



LICENCE

for designs of packagings for the carriage of dangerous goods

Licence No.:

8109

Date: 2017-11-23

Designs: 4GV/4G Fibreboard Boxes

Applicant: Mondi Wellpappe Ansbach GmbH
Corrugated Packaging

Robert-Bosch-Straße 3
D 91522 Ansbach

LICENCE FOR DESIGNS OF PACKAGINGS FOR THE CARRIAGE OF DANGEROUS GOODS

1 Legal Basis

Dangerous Goods Carriage Law - Federal Law Gazette I No. 145/1998 in the version of Federal Law Gazette I No. 91/2013

Roads with public traffic:

European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), Federal Law Gazette No. 522/1973, in the version of Federal Law Gazette III No. 34/2017

Railroad:

Convention concerning International Carriage by Rail (COTIF), Federal Law Gazette No. 225/1985, Appendix C - Regulations concerning the International Carriage of Dangerous Goods by Rail (RID), Federal Law Gazette III No. 137/1967, in the version of Federal Law Gazette III No. 112/2017

Waterways:

European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN), Federal Law Gazette III No. 67/2008, in the version of Federal Law Gazette III No. 79/2017

Transport by sea:

Federal Law Gazette No. 387/1996 with IMDG Code, Amendment 38-16

Civil Aviation:

Federal Law Gazette No. 97/1949 with ICAO-TI, Edition 2017-2018

in connection with:

Accreditation of the Austrian Institute for Packaging (ÖIV) as Testing Laboratory (the Testing Laboratory was accredited according to ISO/IEC 17025 as Testing Laboratory with the ID-number 0013 for the first time at 1st December 1995 with Zl. 92714/501-IX/2/95 by Akkreditierung Austria / Federal Ministry of Science, Research and Economy for the scopes named in the notification and published under www.bmwf.gv.at/akkreditierung)

Notification of the Republic of Austria, Federal Ministry of Transport, Section IV, concerning the allocation of a short marking to identify packagings which have been tested by the ÖIV in accordance with Federal Law Gazette No. 143/1981 (Notification of 1981-09-21, Zl. 75.170/1-IV/6-81)

2 Applicant

Mondi Wellpappe Ansbach GmbH
Corrugated Packaging

Robert-Bosch-Straße 3
D 91522 Ansbach

3 Packaging Manufacturer

Identical to applicant

4 Description of the Packaging Designs

Folding boxes made of triple wall corrugated fibreboard (sort “Tristar 76000S”, composition according to the applicant 440 HKL/160 W/280 KLB/160 W/280 KLB/160 W/400 KLB, flutes ACA) with outer bottom and top flaps meeting (FEFCO 0201) on a wooden pallet; Manufactured with a glued and stitched joint;

Box closure: double-L-closure with a fibre reinforced self-adhesive plastics tape (width: 75 mm); additionally top sided one centric strip of a fibre reinforced self-adhesive plastics tape (width: 75 mm) parallel to its broad side edges; packaging strapped 6 times (2x parallel to its long side edges and 4x parallel to its broad side edges) with bands made of plastics (min. width: 11.5 mm) around the box and the wooden pallet;

Nominal inside dimensions: 1170 x 770 x 800 mm (L x B x H);

Outside dimensions: 1195 x 800 x 870 mm (L x B x H);

Outside dimensions incl. wooden pallet: approx.. 1200 x 800 x 1010 mm (L x B x H);

4.1 Packaging design “4GV”

In the box a bag made of plastics (foil-thickness min. 100 µm), filled with absorbent material “Vermiculite” and leakproof sealed;

The thickness of cushioning material between inner packagings and between inner packagings and the outside of the packaging shall not be reduced below the corresponding thicknesses in the tested packaging according to our Test Report Nr. 8109/10/17;

Maximum total combined gross mass of inner packagings: 115.5 kg;

Maximum gross mass of the filled and sealed package: 242 kg;

Original filling material: articles or inner packagings of any type for solids or liquids;

For the tests glass bottles as inner packagings filled with water and lead shot were used.

4.2 Packaging design “4G”

Maximum gross mass of the filled and sealed package: 250 kg;

Original filling material: solid substances/articles, maybe inner packagings;

For the tests barley with inserted parts of plastics (to decrease the gross mass) were used.

5 Requirements for the Packaging Designs

The packaging designs must be in conformity with the design types which were tested according to the below-mentioned Test Report for a design type 4GV and 4G respectively (“Fibreboard Boxes”) in accordance with chapter 6.1, requirements for the construction and testing of packagings of enclosure A to the European Agreement regarding the International Carriage of Dangerous Goods by Road (ADR).

Similar regulations are in force for the transport by train (RID), by ship (IMDG-Code) and by plane (ICAO-TI), whereby the test requirements regarding the packagings for carrying dangerous goods by the various transport operators have been largely harmonised, because of the acceptance of the UN-Recommendations (“Orange book“, Recommendations prepared by the United Nations Committee of Experts on the Transport of Dangerous Goods, 19th revised edition, 2015).

Therefore the mentioned Test Report is an integral part of this Licence:

Test Report No.:	Date:	Testing House:
8109/10/17	2017-11-23	Österreichisches Institut für Verpackungswesen

6 Manufacturing of the Packagings

Packagings of these licensed designs may be mass-produced. By affixing marking it is certified that mass-produced packagings meet all the requirements of the licensed packaging designs and that all conditions and supports listed in this Licence are fulfilled.

7 Marking

Packagings, when mass-produced in accordance with the tested designs, must be durable, legible and readily visible marked as follows:

 **4GV/X242/S/..*)**
A/PA-02/8109

and/or

 **4G/X250/S/..*)**
A/PA-02/8109

*) the last two digits of the year of production of the fibreboard boxes

All letters, numerals and symbols shall be at least 12 mm high and the marks or a duplicate thereof shall appear on the top or on a side of the packaging.

8 Conditions for the Use of the Packagings

- 8.1 Packagings, mass-produced in accordance with these licensed packaging designs and marked according to point 7 may be used for dangerous goods if such packagings are permitted by the regulations of the various transport operators. If used for transportation by ship, suitable qualities of papers for liners and flutes should be used and the glue of the corrugated board should be wet strength.
- 8.2 According to the capability of the packagings, dangerous goods to be transported can be classified in packaging group I, II or III.
- 8.3 The total combined gross mass of the inner packagings of packaging design "4GV" must not exceed 115.5 kg.
- 8.4 The gross mass of the packages must not exceed the maximum gross mass stated in point 4.
- 8.5 The thickness of cushioning material between inner packagings and between inner packagings and the outside of the packaging shall not be reduced below the corresponding thickness in the originally tested packaging. When fewer or smaller inner packagings are used (as compared to the inner packagings used in the drop test) sufficient additional cushioning material shall be used to take up void spaces.
- 8.6 Inner packagings containing liquids shall be completely surrounded with a sufficient quantity of absorbent material to absorb the entire liquid contents of the inner packagings.
- 8.7 In addition to the UN-Marks specified in point 7 the packagings have to bear other prescribed markings, symbols and dangerous goods labels.
- 8.8 Those parts of packagings which are in direct contact with dangerous substances should not be affected by chemical or by other action of those substances. If necessary, they should be provided with a suitable inner coating or treatment. Such parts of packagings should not incorporate constituents liable to react dangerously with the contents so as to form hazardous products, or to weaken them significantly.

- 8.9 The applicant/manufacture named in point 2/3 must be able to prove that all conditions concerning the usage of these packagings are well known to everybody who uses/fills these packagings for/with dangerous goods.
- 8.10 Direction is made to the necessary approval and supervision of the quality assurance programme according to the “BAM – Gefahrgutregeln (BAM-GGR), BAM-GGR 001, Verfahren der Qualitätssicherung bei der Herstellung und Überwachung von Verpackungen, Großverpackungen und Großpackmitteln (IBC) für den Transport gefährlicher Güter“.
- 8.11 The content of the boxes of the design “4G” may be solids or inner packagings, i.e. combination packagings. In this case the packer/shipper must be able to prove (e.g. by additional drop tests or considering paragraph 6.1.5.1.6, ADR, respectively IMDG-Code) that filled packages can meet the same requirements as the tested packaging design.

9 Others

The packaging designs are in accordance with the test requirements for packagings for the carriage of dangerous goods as stated in the international agreements for traffic by road (ADR), rail (RID), sea (IMDG-Code) and air (ICAO-TI/IATA-DGR). This also covers the test requirements laid down in the Recommendations of the United Nations (UN).

This Licence is given but may be revoked at any time.

10 Licence

The packaging designs as prescribed in point 4 are licensed under the condition that the requirements of point 5 - 8 are fulfilled.

ÖSTERREICHISCHES INSTITUT FÜR VERPACKUNGSWESEN



Dipl.-Ing. (FH) M. Auer, MSc
Head of Institute



Ing. Ulrike Seher
Executive Officer

This Licence No. 8109 consists of 8 pages.



TEST REPORT

No. 8109/10/17

Mondi Wellpappe Ansbach GmbH
Corrugated Packaging

Robert-Bosch-Straße 3
D 91522 Ansbach

The results of the investigations carried out only concern the submitted sample.

The accreditation of the Testing House and this Test Report do not constitute an authorization of the test samples by the accreditation body.

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If the client refers to this Test Report, he has to add "Österreichisches Institut für Verpackungswesen (ÖIV)" and the following article:



THE TESTING LABORATORY WAS ACCREDITED ACCORDING TO ISO/IEC 17025 AS TESTING LABORATORY WITH THE ID-NUMBER 0013 FOR THE FIRST TIME AT 1ST DECEMBER 1995 WITH ZL. 92714/501-LX/2/95 BY AKKREDITIERUNG AUSTRIA / FEDERAL MINISTRY OF SCIENCE, RESEARCH AND ECONOMY FOR THE SCOPES NAMED IN THE NOTIFICATION AND PUBLISHED UNDER WWW.BMWFV.GV.AT/AKKREDITIERUNG

1 Submitted Sample

1.1 Applicant

Mondi Wellpappe Ansbach GmbH
Corrugated Packaging

Robert-Bosch-Straße 3
D 91522 Ansbach

1.2 Packaging Manufacturer

Identical to applicant

1.3 Description of the Packaging Designs

Folding boxes made of triple wall corrugated fibreboard (sort “Tristar 76000S”, composition according to the applicant 440 HKL/160 W/280 KLB/160 W/280 KLB/160 W/400 KLB, flutes ACA) with outer bottom and top flaps meeting (FEFCO 0201) on a wooden pallet; Manufactured with a glued and stitched joint;

Box closure: double-L-closure with a fibre reinforced self-adhesive plastics tape (width: 75 mm); additionally top sided one centric strip of a fibre reinforced self-adhesive plastics tape (width: 75 mm) parallel to its broad side edges; packaging strapped 6 times (2x parallel to its long side edges and 4x parallel to its broad side edges) with bands made of plastics (min. width: 11.5 mm) around the box and the wooden pallet;

Nominal inside dimensions: 1170 x 770 x 800 mm (L x B x H);

Outside dimensions: 1195 x 800 x 870 mm (L x B x H);

Outside dimensions incl. wooden pallet: approx.. 1200 x 800 x 1010 mm (L x B x H);

1.3.1 **Packaging design “4GV”**

In the box a bag made of plastics (foil-thickness min. 100 µm), filled with absorbent material “Vermiculite” and leakproof sealed;

Inner Packagings: 5 layers each 60 100-ml-glass bottles (outside diameter: 56 mm; height <incl. closure>: 103 mm; gross mass: 770 g) with plastic screw closures were used for the drop tests; see attached packaging layout;

Gross mass of the filled and sealed packages: 356.6 kg;

Original filling material: articles or inner packagings of any type for solids or liquids;
For the tests glass bottles as inner packagings filled with water and lead shot were used.

1.3.2 Packaging design “4G”

Maximum gross mass of the filled and sealed package: 250 kg;

Original filling material: solid substances/articles, maybe inner packagings;
For the tests barley with inserted parts of plastics (to decrease the gross mass) were used.

The use of other packaging methods or components may render this Test Report invalid.

2 Requested Investigations

In accordance with the requirements for the construction and testing of packagings of chapter 6.1, laid down in enclosure A of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), each packaging, except the inner packagings of combination packagings, must conform with a packaging design that has been tested and licensed in accordance with the regulations of chapter 6.1 of the above named enclosure.

Similar regulations are in force for the transport by train (RID), by ship (IMDG-Code) and by plane (ICAO-TI), whereby the test requirements regarding the packagings for carrying dangerous goods by the various transport operators have been largely harmonised, because of the acceptance of the UN-Recommendations (“Orange book“, Recommendations prepared by the United Nations Committee of Experts on the Transport of Dangerous Goods, 19th revised edition, 2015).

The submitted samples should be tested for the packaging specification **4GV** and **4G** respectively („Fibreboard Boxes“) for Packaging Groups I, II and III, and in case of positive results UN-Marks (Packaging Licence Nos.) should be established.

Additionally the outer cover (top surface) of the corrugated fibreboard of the packagings should be tested in the respect whether it complies concerning its water absorptiveness with the requirements of subsection 6.1.4.12 of enclosure A of the European Agreement concerning the International Carriage of Dangerous Goods by Road.

3 Investigations Carried out - Results of Investigations

Receipt of test samples: 2017-10-30

The air-conditioning of the test samples was made under the standard climate condition 23 °C/ 50 % relative humidity till the achievement of constant weight. The tests were carried out under the same climatic conditions.

3.1 Test of Packaging Material

3.1.1 Determination of water absorptiveness - Cobb-Test

The test was carried out in accordance with ISO-Standard 535:1991 (see also ÖNORM EN 535), with an exposure time of 30 minutes; the test was carried out only on the outer cover (top surface) of the corrugated fibreboard.

As arithmetical mean of five tests (see also attached printout) for the water absorptiveness **118.5 g/m²** was determined.

Date of test: 2017-11-16

3.2 Packaging Tests

The tests were carried out in accordance with the instructions of the ADR (as described in section 6.1.5, test requirements for packagings).

3.2.1 Drop Tests

3.2.1.1 Packaging design "4GV"

The tests were done at Mondi Wellpappe Ansbach GmbH, Abteilung QS, Robert-Bosch-Str. 3, D 91522 Ansbach, recognized test house by BAM, Bundesanstalt für Materialforschung und -prüfung, in the presence of the Investigator.

The drop of the packages was done by means of an electro-pneumatic hook, where a belt was used for hanging up/positioning the samples. The impact target was a steel plate.

The drop height was (according to the required packaging groups) **1.8 m**.

None of the tested samples was leaking or showed any appreciable damage after the tests.
The inner packagings were leakproof.

Date of tests: 2017-10-05 and 2017-10-06

3.2.1.2 Packaging design “4G”

The drop of the packages was done by means of a pneumatic hook, where belts were used for hanging up/positioning the samples. The impact target was a metal plate.

The drop height was (according to the required packaging groups) **1.8 m**.

None of the tested samples was leaking or showed any appreciable damage after the tests.

Date of tests: 2017-11-15

3.2.2 Stacking Tests

The tests were carried out with an electronically material testing machine supplied by Comp. Zwick, type BX1-FR050TH.A1K-002.

The empty test samples were subjected to a force applied to the top surface of the test samples equivalent to the total weight of identical filled packages, which might be stacked on it, up to a height of 3 metres (including test sample). The maximum gross mass of 356.6 kg was used for the calculation. The tests were done in load direction side 1 - side 3 (identification of sides according ÖNORM EN ISO 22206:1992 “Packaging; complete, filled transport packages; identification of parts when testing”).

Duration of the test: 24 hours.

According to the above mentioned conditions a constant pressure load of **6900 Newton** was applied to the samples.

None of the samples tested showed any considerable damage. During and after the tests no deformation or other signs of early breakdown that could affect the strength of the cases or could cause an instability of the stack were detected.

Date of tests: 2017-11-08 to 2017-11-11

ÖSTERREICHISCHES INSTITUT FÜR VERPACKUNGSWESEN



Dipl.-Ing. (FH) M. Auer, MSc
Head of Institute and Investigator



Ing. Ulrike Seher
Executive Officer

Vienna, 2017-11-23

This Test Report No. 8109/10/17 consists of 7 pages, 1 page printout, 1 packaging layout and 1 closure layout.

Determination of water absorptiveness
Cobb-Test
 ISO 535:1991

Time of test 1800 s (30 min)

Sample:

Client : Mondi Wellpappe Ansbach GmbH
 Sample identification : "Tristar 76000S"
 Surface tested : outside
 Packaging material : triple wall corrugated fibreboard
 Note : The test pieces were cut out of unprinted samples.

Results:

Test piece	Dry mass (g)	Wet mass (g)	Difference (g)	Water absorptiveness (g/m ²)
1	39,1552	40,3241	1,1689	116,89
2	39,0497	40,2056	1,1559	115,59
3	39,1594	40,3442	1,1848	118,48
4	39,0884	40,3084	1,2200	122,00
5	39,1033	40,2959	1,1926	119,26

Statistics:

Min	115,59
Max	122,00
Mean	118,5
Standard dev. - SD	2,44
Coeff. of variation (%)	2,06

Climatic conditions:

Pre-treatment : Conditioning according EN 20187 at 23/50, duration >24 h, no pre-desiccation
 Conditions for testing : 23 °C / 50 %r.H.

Test parameters:

Test device : Analytic balance Sartorius BP211-OCE
 Test area : 100 cm²
 Water volume : 100 ml
 Water temperature : 23 °C

Description:

Water absorptiveness (Cobb-Value): The calculated mass of water absorbed in a specified time by 1 m² of paper or board under specified conditions.

A test piece is weighted immediately before and immediately after exposure for a specified time of one surface to water, followed by plotting. The result of the increase in mass is expressed in grams per square meter (g/m²).

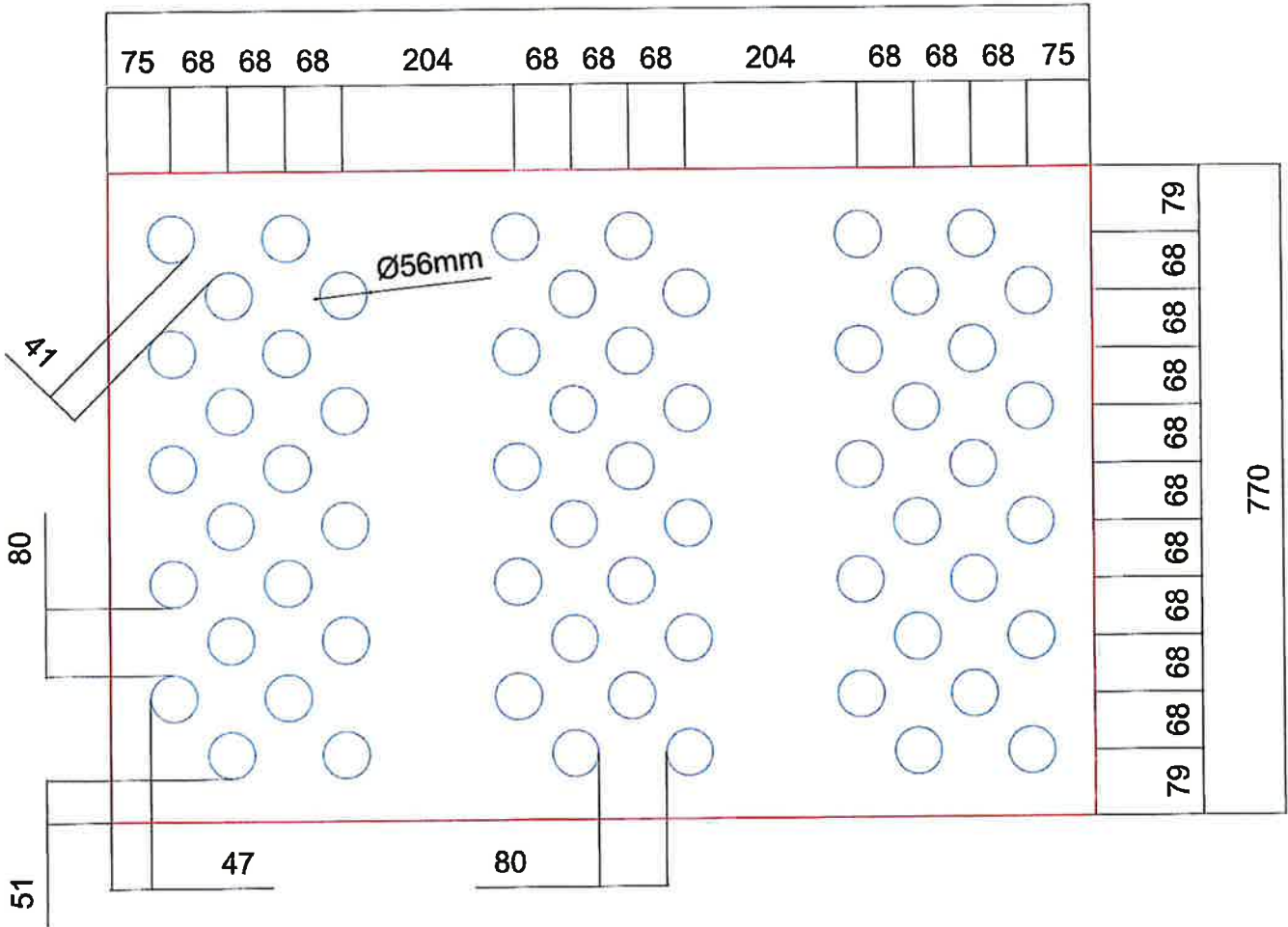
Investigator:  Arik Stangl
 Vienna, 16.11.2017



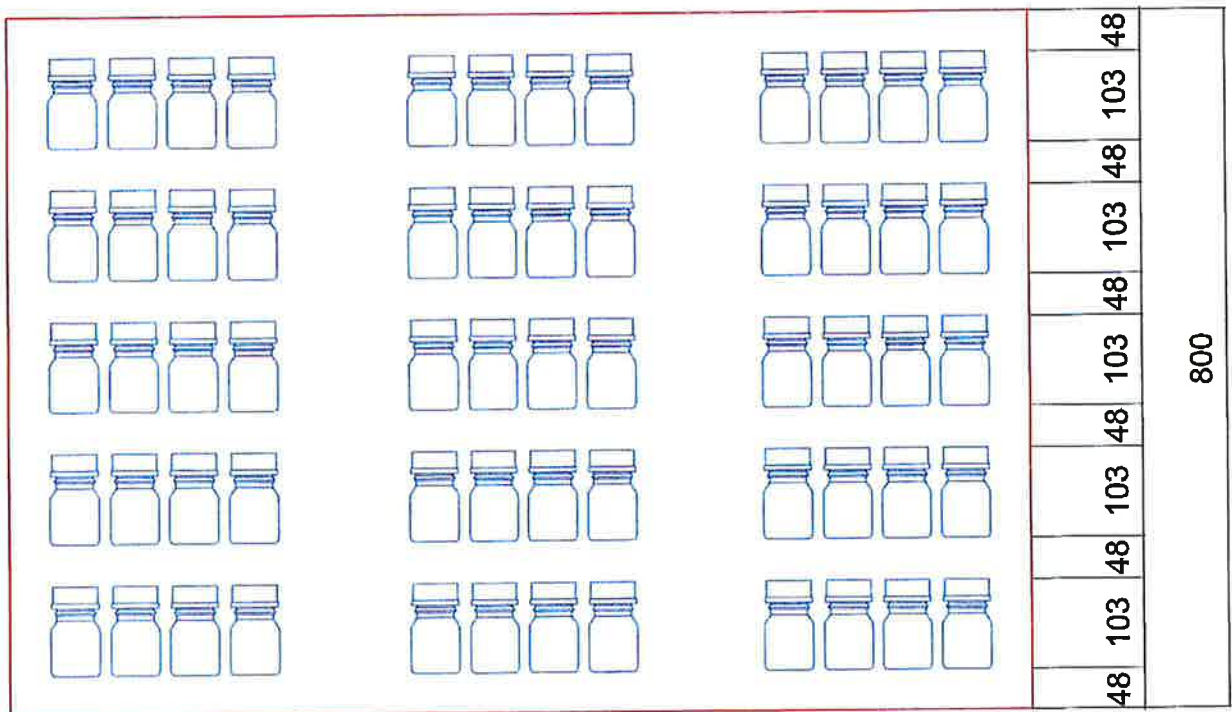
720/250

1170x770x800 mm

1.170



300 x 100 ml (770g) = 231 kg

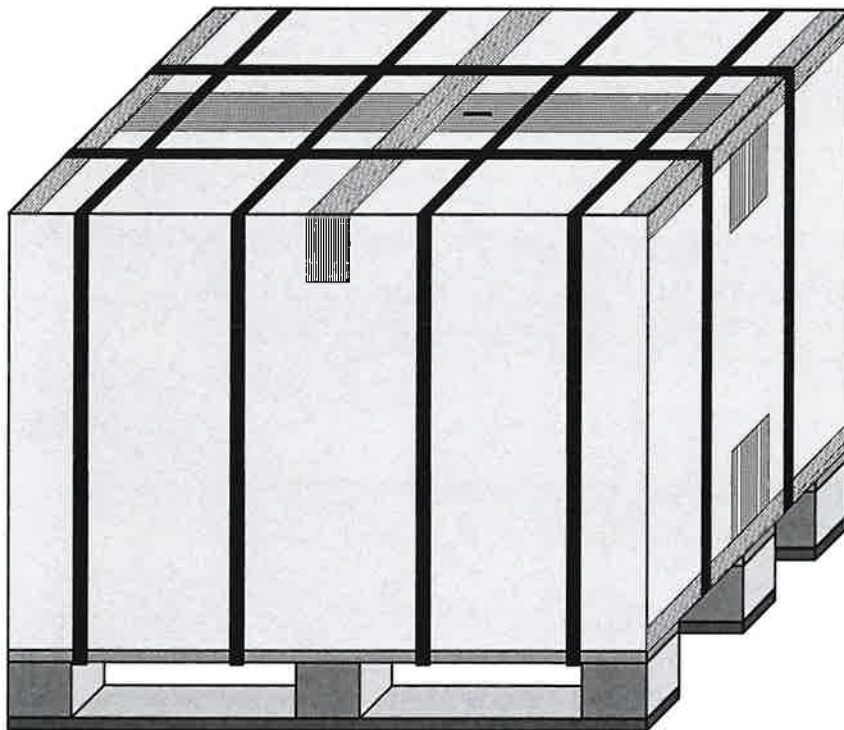


Die Abstandsmaße sind aufgerundet

Prüf-Nr. 7771
vom 11.10.2017



Verschlussskizze



Verschluss der Bodenklappen

Doppel-L-Verschuß mit einem 75mm breiten, faserverstärkten Kunststoffklebeband.

Verschluss der Deckelklappen

Doppel-L-Verschuß mit einem 75mm breiten, faserverstärkten Kunststoffklebeband, zusätzlich ein Streifen mittig quer über die Deckelklappen.

Verschluss der Außenverpackung

Sechsfache Umreifung mit einem 11.5 mm breiten und 0.5 mm starken Kunststoffband, inklusive der Holzpalette, zweimal längs und viermal quer gemäß Skizze.