”). For dimensions (die drawing) please consult with your carton supplier. A manufacturer’s code, batch number and date of manufacture must be printed on one of the outer flaps.

4. TABLE 1PHYSICAL PROPERTIES OF CORRUGATED BOARD

<u>Property</u>	<u>Average</u>
Outer Component	
Caliper unprinted board, mm, minimum - C Flute.	3,9
Difference between board calipers of printed and unprinted areas, % maximum	5,0
Ply adhesion (damp) N/ metre of length of corrugation, minimum	400
Flat crush resistance of printed board, KPa, minimum (not on flaps) - C Flute	250
Water absorption of outer/inner facings, g/m ² per 30 minutes, maximum	120

<u>Property</u>	<u>Average</u>
Inner Component	
Caliper unprinted board, mm, minimum. Combined board (B and C Flute.)	6.2
Ply adhesion (damp) N/ metre of length of corrugation, minimum	400
Water absorption of outer/inner facings, g/m ² per 30 minutes, maximum	120

5. MASS LOAD AT FAILURE

In the past the basis mass of the linerboard and the fluting was specified. The carton manufacturers agreed that it is prescriptive and that it must no longer be specified. It was agreed by all the role players that in future, the mass load at failure must be specified.

Mass load at failure must be determined under the following conditions:

Conditioning atmosphere:-

- a) 32°C ± 1°C and 87% RH ± 1% RH for 24 hours.

Mass Load at Failure : 875 kg with a 5% tolerance.

1.6 Specification for the T64, 215mm Carton

SPECIFICATION FOR THE FULL TELESCOPIC 600 x 400 x 215MM CARTON FOR EXPORT CITRUS

1. LINERS AND FLUTING

1.1 Liners

All 600 x 400 x 215mm full telescopic export citrus cartons must be manufactured with Virgin Kraft Linerboard.

1.2 Fluting

All 600 x 400 x 215mm full telescopic export citrus cartons must be manufactured with Semi – chemical or other approved Hi – performance fluting. The fluting shall be essentially free from abrasive constituents that may induce a high rate of wear of corrugating rolls, and shall be such that it does not crack during the corrugating process.

2. OUTER COMPONENTS

2.1 Corrugated Board

The board shall be single – wall simplex board of “C” flute construction. For dimensions (die drawing) please consult with your carton supplier. **For identification purposes a manufacturer’s code must be printed on the business end of all outer components.** A batch number and date of manufacture must be printed on one of the outer top flaps.

3. INNER COMPONENTS

3.1 Corrugated Board

The board shall be double – wall corrugated board of “B” and “C” flute construction. Other corrugated board profiles eg. “B” and “E” flute and any other new designs to be approved by the packaging workgroup and export organisations first (see section 4 on page 34 – “Newly developed/experimental carton trial procedure”). For dimensions (die drawings) please consult with your carton supplier. A manufacturer’s code, batch number and date of manufacture must be printed on one of the outer flaps.

4. **TABLE 1****PHYSICAL PROPERTIES OF CORRUGATED BOARD**

<u>Property</u>	<u>Average</u>
Outer Component	
Caliper unprinted board, mm, minimum - C Flute.	3,9
Difference between board calipers of printed and unprinted areas, % maximum	5,0
Ply adhesion (damp) N/ metre of length of corrugation, minimum	400
Flat crush resistance of printed board, KPa, minimum (not on flaps) - C Flute	250
Water absorption of outer/inner facings, g/m ² per 30 minutes, maximum	120
<u>Property</u>	<u>Average</u>
Inner Component	
Caliper unprinted board, mm, minimum. Combined board (B and C Flute.)	6.2
Ply adhesion (damp) N/ metre of length of corrugation, minimum	400
Water absorption of outer/inner facings, g/m ² per 30 minutes, maximum	120

5. **MASS LOAD AT FAILURE**

In the past the basis mass of the linerboard and the fluting was specified. The carton manufacturers agreed that it is prescriptive and that it must no longer be specified. It was agreed by all the role players that in future, the mass load at failure must be specified.

Mass load at failure must be determined under the following conditions:

Conditioning atmosphere:-

- a) 32°C ± 1°C and 87% RH ± 1% RH for 24 hours.

Mass Load at Failure : 800 kg with a 5% tolerance.

1.7 Specification for Standard and Supervent A15C Carton.

SPECIFICATION FOR THE A15C FULL TELESCOPIC CARTON FOR EXPORT CITRUS

1. LINERS AND FLUTING

1.1 Liners

All A15C full telescopic export citrus cartons must be manufactured with Virgin Kraft Linerboard.

1.2 Fluting

All A15C full telescopic export citrus cartons must be manufactured with Semi chemical or other approved Hi – performance fluting. The fluting shall be essentially free from abrasive constituents that may induce a high rate of wear of corrugating rolls, and shall be such that it does not crack during the corrugating process.

2. OUTER COMPONENTS

2.1 Corrugated Board

The board shall be single – wall simplex board of “C” flute construction. For dimensions (die drawing) please consult with your carton supplier. **For identification purposes a manufacturer’s code must be printed on the business end of all outer components.** A batch number and date of manufacture must be printed on one of the outer top flaps.

3. INNER COMPONENTS

3.1 Corrugated Board

The board shall be double – wall corrugated board of “B” and “C” flute construction. Other corrugated board profiles eg. “B” and “E” flute and any other new designs to be approved by the packaging workgroup and export organisations first (see section 4 on page 34 – “Newly developed/experimental carton trial procedure”). For dimensions (die drawing) please consult with your carton supplier. A manufacturer’s code, batch number and date of manufacture must be printed on one of the outer flaps.

4. TABLE 1PHYSICAL PROPERTIES OF CORRUGATED BOARD

<u>Property</u>	<u>Average</u>
Outer Component	
Caliper unprinted board, mm, minimum - C Flute.	3,9
Difference between board calipers of printed and unprinted areas, % maximum	5,0
Ply adhesion (damp) N/ metre of length of corrugation, minimum	400
Flat crush resistance of printed board, KPa, minimum (not on flaps) - C Flute	250
Water absorption of outer/inner facings, g/m ² per 30 minutes, maximum	120

<u>Property</u>	<u>Average</u>
Inner Component	
Caliper unprinted board, mm, minimum. Combined board (B and C Flute.)	6.2
Ply adhesion (damp) N/ metre of length of corrugation, minimum	400
Water absorption of outer/inner facings, g/m ² per 30 minutes, maximum	120

5. MASS LOAD AT FAILURE

In the past the basis mass of the linerboard and the fluting was specified. The carton manufacturers agreed that it is prescriptive and that it must no longer be specified. It was agreed by all the role players that in future, the mass load at failure must be specified.

Mass load at failure must be determined under the following conditions:

Conditioning atmosphere:-

- a) 32°C ± 1°C and 87% RH ± 1% RH for 24 hours.

Mass Load at Failure : 600 kg with a 5% tolerance.

2. PALLET SPECIFICATION.

SPECIFICATION FOR THE 1210 X 1010MM PALLET FOR EXPORT CITRUS

1. DESCRIPTION

Type: Non-reversible, perimeter base, four-way entry disposable pallet.
Size: 1210mm x 1010mm x 153mm

2. MATERIAL

All pallets must be constructed from either SA Pine or Saligna. The density of SA Pine and Saligna must be at least 400kg/m³ at a moisture content of 12%. For SA Pine, no wood may have a moisture content of more than 20% when used in constructing the pallet.

3. COMPONENTS

Overall dimensions of Pallet

Dimensions (mm)	Tolerances (mm)
Length 1210	+ 0 - 2
Width 1010	+ 0 - 2
Height 153	+ 2 - 2

The overall dimensions and tolerances for the pallet as a whole are critical and overriding irrespective of the tolerances permitted for individual components below.

Timber components

	Number	Length (mm)	Width (mm)	Height/Thickness (mm)
Top slats	5	1010	100	19
	*2	1010	150	19
Bearers	3	1210	100	25
Bottom stringers	5	1010	100	19
Blocks	6	150	100	90
	3	100	100	90

*Note: Two 75mm wide top slats may be used to replace the 150mm wide top slats.

Tolerances

	Length (mm)	Width (mm)	Height/Thickness (mm)
Slats, stringers and bearers	+ 0 - 2	+ 3 - 2	+ 2 - 0
Blocks	+ 2 - 2	+ 2 - 2	+ 1 - 1

The variation in thickness on top deck planks next to each other must not be more than 2mm.

Squareness

Ends of slats to be cut square: Two (2) mm over width.

The diagonal dimensions of a complete pallet must not differ by more than 8mm from each other.

4. FINISH

All components to be finely sawn.

5. DISCOLORATION

No discoloration by paint, lacquer, pitch or any other substance which may taint fruit is permissible.

6. SAWN LUMBER DEFECTS

No bark allowed on wood.

Permissible wane on slats:

Wane can be up to 25% of the total surface area of any one side of the top or bottom slats, provided that the opposite side has full-face area. The full face area must always be on top.

Presence of wood beetles or signs of wood beetles will be a reason for rejection.

Twist must not exceed 4 degrees.

Splitting/cracking is not permitted.

7. KNOTS AND KNOTHOLES

The permissible size of knots shall not be in excess of 35% of the width of any timber used.

The following type of knots shall not be permitted:

Knots and knotholes interfering with nails.

Split splay (spike) knots and knotholes having sharp edges which could damage cartons on pallets.

Knots on edges of any timber not to exceed 25% of the width.

8. GRAIN

The grain of the timber must run along the length of the blocks and slats.

9. FASTENERS (See Annexure 1 and 2)

All nails to be annular – ringed (ring-shank) type nails.
Nails to be positioned as shown on the drawings.

Tops slats to bearers: 54 of 42mm x 2,5mm.
Top deck to blocks: 18 of 75mm x 3,15mm.
Bottom slats to blocks: 30 of 60mm x 2,5mm.

Nail guns must be set so that nails are not driven more than 2mm below the surface of the plank to prevent cracking.
On blocks the nailing area must not be reduced by more than 15mm.

10. CONSTRUCTION

Slats to be positioned as shown on the drawings.
All tolerances shall be met. The bottom stringers must be flush against each other, leaving no gaps where they are joined.

11. TREATMENT OF PALLETS

Wood used when manufacturing wooden pallets for Export Citrus must be treated to prevent pests/insects as well as fungal growth.

PHYTOSANITARY REQUIREMENTS. (Insects.)

Wooden packaging must be treated according to ISPM 15 “Guidelines for Regulating Wood Packaging Material in International Trade.” Treatment can either be with heat (including kiln drier) or with Methyl Bromide.

Heat treatment (HT)

Wood packaging material should be heated in accordance with a specific time-temperature schedule that achieves a minimum wood core temperature of 56°C for a minimum of 30 minutes.

Kiln-drying (KD), chemical pressure impregnation (CPI), or other treatments may be considered HT treatments to the extent that these meet the HT specifications. For example, CPI may meet the HT specification through the use of steam, hot water or dry treatment.

Methyl bromide (MB) PLEASE SEE FOOTNOTE ON TOP OF PAGE 20.

The wood packaging material should be fumigated with Methyl Bromide. The treatment is indicated by the mark MB. The minimum standard for Methyl Bromide fumigation treatment for wood packaging material is as follows:

Temperature	Dosage rate	Minimum concentration (g/m ³) at:			
		0.5hrs	2hrs	4hrs	16hrs
21 °C or above	48	36	24	17	14
16 °C or above	56	42	28	20	17
11 °C or above	64	48	32	22	19

FOOTNOTE !!

Please note that Methyl Bromide (MB) is being phased out and product availability during 2012 is likely to become more limited. MB is already banned in certain countries and Exporters/Growers are urgently requested to make sure that MB treated pallets are not exported to countries where MB is not allowed.

FUNGAL GROWTH. (No fungal growth is allowed on pallets.)

To prevent fungal growth all pine components must be treated with a 1% solution of Sodium Ortho Phenyl Phenate (SOPP). If and when necessary Saligna components can also be treated with a 1% SOPP solution. The treatment can also be done after the pallet is assembled when the complete pallet is immersed in a 1% SOPP solution.

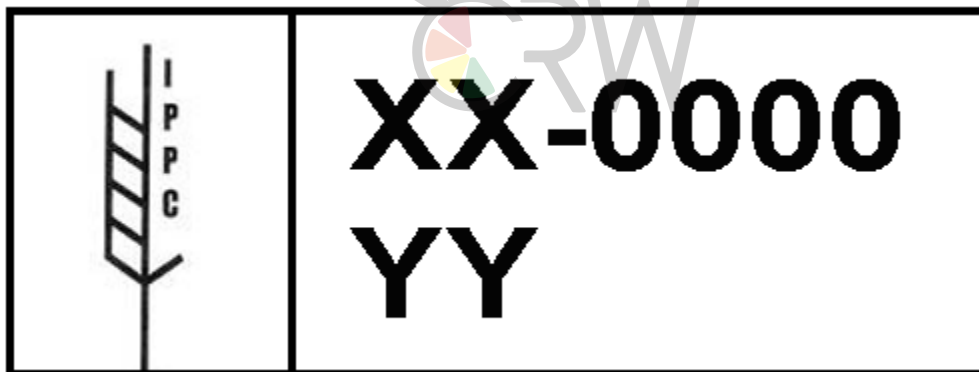
To be effective the SOPP treatment must be done after the Phytosanitary treatment (HT or MB).

12. MARKING

In order to prevent the proliferation of differing import regulations, the International Plant Protection Convention (IPPC) Secretariat has issued ISPM 15 "Guidelines for Regulating Wood Packaging Material in International Trade"

The key features of ISPM 15:

- i. ISPM 15 applies only to solid wood.
- ii. Treatment of the packaging by approved measures, (HT) or (MB). (Please refer to point 11 – Treatment of pallets.)
- iii. Permanent and legible marking of the packaging must be provided on two opposite sides of the package.
- iv. Service providers must be registered with the Department of Agriculture, Forestry and Fisheries, Directorate Inspection Services to use the ISPM mark on treated wood.



Example of IPPC mark

The mark should at minimum include the:

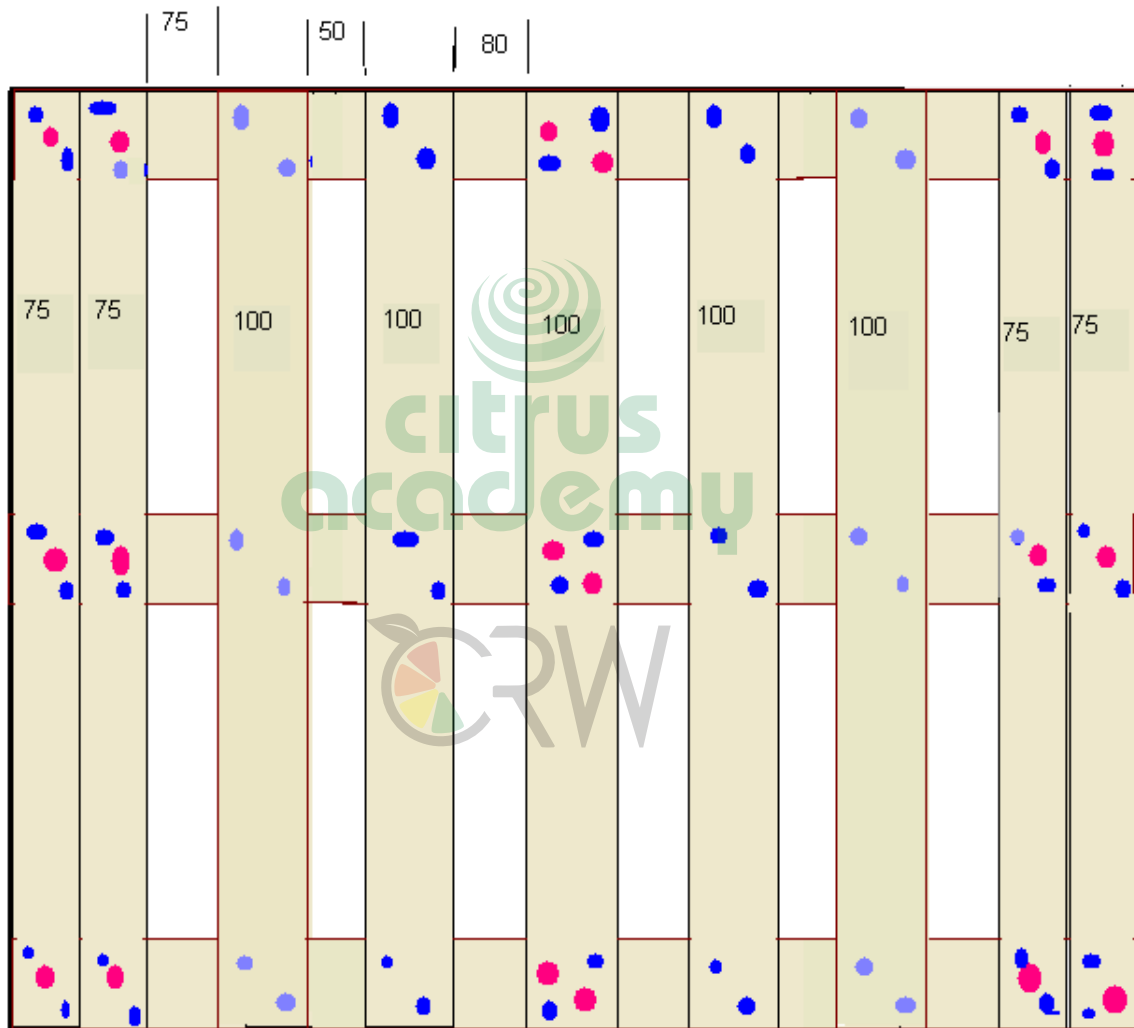
- v. Symbol
- vi. ISO two letter country code (XX – ZA for South Africa) followed by a unique four digit assigned to the producer of the wood packaging material, who is responsible for ensuring appropriate wood is used and properly marked.
- vii. IPPC abbreviation according to the approved treatment used - YY (e.g. HT or MB). (Please refer to point 11 – Treatment of pallets).

- viii. The mark should have a clear border around it.
- ix. Only black will be permitted. Please note: If IPPC mark not 100% legible, pallet will be rejected.

13. TEST AND ACCEPTANCE PROCEDURE

13.1 See Annexure 3.

ANNEXURE 1



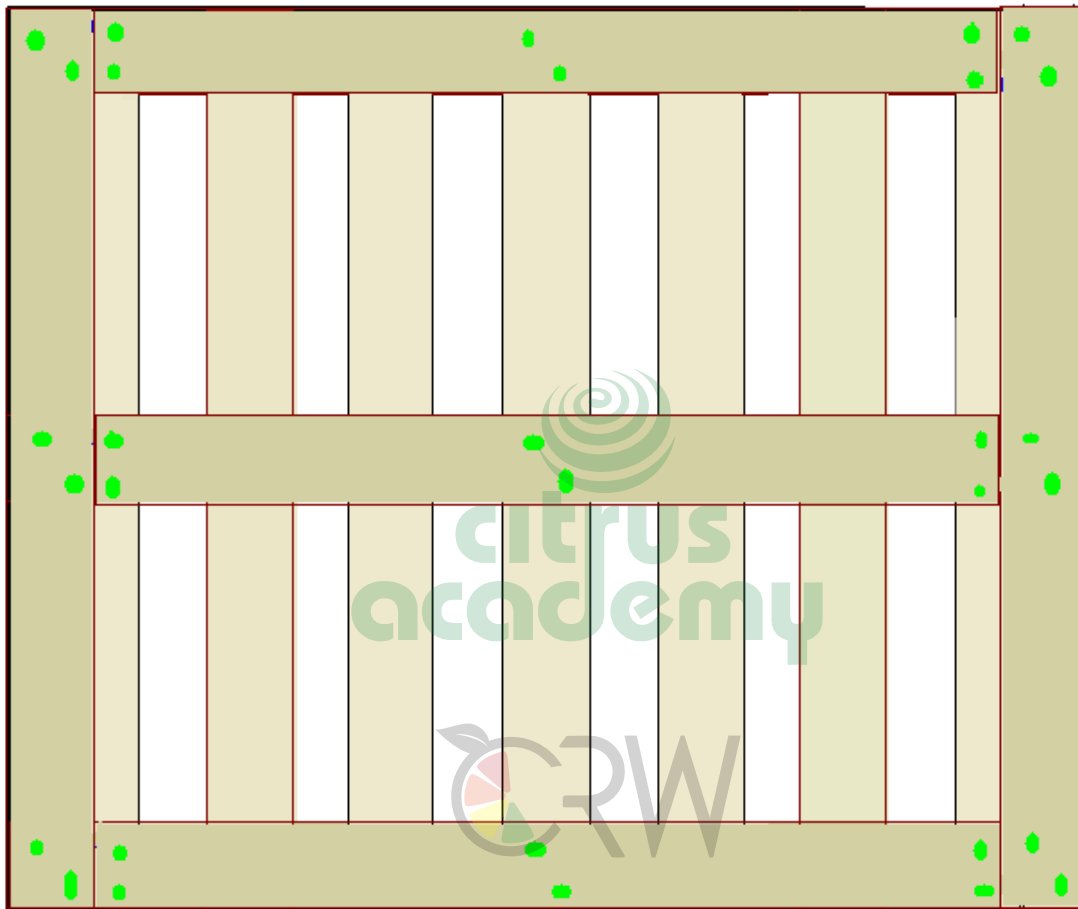
Standard 1210 x 1010mm Pallet For Citrus Export Pallet

Option 1

Nails:

Top to Blocks 18 of 75 mm x 3.15mm
 Top planks to Bearers 54 of 42mm x 2.5mm

ANNEXURE 2



Standard 1210 x 1010mm Pallet for Export Citrus

Option 1

Nails:
Bottom planks to blocks 30 of 60mm x 2.5mm



Wane illustration (see item 6 page 18)

ANNEXURE 3

TEST AND ACCEPTANCE PROCEDURE

1. SIZE OF SAMPLE

Five pallets will be chosen at random from a consignment of 200 pallets or part thereof and will be tested by the exporter.

Rejection of consignment

If in any sample more than one pallet is rejected, the consignment will be rejected entirely. Where only one pallet is found not to comply with specifications a further 5 pallets will be drawn and tested. Should any of these 5 pallets be rejected, the consignment in its entirety will be accepted after removal of pallets which visually show defects.

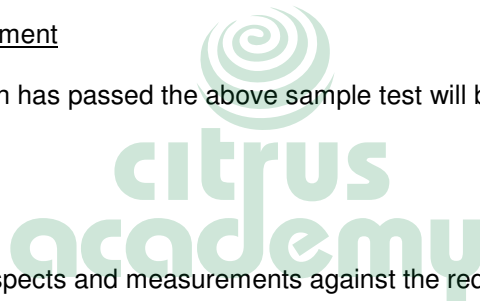
Acceptance of consignment

Any consignment which has passed the above sample test will be accepted in its entirety.

2. TEST PROCEDURE

a. Visual check

Check all visual aspects and measurements against the requirements of this specification.



3. PALLETISATION PROTOCOLS

3.1 PALLETISATION PROTOCOLS FOR CONVENTIONAL VESSELS, STANDARD - AND HI-CUBE SHIPPING CONTAINERS

GENERAL INFORMATION

The stacking and stabilization of the cartons on the pallets are extremely important. The cartons on the first (bottom) layer must be positioned in such a way that the four (4) corners of the cartons are always placed on a top slat of the pallet. (The 4 corners of each carton must always rest squarely on wood).

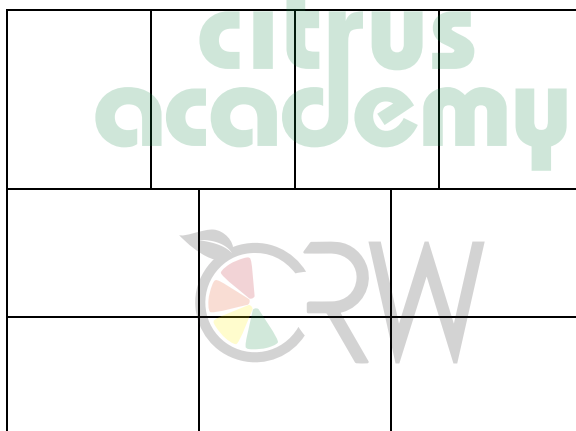
STACKING PATTERNS ON 1210 X 1010 MM FOUR WAY ENTRY DISPOSABLE EXPORT PALLETS

1. FULL TELESCOPIC CARTONS – STANDARD CONTAINERS AND CONVENTIONAL VESSELS

1.1 All A15C Cartons (400x300x270mm)

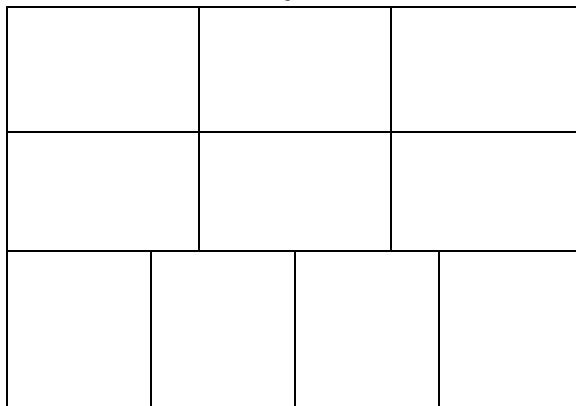
Stacking patterns – Layers 1,2,3,5 and 7.

1210mm



Stacking patterns – Layers 4 and 6.

1210mm

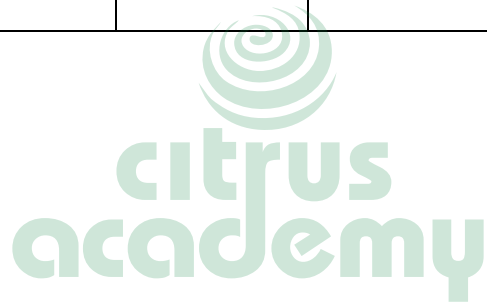
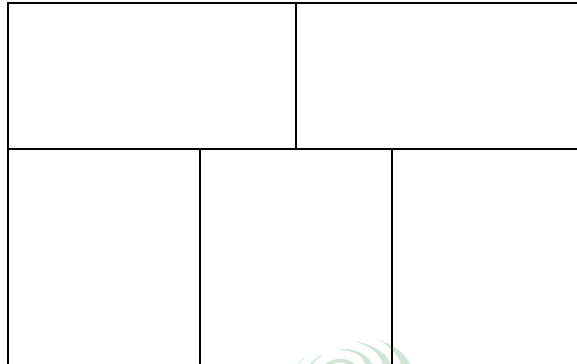


**1.2 (T64)600 x 400 x 170mm and 600 x 400 x 215mm
Citrus export cartons**

Stacking patterns (170) – Layers 1,2,3,4,6,8 and 10

Stacking patterns (215) – Layers 1,2,3,4,6 and 8.

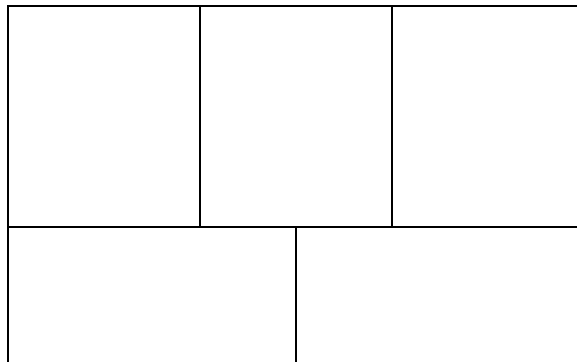
1210mm



Stacking patterns (170) – Layers 5,7,9 and 11

Stacking patterns (215) – Layers 5,7 and 9.

1210mm

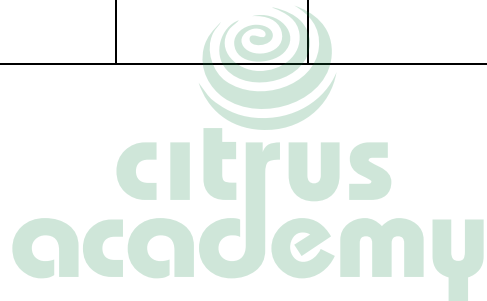
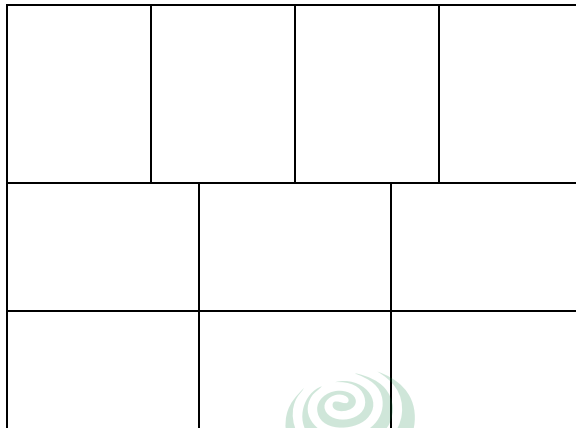


2. FULL TELESCOPIC CARTONS – HI-CUBE SHIPPING CONTAINERS

2.1 All A15C Cartons (400x300x270mm)

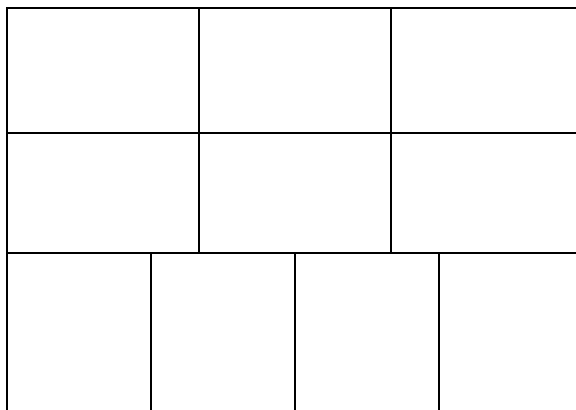
Stacking patterns – Layers 1,2,3,5 and 7.

1210mm



Stacking patterns – Layers 4, 6 and 8.

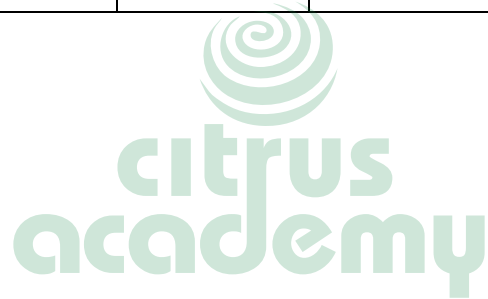
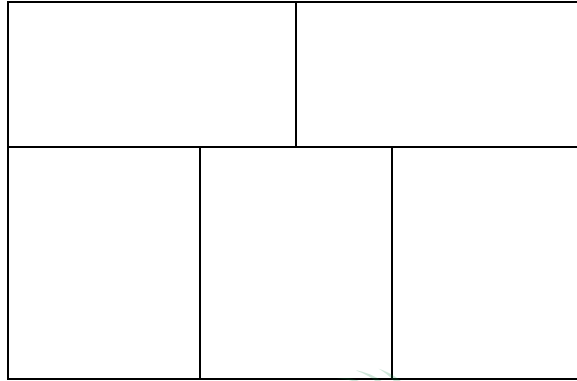
1210mm



**2.2 (T64)600 x 400 x 170mm and 600 x 400 x 215mm
Citrus export cartons**

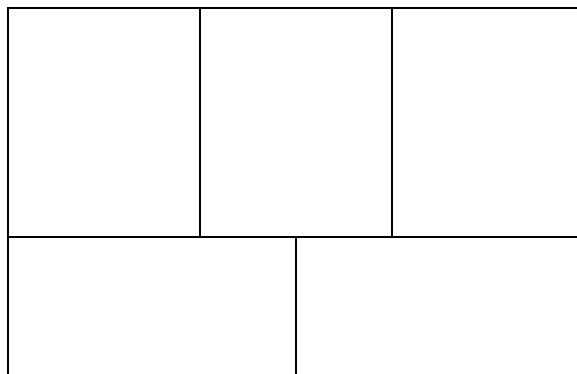
Stacking patterns (170) – Layers 1,2,3,4,6,8,10 and 12
Stacking patterns (215) – Layers 1,2,3,4,6,8 and 10.

1210mm



Stacking patterns (170) – Layers 5,7,9,11 and 13
Stacking patterns (215) – Layers 5,7 and 9.

1210mm



3. STABILISATION OF CARTONS ON PALLETS

3.1 Full Telescopic

Pallet loads to be stabilised with four (4) laminated paper corner pieces and horizontal plastic straps. The corner pieces to be placed on top of the pallets.

Spot Gluing

In cases where spot gluing can be done successfully and the use of corner pieces for certain markets is not compulsory, cartons may be stabilised/secured with spot gluing and horizontal plastic straps. The spot glue must be approved by the export organisations.

For the positioning of the horizontal plastic strapping on pallet loads, stabilised with spot gluing, see tables (full telescopic) on pages 32 and 33.

3.2 Corner Pieces

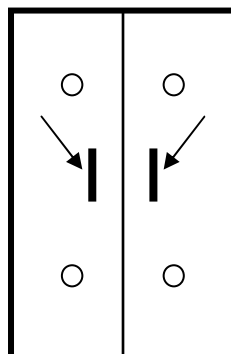
Standard Containers and Conventional vessels:

- Length – 1850mm
- Dimensions – 50 x 50 x 5mm
- The water absorption of the outer face of the laminated paper corner pieces: G/m² per 30 minutes, 120 maximum.

Hi-cube Shipping Containers:

- Length – 2130mm
- Dimensions – 50 x 50 x 5mm
- The water absorption of the outer face of the laminated paper corner pieces: G/m² per 30 minutes, 120 maximum.

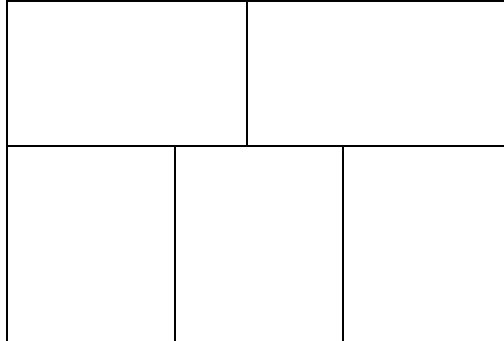
Positioning of Hot Melt Spot Glue



4. **OPEN DISPLAY CARTONS CONVENTIONAL VESSELS, STANDARD- AND HI-CUBE SHIPPING CONTAINERS**

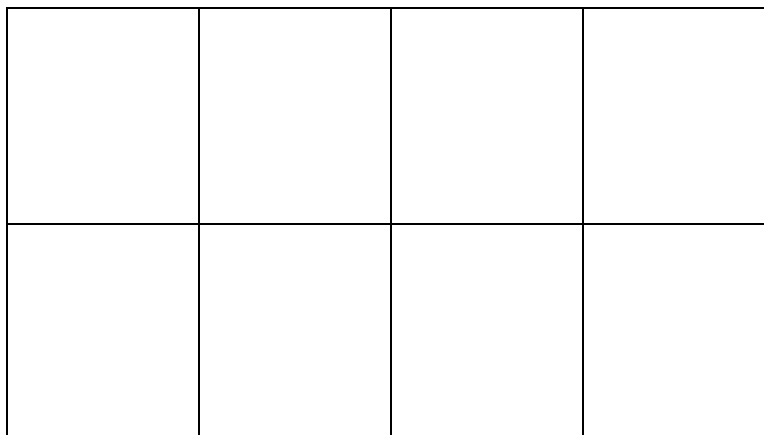
4.1 Stacking Patterns – 600 x 400 open display cartons. Column stacked all the way up

1210mm



4.2 Stacking Patterns – 500 x 300 (E10D) open display cartons. Column stacked all the way up

1210mm



- 4.3 Stacking Patterns – 300 x 200 (A02D) open display cartons. Column stacked all the way up.

1210mm

5. STABILISATION OF CARTONS ON PALLETS

5.1 Open display cartons

Pallet loads to be stabilised with four (4) laminated paper corner pieces, securing sheets and horizontal plastic straps. The corner pieces to be placed on top of the pallets. All open display cartons to be covered with corrugated board pallet caps.

5.2 Corner Pieces

Standard Containers and Conventional vessels:

- Length – 1850mm
- Dimensions – 50 x 50 x 5mm
- The water absorption of the outer face of the laminated paper corner pieces: G/m² per 30 minutes, 120 maximum.

Hi-cube Shipping Containers:

- Length – 2130mm
- Dimensions – 50 x 50 x 5mm
- The water absorption of the outer face of the laminated paper corner pieces: G/m² per 30 minutes, 120 maximum.

STANDARD CONTAINERS AND CONVENTIONAL VESSELS

Carton type	No of cartons per layer	No of layers	No of cartons per pallet	Layers to be strapped	Securing sheet layers
Full Telescopic					
A15C 400x 300x270	10	7	70	1,2,3,5 & 7	N/A
T64 600x400x170	5	11	55	1,2,3,4,6,9 & 11	N/A
T64 600x400x215	5	9	45	1,2,3,4,7 & 9	N/A
Open Display Cartons					
600x400x146	5	13	65	1,2,3,7,10 & 13	1,2,3,6 & 10
600x400x160	5	12	60	1,2,3,6,9 & 12	1,2,3,6 & 9
600x400x170	5	11	55	1,2,3,6,8 & 11	1,2,3,6 & 8
600x400x220	5	9	45	1,2,3,6 & 9	1,2,3,5 & 7
E10D 500x300x170	8	11	88	1,2,3,6,8 & 11	1,2,3,6 & 8
A02D 300x200x110	20	18	360	1,3,5,7,10, 13,16 & 18	1,2,3,5,8,12 & 15

HI-CUBE SHIPPING CONTAINERS

Carton type	No of cartons per layer	No of layers	No of cartons per pallet	Layers to be strapped	Securing sheet layers
Full Telescopic					
A15C 400x 300x270	10	8	80	1,2,3,5,7 & 8	N/A
T64 600x400x170	5	13	65	1,2,3,5,8,10 & 13	N/A
T64 600x400x215	5	10	50	1,2,3,5,7 & 10	N/A
Open Display Cartons					
600x400x146	5	15	75	1,2,3,5,7,9,11, 13 & 15	1,2,3,5,9 & 12
600x400x160	5	14	70	1,2,3,5,7,9,11 & 14	1,2,3,5,8 & 11
600x400x170	5	13	65	1,2,3,5,7,9,11 & 13	1,2,3,5,8 & 11
600x400x220	5	10	50	1,2,3,5,7 & 10	1,2,3,5 & 8
E10D 500x300x170	8	13	104	1,2,3,5,7,9,11 & 13	1,2,3,5,8 & 11
A02D 300x200x110	20	20	400	1,3,5,7,10,13, 16 & 20	1,2,3,5,8,12 & 16

4. NEWLY DEVELOPED/EXPERIMENTAL CARTON - TRIAL PROCEDURE

1. Phase 1:

Full laboratory tests.
Test results to be submitted to the packaging workgroup.

2. Phase 2:

A total of 20 pallets (10 Experimental - and 10 Control cartons) to be shipped in Hi-cube containers to the UK or Europe.

3. Phase 3:

Same as 2 above but shipped to the Middle East.

4. Phase 4:

40 Pallets Hi-cube containers to the UK or Europe.
40 Pallets Hi-cube containers to the Middle or Far East.
32 Pallets in a conventional vessel to the UK or Europe.
32 Pallets in a conventional vessel to the Middle or Far East.
40 Pallets Hi-cube containers to a cold sterilization market.
32 Pallets in conventional vessel to a cold sterilization market.
A minimum of 10% control cartons to be shipped with each experimental shipment above.

5. Phase 5: (Semi-commercial phase)

A total of 1000 pallets. 50% Hi-cube containers and 50% standard pallets in conventional vessels.

Again a minimum of 10% control cartons to be shipped.

Reports on all experimental shipments (phase 2 to phase 5) to be submitted to the packaging workgroup.

As far as possible all trials to be packed at packhouses long distances away from the ports and ideally all trials to be shipped out of Durban. Very high humidity and therefore a severe test for any experimental carton.

During all stages the carton manufacturer will take full responsibility for any consequential losses.

5. COMPLIANCE WITH SPECIFICATIONS – TESTING PROCEDURE FOR EXPORT CITRUS CARTONS

Cartons to be tested by an independent accredited laboratory.

For full details regarding the testing of cartons please see the document “Schedule For Accredited Carton Manufacturers” dated January 2012. Accredited carton manufacturers are urgently requested to adhere to the schedule. Additional samples will be drawn on an Ad-hoc basis at packhouses across the country. These samples will be drawn by CRI and packhouse staff. All cartons to be delivered to the laboratory by no later than the end of the week prior to the week scheduled for testing. All cartons must be accompanied by a completed questionnaire as per example included in the above-mentioned document.

ACTUAL LABORATORY TESTS.

During the laboratory tests the focus will be on the mass load at failure. The mass load at failure to be determined under the following conditions :

87% Relative humidity $\pm 1\%$ and $32^{\circ}\text{C} \pm 1^{\circ}\text{C}$. for 24 hours.

Physical properties of the corrugated board are very important factors. If required the caliper of the board, ply adhesion, flat crush resistance and water absorption of the outer and inner facings will also be tested for compliance with the relevant specifications. For physical property requirements of the corrugated board see Tables 1 on pages 4,6,8,10,12,14 and 16.

LINERBOARD AND FLUTING.

Compliance with SABS 431.

OTHER REQUIREMENTS.

Dimensions.

Tolerances on blank sizes : Length ± 4 mm and width ± 3 mm

All other dimensions : ± 2 mm. (Manufacturer's joints on all telescopic cartons included)

Narrow and skew manufacturer's joints are causing serious problems and special attention must be given to the specified widths and squareness.

6. CARTON MANUFACTURERS

We are grateful to report that the accreditation processes of the carton manufacturers are finalized..

As mentioned in the 2011 Packaging Material Specifications Document it was a long and complicated process.

ACCREDITED CARTON MANUFACTURERS FOR 2012 ARE :

(In alphabetical order)

- **APL CARTONS (PTY) LTD.**
- **CORRUSEAL GROUP.**
- **HOUERS KOÖPERATIEF BEPERK.**
- **MPACT CORRUGATED.**
- **NAMPAK CORRUGATED.**
- **NEW ERA PACKAGING.**
- **SUNNYPACKS MANUFACTURING.**

For any enquiries please contact:

Dawid Groenewald

Cell: 083 661 6365

E-mail: dawid@cri.co.za

Hannes Bester

Cell: 083 325 8379

E-mail: HannesBester@cri.co.za

