



LICENCE

for a design of a packaging for the carriage of dangerous goods

Licence No.:

6038

Date: 2005-07-28

Design: 4GV Fibreboard Boxes

Applicant: Duropack
Wellpappe Ansbach GmbH

Robert-Bosch-Straße 3
D 91522 Ansbach

LICENCE FOR A DESIGN OF A PACKAGING 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. 61/2003.

Roads with public traffic:

Enclosures A and B of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), Federal Law Gazette No. 522/1973, in the version of the revision Federal Law Gazette III No. 156/2004.

Railroad:

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID), Federal Law Gazette No. 137/1967, in the version of the revision Federal Law Gazette III No. 109/2004 and Federal Law Gazette III No. 110/2004.

Waterroutes:

Federal Law Gazette I No. 62/1997, in the version of Federal Law Gazette I No. 102/2003 and Federal Law Gazette II No. 13/2005.

Transport by sea:

Federal Law Gazette No. 387/1996, with IMDG-Code, Amendment 32-04.

Civil Aviation:

Federal Law Gazette No. 97/1949, with ICAO-TI, Edition 2005-2006.

in connection with:

State-accreditation of the Austrian Institute for Packaging (ÖIV) as testing laboratory by the Republic of Austria, Federal Ministry for Economical Affairs (Notification of 1995-12-29, Zl. 92714/501-IX/2/95 in the version of Notification of 2002-03-26, Zl. 92714/181-I/12/02).

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

Duropack
Wellpappe Ansbach GmbH

Robert-Bosch-Straße 3
D 91522 Ansbach

3 Packaging Manufacturer

Identical to applicant

4 Description of the Packaging Design

Folding boxes made of corrugated fibreboard (sort "Anscor 34940", composition according to the manufacturer 150 KLB/140 W/125 TLB/140 W/190 TLB, flute BC) with outer top and bottom flaps meeting (FEFCO 0201);

manufactured with a glued joint;

Box closure: slot closure with a glass-fibre reinforced plastics tape (75 mm wide);

Inside dimensions: 383 x 383 x 383 mm (L x W x H);

Outside dimensions: 395 x 395 x 410 mm (L x W x H);

in the box a bag made of polyethylene, filled with absorbent material („Vermiculite No. 3") and tied up with a cord;

Inner Packagings: two 2500-ml-glass bottles (outside diameter: 139 mm; height <incl. closure>: 293 mm; maximum gross mass of one filled inner packaging: 4.0 kg) with plastic screw closure;

Maximum gross mass of the filled and sealed package: 15 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.

5 Requirements for the Packaging Design

The packaging design must be in conformity with the design type which was tested according to the below-mentioned test report for a design type **4GV** („Fibreboard Boxes“) in accordance with chapter 6.1, Provisions 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-Code), 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, thirteenth revised edition, 2003).

Therefore the mentioned test report is an integral part of this licence:

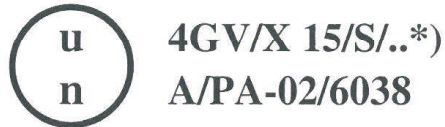
Test Report No.:	Date:	Testing House:
6038/7/05	2005-07-28	Österreichisches Institut für Verpackungswesen

6 Manufacturing of the Packagings

Packagings of these licensed design may be mass-produced. By printing the UN-Marking on the packagings the manufacturer guarantees that the mass-produced packagings meet all the requirements of the licensed packaging design and that all conditions and supports listed in this licence are fulfilled.

7 Marking

The fibreboard boxes, when mass-produced in accordance with the tested design, must be durably and visibly marked as follows:



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

All letters, numerals and symbols shall be at least 6 mm high.

8 Conditions for the Use of the Packagings

- 8.1 Packagings, mass-produced in accordance with the licensed packaging design 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 gross mass of the inner packagings, inserted in the absorbent material must not exceed 8.00 kg.
The gross mass of the packages must not exceed 15 kg.
- 8.4 The thickness of cushioning material between inner packagings and between inner packagings and the outside of the packaging should not be reduced below the corresponding thicknesses in the originally tested packaging. When either fewer or smaller inner packagings are used (as compared to the inner packagings used in the drop test), sufficient additional cushioning material should be used to take up void spaces.

- 8.5 Inner packagings containing liquids should be completely surrounded with a sufficient quantity of absorbent material to absorb the entire liquid contents of the inner packagings.
- 8.6 In addition to the UN-Marking specified in point 7 the packagings have to bear other prescribed markings, symbols and dangerous goods labels.
- 8.7 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.
- 8.8 The applicant named in point 2 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.
- 8.9 Direction is made to the necessary observation of the manufacturing of packagings of this packaging design according to the "BAM - Regeln zu den Vorschriften über die Beförderung gefährlicher Güter", "BAM-GGR 001 - Überwachung und Qualitätssicherung der Herstellung von Gefahrgutverpackungen und Großpackmitteln (IBC)".

9 Others

The packaging design is 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 (IATA-DGR/ICAO-TI). 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 design as prescribed in point 4 is licensed under the condition that the requirements of point 5 - 8 are fulfilled.

ÖSTERREICHISCHES INSTITUT FÜR VERPACKUNGSWESEN



Dir. Univ. Lektor Th. Rieder
Institutsleiter



This licence No. 6038 consists of 7 pages.

ÖIV-Licence No.: 6038



TEST REPORT

No. 6038/7/05

Duorpack

Wellpappe Ansbach GmbH

Robert-Bosch-Straße 3

D 91522 Ansbach

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

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If the client refers to this test report, he has to add „Österreichisches Institut für Verpackungswesen an der Wirtschaftsuniversität Wien (ÖIV)“ and the following article:



AKKREDITIERT FÜR DIE FACHGEBIETE SCHUTZ VOR GEFÄHRLICHEN GÜTERN, VERPACKUNG UND TRANSPORT IM ALLGEMEINEN,
VERPACKUNGSMATERIALIEN ZUBEHÖR, VOLLSTÄNDIGE VERPACKUNGS- UND TRANSPORTEINHEITEN, PAPIERE, PAPPEN
DURCH DAS BUNDESMINISTERIUM FÜR WIRTSCHAFTLICHE ANGELEGENHEITEN LT. BESCHEID ZL. 92714/501-IX/2/95 VOM 29. DEZEMBER 1995
IN DER FASSUNG DES 1. ÄNDERUNGSBESCHEIDES ZL. 92714/181-I/12/02 VOM 26. MÄRZ 2002.

1 Submitted Samples

1.1 Applicant

Duropack
Wellpappe Ansbach GmbH

Robert-Bosch-Straße 3
D 91522 Ansbach

1.2 Packaging Manufacturer

Identical to applicant

1.3 Description of the Packaging Design

Folding boxes made of corrugated fibreboard (sort "Anscor 34940", composition according to the manufacturer 150 KLB/140 W/125 TLB/140 W/190 TLB, flute BC) with outer top and bottom flaps meeting (FEFCO 0201);

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Outside dimensions: 395 x 395 x 410 mm (L x W x H);

in the box a bag made of polyethylene, filled with absorbent material („Vermiculite No. 3") and tied up with a cord;

Inner Packagings: two 2500-ml-glass bottles (outside diameter: 139 mm; height <incl. closure>: 293 mm; gross mass of one filled inner packaging: 8.0 kg) with plastic screw closure;

Gross mass of the filled and sealed package: 23.0 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.

2 Requested Investigations

In accordance with the provisions 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-Code), 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, thirteenth revised edition, 2003).

The submitted samples should be tested for the packaging specification **4GV** („Fibreboard Boxes“) for the Packaging Groups I, II and III, and in case of positive results an UN-Marking (packaging licence No.) should be established.

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

3 Investigations Carried out - Results of Investigations

Receipt of test samples: 2005-07-18

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 (Determination of water absorptiveness - Cobb-Test)

The test was carried out in accordance with ISO-Standard 535:1991 (see also ÖNORM EN 20535), 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 table) a water absorptiveness of **95,0 g/m²** was determined.

Date of test: 2005-07-20

3.2 Tests on Filled Packages

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

3.2.1 Drop Tests

The drop of the packages was done with a drop tester, supplied by Lansmont Corporation, Model PDT-56E, 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 test: 2005-07-27

3.2.2 Stacking Tests

The tests were carried out with an electronic box compression tester, type BX1-FR050TH. A1K-002, supplied by Messrs. Zwick, and with a mechanical compression tester. The empty test samples were subjected to a force applied to the top surface of the test samples equivalent to the total weight (test samples for drop test) of identical filled packages, which might be stacked on it, up to a height of 3 metres (including test sample). Duration of the test: 24 hours.

According to the above mentioned conditions a constant pressure load of **1430 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 effect the strength of the cases or could cause an instability of the stack were detected.

Date of test: 2005-07-19 to 2005-07-21

ÖSTERREICHISCHES INSTITUT FÜR VERPACKUNGSWESEN



Dir. Univ. Lektor Th. Rieder
Institutsleiter



Wien, 2005-07-28

This Test Report No. 6038/7/05 consists of 5 pages and 1 table.

ÖIV-Test Report No.: 6038/7/05

ÖSTERREICHISCHES INSTITUT FÜR VERPACKUNGSWESEN
Staatlich akkreditierte Prüfstelle

Client: Wellpappe Ansbach Test Report No.: 6038/7/05
Material: corr. fibreboard Page: 6 of 6

Special Provisions:

DETERMINATION OF WATER ABSORPTIVENESS
COBB METHOD
ISO 535:1991

Sample:	"Anscor 34940" - outer cover		Test time:	30 min
	dry mass	wet mass	Difference	water absorptive-
Test piece	(g)	(g)	(g)	ness (g/m²)
1	15,8681	16,7998	0,9317	93,17
2	15,7473	16,6996	0,9523	95,23
3	15,7389	16,7071	0,9682	96,82
4	15,8811	16,8611	0,9800	98,00
5	15,9331	16,8612	0,9281	92,81
Minimum				92,81
Maximum				98,00
Standard deviation (SD)				2,25
Coeff. of variation (in %)				2,37
Mean				95,0
Expanded uncertainty (k = 2)				7,29

Conditioning atmosphere: Temperature 23 °C; relative humidity 50 %; Conditioning according to ISO 187
Duration of climatisation: > 24 hours; without predrying;

Deviation from the Standard:

Remarks: Test area: 100 cm² Temperature of water: 23 °C
Quantity of water: 100 ml

The determination of water absorptiveness was done with a balance of Firma Sartorius, type BP211D-OCE, Serial No. 90708350.

water absorptiveness A (Cobb value): The calculated mass of water absorbed in a specified time by 1 m² of paper or board under specified conditions.
Test pieces are not allowed to be penetrated through by the water.

The test results of the determination of water absorptiveness are expressed in g/m². 5 test pieces of the submitted material were tested.
The measured individual test values and the statistical analysis are summarised in this table.

Wien, 2005-07-20



Dir. Univ. Lektor Th. Rieder
Institutsleiter