

Deutsche Akkreditierungsstelle GmbH

Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV

Signatory to the Multilateral Agreements of EA, ILAC and IAF for Mutual Recognition

Accreditation



The Deutsche Akkreditierungsstelle GmbH attests that the testing laboratory

BFSV Verpackungsinstitut Hamburg GmbH
Ulmenliet 20, 21033 Hamburg

is competent under the terms of DIN EN ISO/IEC 17025:2018 to carry out tests in the following fields:

Physical and mechanical tests of packaging materials, packaging media and packaging articles from paper, cardboard, pulp, plastics, wood, metal and glass as well as ready for dispatch unit loads;

Climatic, salt spray, shock, vibration and vacuum tests as well as combination of environmental simulation tests of technical products


The accreditation certificate shall only apply in connection with the notice of accreditation of 04.10.2021 with the accreditation number D-PL-19253-01. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 7 pages.

Registration number of the certificate: **D-PL-19253-01-00**

Berlin,
04.10.2021

Ralf Egner
Head of Division

Translation issued:
05.07.2022


Head of Division

The certificate together with the annex reflects the status as indicated by the date of issue.

The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at <https://www.dakks.de/en/accredited-bodies-search.html>.

This document is a translation. The definitive version is the original German accreditation certificate.

See notes overleaf.

Deutsche Akkreditierungsstelle GmbH

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Spittelmarkt 10
10117 Berlin

Standort Frankfurt am Main
Europa-Allee 52
60327 Frankfurt am Main

Standort Braunschweig
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38116 Braunschweig

The publication of extracts of the accreditation certificate is subject to the prior written approval by Deutsche Akkreditierungsstelle GmbH (DAkkS). Exempted is the unchanged form of separate disseminations of the cover sheet by the conformity assessment body mentioned overleaf.

No impression shall be made that the accreditation also extends to fields beyond the scope of accreditation attested by DAkkS.

The accreditation was granted pursuant to the Act on the Accreditation Body (AkkStelleG) and the Regulation (EC) No 765/2008 of the European Parliament and of the Council setting out the requirements for accreditation and market surveillance relating to the marketing of products. DAkkS is a signatory to the Multilateral Agreements for Mutual Recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Co-operation (ILAC). The signatories to these agreements recognise each other's accreditations.

The up-to-date state of membership can be retrieved from the following websites:

EA: www.european-accreditation.org

ILAC: www.ilac.org

IAF: www.iaf.nu

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-19253-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 04.10.2021

Date of issue: 05.07.2022

Holder of certificate:

BFSV Verpackungsinstitut Hamburg GmbH
Ulmenliet 20, 21033 Hamburg

Tests in the fields:

Physical and mechanical tests of packaging materials, packaging media and packaging articles from paper, cardboard, pulp, plastics, wood, metal and glass as well as ready for dispatch unit loads; Climatic, salt spray, shock, vibration and vacuum tests as well as combination of environmental simulation tests of technical products

Within the scope of accreditation marked with *, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use standards or equivalent testing methods listed here with different issue dates.

The testing laboratory maintains a current list of all testing procedures within the flexible scope of accreditation.

1 Physical and mechanical tests of packaging materials, packaging media and packaging articles from paper, cardboard, pulp, plastics and wood (flexible scope category I) *

DIN ISO 3039
2011-06

Corrugated fibreboard - Determination of grammage of the component papers after separation

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories. Laboratories that conform to the requirements of this standard, operate generally in accordance with the principles of DIN EN ISO 9001.

The certificate together with the annex reflects the status as indicated by the date of issue.

The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at <https://www.dakks.de/en/content/accredited-bodies-dakks>.

Abbreviations used: see last page

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This document is a translation. The definitive version is the original German annex to the accreditation certificate.

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|------------------------------|--|
| DIN ISO 3689 1994-07 | Paper and board; determination of bursting strength after immersion in water |
| DIN EN ISO 186 2002-08 | Paper and board - Sampling to determine average quality |
| DIN EN ISO 527-1 2019-12 | Plastics - Determination of tensile properties - Part 1: General principles |
| DIN EN ISO 527-3 2019-02 | Plastics - Determination of tensile properties - Part 3: Test conditions for films and sheets |
| DIN EN ISO 1924-2 2009-05 | Paper and board - Determination of tensile properties - Part 2: Constant rate of elongation method (20 mm/min) |
| DIN EN ISO 2233 2001-11 | Packaging - Complete, filled transport packages and unit loads - Conditioning for testing |
| DIN EN ISO 2759 2014-10 | Board - Determination of bursting strength |
| DIN EN ISO 3037 2013-12 | Corrugated fibreboard - Determination of edgewise crush resistance (unwaxed edge method) |
| DIN EN ISO 12048 2001-04 | Packaging - Complete, filled transport packages - Compression and stacking tests using a compression tester |
| DIN EN 868-5 2019-03 | Packaging for terminally sterilized medical devices - Part 5: Sealable pouches and reels of porous materials and plastic film construction - Requirements and test methods |
| DIN EN 20187 1993-11 | Paper, board and pulps; standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples |
| DIN EN ISO 535 2014-06 | Paper and board - Determination of water absorptiveness - Cobb method |
| DIN EN 22248 1993-02 | Packaging; complete, filled transport packages; vertical impact test by dropping (free Fall) |
| DIN EN ISO 3035 2012-02 | Corrugated fibreboard - Determination of flat crush resistance |

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| DIN 53121 2014-08 | Testing of paper and board - Determination of the bending stiffness by the beam method |
| DIN 53133 2015-12 | Testing of board - Determination of water resistance of glue bond of corrugated fibreboard |
| DIN 53142-1 2014-12 | Testing of board - Puncture test - Part 1: Puncture test with a pendulum punching device |
| DIN 55440-1 1991-11 | Packaging test - Determination of compression resistance - Part 1: Test with constant conveyance speed |
| DIN 55468-1 2015-06 | Packaging materials - Corrugated board - Part 1: Requirements, testing |
| DIN 55530 2011-05 | Films for packaging - Barrier materials made of low density polyethylene (PE-LD) films and recyclates |
| DIN 55531 2011-05 | Films for packaging - Composite aluminium films |
| ASTM D 642-00 2020-11 | Standard Test Method for Determining Compressive Resistance of Shipping Containers, Components, and Unit Loads |
| ASTM D 4577-05 2019-05 | Standard Test Method for Compression Resistance of a Container Under Constant Load |
| ASTM F 88/F 88M-15 2015 | Standard Test Method for Seal Strength of Flexible Barrier Materials |
| ASTM F 1886/F 1886M-16 2016 | Standard Test Method for Determining Integrity of Seals for Flexible Packaging by Visual Inspection |
| ASTM F 1929-15 2015 | Standard Test Method for Detecting Seal Leaks in Porous Medical Packaging by Dye Penetration |
| ASTM D 4332-14 2014 | Standard Practice for Conditioning Containers, Packages, or Packaging Components for Testing |
| RAL-GZ 492 2015 | Corrugated fibreboard - quality assurance |

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The above listed test methods in the field “physical and mechanical tests of packaging materials, packaging media and packaging articles from paper, pulp, cardboard, plastics and wood” are defined within the flexible scope of accreditation in terms of test parameters, type of test and test range as indicated in the following table:

| Measurand / test parameters | type of test | test range | characteristic test methods |
|--|--------------------------|--------------------------|--|
| Pressure test, Compression test, stacking test | force | max. 200 kN | DIN 55440-1 DIN EN ISO 12048 ASTM D642 |
| | Compression displacement | 0,01 to 1.900 mm | |
| Tensile test, tensile properties of plastics, properties of paper and pulp with respect to tensile load, fracture force of paper | force | max. 500 N max. 20 kN | DIN EN ISO 527-3 DIN EN ISO 1924-2 |
| | Strain | 0,001 to 1.200 mm | |
| Opening and closing of closures of packagings | torque | 2,6 to 10,0 Nm | ASTM D 3198-97 |

1.1 Physical and mechanical tests of packaging materials, packaging media and packaging articles from paper, cardboard, pulp, plastics and wood (without flexible scope)

TL 8135-0003 Technical suppliers' specifications - packaging materials – composite
 2018-11 sheets

TL 8135-0019 Technical suppliers' specifications – packaging materials, Polyethylene
 2019-08 sheets of low density (LDPE)

2 Climatic, salt spray, shock, vibration and vacuum tests as well as in combination of environmental tests of technical products *
2.1 Shock and vibration tests

DIN EN 60068-2-6 Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)
 2008-10

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|------------------------------|---|
| DIN EN 60068-2-27 2010-02 | Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock |
| DIN EN 60068-2-64 2009-04 | Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance |
| DIN EN ISO 2247 2002-12 | Packaging - Complete, filled transport packages and unit loads - Vibration tests at fixed low frequency |
| DIN EN ISO 13355 2017-03 | Packaging - Complete, filled transport packages and unit loads - Vertical random vibration test |
| ASTM D 4728-17 2017-09 | Standard Test Method for Random Vibration Testing of Shipping Containers |
| ASTM D 999-08 2008-08 | Standard Test Methods for Vibration Testing of Shipping Containers |
| ASTM D 5276-98 1999-02 | Standard Test Method for Drop Test of Loaded Containers by Free Fall |

2.2 Climatic tests

| | |
|------------------------------|---|
| ASTM F 1980-16 2016 | Standard Guide for Accelerated Aging of Sterile Barrier Systems for Medical Devices |
| DIN EN 60068-2-1 2008-01 | Environmental testing - Part 2-1: Tests - Test A: Cold |
| DIN EN 60068-2-2 2008-05 | Environmental testing - Part 2-2: Tests - Test B: Dry heat |
| DIN EN 60068-2-14 2010-04 | Environmental testing - Part 2-14: Tests - Test N: Change of temperature |
| DIN EN 60068-2-30 2006-06 | Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle) |
| DIN EN 60068-2-78 2014-02 | Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state |

2.3 Corrosion tests

| | |
|------------------------------|---|
| DIN EN 60068-2-11 2000-02 | Environmental testing - Part 2: Tests; test Ka: Salt mist |
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DIN EN 60068-2-52
2018-08 Environmental testing - Part 2-52: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution)

2.4 Vacuum tests / low pressure tests

DIN EN 60068-2-13
2000-02 Environmental testing - Part 2: Tests; test M: Low air pressure

ASTM D 6653 / D 6653M-01
2013 Standard Test Methods for Determining the Effects of High Altitude on Packaging Systems by Vacuum Method

ASTM D 3087-02
2002 Standard Test Method for Operating Performance of Anion-Exchange Materials for Strong Acid Removal

2.5 High pressure test

ASTM F1140-13/F1140M-13(2020)e1
2020 Standard Test Methods for Internal Pressurization Failure Resistance of Unrestrained Packages

ASTM F 2054-13
2013 Standard Test Method for Burst Testing of Flexible Package Seals Using Internal Air Pressurization Within Restraining Plates

ASTM F 2096-11
2011 Standard Test Method for Detecting Gross Leaks in Medical Packaging by Internal Pressurization (Bubble Test)

| measurand / test parameter | type of test | test range | characteristic test methods |
|---|--|---|--|
| Vibration test, Shock test Bounce | Force vector | Sinus: max. 67 kN Rauschen: max. 62 kN | DIN EN 60068-2-6 DIN EN 60068-2-27 DIN EN 60068-2-64 DIN EN 60068-2-55 DIN EN ISO 2247 MIL STD 810 ASTM D 4728 ASTM D 999 |
| | Vibration displacement amplitude | max. 50,8 mm | |
| | Vibration velocity | max. 2,0 m/s | |
| | Acceleration | max. 1.470 m/s ² | |

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| measurand / test parameter | type of test | test range | characteristic test methods |
|----------------------------------|---|------------------|---|
| | Frequency range | 1 Hz to 2.000 Hz | |
| Drop test | Height of fall | 10 to 2.000 mm | DIN EN 22248 DIN EN 60068-2-32 ASTM D5276 |
| Climatic and temperature test | Temperature | +5 °C to +90 °C | DIN EN 60068-2-30 DIN EN 60068-2-78 |
| | Relative humidity | 30 % to 98 % | |
| Salt spray test | Temperature | 20 to 65 °C | DIN EN 60068-2-11 DIN EN 60068-2-52 |
| | Brine concentration | 5 % NaCl | |
| Temperature test | Temperature | -70 °C to +90 °C | DIN EN 60068-2-1 DIN EN 60068-2-2 |
| Vacuum / Low pressure test | Low pressure (absolute pressure) | max. 200 hPa | DIN EN 60068-2-13 ASTM D6653 ASTM D3078 |
| High pressure test | High pressure (Pressure difference) | max. 2.000 hPa | ASTM F1140 ASTM F2054 ASTM F2096 |

Abbreviations used:

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|---------|---|
| ASTM | American Society for Testing and Materials |
| DIN | German Institute for Standardisation |
| EN | European standard |
| IEC | International Electrotechnical Commission |
| ISO | International Organisation for Standardisation |
| MIL-STD | Military Standard, USA |
| RAL | German Institute for Quality Assurance and Labelling |
| TL | Technical suppliers' specifications of the Federal Agency for Defence Engineering and Procurement |