

Scope of services for the DAkkS partial accreditation certificate D-PL-11130-01-02

The following list shows the scope of services verified within the flexible scope of accreditation in accordance with the annex to the DAkkS partial accreditation certificate https://paconsult.de/fileadmin/PAConsult_GmbH/Zertifizierungen/Teilurkunde-und-Anlage-D-PL-11130-01-02.pdf at our German test facilities in the test categories:

Physical-technological tests, physical and physical-mechanical tests, climate, shock, impact and vibration, IP protection type, solar radiation and corrosion tests and combinations thereof; environmental simulation tests on packages, parts, housings, components and devices.

Within the specified test categories, we are permitted to select standardized or equivalent test methods without the need for prior information and approval by DAkkS.

This applies to packaging tests as well as type tests on parts, housings, components and devices with flexibilization of the accreditation scope according to type B (formerly category I) and type A (formerly category III).

If the test methods for your test samples are not listed, please contact our sales department at Anfrage@paconsult.de. Based on a feasibility analysis, we clarify whether we can offer the requested test.

Tests offered within the scope of accreditation, according to procedures from the sector of physical and visual testing of medical devices as well as sterile barrier and packaging systems, are not included in the list, but can be found in the annex to the DAkkS partial accreditation certificate [Teilurkunde-und-Anlage-D-PL-11130-01-01.pdf](#)

Abbreviations used can be found on the last page.

Packaging Test Procedures:

Standard	Title
DIN 55440-1 2019-10	Packaging test - Determination of compression resistance - Part 1: Test with constant conveyance speed
DIN EN 22248 1993-02	Packaging; complete, filled transport packages; vertical impact test by dropping
DIN EN 22876 1993-02	Packaging; complete, filled transport packages; rolling test
DIN EN ISO 2247 2002-12	Packaging - Complete, filled transport packages and unit loads - Vi- bration tests at fixed low frequency
DIN EN ISO 4180 2020-03	Packaging - Complete, filled transport packages - General rules for the compilation of performance test schedules
DIN EN ISO 13355 2017-03	Packaging - Packages and loading units ready for dispatch - Vibration test with vertical noise excitation
DIN EN 28768 1993-02	Packaging; complete, filled transport packages - toppling test
ASTM D 4169-(23e1) 2023	Standard Practice for Performance Testing of shipping containers and systems
ASTM D 5265-09 2023	Standard Test Method for Bridge Impact Testing1
ASTM D 7386 2016	Standard Practice for Performance Testing of Packages for Single Par- cel Delivery Systems
ASTM D 6055 1996 (Reapproved 2019)	Standard Test Methods for Mechanical Handling of Unitized Loads and Large Shipping Cases and Crates
ASTM D 6179 2007 (Reapproved 2014)	Standard Test Methods for Rough Handling of Unitized Loads and Large Shipping Cases and Crates
ASTM D 6344 2004 (Reapproved 2017)	Standard Test Methods for Concentrated Impacts to Transport Packages
ASTM D 6653 / 6653 M 2013	Standard Test Methods for Determining the Effects of High Altitude on Packaging Systems by Vacuum Method

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Packaging Test Procedures, cont.:

Standard	Title
ASTM D 880 1992 (Reapproved 2015)	Standard Test Method for Impact Testing for Shipping Containers and Systems
ASTM D 4332 2022	Standard Practice for Conditioning Containers, Packages, or Packaging Components for Testing
ASTM D 5276 2019	Standard Test Method for Drop Test of Loaded Containers by Free Fall
ASTM D 642 2015	Standard Test Method for Determining Compressive Resistance of Shipping Containers, Components, and Unit Loads
ASTM D 4728 2017	Standard Test Method for Random Vibration Testing of Shipping Containers
ASTM D 999 2008 (Reapproved 2015)	Standard Test Methods for Vibration Testing of Shipping Containers
ASTM F 1980 2016	Standard Guide for Accelerated Aging of Sterile Barrier Systems for Medical Devices
ASTM F 2096 2011 (Reapproved 2019)	Standard Test Method for Detecting Gross Leaks in Packaging by Internal Pressurization (Bubble Test)
ASTM F 2825 2018	Standard Practice for Climatic Stressing of Packaging Systems for Single parcel Delivery
DIN EN ISO 12048 2001-04	Packaging - Complete, filled transport packages - Compression and stacking tests using a compression tester
DIN EN ISO 2233 2001-11	Packaging - Complete, filled transport packages and unit loads - Conditioning for testing
DIN EN ISO 2244 2002-12	Packaging - Complete, filled transport packages and unit loads - Horizontal impact tests

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Packaging Test Procedures, cont.:

Standard	Title
ISTA 1A 2014	Packaged-Products 150 lb (68 kg) or Less
ISTA 1C 2014	Extended Testing for Packaged-Products 150 lb (68 kg) or Less
ISTA 1E 2014	Unitized Loads of Same Product
ISTA 1G 2014	Packaged-Products 150 lb (68 kg) or Less (Random Vibration)
ISTA 2B 2011	Packaged-Products over 150 lb (68 kg)
ISTA 3B 2017	Packaged-Products for Less Than Truckload (LTL) Shipment
ISTA 3E 2017	Similar Packaged-Products in Unitized Loads for Truckload Shipment
ISTA-6-Amazon 2018	e-Commerce Fulfillment for Parcel Delivery Shipment, Over Boxing
ISTA-6-FedEx 2016	FedEx Procedures for Testing Packaged Products Weighing Up to 150 lbs
ISTA-6-Sam's Club 2010	Packaged-Products for Sam's Club® Distribution System Shipment
ISTA-6-SIOC 2018	Ships in Own Container (SIOC) for Amazon.com Distribution System Shipment

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Test Procedures for type testing of parts, housings, components and devices:

Standard	Title
DIN EN 1789 2014-12	Medical vehicles and their equipment - Road ambulances (Section 6.4.1 and 6.4.2)
DIN EN 50155 2008-03	Railway applications - Electronic equipment used on rolling stock Section 10.2.1 Visual test Section 10.2.3 Cold test Section 10.2.4 Test with dry heat Section 10.2.5 Test with humid heat, circular Section 10.2.9 Insulation test Section 10.2.11 Vibration-, Shock- and Impact test Section 10.2.14 Test of the storage at low temperature
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 60068-2-6 2008-10	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)
DIN EN 60068-2-11 2022-10	Environmental testing - Part 2: Tests; test Ka: Salt mist
DIN EN 60068-2-14 2010-02	Environmental testing - Part 2-14: Tests - Test N: Change of temperature
DIN EN 60068-2-27 2010-02	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock
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 60068-2-32 1995-03	Basic environmental testing procedures - Part 2: Tests; test Ed: Free fall
DIN EN 60068-2-38 2010-06	Environmental testing - Part 2-38: Tests - Test Z/AD: Composite temperature/humidity cyclic test

Test methods in the field of type testing of parts, housings, components and devices, cont.:

DIN EN 60068-2-52 2018-08	Environmental testing - Part 2-52: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution)
DIN EN 60068-2-64 2009-04	Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance
DIN EN 60068-2-78 2014-02	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state
DIN EN IEC 60079-0 2019-09	Explosionsgefährdete Bereiche - Teil 0: Betriebsmittel - Allgemeine Anforderungen
DIN EN 61373 2011-04 + Corrigendum 1 2018-01	Railway applications - Rolling stock equipment - Shock and vibration tests
DIN ISO 9022-2 2015-06	Optik und Photonik – Umweltprüfverfahren – Teil 2: Kälte, Wärme und Feuchte
DIN ISO 9022-3 2022-12	Optics and photonics - Environmental test methods - Part 3: Mechanical stress
DIN EN ISO 9227 2015-09	Korrosionsprüfungen in künstlichen Atmosphären - Salzsprühnebelprüfungen
DNVGL-CG-0339 2019-12	Environmental test specification for electrical, electronic and programmable equipment and systems
MIL-STD 810 H 2019-01	Environmental engineering consideration and laboratory tests Section 500.6: Low Pressure Section 501.7: High temperature Section 502.7: Low temperature Section 505.7: Solar Radiation Section 507.6: Humidity Section 514.7: Sand and Dust Section 514.8: Vibration Section 516.8: Shock

Test methods in the field of type testing of parts, housings, components and devices, cont.:

RTCA / DO 160 G 2010-12	Section 4.0: Temperature and Altitude Section 4.5: Temperature Tests Section 5.0: Temperature Variation Section 6.0: Humidity Section 7.0: Operational Shocks and Crash Safety Section 8.0: Vibration Section 10.0: Waterproofness Section 11.0: Fluids Susceptibility Section 12.0: Sand and Dust Section 14.0: Salt Spray
SO 2669 1995-04	Aerospace - Environmental testing of aerospace equipment - Uniform accelerations
DIN EN 60695-2-2 1996-07	Fire hazard testing - Part 2: Test methods - Section 2: Needle-flame test
DIN EN 60695-11-5 2005-11	Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance

IP-protection

Standard	Title
DIN EN 60529 2014-09	Degrees of protection provided by enclosures (IP Code)

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Abbreviations used:

ASTM	American Society for Testing and Materials
DIN	German Institute for Standardization
DNVGL	Det Norske Veritas Germanischer Lloyd
EN	European Standard
GL	Germanischer Lloyd SE
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
ISTA	International Safe Transit Association
MIL-STD	Department of defence test method standard for environmental engineering consideration and laboratory tests
RTCA	Environmental condition and test procedures for airborne equipment