

# Deutsche Akkreditierungsstelle GmbH

## Annex to the Accreditation Certificate D-PL-12083-01-01 according to DIN EN ISO/IEC 17025:2018

**Valid from: 08.05.2020**

Date of issue: 27.08.2020

Holder of certificate:

**Hohenstein Laboratories GmbH & Co. KG  
Schloss Hohenstein, 74357 Bönningheim**

Tests in the fields:

**Textile-technology and textile-chemical tests on fibres, yarns, fabrics and clothing;  
Selected tests on water, wastewater, eluates and detergents and staining or prevention of staining;  
Physiological and electrostatic tests of textile, clothing systems, bedding materials, sleeping bags, motor vehicle seats and upholstery;  
Spectrophotometric tests of two-dimensional materials (textile, paper, films, lacquers) - colorimetric, whiteness evaluation, textile UV protection;  
Fit and workmanship tests of clothing and ready-made textiles in new condition and after care treatment;  
Tests on personal protective equipment;  
Mechanical, physical and electrical tests for safety of toys;  
Tests on toys and infant articles according to the specifications of the United States Consumer Product Safety Commission;  
Microbiological testing of water;  
Sampling and microbiological testing of water according to §3 section 8 42. BImSchV;  
Microbiological testing according to the German Drinking Water Ordinance;  
Sampling of raw and drinking water;  
Selected microbiological and antimicrobial tests on food, textiles, commodities and disinfectants;  
Tests on biocompatibility and allergen reduction;  
Selected tests on the general hygiene management of facilities**

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

Abbreviations used: see last page

*The certificate together with its annex reflects the status at the time of the date of issue. The current status of the scope of accreditation can be found in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH.  
<https://www.dakks.de/en/content/accredited-bodies-dakks>*

**Annex to the accreditation certificate D-PL-12083-01-01**

**The testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the following:**

- 1) the free choice of standard or equivalent testing methods.**
- 2) the modification, development and refinement of testing methods.**
- 3) to use standards or equivalent testing methods listed here with different issue dates.**

**The listed testing methods are exemplary. The testing laboratory maintains a current list of all testing methods within the flexible scope of accreditation.**

Abbreviations used: see last page

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**1. Textile-technology tests**

**1.1 Colour fastnesses <sup>3)</sup>**

DIN 54056 1985-07	Testing of colour fastness of textiles; determination of colour fastness of dyeings and prints to sublimation in storage
DIN EN 20105-A02 1994-10	Textiles – Tests for colour fastness – Part A02: Grey scale for assessing change in colour
DIN EN 20105-A03 1994-10	Textiles – Tests for colour fastness – Part A03: Grey scale for assessing staining
DIN EN 20105-N01 1995-03	Textiles – Tests for colour fastness – Part N01: Colour fastness to bleaching: Hypochlorite
DIN EN ISO 105-A01 2010-05	Textiles – Tests for colour fastness – Part A01: General principles of testing
DIN EN ISO 105-A04 1999-10	Textiles – Tests for colour fastness – Part A04: Method for the instrumental assessment of the degree of staining of adjacent fabrics
DIN EN ISO 105-A05 1997-07	Textiles – Tests for colour fastness – Part A05: Instrumental assessment of change in colour for determination of grey scale rating
DIN EN ISO 105-B02 2014-11	Textiles – Tests for colour fastness – Part B02: Colour fastness to artificial light: Xenon arc fading lamp test
DIN EN ISO 105-B04 1997-05	Textiles – Tests for colour fastness – Part B04: Colour fastness to artificial weathering: Xenon arc fading lamp test
DIN EN ISO 105-B05 1995-12	Textiles – Tests for colour fastness – Part B05: Detection and assessment of photochromism
DIN EN ISO 105-B07 2009-10	Textiles – Tests for colour fastness – Part B07: Colour fastness to light of textiles wetted with artificial perspiration
DIN EN ISO 105-C06 2010-08	Textiles – Tests for colour fastness – Part C06: Colour fastness to domestic and commercial laundering
DIN EN ISO 105-C10 2007-06	Textiles – Tests for colour fastness – Part C10: Colour fastness to washing with soap or soap and soda

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DIN EN ISO 105-D01 2010-10	Textiles – Tests for colour fastness – Part D01: Colour fastness to dry cleaning using perchloroethylene solvent
DIN EN ISO 105-E01 2013-06	Textiles – Tests for colour fastness – Part E01: Colour fastness to water
DIN EN ISO 105-E02 2013-06	Textiles – Tests for colour fastness – Part E02: Colour fastness to sea water
DIN EN ISO 105-E04 2013-08	Textiles – Tests for colour fastness – Part E04: Colour fastness to perspiration
DIN EN ISO 105-E07 2010-08	Textiles – Tests for colour fastness – Part E07: Colour fastness to spotting: Water
DIN EN ISO 105-N02 2018-12	Textiles – Tests for colour fastness – Part N02: Colour fastness to bleaching: Peroxide
DIN EN ISO 105-P01 1995-04	Textiles – Tests for colour fastness – Part P01: Colour fastness to dry heat (excluding pressing)
DIN EN ISO 105-X05 1997-05	Textiles – Tests for colour fastness – Part X05: Colour fastness to organic solvents
DIN EN ISO 105-X11 1996-10	Textiles – Tests for colour fastness – Part X11: Colour fastness to hot pressing
DIN EN ISO 105-X12 2016-11	Textiles – Tests for colour fastness – Part X12: Colour fastness to rubbing
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 4892-2 2013-06	Plastics – Methods of exposure to laboratory light sources – Part 2: Xenon-arc lamps

**-Translation-**

**1.2 Physical testing of textiles <sup>1) 2)</sup>**

The test range of the flexible accreditation is characterized by the measures listed in the below table.

Measurement unit	Measuring range
Pressure	50 to 2500 Pa
	2.5 kPa to 100 kPa
	10 kPa to 4000 kPa
Mass	0.001 mg to 1.0 g
	1.0 g to 2.0 g
	0.1 g to 100 g
	100 g to 300 g
	300 g to 6000 g
	1 kg to 50 kg
Force	1 N to 10 000 N
Length / Thickness	5 to 100 µm
	0.1 to 5 mm
	1 mm to 150 cm
	1 cm to 5 m
Temperature / Humidity	- 20°C to 110°C
	110°C to 800°C
	0 to 60°C
	5 to 95 % relative humidity
Duration	from 5 s to 2 h

**Characteristic test procedures:**

DIN 53359 2006-11	Testing of artificial leather and similar sheet materials – Flex cracking test
DIN 53363 2003-10	Testing of plastic films – Tear test using trapezoidal test specimen with incision

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DIN 53830-3 1981-05	Testing of textiles – determination of linear density of single and plied yarns – simple yarns and plied yarns – textured yarns – short length method
DIN 53859-5 1992-12	Testing of textiles – tear growth test on textile fabrics – trapezoid test
DIN 66083 1997-02	Classification of burning behaviour of textile products – Textile fabrics for working clothing
DIN 75200 1980-09	Determination of burning behaviour of interior materials in motor vehicles
DIN EN 1049-2 1994-02	Textiles – woven fabrics – construction methods of analysis – determination of number of threads per unit length
DIN EN 12127 1997-12	Textiles – Fabrics – Determination of mass per unit area using small samples
DIN EN 14697 2005-08	Textiles – Terry towels and terry towel fabrics – Specifications and methods of test – Determination of the wetting/absorption time of terry towels and terry towel fabrics
DIN EN 14971 2006-04	Textiles – Knitted fabrics – Determination of number of stitches per unit length and unit area
DIN EN 15598 2008-11	Textiles – Terry fabrics – Test method for the determination of the resistance to pile loop extraction
DIN EN 1773 1997-03	Textiles – Fabrics – Determination of width and length
DIN EN 22313 1992-08	Textiles – Determination of resistance of textile fabrics to water penetration; hydrostatic pressure test
DIN EN 29073-1 1992-08	Textiles – determination of the recovery form creasing of a horizontally folded specimen by measuring the angle of recovery
DIN EN 29073-3 1992-08	Textiles – test method for nonwovens – determination of mass per unit area
DIN EN 29865 1993-11	Textiles; test method for nonwovens; part 3: determination of tensile strength and elongation

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DIN EN 530 2010-12	Abrasion resistance of protective clothing material – Test methods
DIN EN ISO 12945-1 2001-08	Textiles – Determination of fabric propensity to surface fuzzing and to pilling – Part 1: Pilling box method
DIN EN ISO 12945-2 2000-11	Textiles – Determination of fabric propensity to surface fuzzing and to pilling – Part 2: Modified Martindale method
DIN EN ISO 12947-2 2017-03	Textiles – Determination of the 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 (EN ISO 12947-4:1998+AC:2006)	Textiles – Determination of abrasion resistance of fabrics by the Martindale method – Part 4: Assessment of appearance change
DIN EN ISO 13934-1 2013-08	Textiles – Tensile properties of fabrics – Part 1: Determination of maximum force and elongation at maximum force using the strip method
DIN EN ISO 13934-2 2014-06	Textiles – Tensile properties of fabrics – Part 2: Determination of maximum force using the grab method
DIN EN ISO 13935-1 2014-07	Textiles – Seam tensile properties of fabrics and made-up textile articles – Part 1: Determination of maximum force to seam rupture using the strip method
DIN EN ISO 13935-2 2014-07	Textiles – Seam tensile properties of fabrics and made-up textile articles – Part 2: Determination of maximum force to seam rupture using the grab method
DIN EN ISO 13936-1 2004-07	Textiles – Determination of the slippage resistance of yarns at a seam in woven fabrics – Part 1: Fixed seam opening method
DIN EN ISO 13936-2 2004-07	Textiles – Determination of the slippage resistance of yarns at a seam in woven fabrics – Part 2: Fixed load method

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DIN EN ISO 13937-1 2000-06	Textiles – Tear properties of fabrics – Part 1: Determination of tear force using ballistic pendulum method (Elmendorf)
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 13937-3 2000-06	Textiles – Tear properties of fabrics – Part 3: Determination of tear force of wing-shaped test specimens (Single tear method)
DIN EN ISO 13937-4 2000-06	Textiles – Tear properties of fabrics – Part 4: Determination of tear force of tongue-shaped test specimens (Double tear test)
DIN EN ISO 13997 1999-10	Protective clothing – Mechanical properties – Determination of resistance to cutting by sharp objects
DIN EN ISO 1421 2017-03	Rubber – or plastics-coated fabrics – Determination of tensile strength and elongation at break
DIN EN ISO 14419 2010-08	Textiles – Oil repellency – Hydrocarbon resistance test
DIN EN ISO 15025 2017-04	Protective clothing – Protection against flame – Method of test for limited flame spread
DIN EN ISO 15487 2018-12	Textiles – Method for assessing appearance of apparel and other textile end products after domestic washing and drying
DIN EN ISO 2060 1995-04	Textiles – Yarn from packages – Determination of linear density (mass per unit length) by the skein method
DIN EN ISO 2061 2015-12	Textiles – Determination of twist in yarns – Direct counting method
DIN EN ISO 2062 2010-04	Textiles – Yarns from packages – Determination of single-end breaking force and elongation at break using constant rate of extension (CRE) tester

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DIN EN ISO 3759 2011-08	Textiles – Preparation, marking and measuring of fabric specimens and garments in tests for determination of dimensional change
DIN EN ISO 4674-1 2017-03	Rubber- or plastics-coated fabrics – Determination of tear resistance – Part 1: Constant rate of tear methods
DIN EN ISO 4674-2 1998-10	Rubber- or plastics-coated fabrics – Determination of tear resistance – Part 1: Constant rate of tear methods
DIN EN ISO 4920 2012-12	Textile fabrics – Determination of resistance to surface wetting (spray test)
DIN EN ISO 5077 2008-04	Textiles – Determination of dimensional change in washing and drying
DIN EN ISO 5084 1996-10	Textiles – Determination of thickness of textiles and textile products
DIN EN ISO 6530 2005-05 (ISO 6530:2005)	Protective clothing – Protection against liquid chemicals – Test method for resistance of materials to penetration by liquids
DIN EN ISO 6940 2004-06	Textile fabrics – Burning behaviour – Determination of ease of ignition of vertically oriented specimens
DIN EN ISO 6941 2004-05	Textile fabrics – Burning behaviour – Measurement of flame spread properties of vertically oriented specimens
DIN EN ISO 7854 1997-04	Rubber- or plastics-coated fabrics – Determination of resistance to damage by flexing
DIN EN ISO 811 2018-08	Textiles – Test methods for nonwovens – Part 2: Determination of thickness
DIN EN ISO 9073-2 1997-02	Textiles – Test methods for nonwovens – Part 10: Lint and other particles generation in the dry state
DIN EN ISO 9073-10 2005-03	Textiles – Determination of permeability of fabrics to air

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DIN EN ISO 9237 1995-12	Textiles – Determination of thickness of textiles and textile products
ISO 13994 2005-10 Method C	Clothing for protection against liquid chemicals – Determination of the resistance of protective clothing materials to penetration by liquids under pressure
ISO 13996 1999-09	Protective clothing – Mechanical properties – Determination of resistance to puncture
ISO 17493 2016-12	Clothing and equipment for protection against heat – Test method for convective heat resistance using a hot air circulating oven
ISO 3795 1989-10	Road vehicles, and tractors and machinery for agriculture and forestry – Determination of burning behaviour of interior materials
AATCC TM 22 2014	Water Repellency: Spray Test
AATCC TM 118 2013	Oil Repellency: Hydrocarbon Resistance Test
AATCC TM 193 2012	Aqueous liquid Repellency: Water/Alcohol Solution Resistance Test
ASTM D 737 2016-04	Standard Test Method for Air Permeability of Textile Fabrics
ASTM D 1683 2017	Standard Test Method for Failure in Sewn Seams of Woven Apparel Fabrics
ASTM D 3786 2013	Standard Test Method for Bursting Strength of Textile Fabrics- Diaphragm Bursting Strength Tester Method
ASTM D 4966 2016-12	Standard Test Method for Abrasion Resistance of Textile Fabrics (Martindale Abrasion Tester Method)
ASTM D 5034 2013-09	Standard Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)
ASTM D 5035 2015-11	Standard Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method)

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ASTM D 6413 2015	Standard Test Method for Flame Resistance of Textiles (Vertical Test)
ASTM F 903 2017 Method C	Standard Test Method for Resistance of Materials Used in Protective Clothing to Penetration by Liquids
FMVSS 302	Flammability of Interior materials
SOP-QM-11 2 02 001 2019-01	Testing of textiles with compression effect
SOP-QM-11 2 02 003 2017-12	Testing of textiles with compression effect according to DIN 58133
PW-QM-11.2.02.015 2015-10	Determination of the volumetric weight of foamed material

**2. Textile chemistry tests**

**2.1 Physical-chemical tests <sup>3)</sup>**

DIN 53923 1978-01	Testing of textiles; determination of water absorption of textile fabrics (Modification: Additional matrix: sponges and comparable products)
DIN 53924 1997-03	Testing of textiles – Velocity of soaking water of textile fabrics (method by determining the rising height)
ISO 17617, Methode B 2014-12	Textiles – Determination of moisture drying rate
PW-QM-11.2.02.014 2017-04	Moisture absorption of absorbent textiles, e.g. terry cloths, during short-term contact

**-Translation-**

**3. Selected tests on water, wastewater, eluates <sup>3)</sup>**

DIN 38406-3 2002-03	German standard methods for the examination of water, waste water and sludge - Cations (group E) – Part 3: Determination of calcium and magnesium, complexometric method (E 3)
DIN EN ISO 10523 2012-04	Water quality – Determination of pH

**-Translation-**

#### 4. Tests on detergents and cleaning agents as well as staining and prevention of staining<sup>2)</sup>

DIN 53919-2                                      Test cotton fabrics for laundering process control – test of laundering  
 1980-05    with control stripes

##### 4.1 Determination of cosmetic stains as well as detergents and cleanings products performance by visual examination

The test range of the flexible accreditation is characterized by the measures listed in the below table.

Test type	Matrix	Analyte	Characteristic testing
Ordinary visual examination	Detergents and cleaning agents	Appearance	SÖFW-journal, 128. Year AW-QM 11.2.03.050
	Cosmetic stains	Appearance	AW-QM 11.2.03.057 AW-QM 11.2.03.059

##### Characteristic test procedures:

SÖFW-journal, 128. Year                      Quality assessment of the cleaning capacity of hand dishwashing  
 2002-05    detergents

AW-QM 11.2.03.050                              Test methods for comparing detergent and detergent aids tests  
 2016-01

AW-QM 11.2.03.057                              Visual assessment of stains  
 2013-03

AW-QM 11.2.03.059                              In-vitro-tests  
 2018-03    Cosmetic stains on textiles: staining and prevention of staining

##### 4.2 Determination of cosmetic stains as well as detergents and cleanings products performance by photometry

The test range of the flexible accreditation is characterized by the measures listed in the below table.

Test type	Matrix	Analyte	Characteristic testing
Photometry	Detergents and cleaning agents	Appearance	AW-QM 11.2.03.015 AW-QM 11.2.03.050 AW-QM 11.2.03.052

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	Cosmetic stains	Appearance	AW-QM 11.2.03.059 AW-QM 11.2.03.062
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**Characteristic test procedures:**

AW-QM 11.2.03.015 2016-05	Measurement of Whiteness with Minolta CM 3610d
AW-QM 11.2.03.050 2016-01	Test methods for comparing detergent and detergent aids tests
AW-QM 11.2.03.052 2013-03	Testing and assessment of primary and secondary washing effect
AW-QM 11.2.03.059 2018-03	In-vitro-tests Cosmetic stains on textiles: staining and prevention of staining
AW-QM 11.2.03.062 2017-06	In-vitro-tests Deodorant stains: yellow stains on white fabrics

**4.3 Determination of detergents and cleaning products performance by specific sensoric tests**

The test range of the flexible accreditation is characterized by the measures listed in the below table.

Test type	Matrix	Analyte	Characteristic testing
Specific sensoric tests	Detergents and cleaning agents	Haptic	AW-QM 11.2.03.050 AW-QM 11.2.03.051 AW-QM 11.2.03.067

**Characteristic test procedures:**

AW-QM 11.2.03.050 2016-01	Test methods for comparing detergent and detergent aids tests
AW-QM 11.2.03.051 2016-01	Conduct of washes for detergent and detergents aids test
AW-QM 11.2.03.067 2016-01	Conduct of washes for wash and wear test

**-Translation-**



## 5. Physiological and electrostatic tests of textiles, clothing systems, bedding materials and mattresses, sleeping bags, motor vehicle seats and upholstery <sup>2)</sup>

The test range of the flexible accreditation is characterized by the measures listed in the below table.

Measurement unit	Measuring range	Measurement uncertainty **
Duration	from 0.1 s	0.1 s
Mass	0.25 g to 20 g	0.01 g
Force	15 cN to 250 cN	Class 1
Length	0.1 mm to 200 mm	0.1 mm
Angle	2 ° to 90 °	2 °
Performance	0.4 W to 40 W	0.1 W
	30 W to 450 W	1 W
Electrical resistance	1 x 10 <sup>6</sup> Ω to 1 x 10 <sup>15</sup> Ω	5 %
Electrical field strength	1 kV/m to 200 kV/m	0.5 kV/m
Temperature	0 °C to 50 °C	0.02 K
relative humidity	5 % to 90 % relative humidity	2 %
Air speed	1 m/s to 10 m/s	0.1 m/s

\*\* best measurement capability

### Characteristic test procedures:

DIN EN 1149-1 2006-09	Protective clothing – Electrostatic properties – Part 1: Test method for measurement of surface resistivity
DIN EN 1149-2 1997-11	Protective clothing – Electrostatic properties – Part 2: Test method for measurement of the electrical resistance through a material (vertical resistance)
DIN EN 1149-3 2004-07	Protective clothing – Electrostatic properties – Part 3: Test methods for measurement of charge decay
DIN EN 14058 2018-01	Protective clothing – Garments for protection against cool environments
DIN EN 342 2018-01	Protective clothing – Ensembles and garments for protection against cold

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Valid from: 08.05.2020

Date of issue: 27.08.2020

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DIN EN 61340-4-9 2017-03	Electrostatics – Part 4-9: Standard test methods for specific applications – Garments – procedure 6.3.2.1
DIN EN ISO 15496 2018-08	Textiles – Measurement of water vapour permeability of textiles for the purpose of quality control
DIN EN ISO 15831 2004-05	Clothing – Physiological effects – Measurement of thermal insulation by means of a thermal manikin
DIN EN ISO 23537-1 2018-05	Requirements for sleeping bags – Part 1: Thermal and dimensional requirements
ISO 11092 2014-12	Textiles – Physiological effects – Measurement of thermal and water-vapour resistance under steady-state conditions (sweating guarded-hotplate test)
ISO 13029 2012-08	Textiles – Determination of drying rate in dynamic state by the modified sweating-guarded hotplate
ASTM F 1868-14 Part A and B	Standard Test Method for Thermal and Evaporative Resistance of Clothing Materials Using a Sweating Hot Plate
BPI 1.2 2010-12	Measurement of the buffering capacity of textiles with the thermoregulatory model of human skin
BPI 1.3 2009-01	Measurement of the thermal resistance of a wetted fabric with the thermoregulatory model of human skin (Skin Model)
BPI 3.1 2009-03	Tests on textiles – Measurement of the wet cling index $i_k$
BPI 3.2 2008-07	Tests on textiles – Measurement of the sorption index $i_b$
BPI 3.3 2004-07	Tests on textiles – Measurement of the surface index $i_o$
BPI 3.4 2008-02	Tests on textiles – Measurement of the number of contact points $n_K$ between textile and skin
BPI 3.5 2005-11	Tests on textiles – Measurement of the stiffness $s$

**-Translation-**

## 6. Spectrophotometric tests of two-dimensional materials (textiles, paper, films, lacquers) – colorimetry, whiteness evaluation, textile UV protection <sup>3)</sup>

### 6.1 UV-, VIS- and IR range

DIN 5033-7 2014-10	Colorimetry – Part 7: Measuring conditions for object colours
DIN 5033-8 1982-04	Colorimetry – Part 8: Measuring conditions for light sources
DIN 5033-9 2018-04	Colorimetry – Part 9: Reflectance standard for calibration in colorimetry and photometry
DIN 55981 1979-05	Determination of relative hue of near white specimens
DIN 6172 2014-10	Special metamerism-index for pairs of samples at change in illuminant
DIN 6176 2018-10	Colorimetric evaluation of colour differences of surface colours according to DIN99-formula
DIN 6173-1 1975-01	Colour matching; general rules
DIN EN 410 2011-04	Glass in building – Determination of luminous and solar characteristics of glazing
DIN EN ISO 105-J01 1999-09	Textiles – Tests of colour fastness – Part J01: General principles for measurement or surface colour
DIN EN ISO 105-J03 2010-02	Textiles – Tests for colour fastness – Part J03: Calculation of colour differences
DIN EN ISO 11664-4 2012-06	Colorimetry – Part 4: CIE 1976 L*a*b* Colour space
DIN EN ISO 13468-2 2006-07	Plastics – Determination of the total luminous transmittance of transparent materials – Part 2: Double-beam instrument
PW-QM 11.01/05/06.02.071 2012-03	Determination of the visual acceptance of colour differences (pass/fail method)

**-Translation-**

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PW-QM 11.01/05/06.02.072 2012-03	Determination of the degree of whiteness according to Ganz, CIE, Berger, Taube, Hunter and Stensby, and determination of the color deviation according to Ganz/Griesser and CIE
SOP-QM-11.S.02.009 2019-05	Determination of protective effect of textiles against artificial UV radiation during welding processes

**6.2 UV protection**

DIN EN 13758-1 2007-03	Textiles – Solar UV protective properties – Part 1: Method of test for apparel fabrics
AATCC TM 183 2014	Transmittance or Blocking of Erythemally Weighted Ultraviolet Radiation through Fabrics
AS/NZS 4399 2017	Sun protective clothing – Evaluation and classification
Guidebook UV STANDARD 801 2018-08	Determination of the Ultraviolet Protection Factor (UPF) of textiles according to the UV STANDARD 801

**-Translation-**

## 7. Clothing technology tests<sup>2)</sup>

The test range of the flexible accreditation is characterized by the measures listed in the below table.

Measurement unit	Measuring range	Measurement uncertainty **
Length in terms of woven fabrics / single jersey / sweat fabrics	> 80.0 cm	+2 cm / -1 cm
	> 10.0 – 80.0 cm	+1 cm / -1 cm
	< 10.0 cm	+0.5 cm / -0.5 cm
Length in terms of knitted fabrics / coarse knits	> 35.0 cm	+2.5 cm / -1.5 cm
	> 10.0 – 35.0 cm	+1.5 cm / -1.5 cm
	< 10.0 cm	+0.5 cm / -0.5 cm

\*\* best measurement capability

Supplementary information to various sections of measurement see PW-QM 11.7.02.003

### Characteristic test procedures:

PW-QM 11.7.02.001                      Measuring of test samples / Preparation of measuring tables  
2008-07

### 7.1 Workmanship of clothing and ready-made textiles in new conditions or after care treatment

TextilKennzG                              Textile Marking Act  
2016-02

PW-QM 11.7.02.002                      Workmanship test of ready-made textiles  
2002-08

-Translation-

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**7.2 Fit in new condition and after care treatment**

DIN EN 13402-1 2001-06	Size designation of clothes – Part 1: Terms, definitions and body measurement procedure
DIN EN 13402-2 2002-06	Size designation of clothes – Part 2: Primary and secondary dimensions
DIN EN 13402-3 2014-03	Size designation of clothes – Part 3: Measurements and intervals
DIN EN 14682 2015-03	Safety of children's clothing – Cords and drawstrings on children's clothing
DIN EN 420 2010-03	Protective gloves – General requirements and test methods
DIN EN ISO 3758 2013-12	Textiles – Care labelling code using symbols
ISO 4418 1978-09	Size designation of clothes – Gloves
ISO 8559 1989-07	Garment construction and anthropometric surveys – Body dimensions
ASTM F1816-97 2009	Standard Safety Specifications for Drawstrings on Children's Upper Outerwear
1994-12	Girls' Size Charts, Germany 1994
1991	Body Measurement Charts for Clothing, Swissfashion
2009-03	DOB Size Charts-SizeGERMANY 2008
2009-12	HAKA Size Charts-SizeGERMANY 2008
2009-08	Size Charts Boys-SizeGERMANY 2008
2009-03	Size Charts Girls-SizeGERMANY 2008
2018-10	Size Chart Babies and Infants

**-Translation-**

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PW-QM 11.7.02.003 2010-11	Fit test of assembled textiles in new condition and optimization of size charts
PW-QM 11.7.02.005 2010-11	Fit test of assembled textiles after care treatment
PW-QM 11.7.02.008 2014-08	Fitting test of ready-made textiles in new condition and creation of a calculation measurement chart

**7.3 Tables on finished measures**

PW-QM 11.7.02.006 2008-01	Examination of ready-made measurement charts of submitted assembled textiles
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**8. Pre-treatment <sup>2)</sup>**

DIN EN ISO 15797 2018-05	Textiles – Industrial washing and finishing procedures for testing of workwear
DIN EN ISO 3175-2 2018-04	Textiles - Professional care, drycleaning and wetcleaning of fabrics and garments - Part 2: Procedure for testing performance when cleaning and finishing using tetrachloroethene
DIN EN ISO 6330 2013-02	Textiles – Domestic washing and drying procedures for textile testing
PW-QM 11.7.02.004 2008-01	Enforcement of care treatments of assembled textiles for fit test

**-Translation-**

## **9. Personal Protective Equipment**

### **9.1 Test and requirement standards <sup>3)</sup>**

<p>DIN EN 1149-5 2018-11 (EN 1149-5:2018)</p>	<p>Protective clothing – Electrostatic properties – Part 5: Material performance and design requirements</p>
<p>DIN EN 12477 2005-09 (EN 12477:2001 + A1:2005)</p>	<p>Protective gloves for welders</p>
<p>DIN EN 13034, Typ 6 2009-08 (EN 13034:2005+A1:2009)</p>	<p>Protective clothing against liquid chemicals – Performance requirements for chemical protective clothing offering limited protective performance against liquid chemicals (Type 6 and Type PB [6] equipment) exempt: 5.2 mist test</p>
<p>DIN EN 13911 2004-06 (EN 13911:2004)</p>	<p>Protective clothing for firefighters – Requirements and test methods for fire hoods for firefighters</p>
<p>DIN EN 14058 Anhang A 2004-08</p>	<p>Protective clothing – Garments for protection against cool environments</p>
<p>DIN EN 14325 2018-08 (EN 14325:2018)</p>	<p>Protective clothing against chemicals – Test methods and performance classification of chemical protective clothing materials, seams, joins and assemblages exempt: 4.5 Flex tearing strength 4.6 Flex tearing strength at -30°C 4.11 Permeation 4.14 Resistance against flammability 4.15 Resistance against flame impingement</p>
<p>DIN EN 14404 2010-05 (EN 14404:2004+ A1:2010)</p>	<p>Personal protective equipment – Knee protectors for work in the kneeling position Pkt. 6.10 Ergonomic testing – wearer trials</p>

**-Translation-**



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DIN EN 15614 2007-09 (EN 15614:2007)	Protective clothing for firefighters – Laboratory test methods and performance requirements for wildland clothing exempt: 9.2 retroreflective/fluorescence properties
DIN EN 16350 2014-07	Protective gloves – Electrostatic properties
DIN EN 16689 2017-06	Protective clothing for firefighters – Performance requirements for protective clothing for technical rescue exempt: 7.8 Resistance to Penetration by Blood Borne Pathogens
DIN EN 342 2004-09	Protective clothing – Ensembles and garments for protection against cool
DIN EN 343 2010-05 (EN 343 :2003+ A1 :2007 + AC :2009)	Protective clothing – Protection against rain
DIN EN 374-2 2015-03 (EN 374-2 :2014)	Protective gloves against chemicals and micro-organisms – Part 2: Determination of resistance to penetration
DIN EN 381-2 1995-06 (EN 381-2 :1995)	Protective clothing for users of hand held chain saws – Part 2: Test methods for leg protectors
DIN EN 381-5 1995-06 (EN 381-5 :1995)	Protective clothing for users of hand held chain saws – Part 5: Requirements for leg protectors
DIN EN 388 2019-03 (EN 388 :2016+A1:2018)	Protective gloves against mechanical risks
DIN EN 407 2004-11 (EN 407 :2004)	Protective gloves against thermal risks (heat and/or fire)

**-Translation-**

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DIN EN 420 2010-03 (EN 420 :2003+A1 :2009)	Protective gloves – General requirements and test methods
DIN EN 469 2007-02	Protective clothing for firefighters – Performance requirements for protective clothing for firefighting exempt: 6.15 Optional test – Testing on completeness of clothing
DIN EN 510 1993-03 (EN 510:1993)	Specifications for protective clothing for use where there is a risk of entanglement with moving parts
DIN EN 511 2006-07 (EN 511:2006)	Protective gloves against cold
DIN EN 659 2008-06 (EN 659:2003+A1:2008)	Protective gloves for firefighters
DIN EN ISO 11393-1 2018-12 (EN ISO 11393-1:2018)	Protective clothing for users of hand-held chainsaws - Part 1: Test rig for testing resistance to cutting by a chainsaw
DIN EN ISO 11611 2015-11 (EN ISO 11611:2015)	Protective clothing for use in welding and allied processes
DIN EN ISO 11612 2015-11 (EN ISO 11612:2015)	Protective clothing – Clothing to protect against heat and flame exempt: 9. Optional test — Whole garment test against fire exposure on thermal manikin
DIN EN ISO 13688 2013-12 (EN ISO 13688:2013)	Protective clothing – General requirements
DIN EN ISO 14116 2015-11 (EN ISO 14116:2015)	Protective clothing – Protection against flame – Limited flame spread materials, material assemblies and clothing

**-Translation-**

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<p>DIN EN ISO 20471 2017-03 (EN ISO 20471:2013 + A1:2016)</p>	<p>High visibility clothing – Test methods and requirements exempt: 6. Photometric performance requirements for retroreflective material and combined performance material after physical exposure</p>
<p>DIN EN ISO 374-1 2018-10 (EN ISO 374-1 :2016+A1_2018)</p>	<p>Protective gloves against chemicals and micro-organisms – Part 1: Terminology and performance requirements exempt: 5.3 Permeation</p>
<p>IEC 61482-2 2009-04</p>	<p>Live working – Protective clothing against the thermal hazards of an electric arc – Part 2: Requirements exempt: 5.4 Tests of arc thermal resistance requirements</p>
<p>ISO 15383 2001-09</p>	<p>Protective gloves for firefighters – Laboratory test methods and performance requirements exempt: 6.4.2 Liquid penetration resistance</p>
<p>ANSI / ISEA 107 2015</p>	<p>American National Standard for High-Visibility Safety Apparel and Headwear</p>

**9.2 Textile physical tests <sup>2)</sup>**

<p>DIN EN 1149-1 2006-09</p>	<p>Protective clothing – Electrostatic properties – Part 1: Surface resistivity (test method and demands)</p>
<p>DIN EN 1149-2 1997-11</p>	<p>Protective clothing – Electrostatic properties – Part 2: Test method for the measurement of the electrical resistance through a material (vertical resistance)</p>
<p>DIN EN 1149-3 2004-07</p>	<p>Protective clothing – Electrostatic properties – Part 3: Test methods for measurement of charge decay</p>
<p>DIN EN ISO 811 2018-08</p>	<p>Textiles – Determination of resistance of textile fabrics to water penetration; hydrostatic pressure test</p>
<p>DIN EN 367 1992-11 (EN 367:1992)</p>	<p>Protective clothing; protection against heat and flames; test method: determining of the heat transmission on exposure to flame</p>

**-Translation-**

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DIN EN 348 1992-11	Protective clothing; test method; determination of behaviour of materials on impact of small splashes of molten metal
DIN EN 530 2010-12 (EN 530:2010)	Abrasion resistance of protective clothing material – Test methods
DIN EN 863 1995-11 (EN 863:1995)	Protective clothing – Mechanical properties – Test method: Puncture resist
DIN EN ISO 11664-4 2012-06	Colorimetry – Part 4: CIE 1976 L*a*b* Colour space
DIN EN ISO 12127-1 2016-05 (EN ISO 12127-1:2015)	Clothing to protect against heat and flame – Determination of contact heat transmission through clothing or constituent materials – Part 1: Contact heat produced by heating cylinder
DIN EN ISO 12945-2 2000-11	Textiles – Determination of fabric propensity to surface fuzzing and to pilling – Part 2: Modified Martindale method
DIN EN ISO 12947-2 2017-03	Textiles – Determination of the abrasion resistance of fabrics by the Martindale method – Part 2: Determination of specimen breakdown
DIN EN ISO 13934-1 2013-08 (EN ISO 13934-1:2013)	Textiles – Tensile properties of fabrics – Part 1: Determination of maximum force and elongation at maximum force using the strip method
DIN EN ISO 13934-2 2014-06	Textiles – Tensile properties of fabrics – Part 2: Determination of maximum force using the grab method
DIN EN ISO 13937-1 2000-06	Textiles – Tear properties of fabrics – Part 1: Determination of tear force using ballistic pendulum method (Elmendorf)
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 13938-2 1999-10	Textiles – Bursting properties of fabrics – Part 2: Pneumatic method for determination of bursting strength and bursting distension
DIN EN ISO 13997 1999-10	Protective clothing – Mechanical properties – Determination of resistance to cutting by sharp objects

**-Translation-**

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DIN EN ISO 1421 2017-03 (EN ISO 1421:2016)	Rubber- or plastics-coated fabrics – Determination of tensile strength and elongation at break
DIN EN ISO 14268 2013-03	Leather – Physical and mechanical tests – Determination of water vapour permeability
DIN EN ISO 15025 2017-04	Protective clothing – Protection against flame – Method of test for limited flame spread
DIN EN ISO 3146 2002-06 (EN ISO 3146:2000)	Plastics – Determination of melting behaviour (melting temperature or melting range) of semi-crystalline polymers by capillary tube and polarizing-microscope methods
DIN EN ISO 3376 2012-03 (EN ISO 3376:2011)	Leather – Physical and mechanical tests – Determination of tensile strength and percentage extension
DIN EN ISO 3377-1 2012-03 (EN ISO 3377-1:2011)	Leather – Physical and mechanical tests – Determination of tear load – Part 1: Single edge tear
DIN EN ISO 3759 2011-08	Textiles – Preparation, marking and measuring of fabric specimens and garments in tests for determination of dimensional change
DIN EN ISO 4674-1 2017-03 (EN ISO 4674-1:2016)	Rubber- or plastics-coated fabrics – Determination of tear resistance – Part 1: Constant rate of tear methods
DIN EN ISO 4920 2012-12	Textile fabrics – Determination of resistance to surface wetting (spray test)
DIN EN ISO 5077 2008-04	Textiles – determination of dimensional change in washing and drying
DIN EN ISO 6530 2005-05 (EN ISO 6530:2005)	Protective clothing – Protection against liquid chemicals – Test method for resistance of materials to penetration by liquids
DIN EN ISO 6940 2004-06	Textile fabrics – Burning behaviour – Determination of ease of ignition of vertically oriented specimens
DIN EN ISO 6941 2004-05	Textile fabrics – Burning behaviour – Measurement of flame spread properties of vertically oriented specimens

**-Translation-**

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DIN EN ISO 6942 2002-09 (EN ISO 6942:2002)	Protective clothing – Protection against heat and fire – Method of test: Evaluation of materials and material assemblies when exposed to a source of radiant heat
DIN EN ISO 7854 1997-04 (EN ISO 7854:1997)	Rubber- or plastics-coated fabrics – Determination of resistance to damage by flexing
DIN EN ISO 9073-4 1997-09 (EN ISO 9073-4:1997)	Textiles – Test methods for nonwovens – Part 4: Determination of tear resistance
DIN EN ISO 9185 2007-09 (EN ISO 9185:2007)	Protective clothing – Assessment of resistance of materials to molten metal splash
DIN EN ISO 9237 1995-12	Textiles – Determination of permeability of fabrics to air
ISO 11092 2014-12	Textiles – Physiological effects – Measurement of thermal and water-vapor resistance under steady-state conditions (sweating guarded-hotplate test)
ISO 17493 2016-12	Clothing and equipment for protection against heat – Test method for convective heat resistance using a hot air circulating oven
ISO 4675 1990-07	Rubber- or plastics-coated fabrics – Low-temperature bend test
ISO 5085-1 1989-11	Textiles; determination of thermal resistance; part 1: low thermal resistance
ISO 9150 1998-12	Protective clothing; determination of behaviour of materials on impact of small splashes of molten metal
ISO 9151 2017-05	Protective clothing against heat and flame – Determination of heat transmission on exposure to flame

**-Translation-**

**Annex to the accreditation certificate D-PL-12083-01-01**

**9.3 Colour fastnesses <sup>3)</sup>**

DIN EN 20105-N01 1995-03	Textiles – Tests for colour fastness – Part N01: Colour fastness to bleaching: Hypochlorite
DIN EN ISO 105-B02 2014-11	Textiles – Tests for colour fastness – Part B02: Colour fastness to artificial light: Xenon arc fading lamp test
DIN EN ISO 105-C06 2010-08	Textiles – Tests for colour fastness – Part C06: Colour fastness to domestic and commercial laundering
DIN EN ISO 105-C10 2007-06	Textiles – Tests for colour fastness – Part C10: Colour fastness to washing with soap or soap and soda
DIN EN ISO 105-D01 2010-10	Textiles – Tests for colour fastness – Part D01: Colour fastness to dry cleaning using perchloroethylene solvent
DIN EN ISO 105-E04 2013-08	Textiles – Tests for colour fastness – Part E04: Colour fastness to perspiration
DIN EN ISO 105-N02 2018-12	Textiles – Tests for colour fastness – Part N02: Colour fastness to bleaching: Peroxide
DIN EN ISO 105-P01 1995-04	Textiles – Tests for colour fastness – Part P01: Colour fastness to dry heat (excluding pressing)
DIN EN ISO 105-X11 1996-10	Textiles – Tests for colour fastness – Part X11: Colour fastness to hot pressing
DIN EN ISO 105-X12 2016-11	Textiles – Tests for colour fastness – Part X12: Colour fastness to rubbing

**-Translation-**

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**9.4 Pre-treatment <sup>3)</sup>**

<p>DIN EN ISO 15797 2018-05 (ISO 15797:2017)</p>	<p>Textiles – Industrial washing and finishing procedures for testing of workwear</p>
<p>DIN EN ISO 3175-2 2018-04 (ISO 3175-2:2017-12)</p>	<p>Textiles – Professional care, drycleaning and wetcleaning of fabrics and garments – Part 2: Procedure for testing performance when cleaning and finishing using tetrachloroethene</p>
<p>DIN EN ISO 6330 2013-02 (EN ISO 6330:2000 + A1:2009)</p>	<p>Textiles – Domestic washing and drying procedures for textile testing</p>

**10. Test on toys <sup>3)</sup>**

<p>DIN EN 62115 2016-06</p>	<p>Electric toys – Safety (IEC 62115:2003 + A1:2004, modified) exempt: 11 Resistance to humidity Annex E Toys with laser or light-emitting diodes (LEDs) Annex ZC Toys that create electromagnetic field</p>
<p>DIN EN 71-1 2018-12</p>	<p>Safety of toys – Part 1: Mechanical and physical properties exempt: 8.18 Folding or sliding mechanisms 8.19 Electric resistivity of cords 8.21 Static strength 8.22 Dynamic strength 8.23 Stability 8.24 Kinetic energy of projectiles 8.26 Brake performance 8.27 Strength of toy scooter steering tubes 8.28.2.4 Determination of emission sound pressure levels of toys with earphones and headphones 8.29 Determination of maximum design speed of electrically-driven ride-on toys 8.37 Yo-yo balls measurements 8.42 Determination of projectile range</p>

**-Translation-**



8.43 Assessment of leading parts of projectiles and flying toys  
8.44 Length of suction cup projectiles

**-Translation-**

**11. Tests on toys and infant articles according to the specifications of the United States Consumer Product Safety Commission**

16 CFR PART 1501 2015	Method for identifying toys and other articles intended for use by children under 3 years of age which present choking, aspiration, or ingestion hazards because of small parts
16 CFR PART 1510 2012	Requirements for Rattles
ASTM F 963 2017	Standard Consumer Safety Specification for Toy Safety
ASTM F 963-16, 4.6	Small objects
ASTM F 963-16, 4.7	Accessible edges
ASTM F 963-16, 4.8	Projection
ASTM F 963-16, 4.9	Accessible points
ASTM F 963-16, 4.10	Wires and rods
ASTM F 963-16, 4.11	Nails and fasteners
ASTM F 963-16, 4.12	Plastic films
ASTM F 963-16, 4.13	Folding Mechanisms and Hinges
ASTM F 963-16, 4.14	Cords and Elastics in Toys
ASTM F 963-16, 4.17	Wheels, Tires and Axles
ASTM F 963-16, 4.22	Teethers and Teething Toys
ASTM F 963-16, 4.23	Rattles
ASTM F 963-16, 4.24	Squeeze toys
ASTM F 963-16, 4.26	Toys Intended to be Attached to a Crib or Playpen
ASTM F 963-16, 4.27	Stuffed and Beanbag-Type Toys
ASTM F 963-16, 4.31	Balloons
ASTM F 963-16, 4.32	Certain Toys with Nearly Spherical Ends
ASTM F 963-16, 4.33	Marbles
ASTM F 963-16, 4.34	Balls
ASTM F 963-16, 4.35	Pompoms
ASTM F 963-16, 4.36	Hemispheric-Shaped Objects
ASTM F 963-16, 4.38	Magnets
ASTM F 963-16, 4.40	Expanding materials
ASTM F 963-16, 4.41	Toy Chests

**-Translation-**

## **12. Microbiological testing of water**

### **12.1 Sampling <sup>3)</sup>**

DIN EN ISO 19458 2006-12	Water quality – Sampling for microbiological analysis
DIN EN ISO 5667-3 2019-07	Water quality – Sampling – Part 3: Preservation and handling of water samples
DIN ISO 5667-5 2011-02	Water quality – Sampling – Part 5: Guidance on sampling of drinking water from treatment works and piped distribution systems
VDI 2047 Blatt 2 2019-01	Open recoler systems – Securing hygienically sound operation of evaporative cooling systems (VDI Cooling Tower Code of Practice) (here sampling only)
SOP-QM-11.HY03.078 2018-11	Sampling of process water

**-Translation-**

## 12.2 Determination of bacteria in water by means of cultural microbiological methods <sup>1)</sup>

The test range of the flexible accreditation is characterized by the measures listed in the below table.

Test type	Matrix	Analyte	Characteristic testing
Cultural microbiological methods	Drinking water (beside the German Drinking Water Ordinance) Water of swimming pools and baths Process water Water from ventilation and air-conditioning systems Water from open recoler system, cooling towers and wet separators	Bacteria	DIN 19643-1 DIN EN ISO 11731 DIN EN ISO 16266 DIN EN ISO 6222 DIN EN ISO 7899-2 (K15) DIN EN ISO 9308-1 TrinkwV §15 Paragraph (1c) DVGW-Worksheet W 551 UBA Recommendation 02.06.2017 VDI 2047 Part 2 VDI 6022 Part 1 VDI 6022 Part 1.1

### Characteristic test procedures:

DIN 19643-1 2012-11	Treatment of the water of swimming-pools and baths – Part 1: General requirements
DIN EN ISO 11731 (K-23) 2019-03	Water quality – Enumeration of Legionella
DIN EN ISO 16266 (K-11) 2008-05	Water quality – Detection and enumeration of <i>Pseudomonas aeruginosa</i> – Method by membrane filtration
DIN EN ISO 6222 (K-5) 1999-07	Water quality – Enumeration of culturable micro-organisms – Colony count by inoculation in a nutrient agar culture medium
DIN EN ISO 7899-2 (K-15) 2000-11	Water quality – Detection and enumeration of intestinal enterococci – Part 2: Membrane filtration method
DIN EN ISO 9308-1 (K-12) 2017-09	Water quality – Enumeration of Escherichia coli and coliform bacteria – Part 1: Membrane filtration method for waters with low bacterial background flora

-Translation-

Valid from: 08.05.2020

Date of issue: 27.08.2020

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German Drinking Water Ordinance §15 Paragraph (1c)	Determination of culturable micro-organisms – Colony count by inoculation in a nutrient agar culture medium (Colony count at 22°C and 36°C)
UBA Recommendation 02.06.2017	Sampling and detection of Legionella from evaporative cooling system, cooling towers and wet separators
DVGW- Worksheet W 551 2004-04	Drinking water heating and drinking water piping systems – Technical measures to reduce Legionella growth – Design, construction, operation and rehabilitation of drinking water installations
VDI 2047 Part 2 2015-01	Open recoler systems – Securing hygienically sound operation of evaporative cooling systems (VDI Cooling Tower Code of Practice)
VDI 6022 Part 1 2018-01	Ventilation and indoor-air quality – Hygiene requirements for ventilation and air-conditioning systems and units (VDI Ventilation Code of Practice)
VDI 6022 Part 1.1 2012-08	Ventilation and indoor-air quality – Qualification of personnel for hygiene checkings, hygiene inspections, and assessment of indoor-air quality

**-Translation-**

**12.3 Determination of viruses in water by means of cultural microbiological methods <sup>3)</sup>**

The test range of the flexible accreditation is characterized by the measures listed in the below table.

<b>Test type</b>	<b>Matrix</b>	<b>Analyte</b>	<b>Characteristic testing</b>
Cultural microbiological methods	Drinking water (beside the German Drinking Water Ordinance) Water of swimming pools and baths Process water	Viruses	SOP-QM-11.HY.03.024

**Characteristic test procedures:**

SOP-QM-11.HY.03.024  
2019-03

Determination of micro-organisms in water samples and aqueous solutions

**-Translation-**

**12.4 Determination of mould and yeast in water by means of cultural microbiological methods <sup>2)</sup>**

The test range of the flexible accreditation is characterized by the measures listed in the below table.

Test type	Matrix	Analyte	Characteristic testing
Cultural microbiological methods	Drinking water (beside the German Drinking Water Ordinance) Water of swimming pools and baths Process water Water from ventilation and air-conditioning systems	Yeast Mould	VDI 6022 Part 1 SOP-QM-11.HY.03.024

**Characteristic test procedures:**

VDI 6022 Part 1 2011-07	Ventilation and indoor-air quality – Hygiene requirements for ventilation and air-conditioning systems and units (VDI Ventilation Code of Practice)
SOP-QM-11.HY.03.024 2019-03	Determination of micro-organisms in water samples and aqueous solutions

**-Translation-**

### 13 Microbiological testing according to the German Drinking Water Ordinance <sup>3)</sup>

#### Sampling

Procedure	Title
DIN ISO 5667-5 (A 14) 2011-02	Water quality – Sampling – Part 5: Guidance on sampling of drinking water from treatment works and piped distribution systems
DIN EN ISO 5667-3 (A 21) 2013-03	Water quality – Sampling – Part 3: Preservation and handling of water samples
DIN EN ISO 19458 (K 19) 2006-12	Water quality – Sampling for microbiological analysis

#### ANNEX 1: MICROBIOLOGICAL PARAMETER

##### PART I: General requirements to drinking water

Ser. No.	Parameter	Procedure
1	Escherichia coli (E. coli)	DIN EN ISO 9308-1: 2017-09
2	Enterococci	DIN EN ISO 7899-2 (K15) 2000-11

##### PART II: Requirements to drinking water, which is intended for delivery in sealed containers

Ser. No.	Parameter	Procedure
1	Escherichia coli (E. coli)	DIN EN ISO 9308-1: 2017-09
2	Enterococci	DIN EN ISO 7899-2 (K15) 2000-11
3	Pseudomonas aeruginosa	DIN EN ISO 16266 (K11) 2008-05

#### ANNEX 2: CHEMICAL PARAMETER

##### Part I: Chemical parameters, whose concentration as a rule do not increase within the distribution network incl. drinking water installations

Not occupied

##### Part II: Chemical parameters, whose concentrations can increase within the distribution network incl. drinking water installations

Not occupied

-Translation-

Valid from: 08.05.2020

Date of issue: 27.08.2020



**ANNEX 3: INDICATIVE PARAMETER**

**Part I: General indicative parameter**

Ser. No.	Parameter	Procedure
1	Aluminium	Not occupied
2	Ammonium	Not occupied
3	Chloride	Not occupied
4	<i>Clostridium perfringens</i> (including spores)	DIN EN 14189 (K 24): 2016-11
5	Coliform bacteria	DIN EN ISO 9308-1: 2017-09
6	Iron	Not occupied
7	Coloration (Spectral absorption coefficient Hg 436 nm)	Not occupied
8	Odour	Not occupied
9	Taste	Not occupied
10	Colony count at 22°C	TrinkwV §15 (1c)
11	Colony count at 36°C	TrinkwV §15 (1c)
12	Electrical conductivity	Not occupied
13	Manganese	Not occupied
14	Sodium	Not occupied
15	Total organic carbon (TOC)	Not occupied
16	Oxidability	Not occupied
17	Sulphate	Not occupied
18	Turbidity	Not occupied
19	Hydrogen ion concentration	Not occupied
20	Citrate dissolving capacity	Not occupied
21	Tritium	Not occupied
22	Total indicative dose	Not occupied

**Part II: Special requirements to drinking water in equipment of drinking water installations**

Parameter	Procedure
Legionella spec.	ISO 11731: 2017-05 UBA Recommendation 18 <sup>th</sup> December 2018 applicable until 28.02.2019

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**ANNEX 3a: Requirements to drinking water relating radioactive materials**

Not occupied

**Parameters, that are not included in annex 1 to 3 of the German Drinking Water Ordinance**

**Further periodic testing**

Not occupied

The accreditation does not replace the recognition- and admission procedure of the responsible authority according § 15 (4) TrinkwV.

**-Translation-**

**Valid from: 08.05.2020**

Date of issue: 27.08.2020

**14. Sampling and microbiological testing of water according to §3 section 8  
42. BImSchV**

**Sampling**

Procedure	Title
DIN EN ISO 19458 (K 19) 2006-12	Water quality – Sampling for microbiological analysis
	Recommendation of the Federal Environmental Agency for sampling and detection of Legionella from evaporative cooling system, cooling towers and wet separators from 02.06.2017, section C and D

**Microbiological testing**

Parameter	Procedure
Legionella	ISO 11731 2017-05
	Recommendation of the Federal Environmental Agency for sampling and detection of Legionella from evaporative cooling system, cooling towers and wet separators from 02.06.2017, section E and F in consideration of Annex 1 and 2
Colony count at 22°C and 36 °C	DIN EN ISO 6222 (K 5) 1999-07

**15. Microbial testing of textiles and products <sup>3)</sup>**

DIN EN 1884 1998-11	Feather and down – Test methods – Determination of microbiological state (Modification: use of current culture media: buffered peptone water; MSR medium; XLD and Rambach agar; SFP-agar, rapid detection)
DIN EN ISO 22612 2005-05	Clothing for protection against infectious agents – Test method for resistance to dry microbial penetration

-Translation-

**16. Antimicrobial testing of textiles, commodities and disinfectants**

**16.1 Determination of antibacterial activity of textiles, commodities and disinfectants by means of cultural microbiological methods <sup>1)</sup>**

The test range of the flexible accreditation is characterized by the measures listed in the below table.

Test type	Matrix	Analyte	Characteristic testing
Cultural microbiological methods	Commodities	Bacteria	DIN EN ISO 20645 DIN EN ISO 20743 ISO 22196 JIS L 1902 JIS Z 2801 SN 195924 AATCC 100 AATCC 147 AATCC 174 ASTM E 2149a ASTM E 2180
	Disinfectants	Bacteria Mycobacteria	DIN EN 1040 DIN EN 1276 DIN EN 13697 DIN EN 16616 VAH Method 8 VAH Method 9 VAH Method 17

-Translation-

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**Characteristic test procedures:**

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 (phase 1)
DIN EN 1276 2010-01	Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas – Test method and requirements (phase 2, step 1)
DIN EN 13697 2019-10	Chemical disinfectants and antiseptics – Quantitative non-porous surface test for the evaluation of bactericidal and/or fungicidal activity of chemical disinfectants used in food, industrial, domestic and institutional areas – Test method and requirements without mechanical action (phase 2, step 2)
DIN EN 16616 2015-10	Chemical disinfectants and antiseptics – Chemical-thermal textile disinfection – Test method and requirements (phase 2, step 2)
DIN EN ISO 20645 2005-02	Textile fabrics – Determination of antibacterial activity – Agar diffusion plate test
DIN EN ISO 20743 2013-12	Textiles – Determination of antibacterial activity of textile products
ISO 22196 2011-08	Measurement of antibacterial activity on plastics and other non-porous surfaces
JIS L 1902 2015-07	Determination of antibacterial activity and efficacy of textile products
JIS Z 2801 2010	Antimicrobial products – Test for antimicrobial activity and efficiency
SN 195924 1983	Textile fabrics; determination of the antibacterial activity: germ count method
AATCC 100 2012	Assessment of Antibacterial Finishes on Textile Materials

**-Translation-**

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AATCC 147 2016	Antibacterial Activity Assessment of Textile Materials: Parallel Streak Method
AATCC 174 2016	Antimicrobial Activity Assessment of Carpets
ASTM E 2149a 2013	Standard Test Method for Determining the Antimicrobial Activity of Immobilized Antimicrobial Agents Under Dynamic Contact Conditions
ASTM E 2180 2007 (reapproved 2017)	Standard Test Method for Determining the Activity of Incorporated Antimicrobial Agent(s) In Polymeric or Hydrophobic Materials
VAH Method 8 2015-04	Evaluation of bactericidal and yeasticidal activity with quantitative suspension test
VAH Method 9 2015-04	Evaluation of bactericidal and yeasticidal activity with quantitative suspension test
VAH Method 17 2015-04	Chemical-thermal textile disinfection – Single bath method (practical conditions)

**16.2 Determination of antiviral activity by means of microbiological methods <sup>2)</sup>**

The test range of the flexible accreditation is characterized by the measures listed in the below table.

Test type	Matrix	Analyte	Characteristic testing
Microbiological methods	Commodities	Virus	DIN EN ISO 20743 ISO 22196 AW-QM-11.08.03.054 AW-QM-11.08.03.057

**Characteristic test procedures:**

DIN EN ISO 20743 2013-12	Textiles – Determination of antibacterial activity of textile products
ISO 22196 2011-08	Measurement of antibacterial activity on plastics and other non-porous surfaces

**-Translation-**

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AW-QM-11.08.03.054 2012-07	Quantitative microbiological test for antiviral activity of textiles (AMW viral) (following DIN EN ISO 20743)
AW-QM-11.08.03.057 2012-07	Quantitative microbiological test for antiviral activity of commodities and surfaces (AMW viral) (following ISO 22196)

**16.3 Determination of antimycotic and yeasticidal activity by means of microbiological methods <sup>1)</sup>**

The test range of the flexible accreditation is characterized by the measures listed in the below table.

Test type	Matrix	Analyte	Characteristic testing
Microbiological methods	Commodities	Dermatophytes Mould Yeast	DIN EN 14119 DIN EN ISO 20743 DIN EN ISO 846 SN 195921 AATCC 30
	Disinfectants	Dermatophytes Mould Yeast	DIN EN 1275 DIN EN 13697 DIN EN 1650 DIN EN 16616 VAH Method 9 VAH Method 17

**Characteristic test procedures:**

DIN EN 1275 2006-03	Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of basic fungicidal or basic yeasticidal activity of chemical disinfectants and antiseptics – Test method and requirements (phase 1)
DIN EN 13697 2019-10	Chemical disinfectants and antiseptics – Quantitative non-porous surface test for the evaluation of bactericidal and/or fungicidal activity of chemical disinfectants used in food, industrial, domestic and institutional areas – Test method and requirements without mechanical action (phase 2, step 2)
DIN EN 14119 2003-12	Testing of Textiles – Evaluation of the action of microfungi

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DIN EN 1650 2019-10	Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas – Test method and requirements (phase 2, step 1)
DIN EN 16616 2015-10	Chemical disinfectants and antiseptics – Chemical-thermal textile disinfection – Test method and requirements (phase 2, step 2)
DIN EN ISO 20743 2013-12	Textiles – Determination of antibacterial activity of textile products
DIN EN ISO 846 1997-10	Plastics – Evaluation of the action of microorganisms
SN 195921 1994	Textile Fabrics – Determination of the Antimycotic Activity – Agar Diffusion Plate Test
AATCC 30 2013	Antifungal Activity, Assessment on Textile Materials: Mildew and Rot Resistance of Textile Materials
VAH Method 9 2015-04	Evaluation of bactericidal, yeasticidal, fungicidal, tuberculocidal or mycobactericidal activity with quantitative suspension test
VAH Method 17 2015-04	Chemical-thermal textile disinfection – Single bath method (practical conditions)

**-Translation-**



## **17. Microbiological testing – General hygiene management of facilities**

DIN 10113-3 1997-07	Determination of surface colony count on fitment and utensils in foodareas – Part 3: Semiquantitative method with culture media laminated taking up equipment (squeeze method)
DIN ISO 18593 2018-10	Microbiology of food and animal feeding stuffs – Horizontal methods for sampling techniques from surfaces using contact plates and swabs
VAH Method 9 2015-04	Evaluation of bactericidal, yeasticidal, fungicidal, tuberculocidal or mycobactericidal activity with quantitative suspension test
VAH Method 15 2015-04	Chemical/chemical-thermal instrument disinfectants – practical quantitative carrier test
VAH Method 17 2015-04	Chemical-thermal textile disinfection – Single bath method (practical conditions)
SOP-QM-11.HY.03.015 2018-11	Application of bio-indicators for testing sterilizers and disinfection apparatus and assessment
SOP-QM-11.HY.03.021 2018-11	Application of bio-indicators for on-the-spot-testing of disinfecting effects of disinfectant laundering and assessment
AW-QM-11.08.03.027 2008-03	Procedure for determining airborne germs in clean rooms

**-Translation-**

**18. Biological testing**

**18.1 Biocompatibility testing with cell lines by means of biological methods <sup>2)</sup>**

The test range of the flexible accreditation is characterized by the measures listed in the below table.

<b>Test type</b>	<b>Matrix</b>	<b>Analyte</b>	<b>Characteristic testing</b>
Biological methods	Commodities with skin contact Cosmetics	Cell lines	SOP-QM-11.BM.03.059 SOP-QM-11.08.03.068 SOP-QM-11.08.03.080 SOP-QM-11.BM.03.094

**Characteristic test procedures:**

SOP-QM-11.BM.03.059 2019-08	Testing for skin compatibility
SOP-QM-11.08.03.068 2017-09	In vitro test for sensitisation potential „Modified Myeloid U937 Skin Sensitization Test (mMUSST)
SOP-QM-11.08.03.080 2017-08	Testing for skin compatibility according to DIN EN ISO 10993-5 (here: commodities with skin contact)
SOP-QM-11.BM.03.094 2019-08	Test for cytotoxicity on textiles and commodities

**-Translation-**

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**18.2 Biocompatibility testing on chorioallantoic membrane by means of biological methods<sup>2)</sup>**

The test range of the flexible accreditation is characterized by the measures listed in the below table.

<b>Test type</b>	<b>Matrix</b>	<b>Analyte</b>	<b>Characteristic testing</b>
Biological methods	Commodities with skin contact Cosmetics	Chorioallantoic membrane	INVITTOX-Protocol N° 96 SOP-QM-11.08.03.038

**Characteristic test procedures:**

INVITTOX-Protocol N° 96	The Hen´s Egg Test on the Chorioallantoic Membrane (HET-CAM)
SOP-QM-11.08.03.038 2017-08	Test on Irritation: The Hen´s Egg Test on the Chorioallantoic Membrane (HET-CAM)

**-Translation-**

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**18.3 Testing of allergen reduction by means of microscopy <sup>2)</sup>**

The test range of the flexible accreditation is characterized by the measures listed in the below table.

<b>Test type</b>	<b>Matrix</b>	<b>Analyte</b>	<b>Characteristic testing</b>
Microscopy	Commodities	<i>Dermatophagoides pteronyssinus</i>	NF G39-011 AATCC 194 SOP-QM-11.08.03.041

**Characteristic test procedures:**

NF G39-011 2009-02	Properties of textiles – Textiles and polymeric materials having anti-dustmite properties – Characterisation and measurement of anti-dustmite activity
AATCC 194 2013	Assessment of the Anti-House Dust Mite Properties of Textiles under Long-Term Test Conditions
SOP-QM-11.08.03.041 2017-10	Characterisation and measurement of anti-dustmite activity according to NF G39-011

**-Translation-**

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**18.4 Testing of allergen reduction by means of immunoassay <sup>2)</sup>**

The test range of the flexible accreditation is characterized by the measures listed in the below table.

Test type	Matrix	Analyte	Characteristic testing
Immunoassay	Commodities	Der p1	NF G39-011 AATCC TM 194 SOP-QM-11.08.03.062 SOP-QM-11.08.03.063

**Characteristic test procedures:**

NF G39-011 2009-02	Properties of textiles – Textiles and polymeric materials having anti-dustmite properties – Characterisation and measurement of anti-dustmite activity
AATCC TM 194 2013	Assessment of the Anti-House Dust Mite Properties of Textiles under Long-Term Test Conditions
SOP-QM-11.08.03.062 2017-10	Testing on impermeability to mite dropping allergens
SOP-QM-11.08.03.063 2017-10	Characterization and measurement of anti-dustmite activity following NF G39-011 by means of Der p1 ELISA

**-Translation-**

## 19. Molecular biological analysis of cotton and cotton products<sup>3)</sup>

### 19.1 Test on genetic modifications by means of Real-Time-PCR

IWA 32 2019-04	Screening of genetically modified organisms (GMOs) in cotton and textiles
SOP-QM-11.08.03.101 2019-10	IWA 32 – Screening of genetically modified organisms (GMOs) in cotton and cotton products

#### **Abbreviations used:**

AATCC	American Association of Textile Chemists and Colorists
ASTM	ASTM International, formerly known as the American Society for Testing and Materials
AW-QM	Standard Operating Procedure Hohenstein Institute (inhouse method)
BPI	Bekleidungsphysiologisches Institut (inhouse method)
CFR	Code of Federal Regulations
DVGW	Deutsche Vereinigung des Gas- und Wasserfaches e. V. [German Association for Gas and Water]
JIS	Japan Industrial Standard
PW-QM	Standard Operating Procedure Hohenstein Institute (inhouse method)
SN	Schweizer Norm [Swiss Standard]
SOP-QM	Standard Operating Procedure Hohenstein Institute (inhouse method)
UBA	Umweltbundesamt [Federal Environmental Agency]
VAH	Verband für Angewandte Hygiene e.V. [German Association for Applied Hygiene]

**-Translation-**

**Valid from: 08.05.2020**

Date of issue: 27.08.2020