

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

Prüf- und Forschungsinstitut Pirmasens e.V.
Marie-Curie-Straße 19, 66953 Pirmasens

is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out tests in the following fields:

**Physical, physical-chemical, chemical and structural-mechanical testing of commodities, textiles and toys, shoes and raw materials from leather and plastics;
microbiological testing of commodities, leather, textiles, plastics and other materials for antimicrobial properties and specified methods for microbiological testing of commodities and fitments, leather and textiles; mechanical testing of glasses;
physical, physical-chemical and chemical analysis of water, wastewater, sludge, biomass, fermentation products, digestate, biowaste, waste and soil;
testing of personal protective equipment**

The accreditation certificate shall only apply in connection with the notice of accreditation of 17.11.2017 with the accreditation number D-PL-14150-01 and is valid until 16.11.2022. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 24 pages.

Registration number of the certificate: **D-PL-14150-01-00**

Frankfurt am Main,
17.11.2017

Dipl.-Ing. (FH) Ralf Egner
Head of Division

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Head of Division

Deutsche Akkreditierungsstelle GmbH

Office Berlin
Spittelmarkt 10
10117 Berlin

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

Office Braunschweig
Bundesallee 100
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) of 31 July 2009 (Federal Law Gazette I p. 2625) and the Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products (Official Journal of the European Union L 218 of 9 July 2008, p. 30). 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 Cooperation (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-14150-01-00 according to DIN EN ISO/IEC 17025:2005

Period of validity: 17.11.2017 to 16.11.2022

Date of issue: 05.03.2018

Holder of certificate:

Prüf- und Forschungsinstitut Pirmasens e.V.
Marie-Curie-Straße 19, 66953 Pirmasens

Tests in the fields:

**Physical, physical-chemical, chemical and structural-mechanical testing of commodities, textiles and toys, shoes and raw materials from leather and plastics;
microbiological testing of commodities, leather, textiles, plastics and other materials for antimicrobial properties and specified methods for microbiological testing of commodities and fitments, leather and textiles; mechanical testing of glasses;
physical, physical-chemical and chemical analysis of water, wastewater, sludge, biomass, fermentation products, digestate, biowaste, waste and soil;
testing of personal protective equipment**

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 standards /equivalent testing procedures within the flexible scope of accreditation.

Abbreviations used: see last page

1 Chemical testing of commodities, textiles and toys, shoes and raw materials from leather and plastics

DIN EN ISO 4047 1998-12	Leather - Determination of sulphated total ash and sulphated water-insoluble ash
DIN 53304 1977-12	Testing of leather; determination of water content (<i>withdrawn standard</i>)
DIN 53307 1978-01	Testing of leather; determination of the contents of organic and inorganic materials extractable by washing out (loss of weight by washing out) (<i>withdrawn standard</i>)
DIN EN ISO 4048 2008-05	Leather - Chemical tests - Determination of matter soluble in dichloromethane and free fatty acid content (<i>modification: without determination of free fatty acid content</i>)
DIN EN ISO 4098 2006-04	Leather - Chemical tests - Determination of water-soluble matter, water soluble inorganic matter and water-soluble organic matter
DIN EN ISO 4684 2006-02	Leather - Chemical tests - Determination of volatile matter
DIN EN ISO 5398-1 2007-10	Leather - Chemical determination of chromic oxide content - Part 1: Quantification by titration
DIN EN ISO 18219 2016-02	Leather - Determination of chlorinated hydrocarbons in leather. Chromatographic method for short-chain chlorinated paraffins (SCCP)
DIN EN ISO 18254-1 2016-09	Textiles - Method for the detection and determination of alkylphenol ethoxylates (APEO) - Part 1: HPLC-MS
DIN CEN ISO/TS 16189 2013-12	Footwear Critical substances potentially present in footwear and footwear components - Test method to quantitatively determine dimethylformamid in footwear materials
DIN EN 1811 2015-10	Reference test method for release of nickel from all post assemblies which are inserted into pierced parts of the human body and articles intended to come into direct and prolonged contact with the skin

PFI 30/1045 2016-12	Determination of Formamid with GC-MS
DIN EN ISO 13365 2011-04	Leather – Chemical test- - Determination of the preservative (TCMTB, CMK, OPP, OIT) content in leather by liquid chromatography
DIN EN ISO 18218-1 2015-11	Leather - Determination of ethoxylated alkylphenols - Part 1: Direct method
DIN EN ISO 17070 2015-05	Leather - Chemical tests: Determination of tetrachlorophenol-, trichlorophenol-, dichlorophenol-, monochlorophenol-isomers and pentachlorophenol content
DIN EN 16711-1 2016-02	Textiles - Determination of metal content Part 1: Determination of metals using microwave digestion
DIN EN 16711-2 2016-02	Textiles - Determination of metal content Part 2: Determination of metals extracted by acidic artificial perspiration solution
DIN CEN ISO / TS 15968 2010-11	Determination of extractable perfluorooctanesulfonate (PFOS) in coated and impregnated solid articles, liquids and fire fighting foams - Method for sampling, extraction and analysis by LCMS/ MS or LC-MS
DIN EN ISO 5398-2 2009-06	Leather - Chemical determination of chromic oxide content - Part 2: Quantification by colorimetric determination
DIN EN ISO 11885 2009-09	Water quality - Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES) (Modification for solid samples: <i>Determination in the acid digestion solution</i>)
DIN EN ISO 14184-1 2011-12	Textiles - Determination of formaldehyde – Part 1: Free and hydrolyzed formaldehyde (water extraction method)
EDIN EN ISO 17072-1 2017-09	Leather - Chemical determination of metal content – Part 1: Extractable metals
EDIN EN ISO 17072-2 2017-09	Leather - Chemical determination of metal content – Part 2: Total metal content

DIN EN ISO 17075 2008-02	Leather - Chemical tests - Determination of chromium(VI) content
EDIN EN ISO 17075-1 2017-05	Leather - Chemical determination of chromium(VI) content in leather - Part 1: Colorimetric method (ISO/DIS 17075-1:2015)
EDIN EN ISO 17075-2 2017-05	Leather - Chemical determination of chromium(VI) content in leather - Part 2: Chromatographic method (ISO/DIS 17075-2:2015)
DIN EN ISO 17226-1 2008-08	Leather - Chemical determination of formaldehyde content – Part 1: Method using high performance liquid chromatography
DIN EN ISO 17234-1 2015-07	Leather - Chemical tests for the determination of certain azo colorants in dyed leathers – Part 1: Determination of certain aromatic amines derived from azo colorants
DIN EN ISO 17234-2 2011-06	Leather - Chemical tests for the determination of certain azo colorants in dyed leathers – Part 2: Determination of 4-aminoazobenzene
DIN EN 1122 2002-02	Plastics - Determination of cadmium - Wet decomposition method.
DIN EN 12472 2009-09	Method for the simulation of wear and corrosion for the detection of nickel release from coated items
EDIN EN ISO 14362-1 2017-05	Textiles - Methods for determination of certain aromatic amines derived from azo colorants - Part 1: Detection of the use of certain azo colorants accessible with and without extracting the fibres
EDIN EN ISO 14362-3 2017-05	Textiles - Methods for the determination of certain aromatic amines derived from azo colorants - Part 3: Detection of the use of certain azo colorants which may release 4-aminoazobenzene
DIN CEN ISO/TS 16179 2012-12	Footwear - Critical substances potentially present in footwear and footwear components - Determination of organotin compounds in footwear materials
DIN CEN ISO/TS 16181 2013-12	Footwear - Critical substances potentially present in footwear and footwear components - Determination of phthalates in footwear materials

DIN 54231 2005-11	Textiles - Detection of disperse dyestuffs
DIN 54232 2010-08	Textiles - Determination of the content of substances based on Chlorobenzene and Chlorotoluene
DIN 54233-2 2014-07	Testing of textiles - Determination of metal content - Part 2: Determination of extractable metals after extraction with hydrochloric acid
DIN 54233-4 2014-07	Testing of textiles - Determination of metal content – Part 4: Determination of extractable metals after extraction with synthetic saliva
ASU B 82.02-1 1985-06	Examination of commodities - Determination of free formaldehyde from textile commodities
ASU B 82.02-2 2013-01	Examination of commodities - Methods for the determination of certain aromatic amines derived from azo colourants in textiles - Part 1: Detection of the use of certain azo colourants accessible without extraction
ASU B 82.02-3 2014-03	Examination of commodities - Determination of certain azo colourants in dyed leathers
ASU B 82.02-4 2013-01	Examination of commodities - Methods for determination of certain aromatic amines derived from azo colourants in textiles - Part 2: Detection of the use of certain azo colourants accessible by extracting the fibres
ASU B 82.02-8 2001-06	Examination of commodities - Verification and determination of pentachlorophenol in commodities, particularly from leather and textiles (reference method) <i>(additional: Determination of tetrachlorophenol-, Trichlorophenol-, Dichlorophenol and Monochlorophenol-isomeres)</i>
ASU B 82.02-9 2014-02	Examination of commodities - Verification of the application of azo colourants, which release 4-aminoazobenzole
ASU B 82.02-10 2007-03	Examination of commodities - Detection of disperse dyestuffs

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ASU B 82.02-11 2008-10	Examination of commodities – Determination of chromium VI in commodities made from leather
ASTM E 1613-04 2012	Determination of lead by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES), Flame Atomic Absorption Spectrometry (FAAS), or Graphite Furnace Atomic Absorption Spectrometry (GFAAS) Techniques
ASTM E 1645-01 2001	Preparation of dried paint samples by hotplate or microwave digestion for subsequent lead analysis
US 16 CFR Part 13	16 Commercial Practices Chapter II - Consumer Product Safety Commission - Part 1303 CPSC-CH-E1003-09.1 (2011-02-25), Standard Operating Procedure for Determining Lead (Pb) in Paint and other Surface Coatings
CR 12471 clause 5.3.4 2002-06	Screening test for nickel release from alloys and coatings in items that come into direct and prolonged contact with the skin
AfPS GS 2014:01 PAK 2014-08	Testing and Validation of Polycyclic Aromatic Hydrocarbons (PAH) in the course of GS-Mark Certification
PFI 30/1001 2016-12	Determination of selected organochlorine pesticides in textiles and leather using GC-ECD and GC-MS
PFI 30/1002 2016-12	Examination of leather on soluble mineral tanning agents with ICP-OES
PFI 30/1003 2016-12	Determination of volatile organic compounds (VOC) in leather, textiles and plastics using HS-GC-MS
PFI 30/1005 2016-12	Determination of the content of 18 selected PAH (polycyclic aromatic hydrocarbons) in leather, textiles and plastics using HPLC-DAD/FLD and GC-MS
PFI 30/1026 2016-12	Determination of short-chain chlorinated paraffines (C ₁₀ -C ₁₃) in leather using GC-ECD and GC-MS
PFI 30/1027 2016-12	Determination of 4-Nonylphenol in leather, textiles and plastics using GC-MS

2 Microbiological testing of commodities, leather, textiles, plastics, other materials and other chemical products

2.1 Microbiological testing for antimicrobial properties

ISO 22196 2011-08	Plastics - Measurement of antibacterial activity on plastics and other non-porous surfaces. (by film contact method, challenge test procedure)
DIN EN ISO 16187 2013-12	Footwear and footwear components – Test method to assess antibacterial activity
E DIN EN ISO 20150 2017-02	Footwear and Footwear components – Quantitative Challenge test method to assess antifungal activity
DIN EN ISO 20645 2005-02	Textile fabrics – Determination of antibacterial activity – Agar diffusion plate test (Modification: <i>Testing for antimycotic activity - agar diffusion plate test - Test organisms: micro-fungi Aspergillus brasiliensis (Aspergillus niger), Trichophyton mentagrophytes, Candida albicans - Adaptation of culture conditions for micro-fungi</i>)
DIN EN 1040 2006-03	Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of basic bactericidal activity of chemical disinfectants and antiseptics – Test method and requirements
DIN EN 1275 2006-03	Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of basic fungicidal and basic yeasticidal activity of chemical disinfectants and antiseptics – Test method and requirements
AATCC 100 2012	Antibacterial Finishes on Textile Materials, Assessment of (Modification: <i>Determination by agar diffusion plate test according to DIN EN ISO 20645; additional points of time 4 and 24 h</i>)
ASTM E 2149 2013	Standard Test Method for Determining the Antimicrobial Activity of Immobilized Antimicrobial Agents (challenge test procedure) (Modification: <i>Extension for Staphylococcus aureus ATCC 6538 and Extension for Micro-fungi Aspergillus brasiliensis (Aspergillus niger) ATCC 16404, Candida albicans ATCC 10231, Trichophyton mentagrophytes ATCC 9533; additional points of time (4, 24 h); round test specimens, diameter 25 mm</i>)

ASTM E 2180 2007, reapproved 2017	Standard Test Method for Determining the Activity of Incorporated Antimicrobial Agent(s) in Polymeric or Hydrophobic Materials (challenge test procedure)
JIS L 1902 2015-07	Testing of antibacterial activity and efficacy on textile products (Modification: <i>Test organisms: Klebsiella pneumoniae</i> ATCC 4352 and <i>Staphylococcus aureus</i> ATCC 6538 (additional test organisms if required) - additional / optional points of time (0 h/4 h); Determination by agar diffusion plate test according to DIN EN ISO 20645)
PFI 10/2000 2016-12	Testing of antimicrobial activity of active substances by agar diffusion plate test based on DIN EN ISO 20645 and DIN 58940-3

2.2 Microbiological testing on mould

PFI 10/1000 2016-12	Examination of leather and leather intermediate products (wet blue, wet white etc.) on mould resistance in the growth test according to tegewa-method (2010/2012) against <i>Aspergillus niger</i> , <i>Penicillium pinophilum</i> (formerly <i>Pen. funiculosum</i>), <i>Trichoderma viride</i> and <i>Homoconis resinae</i>
PFI 10/1001 2017-03	Susceptibility to mould – Analysis of storage- and transport stability of commodities and materials – Storage at increased atmospheric humidity and increased temperature
PFI 10/1002 2016-12	Examination of commodities on moulds - Macroscopic and microscopic examination - Determination of surface germs according to German ASU B 80.00-3 (1998-01)

2.3 General microbiological testing of commodities and fitments

DIN ISO 18593 2009-12	Horizontal methods for sampling techniques from surfaces using contact plates and swabs
DIN 10113-1 1997-07	Determination of surface colony counts on fitment and utensils in food areas - part 1: Quantitative swab method
DIN 10113-2 1997-07	Determination of surface colony counts on fitment and utensils in food areas - part 2: Semi quantitative swab wash method

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DIN 10113-3 1997-07	Determination of surface colony counts on fitment and utensils in food areas - part 3: Semi quantitative method with culture media laminated taking up equipment (squeeze method)
ASU B 80.00-1 1998-01	Examination of commodities – Determination of the amount of surface germs on furnishings and consumer goods in the food industry - part 1: Quantitative swab wash method
ASU B 80.00-2 1998-01	Examination of commodities – Determination of the amount of surface germs on furnishings and consumer goods in the food industry - part 2: Semi quantitative swab wash method
ASU B 80.00-3 1998-01	Examination of commodities – Determination of the amount of surface germs on furnishings and consumer goods in the food industry - part 3: Semi quantitative method with media laminated taking up equipment (contact plate method)
ASU B 80.00-5 2011-12	Examination of commodities – methods for sampling techniques for microbiological examination of surfaces with foodstuff contact using contact plates and swabs

3 Physical and mechanical testing of commodities, shoes and raw materials from leather plastics and textiles

DIN ISO 34-1 2016-09	Rubber, vulcanized or thermoplastic - Determination of tear strength - Part 1: Trouser, angle and crescent test pieces
DIN ISO 4649 2014-03	Rubber, vulcanized or thermoplastic - Determination of abrasion resistance using a rotating cylindrical drum device
DIN EN ISO 20105-B02 2014-09	Textiles – Colour fastness tests- Part B02: Colour fastness to artificial light: Xenon arc fading lamp test
DIN EN ISO 20105-C01-05 1993-03	Textiles – Colour fastness tests (replaced by DIN EN ISO 20105-C10)
DIN EN ISO 20105-B06 2004-07	Textiles - Tests for colour fastness - Part B06: Colour fastness and ageing to artificial light at high temperatures: Xenon arc fading lamp test
DIN EN ISO 20105-C06 2010-08	Textiles - Tests for colour fastness - Part C06: Colour fastness to domestic and commercial laundering
DIN EN ISO 20105-C10 2007-06	Textiles - Tests for colour fastness - Part C10: Colour fastness to washing with soap or soap and soda
DIN EN ISO 20105-E01 2013-06	Textiles - Tests for colour fastness - Part E01: Colour fastness to water
DIN EN ISO 20105-E02 2013-06	Textiles - Tests for colour fastness - Part E02: Colour fastness to sea water
DIN EN ISO 20105-E04 2013-08	Textiles - Tests for colour fastness - Part E04: Colour fastness to perspiration
DIN EN ISO 20105-X05 1997-05	Textiles - Tests for colour fastness - Part X05: Colour fastness to organic solvents
DIN EN ISO 20105-X12 2002-12	Textiles - Tests for colour fastness - Part X12: Colour fastness to rubbing
DIN EN ISO 845 2009-10	Cellular plastics and rubbers - Determination of apparent (bulk) density

DIN EN ISO 868 2003-10	Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness)
DIN EN ISO 1183-1 2013-04	Plastics - Methods for determining the density of non-cellular plastics - Part 1: Immersion method, liquid pycnometer method and titration method
DIN EN ISO 1183-2 2004-10	Plastics - Methods for determining the density of non-cellular plastics - Part 2: Density gradient column method
DIN EN ISO 2589 2016-07	Leather - Physical and mechanical tests - Determination of thickness
DIN EN ISO 3071 2006-05	Textiles - Determination of pH of aqueous extract
DIN EN ISO 3376 2012-03	Leather - Physical and mechanical tests - Determination of tensile strength and percentage extension
DIN EN ISO 3377-1 2016-07	Leather - Physical and mechanical tests; Determination of tear load - Part 1: Single edge tear
DIN EN ISO 3377-2 2016-07	Leather - Physical and mechanical tests; Determination of tear load - Part 2: Double edge tear
DIN EN ISO 4045 2008-05	Leather - Chemical tests - Determination of pH
DIN EN ISO 5402-1 2012-03	Leather - Physical and mechanical tests - Determination of flex resistance according to Flexometer-method (<i>withdrawn standard</i>)
DIN EN ISO 5403 2012-03	Leather - Physical and mechanical tests - Determination of water resistance of flexible leather (<i>withdrawn standard</i>)
DIN EN ISO 6330 2010-01	Textiles - Domestic washing and drying procedures for textile testing
DIN EN ISO 11640 2013-05	Leather - Tests for colour fastness - Colour fastness to cycles of to-and-fro rubbing
DIN EN ISO 11641 2013-02	Leather - Test for colour fastness - Determination of the fastness of dyeing

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DIN EN ISO 11644 2009-09	Leather - Test for adhesion of finish
DIN EN ISO 15700 1999-10	Leather - Tests for colour fastness - Colour fastness to water spotting
DIN EN ISO 11646 2014-07	Leather - Measurement of area
DIN EN ISO 12947-1 2007-04	Textiles - Determination of the abrasion resistance of fabrics by the Martindale method - Part 1: Martindale abrasion testing apparatus
DIN EN ISO 12947-2 2007-04	Textiles - Determination of abrasion resistance of fabrics by the Martindale method - Part 2: Determination of specimen breakdown
DIN EN ISO 12947-3 2007-04	Textiles - Determination of abrasion resistance of fabrics by the Martindale method - Part 3: Determination of mass loss
DIN EN ISO 12947-4 2007-04	Textiles - Determination of abrasion resistance of fabrics by the Martindale method - Part 4: Assessment of appearance change
DIN EN ISO 13937-2 2000-06	Textiles - Tear properties of fabrics - Part 2: Determination of tear force of trouser-shaped test specimens (single tear method)
DIN EN ISO 1421 1998-08	Rubber- or plastics-coated fabrics - Determination of tensile strength and elongation at break
DIN EN ISO 4674-1 2003-12	Rubber- or plastics-coated fabrics - Determination of tear resistance - Part 1: Constant rate of tear methods
DIN EN ISO 14268 2013-09	Leather - Physical and mechanical tests - Determination of water vapour permeability
DIN EN ISO 17186 2012-03	Leather - Physical and mechanical tests - Determination of surface coating thickness
DIN EN ISO 17229 2016-06	Leather - Physical and mechanical tests - Determination of water vapour absorption

DIN EN ISO 17693 2005-12	Footwear - Test methods for uppers - Resistance to damage on lasting
DIN EN ISO 17707 2005-10	Footwear - Test methods for outsoles - Flex resistance
DIN EN ISO 17708 2003-10	Footwear - Test methods for whole shoe - Upper sole adhesion
DIN EN ISO 20877 2011-12	Footwear - Test methods for whole shoe - Thermal insulation
DIN EN ISO 22774 2005-03	Footwear - Test methods for accessories: shoe laces - Abrasion resistance
DIN EN ISO 22775 2005-03	Footwear - Test methods for accessories: Metallic accessories - Corrosion resistance
DIN EN 522 1998-04	Adhesives for leather and footwear materials - Bond strength - Minimum requirements and adhesive classification (<i>withdrawn standard</i>)
DIN EN 1391 1998-04	Adhesives for leather and footwear materials - Method for evaluating the bondability of materials - Minimum requirements and material classification (<i>withdrawn standard</i>)
DIN EN 1392 2006-08	Adhesives for leather and footwear materials - Solvent-based and dispersion adhesives - Testing of bond strength under specified conditions
DIN EN 5404 2012-03	Leather - Physical and mechanical tests - Determination of the water resistance of heavy leathers
DIN EN 12770 2000-03	Footwear - Test methods for outsoles - Abrasion resistance
DIN EN 12771 2000-03	Footwear - Test methods for outsoles - Tear strength
DIN EN 12772 2007-06	Footwear - Test methods for outsoles - Dimensional stability

DIN EN 12773 2000-01	Footwear - Test methods for outsoles - Needle tear strength
DIN EN 12774 2000-04	Footwear - Test methods for outsoles - Determination of split tear strength and delamination resistance
DIN EN 12803 2000-07	Footwear - Test methods for outsoles - Tensile strength and elongation
DIN EN 13512 2002-04	Footwear - Test methods for uppers and lining - Flex resistance
DIN EN 13514 2002-04	Footwear - Test methods for uppers - Delamination resistance
DIN EN 13515 2002-03	Footwear - Test methods for uppers and lining - Water vapour permeability and absorption
DIN EN 13518 2005-11	Footwear - Test methods for uppers - Water resistance
DIN EN 13520 2005-03	Footwear - Test methods for uppers, lining and insoles - Abrasion resistance
DIN EN 13522 2002-04	Footwear - Test methods for uppers - Breaking strength and elongation
DIN EN 13571 2006-10	Footwear - Test methods for uppers, lining and insoles - Tear strength
DIN EN 15307 2015-04	Adhesives for leather and footwear materials - Sole-upper bonds - Minimum strength requirements
DIN EN 17700 2005-12	Footwear - Test methods for uppers, linings and insoles - Colour fastness to rubbing Method A and C
DIN EN 61340-4-3 2009-09	Electrostatics - Part 4-3: Standard test methods for specific applications
DIN EN 61340-5-1 2008-07	Electrostatics - Part 5-1: Protection of electronic devices from electrostatic phenomena - General requirements

DIN 4843-100 1993-08	Safety, protective and occupational footwear; slip resistance, metatarsal protection, protective insert and thermal behaviour; safety requirements, testing (<i>withdrawn standard</i>)
DIN 51097 2016-04	Testing of floor coverings - Determination of the anti-slip properties - Wet-loaded barefoot areas; Walking method; Ramp test
DIN 51130 2014-02	Testing of floor coverings - Determination of the anti-slip property - Workrooms and fields of activities with slip danger - Walking method - Ramp test
DIN 53331 1980-05	Testing of leather; determination of the stitch tear resistance (<i>withdrawn standard</i>)
DIN EN ISO 23910 2008-01	DIN EN ISO 23910 (replaces DIN 53331)
DIN 53340 1979-07	Testing of leather; determination of the behaviour at permanent folding of semi-flexible leathers
DIN 53351 2003-09	Testing of artificial leather and similar sheet materials - Behaviour at permanent folding (Flexometer-method) (<i>withdrawn standard</i>)
DIN EN ISO 32100 2011-04	Rubber- or plastics-coated fabrics - Physical and mechanical tests - Determination of flex resistance by the flexometer method
DIN 53325 1974-01	Testing of leather; ball compression test for determination of grain expansion capacity and the force of fracture with the lastometer
DIN 53354 1981-02	Testing of artificial leather; tensile test (<i>withdrawn standard</i>)
DIN 53356 1982-08	Testing of artificial leather and similar sheet materials; tear growth test
DIN 53359 2006-11	Testing of artificial leather and similar sheet materials - Flex cracking test
DIN 53479 1976-07	Testing of Plastics and Elastomers; Determination of Density (<i>withdrawn standard</i>)

DIN 53420 1978-12	Testing of Cellular Materials; Determination of Apparent Density
DIN 53504 2009-10	Testing of rubber; determination of tensile strength at break, tensile stress at yield, elongation at break and stress values in a tensile test
DIN 53505 2000-08	Testing of rubber - Shore A and Shore D hardness test (<i>withdrawn standard</i>)
DIN 53506 1990-12	Testing of rubber; determination of needle tear resistance
DIN 53507 1983-03	Testing rubber and elastomers; Determination of the tear strength of elastomers; Trouser test piece (<i>withdrawn standard</i>)
DIN 53512 2000-04	Testing of rubber - Determination of rebound resilience (Schob pendulum)
DIN 53516 1987-06	Testing of rubber and elastomers; determination of abrasion resistance (<i>withdrawn standard</i>)
DIN 53543 1979-02	Testing of Semi-Rigid Polyurethane (PUR) Integral Cellular Materials; Materials for Soles and Parts of Shoes
DIN 53859-4 1977-02	Testing of textiles; tear growth test on textile fabrics, nonwoven textiles (<i>withdrawn standard</i>)
DIN 54301 1977-07	Testing of textiles; determination of the needle tearing out resistance of nonwoven textiles (<i>withdrawn standard</i>)
PFI 00/1011 (00/1160) 2011-08	Measurement of insole length
PFI 00/1015 2011-08	Adhesion of outsole (in dependence to DIN 4843 clause 6.23)
PFI 00/1046 2011-08	Water resistance whole footwear WIWEB-test specification TL 8430-0039 (BWB)

PFI 00/1172
2012-01

Shore Hardness

PFI 00/1209
2011-08

Burning behaviour
(DIN EN 71-2 / DIN EN 15090 / DIN 75200 / DIN EN 407 / ISO
6941)

4 Safety of toys

4.1 Mechanical and physical properties

DIN EN 71-1
2011-07

Safety of toys – Part 1: Mechanical and physical properties as follows:
Properties for following listed testing:

- 8.1. General requirements
- 8.2. Small parts cylinder
- 8.3. Torque test
- 8.4. Tension test
- 8.5. Drop test
- 8.8. Compression test
- 8.10. Accessibility of a part or component
- 8.11. Sharpness of edges
- 8.12. Sharpness of points

4.2 Chemical Analysis

DIN EN 71-3
2014-12

Safety of toys – Part 3: Migration of certain elements
(*except Chromium VI*)

5 Testing of glasses

DIN EN ISO 12870 2009-07	Ophthalmic optics – Spectacle frames – Requirements and test methods as follows: 4.7 Resistance to perspiration 4.8 Mechanical stability 4.9 Resistance to ignition
DIN EN 14139 2010-11	Ophthalmic optics – Specifications for ready-to-wear spectacles as follows: 4.1 General requirements 4.2 Optical power range 4.3 Optical power tolerances 4.4 Reference points and prismatic power tolerances 5. Marking on the spectacles, indications on packaging, instruction for use
BS 5883 1996-10	Surface swimming Goggles as follows: 4.1 General 4.2 Projections 4.3 Material components 4.4 Lenses 4.6 Water seal 4.7 Head strap 4.8 Bridge strap 5. Marking 6. Instructions

6 physical, physiochemical and chemical analysis of water, wastewater, sludge, biomass, fermentation products, digestate, biowaste, waste and soil

DIN 19747 2009-07	Investigation of solids – Pre-treatment, preparation and processing of samples for chemical, biological and physical investigations
DIN EN 16179 2012-11	Sludge, treated biowaste and soil – Guidance for sample pretreatment
DIN EN 16174 2012-11	Sludge, treated biowaste and soil – Digestion of aqua regia soluble fractions of elements

DIN EN 15933 2012-11	Sludge, treated biowaste and soil – Determination of pH
DIN EN 12880 2001-02	Characterization of sludges – Determination of dry residue and water content
DIN EN 15934 2012-11	Sludge, treated biowaste, soil and waste – Calculation of dry matter fraction after determination of dry residue or water content
DIN EN 15935 2012-11	Sludge, treated biowaste, soil and waste – Determination of loss on ignition
DIN 38406-E 5 1983-10	German standard methods for the examination of water, waste water and sludge; cations (group E); determination of ammonia-nitrogen (E 5)
DIN EN 16169 2012-11	Sludge, treated biowaste and soil – Determination of Kjeldahl nitrogen
Biogas Journal 2006-04	Detect process troubles at an early stage (Determination of the FOS/TAC-value; method according to Nordmann) Christa Rieger, Prof. Dr. Peter Weiland
DIN EN 27888 1993-11	Water quality; determination of electrical conductivity
DIN CEN/TS 15937; DIN SPEC 91202 2013-08	Sludge, treated biowaste and soil – Determination of specific electrical conductivity
Methodenbuch Bundesgütegemeinschaft Kompost e.V. 2006-09	Determination of salt content
DIN 38414-S 19 1999-12	German standard methods for the examination of water, waste water and sludge - Sludge and sediments (group S) – Part 19: Determination of the steam-volatile organic acids (S 19)
PFI 15/1006 2016-12	Determination of organic acids and other organic compounds in sludge, fermentation products, biomass, biowaste, digestate, digestion products and comparable materials with HPLC-RID

PFI 15/1016 2017-01	Determination of volatile organic acids in sludge, fermentation products, biomass, biowaste, digestate, digestion products and comparable materials with GC -FID
USA-Department of Energy National Renewable Energy Laboratory - Biomass Analysis Technology Team - Laboratory Analytical Procedure 2005-07	Determination of sugars, by products and degradation products in liquid fraction process samples
DIN EN ISO 11885 2009-09	Water quality - Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES)
DIN EN 16170 2017-01	Sludge, treated biowaste and soil – Determination of elements using inductively coupled plasma optical emission spectrometry (ICP-OES)
DIN EN 14918 2010-04	Solid biofuels – Determination of calorific value
DIN EN 16634-1 2009-07	Food products – Determination of the total nitrogen content by combustion according to the Dumas principle and calculation of the crude protein content – Part 1: Oilseeds and animal feeding stuffs
PFI 15/1010 2016-12	Biogas – Determination of composition (methane, carbon dioxide, nitrogen, oxygen, hydrogen, hydrogen sulfide and carbon monoxide) with GC-TCD

7a testing of personal protective equipment, foot and leg protection against cold, foot and leg protection against heat, foot and leg protection against mechanical risks, fire fighter footwear, protective footwear for motorcycle riders; safety footwear with resistance to chain saw cutting, footwear protecting against thermal risks and molten metal splash, footwear protecting chemicals testing of foot and leg protection against cold environment up to – 50°C, foot and leg protection against hot environment > 100°C, foot and leg protection against mechanical risks, protective footwear for motorcycle riders

DIN EN 344-1 1997-06	Safety, protective and occupational footwear for professional use - Part 1: Requirements and test methods (includes Amendment A1:1997) <i>(withdrawn standard)</i>
DIN EN ISO 20344 2004-10 und 2007-11	Personal protective equipment - Test methods for footwear <i>(withdrawn standard)</i>
DIN EN 12568 2010-10	Foot and leg protectors - Requirements and test methods for toecaps and penetration resistant inserts
DIN EN ISO 13287 2013-02	Personal protective equipment - Footwear - Test method for slip resistance
DIN EN ISO 20344 2013-02	Persönliche Schutzausrüstung – test methods for footwear
DIN EN ISO 20345 2012-04	Personal protective equipment - Safety footwear
DIN EN ISO 20346 2014-09	Personal protective equipment - Protective footwear
DIN EN ISO 20347 2012-05	Personal protective equipment - Occupational footwear
DIN EN 13634 2016-03	Protective footwear for motorcycle riders - Requirements and test methods
DIN EN 13832-1 2006-11	Footwear protecting against chemicals - Part 1: Terminology and test methods
DIN EN 13832-2 2006-11	Footwear protecting against chemicals - Part 2: Requirements for footwear resistant to chemicals under laboratory conditions

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DIN EN 13832-3 2006-11	Footwear protecting against chemicals - Part 3: Requirements for footwear highly resistant to chemicals under laboratory conditions
DIN EN 15090 2012-04	Personal protective equipment - Footwear for firefighters
DIN EN ISO 17249 2014-05	Personal protective equipment - Safety footwear with chain saw cut resistance
DIN EN ISO 20349 2011-03	Personal protective equipment – footwear against thermal risks and molten metal splashes – Test methods and requirements
ISO 11999-6 2016-08	PPE for Firefighters – Test methods and requirements for PPE used by firefighters who are at risk of exposure to high levels of heat and/or flame while fighting fires occurring in structures – part 6: Footwear
AS NZS 2210.2-2009 (ISO 20344 mod.)	Occupational Protective Footwear Part 2: Test methods
AS NZS 2210.3-2009 (ISO 20345 mod.)	Occupational Protective Footwear Part 3: Specification for Safety Footwear
AS NZS 2210.4-2009 (ISO 20346 mod.)	Occupational Protective Footwear Part 4: Specification for protective footwear
AS NZS 2210.5-2009 (ISO 20347 mod.)	Occupational Protective Footwear Part 5: Specification for occupational footwear
AS NZS 4821-2014	Protective footwear for firefighters - Requirements and test methods
ASTM F 2412-11	Test Methods for Foot Protection
ASTM F 2413-11	Specification for Performance Requirements for Foot Protection

7b Testing of personal protective equipment, testing of gloves against mechanical risks

DIN EN 388 2017-01	Protective gloves against mechanical risks
DIN EN 420 2010-03	Protective gloves – general requirements and test methods

7c Personal protective equipment, testing of eye protection

DIN EN 166 2002-04	Personal eye protection – requirements
DIN EN 167 2007-10	Personal eye protection – optical test methods
DIN EN 168 2002-04	Personal eye protection – non-optical test methods
DIN EN ISO 12312-1 2014-04	Eye and face protection - Sunglasses and related eyewear - Part 1: Sunglasses for general use
DIN EN 1938 2010-12	Personal eye protection - Goggles for motorcycle and moped users
DIN EN 174 2001-07	Personal eye-protection - Ski goggles for downhill skiing
DIN EN 13178 2007-07	Personal eye protection - Eye protectors for snowmobile users
DIN EN ISO 12311 2015-06	Personal protective equipment - Test methods for sunglasses and related eyewear
DIN EN 172 2002-02	Personal eye-protections - Sunglare filters for industrial use

Abbreviations used:

AATCC	American Association of Textile Chemists and Colorists
ASTM	American Society for Testing and Materials
ASU	Amtliche Sammlung von Untersuchungsmethoden nach § 64 LFGB
AS NZS	Standards Australia/ New Zealand Standards
BWB	Bundesamt für Wehrtechnik und Beschaffung
BS	British Standard
CFR	Code of Federal Registrations
CR	Document by AFNOR (association française de normalisation)
DIN	Nationale Norm
EN	Europäische Norm
FOS	Volatile Organic Acids (Flüchtige organische Säuren)
GS-Zeichen	Siegel geprüfte Sicherheit (Geräte- und Produktsicherheitsgesetz)
ISO	Internationale Norm
JIS	Japan Industrial Standard
LFGB	Lebensmittel- und Futtermittelgesetzbuch
PFI	Inhouse method of Prüf- und Forschungsinstitut Pirmasens e.V. (PFI)
ProdSG	Produktsicherheitsgesetz
TAC	Buffer capacity (Totales anorganisches Carbonat)
WIWEB	Wehrwissenschaftliches Institut für Werk- und Betriebsstoffe
ZEK	Zentraler Erfahrungsaustauschkreis zugelassener Stellen nach dem Geräte- und Produktsicherheitsgesetz