

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-13119-02-00  
according to DIN EN ISO/IEC 17025:2018

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

Holder of certificate:

**IMA Materialforschung und Anwendungstechnik GmbH  
Wilhelmine-Reichard-Ring 4, 01109 Dresden**

for its laboratories

**Labor für Materialographie  
Labor für Schwingungsprüfungen  
Labor für statische und dynamische Bauteilprüfungen  
Labor für mechanisch-technologische Prüfungen  
Labor für Kunststoffprüfungen  
Labor für Rohrsystemprüfungen  
Labor für zerstörungsfreie Prüfung  
Labor für elektrische Betriebsfestigkeit**

at the location:

**Wilhelmine-Reichard-Ring 4, 01109 Dresden  
Am Lagerplatz 4, 01099 Dresden**

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>*

Tests in the fields:

**Tribological component test, component oriented and model testing under dry friction, liquid friction or mixed friction conditions;**  
**mechanical vibration and shock tests as well as static and dynamic tests with internal pressure;**  
**mechanical strength and functional tests on specimens, specimen similar structural elements, building components, components, structures and complete products;**  
**mechanical-technological and physical tests on polymer materials and derived products;**  
**structural mechanical, analytical and physical tests on pipes, fittings and their materials;**  
**manual non-destructive tests (ultrasonic, visual, magnetic particle and penetrant testing) as well as mechanical ultrasonic testing of metallic and fibre reinforced materials and plastic as well as composite materials;**  
**metallographic investigations and spark discharge optical emission spectrometric analyses of the chemical composition of steel and alloys of Al- and Cu-Basis;**  
**Corrosion tests (dipping method);**  
**Electrical tests of devices, components and assemblies; testing of electrical and electronic devices, components and assemblies in motor vehicles; Environmental simulation tests on devices, components and components;**  
**testing of noise behaviour of fittings and water installation devices**

The test methods are indicated with the following abbreviations for locations, in which they are performed respectively:

D1 = Wilhelmine-Reichard-Ring 4, 01109 Dresden

D2 = Am Lagerplatz 4, 01099 Dresden

**Within the given testing field marked with \*, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the free choice of standard or equivalent testing methods within a defined test area. The test methods listed are exemplary.**

**Within the given testing field marked with \*\*, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the modification, further and new development of testing methods within of a defined test area. The listed testing methods are exemplary.**

**Within the given testing field marked with \*, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the free choice of standard or equivalent testing methods with different issue dates.**

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

**1 Tribological component-test, component oriented and model testing under dry friction, liquid friction or mixed friction conditions \* (D1, D2)**

Test type	Measurand/ test parameter	Measurement and test range	Characteristic test methods
Sliding abrasion, continuous and oscillating	Wear mass $W_m$	$W_m > 1$ mg 0 g until 200 g	DIN 50321 DIN ISO 4649
Sliding abrasion, continuous and oscillating	Linear wear $W_l$	$W_l > 1$ $\mu$ m Surface profile measuring system Perthometer Concept 7.21, measurement range 1 $\mu$ m until 4000 $\mu$ m	DIN 50321 ASTM F 1978 DIN EN ISO 4287 DIN EN ISO 4288 DIN EN ISO 13565-1 DIN EN ISO 13565-2

**2 Mechanical vibration and shock tests as well as static and dynamic tests with internal pressure even under temperature loads \*\* (D1, D2)**

Test type	Measurand/ test parameter	Measurement and test range	Characteristic test methods
Vibration and shock test with electro- dynamic shakers	Acceleration vibration	until 140 g	DIN EN 60068-2-6 DIN EN 60068-2-27 DIN EN 60068-2-64 DIN EN 60068-2-80 DIN EN 60068-2-81
	Frequency of vibration acceleration	1 Hz until 3,5 kHz	
	Acceleration shocks	until 300 g	
Multi-axial vibration test with servo hydraulics	Acceleration swing	until 20 g	IMA-PV K/1 IMA-PV K/2
	Swing displacement	until 120 mm	
	Frequency of vibration acceleration	0,1 Hz until 150 Hz	
Hot gas flow	Temperature	until 850 °C	IMA-PV K/1
	Mass flow	until 0,85 kg/s	
Climate test	Temperature	-70 °C until 300 °C	DIN EN 60068-2-1 DIN EN 60068-2-2 DIN EN 60068-2-30 DIN EN 60068-2-38 DIN EN 60068-2-53 DIN EN 60068-2-78
	Humidity	10 % until 98 %	
Bursting pressure test	Dynamic pressure	until 5000 bar	IACS Requ. 2011 GL VI-7-8
Dynamic pressure test	Pressure frequency	until 1400 bar	DNV No. 2.9 DIN EN ISO 19879
	Vibration	until 30 Hz	

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

Test type	Measurand/ test parameter	Measurement and test range	Characteristic test methods
Compression test with simultaneous bending	Vibration frequency	until 25 mm	
	Dynamic pressure	until 100 Hz	

**3 Mechanical strength and functional tests on specimens, specimen similar structural elements, building components, components, structures and complete products \*\* (D1, D2)**

Test type	Measurand/ test parameter	Measurement and test range	Characteristic test methods
Single component static and dynamic tests for - tensile - compressive - torsion - flexure	Tensile strength	10 N until 2000 kN	IMA-PV C/1 IMA-PV C/2 DIN EN ISO 376 DIN EN ISO 7500-1 DIN EN 13749 UIC 517 AC2/8
	Compression force	10 N until 4000 kN	
	Torsional moment	5 Nm until 20 kNm	
	Displacement/ Deformation	10 µm until 200 mm	
	Angle	0,1° until 360°	
	Elongation	10 µm/m until 5%	
Abrupt stress loads (Impact test)	Energy	7,5 J until 14,7 kJ	AITM1-0100 AC2/8
	Velocity	3 until 18 m/s	
	Force	22 kN	
	Acceleration	1 g until 10.000 g	
	Mass	700 g until 150kg	
	Drop Height	0,7 m until 4 m	
Environmental simulation	Humidity	10% RH until 98% RH	DIN EN 60584-2 DIN EN 2823 ASTM 5229 DDIN EN 60068-2-14 DDIN EN 60068-2-30
	Temperature	-80°C - 1200°C	
Vibration / oscillation	Acceleration	1g until 500g (DC 10kHz)	FoN 106100 FoN 106300 AC2/8
	Force	1 kN until 50 kN	
	Displacement	1 until 250 mm	

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

Test type	Measurand/ test parameter	Measurement and test range	Characteristic test methods
	Elongation	10 µm/m until 5%	
Internal pressure	Differential pressure	1 mbar until 2000 bar	AC2/8
Internal pressure with superimposed mechanical load	Differential pressure	1 mbar until 200 bar	IMA-PV C/4
	Tensile / Compression force	10 kN until 3000 kN	IMA-PV C/5
	Displacement	1 until 200 mm	IMA-PV C/6
	Elongation	10 µm/m until 5%	IMA-PV C/7 AC2/8
Multiple component static and dynamic tests	Force	10 N until 4000 kN	DIN EN 13749 DIN EN 12663-1 TSI_WAG UIC 517 IMA-PV C/8 AC2/8 AK-LH-14 EN 12082
	Torsion moment	5 Nm until 20 kNm	
	Displacement	10 µm until 2,5 m	
	Angle	0,1° until 360°	
	Elongation	10 µm/m until 5%	
	Air speed/ Windspeed	1 until 4 m/s 4 until 25 m/s	
	Revolutions per minute	1 until 3000 min <sup>-1</sup>	
	Temperature	20 until 150 °C	
Stress and strain measurements	Force	10 N until 4000 kN	DIN EN 60584-2 DIN EN ISO 376 DIN EN ISO 7500-1 FoN 106101 AC2/8
	Displacement	10 µm until 2,5 m	
	Angle	0,1° until 360°	
	Acceleration	1g until 500g (DC 10kHz)	
	Elongation	10 µm/m until 5%	

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**4 Mechanical strength and functional tests on specimens, specimen similar structural elements, building components, components, structures and complete products \*\* (D1, D2)**

Test type	Measurand/ test parameter	Measurement and test range	Characteristic test methods
Tensile testing Compressive testing (axial) Bend testing Shear testing	Force	2N - 500 kN	DIN EN 2002-1 DIN EN 2002-2 DIN 50100 DIN ISO 614 DIN ISO 4506 ASTM E 8 ASTM E 9 ASTM E 399 DIN EN ISO 6892-1 DIN EN ISO 6892-2 AITM 1-0008
	Displacement/ Deformation	from 1 µm	
Fatigue tests (e.g. circular bend, alternative bending, tensile-compressive)	Force	until 500 kN	ASTM E 466 DIN EN 6072 ISO 12106 DIN EN ISO 7438 DIN EN 2002-6 DIN 50100
	Displacement/ Deformation	until ±50 mm (Zylinderweg)/ until 5% Dehnungsamplitude	
	Moment	2.000 Nm	
Strain gauge measurements	Length changes	until 10 <sup>-1</sup>	VDI/VDE 2635
High dynamic load (Impact or Crash tests)	Acceleration	1 g until 50000 g	AITM 1-0010 ASTM E 208
	Time	from 1 µs	
Creep stress rupture test	Force	0,5 N until 50 kN	DIN EN 2002-05 ASTM F 519 DIN EN ISO 204
	Displacement/ Deformation	from 0,1 µm	
Hardness Brinnel (HB)	Force	49,03 N until 9,4 kN	DIN EN ISO 6506-1 DIN EN 2002-7 ISO 6506-1 ASTM E 10
	Diameter	0,1 µm until 10 mm	
Hardness Rockwell-B (HRB)	Force	98,07 N until 980,7 N	DIN EN ISO 6508-1 DIN EN 2002-7 ISO 6508-1 ASTM E 18
	Indentation depth	0,2 µm until 260 µm	
Hardness Rockwell-C (HRC)	Force	98,07 N until 1,471 kN	DIN EN ISO 6508-1 DIN EN 2002-7 ISO 6508-1 ASTM E 18
	Force	0,2 until 200 µm	

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

Hardness Vickers (HV)	Indentation depth	0,2 N until 1,0 kN	DIN EN ISO 6507-1 ASTM E 384
	Force	0,01 µm until 1,4 mm	
Hardness (UCI)	Diagonal	20...70 HRC 200 ... 900 HV	DIN 50159-1
Notch impact bending test	Revaluation frequency change in hardness	15 J until 300 J	ISO 148-1 ASTM E 23 DIN 50115
	Rockwell Hardness (HRC) Vickers Hardness (HV)		
Cyclic crack grow rates	Impact energy	1 µV until 100 mV	ASTM E 647 DIN EN 3873
	Voltage	0,1 mm until 250 mm	
Fracture toughness	Displacement / Crack length	5 kN until 500 kN	ASTM E 399 ASTM E 561 DIN EN ISO 15653
	Force	from 0,1 µm	
Temperature/ environmental effect	Displacement / Crack length	-196 °C until 1200 °C	DIN EN 2002-2 ASTM G 47
Screw connections: -Security performance - Torque Preload force	Preload force	500 kN	DIN 25201-4 DIN 65151 DIN EN ISO 16047
	Tightening torque	2000 Nm	
	Shear force	80 kN	
	Lateral movement	± 2 mm	

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

**5 mechanical-technological and physical tests on polymer materials and derived products (D1, D2)**

**5.1 mechanical-technological and physical tests on polymer materials and derived products except following tests: hardness testing, conditioning, viscosity and dilatometry \*\***

Test type	Measurand/ test parameter	Measurement and test range	Characteristic test methods
Tensile Bend Compressive Shear  for static, quasi-static and dynamic loading sequence	Force	10 N until 250 kN	DIN EN ISO 527-1...5
	Deformation	10 µm until 100 mm	DIN EN ISO 178 DIN EN ISO 14125
	Expansion (DMS)	10 µm/m until 5 %	DIN EN ISO 604 DIN EN ISO 14126
	Temperature	-60 °C until 200 °C	DIN EN ISO 14129 DIN EN ISO 14130 ASTM D 7078/D 7078M
	Time	0,1 s until 10 h	ASTM D 3479
Peeling test	Force	10 N until 250 kN	DIN EN 2243-3
	Deformation	10 µm until 100 mm	DIN EN ISO 11339
Energy release rate	Force	10 N until 250 kN	ISO 15024 ASTM D 5528
	Crack growth	0,5 until 150 mm	AITM 1-0005
Long term tensile test Long term flexural test	Force	10 N until 20 kN	DIN EN 899-1 DIN EN 899-2
	Deformation	10 µm until 100 mm	
	Time	0,1 s until 10 000 h	
	Temperature	-25 °C until 180 °C	
Conditioning Water absorption Aging Warm storage	Mass	0,001 mg until 32 kg	DIN EN ISO 62
	Temperature	-70 °C until 300 °C	DIN EN 2378 ASTM D 5229/D 5229M
	Time	0,1 s until 10 000 h	PR EN 3615 EN ISO 1110
	Humidity	10 % until 98 %	DIN EN ISO 175
Density determination	Mass	0,001 mg until 32 kg	DIN EN ISO 1183-1 DIN EN ISO 845
Fibre content, filler content	Mass-based on calcination method / wet mixing washing	0,001 mg until 32 kg	DIN EN ISO 1172 DIN EN 2564

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020



**Annex to the accreditation certificate D-PL-13119-02-00**

Screw removal test Bolt load capacity	Force	100 N until 250 kN	DIN EN 14509 AITM 1-0009
	Deformation	10 µm until 100 mm	AITM 1-0065
DMA	Temperature	-60 °C until 350 °C	DIN EN ISO 6721 AITM 1-0003
	Deformation	-250 until 250 µm	ASTM D 7028
DSC, OIT	Temperature	-60 °C until 350 °C	DIN EN ISO 11357-2 DIN EN ISO 11357-3 DIN EN ISO 11357-6 AITM3-0002
Impact test	Energy	5 J until 110 J	AITM 1-0010
	Penetration depth	0,01 until 5 mm	
	Drop height	0 until 200 mm	

**5.2 hardness testing, conditioning, viscosity and dilatometry on polymer materials and derived products \***

Test type	Measurand/ test parameter	Measurement and test range	Characteristic test methods
Hardness Barcol	Hardness	0 until 90 Skt. Barcol	DIN EN 59
Hardness Shore	Hardness	0 until 100 Skt. Shore A/D	DIN EN ISO 868
Viscosity	Torsion moment	0,25 until 10 mNm	DIN 53019-1 DIN 53019-2 DIN 53019-3 DIN EN ISO 2555
Conditioning Standard climate	Temperature	23 °C;	DIN EN ISO 291
	Humidity	50 %	DIN EN 2743
Dilatometry	Deformation	-5000 until 5000 µm	ISO 11359-2 ASTM E 831

**5.3 characteristic product standards with test methods, belonging to the above-mentioned testing**

AITM 1-0002  
1998-11                      AITM Airbus Test Method - Fibre Reinforced Plastics Determination of in-plain shear properties (±45 ° tensile test)

AITM 1-0003  
2010-02                      Determination of the glass transition temperatures

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

AITM 1-0005 2015-10	Determination of mode I fracture toughness energy
AITM 1-0007 2016-03	AITM Airbus Test Method - Fibre Reinforced Plastics - Determination of Plain, Open Hole and Filled Hole Tensile Strength
AITM 1-0008 2015-03	AITM Airbus Test Method - Fibre Reinforced Plastics
AITM 1-0009 2013-07	AITM Airbus Test Method - Fibre Reinforced Plastics Determination of Bearing Strength by either Pin or Bolt Bearing Configuration
AITM 1-0010 2005-10	Determination of Compression Strength After Impact
AITM 1-0018 2003-12	AITM Airbus Test Method - Fibre Reinforced Plastics Sandwich flexural test 4-point bending
AITM 1-0019 2015-06	AITM Airbus Test Method Determination of tensile lap shear strength of Composite Joints
AITM 1-0025 1994-10	AITM Airbus Test Method - Fibre Reinforced Plastics Flatwise tensile test of composite sandwich panel
AITM 1-0053 2015-11	Determination of mode I fracture toughness energy of bonded joints (G1C Test)
AITM 1-0069 2011-12	Fibre Reinforced Plastics - Determination of curved-beam failure load
AITM 3-0002 1995-06	AITM Airbus Test Method - Analysis of non metallic materials (uncured) by Differential scanning calorimetry
AITM 3-0008 1995-06	AITM Airbus Test Method - Determination of the extent of cure by Differential scanning calorimetry
ASD-STAN prEN 6060 1995-12	Fibre reinforced plastics - Test method - Determination of the tensile single lap shear strength

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

ASD-STAN prEN 6066 P1 1995-11	Fibre reinforced plastics - Test method - Determination of tensile strength of a tapered and stepped joints
ASD-STAN prEN 3615 1998-11-30 30.11.1998	Fibre reinforced plastics - Determination of the conditions of exposure to humid atmosphere and of moisture absorption
ASTM C 271 2016	Standard Test Method for Density of Sandwich Core Materials
ASTM C 273/C 273M 2018	Standard Test Method for Shear Properties of Sandwich Core Materials
ASTM C 297/C 297M 2016	Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions
ASTM C 364 2016	Standard Test Method for Edgewise Compressive Strength of Sandwich Constructions
ASTM C 365 2016	Standard Test Method for Flatwise Compressive Properties of Sandwich Cores
ASTM C 393/C 393M 2011	Standard Test Method for Core Shear Properties of Sandwich Constructions by Beam Flexure
ASTM D 1623 2017	Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics
ASTM D 1781 2012	Standard Test Method for Climbing Drum Peel for Adhesives
ASTM D 2240 2015	Standard Test Method for Rubber Property-Durometer Hardness
ASTM D 2343 2009	Standard Test Method for Tensile Properties of Glass Fiber Strands, Yarns, and Rovings Used in Reinforced Plastics
ASTM D 2583 2013	Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

ASTM D 2584 2018	Standard Test Method for Ignition Loss of Cured Reinforced Resins
ASTM D 2734 2016	Standard Test Methods for Void Content of Reinforced Plastics
ASTM D 2990 - 09 2017	Standard Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics
ASTM D 3039 / D 3039M 2017	Standard Test Method for Tensile Properties of Polymer Matrix Composite Materials
ASTM D 3167 2010	Standard Test Method for Floating Roller Peel Resistance of Adhesives
ASTM D 3171 2011	Standard Test Methods for Constituent Content of Composite Materials
ASTM D 3410 2016	Standard Test Method for Compressive Properties of Polymer Matrix Composite Materials with Unsupported Gage Section by Shear Loading
ASTM D 3479 2012	Standard Test Method for Tension-Tension Fatigue of Polymer Matrix Composite Materials
ASTM D 3528 2008	Standard Test Method for Strength Properties of Double Lap Shear Adhesive Joints by Tension Loading
ASTM D 3529 2010	Standard Test Method for Matrix Solids Content and Matrix Content of Composite Prepreg
ASTM D 3846 2008	Standard Test Method for In-Plane Shear Strength of Reinforced Plastics
ASTM D 5026 2006	Standard Test Method for Plastics: Dynamic Mechanical Properties: In Tension
ASTM D 5528 2013	Standard Test Method for Mode I Interlaminar Fracture Toughness of Unidirectional Fiber-Reinforced Polymer Matrix Composites

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

ASTM D 5229/D 5229M 2012	Standard Test Method for Moisture Absorption Properties and Equilibrium Conditioning of Polymer Matrix Composite Materials
ASTM D 5687 1995	Standard Guide for Preparation of Flat Composite Panels with Processing Guidelines for Specimen Preparation
ASTM D 570 2010	Standard Test Method for Water Absorption of Plastics
ASTM D 5947 2018	Standard Test Methods for Physical Dimensions of Solid Plastics Specimens
ASTM D 618 2013	Standard Practice for Conditioning Plastics for Testing
ASTM D 6272 2017	Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials by Four-Point Bending
ASTM D 638 2014	Standard Test Method for Tensile Properties of Plastics
ASTM D 6641 2014	Standard Test Method for Compressive Properties of Polymer Matrix Composite Materials Using a Combined Loading Compression (CLC) Test Fixture
ASTM D 695 2010	Standard Test Method for Compressive Properties of Rigid Plastics
ASTM D 7028 2015	Standard Test Method for Glass Transition Temperature (DMA T <sub>g</sub> ) of Polymer Matrix Composites by Dynamic Mechanical Analysis (DMA)
ASTM D 7078/D 7078M 2012	Standard Test Method for Shear Properties of Composite Materials by V-Notched Rail Shear Method
ASTM D 7136 2015	Standard Test Method for Measuring the Damage Resistance of a Fiber-Reinforced Polymer Matrix Composite to a Drop-Weight Impact Event

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

ASTM D 7137 2017	Standard Test Method for Compressive Residual Strength Properties of Damaged Polymer Matrix Composite Plates
ASTM D 7264/D 7264M 2015	Standard Test Method for Flexural Properties of Polymer Matrix Composite Materials
ASTM D 790 - 07 2010	Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
ASTM D 7905 2014	Standard Test Method for Determination of the Mode II Interlaminar Fracture Toughness of Unidirectional Fiber-Reinforced Polymer Matrix Composites
ASTM D 792 2013	Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
ASTM E 1356 (2008) 2014	Standard Test Method for Assignment of the Glass Transition Temperatures by Differential Scanning Calorimetry
ASTM E 1640 2013	Standard Test Method for Assignment of the Glass Transition Temperature By Dynamic Mechanical Analysis
ASTM E 2004 2018	Standard Test Method for Facing Cleavage of Sandwich Panels
ASTM E 831 2014	Standard Test Method for Linear Thermal Expansion of Solid Materials by Thermomechanical Analysis
DIN 16495 1989-03	Testing of resins, hardeners and accelerators, and catalyzed resins (here: 6.3: <i>Determination of gel time</i> )
DIN 16495 1989-03	Testing of resins, hardeners and accelerators, and catalyzed resins (here: 6.5: <i>Determination of volume shrinkage</i> )
DIN 18807-9 1998-06	Trapezoidal sheeting in buildings - Part 9: Aluminium trapezoidal sheeting and their connections; application and construction
DIN 51220 2003-08	Materials testing machines - Generals for requirements and for verification and calibration of materials testing machines

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN 53019-1 2008-09	Viscometry - Measurement of viscosities and flow curves by means of rotational viscometers - Part 1: Principles and measuring geometry
DIN 53019-2 2001-02	Viscosimetry - Measurement of viscosities and flow curves by means of rotation viscosimeters - Part 2: Viscosimeter calibration and determination of the uncertainty of measurement
DIN 53019-3 2008-09	Viscometry - Measurement of viscosities and flow curves by means of rotational viscometers - Part 3: Errors of measurement and corrections
DIN 53292 1982-02	Testing of sandwiches; Tensile test perpendicular to the faces
DIN 53293 1982-02	Testing of sandwiches; Bending test
DIN 53294 1982-02	Testing of sandwiches; Shear test
DIN 53295 1982-02	Testing of sandwiches; Peel test by means of a drum
DIN 6038 2016-02	Aerospace series - Fibre reinforced plastics - Test method - Determination of the compression strength after impact
DIN 65148 1986-11	Aerospace; testing of fibre-reinforced plastics; determination of interlaminar shear strength by tensile test
DIN 65375 1989-11	Aerospace; fiber reinforced plastics; testing of unidirectional laminates; compression test transverse to fiber direction
DIN 65382 1988-12	Aerospace; reinforcement fibres for plastics; tensile test of impregnated yarn test specimens
DIN 65466 1996-11	Aerospace - Fibre reinforced plastics - Testing of unidirectional laminates; Determination of shear strength and shear modulus in tension

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN 1090-4 2018-09	Execution of steel structures and aluminium structures - Part 4: Technical requirements for cold-formed structural steel elements and cold-formed structures for roof, ceiling, floor and wall applications
DIN EN 1090-5 2017-07	Execution of steel structures and aluminium structures - Part 5: Technical requirements for cold-formed structural aluminium elements and cold-formed structures for roof, ceiling, floor and wall applications
DIN EN 13473-1 2001-11	Reinforcement - Specifications for multi-axial multi-ply fabrics - Part 1: Designation
DIN EN 13706-1 2003-02	Reinforced plastic composites - Specification for pultruded profiles - Part 1: Designation
DIN EN 13706-2 D 2003-02	Reinforced plastic composites - Specifications for pultruded profiles - Part 2: Methods of test and general requirements
DIN EN 13706-2 E 2003-02	Reinforced plastic composites - Specifications for pultruded profiles - Part 2: Methods of test and general requirements
DIN EN 14509 2013-12	Self-supporting double skin metal faced insulating panels - Factory made products - Specifications
DIN EN 1465 2009-07	Adhesives - Determination of tensile lap-shear strength of bonded assemblies
DIN EN 1607 2013-05	Thermal insulating products for building applications - Determination of tensile strength perpendicular to faces
DIN EN 1602 2013-05	Thermal insulating products for building applications - Determination of the apparent density
DIN EN 2243-1 2007-04	Aerospace series - Non-metallic materials - Structural adhesives - Test method - Part 1: Single lap shear

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020



**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN 2243-2 2006-10	Aerospace series - Non-metallic materials - Structural adhesives - Test method - Part 2: Peel metal-metal
DIN EN 2243-3 2006-10	Aerospace series - Non-metallic materials - Structural adhesives - Test method - Part 3: Peeling test metal-honeycomb core
DIN EN 2243-4 2006-10	Aerospace series - Non-metallic materials - Structural adhesives - Test method - Part 4: Metal-honeycomb core flatwise tensile test
DIN EN 2330 1993-04	Aerospace series; textile glass fibre preimpregnates; test method for the determination of the content of volatile matter
DIN EN 2332 1993-04	Aerospace series; textile glass fibre preimpregnates; test method for the determination of the resin flow
DIN EN 2377 1989-10	Aerospace series; glass fibre reinforced plastics; test method; determination of apparent interlaminar shear strength
DIN EN 2378 1995-11	Aerospace series - Fibre reinforced plastics - Determination of water absorption by immersion
DIN EN 2555 2018-09	Plastics - Resins in the liquid state or as emulsions or dispersions - Determination of apparent viscosity using a single cylinder type rotational viscometer method
DIN EN 2557 1997-05	Aerospace series - Carbon fibre preimpregnates - Determination of mass per unit area
DIN EN 2558 1997-05	Aerospace series - Carbon fibre preimpregnates - Determination of the volatile content
DIN EN 2559 1997-05	Aerospace series - Carbon fibre preimpregnates - Determination of the resin and fibre content and the mass of fibre per unit area
DIN EN 2560 1998-08	Aerospace series - Carbon fibre preimpregnates - Determination of the resin flow

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN 2561 1995-11	Aerospace series - Carbon fibre reinforced plastics - Unidirectional laminates - Tensile test parallel to the fibre direction
DIN EN 2562 1997-05	Aerospace series - Carbon fibre reinforced plastics - Unidirectional laminates; flexural test parallel to the fibre direction
DIN EN 2563 1997-03	Aerospace series - Carbon fibre reinforced plastics - Unidirectional laminates; determination of apparent interlaminar shear strength
DIN EN 2564 2018-12	Aerospace series - Carbon fibre laminates - Determination of the fibre, resin and void contents
DIN EN 2578 1998-10	Plastics - Determination of time-temperature limits after prolonged exposure to heat
DIN EN 2597 1998-08	Aerospace series - Carbon fibre reinforced plastics; unidirectional laminates - Tensile test perpendicular to the fibre direction
DIN EN 2743 2003-06	Aerospace series - Fibre reinforced plastics - Standard procedures for conditioning prior to testing unaged materials
DIN EN 2823 2017-07	Aerospace series - Fibre reinforced plastics - Determination of the effect of exposure to humid atmosphere on physical and mechanical characteristics
DIN EN 2850 2018-01	Aerospace series - Carbon fibre thermosetting resin - Unidirectional laminates - Compression test parallel to fibre direction
DIN EN 59 1977-11	Glass Reinforced Plastics; Measurement of Hardness by Means of a Barcol Impressor
DIN EN 60068-2-14 2010-04	Environmental testing - Part 2-14: Tests - Test N: Change of temperature
DIN EN 6031 2016-02	Fibre reinforced plastics - Test method - Determination of in-plane shear properties ( $\pm 45^\circ$ tensile test)
DIN EN 6032 2016-02	Aerospace series - Fibre reinforced plastics - Test method - Determination of the glass transition temperatures

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN 6033 2016-02	Aerospace series - Carbon fibre reinforced plastics - Test method - Determination of interlaminar fracture toughness energy - Mode I - GIC
DIN EN 6034 2016-02	Aerospace series - Carbon fibre reinforced plastics - Test method - Determination of interlaminar fracture toughness energy - Mode II - G[IIC]
DIN EN 6035 2016-02	Aerospace series - Fibre reinforced plastics - Test method - Determination of notched and unnotched tensile strength
DIN EN 6036 2016-02	Aerospace series - Fibre reinforced plastics - Test method - Determination of notched, unnotched and filled hole compression strength
DIN EN 6037 2016-02	Aerospace series - Fibre reinforced plastics - Test method - Determination of bearing strength
DIN EN 6041 2018-03	Aerospace series - Non-metallic materials - Test method - Analysis of non-metallic materials (uncured) by Differential Scanning Calorimetry (DSC)
DIN EN 6064 2018-03	Aerospace series - Analysis of non-metallic materials (cured) for the determination of the extent of cure by Differential Scanning Calorimetry (DSC)
DIN EN 826 2013-05	Thermal insulating products for building applications - Determination of compression behaviour
DIN EN ISO 10618 2004-11	Carbon fibre - Determination of tensile properties of resin-impregnated yarn
DIN EN ISO 1110 1998-03	Plastics - Polyamides - Accelerated conditioning of test specimens
DIN EN ISO 11339 2010-06	Adhesives - T-peel test for flexible-to-flexible bonded assemblies
DIN EN ISO 11357-1 2017-02	Plastics - Differential scanning calorimetry (DSC) - Part 1: General principles
DIN EN ISO 11357-2 2014-07	Plastics - Differential scanning calorimetry (DSC) - Part 2: Determination of glass transition temperature and glass transition step height

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN ISO 11357-3 2013-04	Plastics - Differential scanning calorimetry (DSC) - Part 3: Determination of temperature and enthalpy of melting and crystallization
DIN EN ISO 11357-5 2014-07	Plastics - Differential scanning calorimetry (DSC) - Part 5: Determination of characteristic reaction-curve temperatures and times, enthalpy of reaction and degree of conversion
DIN EN ISO 11357-6 2013-04	Plastics - Differential scanning calorimetry (DSC) - Part 6: Determination of oxidation induction time (isothermal OIT) and oxidation induction temperature (dynamic OIT)
DIN EN ISO 1172 1998-12	Textile-glass-reinforced plastics - Prepregs, moulding compounds and laminates - Determination of the textile-glass and mineral-filler content; calcination methods
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 14125 2011-05	Fibre-reinforced plastic composites - Determination of flexural properties
DIN EN ISO 14126 2000-12	Fibre-reinforced plastic composites - Determination of compressive properties in the in-plane direction
DIN EN ISO 14129 1998-02	Fibre-reinforced plastic composites - Determination of the in-plane shear stress/shear strain response, including the in-plane shear modulus and strength, by $\pm 45^\circ$ tension test method
DIN EN ISO 14130 1998-02	Fibre reinforced plastic composites - Determination of apparent interlaminar shear strength by short beam-method
DIN EN ISO 1675 1998	Plastics - Liquid resins - Determination of density by the pycnometer method
DIN EN ISO 175 2011-03	Plastics - Methods of test for the determination of the effects of immersion in liquid chemicals

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN ISO 178 2013-09	Plastics - Determination of flexural properties
DIN EN ISO 1889 2009-10	Reinforcement yarns - Determination of linear density
DIN EN ISO 1923 1995	Cellular plastics and rubbers - Determination of linear dimensions
DIN EN ISO 2818 1997-06	Plastics - Preparation of test specimens by machining
DIN EN ISO 291 2008-08	Plastics - Standard atmospheres for conditioning and testing
DIN EN ISO 3521 1999-10	Plastics - Unsaturated polyester and epoxy resins - Determination of overall volume shrinkage
DIN EN ISO 527-1 2012-06	Plastics - Determination of tensile properties - Part 1: General principles
DIN EN ISO 527-2 2012-6	Plastics - Determination of tensile properties - Part 2: Test conditions for moulding and extrusion plastics
DIN EN ISO 527-3 2019-02	Plastics - Determination of tensile properties - Part 3: Test conditions for films and sheets
DIN EN ISO 527-4 1997-07	Plastics - Determination of tensile properties - Part 4: Test conditions for isotropic and anisotropic fibre-reinforced plastic composites
DIN EN ISO 527-5 2010-01	Plastics - Determination of tensile properties - Part 5: Test conditions for unidirectional fibre-reinforced plastic composites
DIN EN ISO 604 2003-12	Plastics - Determination of compressive properties
DIN EN ISO 62 2008-05	Plastics - Determination of water absorption
DIN EN ISO 844 2014-11	Rigid cellular plastics - Determination of compression properties

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN ISO 845 2009-10	Cellular plastics and rubbers - Determination of apparent density
DIN EN ISO 868 2003-10	Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness)
DIN EN ISO 899-1 2018-03	Plastics - Determination of creep behaviour - Part 1: Tensile creep
DIN EN ISO 899-2 2015-06	Plastics - Determination of creep behaviour - Part 2: Flexural creep by three-point loading
DIN EN ISO 9163 2005-07	Textile glass - Rovings - Manufacture of test specimens and determination of tensile strength of impregnated rovings
ISO 10119 2002-05	Carbon fibre - Determination of density
ISO 11359-1 2014-01	Plastics - Thermomechanical analysis (TMA) - Part 1: General principles
ISO 11359-2 1999-10	Plastics - Thermomechanical analysis (TMA) - Part 2: Determination of coefficient of linear thermal expansion and glass transition temperature
ISO 13003 2003-12	Fibre-reinforced plastics - Determination of fatigue properties under cyclic loading conditions
ISO 15024 2001-12	Fibre-reinforced plastic composites - Determination of Mode I interlaminar fracture toughness, GIC, for unidirectionally reinforced materials
ISO 16012 2015-03	Plastics - Determination of linear dimensions of test specimens
ISO 18352 2009-08	Kohlenstofffaserverstärkte Kunststoffe - Ermittlung der Compression-After-Impact Eigenschaften bei spezifischer Aufprallenergie Laminaten; Bestimmung der Druckfestigkeit nach Schlagbeanspruchung
ISO 1922 2012-08	Rigid cellular plastics - Determination of shear strength

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

ISO 1926 2009-12	Rigid cellular plastics - Determination of tensile properties
ISO 25217 2009-05	Adhesives - Determination of the mode 1 adhesive fracture energy of structural adhesive joints using double cantilever beam and tapered double cantilever beam specimens
ISO 3374 2000-06	Reinforcement products - Mats and fabrics - Determination of mass per unit area
ISO 4587 2003-03	Adhesives - Determination of tensile lap-shear strength of rigid-to-rigid bonded assemblies
ISO 5893 2002-07	Rubber and plastics test equipment - Tensile, flexural and compression types (constant rate of traverse) - Specification
ISO 6721-5 2019-04	Plastics - Determination of dynamic mechanical properties - Part 5: Flexural vibration - Non-resonance method
SACMA 1R-94 1994	Compressive Properties of Oriented Fiber-Resin Composites
SACMA 18R-94 1994	Glass Transition Temperature (T <sub>g</sub> ) Determination of oriented fiber-resin Composites

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

**6 Mechanical-technological, analytical and physical tests of pipes and fittings and their materials \* (D1, D2)**

Test type	Measurand/ test parameter	Measurement and test range	Characteristic test methods
<b>Pressure tests</b>			
Internal pressure resistance	Pressure Temperature	until 200 bar 20 until 135 °C	DIN EN ISO 1167-1-4 EN 1447
Thermal cycling test	Pressure Temperature Flow rate	until 10 bar 20 until 95 °C until 15 m <sup>3</sup> /h	DVGW-W 534 EN 12293
Pressure cycling	Pressure	until 50 bar	DVGW-W 534 EN 12295
Vibration resistance	Pressure	until 50 bar	DVGW-W 534
Leak tightness under vacuum	Pressure	until -0,9 bar	DVGW-W 534 EN 12294 EN ISO 3459
Bending fatigue strength	Pressure	until 50 bar	DVGW-W 534
Bending resistance	Pressure	until 50 bar	DVGW W 534 EN ISO 3503
Forced leakage	Pressure	until 15 bar	DVGW W 534
Flow resistance	Pressure differential - static - dynamic Flow rate	until 40 bar 0,25 mbar until 2 bar until 35m <sup>3</sup> /h	DVGW-W 575 DIN EN 1267
Cyclic internal pressure test	Pressure	until 20 bar	ISO 15306
<b>Mechanical tests</b>			
Long term tensile test Shear strength Long term bend test Tensile strenght	Force Displacement Time Temperature	10 N until 100 kN 10 µm until 100 mm 0,1 until 2*10 <sup>4</sup> h 20 until 250 °C	DIN EN 899-1 DIN EN 899-2 ISO 6259-1-3 ISO 8513 ISO 8521
Resistance to pulling out	Force Temperature	0 until 10 kN 20 until 95 °C	EN ISO 3501
Stress cracking test	Displacement	until 100 mm	DIN EN ISO 13479 ISO 13480
Long term ring rigiddity (Ring stiffness)	Displacement	until 100 mm	DIN EN ISO 9967 DIN EN ISO 9969 ISO 7685 ISO 10466

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020



**Annex to the accreditation certificate D-PL-13119-02-00**

Test type	Measurand/ test parameter	Measurement and test range	Characteristic test methods
Warm storage / Aging	Temperature	20 until 150°C	DIN EN ISO 21003-2, Annex C DIN EN ISO 2578
Falling weight test	Mass Displacement	1 until 16 kg 500 until 2.000 mm	DIN EN 744
Impact test Notch impact test	Impact energy	15 J / 50 J	DIN EN ISO 179-1
Thermal conductivity	Temperature	60 °C until 100 °C	DIN EN 253
	electrical power	1 W until 1000 W	
Emission measurement (Determination of volatile organic hydrocarbon compounds)	Concentration	0 until 100.000 ppm [C3H8]	BMW GS 97014 Porsche PPV 4050 Porsche PPV 4051
Leak test	Concentration	Leakage rate 10-6 mbar*/l/sec. [He]	BMW GS 97014 Porsche PPV 4050 Porsche PPV 4051
	Pressure	0 until 100 mbar	
Cell structure, Open cellular structure	Volume	0,001 until 100 cm <sup>3</sup>	DIN EN 253
<b>Physical tests</b>			
Longitudinal reversion (shrinkage)	Temperature	100 until 150 °C	DIN EN ISO 2505
Melt mass flow rate	MFR	50 until 300 °C 2,16 until 10 kg	DIN EN ISO 1133
Degree of cross linking	Degree of cross linking	50 until 100 %	DIN EN ISO 10147

**6.1 Beispielhafte Prüfverfahren an Rohrsystemen und deren Bauteilen**

AENOR RP 01.52  
2016-09                      Aenor Mark specific rules for plastics piping systems for hot and cold  
water installations  
(here: *Section 3.2: Sampling and tests to be done by the laboratory*)

AENOR RP 01.71  
2012                              Aenor Mark specific rules for multilayer piping systems for hot and cold  
water installations  
(here: *Section 3.2: Sampling and tests to be done by the laboratory*)

API 15S  
2016-07                              Spoolable Reinforced Plastic Line Pipe  
(here: *Section 5: Qualification Program*  
*Section 6.4: Quality Assurance Tests*)

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**  
Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

API 17J 2014-05	Specification for Unbonded Flexible Pipe (here: <i>Section 6.2: Testing Requirements</i> <i>Section 9: Factory Acceptance Test</i> )
ASTM D 1598 2009-11	Standard Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure
ASTM D 1599 2005-05	Standard Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing and Fitting
ASTM D 2105 2001-06	Standard Test Method for Longitudinal Tensile Properties of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Tube
ASTM D 2143 2015-03	Standard Test Method for Cyclic Pressure Strength of Reinforced, Thermosetting Plastic Pipe
ASTM D 2290 2016-08	Standard Test Method for Apparent Hoop Tensile Strength of Plastic or Reinforced Plastic Pipe
ASTM D 2412 2011-04	Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
ASTM D 2837 2013-11	Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products
ASTM D 2924 2006	Standard Test Method for External Pressure Resistance of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
ASTM D 2992 2012-04	Standard Practice for Obtaining Hydrostatic or Pressure Design Basis for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Fittings
ASTM D 3262 2016-04	Standard Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Sewer Pipe
ASTM D 3517 2014-03	Standard Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pressure Pipe
ASTM D 3681 2012-04	Standard Test Method for Chemical Resistance of "Fiberglass" (Glass - Fiber - Reinforced Thermosetting-Resin) Pipe in a Deflected Condition
ASTM D 3754 2014-03	Standard Specification for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Sewer and Industrial Pressure Pipe

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

ASTM D 5365 2012-04	Standard Test Method for Long-Term Ring-Bending Strain of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
ASTM F 2262 2009-05	Standard Specification for Crosslinked Polyethylene/Aluminum/ Crosslinked Polyethylene Tubing OD Controlled SDR9 (here: <i>Section 9: Test Methods</i> )
ASTM F 876 2015-09	Standard Specification for Crosslinked Polyethylene (PEX) Tubing (here: <i>Section 7: Test Methods</i> )
ASTM F 877 2011-08	Standard Specification for Crosslinked Polyethylene (PEX) Hot- and Cold-Water Distribution Systems (here: <i>Section 9: Test Methods</i> )
DBS 918 064 2013-12	Plastic pipes and fittings for drainage in train facilities (here: <i>Section 2: Technical requirements for plastic pipes</i> )
DIN 16833 2009-09	Polyethylene pipes of raised temperature resistance (PE-RT) - PE-RT Type I and PE-RT Type II - General quality requirements, testing
DIN EN 16838 2016-11	Refrigerated display scooping cabinets for gelato - Classification, requirements and test conditions
DIN 16839 2010-12	Thermoplastics materials for fittings - Polysulfone (PSU) - General quality requirements and testing
DIN 16840 2010-12	Thermoplastics materials for fittings - Polyvinylidene fluoride (PVDF) - General quality requirements and testing
DIN 16868-2 2016-10	Glass fibre reinforced unsaturated polyester resin (UP-GF) pipes - Part 2: Wound, filled, general quality requirements, testing (here: <i>Section 6: Testing</i> )
DIN 16869-2 2014-12	Centrifugally cast filled glass fibre reinforced unsaturated polyester resin (UP-GF) pipes - Part 2: General quality requirements, testing (here: <i>Section 6: Testing</i> )
DIN 16874 2018-09	Pipes of high-density polyethylene (PE-HD) for buried telecommunication - Dimensions and technical delivery conditions
DIN 16878 2017-07	Pipes and fittings of polypropylene (PP) for buried cable ducting - Dimensions and technical delivery conditions

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN 16887 1990-07	Determination of the long-term hydrostatic pressure resistance of thermoplastics pipes
DIN 16892 2000-07	Crosslinked polyethylene (PE-X) pipes - General requirements, testing
DIN 16894 2011-04	Pipes of crosslinked medium density polyethylene (PE-MDX) - General quality requirements and testing
DIN 16961 Parts 1-2 2018-08	Thermoplastics pipes and fittings with profiled wall and smooth pipe inside
DIN 16966-1 1988-11	Glass fibre reinforced polyester resin (UP-GF) pipe fittings and joint assemblies; fittings; general quality requirements and testing (here: <i>Section 4: Testing</i> )
DIN 16966-7 1995-04	Pipe joints and their elements of glass fibre reinforced polyester resins - Part 7: Bushings, flanges, flanged and butt joints; general quality requirements and test methods (here: <i>Section 5: Testing</i> )
DIN 16968 2012-11	Pipes made of Polybutene-1 (PB-1) - PB 125 - General quality requirements and testing
DIN 19534-3 2000-07	Pipes and fittings of unplasticized poly(vinyl chloride) (PVC-U) with ring seal socket for non pressure underground drainage and sewerage - Part 3: Quality control and installation (here: <i>Section 4: Assessment of conformity</i> )
DIN 19537-3 1990-11	Prefabricated high density polyethylene (PE-HD) manholes for use in sewerage systems; dimensions and technical delivery conditions (here: <i>Section 4: Testing</i> )
DIN 19628 2007-07	Mechanical filters for drinking water installations - Application of mechanical filters according to DIN EN 13443-1 (here: <i>Section 4: Requirements</i> )
DIN 19636-100 2008-02	Softeners (cation exchangers) for drinking water installation - Part 100: Requirements for application of softeners in accordance with DIN EN 14743 (here: <i>Section 5: Testing</i> )
DIN 3266 2018-03	Valves for drinking water installations on private premises - Anti-vacuum valves, types D and E, Section 5

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN 3387-1 2008-11	Separable unthreaded pipe connections for metal gas pipes - Part 1: Connections for pipes with smooth ends (here: <i>Section 4: Requirements and testing</i> )
DIN 3544-1 1985-09	High-density polyethylene (HDPE) valves; tapping valves; requirements and test
DIN 3546-1 2011-01	Stop valves for domestic water supply - Part 1: General requirements and tests for manually operated piston type gate valves of special design, gate valves and diaphragm valves, Technical rule of the DVGW
DIN 3553 2019-03	Fittings for drinking water systems in buildings - Leakage protection systems with sensors and automated shut-off devices - Detectors for installation in drinking water installations - Requirements and tests
DIN 4262-1 2009-10	Pipes and fittings for subsoil drainage of trafficked areas and underground engineering - Part 1: Pipes, fittings and their joints made from PVC-U, PP and PE (here: <i>Section 6: Requirements to pipes and Section 9: Tightness</i> )
DIN 4724 2001-04	Plastic piping systems for warm water floor heating systems and radiator pipe connecting - Crosslinked polyethylene of medium density (PE-MDX) (here: <i>Section 5: Pipes and Section 8: Jointing and piping systems</i> )
DIN 4726 2017-10	Warm water surface heating systems and radiator connecting systems - Plastics piping systems and multilayer piping systems (here: <i>Section 5: Test methods</i> )
DIN 53769-1 1988-11	Testing of glass fibre reinforced plastics pipes; determination of the longitudinal shear strength of type B pipe fittings
DIN 8061 2016-05	Unplasticized polyvinyl chloride (PVC-U) pipes - General quality requirements, testing
DIN 8075 2018-08	Polyethylene (PE) pipes - PE 80, PE 100 - General quality requirements, testing
DIN 8076 2013-09	Pressure pipelines made from thermoplastics materials - Metal and plastics compression fittings for polyethylene (PE) pipes - General quality requirements and testing (here: <i>Section 8: component testing and Section 9: Mechanical properties</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN 8078 2008-09	Polypropylene (PP) pipes - PP-H, PP-B, PP-R, PP-RCT - General quality requirements and testing
DIN 8079 2009-10	Chlorinated polyvinyl chloride (PVC-C) pipes - Dimensions
DIN EN 12666-1 DIN CEN/TS 12666-2; 2012-11	Plastics piping systems for non-pressure underground drainage and sewerage - Polyethylene (PE) - Part 1: Specifications for pipes, fittings and the system (here: <i>Section 6: Testing</i> )
DIN EN 1074-1 2000-07	Valves for water supply - Fitness for purpose requirements and appropriate verification tests - Part 1: General requirements
DIN EN 1074-2 2004-07	Valves for water supply - Fitness for purpose requirements and appropriate verification tests - Part 2: Isolating valves
DIN EN 1074-3 2000-07	Valves for water supply - Fitness for purpose requirements and appropriate verification tests - Part 3: Check valves
DIN EN 1111 2017-10	Sanitary tapware - Thermostatic mixing valves (PN 10) - General technical specification
DIN EN 1119 2009-07	Plastics piping systems - Joints for glass-reinforced thermosetting plastics (GRP) pipes and fittings - Test methods for leaktightness and resistance to damage of non-thrust resistant flexible joints with elastomeric sealing elements
DIN EN 1120 1996-07	Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes and fittings - Determination of the resistance to chemical attack from the inside of a section in a deflected condition
DIN EN 12099 1997-08	Plastics piping systems - Polyethylene piping materials and components - Determination of volatile content
DIN EN 12106 1997-11	Plastics piping systems - Polyethylene (PE) pipes - Test method for the resistance to internal pressure after application of squeeze-off
DIN EN 1213 1999-12	Building valves - Copper alloy stopvalves for potable water supply in buildings - Tests and requirements

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN 12201-1 2011-11	Plastics piping systems for water supply, and for drainage and sewerage under pressure - Polyethylene (PE) - Part 1: General (here: <i>Section 4: Material</i> )
DIN EN 12201-2 2013-12	Plastics piping systems for water supply, and for drainage and sewerage under pressure - Polyethylene (PE) - Part 2: Pipes (here: <i>Section 7: Mechanical properties and Section 8: Physical properties</i> )
DIN EN 12201-3 2013-01	Plastics piping systems for water supply, and for drainage and sewerage under pressure - Polyethylene (PE) - Part 3: Fittings (here: <i>Section 7: Mechanical properties and Section 8: Physical properties</i> )
DIN EN 12201-4 2012-04	Plastics piping systems for water supply, and for drainage and sewerage under pressure - Polyethylene (PE) - Part 4: Valves (here: <i>Section 7: Mechanical properties and Section 8: Physical properties</i> )
DIN EN 12201-5 2011-11	Plastics piping systems for water supply, and for drainage and sewerage under pressure - Polyethylene (PE) - Part 5: Fitness for purpose of the system (here: <i>Section 4: Fitness for purpose of the system</i> )
DIN EN 12266-1 2012-06	Industrial valves - Testing of metallic valves - Part 1: Pressure tests, test procedures and acceptance criteria - Mandatory requirements
DIN EN 1228 1996-08	Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes - Determination of initial specific ring stiffness
DIN EN 12293 1999-09	Plastics piping systems - Thermoplastics pipes and fittings for hot and cold water - Test method for the resistance of mounted assemblies to temperature cycling
DIN EN 12294 1999-10	Plastics piping systems - Systems for hot and cold water - Test method for leaktightness under vacuum
DIN EN 12295 1999-10	Plastics piping systems - Thermoplastics pipes and associated fittings for hot and cold water - Test methods for resistance of joints to pressure cycling

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN 1267 2012-04	Industrial valves - Test of flow resistance using water as test fluid
DIN EN 12729 2003-02	Devices to prevent pollution by backflow of potable water - Controllable backflow preventer with reduced pressure zone - Family B, type A (here: <i>Section 9: Requirements and test methods</i> )
DIN EN 1286 2017-10	Sanitary tapware - Low pressure mechanical mixing valves; general technical specification
DIN EN 1287 2017-10	Sanitary tapware - Low pressure thermostatic mixing valves - General technical specification
DIN EN 13076 2004-05	Devices to prevent pollution by backflow of potable water - Unrestricted air gap - Family A - Type A (here: <i>Section 7: Requirements</i> )
DIN EN 13077 2018-06	Devices to prevent pollution by backflow of potable water - Air gap with non-circular overflow (unrestricted) - Family A - Type B (here: <i>Section 7: Requirements</i> )
DIN EN 13078 2004-02	Devices to prevent pollution by backflow of potable water - Air gap with submerged feed incorporating air inlet plus overflow - Family A, type C (here: <i>Section 4: test methods</i> )
DIN EN 13079 2003-12	Devices to prevent pollution by backflow of potable water - Air gap with injector - Family A; Type D (here: <i>Section 7: Requirements</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020



**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN 1329-1 2018-05	Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure - Unplasticized poly(vinyl chloride) (PVC-U) - Part 1: Specifications for pipes, fittings and the systems <i>(here: Section 7: Mechanical properties, Section 8: Physical properties and Section 9: Requirements for the connection and the usability of the pipe system)</i>
DIN EN 13443-1 2007-12	Water conditioning equipment inside buildings - Mechanical filters - Part 1: Particle rating 80 µm to 150 µm - Requirements for performances, safety and testing
DIN EN 13443-2 2007-10	Water conditioning equipment inside buildings - Mechanical filters - Part 2: Particle rating 1 µm to less than 80 µm - Requirements for performance, safety and testing
DIN EN 13476-1 2018-10	Plastics piping systems for non-pressure underground drainage and sewerage - Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) - Part 1: General requirements and performance characteristics <i>(here: Section 9: Related to test methods and properties their Performance of the system)</i>
DIN EN 13476-2 2018-10	Plastics piping systems for non-pressure underground drainage and sewerage - Structured-wall piping systems of unplasticized poly (vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) - Part 2: Specifications for pipes and fittings with smooth internal and external surface and the system, Type A <i>(here: Section 8: Physical properties and Section 9: Mechanical properties)</i>
DIN EN 13476-3 2018-10	Plastics piping systems for non-pressure underground drainage and sewerage - Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) - Part 3: Specifications for pipes and fittings with smooth internal and profiled external surface and the system, Type B <i>(here: Section 9: Testing and monitoring)</i>

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN 13476-4 2013-06	Plastics piping systems for non-pressure underground drainage and sewerage - Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) - Part 4: Guidance for the assessment of conformity (here: <i>Section 6: Testing and monitoring</i> )
DIN EN 13828 2003-12	Building valves - Manually operated copper alloy and stainless steel ball valves for potable water supply in buildings - Tests and requirements
DIN EN 1393 1996-12	Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes; Determination of initial longitudinal tensile properties
DIN EN 1394 1996-12	Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes - Determination of the apparent initial circumferential tensile strength
DIN EN 13959 2005-01	Anti-pollution check valves - DN 6 to DN 250 inclusive - Family E, type A, B, C and D (here: <i>Section 10: Test requirements</i> )
DIN EN 1401-1 2009-07	Plastics piping systems for non-pressure underground drainage and sewerage - Unplasticized poly(vinyl chloride) (PVC-U) - Part 1: Specifications for pipes, fittings and the system (here: <i>Section 7: Mechanical properties, Section 8: Physical properties and Section 9: Requirements for the customariness</i> )
DIN EN 14364 2013-05	Plastics piping systems for drainage and sewerage with or without pressure - Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) - Specifications for pipes, fittings and joints (here: <i>Section 5: Pipes, Section 6: Fittings and Section 7: Fitness for purpose of the connection</i> )
DIN EN 14367 2005-10	Non controllable backflow preventer with different pressure zones - Family C, type A (here: <i>Section 9: Requirements and test methods</i> )
DIN EN 14451 2019-02	Devices to prevent pollution by backflow of potable water - In-line anti-vacuum valves DN 10 to DN 50 inclusive - Family D, type A (here: <i>Section 10: Requirements and test methods</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN 14452 2005-08	Devices to prevent pollution by backflow of potable water - Pipe interrupter with atmospheric vent and moving element DN 10 to DN 20 - Family D, type B (here: <i>Section 10: Requirements and test methods</i> )
DIN EN 14453 2005-08	Devices to prevent pollution by backflow of potable water - Pipe interrupter with permanent atmospheric vent DN 10 to DN 20 - Family D, type C (here: <i>Section 10: Requirements and test methods</i> )
DIN EN 14454 2005-08	Devices to prevent pollution by backflow of potable water - Hose union backflow preventer DN 15 to DN 32 - Family H; type A (here: <i>Section 10: Requirements and test methods</i> )
DIN EN 14455 2005-08	Devices to prevent pollution by backflow of potable water - Pressurised air inlet valves DN 15 to DN 50 - Family L, type A and type B (here: <i>Section 10: Requirements and test methods</i> )
DIN EN 1447 2011-01	Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes - Determination of long-term resistance to internal pressure
DIN EN 14506 2005-08	Devices to prevent pollution by backflow of potable water - Automatic diverter - Family H, type C (here: <i>Section 10: Requirements and test methods</i> )
DIN EN 14622 2005-08	Devices to prevent pollution by backflow of potable water - Air gap with circular overflow (restricted) - Family A, type F (here: <i>Section 7: Requirements</i> )
DIN EN 14623 2005-08	Devices to prevent pollution by backflow of potable water - Air gaps with minimum circular overflow (verified by test or measurement) - Family A, type G (here: <i>Section 7: Requirements</i> )
DIN EN 14652 2007-09	Water conditioning equipment inside buildings - Membrane separation devices - Requirements for performance, safety and testing

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN 14743 2007-09	Water conditioning equipment inside buildings - Softeners - Requirements for performance, safety and testing
DIN EN 1488 2000-06	Building valves - Expansion groups - Tests and requirements
DIN EN 14898 2007-09	Water conditioning equipment inside buildings - Active media filters - Requirements for performance, safety and testing
DIN EN 1491 2000-06	Building valves - Expansions valves - Tests and requirements
DIN EN 15092 2008-09	Building valves - Inline hot water supply tempering valves - Tests and requirements
DIN EN 15096 2008-04	Devices to prevent pollution by backflow of potable water - Hose Union anti-vacuum valves - DN 15 to DN 25 inclusive Family H, type B and type D - General technical specification (here: <i>Section 10: requirements and test methods</i> )
DIN EN 1555-1 2010-12	Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) - Part 1: General (here: <i>Section 4: Materials</i> )
DIN EN 1555-2 2010-12	Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) - Part 2: Pipes (here: <i>Section 7: Mechanical properties and Section 8: Physical properties</i> )
DIN EN 1555-3 2013-01	Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) - Part 3: Fittings (here: <i>Section 7: Mechanical properties and Section 8: Physical properties</i> )
DIN EN 1555-4 2011-11	Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) - Part 4: Valves (here: <i>Section 7: Mechanical properties and Section 8: Physical properties</i> )
DIN EN 1555-5 2010-12	Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) - Part 5: Fitness for purpose of the system (here: <i>Section 4: Fitness for purpose</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN 15632-1 2015-03	District heating pipes - Pre-insulated flexible pipe systems - Part 1: Classification, general requirements and test methods
DIN EN 15632-2 2015-03	District heating pipes - Pre-insulated flexible pipe systems - Part 2: Bonded plastic service pipes - Requirements and test methods
DIN EN 15632-3 2015-03	District heating pipes - Pre-insulated flexible pipe systems - Part 3: Non bonded system with plastic service pipes - requirements and test methods
DIN EN 15632-4 2009-10	District heating pipes - Pre-insulated flexible pipe systems - Part 4: Bonded system with metal service pipes - Requirements and test methods
DIN EN 1567 2000-01	Building valves - Water pressure reducing valves and combination water pressure reducing valves - Requirements and tests
DIN EN 15698-1 2009-07	District heating pipes - Preinsulated bonded twin pipe systems for directly buried hot water networks - Part 1: Twin pipe assembly of steel service pipe, polyurethane thermal insulation and outer casing of polyethylene (here: <i>Section 5: Test methods</i> )
DIN EN 15698-2 2015-11	District heating pipes - Preinsulated bonded twin pipe systems for directly buried hot water networks - Part 2: Fitting and valve assembly of steel service pipes, polyurethane thermal insulation and outer casing of polyethylene (here: <i>Section 5: Test methods</i> )
DIN EN 1717 2011-08	Protection against pollution of potable water installations and general requirements of devices to prevent pollution by backflow
DIN EN 1796 2013-05	Plastics piping systems for water supply with or without pressure - Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) (here: <i>Section 5: Pipes,</i> <i>Section 6: Fittings and</i> <i>Section 7: Fitness for purpose of the connection</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN 1852-1 2018-03	Plastics piping systems for non-pressure underground drainage and sewerage - Polypropylene (PP) - Part 1: Specifications for pipes, fittings and the system (here: <i>Section 4: Materials, Section 7: Mechanical properties, Section 8: Physical properties and Section 9: Requirements on the connections and the fitness for purpose of the pipe system</i> )
DIN EN 200 2008-10	Sanitary tapware - Single taps and combination taps for water supply systems of type 1 and type 2 - General technical specification
DIN EN 253 2015-12	District heating pipes - Preinsulated bonded pipe systems for directly buried hot water networks - Pipe assembly of steel service pipe, polyurethane thermal insulation and outer casing of polyethylene (here: <i>Section 5: Test methods</i> )
DIN EN 448 2016-02	District heating pipes - Preinsulated bonded pipe systems for directly buried hot water networks - Fitting assemblies of steel service pipes, polyurethane thermal insulation and outer casing of polyethylene (here: <i>Section 5: Test methods</i> )
DIN EN 476 2011-04	General requirements for components used in drains and sewers (here: <i>Section 7: Test methods</i> )
DIN EN 488 2016-02	District heating pipes - Preinsulated bonded pipe systems for directly buried hot water networks - Steel valve assembly for steel service pipes, polyurethane thermal insulation and outer casing of polyethylene (here: <i>Section 5: Tests, test methods and test requirements</i> )
DIN EN 489 2009-07	District heating pipes - Preinsulated bonded pipe systems for directly buried hot water networks - Joint assembly for steel service pipes, polyurethane thermal insulation and outer casing of polyethylene (here: <i>Section 5: Type test methods</i> )
DIN EN 816 2017-10	Sanitary tapware - Automatic shut-off valves PN 10
DIN EN 817 2008-09	Sanitary tapware - Mechanical mixing valves (PN 10) - General technical specifications

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN ISO 11173 2018-02	Thermoplastics pipes - Determination of resistance to external blows - Staircase method
DIN EN ISO 11296-4 2018-09	Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks - Part 4: Lining with cured-in-place pipes (here: <i>Section 5: Pipes in „M“-condition, Section 6: Fittings in „M“ condition and Section 8: Fitness for purpose of the lining-systems in „I“-condition</i> )
DIN EN ISO 11297-4 2018-09	Plastics piping systems for renovation of underground drainage and sewerage networks under pressure - Part 4: Lining with cured-in-place pipes (here: <i>Section 5: Pipes in „M“-condition, Section 6: Fittings in „M“ condition and Section 8: Fitness for purpose of the lining-systems in „I“-condition</i> )
DIN EN ISO 13056 2018-12	Plastics piping systems - Pressure systems for hot and cold water - Test method for leaktightness under vacuum
DIN EN ISO 13254 2018-01	Thermoplastics piping systems for non-pressure applications - Test method for watertightness
DIN EN ISO 13255 2018-01	Thermoplastics piping systems for soil and waste discharge inside buildings - Test method for airtightness of joints
DIN EN ISO 13257 2019-04	Thermoplastics piping systems for non-pressure applications - Test method for resistance to elevated temperature cycling
DIN EN ISO 13259 2018-09	Thermoplastics piping systems for underground non-pressure applications - Test method for leaktightness of elastomeric sealing ring type joints
DIN EN ISO 13260 2018-01	Thermoplastics piping systems for non-pressure underground drainage and sewerage - Test method for resistance to combined temperature cycling and external loading
DIN EN ISO 13262 2018-01	Thermoplastics piping systems for non-pressure underground drainage and sewerage - Thermoplastics spirally-formed structured-wall pipes - Determination of the tensile strength of a seam
DIN EN ISO 13263 2018-01	Thermoplastics piping systems for non-pressure underground drainage and sewerage - Thermoplastics fittings - Test method for impact strength

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN ISO 13264 2018-01	Thermoplastics piping systems for non-pressure underground drainage and sewerage - Thermoplastics fittings - Test method for mechanical strength or flexibility of fabricated fittings
DIN EN ISO 1133 Parts 1-2 2012-03	Plastics - Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics
DIN EN ISO 1167 Parts 1-4 2008-02	Thermoplastics pipes, fittings and assemblies for the conveyance of fluids - Determination of the resistance to internal pressure
DIN EN ISO 1172 1998-12	Textile-glass-reinforced plastics - Prepregs, moulding compounds and laminates - Determination of the textile-glass and mineral-filler content; calcination methods
DIN EN ISO 1452-1 2010-04	Plastics piping systems for water supply and for buried and above-ground drainage and sewerage under pressure - Unplasticized poly(vinyl chloride) (PVC-U) - Part 1: General (here: <i>Section 4: Materials</i> )
DIN EN ISO 1452-2 2010-04	Plastics piping systems for water supply and for buried and above-ground drainage and sewerage under pressure - Unplasticized poly(vinyl chloride) (PVC-U) - Part 2: Pipes (here: <i>Section 4: Material, Section 8: Mechanical properties and Section 9: Physical properties</i> )
DIN EN ISO 1452-3 2010-04	Plastics piping systems for water supply and for buried and above-ground drainage and sewerage under pressure - Unplasticized poly(vinyl chloride) (PVC-U) - Part 3: Fittings (here: <i>Section 4: Material, Section 8: Mechanical properties and Section 9: Physical properties</i> )
DIN EN ISO 1452-4 2010-04	Plastics piping systems for water supply and for buried and above-ground drainage and sewerage under pressure - Unplasticized poly(vinyl chloride) (PVC-U) - Part 4: Valves (here: <i>Section 4: Material, Section 8: Mechanical properties and Section 9: Physical properties</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020



**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN ISO 1452-5 2010-04	Plastics piping systems for water supply and for buried and above-ground drainage and sewerage under pressure - Unplasticized poly(vinyl chloride) (PVC-U) - Part 5: Fitness for purpose of the system (here: <i>Section 4: Fitness for purpose of the connections and system</i> )
DIN EN ISO 13479 2010-01	Polyolefin pipes for the conveyance of fluids - Determination of resistance to crack propagation - Test method for slow crack growth on notched pipes
DIN EN ISO 13967 2010-04	Thermoplastics fittings - Determination of ring stiffness
DIN EN ISO 13968 2009-01	Plastics piping and ducting systems - Thermoplastics pipes - Determination of ring flexibility
DIN EN ISO 14125 2011-05	Fibre-reinforced plastic composites - Determination of flexural properties
DIN EN ISO 15874-2 2018-11	Plastics piping systems for hot and cold water installations - Polypropylene (PP) - Part 2: Pipes (here: <i>Section 4: Material, Section 7: Mechanical properties and Section 8: Physical and chemical properties</i> )
DIN EN ISO 15874-3 2018-11	Plastics piping systems for hot and cold water installations - Polypropylene (PP) - Part 3: Fittings (here: <i>Section 4: Material, Abschnitt 7: Mechanical properties of fittings made of composite and Section 8: Physical and chemical properties of fittings made of composite</i> )
DIN EN ISO 15874-5 2018-11	Plastics piping systems for hot and cold water installations - Polypropylene (PP) - Part 5: Fitness for purpose of the system (hier: <i>Abschnitt 4: Fitness for purpose of the connections and pipe system</i> )
DIN EN ISO 15875-2 2004-03	Plastics piping systems for hot and cold water installations - Crosslinked polyethylene (PE-X) - Part 2: Pipes (here: <i>Section 4: Material, Section 7: Mechanical properties and Section 8: Physical and chemical properties</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN ISO 15875-3 2004-03	Plastics piping systems for hot and cold water installations - Crosslinked polyethylene (PE-X) - Part 3: Fittings (here: <i>Section 4: Material, Section 7: Mechanical properties of fittings made of composite and Section 8: Physical and chemical properties of fittings made of composite</i> )
DIN EN ISO 15875-5 2004-03	Plastics piping systems for hot and cold water installations - Crosslinked polyethylene (PE-X) - Part 5: Fitness for purpose of the system (here: <i>Section 4: Requirements on the connections and the fitness for purpose of the pipe system</i> )
DIN EN ISO 15876-2 2017-06	Plastics piping systems for hot and cold water installations - Polybutylene (PB) - Part 2: Pipes (here: <i>Section 4: Pipe material, Section 7: Mechanical properties and Section 8: Physical and chemical properties</i> )
DIN EN ISO 15876-3 2017-06	Plastics piping systems for hot and cold water installations - Polybutylene (PB) - Part 3: Fittings (here: <i>Section 4: Material properties, Section 7: Mechanical properties of fittings made of composite and Section 8: Physical and chemical properties of fittings made of composite</i> )
DIN EN ISO 15876-5 2017-06	Plastics piping systems for hot and cold water installations - Polybutylene (PB) - Part 5: Fitness for purpose of the system (here: <i>Section 4: fitness for purpose on the connection and pipe system</i> )
DIN EN ISO 15877-2 2011-03	Plastics piping systems for hot and cold water installations - Chlorinated poly(vinyl chloride) (PVC-C) - Part 2: Pipes (here: <i>Section 4: Pipe material, Section 7: Mechanical properties and Section 8: Physical and chemical properties</i> )
DIN EN ISO 15877-3 2011-03	Plastics piping systems for hot and cold water installations - Chlorinated poly(vinyl chloride) (PVC-C) - Part 3: Fitting (here: <i>Section 4: Material and Section 7: Mechanical properties</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN ISO 15877-5 2011-03	Plastics piping systems for hot and cold water installations - Chlorinated poly(vinyl chloride) (PVC-C) - Part 5: Fitness for purpose of the system <i>(here: Section 4: Requirements on the connections and the fitness for purpose of the pipe system)</i>
DIN EN ISO 179-1 2010-11	Plastics - Determination of Charpy impact properties - Part 1: Non-instrumented impact test
DIN EN ISO 19892 2018-12	Plastics piping systems - Thermoplastics pipes and fittings for hot and cold water - Test method for the resistance of joints to pressure cycling
DIN EN ISO 19893 2018-12	Plastics piping systems - Thermoplastics pipes and fittings for hot and cold water - Test method for the resistance of mounted assemblies to temperature cycling
DIN EN ISO 21003-2 2011-07	Multilayer piping systems for hot and cold water installations inside buildings - Part 2: Pipes <i>(here: Section 9: Pressure resistance, Section 10: Thermal stability, Section 11: Strength of the weld in multi-layer composite pipes M, Section 12: Separation of the layers and Section 14: Physical and chemical properties)</i>
DIN EN ISO 21003-3 2011-07	Multilayer piping systems for hot and cold water installations inside buildings - Part 3: Fittings <i>(here: Section 5: Material properties, Section 8: Mechanical properties of fittings made of composite (internal pressure test) and Section 9: Physical and chemical properties of fittings made of composite)</i>
DIN EN ISO 21003-5 2011-07	Multilayer piping systems for hot and cold water installations inside buildings - Part 5: Fitness for purpose of the system <i>(here: Section 5: Fitness for purpose on the connection and pipe system)</i>
DIN EN ISO 22391-2 2010-04	Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 2: Pipes <i>(here: Section 4: Material, Section 7: Mechanical properties and Section 8: Physical and chemical properties)</i>

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN ISO 22391-3 2010-04	Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 3: Fittings (here: <i>Section 4: Material properties, Section 7: Mechanical properties of fittings made of composite and Section 8: Physical and chemical properties of fittings made of composite</i> )
DIN EN ISO 22391-5 2010-04	Plastics piping systems for hot and cold water installations - Polyethylene of raised temperature resistance (PE-RT) - Part 5: Fitness for purpose of the system (here: <i>Section 4: Requirements on the connections and the fitness for purpose of the pipe system</i> )
DIN EN ISO 2505 2005-08	Thermoplastics pipes - Longitudinal reversion - Test methods and parameters
DIN EN ISO 2578 1998-10	Plastics - Determination of time-temperature limits after prolonged exposure to heat
DIN EN ISO 3127 2018-01	Thermoplastics pipes - Determination of resistance to external blows - Round-the-clock method
DIN EN ISO 3458 2015-08	Plastic piping systems - Mechanical joints between fittings and pressure pipes - Test method for leaktightness under internal pressure
DIN EN ISO 3501 2015-06	Plastics piping systems - Mechanical joints between fittings and pressure pipes - Test method for resistance to pull-out under constant longitudinal force
DIN EN ISO 3503 2015-06	Plastics piping systems - Mechanical joints between fittings and pressure pipes - Test method for leaktightness under internal pressure of assemblies subjected to bending
DIN EN ISO 4624 2016-08	Paints and varnishes - Pull-off test for adhesion
DIN EN ISO 6259-1 2015-08; Part 3 2015-11	Thermoplastics pipes - Determination of tensile properties
DIN EN ISO 899-1 2018-03	Plastics - Determination of creep behaviour - Part 1: Tensile creep

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN ISO 899-2 2015-06	Plastics - Determination of creep behaviour - Part 2: Flexural creep by three-point loading
DIN EN ISO 9080 2013-02	Plastics piping and ducting systems - Determination of the long-term hydrostatic strength of thermoplastics materials in pipe form by extrapolation
DIN EN ISO 9852 2018-01	Unplasticized poly(vinyl chloride) (PVC-U) pipes - Dichloromethane resistance at specified temperature (DCMT) - Test method
DIN EN ISO 9967 2016-07	Thermoplastics pipes - Determination of creep ratio
DIN EN ISO 9969 2016-06	Thermoplastics pipes - Determination of ring stiffness
DVGW VP 624 2005-05	Plastic pipes made of cross-linked polyethylene (PE-X) for drinking water and gas installation; gas inside piping with an operating pressure of up to 100 mbar (here: <i>Section 3: Requirements and tests</i> )
DVGW G 5600-1 2014-02	Metallic material intersection connector for polyethylene gas pipes - Requirements and testing (here: <i>Section 4: Requirements and tests</i> )
DVGW G 5614 2013-12	Permanent pipe joints for metal gas lines - press connectors (here: <i>Section 4: Requirements and tests</i> )
DVGW G 5628 2016-09	Installation Systems for gas installation inside buildings, consisting of multi-layer pipes and their corresponding fittings, for an operating pressure less than or equal to 100 mbar - Requirements and testing (here: <i>Section 5: Pipes - requirements and tests, Section 6: Connector - requirements and testing, Section 7: Systems und system tests and Section 11: Type examination</i> )
DVGW GW 6 2014-03	Solder adapter and threaded fittings made of copper and copper alloys in the gas and potable water installation – Requirements and tests
DVGW GW 327 2011-03	Lining of gas and water pipes with glued on surface hoses (here: <i>Section 4: Requirements</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DVGW GW 335-A 1 2003-06	Plastic pipeline systems in gas and water distribution - requirements and testing - part A1: PVC - U pipes and fittings / components for water distribution (here: <i>Section 5: Tests</i> )
DVGW GW 335-A 2 2005-11	Part A2: PE 80 and PE 100 (here: <i>Section 5: Tests</i> )
DVGW GW 335-A2-B1 2010-12	Supplementary sheet 1 to DVGW Worksheet GW 335-A2:2005-11: Plastic pipe systems in gas and water distribution - Requirements and tests - Part A2: Pipes made of PE 80 and PE 100
DVGW GW 335-A3 2003-06	Plastic pipeline systems in gas and water distribution - requirements and testing - part A 3: PE-Xa pipes (here: <i>Section 5: Tests</i> )
DVGW GW 335-B2 2004-09	Plastic pipeline systems in gas and water distribution - requirements and testing - part B2: PE 80 and PE 100 fittings (here: <i>Section 5: Tests</i> )
DVGW GW 335-B3 2011-09	Plastic pipeline systems in gas and water distribution - requirements and testing - part B3: mechanical connectors made from plastics (POM, PP) for water distribution (here: <i>Section 3: Requirements and Tests</i> )
DVGW GW 335-B3-B1 2013-02	Supplement 1 for PE 100 connectors to DVGW GW 335-B3:2011-09 plastics pipeline systems in gas and water distribution - part B3: mechanical connectors made from plastics (POM, PP) for water distribution (here: <i>Section 3: Requirements and Tests</i> )
DVGW GW 335-B3-B2 2013-04	Supplement 2 for PA GF connectors to DVGW GW 335-B3:2011-09 plastics pipeline systems in gas and water distribution - part B3: mechanical connectors made from plastics (POM, PP) for water distribution (here: <i>Section 3: Requirements and Tests</i> )
DVGW GW 335-B4 2014-04	plastics pipeline systems in gas and water distribution - part B4: fittings with metallic covering with mechanical or spigot and socket connectors for water distribution - requirements and testing (here: <i>Section 4: Requirements and Tests</i> )
DVGW GW 541 2004-10	Stainless steel pipes for gas and drinking water installation - Requirements and tests: working technical note (here: <i>Section 3: Requirements and Tests</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DVGW VP 549 2007-06	Hoses for the temporary transportation of drinking water (here: <i>Section 4: Requirements and Tests for hose</i> )
DVGW VP 550 2007-06	Hoses for the temporary transportation of drinking water (here: <i>Section 4: Requirements and Tests</i> )
DVGW VP 615 1996-07	Pressure pipes, fittings and pipe connections from glass fibre reinforced polyester resin (UP-GF) for potable water pipelines (here: <i>Section 6: Test by a DVGW- approved testing laboratory (External inspection)</i> )
DVGW VP 640 2003-08	Plastic pipeline systems in gas and water distribution - requirements and testing - PE-Xb and PE-Xc pipes (here: <i>Section 5: Tests</i> )
DVGW VP 652 2006-05	Copper pipes with fixed plastic claddings for drinking water installation (here: <i>Section 4: Requirements and tests</i> )
DVGW W 330 2011-03	Glued on surface hoses for water pipes (here: <i>Section 4: Test</i> )
DVGW W 363 2010-06	Shut-off valves, non-return valves, venting valves and control valves made of metal materials for potable water supply systems - Requirements and tests
DVGW W 421 2009-05	Water meter - Requirements and tests (here: <i>Section 4: Test</i> )
DVGW W 534 2015-07	Pipe connectors and connections in drinking installation (here: <i>Section 12: Connection check</i> )
DVGW W 542 2009-08	Multiple layer piping systems in drinking water installation (here: <i>Section 4: Requirements and tests and Section 6: Variant method for testing and certification of multi-layer composite pipes, when modifying already certified structures</i> )
DVGW W 543 2005-05	Pipe connectors and connections in drinking installation (here: <i>Section 4: Requirements and tests, Section 5: Hose pipe group I, Section 5.5: Requirements and tests, Section 7: Hose pipe group III and Section 7.4: Requirements and tests</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DVGW W 544 2011-03	Plastic pipes in drinking water installations (here: <i>Section 5: Polybuten pipes, Section 5.1: Requirements and tests, Section 6: Polypropylen pipes, Section 6.1: Requirements and tests, Section 7: Cross-linked polyethylene pipes, Section 7.1: Requirements and tests, Section 8: Chlorinated polyvinyl chloride pipes, Section 8.1: Requirements and tests, Section 9: Polyethylene pipes made from raised temperature resistance and Section 9.1: Requirements and tests</i> )
DVGW W 554 (P) 2011-03	Regulated circulation valves (here: <i>Section 3: Requirements and tests</i> )
DVGW W 570-1 2013-03	Fittings for drinking water installation - Part 1: Requirements and tests for building fittings (here: <i>Section 3: Requirements and tests</i> )
DVGW W 570-2 2008-01	Fittings for drinking water installation - Part 2: Requirements and tests for safety valves (here: <i>Section 4: Requirements and tests</i> )
DVGW W 570-3 2013-12	Fittings in the drinking water installation - building and safety fittings and / or combinations in special designs for applications according to DIN EN 806 and DIN EN 1717 in conjunction with DIN 1988 (here: <i>Section 3: Requirements and tests</i> )
DVGW W 574 2007-04	Sanitary valves as extraction fittings for drinking water installation (here: <i>Section 4: Requirements and tests</i> )
DVGW W 575 2012-01	Determination of resistance coefficient for form and connection components in drinking water installation (here: <i>Section 4: Tests</i> )
DVGW W 576 2013-08	Thermostatic mixers - requirements and tests
DVGW W 579 2015-09	Sampling Valves in Drinking Water Installations (here: <i>Section 4: Examination</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020



**Annex to the accreditation certificate D-PL-13119-02-00**

DVS 2202-1 2006-07	Imperfections in thermoplastic welding joints - Features, descriptions, evaluation
DVS 2203-1 Supplement 1 2010-08	Testing of welded joints between panels and pipes made of thermoplastics - Requirements in the tensile test - Short-time tensile welding factor
DVS 2203-1 Supplement 2 2014-05	Testing of welded joints between panels and pipes made of thermoplastics - Requirements in the tensile creep test (Tensile creep welding factor fs)
DVS 2203-1 Supplement 3 2012-06	Testing of welded joints between panels and pipes made of thermoplastics - Requirements in the technological bending test - Bending angle/bending path
DVS 2203-1 2003-01	Testing of welded joints of thermoplastics sheet and pipes - Test methods - Requirements
DVS 2203-2 Supplement 1 2010-08	Testing of welded joints between panels and pipes made of thermoplastics - Low-temperature tensile test
DVS 2203-2 2010-08	Testing of welded joints between panels and pipes made of thermoplastics - Tensile test
DVS 2203-3 2011-04	Testing of welded joints between panels and pipes made of thermoplastics - Tensile impact test
DVS 2203-4 Supplement 1 2001-12	Testing of welded joints of thermoplastic sheets and pipes - Tensile creep test - Testing of socket joints
DVS 2203-4 Supplement 2 2016-09	Testing of welded joints of thermoplastic sheets and pipes - Tensile creep test - Testing of the resistance to slow crack growth using the Full Notch Creep Test (FNCT)
DVS 2203-4 Supplement 3 2015-03	Testing of welded joints between panels and pipes made of thermoplastics - Tensile creep-rupture test - Checking of the demanded tensile creep-rupture welding factor and of the minimum service life of welded joints between polyethylenes (PE 80 and PE 100)
DVS 2203-4 1997-07	Testing of welded joints of thermoplastics plates and tubes - Tensile creep test
DVS 2203-5 1999-08	Testing of welded joints of thermoplastics plates and tubes - Technological bend test

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DVS 2203-6 Supplement 1 2016-08	Testing of joints between polymeric materials - Torsion shear and radial peeling tests for joints executed by means of sleeve welding with an incorporated electric heating element and heated tool sleeve welding
DVS 2203-6 Supplement 2 2008-01	Testing of joints between polymeric materials - Testing of adhesive-bonded joints in the shear and peeling tests
DVS 2203-6 2008-01	Testing of joints between polymeric materials - Shear and peeling tests
DVS 2207-1 Supplement 1 2005-12	Welding of thermoplastics - Heated tool welding of pipes made of PE-X with pipeline components made of PE-HD (here: <i>Section 5: Check of the welded connection</i> )
DVS 2207-1 2015-08	Welding of thermoplastics - Heated tool welding of pipes, pipeline components and sheets made of PE-HD (here: <i>Section 7: Check of the welded connection</i> )
DVS 2220 2011-05	Qualification testing of plastics laminators and adhesive bonders - Test group II-Laminates as well as laminate and adhesivebonded joints between GFRPs (UP-GF and EP-GF) (here: <i>Section 6.3: Mechanical-technological test</i> )
GMW15803 2015-04	Performance Test for Connections Used in Charge Air Systems
ISO 10466 1997-11	Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes - Test method to prove the resistance to initial ring deflection
ISO 10467 2018-06	Plastics piping systems for pressure and non-pressure drainage and sewerage - Glass-reinforced thermosetting plastics (GRP) systems based on unsaturated polyester (UP) resin (here: <i>Section 5: Pipes, Section 6: Fittings und Section 7: Joint performance</i> )
ISO 10468 2018-05	Glass-reinforced thermosetting plastics (GRP) pipes - Determination of the ring creep properties under wet or dry conditions
ISO 10471 2018-05	Glass-reinforced thermosetting plastics (GRP) pipes - Determination of the long-term ultimate bending strain and the long-term ultimate relative ring deflection under wet conditions

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

ISO 10639 2017-10	Plastics piping systems for pressure and non-pressure water supply - Glass-reinforced thermosetting plastics (GRP) systems based on unsaturated polyester (UP) resin (here: <i>Section 5: Pipes, Section 6: Fittings und Section 7: Joint performance</i> )
ISO 10928 2016-12	Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes and fittings - Methods for regression analysis and their use
ISO 10952 2014-03	Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes and fittings - Determination of the resistance to chemical attack for the inside of a section in a deflected condition
ISO 12091 1995-12	Structured-wall thermoplastics pipes - Oven test
ISO 13480 1997-09	Polyethylene pipes - Resistance to slow crack growth - Cone test method
ISO 13953 2001-09	Polyethylene(PE) pipes and fittings - Determination of the tensile strengt and failure mode of test pieces from a butt-fused joint
ISO 15306 ISO 15306 AMD 1 2012-02	Glass-reinforced thermosetting plastics (GRP) pipes - Determination of the resistance to cyclic internal pressure; Amendment 1
ISO 16770 2004-02	Plastics - Determination of environmental stress cracking (ESC) of polyethylene - Full-notch creep test (FNCT)
ISO 17454 2006-02	Plastics piping systems - Multilayer pipes - Test method for the adhesion of the different layers using a pulling rig
ISO 17456 2006-09	Plastics piping systems - Multilayer pipes - Determination of long-term strength

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

ISO 17885 2015-09	Plastics piping systems - Mechanical fittings for pressure piping systems - Specifications (here: <i>section 8: Physical characteristics and section 9: Performance requirements</i> )
ISO 18553 AMD 1 2007-08	Method for the assessment of the degree of pigment or carbon black dispersion in polyolefin pipes, fittings and compounds AMENDMENT 1
ISO 18553 2002-03	Method for the assessment of the degree of pigment or carbon black dispersion in polyolefin pipes, fittings and compounds
ISO 21004 2006-11	Plastics piping systems - Multilayer pipes and their joints, based on thermoplastics, for water supply (here: <i>Section 6: Long-term hydrostatic strength, Section 8: Mechanical characteristics, Section 9: Fitting and valves und Section 10: Fitness for purpose of the system</i> )
ISO 4437-2 2014-01	Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) - Part 2: Pipes
ISO 4437-3 2014-01	Plastics piping systems for the supply of gaseous fuels - Polyethylene (PE) - Part 3: Fittings
ISO 6259-2 1997-12	Thermoplastics pipes - Determination of tensile properties - Part 2: Pipes made of unplasticized poly(vinyl chloride) (PVC-U), chlorinated poly(vinyl chloride) (PVC-C) and high-impact poly(vinyl chloride) (PVC-HI)
ISO 6259-3 2015-06	Thermoplastics pipes - Determination of tensile properties - Part 3: Polyolefin pipes

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

ISO 7432 2018-09	Glass-reinforced thermosetting plastics (GRP) pipes and fittings - Test methods to prove the design of locked socket-and-spigot joints, including double-socket joints, with elastomeric seals
ISO 7509 2018-09	Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes - Determination of time to failure under sustained internal pressure
ISO 7685 1998-07	Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes - Determination of initial specific ring stiffness
ISO 8483 ISO 8483 AMD 1 2012-02	Glass-reinforced thermosetting plastics (GRP) pipes and fittings - Test methods to prove the design of bolted flange joints; Amendment 1
ISO 8513 2016-02	Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes - Test methods for the determination of the initial longitudinal tensile strength
ISO 8521 2009-08	Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes - Test methods for the determination of the apparent initial circumferential tensile strength
ISO 8533 ISO 8533 AMD 1 2012-03	Plastics piping systems for pressure and non-pressure drainage and sewerage - Glass-reinforced thermosetting plastics (GRP) systems based on unsaturated polyester (UP) resin - Test methods to prove the design of cemented or wrapped joints; Amendment 1
ISO/DIS 4427-2 2018-07	Plastics piping systems for water supply, and for drainage and sewerage under pressure - Polyethylene (PE) - Part 2: Pipes
ISO/DIS 4427-3 2018-07	Plastics piping systems for water supply, and for drainage and sewerage under pressure - Polyethylene (PE) - Part 3: Fittings
KIWA BRL 5602 2016-10	Plastics piping systems of PE-RT intended for underfloor heating (here: <i>Section 4: Requirements and determination methods</i> )
KIWA BRL 5603 2016-10	Plastics piping systems of PE-X intended for underfloor heating (here: <i>Section 4: Other requirements and determination methods</i> )
KIWA BRL 5610 2016-10	Plastic piping systems of PE-X/AL intended for heating installations: radiator connections (here: <i>Section 4: Other requirements and determination methods</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

KIWA BRL 5611 2016-10	Plastic piping systems of PE-RT/AL intended for heating installations: radiator connections (here: <i>Section 4: Other requirements and determination methods</i> )
KIWA BRL K17605 2016-10	Evaluation guideline for the Kiwa technical approval with product certificate for plastics piping systems for water supply with or without pressure - Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) (here: <i>Section 4: Performance requirements and test methods of the piping system</i> )
KIWA BRL K536 part B 2011-12	Plastic piping systems of PP-R intended for transport of hot and cold drinking water (here: <i>Section 3: Requirements and determination methods</i> )
KIWA BRL K536 part C 2011-12	Plastic piping systems of PB intended for transport of hot and cold drinking water (here: <i>Section 3: Producteisen en bepalingsmethoden</i> )
KIWA BRL K536 part E 2011-12	Plastic piping systems of PE-X/Al intended for transport of hot and cold drinking water (here: <i>Section 3: Producteisen en bepalingsmethoden</i> )
KIWA BRL K536 part G 2011-12	Plastic piping systems of PE-RT/Al intended for transport of hot and cold drinking water (here: <i>Section 4: Product requirements and test methods</i> )
KIWA KOMO BRL 52204 2016-12	Evaluation guideline for the KOMO® quality declaration for Plastics piping systems for draining and sewerage with or without pressure - Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) (here: <i>Section 4: Performance requirements and test and methods of the piping system, Section 5: Product requirements: pipes und Section 6: Product requirements: fittings</i> )
NSF/ANSI 14 2012	Plastics Piping System Components and Related Materials (here: <i>Section 5: Physical and performance requirements</i> )
ÖNORM B 5165 2016-08	Piping systems for hydropower plants - Pipes, joints and fittings made of glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) (here: <i>Section 5: Raw materials and material and Section 7: Piping systems for power plant lines</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

<p>ÖNORM B 5161 2017-05</p>	<p>Plastics piping systems for water supply and for drainage and sewerage with or without pressure - Pipes, joints and fittings made of glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) - Supplementary requirements to OENORM EN 1796 and OENORM EN 14364 as well as methods for the substantiation of conformity (here: <i>Section 5: Requirements and tests</i>)</p>
<p>ÖVGW QS-G392/1 2015-10</p>	<p>Gas pipe systems made of polyethylene PE 80, PE 100 and PE 100-RC, part 1: materials; Requirements and tests for the award of the ÖVGW quality mark (here: <i>Section 4: Requirements and tests</i>)</p>
<p>ÖVGW QS-G 392/2 2015-10</p>	<p>Gas pipe systems made of polyethylene PE 80, PE 100 and PE 100-RC, part 2: Pipes, requirement and tests for the award of the ÖVGW quality mark (here: <i>Section 4: Requirements and tests</i>)</p>
<p>ÖVGW QS-G 392/3 2015-10</p>	<p>Gas pipe systems made of polyethylene PE 80, PE 100 and PE 100-RC, part 3: Fittings, requirement and tests for the award of the ÖVGW quality mark (here: <i>Section 4: Requirements and tests</i>)</p>
<p>ÖVGW QS-W405/1 2016-12</p>	<p>Polyethylene PE 100-RC pipe systems for alternative installation techniques for the supply of drinking water Part 1: Polyethylene pipes PE 100-RC (Resistance to crack) (here: <i>Section 9: Types and conduct of the test</i>)</p>
<p>ÖVGW QS-W406/1 2016-02</p>	<p>Polyethylene (PE 40, PE 80 und PE 100) pipe systems for the supply of drinking water Part 1: Polyethylen pipes (here: <i>Section 7: Types and conduct of the test</i>)</p>
<p>ÖVGW QS-W406/2 2016-07</p>	<p>Polyethylene (PE 40, PE 80 und PE 100) pipe systems for the supply of drinking water Part 2: PE fittings and tensional connections for polyethylene pipes (here: <i>Section 7: Types and conduct of the test</i>)</p>
<p>ÖVGW/GRIS QS-W407 2018-01</p>	<p>Pipes, fittings, jacking pipes and couplings made of glass-reinforced thermosetting plastics (GRP) for the supply of drinking water (here: <i>Section 9: Arten und Durchführung der Prüfungen</i>)</p>
<p>SAE J1769 2002</p>	<p>SAE Information Report - Protocol for Evaluation of Long Term Permeation - Barrier Durability on Non-Metallic Fuel Tanks (here: <i>Section 3.2: Test Protocol Steps</i>)</p>

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

SAE J2044 2009-08	Quick Connect Coupling Specification for Liquid Fuel and Vapor/Emissions Systems (here: <i>Section 7: Design Verification/ Validation Testing</i> )
SKZ HR 3.12 2015-06	Heating pipes made of HDPE/AL/HDPE-multilayer pipe (here: <i>Section 4: Approval and test</i> )
SKZ HR 3.13 2006-05	Heating pipes made of crosslinked polyethylene of medium density PE-MDX (here: <i>Section 3: Approval and test</i> )
SKZ HR 3.16 2015-04	Heating pipes made of polyethylene with raised temperature resistance (here: <i>Section 4: Approval and test</i> )
SKZ HR 3.2 2015-04	Heating pipes made of crosslinked polyethylene PE-X (here: <i>Section 4: Approval and test</i> )
SKZ HR 3.26 2015-02	Geothermal probe feet, pipes and pipe fittings made of polyethylene PE 100 for geothermal energy products (here: <i>Section 4: Approval and test</i> )
SKZ HR 3.3 2015-04	Heating pipes made of PP-R and PP-RCT (here: <i>Section 4: Approval and test</i> )
SKZ HR 3.35 2011-04	Testing and inspection specifications - Floor heating systems made of polyethylene of raised temperature (here: <i>Section 3: Approval and test</i> )
SKZ HR 3.39 2011-11	Drainage pipes and mouldings made of PP to be used inside the building structure (here: <i>Section 3: Approval and test</i> )
SKZ HR 3.4 2013-05	Heating pipes made of PB (here: <i>Section 3: Approval and test</i> )
SKZ HR 3.42 2009-04	Test and inspection specifications - Pressure pipes made of multilayer pipes PE 80, PE 100, PE-X (here: <i>Section 3: Approval and test</i> )
Specification of Thüga AG for PE-pipes 2016-10	Specification for gas and potable water pipe made of Polyethylen PE 100 and PE 100-RC (here: <i>Section 4: Approval and test</i> )
SVGW ZW 101 2019-01	General terms and conditions of the SVGW certification body water

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020



**Annex to the accreditation certificate D-PL-13119-02-00**

SVGW ZW 106 2019-01	Waste fitting and Angled isolating valve (here: <i>Section 4: Requirements</i> )
SVGW ZW 110 2019-01	Isolation valves (here: <i>Section 4: Requirements</i> )
SVGW ZW 125 2019-01	Drinking water distribution systems with pipes made of PE-X (here: <i>Section 4: Requirements</i> )
SVGW ZW 129 2019-01	Drinking water distribution systems with pipes made of PB (here: <i>Section 4: Requirements</i> )
SVGW ZW 142 2019-01	Drinking water distribution systems with multilayer composite pipes (here: <i>Section 4: Requirements</i> )
SVGW ZW 148 2019-01	Metal connector for threaded connections (here: <i>Section 4: Requirements</i> )
VDA 230-207 2013-03	Resistance of metallic materials to corrosion from fuels (here: <i>Section 3: Test requirements</i> )
VW TL 820 26 1999-07	Fuel filter, functional requirements (here: <i>Section 4: Function</i> )
VW TL 822 53 2008-12	ZSB fuel lines, functional requirements (here: <i>Section 4: Tests</i> )
VW TL 824 17 2004-04	Two-component nozzle fuel tank area, functional requirements (here: <i>Section 3: Tests</i> )
VW TL 824 75 2014-03	Quick coupling in the SCR system - functional requirements (here: <i>Section 3: Requirements,</i> <i>Section 5: New part examination,</i> <i>Section 6: Media resistance,</i> <i>Section 7: Endurance test and</i> <i>Section 8: Examination of electrical connections in heated quick</i> <i>couplings</i> )
ZP 7644 2018-10	Certification program threaded fittings made of stainless steel in the potable water installation (here: <i>Section 7: Requirements and</i> <i>Section 8: Monitoring</i> )

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN CERTCO ZP Plastic pipes and composite pipe systems 2015-01	Plastic pipes and systems for warm water surface heating and heating element connections (here: <i>Section 4: Test</i> )
DIN CERTCO ZP plastic pipe systems 2015-03	Plastic pipe system (sewers and waste water pipes) (here: <i>Section 5: Test</i> )
DIN CERTCO ZP „Kunststoffrohrsysteme“ 2017-05	Plastic pipe system (pressure pipes and fittings) (here: <i>Section 5: Test</i> )
DIN CERTCO ZP 23.6.1/8 2012	Pipes and fittings of Polyethylen (PE 100, PE 100 RC) for geothermal (here: <i>Section 4: Test</i> )

**7 Manual and mechanized non-destructive testing (D1, D2)**

**7.1 Ultrasonic testing - Manual and mechanized surface and volume testing of metallic components, fiber reinforced materials and plastics as well as composites materials**

DIN EN ISO 16810 *** 2014-07	Non-destructive testing - Ultrasonic testing - General principles (here: <i>Only section 9</i> )
DIN EN ISO 16823 *** 2014-07	Non-destructive testing - Ultrasonic testing - Transmission technique
DIN EN ISO 16826 *** 2014-06	Non-destructive testing - Ultrasonic testing - Examination for discontinuities perpendicular to the surface
DIN EN ISO 17640 *** 2011-04	Non-destructive testing of welds - Ultrasonic testing - Techniques, testing levels, and assessment (here: <i>Only section 7-10 and annex A</i> ) ( <i>withdrawn standard</i> )
DIN EN 10228-3 *** 2016-03	Non-destructive testing of steel forgings - Part 3: Ultrasonic testing of ferritic or martensitic steel forgings

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

DIN EN 10228-4 *** 2016-10	Non-destructive testing of steel forgings - Part 4: Ultrasonic testing of austenitic and austenitic-ferritic stainless steel forgings
DIN EN 12680-1 *** 2003-06	Founding - Ultrasonic examination - Part 1: Steel castings for general purposes
IMA-PV A/17 2019-01	Test instruction for ultrasound testing by means of ultrasound scanning system LS100 (Translation)
IMA AN1/26 2019-05	Non-destructive testing (NDT) - Ultrasonic testing (UT) (Translation)

**7.2 Penetrant testing - Testing for surface-open material irregularities and defects of metallic components, fiber reinforced materials and plastics as well as composites materials**

DIN EN ISO 3452-1 *** 2014-09	Non-destructive testing - Penetrant testing - Part 1: General principles (here: <i>Only section 8</i> )
DIN EN ISO 3452-5 *** 2009-04	Non-destructive testing - Penetrant testing - Part 5: Penetrant testing at temperatures higher than 50 °C
DIN EN ISO 3452-6 *** 2009-04	Non-destructive testing - Penetrant testing - Part 6: Penetrant testing at temperatures lower than 10 °C
DIN EN 1371-1 *** 2012-02	Founding - Liquid penetrant testing - Part 1: Sand, gravity die and low pressure die castings
DIN EN 1371-2 *** 2015-04	Founding - Liquid penetrant testing - Part 2: Investment castings
DIN EN 10228-2 *** 2016-10	Non-destructive testing of steel forgings - Part 2: Penetrant testing
IMA-PV A/14 2005-05	Special information in the test procedure for the fluorescent dye penetration test on hip joint implants (Translation)
IMA AN1/27 2019-03	Non-destructive testing (NDT) - Penetrant testing (PT) (Translation)

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**7.3 Magnetic particle test - Manual testing of surfaces on ferromagnetic materials of irregularities and defects**

DIN EN ISO 9934-1 \*\*\*  
2017-03 Non-destructive testing - Magnetic particle testing - Part 1: General principles  
(here: *Only section 7-14*)

DIN EN 1369 \*\*\*  
2013-01 Founding - Magnetic particle testing

DIN EN 10228-1 \*\*\*  
2016-10 Non-destructive testing of steel forgings - Part 1: Magnetic particle inspection

DIN EN ISO 17638 \*\*\*  
2017-03 Non-destructive testing of welds - Magnetic particle testing

IMA AN1/28  
2019-11 Non-destructive testing (NDT) - Magnetic particle test (MT) (Translation)

**7.4 Visual inspection - Testing of external and internal surfaces of irregularities and defects of metallic components, fiber reinforced materials and plastics as well as composites materials**

DIN EN 13018 \*\*\*  
2016-16 Non-destructive testing - Visual testing - General principle  
(here: *Only section 5 and 6*)

DIN EN ISO 17637 \*\*\*  
2017-04 Non-destructive testing of welds - Visual testing of fusion-welded joints

IMA AN1/14  
2019-06 Performance of visual inspection (Translation)

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**8 Metallographic investigations and spark discharge optical emission spectrometric analyses of the chemical composition of steel and alloys of Al- and Cu-Basis \* (D1)**

Test type	Measurand/ test parameter	Measurement and test range	Characteristic test methods
Atomic emission spectroscopy	Element contents	Steel Al-alloys Cu-alloys	AA1/04
Materialographic investigations	Macro and micro structure, degree of purity, Grain size, Phase fraction of metallic, Layer thickness, decarburisation, Alloy depletion, $\alpha$ -Case-thickness (Ti)	Length	ASTM E 45 DIN 50602 ASTM E 112 VDI 3822 AA1/05 AA1/09 AA1/14 AA1/15 AA1/16 AA1/17 AA1/18 AA1/19 AA1/21

**8.1 Characteristic test methods for metallographic investigations**

ASTM B 487 2013	Standard Test Method for Measurement of Metal and Oxide Coating Thickness by Microscopical Examination of Cross Section
ASTM E 3 2011	Standard Guide for Preparation of Metallographic Specimens
ASTM E 45 2013	Standard Test Methods for Determining the Inclusion Content of Steel <i>(withdrawn standard)</i>
ASTM E 112 2013	Standard Test Methods for Determining Average Grain Size
ASTM E 340 2015	Standard Practice for Macroetching Metals and Alloys
ASTM E 407 2015	Standard Practice for Microetching Metals and Alloys

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

ASTM E 1077 2014	Standard Test Methods for Estimating the Depth of Decarburization of Steel Specimens
ASTM F 2111 2011	Standard Practice for Measuring Intergranular Attack or End Grain Pitting on Metals Caused by Aircraft Chemical Processes
DIN 50602 1985-09	Metallographic examination; microscopic examination of special steels using standard diagrams to assess the content of non-metallic inclusions ( <i>withdrawn standard</i> )
DIN EN 3114-001 2007-04	Aerospace series - Test method - Microstructure of ( $\alpha + \beta$ ) titanium alloy wrought products - Part 001: General requirements
DIN EN 3114-002 2007-07	Aerospace series - Test method - Microstructure of ( $\alpha + \beta$ ) titanium alloy wrought products - Part 002: Microstructure of bars, sections, forging stock and forgings

**9 Corrosion tests (dipping method) and their evaluation \* (D1, D2)**

Test type	Measurand/ test parameter	Measurement and test range	Characteristic test methods
Corrosion tests (dipping method)	Loss of mass	$\Delta m > 1 \text{ mg}$ 0 g until 200 g	DIN EN ISO 3651-2 ASTM G 66 ASTM G 67 AA1/20
Microscopic evaluation method	Depth (length)	$> 0,001 \text{ mm}$ 0 mm until 10 mm	ASTM G 66 ASTM G 67 ASTM F 2111 AA1/16

**9.1 Characteristic test methods for Corrosion tests (dipping method) and their evaluation**

DIN EN ISO 3651-1 1998	Determination of resistance to intergranular corrosion of stainless steels - Part 1: Austenitic and ferritic-austenitic (duplex) stainless steels - Corrosion test in nitric acid medium by measurement of loss in mass (Huey test)
DIN EN ISO 3651-2 1998	Determination of resistance to intergranular corrosion of stainless steels - Part 2: Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels - Corrosion test in media containing sulfuric acid

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020



**Annex to the accreditation certificate D-PL-13119-02-00**

Electrical engineering	VDE 0660 - 117:2013 DIN EN 60947-4-2:2013 EN 60947-4-2:2012 IEC 60947-4-2:2011 + Correction: 2012	Low-voltage switchgear and control gear - Part 4-2: Contactors and motor-starters - AC semiconductor motor controllers and starters	
Electrical engineering	VDE 0660 - 109:2015 DIN EN 60947-4-3:2015 EN 60947-4-3:2014 IEC 60947-4-3:2014	Low-voltage switchgear and controlgear - Part 4-3: Contactors and motor-starters - AC semiconductor controllers and contactors for non-motor loads	
Electrical engineering	VDE 0660 - 200:2010 DIN EN 60947-5-1:2018 EN 60947-5-1:2004 + Correction:2005 + A1:2009 IEC 60947-5-1:2003 + A1:2009	Low-voltage switchgear and control gear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices (IEC 60947-5-1:2016 + COR1:2016)	
Electrical engineering	VDE 0660 - 208:2014 DIN EN 60947-5-2:2014 EN 60947-5-2:2007 + A1:2012 IEC 60947-5-2:2007 + A1:2012	Low-voltage switchgear and controlgear - Part 5-2: Control circuit devices and switching elements - Proximity switches	
Electrical engineering	VDE 0660 - 114:2014 DIN EN 60947-6-1:2014 EN 60947-6-1:2005 + A1:2014 IEC 60947-6-1:2005 + A1:2013	Low-voltage switchgear and controlgear - Part 6-1: Multiple function equipment - Transfer switching equipment	

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020



**Annex to the accreditation certificate D-PL-13119-02-00**

Electrical engineering	VDE 0660 - 115:2007 DIN EN 60947-6-2:2007 EN 60947-6-2:2003 + A1:2007 IEC 60947-6-2:2002 + A1:2007	Low-voltage switchgear and controlgear - Part 6-2: Multiple function equipment - Control and protective switching devices (or equipment) (CPS)	
Electrical engineering	VDE 0611 - 1:2010 DIN EN 60947-7-1:2010 EN 60947-7-1:2009 IEC 60947-7-1:2009	Low-voltage switchgear and controlgear - Part 7-1: Ancillary equipment - Terminal blocks for copper conductors	
Electrical engineering	VDE 0611 - 3:2010 DIN EN 60947-7-2:2010 EN 60947-7-2:2009 IEC 60947-7-2:2009	Low-voltage switchgear and controlgear - Part 7-2: Ancillary equipment - Protective conductor terminal blocks for copper conductors	
Electrical engineering	VDE 0611 - 6:2010 DIN EN 60947-7-3:2010 EN 60947-7-3:2009 IEC 60947-7-3 2009	Low-voltage switchgear and controlgear - Part 7-3: Ancillary equipment - Safety requirements for use terminal blocks	
Electrical engineering	VDE 0660-600-1:2012 DIN EN 61439-1:2012 EN 61439-1:2011 IEC 61439-1:2011	Low-voltage switchgear and controlgear assemblies Part 1: General rules	
Electrical engineering	VDE 0660-600-2:2012 DIN EN 61439-2:2012 EN 61439-2 2011 IEC 61439-2:2011	Low-voltage switchgear and controlgear assemblies Part 2: Power switchgear and controlgear assemblies	

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

Electrical engineering	VDE 0660-600-3:2013 DIN EN 61439-3:2013 EN 61439-3:2012 IEC 61439-3:2012	Low-voltage switchgear and controlgear assemblies - Part 3: Distribution boards intended to be operated by ordinary persons (DBO)	
Electrical engineering	VDE 0660-600-4:2013 DIN EN 61439-4:2013 EN 61439-4:2013 IEC 61439-4:2012	Low-voltage switchgear and controlgear assemblies - Part 4: Particular requirements for assemblies for construction sites (ACS)	
Electrical engineering	VDE 0660-600-5:2015 DIN EN 61439-5:2015 EN 61439-5:2015 IEC 61439-5:2014 + Correction:2015	Low-voltage switchgear and controlgear assemblies - Part 5: Assemblies for power distribution in public networks	
Electrical engineering	VDE 0660-600-6:2013 DIN EN 61439-6:2013 EN 61439-6:2012 IEC 61439-6:2012	Low-voltage switchgear and controlgear assemblies - Part 6: Busbar trunking systems (busways)	
Electrical engineering	VDE 0606-200:2013 DIN EN 61535:2013 EN 61535:2009 + A1:2013 IEC 61535:2009 + A1:2012	Installation couplers intended for permanent connection in fixed installations	

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

Electrical engineering	VDE 0609-1:2000 DIN EN 60999-1:2000 EN 60999-1:2000 IEC 60999-1:1999	Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm <sup>2</sup> up to 35 mm <sup>2</sup> (included)	
Electrical engineering	VDE 0609-101:2004 DIN EN 60999-2:2004 EN 60999-2:2003 IEC 60999-2:2003	Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units - Part 2: Particular requirements for clamping units for conductors above 35 mm <sup>2</sup> up to 300 mm <sup>2</sup>	
Electrical engineering	VDE 0613-1:2005 DIN EN 60998-1:2005 EN 60998-1:2004 IEC 60998-1:2002, modified	Connecting devices for low-voltage circuits for household and similar purposes - Part 1: General requirements	
Electrical engineering	VDE 0613-2-1:2005 DIN EN 60998-2-1:2005 EN 60998-2-1:2004 IEC 60998-2-1:2002, modified	Connecting devices for low-voltage circuits for household and similar purposes - Part 2-1: Particular requirements for connecting devices as separate entities with screw-type clamping units	

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

Electrical engineering	VDE 0613-2-2:2005 DIN EN 60998-2-2:2005 EN 60998-2-2:2004 IEC 60998-2-2:2002, modified	Connecting devices for low-voltage circuits for household and similar purposes - Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units	
Electrical engineering	VDE 0613-2-3:2005 DIN EN 60998-2-3:2005 EN 60998-2-3:2004 IEC 60998-2-3:2002, modified	Connecting devices for low-voltage circuits for household and similar purposes Part 2-3: Particular requirements for connecting devices as separate entities with insulation-piercing clamping units	
Electrical engineering	VDE 0115-460-1:2003 DIN EN 60077-1:2003 EN 60077-1:2002 IEC 60077-1:1999, modified	Railway applications - Electric equipment for rolling stock - Part 1: General service conditions and general rules	
Electrical engineering	VDE 0115-460-2:2003 DIN EN 60077-2:2003 EN 60077-2:2002 IEC 60077-2:1999, modified	Railway applications - Electric equipment for rolling stock - Part 2: Electrotechnical components - General rules	

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

Electrical engineering	VDE 0115-460-3:2003 DIN EN 60077-3:2003 EN 60077-3:2002 IEC 60077-3:2001	Railway applications - Electric equipment for rolling stock - Part 3: Electrotechnical components - Rules for d.c. circuit-breakers	
Electrical engineering	VDE 0110-1:2008 DIN EN 60664-1:2008 EN 60664-1:2007 IEC 60664-1:2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	
Electrical engineering	VDE 0113-1:2014-10 DIN EN 60204-1:2014 IEC 60204-1:2005	Safety of machinery - Electrical equipment of machines - Part 1: General requirements	
Electrical engineering	VDE 0115-200:2008 DIN EN 50155	Railway applications - Rolling stock - Electronic equipment	
Electrical engineering	DIN EN 50124-1:2017 VDE 0115-107-1:2017-12	Railway applications - Insulation coordination - Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment	
Electrical engineering	DIN EN 50124-2 VDE 0115-107-2:2017-12	Railway applications - Insulation coordination - Part 2: Overvoltages and related protection	

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

Electrical engineering	DIN EN 60898-1 VDE 0641-11:2006-03	Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations - Part 1: Circuit-breakers for a.c. operation	
<b>Tests on electrical connectors ***</b>			
Electrical engineering	DIN EN 60512-1-1:2003 IEC 60512-1-1:2002	Connectors for electronic equipment - Tests and measurements - Part 1-1: General examination - Test 1a: Visual examination	
Electrical engineering	DIN EN 60512-1-2:2003 IEC 60512-1-2:2002	Connectors for electronic equipment - Tests and measurements - Part 1-2: General examination - Test 1b: Examination of dimension and mass	
Electrical engineering	DIN EN 60512-1-3:1998 IEC 60512-1-3:1997	Electromechanical components for electronic equipment - Basic testing procedures and measuring methods - Part 1: General examination - Section 3: Test 1c - Electrical engagement length	
Electrical engineering	DIN EN 60512-2-1 2003 IEC 60512-2-1:2002	Connectors for electronic equipment - Tests and measurements - Part 2-1: Electrical continuity and contact resistance tests - Test 2a: Contact resistance - Millivolt level method	
Electrical engineering	DIN EN 60512-2-2 2004 IEC 60512-2-2:2003	Connectors for electronic equipment - Tests and measurements - Part 2-2: Electrical continuity and contact resistance tests - Test 2b: Contact resistance - Specified test current method	
Electrical engineering	DIN EN 60512-2-3 2003 IEC 60512-2-3:2002	Connectors for electronic equipment - Tests and measurements - Part 2-3: Electrical continuity and contact resistance tests - Test 2c: Contact resistance variation	
Electrical engineering	DIN EN 60512-2-5 2004 IEC 60512-2-5:2003	Connectors for electronic equipment - Tests and measurements - Part 2-5: Electrical continuity and contact resistance tests - Test 2e: Contact disturbance	

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

Electrical engineering	DIN EN 60512-3-1:2003 IEC 60512-3-1:2002	Connectors for electronic equipment - Tests and measurements - Part 3-1: Insulation tests - Test 3a: Insulation resistance	
Electrical engineering	DIN EN 60512-4-1:2004 IEC 60512-4-1:2003	Connectors for electronic equipment - Tests and measurements - Part 4-1: Voltage stress tests - Test 4a: Voltage proof	
Electrical engineering	DIN EN 60512-5-1:2003 IEC 60512-5-1:2002	Connectors for electronic equipment - Tests and measurements - Part 5-1: Current-carrying capacity tests - Test 5a: Temperature rise	
Electrical engineering	DIN EN 60512-5-2:2003 IEC 60512-5-2:2002	Connectors for electronic equipment - Tests and measurements - Part 5-2: Current-carrying capacity tests - Test 5b: Current-temperature derating (Derating-Curve)	
Electrical engineering	DIN EN 60512-6-5:2000 IEC 60512-6-5:1997	Electromechanical components for electronic equipment - Basic testing procedures and measuring methods - Part 6: Dynamic stress tests - Section 5: Test 6e: Random vibration	
Electrical engineering	DIN EN 60512-10-4:2004 IEC 60512-10-4:2003	Connectors for electronic equipment - Tests and measurements - Part 10-4: Impact tests (free components), static load tests and overload tests - endurance tests and overload tests - Test 10d: Electrical overload	
Electrical engineering	DIN EN 60512-13-1:2006 IEC 60512-13-1:2006	Connectors for electronic equipment - Tests and measurements - Part 13-1: Mechanical operation tests - Test 13a: Engaging and separating forces	
Electrical engineering	DIN EN 60512-13-5:2006	Connectors for electronic equipment - Tests and measurements - Part 13-5: Mechanical operation tests - Test 13e: Polarizing and keying method	
Electrical engineering	DIN EN 60512-15-6:2009	Connectors for electronic equipment - Tests and measurements - Part 15-6: Connector tests (mechanical) - Test 15f: Effectiveness of connector coupling devices	

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

**11 Testing of electrical and electronic devices, components and assemblies in motor vehicles \*\*\* (D2)**

Field of testing	Standard or test method / issue	Title of the standard or test method	Limitations to the test method
<b>LV 123 Electrical properties and electrical safety of high-voltage components in motor vehicles</b>			
Auto-motive	BMW GS 95023 2016-11	Electrical properties and electrical safety of high-voltage components in motor vehicles - requirements and tests	Not 10.4.6
Auto-motive	Mercedes MBN LV 123 2014-03	Electrical properties and electrical safety of high-voltage components in motor vehicles - requirements and tests	Not 10.4.6
Auto-motive	Volkswagen VW80303, VW 80302 2014-06	Electrical properties and electrical safety of high-voltage components in motor vehicles - requirements and tests	Not 10.4.6
<b>LV 124 Electrical and electronic components in motor vehicles up to 3.5 t</b>			
Auto-motive	BMW GS 95024-2-1 2010-01	Electrical and electronic components in motor vehicles Electrical requirements and tests	Not E-02, E-03, E-04, E-06, E-09, E-11,
Auto-motive	BMW GS 95024-2-2 2011-02	Electrical and electronic components in motor vehicles Electrical requirements and tests Additional requirements to GS 95024-2-1	Not E-02, E-03, E-04, E-06, E-09, E-11,
Auto-motive	BMW GS 95024-3-1 2010-01	Electrical and electronic components in motor vehicles up to 3.5 t General requirements, test conditions and tests	Not M-02, M-03 K-06, K-07 K-10, K-11 K-12, K-13 K-15, K-17 K-18
Auto-motive	Mercedes MBN LV 124-1 2013-03	Electrical and electronic components in passenger cars up to 3.5 t - General requirements, test conditions and tests Part 1: Electrical requirements and tests 12 V electrical system	Not E-02, E-03, E-04, E-06, E-09, E-11,

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020



**Annex to the accreditation certificate D-PL-13119-02-00**

Auto- motive	Mercedes MBN LV 124-2 2013-08	Electrical and electronic components in passenger cars up to 3.5 t - General requirements, test conditions and tests Part 2: environmental requirements	Not M-02, M-03 K-06, K-07 K-10, K-11 K-12, K-13 K-15, K-17 K-18
Auto- motive	Volkswagen VW 80000 VW 80101 VW 80332	Electrical and electronic components in motor vehicles up to 3.5 t General requirements, test conditions and tests	Not E-02, E-03, E-04 E-06, E-09, E-11 M-02, M-03 K-06, K-07 K-10, K-11 K-12, K-13 K-15, K-17 K-18
<b>LV 148 Electrical and electronic components in motor vehicles 48 V Bordnetz, test conditions and tests</b>			
Auto- motive	VDA 320 2014-08	Electric and Electronic Components in Motor Vehicles 48 V On-Board Power Supply - Requirements and Tests	
Auto- motive	BMW GS 95026 2013-05	Electric and Electronic Components in Motor Vehicles 48 V On-Board Power Supply - Requirements and Tests	
Auto- motive	Mercedes MBN LV 148 2013-11	Electric and Electronic Components in Motor Vehicles 48 V On-Board Power Supply - Requirements and Tests	
Auto- motive	Volkswagen VW 82148, VW 80332, VW 75174 2013-09	Electric and Electronic Components in Motor Vehicles 48 V On-Board Power Supply - Requirements and Tests	
<b>ISO 16750-x Road vehicles - Environmental conditions and testing for electrical and electronic equipment</b>			
Auto- motive	ISO 16750-2:2012-11	Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 2: Electrical loads	Not chapter 4.4

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

Auto- motive	ISO 16750-3:2012-12	Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 3: Mechanical loads	Not chapter 4.5, 4,6
Auto- motive	ISO 16750-4:2010-04	vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 4: Climatic loads	Not chapter 5.4, 5.5, 5.8, 5.9, 5.10
Auto- motive	ISO 16750-5:2010-04	Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 5: Chemical loads	
<b>LV 214 Automotive Connectors</b>			
Electri- cal engi- neering	BMW GS 95006-7-1 2010-05	Automotive connectors - test specification	Not PG18.2 / 18.3 salt spray, B19.4 industrial climate, B23.1 / B23.2 diving
Electri- cal engi- neering	Mercedes MBN 10384 (LV 214) 2010-11	Automotive connectors - test specification	Not PG18.2 / 18.3 salt spray, B19.4 industrial climate, B23.1 / B23.2 diving
Electri- cal engi- neering	Volkswagen VW 75174 2010-04	Automotive connectors - test specification	Not PG18.2 / 18.3 salt spray, B19.4 industrial climate, B23.1 / B23.2 diving

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

Electrical engineering	Porsche PTL 12100-A1005 2010-05	Automotive connectors - test specification	Not PG18.2 / 18.3 salt spray, B19.4 industrial climate, B23.1 / B23.2 diving
<b>LV 215 High-voltage connectors in motor vehicles - requirements and test conditions</b>			
Electrical engineering	Volkswagen VW 80302 (LV215-2) 2013-02	High-voltage connectors in vehicles - requirements and test conditions	Not dust, water and salt tests
Electrical engineering	Volkswagen VW 80304 (LV215-1) 2013-03	Electrics / electronics - Requirements for HV components	Not dust, water and salt tests
Electrical engineering	Volkswagen VW 80332 2019-01	High-voltage connectors in motor vehicles - requirements and test conditions	Not chapter 11.14, 13.20, 13.30, 13.31, 13.32

**12 Environmental simulation tests on devices, parts and components \*\*\* (D2)**

Field of testing	Standard or test method / issue	Title of the standard or test method	Limitations to the test method
<b>DIN EN 60068-x Environmental testing</b>			
Environmental simulation	DIN EN 60068-2-1:2008 VDE 0468-2-1:2008 IEC 60068-2-1:2007	Environmental testing - Part 2-1: Tests - Test A: Cold	Otherwise no confirmation ISO16750-x
Environmental simulation	DIN EN 60068-2-2:2008 VDE 0468-2-2:2008 IEC 60068-2-2:2007	Environmental testing - Part 2-2: Tests - Test B: Dry heat	Otherwise no confirmation ISO16750-x
Environmental simulation	DIN EN 60068-2-6:2008 VDE 0468-2-6:2008	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	Otherwise no confirmation

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

Environmental simulation	IEC 60068-2-6:2008	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	Otherwise no confirmation
Environmental simulation	DIN EN 60068-2-14:2010 VDE 0468-2-14:2010	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	Without Nc
Environmental simulation	DIN EN 60068-2-27:2010 VDE 0468-2-27:2010	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	
Environmental simulation	DIN EN 60068-2-29:1995	Environmental testing - Part 2: Tests; Tests Eb and guidance: Bump	
Environmental simulation	DIN EN 60068-2-30:2006	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	
Environmental simulation	DIN EN 60068-2-31:2009 VDE 0468-2-31:2009-04	Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens	without procedure 2 Repeated free falling
Environmental simulation	DIN EN 60068-2-38:2010 VDE 0468-2-38:2010	Environmental testing - Part 2-38: Tests - Test Z/AD: Composite temperature/humidity cyclic test	
Environmental simulation	DIN EN 60068-2-53:2011 VDE 0468-2-53:2011-02	Environmental testing - Part 2-53: Tests and guidance: Combined climatic (temperature/humidity) and dynamic (vibration/shock) tests	Just temperature
Environmental simulation	DIN EN 60068-2-64:2009 VDE 0468-2-64:2009-04	Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance	
Environmental simulation	DIN EN 60068-2-78:2014 VDE 0468-2-78:2014-02	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	
Environmental simulation	DIN EN 60068-2-80:2006	Environmental testing - Part 2-80: Tests - Test Fi: Vibration - Mixed mode	
Environmental simulation	DIN EN 60068-2-81:2004	Environmental testing - Part 2-81: Tests - Test Ei: Shock - Shock response spectrum synthesis	
Environmental simulation	DIN EN 61373:2011 + Correction 1:2018 VDE 0115-106:2011-04 + Correction 1:2018	Railway applications - Rolling stock equipment - Shock and vibration tests	

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

Environmental simulation	DNVGL-CG-0339:2016	Environmental test specification for electrical, electronic and programmable equipment and systems	Not chapter 10, 11, 14, 15
Environmental simulation	DIN EN 60529:2014 IEC 60529:1989 + A1:1999 + A2:2013	Degrees of protection provided by enclosures (IP Code) Range: First code number 0X to 4X	Just IPOX to IP4X
Environmental simulation	ISO 20653:2013-02	Road vehicles - Degrees of protection (IP code) - Protection of electrical equipment against foreign objects, water and access	Just IPOX to IP4X

**13 Testing the noise behaviour of fittings and devices in water installations \*\*\* (D2)**

DIN EN ISO 3822-1 2009-07	Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 1: Method of measurement
DIN EN ISO 3822-2 1995-05	Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 2: Mounting and operating conditions for draw-off taps and mixing valves
DIN EN ISO 3822-3 2018-04	Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 3: Mounting and operating conditions for in-line valves and appliances
DIN EN ISO 3822-4 1997-03	Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 4: Mounting and operating conditions for special appliances

**Abbreviations used:**

AA1	Work instructions of Labors für Materialographie, IMA
AA3	Work instructions of Labors für zerstörungsfreie Prüfung, IMA
AC2	Work instructions of Labors für statische und dynamische Bauteilprüfungen, IMA
AD	Working group pressure vessels
AENOR RP	Asociación Espanola de Normalización Reglamento Particular
AITM	Airbus Industrie Test Method
AN1	Work instructions of Labors für zerstörungsfreie Prüfung
ASTM	American Society for Testing and Materials
DBS	Deutsche Bahn Standard
DIN	Deutsches Institut für Normung e.V. – German Institute for Standardisation

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020

**Annex to the accreditation certificate D-PL-13119-02-00**

BRL	Beurteilungsrichtlinie (Specification for evaluation)
DGZFP	Deutsche Gesellschaft für zerstörungsfreie Prüfung (DGZfP) - German Society for NDT
DIN CERTCO	Gesellschaft für Konformitätsbewertung GmbH
DIN CERTCO ZP	Prüfverfahren im zur Grunde gelegten Zertifizierungsprogramm
DMA	Dynamic Mechanical Analysis
DSC	Differential Scanning Calorimetry
DVGW	Deutscher Vereinigung des Gas- und Wasserfaches e. V. – German Association for Gas and water
DVS	Deutscher Verband für Schweißen und verwandte Verfahren e.V. – German association for welding
E.ON	Energiekonzern E.ON – E.ON power company
FoN	Fortschritt Norm – advanced standard
GRIS	Güteverband Rohre im Siedlungswasserbau
GW	Gas Wasser
HP	Herstellung und Prüfung
IACS	International Association of Classification Societies LTD.
IMA-PV	Test specification of IMA Dresden
KIWA	Keurings instituut voor waterleiding Artikelen (formerly: Dutch Test Institute for drinking water articles) – presently company name
LBW	Laser Beam Welding
MIL-STD	Military Standard
OIT	Oxidations-Indikationszeit Oxydationindication Time
ONR	Österreichische Regeln - Austrian normative documents
ÖNORM	Österreichische Norm - Austrian Test standards
ÖVGW	Austrian Standard for Gas and Water
PA	Phased Array
PG	Prüfrichtlinie Gas – test normative documents for gas
PW	Prüfrichtlinie Wasser – test normative documents for water
SEL	Stahl-Eisen Lieferbedingungen – steel and iron suppliers' specifications
SEP	Stahl-Eisen-Prüfblatt – Steel and iron Testing Specification
SKZ HR	in-house method of SKZ - TeConA GmbH
SVGW	Schweizerischer Verein des Gas- und Wasserfaches Swiss Association of Gas-Water
TPG	Technische Prüfstelle Gas – technical testing centre gas
TPW	Technische Prüfstelle Wasser – technical testing centre water
TSI	Technical Specification of Interoperability
UIC	Union Internationale des chemins de fer – International Union of railway
UT	Ultrasonic Testing
VDE	Verband der Elektrotechnik Elektronik Informationstechnik e.V. – Association of electrotechnic electronic information technic
VDI	Verein Deutscher Ingenieure – Association of German Engineers
VP	Vorläufige Prüfgrundlage – preliminary test specifications
WAG	TSI bezogen auf „Fahrzeuge – Güterwagen“ – TSI for goods train
ZfP	Non-destructive Testing (NDT)

**-Translation-**

Abbreviations used: see last page

**Valid from: 18.12.2019**

Date of issue: 10.02.2020