

DATE: Zellik, 22/01/2010

TEST REPORT

REPORT NR: SDR/sdr/G-10.012

Report G-10.012/p 1 of 6

OBJECT : Tests on fibreboard boxes (4G/4GV), to obtain the authorisation for the transport of dangerous goods of the packaging group(s) I, II & III.

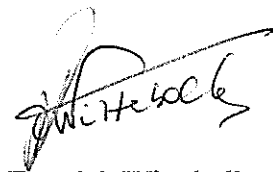
Receiving-date samples: 21/01/2010

Executing date or period of tests: 21/01/2010

BY ORDER OF: **THE PACK**
HOOIGAARDESTRAAT 34
1800 VILVOORDE
BELGIUM

This report is a test report and exclusively refers to the tested objects. The use of the packaging is submitted to the authorization of the competent authority (ADR-RID, IMDG)

General Manager



Eng. M. Wittebolle

Analyst - Consultant



Stefaan De Ryck

The results of this report are exclusively related to the submitted samples

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Accuracy of the test results available on request

1. Presented samples:

Type of box: American box FEFCO n° 0201 with a 25 mm glued joint at the inside of the box and conform the description (4G) as mentioned in the different regulations.

Manufacturer: VPK Packaging
Oude Baan 120
9200 Dendermonde
BELGIUM

Closure : The top and bottom flaps are closed with fiber reinforced tape.
Width : 75 mm
The 4GV box is also taped on the factory seam, see pictures.

Description of the samples

Double-double wall corrugated fiberboard boxes.
Composition and characteristics see point 4.

4G

1 metal drum of 25 liters with UN-mark :
1A2/X54/S/06 B/BLG - 010134
The empty space around the drum is filled with PE chips.
Filled weight : 26,4 kg
Height : 330 mm
Diameter : 335 mm

Weight of the complete filled box : 28 kg

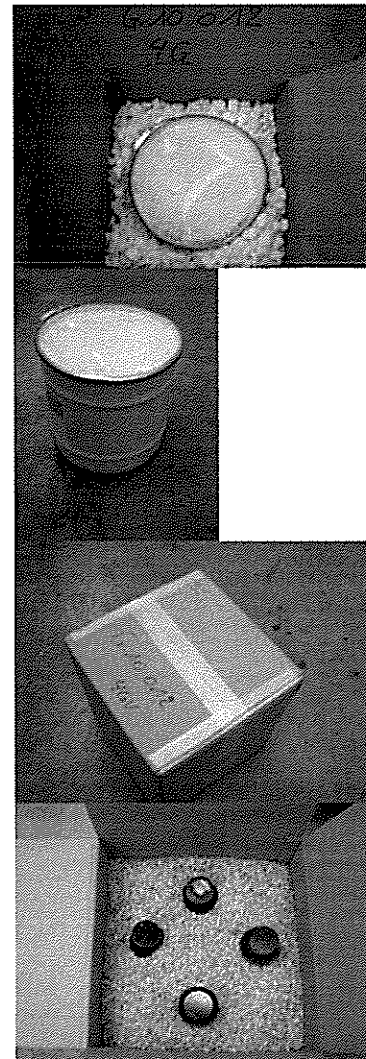
Weight calculation : X 28 = Y 42 = Z 63

4GV

4 glass bottles of 1 liter, with 4 glass bottles of 500 ml on top. All empty spaces is filled with vermiculite.

Filled weight bottle of 1 liter : 4,3 kg
Height : 185 mm
Diameter : 103 mm
Filled weight bottle of 500 ml : 2,5 kg
Height : 157 mm
Diameter : 84 mm

Weight of the complete filled box : 37 kg
Authorised weight of the box in use : 24 kg



2. Test program:

Performance tests for fiberboard boxes (4G) prescribed by :

- UN-regulations – part 6
- IMDG – part 6
- ICAO – part 6
- ADR – RID part 6

A. Drop tests:

Filling material	:	See point 1	
Number of tested packagings	:	10	
Preconditioning	:	48 hours at 23°C and 50% R.H.	
Drop height	:	1,80 m	
Drop orientation	:	First drop	: flat on the bottom
		Second drop	: flat on the top
		Third drop	: flat on the long side
		Fourth drop	: flat on the short side
		Fifth drop	: on a corner

Criterion:

No damage liable to affect safety during transport.

No important breakage or leakage, nor of the box, nor of the inner receptacles.

B. Stacking tests:

Filling material	:	empty (4GV), filled (4G)
Conditioning	:	23°C and 50% R.H.
Number of tested packagings	:	3
Stacking height	:	3 m
Duration of the test	:	24 hours
Stacking load	:	4GV [(3000/485)-1] x 37 = 193 kg
		4G [(3000/485)-1] x 63 = 326 kg

Criterion:

No deterioration which could adversely affect transport safety.

No distortion liable to reduce the strength of the box or to cause instability in a stack of packages.

3. Results of the tests:

A. Drop tests:

No loss of contents.

B. Stacking tests:

No test sample shows any deterioration which could adversely affect transport safety.

No distortion liable to reduce the strength of the box or to cause instability in a stack of packages.

4. Characteristics of the fiberboard:

MEASUREMENTS	UNIT	
* Weight of the box	g	1143
* Dimensions (external measured) (l x w x h)	mm	(433x433x485)
* Dimensions (internal nominal) (l x w x h)	mm	(420x420x480)
* Thickness	mm	6,62
* Weight per m ²		
- outer facing: Brown Kraft	g/m ²	141
- flute: Wellenstof (B)	g/m ²	109
- centre facing: Testliner	g/m ²	113
- flute: Wellenstof (C)	g/m ²	137
- inner facing: Brown Kraft	g/m ²	1143
Total	g/m ²	733
* Bursting strength	kPa	1578
* Puncture resistance	J	7,99
* Edge crush resistance	kN/m	9,1
* Water absorption	g/m ²	87

5. Conclusion:

The presented packagings 4GV have successfully met the performance tests prescribed for the transport of dangerous goods of the packaging groups I, II and III and may be used in connection with the following conditions :

- maximal stacking height : 3 m
- maximal total weight : 24 kg

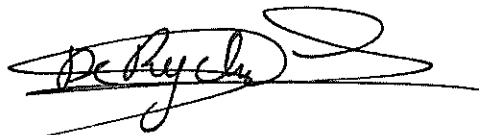
The presented packagings may also be used under a 4G certification for the described combinations for the transport of dangerous goods of the packaging groups I, II and III and may be used in connection with the following conditions :

- maximal stacking height : 3 m
- maximal total weight : X 28 kg
X 28 = Y 42 = Z 63 kg

All other conditions of use are not covered by this report.

The packaging may only be used for the transport of dangerous goods by road, rail, sea or air with the agreement of the concerned competent authority.

Stefaan De Ryck



Analyst – Consultant
IBC and Dangerous Goods Packaging

Zellik, 22/01/2010

Report G-10.012

The use of the UN-mark hereafter, is still submitted to the authorization of the competent authority.

The hereafter mentioned packaging:

Fiberboard boxes (4G/4GV)

that are the subject of report :

G-10.012 of the 22/01/2010
may obtain the hereafter mentioned UN-mark :

 4G/X28/S/* * : year of manufacture
B/THEPACK.773-** ** : registration number to be
X 28 = Y 42 = Z 63 delivered by the authority

 4GV/X24/S/* * : year of manufacture
B/THEPACK.773-** ** : registration number to be
delivered by the authority

as far as the use of the above mentioned packaging in the IMDG, ICAO and ADR-RID prescriptions is provided for.

The stacking test was effectuated for a stacking height of 3 m.

Gross mass: 4G : 28 kg
4GV : 24 kg

Firm: THE PACK
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